

The Allied Sandbox:

The Role of the Tunisian Campaign as an Allied Learning Experience, 1942-1943

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Abstract

This dissertation focuses on how, between November 1942 and May 1943, Allied forces in North Africa welded together a system of warfighting that would serve them effectively for the rest of the Second World War. In reinterpreting the history of the Tunisian Campaign, this thesis will demonstrate the vital process of evolution undergone by Allied forces in North Africa, thereby lending credence to previous, but largely unsubstantiated claims within the literature that the campaign in Tunisia taught the Allies lessons which were invaluable to the success of their future campaigns. The creation of Allied Force Headquarters (AFHQ) for the undertaking of Operation Torch and the subsequent transformation of that operation into a fully realised campaign will be shown to have provided the Allies with vital experience of modern coalition warfare, serving as a learning experience at not only the command level, but in all key arenas of campaigning, including logistics, battlefield operations, and cooperation between air, ground, and naval forces.

In examining this topic, the thesis also interjects into a number of key historical debates with significance to the study of the wider Second World War. The frequently polarised attitude taken by scholars to the ascription of either Allied material superiority or doctrinal sophistication as key to Allied victory will instead be shown to be a false dichotomy, as will the oft-embraced notion that Allied command structures were often dysfunctional and even impotent in comparison with those of the Axis. Indeed, it will be shown that in Tunisia, and despite early shortcomings, AFHQ provided the solid institutional base without which Allied aspirations could easily have been frustrated, serving as a vital nexus of both organisation and corporate learning. The development of the AFHQ system over the course of the campaign would see the incorporation of logistical and materiel supremacy as a key element of Allied doctrine, emplaced alongside increasingly refined tactical and operational methods, not as competitors, but as complementary pillars of a newly developed and continually evolving Allied way of war.

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List of Abbreviations

AASC	Allied Air Support Command
ABDA	American-British-Dutch-Australian Command
AFHQ	Allied Force Headquarters
AFV	Armoured Fighting Vehicle
AGRA	Army Group Royal Artillery
AOP	Air Observation Post
ASC	Air Support Command
BRA	Brigadier Royal Artillery
CAO	Chief Administrative Officer
CCA (also CCB, CCC)	Combat Command 'A'/'B'/'C' – Regimental Combat Team/Brigade-sized unit, US 1 st Armored Division
CCRA	Commanders, Corps Royal Artillery
C-in-C	Commander-in-Chief
CCoS	Combined Chiefs of Staff
CRA	Commander Royal Artillery
CTF	Center Task Force
DAK	Deutsches Afrikakorps
EAC	Eastern Air Command
EBS	Eastern Base Section
ETF	Eastern Task Force
ETOUSA	European Theater of Operations, United States Army
GCI	Ground Control Intercept
GRT	Gross-Registered Tons
HQ	Headquarters
JPS	Joint Planning Staff
LCI	Landing Craft Infantry
LCT	Landing Craft Tank
LCV/P	Landing Craft Vehicle/Personnel

LSG	Landing Ship Gantry
LSI	Landing Ship Infantry
LST	Landing Ship Tank
MAC	Mediterranean Air Command
MT	Motor Transport
NAAF	Northwest African Air Forces
NACAF	Northwest African Coastal Air Force
NASAF	Northwest African Strategic Air Force
NATAF	Northwest African Tactical Air Force
NATOUA	North African Theater of Operations, United States Army
NCO	Non-Commissioned Officer
OKW	Oberkommando der Wehrmacht
2-pdr (also 6, 17, 25-pdr)	Pounder – denotes shell weight of British field guns
PZ AOK5	5. Panzerarmee
RAF	Royal Air Force
RDF	Range and Direction Finding
RTR	Royal Tank Regiment
SHAEF	Supreme Headquarters, Allied Expeditionary Force
SOS	United States Army Services of Supply
SWPA	South West Pacific Area Command
USAAF	United States Army Air Force
USACE	United States Army Corps of Engineers
WDAF	Western Desert Air Force
WTF	Western Task Force

Introduction

*“There, General, are the fruits of your victory.”
“Ours, you mean, ours – that we have all won together.”*

Harold Macmillan and General Dwight Eisenhower, May 1943¹

Although the study of the Second World War’s campaigns has produced entire libraries’ worth of material, it cannot be said that scholarly attention has been divided equally among the conflict’s many theatres and engagements. North-West Europe, the Eastern Front, and the Pacific Theatre all loom large in the collective consciousness, and while other, less prominent theatres such as Burma have begun to receive the attention that they deserve, it is nevertheless a slow and uneven process that continues to see some campaigns neglected. Such has very much been the case with regard to the Tunisian Campaign, which despite not only occurring during the vital period where Allied fortunes began to turn, but actively contributing to this sea change, has remained largely consigned to a background role both within the scholarly community and the wider popular imagination. As a result, this lack of attention has jaundiced our understanding of how the western Allies were able to transition from early defeats at the hands of the Axis powers, into returning to the European continent at the head of a well-equipped and highly experienced multinational force, backed by an impressively complex system for the direction of coalition warfare. This thesis, therefore, is concerned with helping to establish the means by which that process was undergone, shedding some light on the evolution of Allied warfighting methods in a campaign that has thus far eluded in-depth study and showing that it was in the hills and valleys of Tunisia that an ‘Allied way of war’ began to truly be forged.

The importance of the Tunisian Campaign to the wider narrative of the Second World War can be discerned from even a cursory inspection. Initiated on 8 November 1942 by the Anglo-American invasion of French North Africa, Operation Torch, as it was known, was at that point the largest amphibious landing operation

¹ Stephen E Ambrose, *Eisenhower: Soldier and President* (New York: Simon and Schuster, 2014) p. 97.

ever attempted and was designed to drive the Axis out of Africa entirely, thereby reopening the Mediterranean. Such a decision indelibly shaped Allied strategy, as the allocation of resources to the landings near irrevocably committed the Allies to further operations in the Mediterranean theatre, fundamentally shifting the future course of the Second World War. Further developments in Tunisia also impacted later operations, as although the Torch landings were largely successful, even against sometimes determined Vichy French resistance, the Allies were unable to seize control of French North Africa before the Axis could mount a counter-invasion. Establishing a beachhead in Tunisia, from which the Allies proved unable to oust them in the winter of 1942, German and Italian forces poured into North Africa, Anglo-American forces doing likewise, leading to a conflict of expanding scale and scope that was finally brought to a conclusion in early May 1943. Although early on the Axis enjoyed a number of successes, leading up to the tense Battle of Kasserine Pass, the Allies steadily rallied and began to push the German-Italian forces back into Tunisia. The arrival of 8th Army, fresh from their long advance from El Alamein, added their strength to that of the British First Army, US II Corps and French 19th Corps in establishing an ever-tightening ring around the Axis defences. Breaching first the Mareth Line in mid-March and then driving north and eastwards in Operations Scipio, Sweep, and Vulcan, the Allies were finally in a position to shatter Army Group Afrika's defences by the end of April, a final offensive, Operation Strike, seizing both Tunis and Bizerte on 7 May. Army Group Afrika's capitulation was to follow less than a week later on 13 May, marking the final end of the North African campaign.

Although ultimately not the swift victory the Combined Chiefs of Staff (CCoS) had hoped for, the Tunisian Campaign nevertheless had tremendous impacts. The complete destruction of Army Group Afrika removed the Axis' final toehold on the African continent, undoing the stranglehold the Axis had possessed over the central Mediterranean since mid-1940. The latter's entire southern flank consequently lay open to Allied incursion, stretching Axis defences thin, while the damage inflicted upon Italy's aspirations brought Mussolini's regime to the brink of collapse. Added to this were Axis losses in manpower, with over 300,000 casualties, 250,000 of them unwounded prisoners, placing Allied victory in Tunisia in the same order of magnitude as that of the Soviet victory at Stalingrad a few months prior.

Losses in material were equally devastating, encompassing not only thousands of tons of guns, vehicles and supplies, but also the destruction of much of the Axis merchant marine and the mauling of the Luftwaffe and Regia Aeronautica. By contrast, the Allied cause was only strengthened by the invasion of North Africa, the recapture of the Mediterranean shipping lanes being one such benefit. The reopening of the route between Gibraltar and Suez meant that Allied convoys no longer had to make the circuitous trip round the Cape of Good Hope, thus freeing up vessels for employment elsewhere. Additionally, where Italy now seemed poised to ignominiously exit the war, Tunisia had seen the revival of France as a key Allied power, as negotiations with Vichy leaders after Torch had seen French forces in North Africa realign themselves with the Allies, the subsequent formation of the French Committee of National Liberation uniting ex-Vichy and Free French forces under a single provisional government. The resupply of French forces during the campaign enabled the Allied powers to begin the process of rebuilding a functioning French field army, which would provide valuable service in Italy and the liberation of France.

Yet despite the dramatic events of the six-month campaign, the literature dedicated to covering Tunisia is at best decidedly patchy, a situation largely attributable to its treatment by news media and personal accounts both during and immediately after the war. A brief examination of the newspaper coverage of the campaign reveals this eclectic and uneven focus, beginning with the news that Operation Torch was underway on 8 November 1942. According to journalist Alan Moorehead, discontent at the lack of a second Allied front had been simmering throughout much of 1942, and as such when the news broke of the Allied landings, ‘the effect on the people was electric. They snatched at newspapers and they hung around their radio sets. They were aglow with the news. America was in it at last. At last we had a second front. At last we were hitting back.’² This enthusiasm however, borne from Tunisia’s strategic and political importance, dwindled as the weeks wore on and the dynamism and energy of Torch gave way to indecisive skirmishing, the Allies’ desperate scramble to take Tunis petering out amid mud and pouring rain at year’s end. This lack of immediate success prompted criticism at home, the *Daily Mail* publishing an editorial that claimed there was ‘considerable dissatisfaction with

² Alan Moorehead, *African Trilogy* (London: Hamish Hamilton, 1946), p. 409.

the course of the campaign in Africa', as 'it would appear that we have been mainly on the defensive since Dec. 5 and there is no sign whatsoever of a further push forward in the future'.³ Less polemical, but still far from euphoric was *The New York Times*' assessment of the situation, as while they called the situation in Africa hopeful, this was tempered by the 'sobering reminder that both political and military problems of great complexity in Africa are not solved but in solution'.⁴

Solutions were not however immediately forthcoming, and this pall of disappointment continued to shape perceptions of the campaign as a grinding stalemate. This was not helped by dramatic events from further afield, as a slew of successive Allied victories, such as 8th Army's capture of Tripoli on 23 January, Paulus' surrender at Stalingrad on 2 February, and the Japanese evacuation of Guadalcanal on 7 February, grabbed the public imagination. Even within the theatre, Allied success in small exchanges was easily overshadowed by the Casablanca Conference in mid-January, but no sooner had this rush of good news dried up than Axis forces in Tunisia, now headed by the famed Erwin Rommel, delivered a powerful blow to Allied forces at Kasserine Pass. Kasserine was to receive prominent coverage for much of the battle's duration, thereby cementing its pivotal position within popular memory of the Tunisian Campaign, particularly among American audiences, for whom II Corps' early defeats were to form part of a collective trauma. Although correspondents were swift to praise 'the courage of tired men fighting against the odds', the precarious situation and humiliating shock dealt to American forces did much to prompt concern from pundits, including questions about Allied fighting capabilities.⁵ Coverage eventually turned more positive as Allied forces slowed the German advance to a halt, cautious optimism eventually being replaced by celebration as Eisenhower's troops embarked on a successful counteroffensive.

³ 'Campaign in Africa Criticized in London', *The New York Times*, (4 January, 1943) <https://timesmachine.nytimes.com/timesmachine/1943/01/04/issue.html> [accessed 21/01/2021]

⁴ 'Year of Decision', *The New York Times* (1 January, 1943) <https://timesmachine.nytimes.com/timesmachine/1943/01/01/83892384.html?pageNumber=22> [accessed 21/01/2021]

⁵ Frank L. Kluckhohn, 'How Germans Took Pass at Kasserine', *The New York Times* (22 February, 1943) <https://timesmachine.nytimes.com/timesmachine/1943/02/22/85085252.html?pageNumber=8> [accessed 21/01/2021]

From this watershed, a steady march to victory was now predicted, as Kasserine was translated into a wider superiority in-theatre, but much of AFHQ's thunder was stolen by the entry into theatre of 8th Army, by this point renowned as heroes of El Alamein. Indeed, such was the over-emphasis on 8th Army's role in Allied victory that Generals Alexander and Eisenhower both appealed to the War Office over misleading coverage, indicting the BBC's report on Operation Strike as 'militarily inaccurate apart from being inapt and tactless', due to the 'very exaggerated picture of the part played by the Eighth Army thus minimizing that of First Army'.⁶ These faux pas aside, final victory in Tunisia was greeted with considerable enthusiasm, many observers comparing the vast bag of Axis prisoners to the Soviet victory at Stalingrad and speculating where the victorious Allies might strike next. Others highlighted Tunisia's import as a learning experience, a thread that had gathered some momentum in the aftermath of Kasserine, where the hard knocks suffered by Allied forces were emphasised not as setbacks, but as training lessons, Kluckhohn writing on 1 March that 'to some extent this North African campaign has been the same sort of testing ground for the Americans that Spain was for the Germans'.⁷ This was a motif repeated post-campaign, Hanson Baldwin calling Tunisia 'a college on the conduct of war by Allies', where 'the hard lessons learned may save many lives in the battles of tomorrow'.⁸ Such reflection however, was largely drowned out by the high tempo of Allied operations, including preparations for the invasion of Sicily, which drew media attention swiftly beyond the bounds of Tunisia, leading to the campaign's rapid decline in the public consciousness.

Post-war accounts did comparatively little to arrest this trend, many senior commanders and leaders preferring instead to emphasise campaigns that might reflect better on their reputations, or subordinating their Tunisian experiences to broader narratives. Patton's *War As I Knew It* reflects the former approach, scarcely opining at all on Tunisia beyond Operation Torch, despite plentiful material in the

⁶ London, The National Archives (TNA): WO 193/844, 'Operations; Phase I - Part 3'.

⁷ Frank L. Kluckhohn, 'US Men and Arms Stand Up in Tunisian Testing Ground', *The New York Times* (1 March, 1943)
<https://timesmachine.nytimes.com/timesmachine/1943/03/01/85627705.html?pageNumber=1>
 [accessed 22/01/2021]

⁸ Hanson W. Baldwin, 'Tunisia's Lessons Aid Allies' Power', *The New York Times* (12 May, 1943)
<https://timesmachine.nytimes.com/timesmachine/1943/05/12/88532761.html?pageNumber=7>
 [accessed 22/1/2021]

later published *The Patton Papers* to cover this period.⁹ The memoirs of Harold Alexander by contrast epitomise the latter tendency, subsuming a potted history of the campaign before the author's arrival into a broader history of the desert war, before concluding the Tunisian narrative as the epilogue to the saga of his and Montgomery's victory at El Alamein.¹⁰ Many of these accounts therefore, do little to overturn the established narratives created by the campaign's media coverage, some instead working to sharpen those preconceptions and entrench them in the popular consciousness. Montgomery's memoirs for example, as might be expected of the commander of 8th Army, do much to place the desert veterans at the centre of the narrative of Tunisian victory, further entrenching those pre-existing conceptions of their reputation as the army that defeated Rommel and won the North African Campaign.¹¹ Only Axis accounts offer much fresh perspective, memoirs and studies of senior commanders, such as Alfred Toppe's *Desert Warfare*, suggesting that to the Axis, the key struggle in Tunisia was one of logistics, a concept often placed diametrically opposite to fighting ability.¹² Later publications, such as the papers of General Eisenhower, and increased archival access due to the declassification of documents, further added to the source basis of the campaign.¹³ However, despite the additional insight offered by these accounts, they did little to overturn established narratives, both due to the pre-existing lack of scholarly interest in Tunisia and, in the case of private papers, the continued centralisation of the campaign's narrative around senior figures.

These different emphases have done much to shape the resulting literature, which has sharpened into three distinct but non-coterminous traditions, all of which have influenced each other at various points, but have remained largely apart in form and function. The first of these, and referent for those works following, have been the campaign's official histories, of which there are a number of volumes. The British and American official histories, Playfair's *The Destruction of Axis Forces in North Africa* (1966) and Howe's *Seizing the Initiative in the West* (1957), remain

⁹ George S. Patton, *War as I Knew It* (New York, W.H. Allen, 1950); *The Patton Papers 1940-1945*, ed. by Martin Blumenson (Boston: Houghton Mifflin Co., 1974).

¹⁰ Earl Alexander of Tunis, *The Alexander Memoirs, 1940-1945* (London: Frontline, 2010)

¹¹ Montgomery of Alamein, *Memoirs* (London: Collins, 1958).

¹² Major-General Alfred Toppe, *Desert Warfare: German Experiences in World War II* (Fort Leavenworth, Kan: Combat Studies Institute, US Army Command and General Staff College, 1952).

¹³ *The Papers of Dwight David Eisenhower: The War Years: II*, ed. Alfred D Chandler et al., (London: The John Hopkins Press, 1970).

arguably the most complete and in-depth accounts, providing a detailed and thorough recounting of the campaign.¹⁴ Although primarily concerned with establishing a clear narrative account without delving too deeply into analysis, both Howe and Playfair do in places offer perceptive comment on key developments. Howe for example, highlights the immaturity of the Allied coalition in 1942 and the key role Tunisia played in developing that partnership before an attempt was made to return to Europe, as ‘even if the Allies had succeeded in establishing a bridgehead in Normandy in 1943, their experience in Tunisia demonstrated that they would have been unprepared for breaking out and thrusting far toward the heart of Nazi Germany’.¹⁵ These more generalist accounts have also been accompanied by more directed studies, including Hinsley’s *British Intelligence in the Second World War* (1981), Roskill (1956) and Morison’s (1950) British and American naval histories, and Spivak and Leoni’s *La Campagne de Tunisie* (1985), a history of the French forces fighting in North Africa.¹⁶ Such accounts provide key detail and alternative perspectives from which to examine the campaign, Hinsley for instance highlighting that though the Allies possessed a highly effective intelligence network, the lack of proper organisation for its use within AFHQ limited the practical value of acquired intelligence until later in the campaign.¹⁷

Axis offerings in this area are more sporadic and generally more recently published. Split over two volumes, the German official history is not completely cohesive, dealing with the Torch landings to January 1943 in some detail in *Vol. VI: The Global War* (2001), but sparing comparatively little time for the steady march to Axis defeat in May 1943 in *Vol. VIII: The Eastern Front* (2017), largely covering the strategic situation and the departure of Rommel.¹⁸ Nevertheless, some valuable

¹⁴ I.S.O Playfair, *The Mediterranean and Middle East, Volume IV: The Destruction of Axis Forces in North Africa* (London: HMSO, 1966); George F. Howe, *Northwest Africa: Seizing the Initiative in the West* (Honolulu, Hawaii: University Press of the Pacific, 2005).

¹⁵ Howe, p. 677.

¹⁶ F.H. Hinsley, *British Intelligence in the Second World War vol. 2* (London: HMSO, 1981); Stephen Roskill, *The War At Sea, 1939-1945, Volume 2: The Period of Balance* (London: HMSO, 1956); Samuel Eliot Morison, *History of United States Naval Operations in World War II, Vol. II: Operations in North African Waters, October 1942 - June 1943* (Boston: Little, Brown, 1950); Marcel Spivak and Armand Leoni, *La Campagne de Tunisie, 1942-1943, vol.2: Les Forces Francais dans La Lutte Contre L’Axe en Afrique* (Chateau de Vincennes: Ministry of Defence, 1985).

¹⁷ Hinsley, pp. 729-33.

¹⁸ Boog, Horst, and others, *Germany and the Second World War, Volume VI: The Global War*, trans. Ewald Osers (Oxford: Clarendon, 2001); Karl-Heinz Frieser, *Germany and the Second World War, Volume VIII: The Eastern Front 1943-1944: The War in the East and on the Neighbouring Fronts* (Oxford: Oxford University Press, 2017).

insights can be gleaned from these pages, such as the high command's rationale for defending Tunisia and the perception of Axis ground forces that Allied troops were skilfully handled during the advance on Tunis. Italian offerings on Tunisia are more substantial, Mario Montanari of the Italian Army Historical Office having produced a number of monographs on both Italian strategy and operations, including a full volume on the Tunisian Campaign (1993).¹⁹ These, much as the German volumes, emphasise the steady collapse of the bridgehead in Tunisia, highlighting political infighting at home and the erosion of logistical systems as key issues for the Axis, and providing a counterpoint perspective for Allied accounts that contains interesting contrasts. Beneath the overarching histories of each nation and their respective services, quasi-official productions, usually sponsored by divisional or regimental associations, have also covered the experiences of individual units or arms of combat, adding additional texture and nuance to otherwise sweeping national narratives. This includes works such as Knickerbocker's *Danger Forward* (1947), a history of US 1st Infantry Division, and Stevens' *Bardia to Enfidaville* (1962), which follows 2nd New Zealand Division's experiences in North Africa, culminating in the Axis surrender in Tunisia.²⁰ Many of these studies speak to the formative experience that many formations gained in Tunisia, Cyril Ray's history of 78th Division, *Algiers to Austria* (1952), saying that 'what was to matter to them in the battles still to come, they had learned to fight a European campaign – the first since Dunkirk'.²¹

Yet while the official histories have laid fertile and detailed groundwork for further exploration, the Tunisian Campaign as a whole has not attracted much interest from scholars as a topic of independent study, a fact attested to by the relative lack of articles that would demonstrate a thriving academic discourse. Instead, much akin to the tradition of memoirs it follows on from, the academic historiography has largely divided itself between grander narratives and more narrow, focused topics. Most prevalent in the former category are those works which incorporate Tunisia from the perspective of Allied grand strategy, as the decision to

¹⁹ Mario Montanari, *Le Operazioni in Africa Settentrionale, Vol.4: Enfidaville (Novembre 1942 – Maggio 1943)* (Rome: Ufficio Storico dello Stato Maggiore dell'Esercito, 1993).

²⁰ Hubert Knickerbocker, *Danger Forward: The Story of the First Division in World War II* (Washington D.C.: The Society of the First Division, 1947); William George Stevens, *Bardia to Enfidaville* (Wellington: War History Branch, Department of Internal Affairs, 1962).

²¹ Cyril Ray, *Algiers to Austria: A History of 78 Division in the Second World War* (Uckfield: The Naval and Military Press, 2014).

embark on Operation Torch fundamentally shaped the future course of the war. Matthew Jones (1996) for example, has argued that Operation Torch was the Allies' only viable option for military action at the time; although a Normandy invasion was highly alluring to an American doctrine that sought to rapidly deliver a decisive blow, Allied shipping reserves were simply insufficient to deliver a viable cross-channel landing, and the invasion itself was incredibly risky.²² However, while this view has become increasingly accepted in recent years, most recently by Richard Betts (2019) and Th. W. Bottelier (2020), it is worth noting that there has been a pronounced divide in the historiography, largely on national grounds, mirroring the disagreement between the British and American elements of the CCoS, the latter of whom advocated instead for a direct invasion of Normandy.²³ Norman Gelb's *Desperate Venture* (1992) for instance takes the American perspective first espoused by Russell Weigley in *The American Way of War* (1973), arguing that the Torch landings were a mistake, delaying the eventual cross-channel invasion and causing needless tension between the alliance partners.²⁴ This viewpoint was taken to its farthest extent by British historian Correlli Barnett, whose *Engage the Enemy More Closely* (1991) argued that not only Torch, but the entire British Mediterranean strategy was a needless diversion, positioning Barnett in direct opposition to the pro-Mediterranean interpretation first established in 1968 by Michael Howard, who also made substantial contributions to the British official history.²⁵ A notable dissenter to this debate was Andrew Buchanan (2014), who suggested that Torch was actually the result of a convergence of interests between Britain and America, as US political aims and British imperial interests both aligned towards action in the Mediterranean.²⁶ However, as Simon Ball argued in 2016, this perception of an

²² Matthew Jones, *Britain, the United States and the Mediterranean War, 1942-44* (London: Macmillan, 1996).

²³ Richard K. Betts, 'The Grandiosity of Grand Strategy', *The Washington Quarterly* 42, (2019): 7-22; Th. W. Bottelier, 'Not On A Purely Nationalistic Basis': The Internationalism of Allied Coalition Warfare in the Second World War', *European Review of History* 27, (2020): 152-175.

²⁴ Norman Gelb, *Desperate Venture: The Story of Operation Torch, the Allied Invasion of North Africa* (New York: William Morrow & Co., 1992); Russell Weigley, *The American Way of War: A History of United States Military Strategy and Policy* (Bloomington, IN: Indiana University Press, 1973).

²⁵ Correlli Barnett, *Engage the Enemy More Closely: The Royal Navy in the Second World War* (New York: W. W. Norton, 1991); Michael Howard, *The Mediterranean Strategy in the Second World War* (London: Weidenfield and Nicolson, 1968); Michael Howard, *History of the Second World War: Grand Strategy Vol IV: August 1942-September 1943* (London: HMSO, 1972)

²⁶ Andrew Buchanan, *American Grand Strategy in the Mediterranean during World War II* (New York: Cambridge University Press, 2014).

American strategic reorientation lacks solid evidential grounding in American policy, as it seeks to systematise a series of decisions that were taken largely on the basis of military and political exigency.²⁷

Others have taken this focus even wider, seeking to contextualise Tunisia within the wider war then ongoing. Gerhard Weinberg's *A World At Arms: A Global History of World War II* (1994), argues that although some perceived the North African invasions as a sideshow, the amount of Axis resources it sucked in was crucial due to the then-critical situation on the Eastern Front, especially with regard to the destruction of Axis air transport.²⁸ This stood in opposition to John Ellis' interpretation, whose *Brute Force* (1990) claims that Torch had limited impact due to the comparatively few German divisions it eventually destroyed and more recently by Phillips O'Brien in *How The War Was Won* (2015), whose material-oriented study on battles, attrition, and wartime production argues that losses in Tunisia were modest compared with overall German production.²⁹ Some, such as Anthony Rice (1997) and Niall Barr (2015), have instead examined the Tunisian Campaign from the perspective of international cooperation, with Operation Torch serving an important role as the Anglo-American coalition's first major combined venture.³⁰ Although Barr remains sceptical that the Tunisian Campaign was wholly effective in building Allied unity, arguing that much of it 'remained only a surface sheen', both he and Rice are in agreement on the campaign's role in constructing a functioning organisation and method through which the Allies could build a unified operational concept.³¹

At the opposite end of the spectrum, Tunisia has also received some coverage from more focused works, covering particular armed services or exploring only a limited portion of the campaign. The role of the air forces in Tunisia has been particularly well served in the historiography, not only with past offerings such as

²⁷ Simon Ball, 'Buchanan, A. (2014). American Grand Strategy in the Mediterranean During World War II.' *Diplomacy & Statecraft*, 27 (2016): 193–194.

²⁸ Gerhard Weinberg, *A World At Arms: A Global History of World War II*, (Cambridge: Cambridge University Press, 1994).

²⁹ John Ellis, *Brute Force: Allied Strategy and Tactics in the Second World War* (London: Andre Deutsch, 1990); Phillips P. O'Brien, *How the War Was Won: Air-Sea Power and Allied Victory in World War II* (Cambridge: Cambridge University Press, 2015).

³⁰ Anthony J. Rice, 'Command and Control: The Essence of Coalition Warfare', *Parameters* 27, no. 1 (1997): 152-167; Niall Barr, *Yanks and Limeys: Alliance Warfare in the Second World War* (London: Jonathan Cape, 2015).

³¹ Barr, p. 243.

Cooling's *Case Studies in the Development of Close Air Support* (1990) and Mortensen's *A Pattern for Joint Operations* (1987), but also more recent works, such as Robert Ehlers' *The Mediterranean Air War* (2015) and Michael Bechthold's 'A Question of Success' (2004).³² The enthusiasm of airpower writers in discussing North Africa is understandable; for American commentators like Rein (2012), North Africa is arguably the birth place of the US Air Force, while for British commentators such as Gladman (2009), the Tunisian campaign saw the culmination and dissemination of army/air cooperation techniques practiced in the Western Desert.³³ Naval operations by contrast have been less well served until recently, Barnett's *Engage the Enemy More Closely* being perhaps the most authoritative work on Mediterranean operations until after the millennium.³⁴ The last few years however have seen a surge in naval publications, including volumes by Evan Mawdsley (2019), Craig Symonds (2018) and Vincent O'Hara (2013), all of which contain sections that highlight the contribution of Tunisia to swinging the balance of power at sea in the Allies' favour in early 1943.³⁵ The latest of these additions, Richard Hammond's *Strangling the Axis* (2020), also addresses the Tunisian situation in one of its chapters, positioning the Allies' ability to gain dominance over the Mediterranean's seaborne supply routes as pivotal in ultimate Allied victory in the theatre.³⁶ Additionally, Operation Torch, much as it has intrigued scholars of strategy, has also attracted some attention from scholars of combined operations, including O'Hara's eponymous *Torch* (2015), which highlights the landings'

³² Benjamin Franklin Cooling (ed.), *Case Studies in the Development of Close Air Support* (Washington D.C.: Office of Air Force History, 1990); Daniel R. Mortensen, *A Pattern for Joint Operations: World War II Close Air Support, North Africa* (Washington D.C.: Office of Air Force History, 1987); Robert S. Ehlers Jr., *The Mediterranean Air War: Airpower and Allied Victory in World War II* (Lawrence, Kansas: University Press of Kansas, 2015); Michael Bechthold, 'A Question of Success: Tactical Air Doctrine and Practice in North Africa, 1942-1943', *Journal of Military History* 68, no.3 (July 2004): 821-851

³³ Christopher M. Rein, *The North African Air Campaign: U.S. Army Air Forces from El Alamein to Salerno* (Lawrence: University Press of Kansas, 2012); Brad William Gladman, *Intelligence and Anglo-American Air Support in World War Two: The Western Desert and Tunisia, 1940-43* (Basingstoke: Palgrave Macmillan, 2009).

³⁴ Barnett, *Engage the Enemy More Closely*.

³⁵ Evan Mawdsley, *The War For The Seas: A Maritime History of World War II* (London: Yale University Press, 2019); Craig Symonds, *World War II At Sea: A Global History* (Oxford: Oxford University Press, 2018); Vincent P. O'Hara, *Struggle for the Middle Sea: The Great Navies at War in the Mediterranean Theater, 1940-1945* (Annapolis, MD: Naval Institute Press, 2013)

³⁶ Richard Hammond, *Strangling the Axis: The Fight For Control of the Mediterranean During the Second World War* (Cambridge: Cambridge University Press, 2020)

importance to later Allied invasions, calling the lessons derived from Torch ‘the minimum pre-requisites for the victory the western Allies won in 1945’.³⁷

Land-based combat in Tunisia has, by comparison, been less well-represented in the literature. While the discourse surrounding other theatres, such as North-West Europe, has seen publications like Stephen Ashley Hart’s *Colossal Cracks* (2007) and John Buckley’s *Monty’s Men* (2013) that add significantly to our understanding of how the Allies waged war in Normandy, that around Tunisia has remained largely under-developed. Indeed, Tunisia seems to have formed something of a historical blind spot for many scholars, a fact acknowledged by Hargreaves, Rose, and Ford in their study of Allied fighting effectiveness in the Mediterranean.³⁸ Analyses of the North African Campaign for example, usually cut short after the battle of El Alamein, confining Tunisia to a brief mention in the epilogue, if at all. James Colvin’s *Eighth Army Versus Rommel* (2020) is a perfect example of the latter, ending the narrative of 8th Army’s tactical development immediately after Alamein, despite the six months further campaigning that Montgomery’s force would undertake before final victory.³⁹ Even more holistic studies often dwell only scantily upon Tunisia, often remarking upon it merely as a bookend to Britain’s desert odyssey, or as the beginning of US entry into the Mediterranean and European theatres. This includes Jonathan Fennell’s much-lauded examination of the British and Commonwealth armies, *Fighting The People’s War* (2019), which devotes only five pages to Tunisia, compared to more than a hundred on the Western Desert, of which the vast majority is dedicated to both of these narratives.⁴⁰ On the other side of the hill, Axis-focused works such as Martin Kitchen’s *Rommel’s Desert War* (2009), present the Tunisian Campaign as the final, inevitable chapter in a process of Axis collapse in the Mediterranean theatre.⁴¹ Commitment to North Africa, Kitchen

³⁷ Vincent O’Hara, *Torch: North Africa and the Allied Path to Victory* (Annapolis, Maryland: Naval Institute Press, 2015)

³⁸ Stephen Ashley Hart, *Colossal Cracks: Montgomery’s 21st Army Group in Northwest Europe, 1944-45* (Mechanicsburg, PA: Stackpole, 2007); John Buckley, *Monty’s Men: The British Army and the Liberation of Europe* (London: Yale University Press, 2013); Andrew Hargreaves, Patrick Rose, and Matthew Ford, ‘Introduction’, in *Allied Fighting Effectiveness in North Africa and Italy, 1942-1945*, ed. by Andrew Hargreaves, Patrick Rose, and Matthew Ford (Leiden: Brill, 2014), pp. 1-12.

³⁹ James Colvin, *Eighth Army Versus Rommel: Tactics, Training and Operations in North Africa, 1940-1942* (Warwick: Helion, 2020).

⁴⁰ Jonathan Fennell, *Fighting the People’s War: The British and Commonwealth Armies and the Second World War* (Cambridge: Cambridge University Press, 2019).

⁴¹ Martin Kitchen, *Rommel’s Desert War: Waging World War II in North Africa, 1941-1943* (Cambridge: Cambridge University Press, 2009).

argues, saw Axis resources sucked into an unwinnable secondary theatre and then ultimately squandered by Hitler's determination to hold an untenable African bridgehead. Such sentiments are echoed in Robert Citino's *The Wehrmacht Retreats* (2012), which casts the campaign as part of a 1943 'year of defeat', where the strategic and material imbalances between Allies and Axis finally tipped the balance convincingly toward the former.⁴²

However, while most overarching narratives have dealt with Tunisia in a limited, or fragmentary fashion, some scholars have occasionally offered thoughtful arguments about the campaign's impacts. A notable strand within this patchwork includes those few works which note Tunisia as a vital learning experience for Allied forces, echoing those comments made by correspondents at the time. Charles Forrester's *Monty's Functional Doctrine* (2015) for instance, highlights that the Tunisian experience played a key part in the formulation of doctrine prior to the invasion of Normandy, particularly with reference to combined arms.⁴³ Although he ultimately concludes that 21st Army Group chose to ignore some of these lessons, Forrester's work is important as it is one of the few British-focused works of its kind to recognise the value of the Tunisian experience to later campaigns. American-oriented works, by contrast, have often found it easier to attribute to Tunisia some of the improvement undergone by American forces prior to D-Day, but rarely dwell on it. Jonathan Mallory House's *Toward Combined Arms Warfare* (1984) is a proud exponent of this tradition, but nevertheless highlights that Tunisia was the nadir for American tank destroyer doctrine, which proved ill-suited to the local terrain, while an over-adherence to mobility-centred armour tactics often left tank units dispersed and lacking in firepower.⁴⁴ Both of these issues, amply demonstrated in battles such as Kasserine Pass, provided valuable experience to American forces, enabling them to remedy some of their more glaring defects. Russell Hart's *Clash of Arms* (2004) echoes many of these points, arguing that Tunisia played an important role as a

⁴² Robert M. Citino, *The Wehrmacht Retreats: Fighting A Lost War, 1943* (Lawrence, Kansas: University Press of Kansas, 2012).

⁴³ Charles Forrester, *Monty's Functional Doctrine: Combined Arms Doctrine in British 21st Army Group in Northwest Europe, 1944-45* (Solihull: Helion, 2015).

⁴⁴ Jonathan Mallory House, *Toward Combined Arms Warfare: A Survey of 20th-Century Tactics, Doctrine and Organization* (Fort Leavenworth, KS: US Army Command and General Staff College, 1984).

sounding board for Allied operational practice.⁴⁵ The campaign demonstrated that US doctrine, developed in the isolation of peacetime, was essentially sound in its formulation, while also allowing British forces to hone their early war experiences and developments into the methodical, firepower-heavy approach for which they would be known in Normandy.

Deeper insights into ground combat have also been gleaned by specialist studies, Steven Barry's *Battalion Commanders at War* (2013) representing one of the few more recent entries.⁴⁶ Although primarily concerned with the training and leadership of American junior officers in Tunisia and Sicily, Barry's work nevertheless raises broader questions on the role of Tunisia as a developmental stage for the US Army, contending that the adaptive strength of battalion-level leadership was vital in pulling American forces through their first combat experiences. Similarly, Neal Dando's *From Tobruk to Tunis* (2016) also provides a topically focused perspective on events in Tunisia, as his study concerns itself with the influence of the North African terrain upon doctrinal development, including that in Tunisia, which Dando concludes provided a challenge which showcased improving British doctrine.⁴⁷

The final strand of the literature is predominantly given over to more popular works and includes many of the admittedly few Tunisian-centred monographs published in the past seven decades. These often lean towards the narrative end, such as Kenneth Macksey's *Crucible of Power* (1969), which offers a predominantly Allied narrative of the campaign, although it does in places perceptively identify the underlying factors that shaped the outcome of the battle for Tunisia, astutely identifying the fragmentary nature of Axis strategy in North Africa and contrasting that with an increasingly united Allied front.⁴⁸ Other entries into the literature from the same era offer similar experiences, such as Gregory Blaxland's *The Plain Cook and the Great Showman* (1977), which centres its attention on comparing the leaders

⁴⁵ Russell A. Hart, *Clash of Arms: How the Allies Won in Normandy* (Norman, OK: University of Oklahoma Press, 2004).

⁴⁶ Steven Barry, *Battalion Commanders at War: US Army Tactical Leadership in the Mediterranean Theater, 1942-1943* (Lawrence: University Press of Kansas, 2013).

⁴⁷ Neal Dando, *From Tobruk to Tunis: The Impact of Terrain on British Operations and Doctrine in North Africa: 1940-43* (Solihull: Helion and Co., 2016).

⁴⁸ Kenneth Macksey, *Crucible of Power: The Fight for Tunisia, 1942-1943* (London: Hutchinson, 1969).

of the two British armies in theatre, Kenneth Anderson and Bernard Montgomery, while seeking to reposition the former, and First Army in general, as key contributors to Allied victory.⁴⁹ Most of these second-generation entries into the history of the campaign tend to portray Tunisia as being an expanding contest of strength between Allies and Axis, reflecting the broader historiographical tradition of the era, suggesting that the Allies eventually by trial, error, and determination, were able to overcome and outfight an increasingly worn-out Axis. This has been contested by more recent works, largely penned around the millennium, which have taken a more cynical approach to Allied victory in Tunisia, aping a more revisionist approach in the contemporary scholarship. Watson's *Exit Rommel: The Tunisian Campaign* (2007), for example, which focuses mainly on delivering a narrative of the campaign from Rommel's own perspective, presents the Tunisian Campaign as a foregone conclusion.⁵⁰ Although Axis forces fought effectively and sometimes made it appear as if the campaign hung in the balance, shortages of supplies and growing Allied material and technical superiority effectively decided the outcome. These sentiments were echoed in David Rolf's *The Bloody Road to Tunis* (2001), which portrays an Allied coalition thoroughly inexperienced and often at odds with itself, but eventually capable of grinding the Axis down through ruthless attrition.⁵¹

Alongside narrative retellings, popular accounts of the campaign have also been subsumed within biographical works, such as those of Haycock (2004) and Jackson (1971), who have covered Eisenhower and Alexander respectively.⁵² These have often echoed similar sentiments about the formative experience offered by Tunisia, save on a more personal level for the men who would come to command Allied forces in later campaigns. Other works have covered specific operations more densely and indeed sometimes overlap with more academically-oriented pieces in both attention to detail and thoroughness of research, such as Martin Blumenson's much-acclaimed account *Kasserine Pass* (1966).⁵³ The latter's rich narrative, an

⁴⁹ Gregory Blaxland, *The Plain Cook and the Great Showman: The First and Eighth Armies in North Africa* (London: William Kimber & Co., 1977).

⁵⁰ Bruce Allen Watson, *Exit Rommel: The Tunisian Campaign, 1942-43* (Mechanicsburg, PA: Stackpole Books, 2007).

⁵¹ David Rolf, *The Bloody Road to Tunis: Destruction of the Axis Forces in North Africa, November 1942 - May 1943* (London: Frontline, 2001).

⁵² D.J. Haycock, *Eisenhower and the Art of Warfare: A Critical Appraisal* (London: McFarland & Co., 2004); W. G. F. Jackson, *Alexander of Tunis As Military Commander* (London: BT Batsford, 1971).

⁵³ Martin Blumenson, *Kasserine Pass* (New York, NY: Tower Publications, 1966)

artifact of Blumenson's experience as a US Army historical officer and contributor to the American official history, shares no small part of the credit for immortalising the eponymous battle in American popular memory. Within this tradition of densely packed operational studies, Mitchell's *The Battle of the Peaks* (2019) forms the most recent example.⁵⁴ A highly forensic exploration of First Army's penultimate operation, Vulcan, Mitchell follows the experience of 78th Division in incredible detail, highlighting the experience and sophistication of method developed by both of these formations over the course of the campaign. These lessons, much as First Army itself, formed a crucial component in Allied victory in Tunisia, but have not received the attention they deserve, as a result of contemporary over-publicisation of 8th Army and a lack of substantive scholarship in the years following.

This echoes the words of Colin Baxter a quarter-century ago, who concluded in *The War In North Africa* that 'the relatively short but decisive Tunisian campaign when the American army came of age is awaiting a full-length study'.⁵⁵ What this survey of the literature demonstrates is that we are still waiting for such, as on the whole the conflict in Tunisia has lain neglected by scholars for much of the last seven decades, and there remain considerable gaps in the literature. Although Tunisia has been discussed from a multitude of angles, whatever academic interest it has generated has largely been fleeting or narrow, either subsumed into grander narratives or explored in microcosm by highly focused studies. Fuller treatments of the campaign have therefore predominantly been confined to works of popular history, which have frequently conformed to the trends of the academic historiography but have rarely engaged in deeper analysis of the campaign's underlying factors and wider impacts. As such, there has been little interrogation of many of the narrative themes established by contemporary and early post-war accounts of the campaign, many of which have been repeated as truisms by later scholars disinterested in subjecting Tunisia to more penetrating analysis. This lack of a holistic appreciation has consequently denuded the scholarship of a proper understanding of many of the key elements of the Tunisian campaign, both in the context of the campaign's own narrative and within wider debates surrounding the

⁵⁴ Ian Mitchell, *The Battle of the Peaks and Longstop Hill: Tunisia, April – May 1943* (Warwick: Helion, 2019).

⁵⁵ Colin F. Baxter, *The War in North Africa, 1940-43: A Selected Bibliography* (London: Greenwood, 1996), p. 74.

history of the Second World War. In particular, while the general outline of the campaign is well understood, there has been little attention devoted to precisely how it is that the Allies were able to bring the fighting in Tunisia to a successful conclusion, nor how the campaign may have served as a formative experience for Allied forces more broadly. Although it has been a recurrent strand in the literature, repeated frequently in texts dating back to the contemporary, the concept of the Tunisian Campaign as an important learning experience for Allied forces has yet to be treated to a thoroughgoing and comprehensive examination that could establish the veracity of this narrative.

As such, there remains a gap in our collective understanding of the evolution of Allied forces across the Second World War and the role the Tunisian Campaign played in aiding this development process. This project aims to address this oversight by answering the questions: how did the Anglo-American coalition achieve victory in Tunisia, why were the Allies able to win, and what was the Tunisian Campaign's significance to the wider Second World War? To answer these questions, this thesis will seek to provide a complete understanding of the experience and evolution of Allied forces during the campaign in Tunisia, from the preparation of Operation Torch in mid-1942, to the surrender of Army Group Afrika on 13 May 1943. It seeks to establish whether Allied forces underwent an observable process of learning while engaged in this campaign. The first of these tasks, the provision of a complete understanding of the Allies' experiences in Tunisia, seeks to develop a clear scholarly treatment of the campaign's key events and developments, confronting entrenched narratives and contextualising the campaign as part of the wider Second World War. This then offers an effective analytical framework to confront the second of the three tasks, examining the evolution of Allied forces across the changing circumstances of the Tunisian Campaign. In tackling this aspect, the thesis will highlight and examine the ways in which the Anglo-American coalition, and to a lesser extent, their Axis opponents, changed and adapted across the course of the campaign, thereby providing a core understanding of why the conflict unfolded in the way it did, and how the Allies came to claim victory. The final component of the thesis is concerned with establishing the relevancy of Tunisia to the wider Second World War, by exploring whether the growth and adaptation of Allied forces in Tunisia can be considered to form part of a systemic process of

evolution. The thesis will interrogate the concept that Tunisia formed an important learning experience for the Allies, blending existing knowledge with new experiences and innovations to synthesise lessons that had enduring relevance as the war progressed into new theatres.

In addressing these research questions, the thesis will examine the Allied campaign from a perspective of corporate learning, a concept most often adapted in business or economic studies, which encompasses the capacity of an organisation to acquire, adapt, apply, and disseminate knowledge in order to improve its efficiency. As it pertains to Allied efforts in Tunisia, the application of corporate learning would hence refer to the efforts of AFHQ to improve, refine, and adapt its organisation and methods of war in order to obtain victory over Axis forces. This process of learning can be considered to have four stages, not dissimilar to the Observe-Orient-Decide-Act (OODA) Loop developed by John Boyd as a framework for military decision-making in the mid-20th Century.⁵⁶ Within this model, in a given situation a force will observe its current circumstances, orient itself through a variety of factors such as experience and cultural disposition, decide on a course of action, and execute this plan, before repeating this cycle again. When applied to the concept of corporate learning, the OODA model can be rendered thus: that an organisation observes its own weaknesses and mistakes, or an opportunity that has arisen, orients itself by the exploration of the causes and solutions, decides on a course of action, and then acts, by implementing the chosen response. However, while such decisions can result from a discrete and spontaneous occurrence of learning and adaptation, the OODA loop itself can only be considered complete when tied to an iterative process of learning, in which changes made within the corporate organisation give way to fresh cycles of learning. The ability of a corporate body to sustain such cycles is intrinsically tied to its organisation and outlook, and the encouragement of a strong learning culture at the core of an organisation can see the experience of cumulative lessons contribute to the creation of a corpus of corporate knowledge upon which it can draw in future situations. Such a concept parallels the thoughts of Alfred Chandler, who contends that business enterprises were formed around an integrated learning base, with a successful firm being able to ‘apply its knowledge in ways that

⁵⁶ John Boyd, ‘The Essence of Winning and Losing’, accessed 21/09/2021, http://pogoarchives.org/m/dni/john_boyd_compendium/essence_of_winning_losing.pdf

maintained strong capabilities to sustain competitiveness'.⁵⁷ For military organisations, the development of such a base enables them to adapt to different combat scenarios and conditions, affording them the greatest chance to achieve their objectives with maximum efficiency.

Through the use of these concepts, this thesis will seek to establish whether Allied forces underwent a process of corporate learning during the Tunisian Campaign. It will assess the extent to which a cycle of learning, as defined by the OODA loop model, was implemented among Allied forces and moreover, interrogate whether these individual lessons were tied to a wider process of learning. In doing so, it will explore whether examples of Allied learning were confined to isolated or spontaneous instances, or formed part of a broader, continuous, and more systematised evolution of responses that would underscore AFHQ as a robust and flexible organisation, formed around an integrated learning base.

The thesis will seek to measure change and quantify the OODA loop by examining how and why these changes took place, focusing around four key areas, which directly parallel the stages of the OODA loop. Firstly, in examining the Observe stage of OODA, it will seek to clarify the motivating factors that initiated a cycle of learning for the Allies, locating for example whether it was internal organisational pressures or external factors that drove Allied forces to examine their own weaknesses or implement new ideas, and also what factors may have inhibited or otherwise restricted change. Secondly, in parallel with Orient, it will interrogate the methods through which learning took place, be it resulting from a process of top-down, official, and systemic reform, imported knowledge, or informal, ad hoc developments at the grassroots level, and how these different directions of change shaped the overall process. Thirdly, for the Decide phase, the thesis will analyse the implementation of changes resulting from the learning process, examining the solutions decided upon by Allied forces and the means by which these were realised. Finally, covering the Act stage of OODA, the thesis will assess the consequences of Allied learning and efforts at reform, highlighting the efficacy of different adaptations in combatting perceived challenges and exploring the impacts of these

⁵⁷ Ryan McDonough, Paul J Miranti, and Michael P Schoderbek, 'Alfred D. Chandler's Integrated Learning Base: Towards the Classification and Measurement of Corporate Innovation.' *Accounting History* 25 (2020): 536-557.

upon both the Tunisian campaign and the wider war. At all stages of this process, the thesis will also highlight where efforts at reform may have failed, and those obstacles that were encountered within the learning cycle, alongside the successes enjoyed by the forces engaged in Tunisia, and how they were often interconnected. While change itself is difficult to quantify in empirical measure, the factors outlined above provide a framework against which the thesis can offer a substantive analysis of corporate learning in Tunisia. Hence, we will be able to gauge the extent, impact and longevity of the reforms made during the campaign. From these examinations, the thesis will seek to build an image of the Tunisian Campaign's importance as a learning experience in not only its own right, but also within the grander narrative of the Second World War.

In tackling these questions, this thesis will demonstrate that Allied forces evolved significantly over the course of the Tunisian Campaign, adapting not only to the requirements of the local environment, but also institutionally and structurally to the needs of a multi-national, multi-domain, and modern battlefield. In particular, this thesis posits that Tunisia, as the first major Anglo-American joint operation, saw the creation and elaboration of a complex multi-national command structure dedicated to establishing unity of purpose between the Allies. This oversaw a vast and expanding war effort predicated on the strength of Allied industry and coordinated by a sophisticated network of boards and a robust logistical organisation, enabling the concentration of substantial numbers of men, materiel, and munitions within the Tunisian theatre. These advantages underpinned an increasingly sophisticated military machine, which combined this strength with improved training, tactics, and experience to overcome the Axis in Tunisia and evict them from the African continent. Such refinements were also visible across other Allied services too, with improvements to air and sea operations and a closer integration between all three services allowing the Allies to effectively wage war on land, sea and air. Although initially ill-defined, each of these developments would form a perennial characteristic of Allied operations, not only in Tunisia, but in later campaigns as well, contributing to a nascent and uniquely Allied approach to waging war. Moreover, this thesis will highlight that not only was the process of learning uneven across different phases of the campaign, but that the manner and emphasis of these reforms changed as the demands of the theatre shifted and the Allies adapted to

meet them. The growing capability of Allied forces to reflect on lessons and master them will be compared and contrasted to the approach taken by Axis forces throughout the campaign in order to further underline this point, the adaptation of the Allied operational outlook away from ad hoc solutions being juxtaposed against the chronic short-termism of senior Axis leaders. It will show that these adaptations were often interrelated and influenced each other and required not only the necessary institutional power and the recognition of internal flaws, but also motivating factors such as external knowledge, operational setbacks, and wider strategic concerns. Finally, this thesis will also demonstrate that some of the lessons learned by the Allies in Tunisia had far-reaching influence on later campaigns, contributing to a continued cycle of Allied improvement and laying the foundations for a defined and highly effective Allied Way of War.

As such, this thesis will fit neatly into an existing historiographical gap concerning the development and recovery of the Allied armies from their early defeats against the Axis during the Second World War to their eventual successes in North-West Europe and Italy, by demonstrating that Tunisia served as a vital nexus of intellectual and institutional development for ideas from different nationalities and theatres, most notably the lessons learned in the western desert, contemporary lessons learned in Tunisia itself, and the doctrinal evolution undergone by British and American armies at home prior to the campaign. Moreover, the project will also show that Tunisia was one of the first battlefields on which Allied materiel superiority began to be felt, but also that this materiel superiority was used cannily to achieve swift and lasting victory, thus displacing the oft-repeated false dichotomy that it was overwhelming material strength and not skilled tactical leadership that enabled the Allies to claim victory in Tunisia. Finally, this project will also contribute, in an interdisciplinary sense, to the understanding of corporate learning and the methods by which institutions learn lessons, consider them, and then resolve them, by looking at the sources of change within AFHQ, the systems employed to analyse institutional failings/operational needs, and the steps taken to adapt Allied forces to those needs.

In order to provide a clear and holistic picture of Allied development across the campaign, the thesis will be structured into five chronological chapters. These chapters broadly correspond to and expand upon the Allies' own periodisation of the

campaign, as can be found in the War Office's 1946 publication of General Kenneth Anderson's dispatch. Anderson identified three key phases to the campaign: the rush on Tunis in late 1942, a build-up phase in the first few months of 1943, and finally an offensive period culminating in the final destruction of the Axis forces on 13 May.⁵⁸ The thesis builds on this outline with the addition of a section concerned with the initial landings in North Africa and the delineation of the build-up phase into two discrete sections, both to make each chapter similar in size and broad chronology and to more clearly delineate the ebb and flow of the overall campaign, as well as the process of Allied learning within it. In a similar vein, each chapter is further broken down into four topic areas focusing on different aspects of the overall Allied effort: Command, Logistics, Operations, and Air/Sea/Land. The first of these, Command, is centred on the structure and operation of Allied Force Headquarters and the planning, decision-making and interactions between senior officers. Logistics covers the all-important realm of supply, including convoy transit, the arrival of reinforcements, the function of rear echelon and supply units, and the state of local infrastructure, along with the resultant impact this had on frontline troops. The broadest section, Operations, contains analyses pertaining to the performance of frontline combat troops, ranging from tactics and training, through to equipment and unit organisation. The final section, Air/Sea/Land, deals with the all-domain aspect of the Tunisian Campaign, as the role of air and naval forces in securing Allied victory in Tunisia cannot be overlooked, and as such focuses on the interplay between all three military branches, such as the provision of close air support and the development of the Allied interdiction campaign. By using these four topics as organisational sub-sections, it ensures that the narrative of the thesis encompasses as much of the Allied effort as possible, thus presenting a more holistic and rounded picture. Moreover, it becomes easier to delineate between the types of lessons that Allied forces learned, as well as discern what the comparative emphasis of reform was during each phase of the campaign.

However, while this thesis seeks to encompass as broad an experiential range as possible, by necessity some topics are only discussed briefly or have been omitted

⁵⁸ Kenneth Anderson, 'Official Despatch by Kenneth Anderson, GOC-in-C First Army covering events in NW Africa, 8 November 1942 – 13 May 1943', *The London Gazette* (Supplement), no.37779 (5 November, 1946): pp. 5449-5464, <https://www.thegazette.co.uk/London/issue/37779/supplement/5449> [accessed 09/02/2021]

as beyond the scope of the thesis. The operation and organisation of Allied intelligence for example, although referenced with regard to in-theatre operations, has not been explored in substantial detail, and in particular intelligence gathering from outside the theatre, such as the operation of Ultra, has not been discussed.⁵⁹ Similarly, although the thesis does touch in places on the distinctions in learning and experience between the forces of different Allied nations, it does not seek to analyse the management of transnational forces in significant depth.⁶⁰

Furthermore, while this work is largely focused on how and why Allied forces learned during the Tunisian Campaign, it has not focused explicitly on the means by which these lessons were transmitted and disseminated throughout AFHQ and its subordinate services. The ability of armed forces to formulate and inculcate common doctrines and operational techniques has formed a fertile area of debate for scholars, as while the centralised development of doctrine within different services is often easily delineated, demonstrating that fighting formations actually adhered to those tenets is considerably less straightforward. This has particularly been the case with regard to the British and Commonwealth armies of the Second World War, as, due to its polyglot, globally deployed, and largely decentralised nature, some scholars have argued that doctrinal coherence within these forces simply could not be, and was not, established, making the definition of a monolithic British doctrine

⁵⁹ Interested readers are thus encouraged to explore other works within the literature that pertain more closely to this area, as there is a considerable scholarship on Allied intelligence gathering. Perhaps the most complete overview in this area is Hinsley's volume on British intelligence, although numerous valuable contributions have been made beyond this, including studies by Gladman, Ferris, Beam's work on intelligence gathering for Operation Torch, and Kreis' edited volume on intelligence and the US Army Air Forces. F.H. Hinsley, *British Intelligence in the Second World War*; Gladman, *Intelligence and Anglo-American Air Support*; John Robert Ferris, *Intelligence and Strategy: Selected Essays* (London: Routledge, 2005); John C. Beam, 'The Intelligence Background to Operation Torch', *Parameters* 13 (1983), pp. 60-68; John F. Kreis (ed.), *Piercing the Fog: Intelligence and Army Air Forces Operations in World War II* (Washington D.C.: Air Force History and Museums Program, 1996).

⁶⁰ Those seeking a detailed analysis of French, Commonwealth, and other Allied forces under Anglo-American command may wish to consider engaging with both the national narratives of each contingent, such as Bharucha's Official History of the Indian Army in North Africa, and more focused research by Alan Jeffreys, Fennell, Arielli et al and Edwards. Major P. C. Bharucha, *Official History of the Indian Armed Forces in the Second World War, 1939-1945: The North Africa Campaign, 1940-1943* (New Delhi: Combined Inter-Services Historical Section, 1956); Alan Jeffreys, *Approach to Battle: Training the Indian Army During the Second World War* (Solihull: Helion, 2016); Fennell, *Fighting the People's War*; Nir Arielli et al, 'Une Guerre non Européenne: Les Troupes des Colonies et des Dominions' in *La Guerre du Desert*, ed. by Nicola Labanca, David Reynolds and Olivier Wieviorka (Paris: Perrin, 2019), pp. 155-180; Jill Edwards (ed.), *El Alamein and the Struggle for North Africa: International Perspectives from the Twenty-First Century* (Cairo: The American University in Cairo Press, 2012).

impossible to assert. David French, for example, has argued in *Churchill's Army* that Britain's liberal, anti-authoritarian culture engendered a revulsion towards rigid doctrine from senior officers, which ultimately manifested in an overall doctrine that stated general principles but no concrete examples, 'to enable each individual commander to decide how to apply them in the light of the particular circumstances he confronted'.⁶¹ Other scholars have positioned themselves at different poles of this debate, Timothy Harrison Place for example echoing Williamson Murray in arguing that Britain not only lacked a cohesive doctrine, but that trainers and troops alike widely ignored those tenets that did exist.⁶² Stephen Hart, John Buckley, and Charles Forrester by contrast have all argued that, by Normandy, British forces possessed a loose, but coherent and flexible doctrine developed across the Second World War, a sentiment mirrored by Tim Moreman in his study of British fighting methods in Burma and the Far East.⁶³ In this regard, this thesis may offer some poignant comment on the development and implementation of new Allied tactics and operational methods, some of which ultimately found their way into the practice of the Allied armies deployed into Italy and Northwest Europe, however it does not comment on the extent to which these lessons were codified or effectively disseminated among the fighting troops.

This thesis thus attempts to assess how the Allied coalition approached the challenge of their first major combined intervention of the Second World War and demonstrate how the Tunisian experience proved invaluable to the development of Allied operational methods into the latter half of the war. The learning process of Allied forces has often been hotly contested but from Tunisia emerges a new angle on the growth and evolution of an Allied way of war, that placed emphasis on unity of purpose, technological and tactical sophistication, inter-service cooperation, and adroit employment of material superiority.

⁶¹ David French, *Raising Churchill's Army: The British Army and the War Against Germany, 1919-1945* (Oxford: Oxford University Press, 2000), pp. 20-23, 46.

⁶² Timothy Harrison Place, *Military Training in the British Army, 1940-1944: From Dunkirk to D-Day* (London: Routledge, 2000); Williamson Murray, 'British Military Effectiveness in the Second World War', in *Military Effectiveness Vol. 3: The Second World War*, ed. by Allan R. Millett and Williamson Murray (Cambridge: Cambridge University Press, 2010), pp. 90-135.

⁶³ Hart, *Colossal Cracks*; Buckley, *Monty's Men*; Forrester, *Monty's Functional Doctrine*; T. R. Moreman, *The Jungle, the Japanese and the British Commonwealth Armies at War, 1941-45* (Abingdon: Routledge, 2013).

Chapter One

Operation Torch, 8-10 November 1942

On 8 November 1942, some 300 Allied ships, carrying a little over 100,000 soldiers, made three simultaneous amphibious landings at locations along the coast of French North Africa; one in Morocco, aimed at Casablanca, and two in Algeria, at Oran and Algiers. These landings, codenamed 'Torch', marked the first major effort of the Anglo-American alliance and paved the way for a further six months of campaigning which was to culminate with the final capitulation of Axis forces in North Africa. Torch's roots were old, relatively speaking, as Allied interest in North and West Africa had first been piqued following the Fall of France in mid-1940. The strategic potential of French holdings in these regions was formidable, their subsumption under Vichy France enabling the Axis to tighten their grip on the Western Mediterranean, further denying its use to Allied shipping.¹ Yet it was only in Autumn 1941 that action in French North Africa was seriously contemplated, with the creation of Operation Gymnast, which aimed to win back control of the North African littoral by trapping Axis forces in Libya between two Allied armies, one advancing from Tunisia and the other from Egypt. However, Gymnast did not materialise, as the less than resounding results of 8th Army's Operation Crusader saw the plan shelved, only to be promptly resurrected on US entry into the war as Super Gymnast, a proposal for a combined Anglo-American operation aimed at Casablanca. Super Gymnast also proved a non-starter however, as in April the Allies instead opted to begin preparing for Operation Roundup, a plan for an amphibious invasion of North-West Europe, intended for Spring 1943.²

However, while Roundup was an acceptable long-term goal for the military planners, political demands, particularly on President Roosevelt, who faced pressure both on the domestic front and from the beleaguered Soviet Union, obliged the Allies to find employment for their troops in 1942.³ The end result of that search saw Super Gymnast revived once more, although not without some controversy. The

¹ Playfair, pp. 109-10.

² Desmond Dinan, *The Politics of Persuasion* (London: University Press of America, 1988), pp. 248-49.

³ Howard, *Grand Strategy Vol. IV*, p. xvii.

prospect of Allied commitment to North Africa divided the CCoS; while the British Imperial General Staff were broadly in favour, the US Joint Chiefs, headed by Army Chief of Staff George C. Marshall, disdained this 'Mediterranean dawdle', with Marshall instead favouring Operation Sledgehammer, a proposed precursor to Roundup.⁴ The latter plan, which envisioned the capture of a beachhead at Cherbourg or Brest in Autumn 1942, to be held until Roundup in the Spring, was thoroughly opposed by the British, with Alan Brooke, the Chief of the Imperial General Staff, writing 'it could only result in the worst of disasters'.⁵ The deadlock was finally broken by Roosevelt on 25 July, who settled on Super Gymnast, now redubbed Torch, and the liberation of French North Africa as the alliance's first major joint operation of the Second World War.

The decision to undertake Torch indelibly shaped Allied strategy, as the commitment of Allied forces to the Mediterranean theatre ultimately forced the cancellation of Roundup, delaying any potential cross-Channel invasion until 1944. As a result, Torch has received ample scrutiny from scholars keen to discuss the implications Torch had in determining the course of the wider war, as well as the import of the operation from the perspective of inter-Allied politics. There has been no shortage of sceptics of the value of Torch, Norman Gelb arguing that 'much additional grief and destruction were suffered' because a cross-Channel invasion was not launched sooner, while Morison suggests that Torch was settled on only due to the intractability of the USA's British allies.⁶ However while criticisms of the operation are well-accounted for, most accounts of Torch generally emphasise that it was the most viable operation for 1942 given the constraints under which the Allies were operating. Sainsbury for example, while cognisant of Torch's shortcomings, has argued that the alternative, Sledgehammer, 'would be at best a useless and expensive bridgehead or at worst a disastrous defeat'.⁷ The difference between American and British outlooks has also been reconciled in a number of accounts, recognising that the rift was primarily founded on the radically different mentality

⁴ Douglas Porch, *Hitler's Mediterranean Gamble: The North African and Mediterranean Campaigns in World War II* (New York: Weidenfeld and Nicolson, 2004), pp. 326-27.

⁵ Field Marshal Lord Alanbrooke, *War Diaries, 1939-1945*, ed. by Alex Danchev and Daniel Todman (London: Weidenfeld and Nicolson, 2001), p. 282.

⁶ Gelb, p. 328; Morison, p. 15.

⁷ Keith Sainsbury, *The North African Landings, 1942* (London: Davis-Poynter, 1976), p. 92.

with which they approached strategic issues.⁸ The official histories themselves epitomise this understanding, Howe noting that British unwillingness to undertake Sledgehammer was not founded in obstinacy, but in a lack of desire to ‘make a sacrifice attack’, while Playfair empathises with American concerns about British imperial ambitions driving Allied strategy.⁹

Yet while Torch has been comparatively well-served in the campaign’s literature, it has often preoccupied scholars only in terms of its strategic implications, rather than as an important experience in its own right, Torch’s planning and execution often serving primarily as narrative window dressing for more high-level politico-strategic considerations. This chapter aims to fill this gap and will highlight the relevance of the actual preparation and execution of the Torch operation to both the Tunisian Campaign and the Allied war effort in general. In particular, it will underscore the claim that Torch represented a vital step in Anglo-American war-making and demonstrate that the preparations for Torch laid the groundwork for future and even closer cooperation between the Allies. The multitude of challenges inherent in mounting Operation Torch will be shown to have galvanised a diverse and vigorous process of learning, leading to the development of organisations and practices that were often not only highly innovative, but also enduring, incorporating lessons from earlier operations which could then be built upon in both Tunisia and later campaigns. Such also encompasses those failings and misfires that will be seen to have occurred both during planning and execution, as the lessons from these also provided valuable experience in honing the Allies’ understanding of amphibious and combined operations. In this regard, Torch will be shown to have served as a valuable testing ground for new Allied methods, as well as setting the stage for the longer learning process of the Tunisian Campaign.

Allied planning for Operation Torch began on 31 July, only a day after President Roosevelt instructed the Joint Chiefs that Torch was now the Allies’ primary objective, and even at this initial stage it is clear to see the trailblazing nature of the operation.¹⁰ Planning was to be undertaken on a joint basis, with both Allied staffs working together to prepare this multinational undertaking. Although

⁸ Jones, pp. 6-7.

⁹ Howe, p. 12; Playfair, pp. 111-12.

¹⁰ Howard, p. xxv.

inter-allied planning was no new thing, the CCoS being a prime example, the real significance of Torch lay in terms of the scale and closeness of the cooperation between the Allies, a degree of integration 'hitherto unheard of in the history of coalition warfare'.¹¹ Up to this point, joint work between Anglo-American forces had largely been relegated to the strategic level of operations, as the primary theatres in which Allied forces were engaged were broadly separated between the two nations, with a few exceptions, and as such required little inter-Allied coordination on the operational level. Torch marked a divergence from this pattern, as the landing forces were to consist not only of elements of the US Army, Navy and Army Air Force, but also their opposite numbers in British service. This required a degree of vertical and lateral integration unrivalled by any previous coalition ventures, save perhaps the short-lived ABDA Command in South-East Asia, which lasted a mere forty-one days and suffered from 'rushed implementation, a convoluted command structure, and lack of material and manpower' which had ultimately doomed the command.¹² The failure of this experiment showed the Allies where they had erred however, and in order to secure the success of this new venture, the CCoS, spearheaded by Marshall, moved to create a joint command structure founded on the principle of unity of command, the centrepiece of which was to be known as Allied Force Headquarters.

Created on 12 September from the Torch planning staff at Norfolk House, AFHQ united all the elements of the task force for North Africa under one Supreme Commander, Lieutenant-General Dwight D. Eisenhower.¹³ Eisenhower, the Commanding General of the European Theater of Operations, United States Army (ETOUSA) and leader of the War Department's Operations Division, had already been engaged for this role in late July and assumed 'immediate executive authority' at the start of August.¹⁴ The appointment of a single Supreme Commander was largely an American-led decision, as United States forces were used to the

¹¹ Jones, p. 26.

¹² Thomas Wisbith, *Allied Force Headquarters during the North African Campaign: A study of Allied integrated multi-national command organization from August 1942-May 1943* (B.A. Thesis: The Ohio State University, 2018), p. 20.

https://kb.osu.edu/bitstream/handle/1811/84607/2/Final_Draft_Complete.pdf [accessed 20/4/2021]

¹³ TNA: AIR 23/3565, 'Analytical guide to the combined British-American records of the Mediterranean theatre of operations in World War II', 1947.

¹⁴ The National Archives and Records Administration (NARA): RG 498, 'HQ ETOUSA - History of AFHQ Vol.1'.

establishment of a unitary authority within theatres of operation, while British forces tended to rely on a committee of commanders from each service to direct operations. The latter however was felt that it could lead to inertia at the command level during crisis situations and potentially lead to a disunity of policy between both services and nationalities.¹⁵ A single overall commander was hence preferable in avoiding these pitfalls, resulting in the eventual selection of Eisenhower, whose experience in working with British planners and commitment to inter-Allied cooperation, stood him in good stead as one who could manage the various difficulties of running such a complex headquarters. Additionally, the appointment of an American commander also helped to preserve the impression of Torch being primarily an American enterprise, a fiction devised by the CCoS to minimise Vichy French hostility to the Torch landings, as ‘the list of French grievances against the British was extensive’.¹⁶ Eisenhower’s directive was brief, but highlighted the most important elements of his role; as Supreme Commander, later changed to Commander-in-Chief (C-in-C), Allied Expeditionary Force, he was answerable solely to the CCoS, who placed ‘in the hands of the Commander-in-Chief, the maximum degree of exclusive authority and responsibility,’ with all other personnel within the task force subordinated directly to him.¹⁷ In empowering Eisenhower this way, the Allies enshrined unity of command at the core of the Torch enterprise, and to ensure this was not undermined, the CCoS took additional steps to reinforce the Supreme Commander’s position. Most notable among these was the decision of the Imperial General Staff to limit the right of British commanders under Eisenhower’s authority to appeal to the War Office over disagreeable orders to ‘grave and exceptional’ circumstances and not without informing Eisenhower as to why before doing so.¹⁸ Such a measure not only helped to limit potential discord at the command level, but also reemphasised the CCoS’s commitment to making Torch a truly united effort.

Nor was the creation of the post of Supreme Commander the only novel element of AFHQ. Both the structure of AFHQ and the wider Torch task force were developed with the intention of achieving as complete an integration between the

¹⁵ Wisbith, pp. 19-21.

¹⁶ Douglas Porch, *The Path to Victory: The Mediterranean Theater in World War II* (New York: Farrar, Straus and Giroux, 2004), p. 336.

¹⁷ NARA: RG 319, ‘Commander-in-Chief’s Dispatch, North African Campaign, 1942-1943’.

¹⁸ NARA: RG 498, ‘HQ ETOUSA - History of AFHQ Vol.1’.

two Allied nations as possible, the aim being to proceed, as Eisenhower put it, ‘as though all its members belonged to a single nation’.¹⁹ To that end, the staff structure of AFHQ was organised along the principle of balanced personnel, with British and American staff chiefs being assigned deputies from their opposite service where possible, while their subordinate staff within each department were comprised of a mixture of staff officers of both nationalities. AFHQ’s departments were themselves constituted along American lines, due to Eisenhower’s greater familiarity with this system, with four General (G) Sections, G-1 (Personnel), G-2 (Intelligence), G-3 (Operations), and G-4 (Supply), plus a number of Special Staff Sections to cover more technical areas, the latter sections being allowed to deviate from the principle of balanced personnel in order to ‘select from the best qualified source’.²⁰ The command structure of the Torch landing forces also conformed to these principles, with three Americans, Major-General Mark Clark, Brigadier-General Walter Bedell Smith and Brigadier-General James Doolittle appointed as Deputy C-in-C, Chief of Staff and Commander of American air forces respectively, while three British leaders, Lieutenant-General Kenneth Anderson, Admiral Sir Andrew Cunningham and Air Marshal Sir William Welsh were appointed as Commander of British ground forces, Allied Naval Commander, Expeditionary Force, and Commander of British air forces.²¹ With the exception of air units, which were to be kept nationally segregated, each of these commanders had under their auspice both British and American elements of the Torch landing forces, Cunningham for example being placed in overall command of the entire naval contingent. This arrangement was reversed further down the command chain, as due to the desire to present Torch to the French as an American-dominated operation, the ground commanders of the Torch beaches were American, being led by Major-Generals Patton, Fredendall and Ryder at Casablanca, Oran and Algiers respectively. This international intermingling was also represented laterally in the command structure, with both Fredendall and Ryder having British admirals Troubridge and Burrough as their opposite numbers in

¹⁹ Dwight D. Eisenhower, *Crusade in Europe* (London: William Heinemann, 1948), p. 85.

²⁰ NARA: RG 498, ‘HQ ETOUSA – History of AFHQ Vol.1’.

²¹ TNA: WO 204/475, ‘Part I: Period of the North Africa Invasion (Aug-Dec 1942) 1 Vol’, 1945.

the navy during the operation, the latter commenting on the ‘very happy relations’ that existed between the commanders of the Eastern Task Force (ETF).²²

There were of course some roadblocks to complete integration however, often due to irreconcilable differences in national practice, but solutions were forthcoming, many of them from Eisenhower’s formidable Chief of Staff, Walter Bedell Smith.²³ British and American logistical organisations, for example, although too far removed from each other to ever achieve homogeneity, were reconciled by Smith [and?] by their retention as essentially separate entities within G-1 and G-4 and the appointment of Major General Humfrey Gale to the post of Chief Administrative Officer (CAO), responsible for the coordination of all operational logistics within the theatre.²⁴ Such a solution circumvented potential issues with unity of command, whilst averting the need to intermingle two highly complex and divergent systems. The balancing act required to ensure that AFHQ best represented both nations fairly was a highly difficult one, and Allied success in achieving this in no small part can be credited to Eisenhower, whose ‘practically born-again commitment’ to even-handedness when overseeing AFHQ did much to smooth over any disagreements or ill-feeling.²⁵ As Carlo D’Este highlights, ‘from the outset a single theme characterized Eisenhower’s assumption of command: Allied unity’, a commitment that remained even ‘in the midst of Allied squabbling that at times became bitter’.²⁶ Eisenhower’s drive to ensure his new headquarters was a successful experiment is clearly apparent in the latter’s dispatch, where he states:

I was determined from the first, to do all in my power to make this a truly Allied force, with real unity of command and centralization of administrative responsibility. Alliances in the past have often done no more than to name the common foe, and “unity of command” has been a pious aspiration thinly disguising the national jealousies, ambitions and recriminations of high ranking officers, unwilling to subordinate themselves or their forces to a commander of different nationality or different service.²⁷

²² Vice-Admiral H.M. Burrough, ‘Admiral Sir Andrew Cunningham’s Despatch, 22 Oct to 17 Nov 1942: Enclosure I’ in *Operations in North Africa and the Middle East 1942-1944*, ed. by John Grehan and Martin Mace (Barnsley: Pen and Sword Military, 2015), pp. 104-120 (p.120).

²³ D.K.R. Crosswell, *Beetle: The Life of General Walter Bedell Smith* (Lexington, Kentucky: The University Press of Kentucky, 2010), pp. 320-22.

²⁴ NARA: RG 498, ‘HQ ETOUSA – History of AFHQ Vol.1’.

²⁵ Porch, *The Path to Victory*, p. 339.

²⁶ Carlo D’Este, *Eisenhower* (London: Weidenfeld and Nicolson, 2002), p. 327.

²⁷ NARA: RG 319, ‘Commander-in-Chief’s Dispatch’.

In this regard, Eisenhower can be considered to have been at least partially successful, as while AFHQ was still a new, unrefined concept, the steps taken in creating a single, unified command structure for the Torch campaign represented a remarkable achievement and can be seen to have laid the bedrock for future inter-allied cooperation.

Yet while the Allies enjoyed considerable success in creating a functional joint staff system for Torch, tactical planning for the operation can be seen to have been a rather more fraught process, largely characterised by time constraints and uncertainties. The former had largely been inflicted on the Torch planners by the CCoS, as the inability of the Allied chiefs and other figures to reach a consensus on the North African invasion left the planning staff with only marginally more than three months until D-Day, in which they had to organise the most ambitious amphibious invasion ever mounted. This was a daunting task, as Howe indicates, stating that for most operations ‘from three to five months would have been required to complete tactical plans and mount the expedition’.²⁸ Yet despite this narrow deadline, and in somewhat ironic contrast to the sense of cooperation Eisenhower was seeking to imbue in AFHQ, the CCoS continued to clash over the details of the Torch operation, further complicating an already hectic planning schedule. In an interesting inversion of prior debates, it was now the Americans who proved cautious, favouring landings towards the Atlantic coast in order to secure supply lines and guard against possible Spanish intervention, whilst the Torch planners and the British General Staff, with the notable exception of Brooke, championed a bold strategy to land as far east as possible, at Bone, or even Bizerte, in order to seize Tunisia before an Axis response could be mustered.²⁹ In Sainsbury’s estimation ‘the British on the whole were right’, as in the aftermath of Operation Torch the Allies were unable to seize Tunis before the Axis could establish a bridgehead there, but in the short term this Allied discord served primarily to delay more detailed planning for the invasion and sow confusion amongst the Allied staff.³⁰ It took until 4 September to resolve the dispute, and again required the intervention of the heads of the Allied governments in a series of quick-fire telegrams, often irreverently dubbed

²⁸ Howe, p. 32.

²⁹ O’Hara, *Torch*, pp. 50-51; Alanbrooke, pp. 314-15.

³⁰ Sainsbury, pp. 128-30.

the ‘trans-Atlantic essay contest’, eventually resulting in consensus on landings at Algiers, Oran and Casablanca.³¹

Nor were such obstructions confined only to the general planning of Torch. Uncertainties in detail, particularly regarding conditions on the ground in North Africa, as well as the forces which would actually undertake the landings, further confounded and constrained Allied planning. One of the most prominent of these issues was the attitude of the Vichy French garrison of North Africa, as whilst the strength of French forces was known, ‘no accurate assessment could be reached concerning French ability or will to resist’.³² There was some optimism on the Allies’ part that French forces in North Africa would not put up a fight, particularly from Robert Murphy, Roosevelt’s representative in North Africa. Although the latter’s staff had ‘convinced themselves that the Americans would be welcomed ashore with garlands’ through faulty opinion polling, Murphy had also established contacts with senior French officers, such as General Mast, Chief of Staff of the Algiers garrison and leader of a number of pro-Allied officers known as the ‘group of five’, and even Admiral Darlan, C-in-C of the French armed forces.³³ However, while Murphy had received favourable signals, particularly from Mast, the French response remained uncertain, although Murphy himself was convinced they would play ball if the Allies could find the right person to take charge following the invasion. That man, according to Murphy, was General Henri Giraud, a distinguished and respected commander who had escaped German internment and taken up residence in the Vichy half of France, and who seemed to the Allies ‘as their best (if only) choice’.³⁴ Nevertheless, despite Murphy’s optimism, a diplomatic solution could not be relied upon, and consequently ‘plans had to be as flexible as possible to meet anything from full-scale opposition to mere token defence or even positive cooperation’, with Allied ships being loaded in preparation for maximum resistance.³⁵ Space in the first wave of transport ships was thus given over to increasing numbers of assault troops, even more so due to the unknown outlook of Francoist Spain. Politically and economically savaged by three years of civil war,

³¹ Howard, *Grand Strategy Vol. IV*, pp. 123-136.

³² Macksey, p. 43.

³³ Simon Ball, *The Bitter Sea* (London: Harper Press, 2009), pp. 158-61.

³⁴ D’Este, pp. 344-45.

³⁵ Playfair, p. 126.

Spain was hardly possessed of the resources or will to engage in international conflict, but with territories straddling the vital straits of Gibraltar, ‘the Spanish power for mischief was certainly great’.³⁶ As such, although British intelligence was convinced that the potential of Spanish intervention was limited, AFHQ nonetheless prepared for Operation Backbone, a counter-occupation of Spanish Morocco, with equipment and support units being traded for extra combat troops and tanks, in order to supplement the Western Task Force (WTF) accordingly.³⁷ However while the increase in the proportion of frontline units in the landings may have provided additional operational security, they were to prove unnecessary, and moreover the absence of the equipment and support units that they replaced was to have a lasting impact on the course of the campaign, denuding existing units of needed equipment and disrupting the establishment of a functional Allied foothold in North Africa.

Many of the elements that characterised Allied planning for Operation Torch were also carried forward into the logistical development of the operation. Here too, although Allied efforts at coordinating supplies, transport and other vital support functions had invariable flaws, many of the Allies’ initiatives were nevertheless significant achievements. Certainly, Allied successes in coordinating transport and supply for the landings are self-evident, as Torch represented a herculean task, consisting as it did of the movement of some 100,000 men, their equipment, as well as landing craft and other specialised hardware, over considerable distances and to hostile shores, some 1,500 miles from Britain and over 3,500 from the United States. In terms of scale alone, this dwarfed previous Allied amphibious attempts, the landings at Dieppe only three months prior having been less than a tenth the size. Nor was it simply a matter of allocating additional soldiers, although the needs of Torch had the United States Army Services of Supply (SoS) ‘scraping the bottom of the barrel for trained service units’, considerable efforts in procurement were also needed to prepare and supply the task force for the campaign.³⁸ As Atkinson highlights, the vast quantity and variety of materiel needed was staggering, including not only ‘tanks and cannons, rubber boats and outboard motors, ammunition and machine guns’, but also 10,000,000 salt tablets, 750,000 bottles of insect repellent,

³⁶ Howard, *Grand Strategy Vol IV*, pp. 159-160.

³⁷ TNA: AIR 20/2512, ‘Operation “Torch”: relations with Spain and Portugal’, 1942.

³⁸ Richard Leighton, *Global Logistics and Strategy, 1940-1943* (Washington D.C.: Center of Military History, 1995), p. 427.

and 7,000 tons of coal.³⁹ These efforts were similarly matched by the assembly of significant naval forces, as despite some reticence from the US Navy, the Allies put together some 113 transport and landing ships, as well as 219 naval and support vessels including 81 destroyers, a dozen carriers, and six battleships, with these totals rising to over 370 merchant ships, in twelve convoys, and 300 naval vessels during the course of the entire operation.⁴⁰ The system of convoy sailing itself was no mean feat either, consisting of regularly scheduled fast and slow convoys from Britain and America. These shipments were aimed to arrive at staggered intervals determined by a complex timetable and would add steadily to the strength of the task force and build up reserves of vital material.⁴¹

Yet whilst the sheer scale of the Torch preparations would represent an impressive achievement even under optimal operational conditions, that the Allies achieved this under pressing constraints only magnifies this feat of organisation further. Many of these problems were identical to, or indeed caused by, those that had bedevilled the planning of Torch, and Allied logistical planners were engaged in almost constant reaction to the changing face of the operation, with some units, such as the US 3rd Armored Division, being frantically shuttled back and forth, in the 3rd's instance between Louisiana, California and Virginia, as new iterations of the plan were penned.⁴² A definite outline and force allocation for Torch only originated in late September, and this consequently compressed the timescales for preparation considerably, with some elements, such as equipping the assault troops, being continued right up until the convoys sailed.⁴³ This process was even further complicated by the split launching points for the Torch convoys, as while all the landings were to primarily feature American troops, only the Moroccan landings were to originate from the US, with the Algerian invasion forces being dispatched from Britain. Although some of the latter could be drawn from US troops already stationed in the UK in preparation for the soon-to-be-defunct Operation Roundup; 'many of the additional supporting troops [...] had to be sent from the United States

³⁹ Rick Atkinson, *An Army at Dawn: The War in North Africa, 1942-1943* (London: Abacus, 2004), pp. 33-34.

⁴⁰ Playfair, p. 139; TNA: WO 204/1794, 'Operation Torch Planning Data', 1942.

⁴¹ Leighton, p. 437.

⁴² Maurice Matloff and Edwin Snell, *United States Army in World War II: Strategic Planning for Coalition Warfare, 1941-1942* (Washington D.C.: Office of the Chief of Military History, 1953), pp. 316-17.

⁴³ TNA: WO 204/1579, 'Tunisian and Sicilian Campaigns: Lessons Learnt'.

in desperate haste during September and early October in order to arrive in time for the departure of the early convoys from England.⁴⁴ Nor was England the only destination for some of these hasty convoys, as Gibraltar too had to be prepared to support Torch, both directly, with some 410 fighter aircraft shipped to The Rock in crates for assembly, and also indirectly, by providing a staging and refuelling post for the invasion fleet.⁴⁵ Yet despite the haste with which it was conducted, the efforts to prepare the British outpost were nevertheless appreciated by Admiral Cunningham, who noted that although such a large fleet strained Gibraltar's resources, congratulations were in order to the garrison for their excellent arrangements.⁴⁶

However, these successes came at a price, as the immense needs of the Torch landings caused considerable strain to an Allied supply system that was already struggling to cope with the demands of a global conflict. By mid-1942, British forces were engaged in the Mediterranean and the Far East and US forces likewise in the Solomon Islands, placing heavy demands on Allied naval forces and merchant shipping, a burden made heavier still by the need to maintain and protect domestic imports in the Atlantic, as well as convoys supplying aid to the Soviet Union and China.⁴⁷ Torch's addition to the Allies' already lengthy list of commitments destabilised this precarious balancing act, as the operation's substantial requirements made it simply impossible to undertake without cutting into Allied efforts elsewhere. Among the casualties were convoys to the Soviet Union, which were temporarily suspended, while the Admiralty was forced to detach 125 escorts and 52 minesweepers from Atlantic patrol duties, leaving certain convoy routes sparsely defended.⁴⁸ Such measures have prompted considerable criticism of Torch from scholars of Allied wartime logistics, Smith for instance arguing that the shipping needs of the Torch landings represented the sacrifice of 'logistical considerations to domestic political and diplomatic demands' for an operation that 'in its final form was logistically unjustifiable'.⁴⁹ Indeed, Torch's preparation came at arguably the

⁴⁴ Leighton, p. 427.

⁴⁵ Blaxland, pp. 83-84.

⁴⁶ TNA: WO 204/1579, 'Tunisian and Sicilian Campaigns: Lessons Learnt'.

⁴⁷ Matloff and Snell, pp. 308-12.

⁴⁸ O'Hara, *Torch*, pp. 52-54.

⁴⁹ Kevin Smith, *Conflict over Convoys: Anglo-American Logistics Diplomacy in the Second World War* (Melbourne, Australia: Cambridge University Press, 1996), pp. 77-80.

worst possible time, Allied forces having just endured the nadir of the Battle of the Atlantic, with over 400,000 tons of shipping lost in just one week.⁵⁰ The need to strip away escorts and shipping from the embattled trade routes only exacerbated the problem, with twenty-four British cargo ships being sunk in the Central Atlantic alone during Autumn 1942, a loss that was to have a drastic knock-on effect on British imports, which fell over two million tons short of its expected twenty-five million ton goal for 1942.⁵¹ However, whilst Smith's argument is a valid appraisal of the logistical impact of Torch, it should also be noted that the CCoS was fully aware of the potential logistical ramifications. Although concerns had been raised regarding 'the dangerous effects of subsequent naval and shipping losses', the benefits to the shipping situation from opening the Mediterranean, among other strategic advantages, were felt to outweigh any temporary detrimental impacts to the supply network caused by Torch's undertaking.⁵²

Repercussions for Torch's hasty preparation were also to make themselves known at the operational level, as 'the proliferation of material for a lengthening and changing list of units made it impossible to outfit the force in an orderly manner'.⁵³ As Crosswell highlights, demands for Torch supplies exceeded lift capacity by 600 percent, and attempts to accelerate the flow from the American end of the supply chain meant that undermanned supply staffs 'nearly drowned in the deluge of material', while proper record-keeping fell by the wayside leading to some stocks simply vanishing into the ether.⁵⁴ While ultimately able to meet Torch's tight deadlines and dispatch all the required impedimenta, Allied administrative staffs were only able to do so by sacrificing proper organisation for speed, a trade-off that created administrative chaos when it came time to land stores and equipment after the initial amphibious attack. A lack of 'combat-loading', the practice of dispatching troops and equipment in the same vessel, meant that much-needed equipment, including tanks and artillery, languished aboard their transports or arrived ashore miles from their parent units, while a dearth of well-defined unloading schedules

⁵⁰ Roland G. Ruppenthal, *United States Army in World War II: Logistical Support of the Armies Volume I: May 1941-September 1944* (Washington D.C.: Center of Military History, 1995), p. 88.

⁵¹ Smith, pp. 79-80.

⁵² Michael Simpson, ed., *The Cunningham Papers Vol. II: The Triumph of Allied Sea Power 1942-1946* (Aldershot: Ashgate, 2006), pp. 31-35.

⁵³ Leighton, pp. 440-41.

⁵⁴ Crosswell, p. 295.

meant that some troops even went without proper rations for some time after the assault began.⁵⁵ These situations were not helped by the loss of significant numbers of landing craft due to rough waters, which caused severe bottlenecks in over-beach transfer, thus delaying subsequent operations. At Fedala for instance, although Patton's arrival on shore midway through the assault helped to get unloading underway, only two percent of stores had reached the beach by late afternoon and his troops were consequently unable to press on to Casablanca for want of heavy armament and support.⁵⁶ Shore party provision was also inadequate, as trained handlers for the unloading and organisation of supplies had been neglected in the rush to ensure sufficient combat power was brought ashore during Torch.⁵⁷ This lack of expert direction meant that those supplies that did arrive on the beach were often not dispatched to their proper destinations, an oversight particularly noticeable in the difficulties experienced by transport units in reuniting drivers and their vehicles. Often separated in transit much time was spent 'marrying' supply units back up to their vehicle complements, a problem further complicated by some senior officers, who 'came down to the docks, appropriated the first vehicle that took their fancy, and drove off in it'.⁵⁸ Such delays were not to be resolved for some time, which contributed to the bogging down of Allied forces in their immediate landing areas and consequently hindered the advance into Tunisia.

The amphibious assault itself commenced just before dawn on 8 November 1942. Allied convoys had remained mostly unmolested for the duration of their journey, as despite Axis suspicions surprisingly effective deception work kept them in the dark as to the destination of the invasion fleet, the German Naval War Staff mostly believing the fleet's destination was Malta.⁵⁹ However whilst the Torch forces had been successful in actually reaching North Africa, they now had to land and take it, in three simultaneous, daunting assaults across a number of beaches and thousands of miles of coast, in which they would experience varying levels of success. At Algiers, the ETF under General Ryder landed on Apples, Beer and Charlie beaches either side of the city without major incident, before sweeping

⁵⁵ TNA: WO 204/1579, 'Tunisian and Sicilian Campaigns: Lessons Learnt'.

⁵⁶ Macksey, p. 64.

⁵⁷ TNA: WO 204/1653, 'Lessons Learnt; Reports on Operation Torch and the Tunisian Campaign,' 1942-43.

⁵⁸ Ibid; TNA: AIR 23/6563, 'Reports on Air Lessons Learnt in Operation Torch,' 1943.

⁵⁹ Boog et al., *Germany and the Second World War, Volume VI*, pp. 792-93.

inland in the face of limited resistance, most French forces either welcoming the Allied troops or avoiding confrontation. The ETF soon secured Blida and Maison Blanche airfields and encircled Algiers, prompting General Juin, commander of French ground forces in North Africa, to surrender that evening.⁶⁰ The other task forces were not to experience such a warm French welcome. At Oran, General Lloyd Fredendall's Center Task Force (CTF), landing at X, Y, and Z beaches, were brought under fire on Y beach, in Andalouses Bay, and Z beach, in the vital port of Arzew, by French coastal fortifications and air assets and thereafter faced resistance as they pressed inland, seizing outlying towns, as well as Tafaraoui and La Senia airfield.⁶¹ The stiffness of French resistance, particularly around the town of St Cloud, bogged down the US 1st Infantry Division's advance, and it was not until D+2 (10 November), that Oran was forced to surrender.⁶² However, it was on the Atlantic coast that the heaviest fighting was to be found, as Major-General George S. Patton's WTF discovered when they came ashore at Port Lyautey, Safi and Fedala. Although the latter two targets fell relatively swiftly, strong French opposition around the landing zones and Casablanca repeatedly stymied American advances, with Port Lyautey only falling on 10 November.⁶³ Casablanca however held out until later that same day, when an armistice, negotiated by Eisenhower and Admiral Darlan, came into effect, standing down the French forces in North Africa.

Yet while Torch had now accomplished its initial mission, Eisenhower declaring to the press that he was 'well satisfied' with the showing of Allied forces, there were nevertheless a number of failings to criticise in the execution of the landings.⁶⁴ Even before the Allies hit the beach, unclear delineation of responsibilities between army and navy, along with national differences in practice, caused an 'undue amount of delay' in loading the landing craft.⁶⁵ Nor did some units fare any better once underway; although folbot kayaks and small motor launches with pilot officers were utilised to guide the landings ashore, many of these officers had 'been able to do no more than survey the coast through the submarine's

⁶⁰ Burrough, pp. 112-14.

⁶¹ TNA: WO 204/1579, 'Tunisian and Sicilian Campaigns: Lessons Learnt'.

⁶² Howe, p. 220.

⁶³ Macksey, pp. 57-65.

⁶⁴ Wes Gallagher, 'Well Satisfied,' Says Eisenhower of American Army's Progress', *The New York Times*, 10 November 1942 <https://timesmachine.nytimes.com/timesmachine/1942/11/10/issue.html> [accessed 26/04/2021]

⁶⁵ TNA: WO 204/1579, 'Tunisian and Sicilian Campaigns: Lessons Learnt'.

periscope' due to security concerns.⁶⁶ This lack of proper reconnaissance was to prove costly, as the lack of markings for dangerous points on the invasion beaches meant that troops and equipment were landed in deep water or rough ground due to unspotted features, such as sandbars, with consequent losses and delays.⁶⁷ Moreover, the confusion that this generated was hard to put right, as command and control systems were found to be fragile and clumsy, largely due to defects in signalling equipment. American wireless sets in particular were found upon landing to be easily waterlogged, had few spare batteries, and were both short-ranged and easily masked, causing spotty and irregular transmission.⁶⁸ The temperament of already fragile communications equipment was not helped by undertrained personnel, as only 25% of signals personnel had completed specialist communications courses prior to embarkation, with some battalions having had 'no opportunity to work a single problem' before they engaged in combat.⁶⁹ The failure of the rear radio link for the army and air forces further compounded these problems, resulting in a reliance by the ground forces on the naval radio network to pass transmissions which congested the communications system.⁷⁰ The difficulties experienced in ship-to-shore communications meant that the task force commanders often had an unclear picture of events on the ground; at Algiers, Admiral Burrough, assuming that the landings were struggling, dispatched the West Kent battalion from the floating reserve as reinforcements, only for this order to be countermanded too late by General Ryder.⁷¹

These failings in technical preparation, although not particularly problematic, were magnified by personnel shortcomings, especially inexperience. Most of the Allied troops deployed in Operation Torch had no prior experience in amphibious landings, or indeed in the field at all, many of the American units having only been raised in the past few years, leaving the British 11th Brigade as the sole formation in the assault with battle experience.⁷² However even 11th Brigade were little

⁶⁶ Playfair, p. 143.

⁶⁷ TNA: WO 204/1653, 'Lessons Learnt: Reports on Operation Torch and the Tunisian Campaign'.

⁶⁸ TNA: WO 204/1579, 'Tunisian and Sicilian Campaigns: Lessons Learnt'; TNA: WO 204/1653, 'Lessons Learnt: Reports on Operation Torch and the Tunisian Campaign'.

⁶⁹ WO 204/1653, 'Lessons Learnt; Reports on Operation Torch and the Tunisian Campaign'; George Raynor Thompson, and others, *United States Army in World War II: The Technical Services, The Signal Corps: The Test (December 1941 to July 1943)* (Washington D.C.: Center of Military History, United States Army, 2003) p. 354.

⁷⁰ TNA: WO 204/1579, 'Tunisian and Sicilian Campaigns: Lessons Learnt'.

⁷¹ O'Hara, *Torch*, p. 102.

⁷² Blaxland, pp. 86-87.

acquainted with beach landings, the hasty assembling of troops and equipment for Torch having left scant time to conduct exercises. The exception to this, at least as far as CTF and ETF were concerned, were Exercises 'Mosstrooper' and 'Flaxman', a pair of rehearsal landings conducted in Scotland.⁷³ Despite their limited nature, these exercises gave a surprisingly accurate taste of what was to come; although conducted in calm seas, Colonel Armitage, one of the unit officers, noted that a drift of a mile away from the landing point during transfer from ship to shore was not uncommon and that assault waves could be easily disorganised in the darkness.⁷⁴ Moreover, the umpires noted that the American assault troops often took too long to clear their beaches and advance inland, with some waves even stopping to light cigarettes, a delay which created a 'fatal time lag when actual opposition was encountered'.⁷⁵ However there was little time to correct these shortcomings and little more than a month later Allied forces were to repeat many of these mistakes, albeit with deadlier consequences. Allied landing craft handling in particular was found to be lacking during Torch, as although the aforementioned difficulties in guidance and reconnaissance caused some issues for the assault waves, this was made considerably worse by their poor seamanship. Many landing craft wandered off course, some units at Algiers drifting up to five miles and coming ashore on the wrong beach, whilst others risked destruction, particularly at Casablanca, where the rougher waters of the Atlantic hurled craft onto rocks or capsized them, with consequent loss of life.⁷⁶ Landing craft losses were substantial, with the CTF alone losing close to 160 of the 347 they had begun the operation with, most of them on the first day, which greatly slowed subsequent supply operations to the shore.⁷⁷

However, while the 'slow pantomime' of the landings had their own share of failings, it is the fighting once ashore that has drawn possibly the most criticism from scholars, the difficulties encountered by Allied forces in subduing local resistance often being used as an indictment of Allied amateurishness and inexperience.⁷⁸ Much of this criticism hinges on the alleged weakness of the French garrison, a preconception that serves to magnify Allied failings and minimise success,

⁷³ TNA: WO 204/1580, 'Lessons Learnt: Tunisian & Sicilian Campaigns'.

⁷⁴ Ibid.

⁷⁵ Ibid.

⁷⁶ TNA: WO 204/1579, 'Tunisian and Sicilian Campaigns: Lessons Learnt'.

⁷⁷ Morison, pp. 79-80.

⁷⁸ Porch, *Hitler's Mediterranean Gamble*, p. 350.

exemplified by Haycock, who argues that the success of Torch owed more to ‘the low standard of French opposition rather than any display of skill by the Allies’.⁷⁹ Such an argument is unsubstantiated however, as while the French garrison in North Africa was relatively poorly equipped, it nevertheless numbered some 120,000 men, most of them clustered around the same major urban centres the Allies were assaulting, and was bolstered by aircraft, artillery, coastal fortifications, and a number of obsolete tanks.⁸⁰ Although a few French units did fold quickly, particularly at Algiers, where pro-Allied officers encouraged their men to stand down, those units that did engage the landing forces in earnest offered staunch, if disorganised, resistance.⁸¹ At Mehdia for example, American troops, dispersed, disorganised, and lacking much of their heavy equipment because of rough seas, were almost overrun on the beachhead, prompting General Truscott to declare that a similar such landing ‘would have spelled disaster against a well-armed enemy intent on resistance’.⁸² This however is selling both Truscott’s men and their French opponents short, as the Port Lyautey landings were opposed by a sizeable French force, including both tanks and artillery, that fought tenaciously to repel the American invaders. Likewise, though initially forced back, Truscott’s men rallied swiftly, not only quashing substantial French counter-attacks but then riposting with their own night operations, culminating in the capture of the airfield and Fort Lyautey’s ‘Kasba’ fort on 10 November.⁸³ Nor was this the only example of American troops displaying initiative in the face of French opposition, as the 1st US Infantry Division’s assault on Oran stands testament. Encountering severe French resistance in the outlying suburb of St Cloud, Major-General Terry Allen left a blocking force in place to pin down the defenders while the bulk of his forces outflanked the enemy position, driving straight into Oran itself.⁸⁴ In doing so, Allen circumvented the need for a potentially costly assault that could have resulted in unnecessary civilian casualties, this action serving as a potent example of the

⁷⁹ Haycock, pp. 20-21.

⁸⁰ Macksey, p. 43.

⁸¹ O’Hara, *Torch*, p. 86.

⁸² W.G.F Jackson, *The North African Campaign, 1940-43* (London: BT Batsford, 1975), p. 312.

⁸³ Howe, pp. 163-67.

⁸⁴ TNA: WO 204/1579, ‘Tunisian and Sicilian Campaigns: Lessons Learnt’.

surprising adaptability of even these 'green' American troops in their battlefield debut.⁸⁵

Yet whilst Torch allowed American GIs to show their quality and gain valuable experience, perhaps its key operational benefit was to serve as demonstration for a number of new Allied amphibious techniques and technological solutions. Chief among these were new landing craft designs, as while the Allies had infrequently dabbled with specialist craft for amphibious operations, very few functioning designs had been built, much less tested, prior to 1942.⁸⁶ Torch therefore was to be the first large-scale test for a great variety of these new vehicles, including Landing Craft Infantry (LCI) and Landing Craft Vehicle/Personnel (LCV/P) to carry assault units, Landing Ship Infantry (LSI) and Landing Ship Gantry (LSG) to carry the LCIs themselves, and Landing Ship Tank (LST) to disgorge vehicles straight onto the beaches, amongst others.⁸⁷ Many of the landing craft types featured in Torch were to continue in Allied service into later amphibious operations, such as Operation Husky, and provide a basis for further development of amphibious craft. Of particular note amongst the Allied landing craft were the CTF's Maracaibo oilers, adapted shallow draft oil tankers, which the Allies put to use as tank landing vessels.⁸⁸ One of these had been used during the assault on Madagascar earlier that year, but the Allies now used a number of them to effect a mass landing of armoured vehicles, which would become a staple of later Allied amphibious operations.⁸⁹ The availability of armour proved invaluable at Oran, where their additional mobility allowed them to swiftly seize Tafaraoui airfield before sweeping into Oran, whilst at Mehdiya the handful of vehicles the Allies managed to get ashore formed an indispensable part of the American defences, turning aside a threatening French armoured column.⁹⁰ Nor were tanks the only additions to the Allies' amphibious arsenal, as special forces also found a role in the Torch operation, where they received their first full scale deployment. On the ground, No.1 and No.6 British Commando units, perhaps the most experienced troops in amphibious operations the

⁸⁵ Atkinson, pp. 126-28.

⁸⁶ Leighton, pp. 376-77.

⁸⁷ TNA: WO 204/1794, 'Operation Torch Planning Data'; Playfair, pp. 121-23.

⁸⁸ Ibid, p. 122.

⁸⁹ Colin Bruce, *Invaders: British and American Experience of Seaborne Landings 1939-1945* (Annapolis, Maryland: Naval Institute Press, 1999), p. 45.

⁹⁰ TNA: WO 204/1579, 'Tunisian and Sicilian Campaigns: Lessons Learnt'.

Allies had available, accompanied American forces during the Algiers landings, where they were employed to great effect, seizing vital French strongpoints such as Batterie de Lazaret and Blida airfield.⁹¹

Operation Torch also saw experimentation with forces arriving by air. Despite a rough and uneven development, particularly in Britain, which saw continual interservice wrangling between the RAF and British Army, and repeated near-cancellation by a mercurial Churchill, enthusiasm for airborne forces was tangible among the Torch planners, who considered the use of paratroopers 'extremely vital to the operation'.⁹² The 2nd Battalion US 503rd Parachute Infantry was thus earmarked to assist the Oran landings by seizing local airfields at Tafaroui and La Senia, thereby denuding the French defenders of air support.⁹³ This did not go according to plan however, as the formation suffered not only coordination issues during the flight from Britain, but also struggled to find their targets, something that would bedevil Allied airborne attempts in future, and thus were forced to land in the Sebkhah d'Oran salt lake to the south of the city.⁹⁴ Despite this, reports from CTF retained their faith in the utility of airborne troops, suggesting that airborne units offered significant opportunities to conduct sabotage and neutralisation of key objectives inland, simultaneous to a beach landing, a faith borne out in the deployment of the remainder of the newly renamed 509th Parachute Infantry, and the British 1st Para Brigade in the aftermath of Torch.⁹⁵

Of course, while Allied ground troops made sterling contributions to the success of Torch, the efforts of the air and naval forces were to prove equally vital in securing the beachheads, and it is to this collaboration between arms of service that most reports of the operation attribute the landings' success.⁹⁶ Coordination between all three major services began in the planning phases of the operation, it being recognised early on that close cooperation would be key to the success of such an ambitious undertaking. This process was smoothed by the assistance of Lord Louis

⁹¹ TNA: DEFE 2/605, 'American papers: Western Naval Task Force, Western Task Force and Eastern Assault Force reports', 1942.

⁹² John Greenacre, *Churchill's Spearhead: The Development of Britain's Airborne Forces During World War II* (Barnsley: Pen & Sword, 2010), pp. 22-31, 140-41.

⁹³ O'Hara, *Torch*, p. 129.

⁹⁴ Playfair, p. 149.

⁹⁵ TNA: WO 204/1579, 'Tunisian and Sicilian Campaigns: Lessons Learnt'.

⁹⁶ TNA: WO 204/1579, 'Tunisian and Sicilian Campaigns: Lessons Learnt'.

Mountbatten's Combined Operations Headquarters, a 'fourth arm' of British service created by Churchill in 1940 which coordinated air, sea, and ground resources to effect raids across occupied Europe, including Operation Chariot, the famous raid on the drydocks at St Nazaire.⁹⁷ The Combined Operations Headquarters not only contributed its significant experience towards the planning of Operation Torch in terms of expert advice, but also a number of resources to supplement the landings. The battalions of commandos integrated into the assault forces and the converted Landing Ship Headquarters *Bulolo* and *Largs*, which propped up the fragile Allied signals network, were both creations of Mountbatten's command, and their success in Torch prompted comment that they would be 'urgently required for future operations'.⁹⁸ Not all such concepts were so successful however, as demonstrated by the failure of Operations Reservist and Terminal, which called for a daring direct assault, modelled on a similar operation to seize Madagascar, on the main harbours of Oran and Algiers by infantry ferried on small vessels, to seize the port installations intact. In the event, both operations were unsuccessful, costing heavy casualties and proving unable to stop French troops at Oran from scuttling a number of vessels, thus reducing the utility of the port. French coastal defences severely damaged or sank all four Allied ships, with those troops that made it ashore being pinned down by fire and eventually taken into custody.⁹⁹ Much of the culpability for this failure fell again on hasty planning, after-action reports from Terminal Force indicating that the 'intelligence furnished it was both meagre and inadequate', with insufficient time to study it and train appropriately further hampering the operation.¹⁰⁰ Cunningham was similarly minded, as while he defended the operation's audacity he also acknowledged that they had underestimated the tenacity of French resistance, in the face of which 'it could not be expected that they would succeed'.¹⁰¹

The failure of Terminal and Reservist was however but a small blemish on an otherwise excellent record of cooperation between Allied services, the successful organisation of which for Torch would serve as a model for later amphibious

⁹⁷ Bruce, pp. 15-16, 31.

⁹⁸ TNA: WO 193/407, 'Combined Ops HQ Daily Ops Summaries, Mar 41 - Jul 43'

⁹⁹ O'Hara, *Torch*, pp. 94-97, 119-123.

¹⁰⁰ TNA: WO 204/1579, 'Tunisian and Sicilian Campaigns: Lessons Learnt'.

¹⁰¹ *The Cunningham Papers Vol. II*, p. 83.

landings. In the preliminary stages, this can be seen in the sophisticated air and naval screen developed in order to protect the convoys in transit, as despite sophisticated deception work, it was impossible to hide such a significant buildup of ships and material from the enemy. For the WTF, this entailed the assembly at sea of more than 100 ships from multiple American ports, under the cover of various destinations and routes, preceded by five scouting submarines, and escorted by five Naval Groups under Admiral Kent Hewitt, which maintained strict radio silence and boarded any neutral vessels encountered along the way.¹⁰² Convoys from the United Kingdom were arranged with even greater complexity, due to the increased risk of discovery by Axis aircraft or submarines during transit. Six advance convoys, consisting of colliers, tankers, and other slow auxiliary vessels, were sent ahead of the task forces themselves, while the latter were dispatched in separate slow and fast convoys, to be united in the Mediterranean.¹⁰³ Coverage of these forces was extensive, with additional anti-submarine vessels covering the Bay of Biscay, while surface vessels extensively patrolled the Denmark strait between Iceland and Greenland to prevent dispatch of German surface raiders. RAF Coastal Command also contributed greatly, alongside both Bomber Command and the US 8th Air Force, offering escort to shipping and carrying out bombing raids on U-boat bases and the naval port of Brest.¹⁰⁴ These careful measures, as well as no small amount of good fortune, paid handsome dividends for the convoys, which passed towards Morocco and into the Mediterranean without incident.¹⁰⁵ However the danger only increased as the Torch forces approached the Straits of Gibraltar, as the convoys drew attention from Axis aircraft and U-boats. Although most of the substantial Axis submarine fleet in the Mediterranean had been deployed eastwards to cover an attempt to force the Sicilian Narrows, a sizeable force still remained in the area.¹⁰⁶ These dangers were mitigated, however, by aggressive patrolling from both the large escort forces the Allies had put together and also by long range reconnaissance and action from bombers and maritime aircraft, many operating from Gibraltar.¹⁰⁷ As a result, the only significant damage sustained during the voyage was the torpedoing of the troopship *Thomas*

¹⁰² Howe, p. 71.

¹⁰³ Playfair, p. 130.

¹⁰⁴ Admiral Sir Andrew Cunningham, *A Sailor's Odyssey: The Autobiography of Admiral of the Fleet Viscount Cunningham of Hyndhope* (London: Hutchinson & Co., 1951), p. 482.

¹⁰⁵ Cunningham, *A Sailor's Odyssey*, p. 483.

¹⁰⁶ Boog et al., 792-94, 833.

¹⁰⁷ TNA: WO 204/1579, 'Tunisian and Sicilian Campaigns: Lessons Learnt'.

Stone, although even this vessel was not sunk and was towed into Algiers harbour on 11 November.¹⁰⁸

Similar contingencies were also put in place for the coverage of the landing forces on arrival, with the deployment of substantial fleet assets to cover the troopships from the intervention of enemy warships. This was a vital undertaking, as not only was a significant portion of the French fleet based in North Africa, particularly around Oran and Casablanca, there also remained the threat of the main French fleet at Toulon and the surface forces of the Regia Marina. The Allies prepared for these latter dangers by increasing the size of Force 'H' under Vice-Admiral Syfret, the Royal Navy's western Mediterranean squadron, based at Gibraltar. Force 'H' was to cover the flanks of the landing force from possible intervention, which did not in any case materialise, but the fleet's presence nevertheless helped to draw the attention of Axis air forces and submarines away from the landings.¹⁰⁹ Other naval detachments remained with the convoys to keep local French vessels from interfering with the landings. This proved to be a sensible precaution, as the French navy offered stubborn resistance, with several submarines, a cruiser and seven destroyers sallying out of Casablanca harbour on 8 November, and a smaller such force at Oran.¹¹⁰ These attempts achieved little however, as the Allies were well prepared, deploying defensive minefields to restrict enemy access to the landing ships and commanding a significant advantage in firepower, leading to 'distasteful and one-sided encounters' which saw the sinking of several French destroyers and submarines.¹¹¹ The battleship *Jean Bart*, moored in Casablanca, was also neutralised by the American battleship U.S.S. *Massachusetts*, as well as carrier-borne aircraft from the U.S.S. *Ranger* which, along with eight other aircraft carriers, also contested intervention from French aircraft across the breadth of Algeria and Morocco.¹¹²

In addition to these screening duties, air and naval assets were also employed in a more direct manner, turning their firepower in support of the landing forces. Much of this was largely conventional, consisting of the suppression of French

¹⁰⁸ O'Hara, *Torch*, p. 79.

¹⁰⁹ Cunningham, 'Admiral Sir Andrew Cunningham's Despatch', p.101.

¹¹⁰ Morison, p. 98-101.

¹¹¹ Cunningham, 'Admiral Sir Andrew Cunningham's Despatch', p. 101.

¹¹² TNA: DEFE 2/605, 'American Papers'.

fortifications, such as the Cape Matifou battery at Algiers, by naval gunfire, while Allied aircraft from the Fleet Air Arm and US Navy combatted targets further inland, such as La Senia airfield, which was struck twice by bombers dispatched from HMS *Furious*.¹¹³ Yet the Allies also experimented with interbranch capabilities in a more tactical role, augmenting the firepower of the troops undertaking the assault. In the case of airpower, five Air Support Parties were attached to Allied divisions, enabling ground forces to submit requests for close air support, which were then passed back to Corps and then Command level for allocation, whilst similar arrangements, utilising Naval Gunfire Control Parties, allowed the same with the Navy.¹¹⁴ Although a somewhat cumbersome system, not aided by Allied communications difficulties, resulting in some support taking over an hour to arrive, the additional firepower was more than valuable enough to tolerate the delay and helped to compensate for the assault forces' lack of artillery and heavy equipment in covering the advance inland.¹¹⁵ This was particularly the case at Mehdia and Port Lyautey, where General Truscott's troops used the support of the U.S.S. *Savannah* and *Texas* to interdict and suppress French forces contesting their landing, the latter using its heavy 14-inch guns to reach up to ten miles inland to scatter French reinforcement columns.¹¹⁶ Similar utility was found in the air support offered by the Allies' carrier-borne aircraft, CTF in particular noting the usefulness of cannon-armed fighter planes, which 'may be very effectively used in the absence of light bombers against armored vehicles and light tanks', an ability demonstrated in the destruction of a French tank column at Sidi-Bel-Abbes during the Oran assault.¹¹⁷

The signing of the armistice between Allied forces and the Vichy French defenders on 10 November marked the end of Operation Torch, leaving the Allies in control of key footholds across much of French North Africa. Only Tunisia and Italian Libya remained in Axis hands; the task now was to drive them from these remaining holdings. This however would be no simple undertaking, as Allied overcaution had prevented them from attempting to capture the Tunisian ports, an oversight which left an opening through which Axis forces could be funnelled into

¹¹³ Burrough, p. 111.

¹¹⁴ Gladman, *Intelligence and Anglo-American Air Support*, pp. 135-36.

¹¹⁵ TNA: WO 204/1579, 'Tunisian and Sicilian Campaigns: Lessons Learnt'.

¹¹⁶ Howe, pp. 168-69.

¹¹⁷ TNA: WO 204/1579, 'Tunisian and Sicilian Campaigns: Lessons Learnt'.

Tunisia, enabling the development of a bridgehead that would take six months of fighting to overcome. Such an outcome was perhaps inevitable however, due to the hastily improvised and politically driven conception of Torch, which combined both massive scale with incredible urgency, in what Craven and Cate termed ‘the purest gamble America and Britain undertook during the war’.¹¹⁸ Allied staffers were confronted with the challenge of organising the most ambitious amphibious invasion at that point ever conceived, within roughly a quarter of the time normally prescribed for such operations and during which the operation’s parameters continuously changed.¹¹⁹ The difficulties of preparing for Torch were amply described by Eisenhower, who stated:

Ordinarily a commander is given, along with a general objective, a definite allocation of force upon which to construct his strategical plan, supported by detailed tactical, organizational and logistical programmes. In this case the situation was vague, the amount of resources unknown, the final object indeterminate, and the only firm factor in the whole business our instructions to attack.¹²⁰

This uncertainty was in no small part compounded by simple inexperience. The newness of many of the systems and technologies employed in the Torch operation, coupled with the limited familiarity of both Allied units and senior leadership with the task that lay before them, resulted in a number of misfires and mistakes that led Vincent O’Hara to label Torch as a ‘rushed, half-baked experiment in the art of war, full of untested ideas and amateur touches’.¹²¹

However, it is in the context of this spirit of experimentation that Allied performance in Torch must be assessed, as the whole operation was a vast and unprecedented undertaking, ‘an overseas expedition involving a journey of thousands of miles from its bases, terminating in a major attack’.¹²² In an operation of such demand and complexity there were bound to be untried measures and with them inevitable flaws, but the Allies also achieved a number of striking successes. Indeed, the very ability of the Allies to put together such a major and ultimately

¹¹⁸ Wesley Craven and James Cate (eds), *The Army Air Forces in World War II, Vol. 2: Europe: Torch to Pointblank, August 1942 to December 1943* (Chicago: The University of Chicago Press, 1949), p. 49.

¹¹⁹ Leighton, p. 454.

¹²⁰ Eisenhower, p. 86.

¹²¹ O’Hara, *Torch*, p. 3.

¹²² Eisenhower, p. 86.

successful operation in such a short space of time represents a significant accomplishment, and one that is perhaps too easily overlooked. In scant few months, the Allies had launched a fully equipped expedition into enemy territory, in one of the largest fleets ever assembled, to clear thousands of miles of African shore. That Torch not only evaded disaster, but fulfilled its primary objectives without serious casualties, should rightly be hailed as a major achievement.

These successes are only further enhanced when one considers the lessons that the Allies were able to derive from the undertaking of this venture, which were to prove invaluable to the success of future inter-Allied operations. Torch represented a vast testing ground for many of the Allies' amphibious innovations, such as the Maracaibo LSTs, whose success inspired development of purpose-built successors employed in Sicily, Italy, and beyond. New ideas too were inspired by the difficulties encountered during the operation, one notable example of this being the acceleration of a project by the Combined Operations Headquarters for a floating pier, a concept eventually realised as the Mulberry harbours used in Operation Overlord.¹²³ However, while the development of these innovations were undoubtedly welcome additions to the Allied arsenal, they arguably pale in comparison with the strides made by the Allies in Torch's capacity as the first major joint Anglo-American operation. The creation of a new and pioneering multi-national command structure in AFHQ cannot be overestimated in its importance, as it allowed Allied forces from five different services and across two continents to effectively coordinate under one banner, a unity of purpose unmatched among previous wartime alliances. The foundations for inter-Allied cooperation laid in AFHQ would prove invaluable to the Allied cause moving forward, setting a precedent for close integration that would be mirrored in latter campaigns across the globe, in South East Asia Command, and also in SHAEF. Torch, therefore, was not just the beginning of a campaign, but a symbolic one for the Allies, as although mistakes were made and planning was hasty and inexact, it represented that necessary first step into actually making a truly combined war effort function. As an unprecedented venture, the preparations for the operation saw foundational learning occur at all levels of the Allied war effort, much of it initiated top-down by the CCoS, including the formation of AFHQ, and the development of its subordinate formations, which in

¹²³ TNA: WO 193/407, 'Combined Ops HQ Daily Ops Summaries'.

turn made strides of their own as Torch began to take shape. Past experience and sometimes spontaneous innovation were blended together at the operational level as elements were bolted onto and stripped out of the plan, creating a technical chimera that combined familiar, well-trodden elements with experimental and untested concepts. These innovations and developments would form the basis for the prosecution of the Tunisian Campaign, not only teaching valuable lessons to Allied forces, but initiating a new cycle of learning, that would be built upon by the Tunisian Campaign and all those after it.

Chapter Two

The Rush on Tunis, 11 November – 31 December 1942

With a foothold in North Africa now in hand, the next phase of Operation Torch called for the Allies to turn eastward. The task of advancing into Tunisia was to be devolved upon First Army, under Lieutenant-General Kenneth Anderson and drawn from the ETF, which was planned to disembark and advance rapidly from Algiers towards Tunis and Bizerte, in order to deny these key ports to the Axis and prevent them from reinforcing their beleaguered North African front. The ETF outline plan, issued on 28 October, aimed for airborne and commando forces to have seized control of the aerodromes and installations surrounding Tunis and Bizerte by D+5, whilst the bulk of 5th Corps, the main component of First Army, was to have landed and be operating as far as Tunis by D+24, having seized key ports and airfields along the way to facilitate resupply and air cover.¹ With these vital points thus secured, the Allies would then advance on Libya from the west, wrapping up the campaign early in the coming year.

The Allies' aims for this phase of operations, as it turned out, were wildly optimistic. Within less than a week of launching their initial rapid dash towards the Tunisian capital, General Anderson's First Army found themselves in a series of running engagements with Axis forces of the newly created 90th Corps under General Walther Nehring, hastily transferred from Italy to shore up the Axis position in North Africa. Despite some initial success in small actions at Djebel Abiod and Sidi Nsir on 17 and 18 November, the Axis' swift reinforcement of Tunisia soon slowed the Allies' rush on Tunis to a crawl, as 11th Infantry Brigade, of First Army's 78th Division, struggled to seize the transport hub of Medjez El Bab on 25 November, until the Axis eventually withdrew. Although Tebourba fell to the Allies on 27 November, attempts to seize the town beyond, Djedeida, were curtly rebuffed over three days of fighting, and 78th Division ground to a halt. The outskirts of the town, little more than 15 miles from Tunis, represented the high watermark of First Army's efforts that winter, one from which the tide of battle soon receded, as First Army's position began to be eroded by a series of local Axis counterattacks. Starting

¹ TNA: WO 204/1650, 'Operation Torch: Eastern Task Force Outline Plan', 1942.

on 1 December, Nehring's forces, spearheaded by armour, drove the Allies from Djedeida and then Tebourba in a four-day battle that was followed by an assault on Djebel El Guessa, the peak that dominated the Medjerda valley behind Tebourba, on 6 December. The loss of these positions prompted General Allfrey, 5th Corps' commander, to withdraw his forces back down the Medjerda valley towards Medjez, hastened by another Axis attack on 10 December, which persuaded Allfrey to also relinquish the valley's commanding features of Djebel Bou Aoukaz and Longstop Hill. These features were the first objectives for the final Allied offensive of the year, beginning on 22 December. Spearheaded by the 1st Guards Brigade and supported by the US 18th Infantry Regiment, the attack, launched in driving rain and mud, nearly succeeded in capturing Longstop Hill, but was twice repulsed, finally being called off on Christmas Day due to the increasingly deteriorating weather. Although it was a 'bitter decision' for Eisenhower, the Allies' next attempt on Tunis would have to wait until the Spring, prolonging the Tunisian campaign into 1943.²

The failure of the Allied attempt at a coup de main, by seizing Tunisia before the Axis could react, has frequently been criticised as a missed opportunity by scholars, Atkinson describing it as the 'nadir of Allied fortunes in Africa', which would lead to 'a campaign of attrition not unlike that on the Western Front a quarter century before'.³ However, it would be wrong to assume that these implications were not grasped by the Allies themselves. Eisenhower's account states that they had 'hoped that by a decisive blow we could avoid settling down into a logistic marathon with the Axis', indicating that he was well aware that the failure of this gambit would inevitably lead to a protracted struggle.⁴ Allied assessments of this phase of operations offer a number of explanations for the failure, largely revolving around three main factors; the political situation, mainly with regard to the French, paucity of resources and accompanying logistical problems, and the difficulty of developing Allied airpower, the latter of which received its own specific report.⁵ This chapter will argue that these assessments were in general correct, and that though the Allied rush on Tunis ultimately foundered on Axis defences, this failure was, in the long

² Eisenhower, p. 137.

³ Atkinson, pp. 260-61.

⁴ NARA: RG 319, 'Commander-in-Chief's Dispatch'.

⁵ TNA: AIR 23/6561, 'Problems connected with development of Allied air power in North African theatre', 1942.

run, to prove a valuable and ultimately necessary experience for the Allies, as it offered AFHQ time for self-reflection, and to adapt a learning culture at the core of their organisation. It will be shown that it was not simply the strength of Axis resistance that frustrated the rush on Tunis, but also the shortcomings of much of the planning and structures put in place for the Torch landings which, although highly innovative, were proven inadequate for an extended and large-scale campaign. Moreover, although AFHQ was quick to recognise these flaws, identifying failures in planning at the command and logistical level in particular, it took little in the way of substantive action to try and rectify them during this period, preferring to focus on the immediate operational goals encapsulated within the Torch plan. Instead, Eisenhower and his senior commanders often consciously chose to halt Allied learning at the Decision stage, eschewing structural and thoroughgoing reform in favour of relying on ad hoc responses and temporary stopgaps to try and preserve the army's momentum towards Tunis.

Perhaps some of the most concerning deficiencies of the Allied war effort in North Africa that were uncovered by the rush on Tunis were those that manifested at the highest levels of command. Although reports of the period broadly attribute difficulties to external factors, either inherent to the theatre, or from enemy action, it can be seen that Allied command arrangements had chronic shortcomings, largely deriving from the newness of Allied organisations and oversights within the planning for Torch.⁶ Indeed, planning for the aftermath of the Torch landings in general was comparatively spartan, highlighting the unseasoned nature of AFHQ. Whilst the groundwork for Operation Torch was laid in a meticulous, albeit somewhat rushed fashion, the phase following can be seen to have received no such diligence, consisting largely of an estimated timeline of troop movements with little preparation for opposition beyond limited French resistance beyond the beachhead.⁷ Such a notion, however, was breathtakingly naïve, as the idea that Anderson's First Army would be able to pre-empt Axis reinforcements into Tunisia ultimately hinged on the faulty estimation that these troops would take considerable time to muster. By the reckoning of Allied planners, seaborne reinforcements would likely take nearly a month to deploy, as the 'leading units of an armoured or infantry division might

⁶ TNA: WO 204/4237, 'Tunisia: Reports on Operations'.

⁷ TNA: WO 204/1650, 'Eastern Task Force Outline Plan'.

arrive in Tunisia 28 days after the decision to prepare reinforcements', while 'the complete division might be operationally effective 2-3 weeks later'.⁸ The possibility of air reinforcement was similarly neglected, as although Allied appraisals estimated that maybe 8-10,000 men could be transferred over during the second week, these would be lacking in all but basic equipment, making their deployment a sufficient risk that 'it is thought that the Axis would hesitate before undertaking such an operation'.⁹ Consequently and in an ominous fashion which some on the Joint Planning Staff (JPS) had predicted, German troops and air assets began to pour into Tunisia to defend the bridgehead, ahead of the hastily dispatched forward elements of First Army.¹⁰ In some respects, the Allies' estimation of the speed of reinforcement was correct, as the initial reinforcements landed by the Axis in order to secure Tunisia were scarcely the equal of a fully equipped division. Those arriving in the first week consisted of, according to Playfair, some 100 aircraft, as well as 'two companies of the 5th Parachute Regiment, and one of the 104th Panzer-Grenadier Regiment [...] 11th Parachute Engineer Battalion, a weak Reconnaissance company [...] motor-cyclists and one company of tanks.'¹¹ However, that even these 'small parties [...] sent forward to block the line of advance' were more than enough to throw a wrench into AFHQ's plans, simply underscores the failures of Allied planning for this phase of the campaign.¹²

Certainly, there is some truth to the Allied claim that it was Axis action that proved decisive in thwarting their rush on Tunis, as the Axis leapt to the defence of Tunisia with formidable agility. Within a day of the landings, General Warlimont, the Deputy Chief of the Operations Staff for the Oberkommando Der Wehrmacht (OKW), had received instructions to prepare a directive for the Führer, which would be issued the following day (10 November) and called for the formation of an Axis bridgehead in Tunisia. The document displays an incisive grasp of the operational situation, highlighting that the Tunisian position had to be 'won and held in a race with the enemy forces which are expected from Algeria' and recognising the need for a short, easily held front, due to the paucity of local assets, whilst establishing a

⁸ Ibid.

⁹ Ibid.

¹⁰ Hinsley, p. 693.

¹¹ Playfair, p. 171.

¹² Rolf, p. 32.

clear line of (German) command.¹³ The rapidity of this response was also mirrored by Axis ground deployments, as even whilst Warlimont was drafting the aforementioned directive, German aircrews were already occupying El Aouina airfield, near Tunis, while Axis ground forces began executing Case Anton, the occupation of Vichy France.¹⁴ Other troops were also in transit, diverted from reinforcements intended for Rommel's forces in Egypt, with over 750 men per day arriving by airlift, meaning that by 21 November, some 11,000 Axis personnel were on the ground and drawing rations in Tunisia, a figure which would rise to 26,500 by 1 December and then again to 49,500 by the end of the year, with a total of around 170 tanks, a sizeable force with which to oppose Allied ambitions.¹⁵ This rapid development was also accompanied by a succession of commanders, starting with Luftwaffe Colonel Harlinghausen before transitioning to his Heer counterpart Colonel Lederer, under whom an initial perimeter was quickly established around Bizerte and Tunis. On 16 November, Lederer was superseded by General Nehring, who took over the newly created 90th Corps until his replacement on 8 December by Colonel-General Hans Jürgen von Arnim. Yet despite these often quickly shifting circumstances, Axis leaders can be seen to have swiftly asserted control over the situation in Tunisia. Nehring for instance, whose corps headquarters initially consisted only of 'its Commander and one staff officer sharing a taxi-cab and using the French postal system for communications', was nevertheless responsible for an aggressive expansion of his predecessors' initial bridgehead, which brought Axis forward elements into contact with the Allies at the important feature of Djebel Abiod, rather than yielding the key coastal road to Bizerte to the advancing First Army.¹⁶

Another clear oversight of the Torch planning was the lack of consideration given to the development of command infrastructure for the exploitation eastwards once the landings had been successful. Although the drive on Tunis was to be entrusted to General Anderson and his British First Army, the desire for an American face to the invasion had meant that it was Ryder's 34th US Division which formed the primary component of the ETF's landing forces, with the intention of handing

¹³ IWM: Documents.11929, 'EDS Appreciation 12, The Axis in Tunisia, 1942-1943', Chapter 2.

¹⁴ Playfair, p. 171.

¹⁵ IWM: EDS Appreciation 12, Chapter 2.

¹⁶ Macksey, p. 84.

over command once Algiers had been secured.¹⁷ This however was a concept simpler in theory than it was in practice. Whilst Anderson himself was on the ground in short order, arriving 9 November to set up his forward command post, he was unable to enact the first phase of his planned eastward advance, a series of landings by 36th Brigade, ETF's floating reserve, at Bougie and Djidjelli airfield, some 110 and 160 miles east respectively, as the Algiers operation had left them seriously disorganised.¹⁸ Most notably, one of the brigade's battalions, the 6th Royal West Kent, had been brought ashore during the assault as reinforcements and consequently had to be re-embarked, as Anderson refused to split his already limited forces in long-range strikes 'owing (to the) uncertain attitude in some quarters' and concerning intelligence regarding enemy movements.¹⁹ The result of this delay, along with subsequent mechanical issues with one of the landing ships, was that 36th Brigade did not commence their eastward move until the evening of 10 November, two days behind schedule, landing unopposed at Bougie on the 11th. Similar problems also dogged Anderson's planned advance by road for his other available brigade, the 11th, as their involvement in the assault on Algiers kept them detained within the city until the armistice was signed, and even thereafter, much of the brigade's transport was yet to arrive. As such, it was only on 11 November that 'Hart Force', a detachment created from pooling all available motor assets could advance, whilst the rest of 11th Brigade followed on 14 November, some in commandeered vehicles.²⁰ These delays, imposed on First Army's advance by the self-inflicted confusion of command within the ETF, cost the Allies valuable days which the Germans could exploit to shore up the bridgehead. Had Anderson been free to advance those few days earlier, the forward elements of 36th Brigade would have found the road ahead of them at Djebel Abiod, which they reached on 17 November, completely undefended, as until Nehring's arrival on 16 November German 'tactical activity had been more or less nil', Colonel Lederer having been content to hold only a light cordon around Tunis and Bizerte.²¹

¹⁷ Anderson, pp. 130-31.

¹⁸ TNA: WO 175/50, '1st Army HQ War Diaries'.

¹⁹ Ibid; Hinsley, p. 725.

²⁰ Blaxland, p. 99.

²¹ IWM: EDS Appreciation 12, Chapter 3.

Yet whilst the first few crucial days of the campaign saw the Allies bedevilled by planning shortcomings, there were more endemic problems afflicting Allied leadership, which presented themselves as the winter offensive wore on. Perhaps the most pressing of these was the worsening fragmentation of command authority which, alongside the increasing dispersal of Allied units, frustrated attempts at effective command and control. In the latter case, the sheer breadth of the frontline made proper coordination a difficult proposition, with units linked by tenuous communications and spread over a width of dramatic terrain that eventually spanned 250 miles, with even longer lines of communications stretching back towards Algiers. A prime example of these scattered dispositions can be seen in First Army's primary formation, 78th Division, which was split into its three constituent brigades, the 11th being engaged in the main advance towards Tunis, as the 36th made a push along the coast towards Bizerte, whilst 1st Guards Brigade was brought into action late, disembarking in Algiers at the end of November.²² This proved a hampering factor in Anderson's attempt at a dynamic thrust towards Tunis, as the division of his command into multiple small forces made it hard to assert a firm sense of order over the offensive, particularly as headquarters units were often located far behind the frontline in order to maintain rearward communications. First Army Headquarters was initially situated as far back as Philippeville, some 160 miles from Djebel Abiod and over 200 miles from Medjez, where its primary fighting formations were engaged, whilst 78th Division Headquarters was located roughly halfway in between these points, at Souk Ahras.²³ AFHQ itself was not even in North Africa until mid-November, Eisenhower himself transferring to Algiers on the 28th, having for the previous month been directing operations from Gibraltar.

These conditions were worsened significantly by the hasty reinforcement of Anderson's ailing offensive, which produced an eclectic mix of formations and nationalities that further complicated the chain of command. By the end of 1942, the forward elements of Eisenhower's forces in North Africa included British 5th Corps, units of US II Corps, and the French forces of General Barre's Tunisian Command. Of these formations, only the first was actually under the command of First Army, despite Anderson ostensibly being the commander of the Allied offensive, leaving

²² Anderson, pp. 135-37.

²³ TNA: WO 175/50, '1st Army HQ War Diaries'.

the latter in command of an Army that consisted of little more than a division.²⁴ Instead, a labyrinthine and cumbersome system of control was constructed under AFHQ, which did little to help the effective management of the frontline. II Corps, under Fredendall, was retained directly under AFHQ by Eisenhower, not wishing to subordinate American formations under British command, even though this choice violated the core AFHQ concept of unified command. On a personal level, this may have seemed a sensible decision, as Fredendall 'narrowly edged out George Patton as the U.S. Army's leading Anglophobe', but it should be noted that Fredendall was absent from the frontline for much of the winter fighting, with only detachments of his II Corps moving forward to assist First Army.²⁵ As such, it was Fredendall's subordinate commanders, such as General Orlando Ward of US 1st Armored Division, who had to coordinate with the British at the front, leading to a nebulous de facto command structure that was neither particularly effective nor frictionless.

Much the same difficulty was to be found in First Army's relationship with the French, who had begun to cooperate in earnest with the Allies on 19 November, when General Barre's Tunisian Troops Command refused to concede Medjez to Axis forces, inspiring French forces stationed in the Atlas Mountains to begin a general resistance. Allied forces welcomed French cooperation, even if it was 'too late to overcome the fatal effects of that almost morbid sense of honor which had led the French to initially resist us'.²⁶ Initial joint operations seemed promising; cooperation between American paratroopers and French troops secured the key town of Sbeitla in late November, which controlled the important Kasserine Pass through the Eastern Dorsale, whilst General Barre, 'was to place himself under the command of the Commander, First Army', agreeing to coordinate with Anderson as best as he could.²⁷ However, this initial display of collegiality could not hide the problematic relationship of French forces to AFHQ, as highlighted in AFHQ's own French liaison papers, which stated: 'A cursory reading of the French liaison reports yields an impression of French forces as vital sources of information and assistance, yet this

²⁴ Macksey, pp. 108-09.

²⁵ Porch, *Hitler's Mediterranean Gamble*, p. 383.

²⁶ NARA: RG 319, 'Commander-in-Chief's Dispatch'.

²⁷ TNA: WO 204/1151, 'Dispatches from CinC, Operations in North Africa, Nov 42 – Feb 43'.

is actually indicative of a broader issue – lack of integration of French forces into the Allied command.’²⁸

Indeed, although the addition of French forces bolstered available Allied troop strength by a significant, albeit ill-equipped, margin, throughout the entirety of the winter offensive they remained almost a force unto themselves. This was due to the obstinate resistance of the newly elevated commander of all French forces in North Africa, General Giraud. Giraud had been ignominiously deprived of his intended role as the political leader of the French in North Africa during Torch by Admiral Darlan, the latter’s crucial role in brokering a ceasefire between the Allies and the Vichy garrison having allowed him to secure a pre-eminent position in the new regime.²⁹ Giraud’s appointment was thus a means of compensation, but this ultimately proved a further frustration to Allied leadership, as Giraud maintained as obdurate an independence from command authorities as possible, a stance that manifested in unilateral initiatives and demands that ran counter to effective inter-allied cooperation. This included the demand on 17 December that Giraud be granted control of all Allied ground operations, justified by dint of there being 40,000 French troops engaged on the frontline, more than either the British or Americans at that point.³⁰ Although Eisenhower credited this request as having correctly grasped the need for a single front commander to coordinate operations, he was nevertheless obliged to deny Giraud, whose next initiative was nearly to destroy the Allies’ logistical infrastructure in a bid to expand his influence by the import of 50,000 colonial troops, which had to be hurriedly countermanded by AFHQ on 17 December.³¹ In the field, the Detachement D’Armee Francais, under the command of General Alphonse Juin, was stubbornly retained under Giraud’s personal control, Giraud’s justification being that ‘many units here still retain vivid remembrance of fighting in Syria and Mers El Kebir’.³² Whilst such an explanation justifies French resistance to subordination under British command, it scarcely explains Giraud’s equally unaccommodating approach to the prospect of American leadership. Leaving aside the reasoning, the overall result of this unilateralist approach to command is

²⁸ TNA: WO 204/1163, ‘Free French Liaison’.

²⁹ Martin Thomas, *The French Empire at War, 1940-45* (Manchester: Manchester University Press, 1998), p.162.

³⁰ TNA: WO 193/843, ‘Operations: Phase I – Part 2’.

³¹ Ibid.

³² Ibid.

clear, as French resistance to integration under AFHQ ‘introduced additional political distractions into General Anderson’s mind when he needed, most of all, to concentrate his thoughts on military matters’.³³

Nor indeed were the difficulties caused by the Allies’ acquisition of French cooperation limited to the front, as AFHQ also found itself bogged down by the political fallout of Torch. Although Eisenhower’s deal with Admiral Darlan had offered a militarily expedient way to bring an end to French resistance against Operation Torch, as D’Este argues, ‘the reality was that, like it or not, Eisenhower was both a military commander and a politician in the swamp of intrigue in North Africa’.³⁴ News of the deal provoked a political storm in both Britain and America, not least because it excluded the Gaullist Free French, who shared a mutual and abiding antipathy with Darlan due to the latter’s former position within the Vichy regime.³⁵ Certainly, Darlan could not be portrayed as a passive participant in Vichy, having served variously as Petain’s Deputy, as Defence, Foreign, and Interior Minister, and as C-in-C of the French Armed Forces, and the malleability of his loyalties, which had been investigated by Allied intelligence, prompted suspicion and public outcry on both sides of the Atlantic.³⁶ Eisenhower consequently had to expend much effort defending the deal to his superiors back home, authoring an urgent message on 14 November highlighting that French leaders ‘will agree on only one man as having an obvious right to assume the Marshal’s mantle in North Africa. That man is DARLAN [...] All concerned profess themselves to be ready to go along with us provided Darlan tells them to do so, but they are absolutely not willing to follow anyone else.’³⁷

Although this missive finally served to satisfy the CCoS, who prodded Roosevelt and Churchill into support of the ‘Darlan Deal’, Eisenhower still had much else to distract him, spending ‘at least three quarters of his time worrying about political issues’.³⁸ Continued anxieties from the American Joint Chiefs about the potential threat from Spain, forced Eisenhower to keep one eye fixed on the

³³ Macksey, p. 106.

³⁴ D’Este, p. 358.

³⁵ Jones, pp. 70-71.

³⁶ NARA: RG 331, ‘Allied Operational and Occupation HQ, Adjutant General’s Records Branch, Numeric Files, 1942-47, Foreign and International Affairs and Relations’.

³⁷ TNA: WO 204/446, ‘Despatches from Patton and Eisenhower on political/military situation’.

³⁸ Atkinson, p. 197.

Straits of Gibraltar, which combined with problems local to the theatre, often left AFHQ dealing with issues far removed from the battlefield. De Gaulle's Free French formed one such problem, issuing a range of propaganda broadcasts from Radio Accra, a broadcasting station in British Ghana, denouncing the Darlan Deal and the ex-Vichy regime in North Africa, necessitating multiple requests from Eisenhower to London for it to be stopped.³⁹ There were after all, more than enough problems within French North Africa to distract AFHQ. A missive from General Patton on 22 November summarised just a few of these, among which were a lack of fuel coal and skilled interpreters, tensions between the Arab populace and Jewish minorities, and even local shipments of oranges.⁴⁰ It had been hoped that the retention of the French civil administration would have prevented such matters from distracting AFHQ, however, as this bewildering array of issues demonstrates, this was not the case, and AFHQ was in effect becoming the de facto civil authority in North Africa, a fact acknowledged by report C.C.S 126 on 28 November.⁴¹

Such a combination of problems makes it difficult to see how the Allied war effort in Tunisia was directed at all during this period, particularly when one contrasts it to the relatively dynamic approach of the Axis. However, even as these issues arose, there is evidence of a proactive effort at troubleshooting by Allied leadership, trialling ad hoc solutions to try and address the basic causes of their difficulties. In the field, the problems of distant command and poor communications, which plagued both AFHQ and First Army, were sought to be at least partially addressed by the use of forward command posts, which would offer commanders a clearer picture of the frontline and supply additional links in the communication chain. Anderson, whose primary Army HQ largely remained around Philippeville and Constantine, initially placed his forward post at Bone, much closer to 36th Brigade's line of advance, as well as allowing supervision of the nearest port to the frontline.⁴² In December, when it became clear that Medjez was becoming the focal point of decisive action, Anderson shifted this advanced post towards Souk Ahras, putting him in closer contact with this critical sector, whilst AFHQ too made efforts

³⁹ TNA: WO 193/843, 'Operations: Phase I – Part 2'.

⁴⁰ TNA: WO 204/446, 'Despatches from Patton and Eisenhower'.

⁴¹ TNA: WO 193/842, 'Operations: Phase I'.

⁴² TNA: WO 175/50, '1st Army HQ War Diaries'.

to close the 'command gap'.⁴³ On 28 Dec, Eisenhower issued instructions for the creation of a forward command post under General Lucian Truscott, 'to represent me in the coordination of details on the front'.⁴⁴ The usefulness of establishing such command posts has been contested, Macksey arguing that Eisenhower's 'could do little more than transmit as a sort of post office', yet this is something of a cynical view.⁴⁵ While no substitute for a full headquarters, these forward posts nevertheless provided senior officers such as Anderson a base from which to direct operations closer to the frontline, whilst logistical and other functions of the rear HQ could remain fixed in place further back to ensure the smooth operation of army infrastructure.⁴⁶

Further efforts also came in early attempts to begin disentangling the chain of command, beginning with the development of national sectors in the Allied frontline. Early inroads in this direction had been made on 24 November, when 'a rough and ready arrangement had been made' to divide the front between British and French sectors down a line running from Le Kef to Kairouan, but this was a purely informal arrangement between Juin and Anderson and as such was hamstrung by Giraud's continuing refusal to subordinate French troops to Allied command.⁴⁷ Consequently, it was not until late in December when Eisenhower received the opportunity to reorganise the front, following the abrupt assassination of Admiral Darlan on 24 December. As Dinan comments, 'rarely, if ever, has an act of political assassination proved so fortunate or welcome', as Darlan's removal rid the Allies of an otherwise intractable problem, and opened the way to a broad restructuring of French authority in North Africa, that was, at least in the short term, more aligned with Allied goals.⁴⁸ On the operational level, Darlan's demise allowed Giraud to be 'kicked upstairs' to the post of High Commissioner, where he became merely a political problem instead of a military one, while Giraud's now-vacant command was filled by the far more congenial Juin.⁴⁹ Under Eisenhower's new plan, the frontline was divided into three sectors, with the British First Army holding the north, French forces holding the

⁴³ TNA: WO 193/843, 'Operations: Phase I – Part 2'.

⁴⁴ Eisenhower, p. 141.

⁴⁵ Macksey, p. 128.

⁴⁶ TNA: WO 175/50, '1st Army HQ War Diaries'.

⁴⁷ Playfair, p. 270.

⁴⁸ Dinan, pp. 270-71.

⁴⁹ Playfair, p. 190.

central region, and US II Corps holding the south.⁵⁰ Such moves would obviously take time to affect, as the practical intermingling of national troops in vital defensive points made it impossible to transfer them immediately, but this directive nevertheless highlights that the Allies were taking steps to combat their command difficulties.⁵¹

Perhaps the most important initiatives to aid AFHQ came in the civilian field where, as the first arena in which the Allies had to consider civil management of occupied territories, the experience of managing issues in North Africa ‘resulted in certain conclusions which affected all later civil affairs planning’.⁵² Initially, the civilian component of the invasion had consisted of a Civil Affairs Section under H. Freeman Matthews and a Political Affairs Section under W.H. Mack, as it was hoped that the regional French administration would be able to shoulder much of the burden, but when it became clear that these meagre staffs could not meet the task of managing the administration of North Africa, the Allied response was swift.⁵³ On 18 November, Roosevelt wrote to Cordell Hull, head of the State Department, authorising him to draw upon all government departments in support of Allied efforts regarding ‘the economic, political and fiscal questions which were developing in the wake of the advancing American armies in North Africa’.⁵⁴ A series of civilian boards, which had proliferated through 1942 to aid interallied resource management, were gathered under the Committee of Combined Boards to assist with all matters related to civilian requirements in North Africa, with the assistance of the Combined Requirements Group and the Interdepartmental Advisory Committee, which were to gather and pass on all requirements from the region and consider their best implementation.⁵⁵ These developments in Washington were also mirrored by similarly proactive interventions in theatre, beginning with the appointment of Robert Murphy and Harold Macmillan as Minister and Minister Resident on 23 and 30 December, plenipotentiary roles which gave them full authority to deal with

⁵⁰ TNA: WO 193/843, ‘Operations: Phase I – Part 2’.

⁵¹ Howe, p. 351.

⁵² Harry L. Coles and Albert K. Weinberg, *United States Army in World War II, Special Studies: Civil Affairs: Soldiers Become Governors* (Washington D.C.: United States Army Center of Military History, 1986), p. 30.

⁵³ Howe, pp. 55-59.

⁵⁴ Coles and Weinberg, pp. 37-38.

⁵⁵ *Ibid*, pp. 39-40.

civilian matters.⁵⁶ These appointments were accompanied by the creation of the North African Economic Board, chaired by Murphy and CAO Humfrey Gale to coordinate civilian and military supply requirements and harmonise these with available shipping through the North African Shipping Board.⁵⁷ This rapid creation of administrative machinery meant that civil administration could now be coordinated through the Allied governments' own representatives, rather than the C-in-C, allowing Eisenhower to focus on his main objective: driving the Axis from Tunisia.

Whilst the contours of the command situation were certainly some of the most complex issues facing AFHQ, those factors considered as having the most influence in impeding operations that winter were those that arose from problems of supply. The incapacity of the Allied logistical system to cope with the growing demands and lengthening supply lines of the campaign features prominently in reports emanating back from the front. On 2 December, Anderson reported to AFHQ that 'army and air forces are now stretched to limit with precarious communications and no reserve supplies forward', following it two days later with the comment that 'the administrative situation in the forward area is precarious as reserves are very small indeed.'⁵⁸

By contrast with many other facets of the Allied effort during the winter campaign, the time spent tackling questions surrounding the Torch landings did offer some advantageous effects with regard to supply provision. In recognising the mammoth effort that would be required to deploy and maintain a substantial presence in French North Africa, the Allies had prepared themselves to provide large and frequent shipments of materiel, manifested in a complex and detailed shipping schedule. This continued to pay dividends throughout the winter phase of operations, with the dispatch of a sequence of alternating fast and slow convoys, the former arriving every fortnight and the slow convoy arriving four days later.⁵⁹ These convoys were matched closely to available shipping berths and total capacities of their destination ports, a testament to the Allies' careful study of their invasion target, Algiers for instance being able to accommodate up to fifteen 600ft vessels

⁵⁶ TNA: WO 193/843, 'Operations: Phase I – Part 2'.

⁵⁷ Ibid.

⁵⁸ TNA: WO 204/3970, 'Adjutant-General's Records, 1st Army, Dec 42'.

⁵⁹ TNA: WO 175/51, '1st Army HQ War Diary Appendices'.

with a draught of 30ft.⁶⁰ Combined, Algiers, Oran and Casablanca were able to manage 37,500 Dead Weight Long Tons per day at their maximum capacity, not including petroleum, to which the valuable smaller harbours of Bone, Philippeville and Bougie added another 8,000.⁶¹ Knowledge of these figures enabled the Allies to dispatch a steady, but massive amount of supplies to North Africa, with over 150 supply vessels arriving from Britain alone over the course of November, with a similar scale making the journey from the US.⁶² By mid-December these clockwork sailings would see the arrival of not only 189,000 British troops and airmen, as well as 23,000 vehicles, with similar from US forces, but also:

8 million rations; 8 million gallons of petrol; $5\frac{1}{2}$ million gallons of aviation spirit; maintenance transport with a lift of 6,600 tons; 463,000 rounds of artillery ammunition (apart from anti-aircraft); 23 million rounds of small arms ammunitions; large quantities of bombs for the R.A.F.; hospital equipment and supplies for nearly 10,000 patients – to say nothing of a mountain of other things great and small, including 20,000 tons of coal for the railway.⁶³

These plans were at least moderately flexible too, as urgent requisitions from forces at the front were met by the rearrangement of existing cargoes, First Army's request for urgent replacement tanks for 6th Armoured Division in early December resulting in the immediate arrangement for 50 additional Crusader tanks to be dispatched with convoy KMS-6, due to depart a little over a week later.⁶⁴

However, whilst the careful regimentation of Allied shipping offered some clear advantages, these were somewhat rivalled by the drawbacks of such a system. Not least of these issues was the allocation of shipping, as Allied commitments in numerous theatres meant that it was difficult to widen the 'convoy bottleneck', meaning that, even in the immediate aftermath of the invasion, none of the major ports were operating at their maximum capacity.⁶⁵ This was despite the congestion of harbours in the region by traffic both military and civil until French authorities were convinced to relocate them in late November, an issue further exacerbated by the

⁶⁰ TNA: WO 175/60, '1st Army Intelligence Summary no.2'.

⁶¹ NARA: RG 319, 'Item 6-C: Logistical History of NATOUSA and MTOUSA'.

⁶² TNA: WO 193/842, 'Operations: Phase I'.

⁶³ Playfair, p. 167.

⁶⁴ TNA: WO 204/1144, 'Tanks: Requirements and Availability, 1942-44'.

⁶⁵ Leighton, p. 468.

deliberate scuttling of vessels during Torch, Oran's harbour requiring the salvage of no less than nine ships.⁶⁶ Moreover, although the system of supply engineered for North Africa provided some flexibility to meet critical demands, it is also evident that the maintenance of this system put Allied logistical services under considerable strain. In-theatre, the evolving needs of Allied forces ensured that AFHQ consistently had to ask for shipments of critical supplies, but as convoy sizes were fixed, these requisitions forced a trade-off in convoy composition to meet immediate demand, thus creating a backlog of routine supplies that retarded the Allies' long-term build-up. One request, made at the end of December, required significant alterations to the outgoing cargo, as the 'twenty thousand ship tons of Ordnance materiel to replace losses in the 1st Armoured Division made it necessary to displace all but about 30 percent of the organizational equipment of CTF troops sailing in UGF-4.'⁶⁷ As this example highlights, the greatest impact of such adjustments was felt in the sacrificing of administrative shipments in order to provide more frontline manpower and ordnance, trade-offs which ensured that difficulties in managing and distributing supplies would dog AFHQ throughout the campaign. The supply of certain skilled personnel, such as Royal Army Ordnance Corps ammunition handlers, continued to fall below Allied requirements for much of the early campaign, leading in this case to 'unnecessary loss of ammunition through unsatisfactory stowage, but also to damage to guns caused by lack of maintenance and skilled inspection'.⁶⁸ Such radical changes also invariably had consequences at the home end of the supply chain, with administrative difficulties and delay being the result of last-minute requests from AFHQ. Mid-December's UG-3 convoys were both 'delayed five days by successive changes in vessel assignment, engine trouble, and the late arrival of three transports', a dislocation which required the entire convoy schedule to be set back.⁶⁹

Yet despite these issues, it was difficulties in-theatre, that ultimately presented the key logistical problem for the Allies. Poor preparation for the follow-up to Torch meant that Allied forces suffered frequent shortages and consequently could not operate at maximum efficacy, a problem particularly felt at the frontline.

⁶⁶ TNA: WO 193/842, 'Operations: Phase I'.

⁶⁷ Leighton, p. 470.

⁶⁸ TNA: WO 204/1653, 'Lessons Learnt; Reports on Operation Torch and the Tunisian Campaign'.

⁶⁹ Leighton, p. 471.

Anderson's First Army, operating far from their logistical hubs in Algiers, were ill-equipped to confront serious opposition in their drive towards Tunis, as they had come ashore on 'assault scales', equipped only with man-portable weaponry and supplies for short-term action against lightly-armed resistance.⁷⁰ Yet despite the delay imposed on Anderson's planned offensive by the need to stabilise the local political situation, neither 11th nor 36th Brigade had received their full complement of equipment by the time they advanced, which seriously inhibited their ability to properly engage Axis forces in the early weeks of the campaign. However, whilst the incomplete nature of First Army, which Anderson stated 'had not sprung forth fully formed like Aphrodite', was steadily offset by the arrival or transfer of additional units to the Tunisian front, these issues were instead replaced by worsening shortages of vital supplies, as the growth of Allied forces in the combat zone put the logistical network under increasing strain.⁷¹

The root of these problems, as identified by AFHQ, lay predominantly in the distributive end of the supply system, tailing back to the key ports, and the reception and processing of arriving stores. Although felt across the entire army, the short supply of administrative units was particularly debilitating on the dockside, as the absence of 'a few experts to take hold of the situation' meant that 'no plan or provision was made for the orderly handling of anything, with resulting delay in the unloading of ships'.⁷² Reliance was instead placed directly on the units which had replaced the supply sections, a situation which only reaffirmed the lesson that combat troops were not suitable for handling the organisation of logistics, as 'since these troops were not trained at the task, many difficulties arose. Supplies piled up at the dock side and were hauled to dumps helter-skelter. Emphasis was placed upon ship turn around and the classification and the orderly disposal of material were treated as matters of secondary importance'.⁷³ The inefficiency of the unloading effort was further worsened by a lack of prime movers and dockside equipment to provide lifting capacity, part of a general lack of transport that plagued Allied forces in the initial months of the campaign.⁷⁴ Worse still, some arriving vehicles were

⁷⁰ Anderson, pp.130-31.

⁷¹ Ibid, p.135.

⁷² Leighton, p. 451.

⁷³ NARA: RG 319, 'Item 6-C Logistical History of NATOUSA-MTOUSA'.

⁷⁴ Playfair, p. 175.

found to have already experienced severe use, some utility cars having clocked over 50,000 miles, whilst heavier motor transport (MT), suitable for European roads, could not handle North Africa's limited infrastructure.⁷⁵ Some assistance was provided through the hiring of local stevedores, but these were considered little more reliable than the combat troops without adequate direction; both army and local details frequently left their tasks as and when they pleased, and pilferage ran rampant, partially due to the lack of military police to maintain order on the dockside.⁷⁶

This was not helped by the shipping state of some of the arriving convoys, whose contents threw the situation into yet more confusion. One particularly pressing issue was the over-saturation of the supply convoys, the contents of which included the entire war establishment of some units. The result, according to RAF reports, was that 'the mass of unnecessary equipment off loaded in the early days of "Torch" was one of the major difficulties of the operation. It led not only to further chaos in the dock areas, but, by choking the transportation system, was the means of denying the forward units equipment of which they stood vitally in need'.⁷⁷ This tide of equipment was made even more daunting by poor packing practices at home. Cases, some made from cardboard or wood, smashed or fell apart under rough handling, and boxes were either packed too compactly or too loosely, with the result that airfield landing mats arrived in bundles weighing 5,000lbs and loose fly papers were stowed in 15lb cases.⁷⁸ The contents and destinations of the cases often remained unknown until opened too, as labels attached to arriving supplies had been aggressively securitised, prompting the comment that 'it is little use concealing the destination of cases so effectually that they are never able to arrive at all'.⁷⁹ The end result of all of these factors was that the Allies' movement control plans, put together prior to Torch, were 'hopelessly unrealistic' and resulted in a deluge of troops and equipment that available resources simply could not hope to process effectively, let alone organise to supply the distant frontline.⁸⁰

⁷⁵ TNA: AIR 23/6563, 'Report on Air Lessons in Operation Torch'.

⁷⁶ Ibid; NARA: RG 319, 'Item 6-C Logistical History of NATOUSA-MTOUSA'.

⁷⁷ TNA: AIR 23/6563, 'Report on Air Lessons in Operation Torch'.

⁷⁸ Ibid; Leighton, p. 452.

⁷⁹ TNA: AIR 23/6563, 'Report on Air Lessons in Operation Torch'.

⁸⁰ NARA: RG 492, 'North African Operations, Services of Supply, Ops Plans, 42-44'.

However, even had the Allies been properly equipped to sustain an organised throughput of equipment, it is unlikely this would have resolved frontline supply difficulties, as failures at the distributive end were compounded by the poor logistical network. Although in general deficient with regards to transport links, the most restricting element of the North African infrastructure was its rail network, which was primarily dependent on a single standard-gauge East-West railway line, which ran for around 1350 miles from the Atlantic Coast to Tunis, with a few branch lines connecting this vital artery to key ports such as Bone.⁸¹ Not all of these lines were of consistent gauge, in Playfair's words 'the enemy of the smooth carriage of freight,' nor was the system as a whole well-maintained, a deterioration partially attributable to the Axis Armistice Commission, which had stripped useable assets, such as fuel and rolling stock, from North Africa to aid the war effort elsewhere.⁸² Yet denuded of fully adequate MT, Allied forces were nevertheless dependent on this solitary link to sustain their advance, forced to entrust the movement of their supply to a system that remained largely under French civilian management during this period.⁸³ This was particularly problematic during the politically uncertain and vital few weeks after Torch, as local officials hedged their bets on cooperating with the Allies, obstructing railway junctions and proffering only limited assistance.⁸⁴ The outcome of this intransigence was that, far from a vigorous lifeline, North Africa's railways proved stubbornly lethargic, with trains from Algiers to Souk El Arba taking four to six days, at a maximum of six trains per day, once civil requirements were subtracted.⁸⁵ However, even this small trickle of materiel often swamped the limited labour forces available at the railheads, thereby vindicating JPS advice prior to Torch that 'initially, no reliance should be placed on the use of rail transport'.⁸⁶

The Allies therefore sought to take up the slack by alternative means of transportation, by road and sea, but these had their own problems, which had also been foreseen by the Torch planners.⁸⁷ In the latter instance, key supplies were

⁸¹ Playfair, pp. 116-17.

⁸² Ibid, p. 117; TNA: WO 204/1551, 'Dispatches from C-in-C - Operations in North Africa, Nov 42 - Feb 43'.

⁸³ NARA: RG 331, 'AFHQ Adjutant General's Records Branch, G-2 Numeric Files 1942-1947'.

⁸⁴ Blaxland, p. 106.

⁸⁵ Jack Coggins, *The Campaign for North Africa* (New York: Doubleday and Company, 1980), p. 102.

⁸⁶ TNA: WO 204/1650, 'Eastern Task Force Outline Plan'.

⁸⁷ TNA: WO 175/51, '1st Army HQ War Diary Appendices'.

transhipped from their port of arrival along the coast to forward ports, such as Bone or La Calle, thereby saving on rail space, but the necessity of offloading all supplies quickly, due to the frequency of Axis air attack, left the forward ports as congested as the main points of reception in Algiers and beyond.⁸⁸ The need therefore, to devote additional effort to clearing these cluttered terminals, severely inhibited any attempt at the mass transit of supplies by road, as ‘the good through-roads which exist could not at this time be used to any great extent owing to lack of transport vehicles’.⁸⁹ The lack of congestion on the main roads did enable some rapid transit of reinforcements, 78th Division’s 132nd Field Artillery Regiment managing a 320 mile drive from Algiers in 48 hours to join the advancing infantry in the first week of the operation.⁹⁰ However, the need to send troops to the front under their own power not only left them vulnerable to consistent Axis air attack, but caused considerable wear on vehicles and put pressure on Allied fuel stocks, which were initially distinctly limited.⁹¹ Though both of these issues would slowly be addressed by the arrival of additional convoys in December, the increased traffic and worsening weather would combine to reveal the inadequacies of the road network. As with the rail network, there were few reliable through routes, as while the main roads were metalled, many were either simple stone or dirt tracks and deteriorated under heavy use, or bogged down into mud in the torrential rains caused by the onset of winter.⁹² Indeed, such was the disruption caused by the downpour that 11th Brigade became for a period reliant on French assistance, in the form of mule trains, to ensure that rations reached men in the frontline, a measure soon adopted by First Army.⁹³

Where First Army struggled against serious shortages at the end of a perilously long and disorganised supply line, Axis forces by contrast were comparatively well served by their logistical network. The vast bulk of their shipping could take the comparatively short route from Italian ports, largely unmolested by Allied air or naval interventions, from where they could be offloaded and moved onwards from fully operational harbours.⁹⁴ Movement of troops was further

⁸⁸ Howe, p. 292.

⁸⁹ TNA: WO 204/1551, ‘Dispatches from C-in-C’.

⁹⁰ TNA: WO 201/2876, ‘1st Army; Royal Artillery Operations in Tunisia’.

⁹¹ Ibid.

⁹² TNA: WO 231/10, ‘Lessons Learned from Ops in Tunisia, Directorate of Military Training’.

⁹³ Blaxland, p. 138; TNA: WO 106/2730, ‘Tunisia; Miscellaneous Reports, Sept 1942 – May 1943’.

⁹⁴ IWM: EDS Appreciation 12, Chapter 3 & 4.

facilitated by considerable commitment of airpower, transport aircraft numbers rising in November from 205 to 673.⁹⁵ Moreover, Axis forces also had the better of the transport situation within North Africa, as not only were they operating a short distance from their ports of arrival, less than fifteen miles at its shortest point, but they also had the benefit of Tunisia's infrastructure, which was the best developed of France's North African territories. The road network featured a significant proportion of well-tarmacadamed or metalled roads, which were considerably less likely to deteriorate in wet weather, and whilst the railways were of mixed gauge and poor maintenance like those in Allied hands, the Axis possessed both more rolling stock and the changeover in Tunis itself, meaning that supplies largely did not have to be switched between lines.⁹⁶

There were of course, some misfires in Axis logistical planning, largely derived from the rushed nature of the intervention in Tunisia. One such concern was the allocation of shipping to supply and reinforcement, mirroring Allied problems, as the rapid deployment of troops into Tunisia in places began to outstrip the rate at which they could be provisioned, prompting local requisitioning and inhibiting the development of long-term stocks.⁹⁷ Moreover, as the campaign ground into December, Nehring's 90th Corps, soon to become von Arnim's 5. Panzerarmee, found itself sharing supply lines with Rommel's retreating German-Italian Panzer Army, with the resulting confusion causing concerning discrepancies in supply returns, as supplies for both now flowed into Tunisian ports, but not always in different ships.⁹⁸ At the same time, higher authorities clashed over transport control, leading to 'a protracted struggle between the German Naval High Command on the one hand and Goering and the Reich Commissioner for Shipping, Kaufmann, on the other'.⁹⁹ However, although there were invariably flaws in the Axis organisation of their logistical system for the new Tunisian bridgehead, it is evident that in this early period it was largely functional. A combination of developed internal supply lines, rapid decision-making, and the comparatively limited number of troops deployed allowed the Axis to sustain their ground forces effectively, although pressures

⁹⁵ Blaxland, p. 128.

⁹⁶ TNA: WO 175/51, '1st Army HQ War Diary Appendices'; IWM: EDS Appreciation 12, Chapter 4.

⁹⁷ IWM: EDS Appreciation 12, Chapter 4.

⁹⁸ Ibid.

⁹⁹ Ibid.

mounting at the end of the period, from Allied interdiction and generally increasing supply demands, suggested problems ahead.

Yet whilst the Axis had the better of the supply situation, the Allies did take steps to rectify their logistical deficiencies. During this phase, AFHQ implemented a number of measures which, while not instantly alleviating material shortages at the frontline, formed a base of preparatory work aimed at constructing a more functional logistical system. Perhaps the most prominent of these initiatives was the establishment of a supply chain dedicated to re-equipping French forces, as while the French garrison constituted a significant force, it stood in dire need of material assistance. According to Anderson, 'the equipment of the Army was lamentable; no anti-aircraft or anti-tank weapons, rifles and guns dating back to the period 1880-1914, no signal equipment or motor transport, no boots or proper clothing, staff not up to date, et cetera. Only in spirit was the Army formidable'.¹⁰⁰ Roosevelt's declaration of 13 November marked the first steps towards rectifying this dilapidated state, proclaiming that any French province not under Axis control was eligible for lend-lease, opening a path to the provision of American aid.¹⁰¹ This was expanded into a fully-fledged proposal for a rearmament program on 17 November, by the suggestion of General Mast, who drew up a plan for the re-equipment of eight infantry and two armoured divisions.¹⁰² Although some concerns were raised by the CCoS, these initial inroads enabled Eisenhower to request in late November the immediate provision of a token amount of anti-tank and anti-aircraft weaponry, which would have a 'tremendous moral and material effect'.¹⁰³ At the same time, he authorised the loan and transfer of equipment to French frontline forces from British and American stocks, with US troops in Morocco turning over small numbers of vehicles and weapons, including a company of 601st Tank Destroyer Battalion, to bolster French forces.¹⁰⁴ Recognition of an organised effort to begin rearming the French reached full fruition in December, with the creation of a Joint Rearmament Committee to review French requirements and construct a long-range programme building on Mast's suggestions.¹⁰⁵ In developing this initiative, AFHQ built upon the

¹⁰⁰ Anderson, p. 134.

¹⁰¹ Leighton, p. 512.

¹⁰² TNA: WO 194/584, 'Equipment for French Forces in North Africa'.

¹⁰³ Ibid.

¹⁰⁴ TNA: WO 204/1167, 'French Equipment, 1942-44'.

¹⁰⁵ Ibid.

existing Allied commitment to support French forces opposing the Axis, laying the groundwork for the revival of the French Army as a fighting force, a process which would continue throughout and beyond the Tunisian Campaign.

The full enlistment of French cooperation also presented wider opportunities for the Allied supply network, as a significant number of French merchant ships yet remained in North and West African ports. The bulk of these vessels were made available to the Allied shipping pool by French authorities, and although a large number of them needed repair before they could be utilised, this addition helped to ease the convoy shortage which had been a major concern to Allied chiefs a few months prior.¹⁰⁶ Moreover, this influx of transportation allowed Eisenhower to press for the expansion of convoys to North Africa, initially under the guise of supporting French rearmament and ensuring a flow of essential supplies to the civilian economy. In response, the navy partially relaxed convoy restrictions, allowing three French vessels to join each slow convoy, a decision that paved the way towards a later, more general alleviation of the 'convoy bottleneck'.¹⁰⁷ These initiatives to increase seaward supply provision were also matched by attempts to stimulate the flow of supplies within the theatre, many of which, though mundane, are notable for the speed of their implementation. On 18 November, a base sub-area was set up at Bone in the wake of advancing 78th Division troops and was soon accepting shipments of supplies needed to sustain Anderson's rapid dash towards Tunis. This was followed two days later by the opening of the Souk el Arba railhead which, while congested, remained a vital lifeline for First Army and enabled the accumulation of supplies needed for the Allies' final breakthrough attempt in December.¹⁰⁸ Both of these were opened within only a few days of their initial capture, demonstrating the rapidity with which AFHQ capitalised on the ability to extend their sustainment structure forwards.

Moreover, this rapid acquisition was followed by the establishment of long-term plans for the development of the surrounding infrastructure. As it was appreciated that 'the civil road organisation could [...] be of little assistance except as regards the provision of labour', much of the work was thus turned over to the

¹⁰⁶ Leighton, p. 513.

¹⁰⁷ TNA: WO 193/843, 'Operations Phase I - Part 2'.

¹⁰⁸ Playfair, p. 175.

Royal Engineers and US Army Corps of Engineers (USACE), for whom infrastructural development became a 'continuous commitment'.¹⁰⁹ Road construction was given a high priority, although a variety of other projects were also undertaken by Allied engineers, including the trial of flexible fuel pipelines, an innovation that allowed Allied forces to rapidly arrange fuel distribution direct from ports of disembarkation. Trialled in 1942 in the Shenandoah Valley, an ad hoc Pipeline Company disembarked at Oran with CTF, constructing a length of pipeline between Oran and the two airfields of La Senia and Tifariti, along with 27,500 barrels worth of storage, over the course of December.¹¹⁰ This novel experiment enabled the supply of these key airfields direct from the bulk storage in Oran and Arzew, thereby reducing their dependence on MT, a successful trial which enabled such pipelines to be rolled out more generally across North Africa, where 'its success was truly phenomenal'.¹¹¹

Other developments were also made in the area of organisation, the expansion of AFHQ's control of local infrastructure coinciding with the construction of the systems necessary to administer it. The first of these was the creation of base sections under G-4 control, beginning with Mediterranean and Atlantic Base Section at Oran and Casablanca respectively, organisations which would become a staple of Allied Mediterranean supply control. Arriving late in December with the follow-up convoys, the two base sections immediately effected an increasing degree of organisation over the arrival and movement of supplies in their immediate areas, aiding the throughput of materiel to the growing number of US troops further east and properly organising local supply dumps.¹¹² Their jurisdiction was extended on 30 December, as AFHQ centralised both sections directly under it, allocating the area west of Algiers to their control and having all supply requisitions forwarded directly to the appropriate Base Section without reference to AFHQ, thereby alleviating the pressure on AFHQ G-4.¹¹³ Closer to the front, Anderson's First Army formed an Advance Movement Headquarters on 16 December with a similar aim in

¹⁰⁹ TNA: WO 201/823, 'Lessons from Operations in North Africa'; NARA: RG 319, 'Item 6-C Logistical History of NATOUSA-MTOUSA'.

¹¹⁰ TNA: WO 272/2, 'A Review of Petroleum Supply, North African Theatre'.

¹¹¹ NARA: RG 319, 'Item 6-C Logistical History of NATOUSA-MTOUSA'.

¹¹² Ibid.

¹¹³ NARA: RG 492, 'Special Staff of the Adjutant General's Section, General Orders and Circulars, General Orders, 1942-1946'.

mind, delegating to it responsibility for all road and rail movement east of the line Philippeville-Constantine-Biskra, thus allowing First Army to exert a measure of control over traffic flowing into the combat areas beyond Anderson's own HQ.¹¹⁴ This was assisted by the intervention of CAO Humfrey Gale, whose arrival in theatre in early December was followed by aggressive intervention in resolving matters of supply. Placing a four-day moratorium on rail traffic from ports of arrival, Gale detached 200 staff officers from AFHQ and sent them forward to operational commands to oversee supply, before suspending unloading priorities for receiving units to clear the backlog still in circulation. Although this did little to help the surplus piling up on the docks, or increase rates of forward transit, Gale's speedy intervention did much to resolve the congestion in the system. In Crosswell's words 'the remedy worked; the kinks in the railroad lessened'.¹¹⁵

A more complicated topic to discuss with regard to this period is the conduct of frontline operations. While Allied forces experienced both victories and reverses, much of their frontline activity was arguably nullified by the myriad factors that worked against the fighting men, most notably the deteriorating weather and the appalling logistical situation. The difficult task assigned to First Army was clear to Allied leadership from the start, with General Anderson writing to the commander of 78th Division, Major-General Vyvyan Eveleigh, that it would require 'the maximum physical, mental and moral effort of which you and all your men are capable'.¹¹⁶ Although ultimately thwarted short of Tunis, most accounts were largely praiseworthy of the performance of Allied troops, Eisenhower writing after the war that 'troops and commander were not experienced, but the boldness, courage and stamina of General Anderson's forces could not have been exceeded by the most battle-wise veterans. Physical conditions were almost unendurable [...] In spite of all this, and in spite of Anderson's lack of strength [...] he pushed on through Souk-el-Khemis, Beja and finally reached a point from which he could look down into the outskirts of Tunis'.¹¹⁷ Nevertheless, while broader issues have done much to obviate detailed analysis of combat during this period, what is evident is that Allied troops made the best of a difficult situation, their performance in November and December

¹¹⁴ TNA: WO 175/50, '1st Army HQ War Diaries'.

¹¹⁵ Crosswell, pp. 356-57.

¹¹⁶ TNA: WO 175/52, '1st Army HQ War Diary Appendices'.

¹¹⁷ Eisenhower, p. 134.

producing both failings that needed addressing and successes that would inform Allied conduct for the rest of the campaign.

Perhaps one of the most controversial elements of the Allies' rush on Tunis is the strategy pursued by First Army's commander. In keeping with the operational plan for Torch, Anderson's initial thrust called for the 11th and 36th Brigades, his primary available force, to launch a two-pronged drive towards Tunis and Bizerte along parallel routes, supported by Blade Force, a composite armoured unit based on the 17th/21st Lancers.¹¹⁸ This multi-route approach however has garnered criticism for its dispersal of force, Rolf describing Anderson as lacking 'imagination and a ruthless determination to concentrate his limited forces'.¹¹⁹ The logic in this critique, that First Army's troops may have broken through to Tunis had they been concentrated along one route, has some merit, but fails to grasp the logic behind Anderson's strategy, which sought to secure key strongpoints, airfields, and logistical hubs in order to maintain his tenuous lines of communication back to Algiers. The early capture of Bone for example, was vital in bringing 36th Brigade into action much sooner, as it enabled the transfer of some elements of the brigade, which had landed without transport at Bougie on 11 November, 150 miles further east, thereby shortening their march to the front.¹²⁰ Similarly, the transfer of another battalion by rail from Bougie to Setif, some 150 miles from Algiers, helped secure the advancement of First Army's supply line and cleared the way for Blade Force to take the baton from them, moving 379 miles in less than four days to capture the next two key railway junctions of Constantine and Souk el Arba.¹²¹ Had Anderson not done this, he would have been denuded of the full strength of his already meagre forces, as without adequate transport links to provide mobility to both units and supplies, First Army's rate of advance could not have been maintained. As Atkinson aptly states, 'precisely what Anderson could have done otherwise, given his paltry force and stringy logistics, is debatable'.¹²²

Indeed, even with these measures it was Anderson's judgement that his advance could not be pressed further forwards, as contact with Nehring's advance

¹¹⁸ Anderson, p. 136.

¹¹⁹ Rolf, p. 41.

¹²⁰ Anderson, p. 136.

¹²¹ TNA: WO 175/179, 'Blade Force War Diaries'.

¹²² Atkinson, p. 176.

troops at Djebel Abiod and Medjez on 17-19 November prompted him to 'delay any move forward temporarily until the build-up of forces and supplies was sufficient to give it a reasonable chance in the assault on Tunis'.¹²³ This decision has been hotly contested within the campaign's historiography, but as Gelb argues, Anderson's caution was understandable, due to the small nature of his force and the unexpected presence of Axis troops, substantial numbers of which the Torch plan had assured him not to expect.¹²⁴ This brief delay allowed Anderson to re-concentrate his strung-out forces, buying time for his forward elements to rest and receive much-needed supplies whilst Blade Force assembled around Souk el Arba and 11th Brigade formed up around Beja.¹²⁵ First Army's renewed offensive on 25 November can be taken as proof of the wisdom of Anderson's decision, as in the southern sector the newly reinforced 11th Brigade, assisted by US tanks, captured Medjez and then drove up the Medjerda Valley into Tebourba, before finally being halted on 28 November outside Djedeida. Ultimately, although the exhausted First Army would be thrown back by the sudden arrival of units from 10th Panzer Division, the fact that a force of scarcely more than one understrength infantry division and one tank regiment, came within fifteen miles of seizing Tunis against unexpected resistance, suggests that Anderson's leadership was not only sound but pragmatic.

However, whilst Allied operational strategy largely demonstrated a practical understanding of means and ends, the performance of individual units on the tactical level was not so consistent. In particular, high early losses amongst First Army's vanguard forces, although vindicating of Anderson's measured approach, suggests that Allied units were neither properly equipped, nor sufficiently experienced, to overcome defending Axis forces. Indeed, a lack of effective anti-tank weapons hampered British troops in their initial engagements. Despite repeated entreaties to the War Office, infantry units were still being issued with the obsolete Boys anti-tank rifle for close-in protection against armour until January 1943, and although it would then be severely scaled back, there was as yet no approved replacement.¹²⁶ The infantry's primary anti-armour defence hence came from the heavier 6-pdr guns of the divisional anti-tank regiments, but here the shipping restrictions of Torch

¹²³ Anderson, p. 138.

¹²⁴ Gelb, p. 265.

¹²⁵ NARA: RG 319, 'Commander-in-Chief's Dispatch'.

¹²⁶ TNA: WO 201/2581, 'Mid East Command – Equipment Oct 42 – Mar 43'.

again came into play, as 78th Division's dedicated regiment, the 64th Queen's Own Royal Glasgow Yeomanry, was still in transit during the pivotal early weeks of the campaign. Denuded of this vital protection, 78th Division was hence at a substantive disadvantage in confronting the mixed infantry-armour battlegroups fielded by Nehring's 90th Corps, being forced to utilise their 25-pdr field guns in a direct fire role in order to cover this capability gap.¹²⁷ Utilising field artillery in this manner had also been common in the Western Desert and was highly effective, but it was nonetheless only a stopgap measure, which denuded Allied infantry of fire support and rendered the guns highly vulnerable to enemy action. This was demonstrated at Djebel Abiod on 17 November, as 6th Royal West Kent, backed by their supporting artillery, suffered heavy casualties in men and material, despite executing a successful ambush on the composite force Gruppe Witzig.¹²⁸

A lack of experience also contributed to the heavy attrition, as, unused to the difficult terrain and not yet 'blooded' against Axis forces, Allied soldiers made punishing tactical mistakes. A lack of reconnaissance was one such failing, as more than once, advancing Allied elements were ambushed by concealed German troops, 36th Brigade's 8th Argyll and Sutherland Highlanders, for example, suffering the loss of some 100 men and 10 carriers in an action around 'Green' and 'Bald' Hill on 28 November.¹²⁹ Though the rapid tempo of operations does offer some explanation as to why thorough reconnaissance was not always carried out, it was nevertheless a lesson learned harshly, as highlighted in 78th Division's report to the Directorate of Military Training, emphasising the need for 'constant observation through the hours of daylight along the whole front'.¹³⁰ Inexperience particularly afflicted the American component of the Allied force, for whom initial encounters with German troops consequently proved bloody affairs, as demonstrated by 1st US Armored Division's Combat Command B (CCB) at Tebourba in early December. On 3 December, seeking to retake ground from which Blade Force had been forced to retreat the previous day, light tanks of US 13th Armored Regiment launched an unsupported frontal assault on a more heavily-equipped German force and were

¹²⁷ TNA: WO 201/2876, '1st Army; RA Operations in Tunisia'.

¹²⁸ Blaxland, pp. 101-102.

¹²⁹ Howe, p. 306.

¹³⁰ TNA: WO 231/10, 'Lessons Learned from Operations in Tunisia, Directorate of Military Training'.

repulsed with severe casualties, a feat repeated later that day by a company of medium tanks.¹³¹ Although, as Playfair highlights, this action did prevent German armour enveloping Tebourba, the perceived failure of US armour was nevertheless deemed a matter of importance by Allied leadership, as on 25 December, AFHQ released a memorandum reiterating the need for all-arms cooperation as ‘except in rare cases, a tank attack should not be considered without this’.¹³²

Even when Allied troops were sure of their approach, they often suffered heavily, courtesy of the good defensive ground and poor coordination. The impact of the former, which would be a constant feature of the Tunisian Campaign, was sufficient to merit its own section in First Army’s Lessons Learnt document, as: ‘on these commanding heights a few defenders properly dispersed and dug in amongst rocks, were able to watch, hold up, and take heavy toll of much larger numbers of attackers’.¹³³ These natural defensive positions were contrasted by the open ground between them, with wide valleys and plains featuring little cover, thus exposing any attacking troops to withering fire, a disadvantage made worse by poor coordination between Allied troops. In the attack on Medjez in late November, 11th Brigade’s attacking infantry failed to secure a prominent feature that overlooked the town, having dedicated only ‘trivial’ forces to its capture, depriving their supporting artillery of observation points and causing them great difficulty in moving their guns into range.¹³⁴ Consequently, the gunners were not ready to offer support when the main assault commenced, resulting in one battalion being pinned to the riverbed of the Medjerda, from where they had to be extricated by a covering barrage.

Cooperative problems between units were exacerbated by the intermingling of troops of different nationalities, which saw friction between greatly differing doctrine and tactics. In terms of artillery, perhaps the most technically complex branch of the forces deployed, this was particularly acute, as although ‘all Regts are quite prepared to receive any waif and stray’, contrasting technical procedures sometimes frustrated attempts at teamwork.¹³⁵ Anglo-American methodological

¹³¹ Atkinson, pp. 222-23.

¹³² Playfair, p. 181; NARA: RG 338, ‘Records Relating to Lessons Learned, Memorandum on Tank Attacks 25 Dec 1942’.

¹³³ TNA: WO 231/10, ‘Lessons Learned from Operations in Tunisia, Directorate of Military Training’.

¹³⁴ TNA: WO 201/2876, ‘1st Army; RA Operations in Tunisia’.

¹³⁵ TNA: WO 175/86, ‘HQ, 5th Corps, Royal Artillery’.

differences exasperated the commander of 132nd Field Regiment at Medjez, as unobserved American fire ruined a day's gun registration by his unit by causing their target to move, prompting him to state that the Americans 'had no idea of tactical handling of their guns'.¹³⁶ Even simple miscommunications sometimes had drastic effects, as evidenced during the withdrawal towards Medjez on 10 December. Confused reports and a failure to find covering forces led the leader of CCB's vanguard to assume that the bridge they were to withdraw across was not secure, resulting in the diversion of American armour down a dirt track next to the Medjerda, where 18 tanks, 41 guns, and some 180 vehicles were mired in deep mud and consequently abandoned.¹³⁷ This was a serious loss of valuable materiel, which had to be replenished by taking equipment from units in the rearward areas, but more importantly, serves as a perfect example to underscore the dissipation of Allied strength by poor coordination. Caution against intermingling units in future campaigns was noted in Allied lessons learned documents, as whilst it was seen as reasonable to loan supplies or even companies of troops, the mixing of complete Allied formations 'as happened in Tunisia' was one to 'avoid at all costs'.¹³⁸

However, while there is much to be criticised about Allied methods and planning during this period, Anderson's offensive did also employ some innovative methods, including the utilisation of special forces units to supplement conventional ground forces. Both paratroopers and commandos were employed to secure key strongpoints ahead of First Army's vanguard, beginning with the capture of Bone on 12 November by 6 Commando and two companies of 3rd Para, which prompted a similar German force to turn back.¹³⁹ The parachutists in particular were to prove highly valuable due to their operational mobility, which was used to seize targets across the breadth of Tunisia, including a drop on Souk-el-Arba airfield, 90 miles west of Tunis, by British paratroops, as well as at Youks les Bains airfield, 200 miles south of Bone, by the 503rd US Parachute Battalion.¹⁴⁰ Besides the evident logistical advantages afforded by seizing these forward areas, the early presence of Anglo-American units also had 'a stimulating effect on the local French troops'.¹⁴¹ The

¹³⁶ TNA: WO 201/2876, '1st Army; RA Operations in Tunisia'.

¹³⁷ Coggins, p. 113.

¹³⁸ TNA: WO 204/4237, 'Tunisia, Reports on Operations'.

¹³⁹ Blaxland, p. 99.

¹⁴⁰ Craven and Cate, p. 80.

¹⁴¹ Anderson, p. 136.

503rd's landing saw them establish 'cordial relations with a French garrison at Tebessa, and that garrison thereupon promptly gave signs of their good will by arresting the Italian members of the Armistice Commission in that area'.¹⁴² More directly, special forces units engaged with Axis patrols and forward elements, hampering their mobility. At Sidi Nsir, a company from 1st Para Battalion ambushed and wiped out a scouting column of German armoured cars, whilst another paratrooper unit, in conjunction with Blade Force, overran Djedeida airfield on 25 November, destroying over 30 aircraft on the ground before fending off a German counter-thrust towards Chouigui, wrecking 15 enemy tanks.¹⁴³ These actions, beyond denuding the enemy of valuable equipment, served to constrain the range of action of Axis forces, the latter even prompting Nehring to withdraw from his most forward positions, allowing Anderson to press his advance.

Other successes came in the field of engineering as, on 26 November, 237 Field Company of the Royal Engineers made the first operational use of a Bailey bridge, repairing a span of Medjez el Bab's Roman bridge, which had been destroyed by the retreating Germans.¹⁴⁴ Developed by the Experimental Bridging Establishment, the Bailey could accommodate vehicles weighing up to 40 tons and consisted of 28 standard modular components, which were light enough to be carried by individual men and could be assembled without the use of heavy machinery, enabling the rapid bridging of obstacles of varying widths by even small detachments of engineers.¹⁴⁵ Its success at Medjez offered vindication of the design's effectiveness, with First Army going on to construct some 28 Bailey Bridges throughout the campaign, 8 of them capable of carrying 70 ton loads.¹⁴⁶ Indeed, the value of the Bailey was clearly appreciated: 'the success of the Bailey Bridge has been one of the features of the campaign'.¹⁴⁷ Bailey Bridges would soon become a ubiquitous presence across not only every theatre of war in which the Allies

¹⁴² NARA: RG 319, 'Commander-in-Chief's Dispatch'.

¹⁴³ Coggins, p. 105; TNA: WO 175/179, 'Blade Force War Diaries'.

¹⁴⁴ 'UK Military Bridging – Equipment (The Bailey Bridge)', *Think Defence* <https://www.thinkdefence.co.uk/2012/01/uk-military-bridging-equipment-the-bailey-bridge/> [accessed 21/04/2019]

¹⁴⁵ Ibid.

¹⁴⁶ TNA: WO 231/10, 'Lessons Learned from Ops in Tunisia, Directorate of Military Training'.

¹⁴⁷ Ibid.

operated, but in post-war civilian infrastructure as well, with some persisting to this day in several communities across the globe.

Alongside these new innovations the Allies also began to adapt towards the new conditions they were encountering, a process which also reaffirmed old lessons. One particular theme which emphasised both was the importance of seizing dominant terrain features, a common tactical principle that took on new importance in Tunisia's dramatic landscape. As Training Memorandum no.44 highlighted, 'experience continually emphasized the necessity of seizing key terrain features which afford effective observation. Enemy positions subjected to dominant observation rapidly became untenable.'¹⁴⁸ Such wisdom was soon heeded, as by early December, Allied positions around Tebourba were centred on the many Djebels surrounding the town. Similarly, following the retreat to Medjez, Allied commanders sought first to retake commanding positions astride the Medjerda preliminary to offensive action. This gave rise to the Christmas assaults on Longstop Hill by 1st Guards Brigade and elements of US 34th Division, which doubly illustrated this lesson, as twice Allied forces attacked to secure the high ground in front of Medjez, but found it difficult to consolidate because German forces held a second peak directly adjacent to their objective.¹⁴⁹ Although Axis counterattacks eventually forced Longstop's defenders to yield the hill, demonstrating that the Allies had yet mastered neither the terrain nor their foe, their initial success nevertheless demonstrates a greater appreciation of the tactical importance of Tunisia's topography, while showcasing some of those qualities Allied forces already possessed. Allied artillery especially was a powerful boon, even in this early phase, and Anderson's forces possessed both a quantitative and qualitative superiority. The proficiency of Allied gunners went some way towards negating the defensive advantages enjoyed by their opponents, as can be seen during 1st Guards Brigade's second assault on Longstop. Two Field Regiments and a Medium Battery carried out close proximity shoots in support of the assault with the bare minimum of gun registration, requiring very few corrections and leaving 1st Guards Brigadier Copland-Griffiths 'more than satisfied'.¹⁵⁰

¹⁴⁸ TNA: WO 204/1905, 'Lessons From Operations in Tunisia & Italy'.

¹⁴⁹ Blaxland, pp. 140-42.

¹⁵⁰ TNA: WO 175/86, 'HQ, 5th Corps, Royal Artillery'.

Another coup enjoyed by the Allies was the efficacy of their intelligence network, which, while not furnished particularly heavily by Ultra, could exploit enemy communications intercepts with reasonable regularity, resulting in consistent and accurate portraits of German forces and their dispositions. Three intercepted missives from 30 November for instance gave away Axis intentions to attack Allied positions around Tebourba, as well as the number of serviceable tanks they had available, a total of 66, including two of the new Tiger tanks.¹⁵¹ These could also be supplemented by reports from French sources, cultivated from an early date, which provided intel on the enemy's rate of reinforcement, estimated on 21 November to be at 2,000 men per day, plus two cargo ships worth of equipment.¹⁵² However, whilst such intelligence could be valuable when putting together Allied tactical plans, in the grander scheme of operations AFHQ, already operating under severe constraints, could do comparatively little to take advantage. Indeed, this could be described as the prevailing experience of Allied frontline operations during this period, as while they learned some valuable lessons, the flaws exhibited in Allied operational technique simply paled in comparison to those problems they were encountering in other aspects of the campaign.

An especially limiting factor on the Allies' operational freedom in Tunisia derived itself from interbranch cooperation, in particular the deployment of airpower, as for much of this period the skies were almost totally controlled by the Axis. This significantly impeded Anderson's offensive, which by 2 December had been 'temporarily halted owing almost entirely to heavy scale of enemy dive bombing and ground strafing'.¹⁵³ According to the commander of 132nd Field, units tried to move only by moonlight and frequently had to abandon vehicles and take cover.¹⁵⁴ This state of affairs also impinged upon Allied logistics, as the Axis' control of the air disrupted dockyard activities and made the movement of supply eastward 'almost impractical', worsening an already strained situation to which AFHQ was unable to respond in kind.¹⁵⁵ Yet AFHQ was aware of the situation, investing considerable

¹⁵¹ TNA: HW 1/1182, 'Tunisia; GAF maintaining continuous attacks on Allied armour in Tebourba-Chouigui area'.

¹⁵² TNA: WO 175/50, '1st Army HQ War Diaries'.

¹⁵³ TNA: WO 204/3970, 'Adjutant-General's Records, 1st Army, Dec 42'.

¹⁵⁴ TNA: WO 201/2876, '1st Army; RA Operations in Tunisia'.

¹⁵⁵ TNA: WO 204/4237, 'Tunisia: Reports on Operations'.

effort into analysing the root of their problems, which they began to address as 1942 came to a close.

Many of the factors which contributed to the hampering of Allied inter-service development can be traced back, once again, to failures in the planning process of Operation Torch, this time with regard to the air forces. AFHQ started poorly in this regard, as Allied planners, still operating on the false assumption that the ground campaign would not last beyond the end of December, underestimated the potential threat of Axis air assets and thereby the need for aircraft to protect Allied ground forces advancing eastwards.¹⁵⁶ This can be seen most clearly in the numerical balance of the Allied air forces deployed to North Africa, which divided responsibilities between the British and American elements of the task force. The American air component of AFHQ, 12th Air Force, comprising some 1,244 planes, were earmarked for deployment in support of US forces in Morocco and Algeria, although their specific role, beyond guarding against Spanish intervention, is unclear, as they were not expected to move eastwards until after Tunisia had been cleared, a fact Spaatz himself commented on.¹⁵⁷ The composition of 12th Air Force suggests a more long-term employment of their offensive capabilities was intended, in line with a general USAAF predisposition towards strategic bombing, as around half the force was comprised of five medium and heavy bomber groups, which could use Tunisia as a base from which to attack far-distant strategic targets and installations.¹⁵⁸ In the short term however, it was Eastern Air Command (EAC), the RAF section of AFHQ, that would be overseeing air operations to the east, a task made far more difficult by its limited size, some 454 aircraft, just over a third that afforded to 12th Air Force.¹⁵⁹ As a result of this imbalance, the Allies went into the opening stages of the Tunisian Campaign poorly prepared to prosecute the air war it found itself contesting soon after landing.

¹⁵⁶ TNA: AIR 23/6561, 'Problems connected with development of Allied air power in North African theatre'.

¹⁵⁷ Ibid; Craven and Cate, p. 54.

¹⁵⁸ Christopher Shores, and others, *A History of the Mediterranean Air War, 1940-1945, Volume Three: Tunisia and the End in Africa, November 1942 – May 1943* (London: Grub Street, 2016), pp. 31-36.

¹⁵⁹ AIR 23/6561, 'Problems connected with development of Allied air power in North African theatre'.

Certainly, this was an oversight that the Allies could ill-afford, as Axis air forces already held a number of key advantages. In the first place, Kesselring's Luftflotte 2 had already been established in the Mediterranean long before the execution of Torch and were experienced and well-acquainted with the local area, having largely been directed at neutralising the island base of Malta.¹⁶⁰ As such, while the Allies were obliged to rely initially on carrier-based planes until local airfields could be secured and thence on a steady build-up as more materiel trickled in, Axis air forces were already in a state of readiness, enabling them to claim local air superiority and launch strikes on Allied convoys and units with impunity. This was demonstrated at Bougie on 12 November, when Luftwaffe bombers struck the harbour and sank a considerable proportion of the assault ships without any intervention from Allied fighter aircraft, which had arrived that day, but remained on nearby Djidjelli airfield awaiting supply of aviation fuel.¹⁶¹ The efficacy of these attacks was further supplemented by the comparative abundance of both facilities and aircraft available to the Axis. The Luftwaffe's II. Fliegerkorps was rapidly reinforced during the first few days after Torch, drawing from forces as far afield as Norway to rise to a total of 445 aircraft by 10 November.¹⁶² Supplemented by some 370 Italian aircraft, II. Fliegerkorps disposed of a considerable force, including a number of the Focke Wulf 190, a fighter generally superior to anything the Allies possessed in North Africa.¹⁶³ These forces also operated with the advantages of interior lines, rendering their provision far harder to interdict, and the benefit of local, developed and weather-proofed airfields in Sicily, Sardinia and Tunisia itself, reducing round trip time and increasing their ease of operability.

AFHQ, by contrast, had none of these advantages, a handicap that that can best be seen in the difficulties encountered in simply attempting to build up air strength within the theatre. Although some preparation had been made at Gibraltar by the assembly of a number of aircraft for immediate dispatch after the landings, enabling EAC to become operational relatively quickly, there was no straightforward or completely safe route for the continuous provision of additional aircraft to North

¹⁶⁰ Macksey, p. 84.

¹⁶¹ Ibid, pp. 87-88.

¹⁶² Shores, p. 40.

¹⁶³ Ibid.

Africa.¹⁶⁴ Dispatched reinforcements either had to fly from England, a daunting prospect with no interim airfields between Britain and Gibraltar, and which resulted in the internment of pilots who landed in neutral Spain or Portugal, or fly from the Caribbean and then up the west coast of Africa via Dakar and Marrakech, a route opened with the compliance of French officials on 2 December.¹⁶⁵ This constricted the initial rate at which aircraft could be brought into the theatre, with only around 500 being reported in operation on 23 November.¹⁶⁶ This limitation was made worse by unexpectedly high rates of attrition, as other elements of the air force's logistical framework remained equally undeveloped. The most crucial of these centred around the inadequacy of basing in the region, firstly due to the abject lack of immediately available airfields, which instead had to be secured by advancing Allied forces, thereby impeding a swift transfer of air assets to North Africa in the days following Torch.

Moreover, this lack of prior establishment meant that there was limited access to maintenance, as many Allied squadrons flew onto bases without the ground crews necessary to sustain them. In this, the RAF possessed a small advantage, as they deployed two RAF Servicing Commandos during the initial landing, as well as another shortly after, which were intended to provide basic aircraft maintenance on forward airfields. These formations, created on the recommendation of Lord Mountbatten earlier in 1942, performed 'far more work than they were ever intended for, and at one time a Commando in the forward areas was servicing seven fighter squadrons. At times personnel worked up to 72 hours on and without rest, and under the most adverse climactic conditions'.¹⁶⁷ However, whilst these herculean efforts serve to highlight the value of the RAF commandos, they also underscore Allied failure to expedite deployment of conventional maintenance units, which, like many others, were consigned to follow-up convoys. As a result, Allied serviceability rates continued to drop throughout the period, with an average of nine Spitfires per squadron functioning at the beginning of December, whilst the nigh non-existence of Repair and Salvage units meant that there was little chance of recovering downed

¹⁶⁴ Anderson, p. 135.

¹⁶⁵ Rein, p. 101.

¹⁶⁶ TNA: WO 204/1061, 'Air Forces: Miscellaneous Directives on Liaison and Cooperation'.

¹⁶⁷ TNA: AIR 23/6563, 'Report on Air Lessons Learnt in Operation Torch'.

planes.¹⁶⁸ The dire need for replacement aircraft drew heavily on the Allies' allocated reserves, EAC having called on nearly all of its allocated replacements for December and January by 15 December and estimating that, for the next two months, it was unlikely that air units would develop 'more than 60 per cent of their operational air strength at any time'.¹⁶⁹

Difficulties in maintaining operability were further compounded by the poor state of local airfields, as well as the logistical network that served them, in many respects mirroring the problems that plagued Allied ground forces. The sheer scale of the theatre was a prime example, as although First Army's advance rendered a number of airfields available to Allied air forces, there were still only comparatively few available across Algeria, meaning that EAC and 12th Air Force were often still operating from far behind the frontline. Tebourba, one of the furthest points of the Allied advance, was 60, 120 and 140 miles from the main Allied fields at Souk el Arba, Bone, and Youks les Bains respectively, but only 20 from the Axis airfields around Tunis, thus making it far harder for Allied aircraft to remain in the combat zone for extended periods compared to their Axis counterparts.¹⁷⁰ Though there were some closer installations, the occupation of these fields was made untenable by enemy air attack, an attempt to occupy Medjez el Bab's airfield by six Spitfires on 5 December being greeted by an Axis air patrol, which shot two down, obliging the others to abandon the field the next day.¹⁷¹ Alongside the challenge of distance, the level of development of airfields also proved a diminishing factor, as scant few were proofed against the conditions imposed by the worsening winter weather. Mud hampered the operation of aircraft just as much as it did ground operations, making landings hazardous and entirely paralysing the functions of some airfields, including the field closest to the front at Souk el Arba.¹⁷² The consequent constriction of serviceable landing grounds further reduced Allied sortie capacity, but the need to continue operating as many aircraft as possible resulted in the over-saturation and congestion of those airfields which remained serviceable. Bone for example, was burdened with an 'unprecedented amount of aircraft', a problem made worse still by

¹⁶⁸ Playfair, p. 177.

¹⁶⁹ TNA: WO 175/50, '1st Army HQ War Diaries'.

¹⁷⁰ Playfair, pp. 177-78.

¹⁷¹ Shores, pp. 180-81.

¹⁷² Blaxland, p. 107.

the continual redeployment of 12th Air Force squadrons into the Tunisian combat zone to assist the beleaguered EAC.¹⁷³ These crowded installations presented ample targets for enemy air attack, an attack on Maison Blanche airfield on 20 November costing the Allies 10 aircraft, a feat repeated at Bone the next day and Souk el Arba the day after.¹⁷⁴ Moreover, the crowding also had a severe impact on the effectiveness of the units operating from these bases, as ‘the lack of adequate housing accommodation, and the difficulty of maintaining adequate supplies, all tend to lower efficiency and consequently scale of air operational effort’.¹⁷⁵

Overcrowding was however just one aspect of a myriad of logistical issues which undermined the air effort. Further planning failures resulted in the maintenance needs of Allied air units being miscalculated, leading to the dispatch of extraneous stores, which not only took up valuable shipping space, but inundated the already-swamped docks with ‘equipment that would not be needed for many weeks [...] forward units in urgent need of aircraft spares were receiving large supplies of tropical clothing that would not be necessary for 6/7 months’.¹⁷⁶ Nor was it only vital aircraft parts that units stood in need of, as ammunition and even fuel were also distinctly limited, a missive from 12 November indicating that of 500 tons of aviation spirit allotted to Torch, a maximum of 200 was remaining for offensive action and was not likely to be restocked until the arrival of the next convoy late in November.¹⁷⁷ Even had there been ample supplies there was no guarantee that these would reach airfields either, as the system of distribution was thoroughly disorganised. Although in part due to the logistical chaos that afflicted the entirety of the Allied force in North Africa, air units stood in particularly poor stead as they were reliant on the army’s supply system. This arrangement had distinctly mixed results, the negative side being highlighted in a report on air lessons from Torch, which stated: ‘the Army undertook to supply airfields with petrol and ammunition as a matter of high priority. This task they completely failed to carry out in the early stages. But for the fact that the Servicing Commandos went down to the docks and

¹⁷³ TNA: AIR 23/6561, ‘Problems connected with development of Allied airpower in North African Theatre’.

¹⁷⁴ Rein, p. 102; TNA: WO 193/842, ‘Operations: Phase I’.

¹⁷⁵ TNA: AIR 23/6561, ‘Problems connected with development of Allied airpower in North African Theatre’.

¹⁷⁶ TNA: AIR 23/6563, ‘Report on Air Lessons Learnt in Operation Torch’.

¹⁷⁷ TNA: WO 204/1060, ‘Air Intelligence’.

loaded lorries with petrol, we should not have been able to put any fighter aircraft into the air until many days after D.day'.¹⁷⁸ The army also came up short in its provision of anti-aircraft batteries for the defence of airfields, as although EAC could call on the services of the nascent RAF Regiment to provide some level of protection to their bases, they were not initially heavily equipped enough to take on these duties on their own.¹⁷⁹ Army anti-aircraft units of both nations were frequently rotated through Allied airbases, sometimes within a matter of hours, and were often not specialised in airfield defence, deficiencies which left these bases poorly defended.¹⁸⁰

Equipment deficiencies also accounted for a loss of air effectiveness. Perhaps the most pronounced of these was the weakness of Allied air detection hardware, which made the operation of effective fighter control and early warning systems considerably more difficult. The scale and dramatic nature of the terrain interfered with the establishment of continuous RDF (Range and Direction Finding) coverage, making it difficult to locate appropriate sites to establish radar stations, a substantive network of which would be required in order to give reliable warning of attack.¹⁸¹ Although to some extent the need for large-scale installations was mitigated by the deployment of more portable Light Warning and Ground Control Intercept (GCI) sets, these did not provide the same level of data that a larger station could; GCI sets for instance could only focus on one aircraft at a time, leading to a situation at Algiers on 25 December where while GCI was 'looking at one enemy aircraft, more than 40 others slipped in undetected and attacked the town'.¹⁸² GCI was in fact meant to be utilised for the ground control of fighters, particularly at night, where it would be twinned with fighter-mounted Airborne Interception Radar, but none of the latter equipment was initially available, as the two squadrons of Bristol Beaufighters, large multi-role aircraft well-suited for night fighting, available to EAC had been stripped of their radars prior to deployment for reasons of security.¹⁸³ Alongside this deficiency in night fighters, EAC also lacked adequate day bombers and close support aircraft, as their primary bomber, the Bisley, a variant of the Bristol

¹⁷⁸ TNA: AIR 23/6563, 'Reports on Air Lessons Learnt in Operation Torch'.

¹⁷⁹ Playfair, p. 144.

¹⁸⁰ TNA: AIR 23/6563, 'Reports on Air Lessons Learnt in Operation Torch'.

¹⁸¹ Ibid.

¹⁸² Ibid.

¹⁸³ TNA: WO 193/583, 'Supplies and Equipment for North Africa'.

Blenheim, very rapidly proved unsuitable for daylight operations, due to its vulnerability to interception.¹⁸⁴ This was amply proven on 4 December when No. 18 Squadron was attacked and destroyed whilst attempting to bomb an airfield in the vicinity of Chouigui, losing nine Bisleys, in ‘a disaster so complete that from then on our crews were firmly committed to a policy of night bombing’.¹⁸⁵ With their consignment to night-only operations however, EAC’s available pool of support aircraft for daytime operations shrank even further, leaving only four Spitfire fighter squadrons and two fighter-bomber squadrons, equipped largely with Hurricane bombers.¹⁸⁶

It would be wrong, however, to attribute Allied difficulties in the air solely to issues of logistics and equipment, as there is ample evidence to demonstrate that Allied air forces suffered from deficient command and control mechanisms. The most blatant of these problems was the lack of unified command linking General James Doolittle’s 12th Air Force and Air Marshal William Welsh’s EAC, which resulted in duplicated effort and a dearth of effective coordination. The tortuous process needed for units to secure air support from the opposite nation exemplifies these issues, as in order for First Army troops to receive support from 12th Air Force, requests ‘had to go through the chain of command to Headquarters ETF, then to Welsh who commanded EAC, to the Twelfth Air Force and then to XII Bomber Command’.¹⁸⁷ This was a problem worsened by the physical separation between not only the two forces, but the ground and naval forces they were meant to support. Doolittle, whilst remaining in Algiers, maintained a separate headquarters from both AFHQ and Admiral Cunningham’s naval command, whereas Welsh operated initially from nearby Maison Carrée and then moved further into the field with Anderson.¹⁸⁸ Poor communication made harmonising objectives an arduous task, prompting Air Chief Marshal Tedder, Head of RAF Middle East Command, to comment that ‘any reality of combined H.Q. is gone [...] the U.S. air is running a separate war.’¹⁸⁹ Tedder’s statement was not inaccurate, although perhaps mildly

¹⁸⁴ Gladman, *Intelligence and Anglo-American Air Support*, pp. 142-43.

¹⁸⁵ Denis Richards and Hilary St. George Saunders, *The Royal Air Force 1939-1945, Vol. 2: The Fight Avails* (London: HMSO, 1954), pp 256-57.

¹⁸⁶ TNA: AIR 23/6563, ‘Reports on Air Lessons Learnt in Operation Torch’.

¹⁸⁷ Gladman, *Intelligence and Anglo-American Air Support*, p. 139.

¹⁸⁸ Craven and Cate, p. 107.

¹⁸⁹ TNA: AIR 41/50, ‘The Middle East Campaigns; Vol IV Operations in Libya, the Western Desert and Tunisia July 1942 - May 1943’.

misleading, as throughout the period there existed a reasonable, but not rigid division of labour between EAC and 12th Air Force, the former dedicated more to close air support whilst the latter focused on tactical bombing.¹⁹⁰ The extent to which this segregation was effective is questionable however, as in spite of an increasing weight of US bombers, RAF observers considered the impact of Allied tactical bombing to be comparatively slight, as it was ‘entirely un-coordinated with our other air activity’.¹⁹¹ Indeed, this seems to have been the prevailing opinion amongst Allied air commanders too, as in December they switched the targets of 12th Air Force’s Heavy Bomb Groups to focus more on operational targets, attacking Axis harbours and the shipping therein.¹⁹²

Allied failure to develop an effective air command was further exacerbated by adherence to outdated doctrine, a failure creditable, according to the RAF historical narrative, to the ‘astonishing fact that an operation of the magnitude and importance of ‘Torch’ had been launched without significant use being made of the wealth of operational experience that had been amassed in the Middle East throughout the previous eighteen months’.¹⁹³ British forces at home, as James Hudson relates, still broadly adhered to a pre-war air doctrine that placed emphasis on offensive action and strategic bombardment, as did their American allies, and although Churchill had pressed for the adoption of the ‘Libyan model’ of tactical air support in October, there was too little time to implement it.¹⁹⁴ As such, instead of the flexible and effective methodology developed in the Western Desert since 1941, Allied air forces came into Tunisia equipped largely with doctrine that viewed airpower through a binary lens; air forces were to establish a measure of air control in order to protect ground forces, whilst also presenting a strategic threat. This narrow conception of air operations left little room for the tactical development of airpower, by either tethering air units to the control of ground forces, or by

¹⁹⁰ Alan Levine, *The War Against Rommel’s Supply Lines, 1942-43* (Mechanicsburg, PA: Stackpole, 2008), pp. 99-100.

¹⁹¹ TNA: AIR 23/6563, ‘Reports on Air Lessons Learnt in Operation Torch’.

¹⁹² Levine, pp. 99-100.

¹⁹³ TNA: AIR 41/50, ‘The Middle East Campaigns; Vol IV’.

¹⁹⁴ James Hudson, ‘Coalition Air-Land Doctrine in the North African Campaign’ in *Allied Fighting Effectiveness in North Africa and Italy, 1942-1945*, ed. by Andrew Hargreaves, Patrick Rose, and Matthew Ford (Leiden: Brill, 2014), pp. 13-30 (pp. 16-19).

encouraging them to operate in isolation, independently striking strategic targets far behind the frontline uncoordinated with other services.¹⁹⁵

In EAC's case, having many of its units virtually subordinated to First Army squandered its striking power, as the limited understanding of army officers with regards to air operations led to the unprofitable employment of their air support.¹⁹⁶ One such misjudged method was the employment of 'air umbrellas' and fighter sweeps, techniques experimented with previously in the Western Desert, utilising fighters on extended patrols over the frontline to deter or intercept enemy attack craft in protection of the ground forces.¹⁹⁷ These were proven ineffective again in Tunisia, where their instatement did little to dissuade Luftwaffe dive bombers, whilst simultaneously frittering away fuel and fighters which the Allies could ill afford to spare.¹⁹⁸ USAAF doctrine often proved equally faulty, a lack of articulation on escort missions leading P-38 Lightning fighters to be deployed prohibitively close to bomber formations, nullifying their advantage of speed and manoeuvrability, whilst an inability to settle on fighter tactics also diminished their ability to claim air superiority.¹⁹⁹ The rendering of close air support to frontline troops was, if anything, even less effective, as army/air coordination remained distinctly poor, due to a lack of formalised doctrine and general inexperience. An Army Air Support Command with nine 'tentacles', each at battalion or brigade level, processed air support requests and forwarded them to airfields, but direct communication issues meant that requests which could not be met by the RAF group in the forward area had to be sent to AFHQ, where they would be considered by a committee, thus completely sacrificing the flexibility and responsiveness of the air support system.²⁰⁰ Methods for target designation were equally crude, the use of a 'bomblines' defined by a landmark to protect friendly troops proving less than satisfactory given the sparseness of the Tunisian terrain and the inexperience of Allied pilots, who had neither trained for close air support nor operated in such climates.²⁰¹

¹⁹⁵ Gladman, *Intelligence and Anglo-American Air Support*, pp. 137-38.

¹⁹⁶ TNA: AIR 41/50, 'The Middle East Campaigns; Vol IV'.

¹⁹⁷ Playfair, pp. 182-83.

¹⁹⁸ Gladman, *Intelligence and Anglo-American Air Support*, pp. 141-42.

¹⁹⁹ Ibid, pp. 97-98.

²⁰⁰ Ibid, pp.136-37.

²⁰¹ Rein, pp. 110-11.

Nor were air-naval relations much better, as the lack of provision for coastal operations directly undermined attempts at strangling the Axis' Tunisian supply line. This can be seen in the disparity between Axis shipping losses en route to Rommel in Libya and to the bridgehead in Tunisia, as while the former suffered some 26 percent attrition from Allied interdiction during November, those into Tunisia suffered no loss at all.²⁰² This was due to the absence of a dedicated command structure to organise coastal operations, as well as the insufficient number of aircraft available, which were the only means of striking Axis convoys to Tunisia due to large scale anti-submarine patrols and the presence of an extensive minefield running from Bizerte to the Skerki Bank and across the Strait of Sicily.²⁰³ Though in this regard Malta was capable of offering some assistance to Allied interdiction efforts, the island's forces initially remained focused on disrupting Rommel's Libyan supply line and supplies of aviation spirit for offensive action were rationed.²⁰⁴ AFHQ did however make attempts to improve their efforts against Axis shipping, leading to steadily increasing interdiction rates. The key factor in this was the increasing number of aircraft available for coastal operations, part of a general reinforcement in aircraft during December that drastically improved the overall air situation. Malta was the prime recipient of these, receiving an additional 62 aircraft to reinforce the 108 it already possessed, including photo-reconnaissance Mosquito IIs, multi-role Beaufighters, and Albacore and Wellington bombers, giving the island a considerable boost in strike potential.²⁰⁵ The arrival of the 'Stoneage' convoy in Late November also provided the fuel and supplies necessary to utilise these new aircraft, a task which Malta Command undertook with vigour, launching 545 sorties over the course of December compared to 188 for November, many of them now aimed at convoys destined for Tunisia.²⁰⁶ Malta's resupply, along with the improvement of fighter cover over the Allies' forward ports, also gave the Allies the opportunity to increase naval activity, not only via increasing submarine numbers but through the deployment of Forces 'K' and 'Q', primarily comprised of cruisers, to Malta and Bone respectively, from where they could be guided by reconnaissance aircraft in

²⁰² Playfair, p. 210.

²⁰³ Levine, pp. 86-87.

²⁰⁴ TNA: WO 193/842, 'North Africa: Operations Phase I'.

²⁰⁵ Playfair, pp. 204-205.

²⁰⁶ TNA: ADM 219/172, 'Anti-shipping operations in the Mediterranean by Land based aircraft during the Tunisian Campaign'.

attacks on Axis shipping.²⁰⁷ The establishment of this air/naval cooperation paid immediate dividends, Force Q engaging an Axis convoy on the night of 1/2 December with the guidance of Allied aviation, sinking four transport vessels and an Italian destroyer.²⁰⁸ Interdiction of Axis supplies steadily increased throughout December, reaching 23% of all dispatched cargo and beginning the throttling of the bridgehead's supplies that AFHQ had hoped for.²⁰⁹

The arrival of additional air reinforcements went some way towards improving affairs on the ground in North Africa as well, as though a moratorium was placed on moving additional squadrons into the forward areas, a build-up of reinforcements and support craft could still be effected on those airfields behind the frontlines.²¹⁰ Night fighters in particular were swiftly prioritised, resulting in the immediate loan of six radar-equipped Beaufighters from Middle East Command, the dispatch of more than 50 Air Interception radars and GCI sets, and the preparation of another 12 Beaufighters in Britain, with promise of more if needed.²¹¹ These began to tip the scales of the night-time air battle back in favour of the Allies, whilst the deployment of additional bombers to both the USAAF and EAC gave extra potency to the Allies' own strike potential.²¹² Two squadrons of Wellingtons and an additional Bomb Group's worth each of B-17s, B-25s, and A-20 Havocs augmented the Allied tactical bombing force, which began to strike Axis airfields and ports by day and night on a continually increasing scale, hampered only by the poor flying conditions generated by the local weather.²¹³ The impact of these further contributed to the gradual erosion of Axis logistical stability; a single raid by 18 B-17s on 25/26 December dropped 84,000lbs of bombs on the docks at Sfax in southern Tunisia, destroying two large transport ships and damaging others, a feat repeated at Sousse on 27 December.²¹⁴ 9th Air Force, operating with Middle-East Command, also lent their assistance to disrupting the Axis effort, launching strikes on Naples that

²⁰⁷ Jack Greene and Alessandro Massignani, *The Naval War in the Mediterranean, 1940-1943* (London: Chatham, 1998), p. 279.

²⁰⁸ Levine, p. 88.

²⁰⁹ Playfair, p. 210.

²¹⁰ TNA: AIR 23/6561, 'Problems connected with development of Allied airpower in North African Theatre'.

²¹¹ TNA: WO 193/583, 'Supplies and Equipment for North Africa'; TNA: WO 204/1064, 'Air Reinforcements, Dec 42-45'.

²¹² Playfair, pp. 177-79.

²¹³ Shores, pp. 161-62.

²¹⁴ TNA: WO 175/50, '1st Army HQ War Diaries'.

prompted the Regia Marina to move its capital ships north, reducing their threat to Allied naval forces, before turning their attention to Axis ports in Southern Tunisia.²¹⁵

An improving relationship with other branches of service also aided the air situation, as cooperation on logistical matters with the army was substantively overhauled. Supply provision was made good by the end of the drive on Tunis, such that a previously damning report declared that ‘no one can speak too highly of the assistance they have received from the Army’.²¹⁶ Logistical difficulties were further offset by the employment of short-term measures, namely the deployment of C-47 Skytrain transport aircraft, to ferry stocks of aviation fuel and ammunition to forward airfields. Although these supply runs had to be halted in December, as ‘the employment of such aircraft involves the use of much airfield space, great quantities of gasoline, and the labour of many men’, this temporary intervention helped to ensure the continued function of these vital forward installations, thereby propping up the Allies’ ailing air effort.²¹⁷ A more long-term strategy was the siting and construction of new airfields, which helped address the crowding on the Allies’ few operational airbases. Despite operational difficulties, notably the need to bring forward runway planking along the already congested railway network and the glutinous mud which subsumed the planking once laid, a number of serviceable airfields were constructed during this period, especially in the drier south of the country.²¹⁸ Although initially undertaken in service of short term operational expediency, this scheme was expanded on 28 December into a broader policy, aiming over the following months to build up sufficient infrastructure to support a greatly expanded and operationally diverse Allied air effort, which would in turn aid Allied ground forces in throttling the Tunisian bridgehead.²¹⁹

Yet while AFHQ predominantly concerned itself with addressing pressing operational issues during this period, there was also a recognition of the need for deeper and more thoroughgoing structural and doctrinal change. To this end, AFHQ reached out to Middle East Command and the Western Desert Air Force (WDAF),

²¹⁵ Levine, pp. 102-103.

²¹⁶ TNA: AIR 23/6563, ‘Reports on Air Lessons Learnt in Operation Torch’.

²¹⁷ TNA: AIR 23/6561, ‘Problems Connected with Development of Allied Airpower in NA theatre’.

²¹⁸ TNA: AIR 23/6563, ‘Reports on Air Lessons Learnt in Operation Torch’.

²¹⁹ TNA: WO 204/1059, ‘Airfield Construction 1942-45’.

who had articulated their own approach to air operations, based on their wealth of experience fighting in North Africa. Air Marshal Tedder visited AFHQ in late November in order to consult with Eisenhower on the command arrangements for AFHQ's air forces, thereby opening the door for further cooperation, with the dispatch of two Staff Officers to AFHQ from Tedder's command.²²⁰ These were followed by visits from other senior officers such as Air Vice Marshal Arthur Coningham, whilst tactical memoranda from Middle East Command began to be circulated to AFHQ on a regular basis.²²¹ These were also accompanied by some small internal reforms, largely in EAC, where Welsh, in concert with Anderson, agreed on 12 December to centralise most of the aircraft on forward bases under Air Commodore Lawson, commander of 242 Group, who would cooperate with 5th Corps under Allfrey from the same HQ.²²² This offered the prospect of increased air/ground cooperation by centralising forward elements under subordinates who could more easily coordinate with each other. Spaatz also made adjustments within 12th Air Force, splitting the command into geographically coherent sections, with XII Bomber Command and XII Fighter Command becoming the primary USAAF arms engaged in Tunisia, whilst a series of Composite Wings took over duties in those areas to the rear of AFHQ, thus relieving his subordinates of managing forces hundreds of miles apart.²²³

The issue of unified control of air operations still lingered, however. Though ad hoc measures in the direction of air forces were regarded as a reasonable expedient 'owing to the whole-hearted co-operation of the two Air commanders', it was still only a temporary solution, and by the end of November Allied reports stated: 'the need for unified command of all air forces in the theatre to ensure economical and co-ordinated efforts is clear'.²²⁴ Tedder was initially tapped to assume control of Tunisian air efforts following his visits in late November, conversations with Charles Portal, the Chief of Air Staff, leading to the latter asking if Tedder would take his Advanced HQ to Algiers immediately, and assume

²²⁰ TNA: WO 193/842, 'Operations Phase I'.

²²¹ TNA: WO 193/843, 'Operations Phase I: Part II'; TNA: AIR 23/6214, 'RAF Western Desert Tactical Memoranda'.

²²² TNA: WO 175/50, '1st Army HQ War Diaries'.

²²³ Levine, p. 100.

²²⁴ TNA: AIR 23/6561, 'Problems Connected with Development of Allied Airpower in NA theatre'.

command of all Mediterranean air forces.²²⁵ A draft plan in this vein was sent to AFHQ at the start of December, which would have placed British and American air forces under Tedder's overall command, in a manner similar to that prevailing in the Western Desert, but Eisenhower rejected its implementation, stating that his 'problem is immediate and critical and is not to be confused nor its solution postponed by deliberate study of an overall system of air command.'²²⁶ Eisenhower's interim solution was to appoint Spaatz as his deputy in control of air operations on 5 December, thereby offering some measure of unity of command, although this would never be fully satisfactory.²²⁷ Instead, it highlights an overall trend in Allied decision-making during this period, tackling more immediate operational issues in pursuit of short-term objectives, but at the expense of confronting broader structural inadequacies within their overall system of command.

If the success of Operation Torch can be viewed as a vindication of the Allies' bold new combined organisation and demonstrative of lessons already learned thus far in the Second World War, the weeks following and the offensive towards Tunis and Bizerte serve to highlight that there was still much to learn. Chief amongst these lessons was the need for more adequate planning, as overconfidence and a failure to prepare for contingencies, led to disorganisation when the assumptions underpinning the Torch plan ultimately proved faulty. The resultant drive on Tunis was thus an ad hoc offensive, the stresses of which helped to expose the underlying weaknesses of Allied organisation for the campaign, as though nearly successful and validating of some new innovations, the eventual failure of the attempt to drive the Axis from their newly established bridgehead in Tunisia can as much be attributed to poor Allied organisation as it can to tenacious defence by Axis forces. AFHQ's forces were poorly coordinated, with command divides cutting across both nationalities and branches of service, leading to the prosecution of a disjointed campaign further hampered by inexperience and astounding logistical difficulties, deriving from both their theatre of operations and inadequate arrangements for supply. All of these stood in sharp contrast to their Axis opponents, who not only demonstrated their proficiency in ad hoc operations, but benefitted

²²⁵ Vincent Orange, *Tedder: Quietly in Command* (London: Frank Cass, 2004), p. 195.

²²⁶ TNA: WO 193/843, 'Operations Phase I: Part II'.

²²⁷ *Ibid.*

from interior lines and the strategic defensive, enabling them to quickly shore up a bridgehead against the Allies' meagre advance forces.

Moreover, while it is evident that the forces under AFHQ made an active and even energetic effort to overcome those shortcomings and challenges they faced, many of these solutions were however merely short-term stopgaps, improvised by local commands on an ad-hoc basis in response to a pressing operational concern. Broader and more systemic issues were noted by Allied commanders but not acted upon, such as Eisenhower's deferral of broad restructuring of Allied air forces, which deliberately halted the learning process in order to concentrate available resources on the prosecution of the campaign.²²⁸ As such, during this period Allied learning predominantly remained confined to the acquisition of experience, and the development of grassroots, short-term responses to immediate and practical problems. AFHQ, preoccupied largely with the immediate task of securing Tunisia and evicting Axis forces, possessed neither the attention nor the material needed to direct centralised, structural reform. What lasting developments arose from the winter months of the Tunisian Campaign were therefore largely borne from external developments, such as the expansion of civilian infrastructure at AFHQ, and the employment of the first Bailey Bridges, as the CCoS and other Allied organisations outside the theatre proffered their assistance in support of the forces in North Africa. Only once it became clear that the Allies would be unable to capture Tunis during 1942 did AFHQ's priorities begin to change, Eisenhower commenting on this short-term policy by stating:

'I think the best way to describe our operations to date [...] is that they have violated every recognized principle of war, are in conflict with all operational and logistic methods laid down in textbooks, and will be condemned in their entirety by all Leavenworth and War College classes for the next twenty-five years'.²²⁹

These failures did, however, have a silver lining: over the following months of campaigning, Allied forces would not only recover from these painful mistakes, but begin to learn and develop from them in earnest.

²²⁸ TNA: WO 193/843, 'Operations Phase I: Part II'.

²²⁹ Howe, p. 330.

Chapter Three

Sparring Along the Dorsales, 1 January - 24 February 1943

In the wake of the failure of the Allied drive on Tunis, both sides were effectively spent by the beginning of 1943. 'Forced to bow to *force majeure*', and more practically impeded by the glutinous mud of northern Tunisia, Allied commanders and their Axis counterparts now sought to build up and consolidate their positions prior to launching further operations.¹ This did not mean idleness however, as while Eisenhower had accepted the necessity of postponing operations in the north, the Allied right flank, extending into southern Tunisia, offered ample opportunity for manoeuvre. His intention to turn operations southwards was highlighted in a missive to the CCoS on 29 December, stating that 'unless we take positive measures to interfere with and upset the enemy, opportunity will be afforded him to strengthen his bridgehead [...] Our aim is, therefore, to undertake movements that will provide aggressive protection to our right [...] and so place us in the best possible position for the final conquest of Tunisia.'² This intention manifested in the form of Operation Satan, a plan which called for a task force, primarily comprised of elements of US II Corps, to launch a strike towards the vital ports of Sousse, Sfax or Gabes in central and southern Tunisia.³ This would not only deny vital supply infrastructure to the Axis, but also cut their line of communications between Tunis and Tripoli, thus preventing Rommel's retreating German-Italian Panzerarmee from linking up with von Arnim's 5. Panzerarmee.

However, before AFHQ could execute this plan, the Axis took the initiative, von Arnim's forces launching a series of offensive operations throughout the month of January in the central front between the Dorsale mountains, aimed at securing defensive positions on the routes leading into Tunisia's coastal plain. Beginning on 3 January with an attack on Fondouk, Arnim followed up with Operation Eilbote on 18 January, securing Ousseltia and Robaa, with a final attack on 30 January seizing the Faïd pass.⁴ These also bought time for Rommel to retreat into Tunisia, offering the

¹ Atkinson, p. 262.

² TNA: WO 193/843, 'Operations Phase I: Part II'.

³ TNA: WO 204/1391, 'Operation Satan; Planning Papers'.

⁴ IWM: EDS Appreciation 12, Ch.5.

Axis a short window in which their new windfall of troops could be brought to bear on AFHQ's overstretched front before the British 8th Army arrived from Libya, having captured Tripoli on 23 January. Seeking to exploit this opportunity and drive a wedge between the two Allied armies, Rommel and von Arnim launched an offensive against the south of the Allied line, which would become known as the Battle of Kasserine Pass. Beginning on 14 February, Axis forces first drove elements of US II Corps out of the town of Sidi Bou Zid, encircling large numbers of them before capturing Sbeitla on 17 Feb, a pivotal road junction between the western and eastern Dorsales. From there a thrust, either towards Sbiba, or through the Kasserine Pass, offered the chance of capturing Tebessa, US II Corps' forward supply base, and threatening the entire flank of the Allied line. Rommel attempted both of these, 21st Panzer Division striking towards Sbiba, whilst a composite Afrika Korps force broke through the Kasserine Pass. Although the latter attack did make some headway, both prongs of the offensive were eventually halted by tenacious Allied resistance, and on 24 February, in the face of imminent counterattack, Rommel was obliged to call off the offensive and withdraw.

The conclusion of the battle of Kasserine Pass 'marked the end of a phase of the campaign,' which has otherwise largely been perceived as a lull in the tempo of operations in Tunisia, broken by the Axis' sudden offensive action.⁵ Perhaps the chief reason for this is the enduring impact of the psychological trauma inflicted upon US forces by the experience of Kasserine, Eisenhower's naval aide Harry Butcher stating that 'the proud and cocky Americans today stand humiliated by one of the greatest defeats in our history'.⁶ This has done much to shape the historiography of the Tunisian Campaign as a whole, as the portrayal of Kasserine as a pivotal battle, 'which critically endangered the whole Allied line', in both first-hand accounts and subsequent media, has drawn a disproportionate amount of focus due to its strong command over the public imagination.⁷ Despite pronounced divides within the historiography, which have alternately argued that Allied forces were brought to the brink of disaster only for the Axis to lose their nerve, or that the Allies fought the Axis to a standstill, many of these depictions share clear commonalities. In both literary strands, Kasserine Pass is positioned as the pivotal point at which

⁵ Eisenhower, p. 164.

⁶ Harry C. Butcher, *Three Years with Eisenhower* (London: William Heinemann, 1946), p. 231.

⁷ TNA: WO 204/5430, 'Lessons of the Tunisian Campaign, Newspaper Cuttings', 1943.

Axis fortunes began to wane, as although the Allies suffered a defeat, it was not ultimately catastrophic, allowing them to learn from their mistakes and bounce back stronger than before.⁸

Yet this overt focus on Kasserine as a catalyst for reform has served to push the operations preceding the battle further into the backdrop, a process that has been mirrored on the strategic level by a scholarly emphasis on January 1943's Casablanca Conference as a key driver of change.⁹ The result of these two foci is that the first two months of 1943 are often portrayed as a period of relative calm, interleaving these more notable events. This perception was not however shared by Allied commanders, Kenneth Anderson describing the phase as an operationally challenging one, as 'both sides were building up their forces and attempting to hold on to or seize ground important for the future, while we also struggled incessantly to improve our long communications'.¹⁰ Indeed, as this chapter will demonstrate, the early weeks of 1943 were full of activity on both sides, as despite the lack of large-scale operations until the opening of the Kasserine offensive, both AFHQ and its Axis counterparts were otherwise occupied in dealing with issues spanning the entire North African war effort, while simultaneously engaging their opponents in constant, low-intensity combat along the breadth of the frontline. For AFHQ, this meant embracing a learning culture at the core of their organisation in order to grapple with those challenges ignored during the rush on Tunis, while also addressing new problems that arose as the fighting escalated. Although the Casablanca Conference and the galvanising effect of Kasserine both contributed to the reform of Allied efforts from an external and grassroots perspective, this chapter will also show that AFHQ had a far greater hand in those advancements than has previously been appreciated. Even prior to the crucible of Kasserine, what can be seen developing in AFHQ were the foundational elements of a more properly united and directed war effort, as the Allied command now strove to replace those ad hoc improvisations upon which they had initially relied with more permanent solutions, while out in the field, frontline formations began to adapt to local conditions and gain experience in combat.

⁸ Ward Rutherford, *Kasserine: Baptism of Fire* (London: Macdonald and Co., 1971), p.156; Steven J Zaloga, *Kasserine Pass 1943: Rommel's Last Victory* (Oxford: Osprey, 2005), p. 90.

⁹ Jones, p. 40.

¹⁰ Anderson, p. 132.

Reforms made to Allied command structures formed one such part of this solid base, as during this period, AFHQ made a series of attempts to improve the coordination and control of its forces, setting foundations for future refinement. There were however a number of operational barriers still standing in the way of AFHQ's attempts at reform. The failure of the Allied offensive in December worried some of the CCoS, who expressed concern that the initiative had passed to Axis forces, whose interior lines of supply would allow them to build up faster than AFHQ could match. As such, AFHQ was placed under continual pressure to maintain the tempo of operations against 5. Panzerarmee in order to disrupt such a strike, primarily by concentrating fresh troops in the north opposite the capital, but the continued poor weather of northern Tunisia and the weary state of Anderson's First Army precluded the recommencement of the offensive towards Tunis.¹¹ The need to take decisive action was thus the impetus behind the planning of Operation Satan and the movement of the bulk of II US Corps into the area around Tebessa, where it would be poised to take action against the Axis' southern flank and likewise thwart any attempt to outflank the Allied line in return.¹² At the same time, First Army and the forces of General Juin were ordered to 'look for and seize every opportunity to undertake carefully prepared attacks with limited objectives' and to take advantage of any weakening of the enemy line in the north.¹³ Although likely the most sensible course of action that Eisenhower could have sanctioned at that point, shoring up the Allies' strategic position whilst continuing to threaten the Tunisian bridgehead, it was nevertheless one that further exacerbated some of the problems unearthed by the rush on Tunis.

Perhaps the most clearly visible of these was the dispersion of Allied combat strength over a widening area. First Army's initial push into Tunisia during December had spread Allied forces thinly, along a front stretching from Cap Serrat and Sedjenane, on the northern coast, to the Goubellat plain south of Medjez El Bab, some 70 miles as the crow flies, but more than doubled by road. This distance was only multiplied by the deployment of US II Corps into Southern Tunisia, with advanced units positioned as far south as Gafsa and El Guettar, a point near

¹¹ TNA: WO 204/1391, 'Operation Satan: Planning Papers'.

¹² TNA: WO 204/1191, 'Daily Operational Meetings, Dec 42 - May 43'.

¹³ TNA: WO 204/1391, 'Operation Satan: Planning Papers'.

equidistant to the border of Libya as to Tunisia's northern coast.¹⁴ While this movement ensured the security of the Allied flank, placing most major passages between the eastern and western Dorsale mountains in their hands, Allied troops in Tunisia were now stretched across a frontline spanning nearly 300 miles, with complex lines of communication running back into Algeria. This did much to nullify the strenuous attempts made in December to move troops and supplies forward, as these were now spread widely in a bid to cover a broad front instead, attenuating Allied combat power. Although between December and February two full additional divisions, as well as a number of reinforcing brigades and French battalions, were pushed forward to hold sections of the front, this did little more than maintain the current density of units across the breadth of the line.¹⁵ The need for brigades or even battalion-sized units to attempt to control broad swathes of territory was highlighted by Brigadier Russell of 38th Irish Brigade, who stated that 'it was no unusual thing for a battalion to look after a 5 to 6 mile front', whilst at one time, his own brigade, stationed in the Goubellat plain, held '20 miles as the crow flew, but much further when he was walking'.¹⁶ Indeed, according to Anderson, the term 'front' was deceptive as a descriptor for Allied dispositions, as between the localities defended by brigade groups or detachments were equally large gaps, 'inadequately patrolled by both sides'.¹⁷

The dispersion of Allied units also reignited the coordination issues that had been experienced during the rush on Tunis, as while most commanders had moved forward with their troops in order to solve the problems of depth experienced the previous year, they now had to coordinate across a far broader expanse. This was simply untenable, as exemplified by the mammoth efforts Anderson had to make just to liaise with his fellow officers, motoring over 1,000 miles in four days to visit his corps commanders, as 'distances were too great for radio telephony, ordinary telephone was more unreliable, air travel was impossible owing to weather. "Co-ordination" demanded discussion and often compromise and this could only be done by personal visits'.¹⁸ Moreover, to achieve even this level of cohesion Anderson was

¹⁴ Coggins, pp. 122-23.

¹⁵ Playfair, pp. 274-75, Map 27.

¹⁶ TNA: CAB 106/569, '38th Brigade Account, The Irish Brigade in Tunisia, 1942-43', 1943.

¹⁷ Anderson, p. 132.

¹⁸ Anderson, p. 143.

forced to spend the better part of a week away from his own headquarters, sacrificing control over his command, whilst the delay between meetings with each commander also slowed the rate of Allied response, producing ponderous counterblows that the Axis had ample time to prepare for. This was showcased during Operation Eilbote in January. Early in the month, French troops under Generals Mathenet and Barre had advanced through the Karachoum gap in central Tunisia towards Kairouan, threatening the Axis' north-south artery and the port of Sousse.¹⁹ On 18 January, von Arnim opened a counter-offensive to drive the French back through the Dorsale passes, with a spoiling attack against the British further north, and within two days a number of French battalions had been surrounded.²⁰ While a call for reinforcements was sent to both British and American sectors, these took days to mobilise and consequently were only able to stabilise the Allied line, a counterattack on 23 January by CCB relieving the encircled French, after which Axis troops retired, having achieved their objective.²¹

On a more systemic level however, the sluggishness of command and control was a result of AFHQ's continued failure to establish an overall frontline commander for much of January. Although already highlighted during operations in December, the CCoS reiterated this point to Eisenhower on 5 January, stating that the 'only sound arrangement is for all operations in Tunisia to be coordinated and directed by a single commander who can devote his whole attention to it'.²² The latter point effectively ruled out Eisenhower himself, who was tied to Algiers by the need to maintain contact with Washington and London and manage local affairs. Yet Eisenhower was equally unable to delegate frontline command to someone else, as his efforts 'to impose unity on the battlefield were sabotaged by national rivalries and by his natural reluctance to make hard decisions'.²³ While a harsh criticism by Porch, it is nevertheless borne out by Eisenhower's inability to enforce a suitable candidate for leadership on the tri-national force then fighting in Tunisia. The most obvious choice was Kenneth Anderson, who had already had the task de facto thrust upon him in December, but in this Eisenhower faced the continuing opposition of

¹⁹ Playfair, p. 276.

²⁰ Mitcham, pp. 63-64.

²¹ TNA: WO 204/1551, 'Dispatches from C-in-C'.

²² TNA: WO 193/844, 'Operations: Phase I - Part 3'.

²³ Porch, *Hitler's Mediterranean Gamble*, p. 382.

Henri Giraud, who, despite his elevation to High Commissioner, remained as obdurately against the subordination of French troops to Allied command as he had in December.²⁴ Not wanting to alienate Giraud, Eisenhower initially did not force the matter, but later reflected that ‘had I immediately, upon the acceptance of French troops into the Allied command in November 1942, insisted unequivocally upon their battle-line subordination to General Anderson, later confusion would have been less’.²⁵ The same problems of national tension also made any other choice for overall commander unsuitable; Eisenhower had already rejected Giraud’s overtures in that direction in December, and Mark Clark, Eisenhower’s deputy, was viewed with suspicion by the British as a self-aggrandising intriguer, Brooke describing him as ‘very ambitious and unscrupulous’, while his own countrymen resented his tendency to issue disruptive orders and terrorise junior staff officers.²⁶ Clark’s disruptive presence was discreetly removed from AFHQ to command 5th Army, facing Spanish Morocco, in early January, but with that Eisenhower also exhausted the list of acceptable candidates, and so for the first weeks of 1943, the forces in Tunisia remained without strong central leadership.²⁷

Instead, Eisenhower continued to attempt to fulfil the roles of supreme commander and field commander at the same time, with the result that ‘he did neither particularly well’.²⁸ Command at the front was conducted by means of the forward post Ike had ordered created at the end of December, which had been established at Constantine under General Truscott. The C-in-C hoped that the post would allow him to ‘maintain close touch with Commanders and insure coordinated action by all ground and air forces’, but as already mentioned, Eisenhower could rarely afford to actually spend time away from Algiers.²⁹ His direct contact with frontline commanders was thus limited to infrequent meetings and conferences, which were simply inadequate for exercising the detailed management needed to direct the battle then ongoing. Indeed, Eisenhower was often appraised of unfolding situations long after the point he could capitalise on them, exemplified by an order to Anderson on 21 January to ‘operate south and southeast to cut the road leading from

²⁴ Blaxland, p. 143.

²⁵ Eisenhower, p. 162.

²⁶ Alanbrooke, pp. 355-356; D’Este, p. 379.

²⁷ Jones, p. 35.

²⁸ D’Este, p. 376.

²⁹ TNA: WO 193/844, ‘Operations: Phase I - Part 3’.

Pont du Fahs', tasks which Anderson had already dispatched 36th Brigade to undertake.³⁰ Some of these problems could have been resolved had Truscott stepped up as Eisenhower's frontline representative, but Truscott was loathe to impose himself on his fellow officers, especially given his inferior rank to Anderson and Juin, and as such 'his influence over the British, French and even American contingents was largely limited to passing messages to and from AFHQ'.³¹ The result of this loose grip on the ongoing campaign was that no single officer had the requisite authority or capability to coordinate Allied responses to the multitude of engagements that occurred in the first few weeks of 1943. Instead, individual officers were compelled to coordinate ad hoc arrangements between themselves in order to stabilise the Allied line against Axis thrusts, as the jurisdictional boundary lines drawn between AFHQ's constituent forces made it unclear as to who had authority over detachments operating in a different commander's sector. This was particularly problematic, as throughout January von Arnim focused his main efforts against the under-equipped and under-strength French forces in Central Tunisia, who required constant support from both US II Corps and First Army, resulting in the intermingling of troops from all three commands.³²

Moreover, the lack of effective oversight served to prevent the resolution of problems caused by the personal friction between certain Allied commanders. The chief offender and best example in this regard was Lloyd Fredendall, who in his tenure as commander of II US Corps greatly undermined relations with other Allied leaders by his complete disregard for them. This was amply demonstrated in the aftermath of Eilbote, as despite having placed Robinett's CCB under the command of General Louis-Marie Koeltz's 19th Corps, Fredendall continued to give orders to Robinett's force before abruptly recalling them, having apparently forgotten that he had left them at Koeltz's disposal.³³ Nor was this the only occasion on which Fredendall failed to cooperate effectively with his Allied colleagues. In the week following the conclusion of Eilbote, II Corps' commander authorised a raid on Sened in Southern Tunisia as a prelude to an attack towards Maknassy, against the advice of both his subordinate General Ward and General Welvert, commanding the French

³⁰ TNA: WO 204/4243, 'GOC 1st Army Message to Commanders on the Tunisian Front'.

³¹ Atkinson, p. 271.

³² Anderson, pp. 143-44.

³³ Macksey, p. 129; TNA: WO 204/1392, 'Operation Satin; Planning Papers'.

Constantine Division to the north.³⁴ Success in this small scale raid seems to have galvanised Fredendall, as when von Arnim renewed his offensive against Welvert's troops in the Faid Pass, Fredendall refused to cancel his planned offensive against Maknassy in order to offer assistance.³⁵ Instead, Fredendall delegated the task to his reserve, US 1st Armored Division's CCA, who were instructed to assist the French without materially weakening their defences around Sbeitla.³⁶ In the event, both of Fredendall's gambits were curtly rebuffed, at Maknassy in part because the earlier raid on Sened had tipped the Axis defenders off, but also because Fredendall had spread his forces too thinly on the ground, in direct contravention of instructions from AFHQ to keep 1st Armored concentrated.³⁷ Yet despite these blunders, Eisenhower took no action against Fredendall until the height of the battle of Kasserine, where Fredendall's complete loss of control over his troops finally pushed Eisenhower to dispatch Ernest Harmon, commander of 2nd US Armored Division, to take control of the battle as deputy commander of II Corps.³⁸ Although this delay may have been that Eisenhower initially ignored Fredendall's missteps out of solidarity, or was simply unaware of them due to sheer distance from the front, it nevertheless emphasises that had AFHQ had a more centralised and authoritative grasp over frontline operations, these issues could have been more swiftly identified and mitigated, improving Allied coordination as a whole.³⁹

Indeed, such conclusions could easily be applied to the Axis side too as, during this period, many of the problems that beset AFHQ also began to be reflected in their Axis counterparts. The extension of the Tunisian front towards Gafsa and Maknassy, also took a toll on Axis resources, which were stretched thin for much of January and February, until the arrival of the German-Italian Panzerarmee from the south brought additional troops to the region. Although partially mitigated by virtue of the Axis holding the initiative, which allowed them to concentrate units for offensives, when Allied forces launched their own operations, as the French did in the Karachoum Gap in mid-January, isolated units, such as the Italian Superga

³⁴ Coggins, p. 122.

³⁵ TNA: WO 204/1096, 'II US Corps – North African and Italian Campaigns'.

³⁶ Howe, pp. 391-93.

³⁷ TNA: WO 204/1393, 'Tunisia: Initial Occupation and Organisation'.

³⁸ Atkinson, pp. 374-75, 387-88.

³⁹ Macksey, pp. 135-6.

Division, were liable to suffer defeat.⁴⁰ This was particularly accentuated by the lack of corps headquarters in the Axis command, save for Italian XXX Corps, ‘which never played any significant part’, as Nehring, during his short tenure, had not been accompanied by one, and the continued demand for frontline combat troops was deemed to take priority over the dispatch of a headquarters.⁴¹ This was a serious weakness for 5. Panzerarmee, particularly as its order of battle was comprised in part of scratch groupings of individual units, which lacked the cohesion of fully established divisions, such as the Broich (later Manteuffel) Division, which was formed around the airborne units of the Koch Storm Regiment and the Barenthin Regiment, as well as a series of independent battalions and spare support units.⁴² As such, and in neat contrast to the Allies’ lack of frontline unity but more well-established corps and divisions, 5. Panzerarmee was somewhat reliant on von Arnim’s central direction, which lent itself well to the offensives mustered by the Axis throughout this period, but could not be coordinated as effectively on the defensive unless von Arnim was personally on hand, or an ad hoc battlegroup designated.⁴³

Nor was operational overstretch the only similarity shared by the Axis command at the time as, like AFHQ, Axis commanders on the ground were increasingly subject to pressure from their superiors back home.⁴⁴ This included interference by the Führer himself, as in response to a request from Kesselring for additional troops, he allocated the Panzer Division ‘Hermann Goring’ to 5. Panzerarmee. However Hitler attached to this a number of conditions, among them that the division, along with 10th Panzer Division, had to be withdrawn from the frontline to form an operational reserve, and priority had to be given to re-equipping 21st Panzer Division to battle strength.⁴⁵ Yet while ‘it was something quite new in Tunisian affairs for Hitler himself to decide where, and how, Pz AOK 5 formations should be committed’, a more routine level of interference can be found emanating from OB Sud and Comando Supremo and demonstrates the increasing fragmentation

⁴⁰ Mitcham, p. 63.

⁴¹ Alexander, ‘Despatch’ p. 55.

⁴² Ibid, p. 56.

⁴³ Macksey, p. 125.

⁴⁴ Porch, *Hitler’s Mediterranean Gamble*, pp. 370-71.

⁴⁵ IWM: EDS Appreciation 12, Ch.5.

of the Axis command.⁴⁶ Operationally speaking, supreme command in the North African theatre remained with Comando Supremo, largely justified on the grounds that, 'for reasons of political prestige, operations in Tunisia must remain an Italian responsibility'.⁴⁷ However, this supposed unity of command was in practice somewhat farcical, as both Comando Supremo and OB Sud, themselves riven by internal disunity and personal feuds, could be found issuing orders, sometimes contradictory, to the forces in the Tunisian bridgehead, which were in turn implemented or ignored on the whims of the army commanders.⁴⁸ The latter was showcased at Kasserine, where following the initial success of Operations *Frühlingswind* and *Morgenluft*, both von Arnim and Rommel ordered their respective forces to continue the attack towards Sbeitla and Feriana, reaching beyond the limited objectives Comando Supremo had set for them, instead banking on receiving approval after the fact.⁴⁹ Had control been exercised from a headquarters in Tunisia, rather than back in Rome, the Axis high command might have found it easier to control the actions of their generals in North Africa, but little action was taken in this regard until the very end of Kasserine, as 'confusion and a complete lack of harmony reigned at both field and GHQ command levels'.⁵⁰ Instead, Rommel and von Arnim continued to function with ill-defined spheres of responsibility, which were increasingly dragged down by their mutual antipathy and inability to cooperate. At Kasserine, despite Comando Supremo directives, von Arnim withheld 501st Heavy Tank Battalion from Rommel's command and attempted to remove both 10th and 21st Panzer Divisions from the combat area for his own offensive operation west of Tunis.⁵¹ Although it is doubtful that this action was responsible for Rommel's failure, such pettiness actively undermined Axis efforts in the Tunisian bridgehead, preventing the development of a cohesive strategy.

Yet whilst the rifts in the Axis command arguably grew wider during the weeks leading up to Kasserine, those within AFHQ were the subject of serious attempts to resolve them. The most decisive of these efforts came with the convening of the ten-day Casablanca Conference on 14 January, which brought together many

⁴⁶ Ibid.

⁴⁷ Macksey, p. 140.

⁴⁸ Porch, *Hitler's Mediterranean Gamble*, pp. 380-81.

⁴⁹ Howe, p. 426.

⁵⁰ IWM: EDS Appreciation 12, Ch.5.

⁵¹ Ibid; TNA: HW 1/1383, 'Rommel Intends to Advance'.

of the most senior Allied military and political leaders to determine the coalition's future strategy, deliberations which produced two key outcomes for AFHQ. The first of these concerned the future direction of the Allied effort in the European theatre, the CCoS ultimately deciding that the prospect of eliminating Italy from the war and fully re-opening the Mediterranean was too persuasive to ignore.⁵² As such, following Tunisia, the expeditionary forces in the Mediterranean were to undertake an invasion of Sicily, codenamed 'Husky', with a reorganised AFHQ as the overall headquarters. Eisenhower was to be retained as Supreme Commander, with General Alexander as his Deputy C-in-C and Admiral Andrew Cunningham and Air Chief Marshal Tedder as the naval and air commanders respectively.⁵³ This was merely prelude to the second key decision taken at Casablanca however, as the CCoS, mindful of the command difficulties thus far experienced in Tunisia, chose to implement this restructuring of AFHQ's higher echelons while the fighting was still ongoing. Therefore, once 8th Army had crossed into Tunisia from Libya, it was to revert to Eisenhower's command, with General Alexander moving from Middle East Command to take up post as Deputy C-in-C and direct ground operations from a new 18th Army Group HQ.⁵⁴ The target date for the establishment of 18th Army Group was estimated for 10 February, though was pushed back shortly after, Alexander eventually taking up command on 19 February at the height of the Kasserine battle.⁵⁵ Although as yet inactive by the end of this phase of operations, the reforms made by the Allies at the Casablanca Conference offered a solution to many of those problems of coordination that had plagued AFHQ thus far. The appointment of distinct land, sea, and air chiefs and the establishment of a clear chain of command at the frontline under 18th Army Group, served to clearly define the direction of each arm of service, while at the same time unifying them under Eisenhower to provide strong, central leadership, setting in place strong foundations for the exercise of truly united command.

While Casablanca was ongoing, AFHQ also made its own efforts to solve the incumbent problems of command, in places utilising the galvanising pressure exerted on the Allied line by von Arnim's offensives to push through reforms. The first of

⁵² Jones, pp. 42-43.

⁵³ TNA: CAB 122/573, 'Symbol: 'Casablanca Conference'.

⁵⁴ Alexander, 'Despatch' p. 50.

⁵⁵ TNA: WO 204/1137, '18th Army Group Operational Instructions and Reports'.

these was to appoint General Anderson to coordinate British and American troops in Tunisia on 21 January, an unofficial position that gave Anderson tacit authority to determine policy for Allied forces at the frontline.⁵⁶ Although this order did not include the French, most likely to appease Giraud, it should be noted that Anderson and Juin already had an effective working relationship that did much to bridge this gap.⁵⁷ Nevertheless, Anderson's role as coordinator was still little more than a band-aid, as it gave him authority only to direct policy, not issue direct orders, thus requiring him 'to confer with independent commanders and guide them towards decisions conforming to a general plan of action'.⁵⁸ Yet this appointment opened the door to further reform, grounds for which Eisenhower was provided in the week following, as the culmination of the Casablanca Conference finally removed the obstacle of Giraud, who became Co-President of a combined French Committee of National Liberation with Charles de Gaulle and from there enjoyed declining influence over the direction of French forces.⁵⁹ Eisenhower was therefore free to push forward in granting Anderson full authority over forces in Tunisia on 25 January, a directive accepted by Juin on the same evening and made effective on 3 February.⁶⁰ Although still flawed, as Anderson's First Army Headquarters at Laverdure 'were so situated as to make most difficult his effective control of the central and southern portions of the long line', the establishment of a sole commander created a measure of united command, without doubt a distinct improvement over the tangled web that had existed prior.⁶¹

Indeed, Anderson's tenure as commander of the Allied effort in Tunisia brought with it some notable reforms, most notably a more well-defined system of national sectors to make clearer each commander's jurisdiction and return detachments of troops to their parent units.⁶² In the French sector, Anderson gave approval to the formation of 19th Corps, grouping French units in the central region into formalised divisions under the leadership of General Koeltz, their aim being to 'hold a firm central pivot' either side of which British and American forces could

⁵⁶ TNA: WO 204/4243, 'GOC 1st Army Message to Commanders on the Tunisian Front'.

⁵⁷ Blaxland, p. 143.

⁵⁸ Howe, p. 384.

⁵⁹ Jones, p. 81.

⁶⁰ TNA: WO 204/1163, 'Free French Liaison'; Howe, p. 384.

⁶¹ Eisenhower, p. 155.

⁶² TNA: WO 204/1163, 'Free French Liaison'.

operate.⁶³ However, while Anderson's initiative did provide a framework around which the line could be re-organised, this was somewhat undermined by the Allies' lack of reserves, which forced the movement of troops between different sectors to meet crises as they arose, worsening the disorder. This was highlighted at Kasserine, where the patchwork of units assembled for the pass's defence led to no fewer than six different commanders, ranging from Colonel to General in rank, all having 'fingers in the pie'.⁶⁴ Similar difficulties could also be found in Anderson's attempt to form an army reserve, an undertaking with which Eisenhower had tasked him in January.⁶⁵ This was again due to the paucity of units which could be spared from the frontline, as while Anderson attempted to comply with this order, he could only find it feasible to reserve CCB from US 1st Armored Division.⁶⁶ However, even this force was to prove useful in the opening stages of *Frühlingswind*, as the release of CCB to shore up the defence of Sbeitla allowed the withdrawal of elements of II US Corps towards Tebessa, a service also repeated at Djebel el Hamra, where CCB formed the backbone of a US force that finally halted the left wing of Rommel's advance.⁶⁷

While the need to resolve command issues may have been the chief preoccupation of the Allied leadership during this period, the continuing pressure exerted by the tenuous logistical situation constituted a close second. Dubbed 'the battle of supply' by Eisenhower, the early months of 1943 formed a constant contest between the Allies' need to meet the operational challenges of a progressively escalating campaign and their ability to furnish and provision the troops needed for such ventures.⁶⁸ The build-up for Operation *Satin* proved one such challenge, as in order to concentrate US II Corps on the southern end of the frontline, new channels of supply had to be opened into what had otherwise been a sparsely garrisoned region, held by the 'French-American Tunisian Task Force', a mixed bag of 4,000 French and American troops under Colonel Raff.⁶⁹ These were to be replaced by a considerable Allied troop presence, January plans for *Satin* calling for the

⁶³ Anderson, p. 144.

⁶⁴ Playfair, p. 298.

⁶⁵ TNA: WO 204/1393, 'Tunisia: Initial Occupation and Organisation'.

⁶⁶ Anderson, p. 144.

⁶⁷ Howe, p. 428, 433-35, 461-64.

⁶⁸ NARA: RG 319, 'Commander-in-Chief's Dispatch'.

⁶⁹ Lida Mayo, *United States Army in World War II: The Technical Services, The Ordnance Department: On Beachhead and Battlefront* (Washington, D.C.: United States Army Center of Military History, 1991), p. 129

deployment of US 1st Armored Division, a regimental combat team (RCT) of 1st US Infantry Division, and 1st Parachute Brigade, a sizeable force numbering some 34,500 men, nearly 400 guns, and over 4,000 vehicles, equivalent to roughly half that of First Army to their north.⁷⁰ This concentration of force was deemed necessary to give Satin the required strength, but also far outstripped the task force initially envisioned, prompting serious concerns from AFHQ's G-4 about its logistical feasibility. 'Because the force is now twice the size originally planned', the initial forecast build-up required for Satin rose from 5,000 tons in order to establish a ten-day reserve to 11,800 tons, while daily maintenance also increased in line with expansion of the Satin task force, from 450 tons to 800.⁷¹

These demands were a task beyond the Allies' ability to easily supply, requiring both stocks and transport that AFHQ could ill-afford to sacrifice. In the latter case, the need to move supplies southward into central Tunisia was a significant issue, as it entailed a major diversion of stocks away from the more developed coastal transit networks. In order to ship to Tebessa, supplies had to be switched over to the metre gauge railway at Ouled Rahmoun, necessitating considerable effort around Constantine to ensure smooth transshipment. The result was a bottlenecked flow, as the existing track to Tebessa could only carry 540 tons of lift per day in optimal conditions, with 250 of those being earmarked for II US Corps, less than a third of their requirements.⁷² Nor could the Allies do much to increase this, as it was considered impracticable to widen the metre gauge forward into southern Tunisia, meaning that the rest had to be made up by road, where lines of communication extended from Constantine up to 300 miles to the front.⁷³ This placed heavy demands on the Allies' pool of MT, large quantities of which had to be withdrawn from work in ports and base areas to ensure the lift of maintenance stocks to Tebessa, leaving AFHQ woefully short of reserve transport.⁷⁴ Moreover, as the projected build-up could not be achieved solely on stocks dispatched from the rear, some of the tonnage had to be found from the stockpiles of other Allied forces, particularly First Army, whose headquarters staff found themselves having to

⁷⁰ TNA: WO 204/1391, 'Operation Satin; Planning Papers'.

⁷¹ Ibid.

⁷² Ibid.

⁷³ TNA: WO 204/1393, 'Operations in Tunisia: Initial Occupation and Organisation'.

⁷⁴ Playfair, p. 275.

assume full responsibility for Satin's maintenance arrangements and dumping programmes as well.⁷⁵ Roughly a fifth of the projected supplies, some 2,310 tons of ammunition, were taken from First Army's base at Souk el Arba, while petrol, already constrained in supply, was also diverted from the northern sector.⁷⁶

These exertions could have been justified had the operation gone ahead, as its success could have decisively shortened the length of the campaign, but Satin's cancellation in mid-January, due to concerns over the risks involved, effectively mooted the Allies' efforts.⁷⁷ While Eisenhower defended the deployment of II Corps in his memoirs, arguing that they provided a 'strategic flank guard for our main forces in the north', it is hard to argue that Fredendall's troops needed to be deployed quite so rapidly, given that for much of the period the majority of II Corps remained uncommitted.⁷⁸ Instead, II Corps' rushed presence on the end of the Allied line formed a logistical millstone around AFHQ's neck, as even though they were no longer required for Satin, II Corps' supply nevertheless had to be continued, adding to the pressure on an already overstretched line of communications. According to a 29 January note from AFHQ's logistical planners, for the first fortnight in February, they estimated that only 2,960 tons of supplies could be transferred to forces in the forward area, with 1,530 of those going to the ground troops, 1,020 tons short of their requirements and over 1,500 tons short of the 4,500 needed for Allied forces as a whole.⁷⁹ The vast majority of this deficit came from the Satin task force which, as Eisenhower's brainchild, had seen him overrule his logisticians, who 'wailed that our miserable communications could not maintain more than an armoured division and one additional regiment'.⁸⁰ Now, it came back round to bite AFHQ, highlighted in understated fashion by Humfrey Gale, who called it 'a situation which, logistically, was out of hand'.⁸¹

Constant, low intensity combat also strained Allied maintenance capabilities. Part of this problem was derived from the sheer scale of the theatre, as the great distances and high mountains made the maintenance of a conventional frontline

⁷⁵ Anderson, p. 142.

⁷⁶ TNA: WO 204/1391, 'Operation Satin; Planning Papers'.

⁷⁷ TNA: WO 204/1393, 'Operations in Tunisia: Initial Occupation and Organisation'.

⁷⁸ Eisenhower, p. 139.

⁷⁹ TNA: WO 204/1393, 'Operations in Tunisia: Initial Occupation and Organisation'.

⁸⁰ Eisenhower, p. 139.

⁸¹ TNA: WO 204/1391, 'Operation Satin; Planning Papers'.

impossible.⁸² Instead, ground had to be held by aggressive measures, predominantly taking the form of manpower-intensive patrol warfare utilising small, independent forces, which often led to brutal, close-quarters fighting as patrols sought to ambush each other.⁸³ The daily dispatch of fighting patrols was also interspersed with company and battalion-level actions that added to the ‘persistent grumble of activity’ throughout January and February, as both Allies and Axis sought to exploit enemy weak points and ‘seize slices of territory for use later as jumping off places’.⁸⁴ These were however costly undertakings, as both sides dug in on areas of high ground that meant troops had to climb through a storm of concentrated fire to evict defenders from their positions. 38th Brigade’s account summarised it thusly: ‘it is perfect country for defensive fighting. One of my Battalion Commanders – when planning a Battalion attack on a particularly bloody feature North of Medjez-el-Bab said “I’d rather defend it with a platoon”’.⁸⁵ This was highlighted in a 13 January attack on ‘Two Tree Hill’ by 6th Battalion The Royal Inniskilling Fusiliers, who despite being ‘magnificent in their first action’, were repulsed from the hill with over 100 casualties, a loss equivalent to an eighth of the battalion’s strength.⁸⁶

Indeed, Allied leaders found themselves suffering from ‘an acute shortage of infantry’, as the need to dislodge enemy forces from positions otherwise inaccessible to armour, saw the greater bulk of the fighting thrust upon the foot-soldiers.⁸⁷ As First Army’s Lessons Learnt put it, ‘that section of military thinkers who at one time advanced the theory that in future battles infantry would be little more than caretakers, have been again proved in error. In this campaign the most urgent demand was always for infantry and yet more infantry’.⁸⁸ This demand was to prove problematic however, as the slow pace of reinforcement to most infantry units, many of which were debilitated after the winter’s fighting, left Allied forces with insufficient manpower to hold their extended frontline. 1st Battalion East Surreys for instance, who comprised only twenty-three officers and 350 other ranks after the battles in December, from an original total of 796, only had their losses made good

⁸² TNA: WO 231/10, ‘Lessons Learned from Ops in Tunisia, Directorate of Military Training’.

⁸³ TNA: WO 201/823, ‘Lessons from Operations in North Africa’.

⁸⁴ Macksey, p. 124.

⁸⁵ TNA: CAB 106/569, ‘38th Brigade Account’.

⁸⁶ Ibid.

⁸⁷ Anderson, p. 132.

⁸⁸ TNA: WO 231/10, ‘Lessons Learned from Ops in Tunisia, Directorate of Military Training’.

by the end of February, as the constant trickle of casualties did much to offset an improving rate of reinforcement.⁸⁹ Other units thus had to be pressed into service in their place, Anderson being 'forced to use the infantry battalions of 6 Armoured Division on ordinary infantry tasks of holding a sector of the front [...] and this misuse of the armoured divisional infantry continued up to the end of February'.⁹⁰ Special forces units, such as 1st Parachute Brigade and No.1 and No.6 Commandos, were also pressed into service at the front in lieu of regular infantry, No. 6 Commando taking part in 36th Brigade's costly assault on Green and Bald Hills in early January.⁹¹ Although these battalions gave good service in this role, they also suffered heavy casualties in the attrition-intensive fighting among the Tunisian mountains, 1st Para Brigade losing over 1,700 men between the start of the campaign and their withdrawal in April 1943.⁹² Such losses were difficult to replace given the exacting standards of the special forces, and the fact that these units were retained at the front, despite protests from Combined Operations Headquarters, merely demonstrates how stretched AFHQ's resources were.⁹³

Similar tension can also be seen in the materiel reserves available to the Allies, as losses of equipment during this period greatly cut into attempts to build-up stockpiles for future operations. A report on 5th Corps' Ordnance Services noted that 'a noticeable feature was the wastage of equipment at a rate much higher than that anticipated', due to both the prevalence of air attack on Allied vehicles and the fluid nature of the front.⁹⁴ This often led to 'the sudden over-running of a position when, while many of the defenders may get away by night with their personal weapons and equipment, the bulk of the equipment such as guns, tentage, water cans etc., is lost'.⁹⁵ The swift-moving battles in the open country of southern Tunisia particularly displayed this tendency, as the fluid nature of the fighting there often meant that units were encircled or wholesale overrun. US 1st Armored's CCC lost 46 medium tanks, 130 vehicles, and nine self-propelled guns to a German pincer attack at Sidi Bou Zid on 15 February, none of which were recoverable, as their repulse forced

⁸⁹ Bryn Evans, *With the East Surreys in Tunisia, Sicily and Italy, 1942-1945: Fighting for Every River and Mountain* (Barnsley: Pen and Sword Military, 2012), p. 18, 33.

⁹⁰ Anderson, p. 132.

⁹¹ Macksey, p. 124.

⁹² Greenacre, pp. 130-31.

⁹³ TNA: WO 193/407, 'Combined Ops HQ Daily Ops Summaries'.

⁹⁴ TNA: WO 204/1653, 'Lessons Learnt; Reports on Operation Torch and Tunisia'.

⁹⁵ Ibid.

them to withdraw over a dozen miles.⁹⁶ Such losses bit deeply into Allied attempts to bring additional equipment forward, the need to refit US 1st Armored Division after its losses throughout January and February seriously retarding efforts to re-arm British 6th Armoured Division with Sherman tanks until after Kasserine.⁹⁷

These constant losses were made more difficult to replace by the erosion of the logistical network down which supplies flowed. The earmarking of all available vehicles to support Satef left the Allies with no transport reserves with which to replace losses, made worse by a shortage of spare parts to keep the 6,000 trucks supplementing the railway in II Corps' area roadworthy.⁹⁸ By mid-February, '95 percent needed repairs in some degree [...] many of the vehicles were badly in need of fourth echelon overhaul, having been driven more than 15,000 miles without adequate first, second, or third echelon service, and thousands were headed for deadline within two or three weeks unless help came from the base'.⁹⁹ The absence of resources to conduct maintenance was largely a result of the stateside SoS' automatic supply policy, which dispatched unregulated shipments of routine goods to North Africa.¹⁰⁰ In the case of MT, vehicle parts came in standardised boxes, theoretically enough for 100 vehicles a year, but certain items which were prone to wear, such as spark plugs and carburettors, were issued in insufficient quantity, each box, for example, containing only 18 engines.¹⁰¹ A steady stream of vehicles therefore began to fall away from the transport pool for lack of maintenance, with 75 cargo trucks being urgently needed to replace losses by 23 January.¹⁰² These losses could only be met by emergency measures and Eisenhower consequently ordered the grounding of 5th Army in Morocco in late January, stripping three divisions of their transport in order to provide the forces in Tunisia with the lift capacity needed to maintain supply.¹⁰³ This was not however possible with the rail network, which suffered similar levels of attrition to an already depleted pool. Although 50 Warflats (railway flatcars for goods movement) had been landed at Algiers near the beginning of the year, shortages of rolling stock, in particular tank transporters, continued to

⁹⁶ Playfair, p. 292.

⁹⁷ Anderson, p. 146.

⁹⁸ Howe, p. 498

⁹⁹ Mayo, p. 133

¹⁰⁰ NARA: RG 319, 'Item 6-C Logistical History of Natousa-Mtousa'.

¹⁰¹ Mayo, p. 133.

¹⁰² Ibid, p. 132.

¹⁰³ TNA: WO 204/1393, 'Operations in Tunisia - Initial Occupation and Organisation'.

persist, as well as a lack of fuel, railway operating personnel and maintenance staff.¹⁰⁴ A lack of locomotives was the biggest inhibitor to Allied attempts to build up, as there were no available reserves, and the locos themselves were highly vulnerable to air attack, 10 of 27 in the South-East area of the front having been knocked out by aircraft by 6 January.¹⁰⁵ Without adequate replacements, it was impossible for the Allies to exploit the already meagre rail network to its fullest capacity, curtailing the flow of vital goods from ports of arrival to the front in Tunisia.

Yet while the Allies struggled to bring new resources to bear in the ongoing campaign, the same could not be said of the Axis who, during this period, succeeded in developing a numerical superiority over the Allies thanks to a steady stream of reinforcements. Over the course of January, some 29,000 Germans and 12,000 Italians arrived in Tunisia, and although a proportion of these were civilian dock labourers, supply troops and construction units, the arrival of such large numbers of men nevertheless significantly bolstered the Axis presence in Tunisia.¹⁰⁶ These reinforcements were further augmented by the strength of the retreating German-Italian Panzerarmee, the steady withdrawal of which from Tripolitania brought Axis frontline troop strength up to around 100,000 men by the start of February.¹⁰⁷ This handed the Axis the advantage in the short term, as 8th Army had been obliged to briefly halt its 1,500 mile advance after the capture of Tripoli to reorder their supply lines, thereby allowing Rommel and von Arnim to concentrate a numerical superiority against Allied forces to the west.¹⁰⁸ This build-up prompted concern from some Allied commanders, Anderson highlighting the danger that ‘many uninvited guests from opposite Eighth Army were entering my southern parlour’.¹⁰⁹ His worry was that the Axis would use this short window of opportunity to try and deal a crushing blow to AFHQ’s forces while 8th Army was unable to intervene, thereby unpicking the encirclement of the bridgehead which the Allies had crafted. This fear would slowly be realised throughout the month of February, as von Arnim and

¹⁰⁴ Ibid; TNA: WO 204/1144, ‘Tanks - Requirements and Availability’.

¹⁰⁵ TNA: WO 204/1191, ‘Daily Operational Meetings’.

¹⁰⁶ IWM: EDS Appreciation 12, Ch.5.

¹⁰⁷ Howe, p. 370.

¹⁰⁸ Mitcham, p. 76.

¹⁰⁹ Anderson, p. 144.

Rommel leveraged their brief advantage to launch increasingly aggressive strikes against Allied forces, eventually culminating at Kasserine Pass.

This boost, however, came at a price, seriously undermining the logistical stability of the Tunisian bridgehead. Walter Warlimont, the Deputy Chief of the OKW, described the situation after a visit in February as a ‘house of cards’, as while Axis troops certainly outnumbered the Allies in the immediate area, they were also short of fuel, food, transport, artillery, and ammunition.¹¹⁰ None of these could be supplied in sufficient quantity; according to an 8 January conference between Rommel and von Arnim’s senior administrative officers, the monthly requirement of the combined Axis forces was at least 115,000 tons, a figure which would have required the ports of Tunis, Bizerte and Sousse, with a combined daily unloading capacity of 5,300 tons, to be operated at a high rate of efficiency.¹¹¹ Though this seems to have been revised upwards, Mitcham stating that a figure of 150,000 tons per month was passed to OB Sud, ultimately neither of these totals could be met in any meaningful way.¹¹² Based on the best estimates of Comando Supremo, Kesselring stated that the highest supply tonnage that could be dispatched was 80,000 tons per month, which Allied interdiction would likely reduce to around 60,000, less than even the absolute minimum subsistence requirements of 70,000 tons put forth by the commanders at the front.¹¹³ Yet even this was to prove an optimistic assessment, as dockside inefficiency at both ends of the supply chain, lack of convoy escorts and turbulent seas throughout the early months of the year, significantly limited the tonnage arriving in North Africa, even as Italian docksides piled up with surplus supplies.¹¹⁴ Only in January did shipments fall within the range of tonnage put forward by Kesselring, with 69,900 tons of supplies being disembarked in Tunisia, but this proved to be a flash in the pan, declining to only 59,000 the month after.¹¹⁵ Moreover although January saw the largest amount of supplies arrive in North Africa thus far, the month also saw an even higher proportion of tonnage lost en route, Rear Admiral Eberhard Weichold, the Kriegsmarine liaison in Rome, stating that a 55% ratio of tonnage was lost compared

¹¹⁰ IWM: EDS Appreciation 12, Ch.5.

¹¹¹ Ibid.

¹¹² Mitcham, p. 62.

¹¹³ Playfair, p. 274.

¹¹⁴ IWM: EDS Appreciation 12, Ch.5-6.

¹¹⁵ Playfair, p. 250.

to tonnage sailed.¹¹⁶ This effort was to prove the peak of Axis supply to Tunisia throughout the campaign; from here, although troops continued to be sent to try and bolster the bridgehead, Axis forces would be ‘dying administratively’, steadily weakened by a rapidly deteriorating logistical base.¹¹⁷

The difficulties posed by such drastically limited supplies placed the Axis commanders in Tunisia in an increasingly precarious situation, as although they had sufficient troops to pose a serious threat to either Allied army, their position was only going to get materially worse unless something was done to solve it. Thus the window of opportunity afforded to Rommel and von Arnim by their temporary superiority was also a deadline; if the Axis did not secure a decisive breakthrough, or at least sufficient space to disrupt the Allies’ interdiction efforts, while still materially advantaged, they would likely not have the chance to do so again.¹¹⁸ This proved a prime motivator for Rommel, on whose advice Kesselring authorised the extension of the Kasserine offensive to try and seize the Allied supply dump at Tebessa. The capture of this installation would have alleviated some of the material difficulties the Axis were facing, as even ignoring the parlous state of their supply lines, many units suffered serious deficiencies in equipment.¹¹⁹ 21st Panzer Division was a prime example, being short of support staff, maintenance equipment and artillery, but ‘was above all short of MT. It had only 35% of its MT establishment, of which one-third was constantly under repair, half of the vehicles being English without spare parts and the other half being worn out; engines, spare parts and tyres were urgently needed’.¹²⁰ All of these were common complaints across other Axis formations, particularly the lack of MT, as, similarly to the Allies, demands for new vehicles and parts for maintenance far outstripped available supply, although the magnitude of this problem for each side was however vastly different. While the Allies’ parts shortage made them battle to maintain their vehicle fleet, shortages of parts and fuel were so serious for the Axis that up to 30% of Rommel’s MT was grounded, and possessed fewer than three and a half consumption units of fuel (roughly 200 miles worth) at the outset of Kasserine.¹²¹ Similar scarcity could be

¹¹⁶ IWM: EDS Appreciation 12, Ch.5-6.

¹¹⁷ Playfair, p. 273.

¹¹⁸ Howe, p. 405.

¹¹⁹ Kitchen, p. 432.

¹²⁰ IWM: EDS Appreciation 12, Ch.5

¹²¹ Macksey, p. 148.

found across most vital items, and although operations in February were generally unhindered by shortages, neither ‘Rommel nor von Arnim regarded the supply situation with anything but gloom’, particularly once the Kasserine offensive began to peter out.¹²² Having exhausted their best opportunity to drive back Allied forces, concerns about the tenability of the bridgehead now arose, as ‘it was not felt that the supplies of the Axis forces would stand up to any serious strain such as that represented by a protracted defence against an all-out Allied offensive’.¹²³

Such pessimism was understandable, as while both sides were indeed overstretched, it was only the Axis whose supply situation began an effectively terminal decline. Allied forces by contrast, though scarcely possessed of an overabundance at any point, nevertheless enjoyed a comparatively improving supply situation, as the faults in their logistical machine began to be put right. Such initiatives can be seen from the very start of this phase of operations, as in order to ease the logistical burden that had hampered Anderson’s control of frontline operations, AFHQ took administrative responsibility for all logistical matters up to the port of Bone and the railway hub at Constantine on 1 January.¹²⁴ This removed 200 miles of infrastructural management from the purview of First Army’s commander, ‘thereby affording much needed relief to my administrative staff’.¹²⁵ Such a move was further bolstered by the strengthening of supply organisations, as initially skeletal administrative units were finally brought up to strength. From only 2,500 SoS troops in place at the beginning of 1943, supporting 180,000 American troops, US administrative capacity was rapidly increased, reaching 55,000 SoS troops in-theatre by the end of January and 65,000 the month after.¹²⁶ Such an expansion in manpower greatly helped AFHQ to increase the efficiency of its administration, an undertaking further aided by the establishment of new bodies to manage vital materials, such as the Petroleum Section, AFHQ, organised in January on the initiative of Major-General Gale. Based on a similar structure employed by Middle East Command, the Petroleum Section compiled petroleum requisitions for future convoys, maintained records, and planned and coordinated distribution across Allied forces in North

¹²² IWM: EDS Appreciation 12, Ch.6.

¹²³ Ibid.

¹²⁴ Anderson, p. 142.

¹²⁵ Ibid, p. 142.

¹²⁶ NARA: RG 319, ‘Summary of Activities, North African Theater of Operations, USA’.

Africa, in order to more efficiently manage fuel provisions.¹²⁷ The monthly ‘oil slate’ helped to streamline the process of oil shipments, freeing up convoy space for other important stocks, while Base Petroleum Officers, operating in each SoS Base Section, coordinated receipt and storage of fuel in each port, giving a clear overall picture of available reserves.¹²⁸

Another such vital organisation was the creation of the Military Railway Service at AFHQ, which brought together American, French and British railway personnel under one establishment. Prior to this, decisions regarding transport had been resolved at daily Priority of Movements meetings, but it had swiftly become evident that efficient function could only be achieved by ‘setting up a special military railway organization to function on a theater-wide basis’.¹²⁹ This was implemented shortly after Casablanca by the appointment of Brigadier-General Carl Gray Jr., ‘an experienced and aggressive railway executive’, to become Director General of Military Railways in North Africa on 14 February, with the British Director of Transportation, Brigadier R. F. O’Dowd Gage, as his deputy.¹³⁰ In doing so, much as had been done initially with AFHQ, the Allies welded together a combined staff that did much to streamline and smooth over the methodological and operational differences between organisations, greatly improving the efficiency of their transportation efforts. Certainly, this seems to have made an impression on Eisenhower, who remarked that Allied railway engineers ‘were working miracles in improving the decrepit French line leading to the front’.¹³¹ In this endeavour, Gray was helped by an expanding pool of Allied railway units, such as 727th Railway Operating Battalion, part of 703rd Railway Grand Division, which took over operation of the metre-gauge railway running to Tebessa in January. In just over a month, they built up tonnage movements to Tebessa from 900 daily to more than 1,400, with an additional 600-800 tons going direct to the front, as well as troop and hospital trains.¹³² Moreover, this was done without the arrival of any additional

¹²⁷ TNA: WO 204/513, ‘Petrol and Oil, Admin Correspondence and Reports’, 1943.

¹²⁸ Ibid.

¹²⁹ Joseph Bykofsky and Harold Larson, *United States Army in World War II: The Technical Services, The Transportation Corps: Operations Overseas* (United States Army Center of Military History: Washington D.C., 1990), p. 170.

¹³⁰ Bykofsky and Larson, p. 171.

¹³¹ Eisenhower, p. 165.

¹³² United States Army, *The 727th Railway Operating Battalion in World War II* (New York: Simmons-Boardman Publishing Corporation, 1948), pp. 17-23.

locomotives or rolling stock, save for ‘two Diesel jobs picked up at the phosphate mines near Le Kuif’, demonstrating the level of efficiency that could be reached purely by proper organisation.¹³³

This fortification of the Allied supply establishment allowed for considerable material improvement to the logistical network, as the additional manpower improved efficiency and allowed the establishment of new nodes on the supply chain. A number of the Allies’ main bases were built up substantially, with the ports of Bone and Philippeville, as well as the railway hub at Constantine, expanding heavily in terms of storage and facilities.¹³⁴ This also inadvertently applied to Tebessa, as the cancellation of *Satin* left large quantities of advanced supplies that could now be converted into II Corps’ new logistical hub, which was built up to 10 days of supply alongside an evacuation hospital and medical supply depot.¹³⁵ These enlarged stockpiles were fed from arrival ports whose function also improved appreciably during the first months of 1943, in terms of both capacity and speed of processing. The port of Philippeville, which was turned over to the needs of II Corps, was dredged to a 22-foot depth over the course of February, which gave it sufficient berths to unload six vessels simultaneously, aided by imported dockside equipment.¹³⁶ These improvements thus made it possible to discharge even greater tonnages of supplies, particularly in the Allies’ ports in Eastern Algeria, such as Bone, which saw over 127,600 tons of supplies and equipment discharged between mid-December and February, a total which alone was comparable to the entirety of Axis supply efforts.¹³⁷

A commensurate increase in rates of clearance also helped keep the docksides mostly uncongested by these larger arrivals, with Allied planners forecasting that by the beginning of March, a combined total of around 12,000 tons a day of supplies could be cleared by port staff in the ports of Algiers, Bougie, Bone and Philippeville.¹³⁸ This not only improved AFHQ’s ability to receive and process convoys, but also reduced the load on the overland logistics system by improving

¹³³ United States Army, p. 23.

¹³⁴ NARA: RG 319, ‘Commander-in-Chief’s Dispatch’.

¹³⁵ *Ibid.*

¹³⁶ RG 319, ‘Item 6-C Logistical History of Natousa-Mtousa’.

¹³⁷ NARA: RG 319, ‘Commander-in-Chief’s Dispatch’.

¹³⁸ TNA: WO 204/2042, ‘North Africa, British Forces, Strength Returns and Maintenance Tonnages’, 1943-45.

lateral flexibility. The work undertaken on the eastern ports meant that fewer goods had to be received in Morocco, with total receptions declining from 455,000 tons between November and January to 327,000 for the three months following, despite a three-fifths increase in overall supply tonnage to 1,958,000.¹³⁹ The declining need to move all supplies from Atlantic ports freed up rail space on the limited number of train paths eastward for more vital goods, thereby easing the pressure on Tunisia's already congested railways, a task further supplemented by transshipment of goods and fresh troops from ports of arrival to stations further along the coast. A number of small vessels were retained on hand to allow this continued movement, including four cross-channel steamers that transported 36,000 troops between mid-December and mid-February and a regular convoy from Algiers to Bone every 14 days, from which naval landing craft took certain supplies forward to La Calle and Tabarka.¹⁴⁰

However, while the provision of alternative transport by sea did much to aid the ailing overland supply system, AFHQ also made more direct efforts to deal with its chief supply bottleneck. In the main, this was achieved during the Casablanca conference, where Eisenhower outlined a bleak picture of the situation to General Brehon B. Somervell, head of the Army Service Forces, highlighting his desperate lack of MT as the key reason the Allies were making little headway.¹⁴¹ This was not an entirely truthful statement, as highlighted by Leighton, as 'by this time, actually, vehicles were arriving in considerable numbers. More than 4,500 had come in UGS-3 at the end of December, and 5,300 were on the way in UGS-4. In UGF-4, moreover, were technicians and equipment for assembling crated vehicles, capable of putting on the road 3,000 trucks per month'.¹⁴² Nevertheless, Somervell agreed to help resolve the transport shortage by the dispatch of a special convoy, UGS 5½, consisting of 21 vessels carrying 200,000 tons of material to bolster the logistics infrastructure and which was assembled in only two and a half weeks.¹⁴³ UGS 5½'s arrival in early March delivered a substantial number of new vehicles: '5,000 2½ ton trucks (1,500 on wheels), 400 1½ ton trucks (200 on wheels), 72 big tank

¹³⁹ Leighton, pp. 477-78.

¹⁴⁰ NARA: RG 319, 'Commander-in-Chief's Dispatch'.

¹⁴¹ John D. Millett, *United States Army in World War II: The Army Service Forces, The Organization and Role of the Army Service Forces* (United States Army Center of Military History: Washington D.C., 1987), pp. 63-64.

¹⁴² Leighton, p. 475.

¹⁴³ Millett, p. 64.

transporters, 2,000 trailers for the trucks, and some rolling stock'.¹⁴⁴ Such a haul was of 'tremendous value' to the ability of AFHQ to supply the frontline forces, but this was not the sole benefit conferred by the organisation of UGS 5½, which also set the benchmark for widening the convoy bottleneck.¹⁴⁵ This had already begun to some extent by the dispatch of 'Oil Torch' runs in late December, a practice in which unescorted fast tankers carried oil direct from the Caribbean to North Africa, but UGS 5½ did much to demonstrate the viability of larger special convoys carrying vital equipment to meet urgent operational needs.¹⁴⁶ Following its success AFHQ found it easier to arrange larger shipments than before, as a relaxation of naval restrictions allowed additional vessels, or indeed new convoys, to be dispatched to North Africa.

The general improvement of the logistical system also allowed the Allies to bring additional troops and equipment into the combat zone, even after the initial deployment of the *Satin* task force. Although Eisenhower was reluctant to deploy too many more formations to the frontline, mindful of the precarity of his supplies, a trickle of new units arrived in Tunisia, alleviating the strain on existing formations. The depleted First Army was the chief beneficiary in this regard, as the steady build-up of 46th Infantry Division through January and February enabled Anderson to rotate some of his exhausted brigades back for refitting, 139th Infantry Brigade, for instance, taking over from the battered 36th Brigade on the Tabarka-Mateur road in early January.¹⁴⁷ This also gave Anderson some ability to deploy brigades elsewhere to meet crises without compromising his frontline, as evidenced by 36th Brigade's deployment to support the French during Eilbote and 1st Guards Brigade's employment at Kasserine.¹⁴⁸ Infantry reinforcements were supplemented by the arrival of new armoured forces, in the form of 25th Army Tank Brigade, as well as a shipment of Sherman tanks, intended for 6th Armoured Division.¹⁴⁹ Although the latter were ultimately diverted to replace losses in US 1st Armored, as aforementioned, the arrival of new tanks was a welcome boon, the additional fire

¹⁴⁴ Leighton, p. 475.

¹⁴⁵ Eisenhower, p. 165.

¹⁴⁶ Leighton, pp. 475-77.

¹⁴⁷ TNA: CAB 106/545, '"The story of 46th Division 1939-1945"; an account of operations in Tunisia, Italy and Greece.', 1946.

¹⁴⁸ Blaxland, pp. 169-71.

¹⁴⁹ NARA: RG 319, 'Commander-in-Chief's Dispatch'.

support helping to mitigate the imbalance of manpower between the opposing armies, an improvement also repeated in regards to artillery, as a number of new regiments entered First Army service.¹⁵⁰

The French too saw a significant bolstering, as Eisenhower's lobbying attempts to kickstart French rearmament bore valuable fruit. Although initially forced to supply material from his own theatre stocks, the C-in-C continued to highlight dire French deficiencies in equipment to the CCoS, arguing that the situation could be rectified by the provision of 'only a few tanks with some additional flak and anti-tank equipment'.¹⁵¹ These efforts finally bore fruit at Casablanca, as the CCoS undertook to support a long-term program of re-armament that would raise 8 Infantry and 3 Armoured Divisions for Free French forces, drawing largely on the pool of manpower then available in North Africa.¹⁵² This decision paved the way for a steady flow of equipment to French forces already engaged in Tunisia, and was readily taken up by Eisenhower, who allotted 25,000 tons per convoy to French re-armament material, with a further 30,000 for civilian supplies.¹⁵³ Even before this arrived, on 20 January AFHQ authorised the release of a large quantity of weapons, ammunition and MT to 19th Corps, including 400 trucks, 60 37mm anti-tank guns, 100 .50 machine guns, and 6 75mm-armed half-tracks, aimed at giving Koeltz's troops some ability to resist attack by German tanks.¹⁵⁴ Further material was also supplied by the provision of cast-offs from British and American units being refitted themselves, 6th Armoured Division for instance providing a number of outmoded Valentine tanks to French forces on reception of their own new Shermans.¹⁵⁵ With the release of this new equipment, a number of French units were thus rotated back from the frontline for re-equipment, re-training, and reconstitution into fully equipped divisions, often with assistance from British or American officers, and although by no means complete by the time of Kasserine, the foundations of a reinvigorated French army were certainly in place.¹⁵⁶

¹⁵⁰ Playfair, p. 273.

¹⁵¹ TNA: WO 204/1167, 'French Equipment, 1942-44'; TNA: WO 193/844, 'Operations, Phase I - Part 3'.

¹⁵² TNA: WO 204/1185, 'Re-armament policy; directives, general correspondence etc', 1943.

¹⁵³ Leighton, p. 473.

¹⁵⁴ TNA: WO 204/1167, 'French Equipment, 1942-44'.

¹⁵⁵ Anderson, p. 146.

¹⁵⁶ TNA: WO 204/1189, 'Training', 1942-44.

Yet while Allied efforts in the realms of supply and command organisation bore valuable fruit, a more contested legacy is that of the performance of Allied troops in the field. Most first-hand accounts paint a reasonably positive image of this phase, as while senior commanders ‘found a number of things that were disturbing’ in the operational practice of some of their formations, in general the proficiency of their troops was felt to be more than satisfactory.¹⁵⁷ First Army Lessons Learnt for example, reflected on their success in halting many of von Arnim’s local offensives, ‘inflicting losses including many tanks’.¹⁵⁸ Even Kasserine, which inflicted ‘serious wounds’ on II Corps, was felt to have little long-term impact, as it did not affect ‘our strength more than temporarily’, the situation having been stabilised ‘by the energy and initiative of the handful of gallant troops on the spot’.¹⁵⁹ This positive view, however, has not always been upheld in the historiography, Watson for instance dubbing Allied performance as ‘tactically poor if not amateurish’, in contrast with the skilful handling of 5. Panzerarmee, which ‘swept away the French with relentless attacks’, ‘stopped the Americans cold’, and ‘ruffled the British’, before delivering a ‘relentless and faultless’ attack at Kasserine.¹⁶⁰ Others have taken a more proportionate view, highlighting Axis achievements as well as Allied successes. Kitchen, for example, has argued that while Kasserine represented a ‘carefully planned and skilfully executed attempt to turn the Allied southern flank’, neither Rommel nor von Arnim really achieved much more than tactical victories, with losses they could ill afford, mainly due to the increasingly ‘determined and spirited defence’ of Allied forces.¹⁶¹ Yet despite the divergence of these interpretations, it is an interesting point of scholarly analysis that virtually all accounts discussing this period entertain the idea that Allied forces demonstrated a growing combat proficiency. Even Watson, despite his damning critique, nevertheless acknowledges the stiffening resolve and following rapid improvement made by the Allies, particularly surrounding Kasserine.¹⁶² Such points are relatively compelling, as it is easy to see the early battles in January and February as important sources of experience in low and then high intensity combat for many Allied units which were

¹⁵⁷ Eisenhower, pp. 157-58.

¹⁵⁸ TNA: WO 231/10, ‘Lessons Learned from Ops in Tunisia, Directorate of Military Training’.

¹⁵⁹ NARA: RG 319, ‘Commander-in-Chief’s Dispatch’; Alexander, ‘Despatch’ pp. 59-60.

¹⁶⁰ Watson, pp. 68-69, 76-77.

¹⁶¹ Kitchen, p. 431-37.

¹⁶² Watson, p. 74-75, 106-108.

otherwise green. Such engagements, though costly, exposed weaknesses in such a way that the Allies could rectify them moving forward, while more seasoned troops displayed increasing capabilities in the face of Axis assault.

There were of course mistakes made however, and both senior leaders and Allied detractors have not been wrong in focusing on the relative inexperience of Allied soldiers, particularly those in II Corps, as a driving factor. A chief example of these tactical errors was the disposition of II Corps troops upon the extension of the frontline into Southern Tunisia, as while Allied forces were already dangerously dispersed, this weakness was compounded by the selection and siting of poor defensive positions. Although largely the fault of Fredendall, who micro-managed the arrangement of his subordinates' defences, choosing strung-out and non-mutually supporting positions, this was made worse by the failure of junior leaders to prepare those positions adequately.¹⁶³ While unit leaders appreciated the need to secure key high ground features, the fortification of these positions without effective control of the surrounding terrain, meant that these 'islands' were easily encircled. This was proven at Sidi Bou Zid, where 168th RCT of 34th Division found itself surrounded as 10th and 21st Panzer Division swept around the features they were defending, brushing aside 1st Armored Division's force in the valleys between them.¹⁶⁴ Once this had been achieved, Axis forces simply destroyed each of 168th RCT's isolated positions in turn, resulting in the loss of the majority of the unit's strength.¹⁶⁵ Such deployment issues were further compounded by an amateurish approach to the preparation of defensive positions. Despite having occupied certain localities for upwards of two days, some units were found by Eisenhower to have neither adequately camouflaged their defensive earthworks, nor laid mines in front of their position, in stark contrast to the two hours that German troops usually needed to do likewise.¹⁶⁶ This was particularly prevalent in areas not directly on the frontline, leading to a number of units having to frantically dig in when Axis forces finally attacked. Such was the case at Kasserine Pass itself, where Stark Force, a mixed unit of infantry, artillery and engineers under the command of Colonel Alexander Stark, had scant hours to prepare the ground before the Afrika Korps arrived, with many

¹⁶³ Howe, pp 399-400.

¹⁶⁴ TNA: WO 201/780, 'Operation "Torch": operations in Tunisia 18th Army', 1943.

¹⁶⁵ Alexander, 'Despatch', p. 57.

¹⁶⁶ Eisenhower, p. 157.

mines having been laid in plainly obvious positions due to the lack of time to properly conceal them.¹⁶⁷

Nor were lax standards in defence the only signs of serious inexperience, as the tactical capabilities of American troops also displayed marked shortcomings. On the offensive, II Corps' attacks were often poorly handled, or committed piecemeal with limited support and reconnaissance, exemplified by offensives around Faid and Maknassy at the end of January. At Faid, General Raymond McQuillin's CCA, though initially hamstrung by contradictory orders from Fredendall, nevertheless displayed a singular lack of haste in moving to relieve the French, the repulse of a light probe encouraging McQuillin to wait until the next day to commence relief efforts.¹⁶⁸ This merely gave the Axis time to prepare however, resulting in a costly rebuff when the main US attack began at 7am on 31 January, as 'the enemy during the preceding night had emplaced and concealed his antitank and heavy machine guns, mortars and artillery'.¹⁶⁹ Yet where American forces did find their élan, they often suffered just as badly, due to lack of preparation and over-commitment. A prime example of this was the counterattack mounted by CCC around Sidi Bou Zid on 15 February, following the encirclement of 168th RCT. Despite a lack of reconnaissance, which would have revealed that the Americans were heavily outnumbered, CCC enjoyed some initial success due to the dispersion of the German positions, 'about fifty tanks leading a phalanx of armoured infantry and artillery with tank destroyers on the wings [...] grinding its way through rising dust in the modern equivalent of a cavalry charge'.¹⁷⁰ However, such a densely packed formation was vulnerable on open ground; hampered by continuous fire from anti-tank guns, artillery and air support, CCC's advance was brought to a costly halt and then a hurried withdrawal under withering fire, as parts of 21st Panzer Division threatened encirclement.¹⁷¹ Of Stack's initial fifty tanks, only four returned from the attack, leaving 1st Armored Division absent nearly a third of its already depleted strength in armour, II Corps by this point having lost '98 medium tanks, 57 half-tracks, 12

¹⁶⁷ Watson, p. 84.

¹⁶⁸ Howe, p. 391.

¹⁶⁹ Ibid, p. 392.

¹⁷⁰ Macksey, p. 150.

¹⁷¹ NARA: RG 319, 'Commander-in-Chief's Dispatch'.

155mm guns and 17 105mm guns', losses that 'ruled out the possibility of further counterattacks to hold the enemy, much less to restore our strategic position'.¹⁷²

AFHQ was aware of these shortcomings however, as a review of unit training published in the immediate aftermath of Kasserine makes clear. Although American units were praised for having a 'high standard of handling weapons, and marksmanship,' and were of 'excellent physical standard', they were indicted on the quality of their junior leadership, officers, and collective training.¹⁷³ Squad commanders were considered to be a weak link, as they 'know little more than their men, and have had no instruction in the art and practice of command and leadership', whilst the officer corps, though possessing excellent technical knowledge, 'appeared upset by improvisations necessary in war and difference from their textbook'.¹⁷⁴ However the greatest deficiency of American forces was considered to be 'the lack of any minor collective Training for Pls [Platoons] and Coys [Companies]. The two phases of training stressed in U.S.A seems to have been individual handling of weapons, and large-scale manoeuvres'.¹⁷⁵ None of these were new revelations, many of them having been observed during home training in 1942, but such critique goes a long way in explaining why American units struggled in their initial baptism of fire, as the nature of combat in Tunisia during this period struck closely at the gaps in unit training that were identified.¹⁷⁶ Many actions were on a scale between company and brigade/RCT, while the dispersed nature of the fighting put considerable onus on junior leadership and capability in a variety of minor tactical operations, such as mine clearance, for which no basic battledrills had been adapted.¹⁷⁷ This was particularly highlighted in the case of night battles, exemplified by a German night attack at Sbeitla on 17 February, which prompted elements of US 1st Armored, already dispirited following defeat at Sidi Bou Zid, to begin withdrawing, in 'a dense mass of churning traffic which streamed through Sbeitla in the darkness, choking the roads and threatening to leave Sbeitla half-defended'.¹⁷⁸

¹⁷² Ibid.

¹⁷³ TNA: WO 204/1893, 'Training in North Africa, Policy', 1943.

¹⁷⁴ Ibid.

¹⁷⁵ Ibid.

¹⁷⁶ Robert Palmer, and others, *United States Army in World War II, The Army Ground Forces: The Procurement and Training of Ground Combat Troops* (Washington, D.C.: United States Army Center of Military History, 1991), p. 459.

¹⁷⁷ TNA: WO 204/4237, 'Tunisia: Reports on Operations'.

¹⁷⁸ Howe, p. 432.

American troops were not alone among the Allied forces in suffering reverses however, or in receiving critique on their deficiencies. For French units, the factor delineating between battlefield success and failure was deceptively simple, as despite initial successes against the Superga Division in early January, 19th Corps found it hard going against counter-attacking German forces at Fondouk, and later that month at Robaa and Ousseltia.¹⁷⁹ Though the latter were arguably more experienced than their Italian counterparts, the chief difference between the forces 19th Corps faced lay in their equipment. Italian material penury, borne from an ‘essentially artisanal’ wartime industry, and exacerbated by the Regio Esercito’s focus on manpower over material, contrasted poorly with the mechanical approach of their German allies.¹⁸⁰ While the Superga Division was widely dispersed, and short of much of its heavy equipment, the German battlegroups sent to oust the French from their positions were provided substantial artillery and armour support, that the French, still largely reliant on a small number of 75mm field guns for their anti-tank capability, were ill-equipped to face.¹⁸¹ Such deficiencies in equipment were noted by Allied observers as being ‘the great disability which overshadows all matters of training of the French forces’, and thus the main contributor to 19th Corps’ comparatively low combat power.¹⁸² Indeed in most other aspects French soldiers were considered to be of good quality, with tough, self-reliant and experienced men, confident junior leadership, and ‘generally first class, experienced and battle worthy’ officers.¹⁸³ Morale was also high, this spirit having been ‘carefully fostered by Generals Juin and Koeltz and a fine body of junior commanders’; all AFHQ needed to do was provide them with the tools they needed.¹⁸⁴

For British units on the other hand, the cause of their setbacks in combat is less immediately obvious. Anderson’s First Army fared relatively well, proving able to repulse attacks from von Arnim’s 5. Panzerarmee in January and forming a key part of the Allied forces deployed to counter the Axis attack through the Kasserine Pass. However, while successful in the majority of their defensive actions, British

¹⁷⁹ Anderson, p. 143.

¹⁸⁰ MacGregor Knox, ‘The Italian Armed Forces, 1940-3’ in *Military Effectiveness Vol.3: The Second World War*, ed. by Allan R. Millett and Williamson Murray, (Cambridge: Cambridge University Press, 2010), pp. 136-179 (pp. 140-41).

¹⁸¹ Blaxland, pp. 152-53; IWM: EDS Appreciation 12, Ch. 5.

¹⁸² TNA: WO 204/1893, ‘Training in North Africa, Policy’.

¹⁸³ Ibid.

¹⁸⁴ Anderson, p. 134.

forces made scarcely more headway than their French or American allies when attempting to seize German positions. British offensives in January bogged down against staunch Axis resistance, with attacks on Green and Bald Hills on 3 January by 36th Brigade, 3rd Parachute Battalion, and No. 6 Commando being called off after two days of heavy fighting, whilst attempts to take Djebel Mansour and Djebel Alliliga by 1st Guards Brigade and 1st Parachute Battalion in early February, also met the same fate.¹⁸⁵ Certainly, from a training perspective it is hard to discern what British troops were lacking; discipline and morale were considered excellent, 'even after long periods of discomfort in the line', and junior leadership, now combining both practice and experience, was also of a high standard, as was collective training.¹⁸⁶ Those weaknesses identified were also comparably minor, with small arms proficiency being considered 'not as good as it might be', a lack of training with mortars and a tendency for units to clump together on manoeuvres, with none of these particularly constituting sufficiently dire shortcomings to explain British failures on the offensive.¹⁸⁷

Instead, a more in-depth look at these engagements suggests that it was not the proficiency of the troops involved that was the issue, but that they were still yet to fully acclimatise to the tactical challenges posed by the local terrain. As 78th Division's history highlights, at Green and Bald hills, British forces executed a well-coordinated attack under an artillery barrage, but struggled to make headway in the face of well dug-in German defences.¹⁸⁸ Though eventually Bald Hill was captured, aggressive counterattacks kept the situation in flux; 6 Commando 'took it, lost it, and took it again', until the attack was called off on 5 January.¹⁸⁹ A near identical situation was found at Djebel Mansour, where 1 Para and 1st Guards Brigade, along with French Foreign Legion troops, gained possession of both key peaks against 'fiendishly skilled opposition', only to be eventually dislodged after two days of fighting.¹⁹⁰ This was an improvement on previous encounters, such as 1st Guards Brigade's experiences at Longstop, but nevertheless demonstrated that First Army

¹⁸⁵ Blaxland, pp. 146, 156.

¹⁸⁶ TNA: WO 204/1893, 'Training in North Africa, Policy'.

¹⁸⁷ Ibid.

¹⁸⁸ Ray, pp. 36-37.

¹⁸⁹ Ibid, p. 37.

¹⁹⁰ Blaxland, p. 156.

had yet to perfect its technique for seizing Axis hilltop positions.¹⁹¹ First Army's Lessons Learned summarised the German system of defence as making 'full use of reverse slopes and planned immediate counterattacks. Whatever the strength of their total available forces, reserves were always kept immediately available for counter-attack. This type of defence has proved most successful in hilly country'.¹⁹² British forces therefore had to concentrate on displacing their opponents from the reverse slope of the position and consolidation of captured ground at speed, 'to defeat the counter-attack which will almost certainly be made early'.¹⁹³ Some units already displayed the beginnings of this skill, 2nd Battalion London Irish Rifles managing to capture and hold Point 286 during combat around Bou Arada in late January, but the grievous casualties they incurred in doing so makes it clear that First Army still needed time to consider these lessons.¹⁹⁴

In fact, it would not be inaccurate to apply this statement to operations in Tunisia as a whole at this time, as while Allied forces did suffer setbacks, they also demonstrated distinct improvements in their operational efficacy. Though offensive operations had yet to be perfected, their increased success in defensive engagements, compared to those experienced at the end of 1942, represented a significant stride forward. During Eilbote, although 5. Panzerarmee enjoyed some success against 19th Corps, the northern prong of their offensive, consisting of 'infantry and at least fifty tanks of 10 Panzer Division', which fell on 5th Corps' forces in the Goubellat plain, struggled to shift the emplaced defenders.¹⁹⁵ Already building up for an offensive of their own, 5th Corps' men were fully prepared for a German attack, Brigadier Russell of 38th Brigade stating:

The Bosche attacked us instead at 6am on the 18th. This proved to be "a good thing" [...] when the Bosche advanced he found Infantry – where no infantry was expected – and he got a most unexpected blast from 72 guns [...] in addition to his heavy infantry casualties, he lost a large number of tanks.¹⁹⁶

Similar strides in defensive capability were also displayed at Sbiba during Kasserine, where a mixed force of French, British and American troops put up a staunch

¹⁹¹ Ray, pp. 27-29.

¹⁹² TNA: WO 204/4237, 'Tunisia: Report on Operations'.

¹⁹³ Ibid.

¹⁹⁴ TNA: CAB 106/569, '38th Brigade Account'.

¹⁹⁵ Anderson, p. 143.

¹⁹⁶ TNA: CAB 106/569, '38th Brigade Account'.

defence against 21st Panzer Division. Well-sited defences, covered by minefields and pre-prepared artillery, broke up the Axis advance before it could be launched, forcing Rommel to call off his advance on the town, thus blunting the northern thrust of the Axis offensive.¹⁹⁷ A hard-fought engagement at Thala saw comparable scenes, as Brigadier Nicholson's composite 'NickForce' doggedly held on to a series of hastily-established defensive lines outside the town.¹⁹⁸ Although close-run, 10th Panzer Division were unable to break the Allied position, finally withdrawing due to the volume of fire laid down by the Royal Artillery, assisted by the guns of US 9th Infantry Division, who Brigadier Royal Artillery (BRA) Parham taught to fire divisional concentrations on the spot.¹⁹⁹

This improving proficiency was also carried forward into other aspects of campaigning, as Allied forces demonstrated a growing command of the more ubiquitous, low-intensity elements of combat, such as patrolling. Early on it had largely been only the French, used to operating independently in this harsh terrain, that were able to contend with Axis forces in this type of operation, as their equipment deficiencies counted for far less. Occupying positions in the sections of sheer and mountainous terrain between Allied formations, independent battalions of Moroccan, Algerian and Senegalese colonial troops proved highly adept at this sort of irregular warfare, and were thus valuable assets to the more traditionally trained units whose flanks they guarded.²⁰⁰ However, Anglo-American troops quickly recognised the need for vigorous patrolling of their own and, as the period wore on, became increasingly proficient at the task.²⁰¹ For 38th Irish Brigade, in their 'nursery in the Goubellat Plain – Patrolling was the order of the day. Each night saw strong fighting patrols from the three Battalions sallying forth in search of Bosche'.²⁰² Though initially considered 'very brave but not very good' by the prisoners they captured, by the end of January patrols were 'business like. They knew what they had to do – the best way to do it – and the weapons to use for the job'.²⁰³ Alongside patrolling, night operations also became an important aspect of campaigning, with

¹⁹⁷ Macksey, pp. 158-59.

¹⁹⁸ Anderson, p. 145.

¹⁹⁹ Macksey, pp. 169-70.

²⁰⁰ TNA: CAB 106/569, '38th Brigade Account'.

²⁰¹ TNA: WO 201/823, 'Lessons from Operations in North Africa'.

²⁰² TNA: CAB 106/569, '38th Brigade Account'.

²⁰³ Ibid.

Allied forces increasingly utilising the cover of darkness to offset the advantages in defence afforded to their opponents by the terrain.²⁰⁴ In early January, 36th Brigade's attack on Green and Bald Hills made use of such a night assault to gain the lower slopes, before 1 Para moved up to take the summit.²⁰⁵ Although unable to fully capture the Axis position, following these early examples the Allies would continue to employ night attacks with increasing success, First Army Lessons Learnt concluding that 'initially our troops showed inferiority to the Germans in nightwork. But, with practice and experience our troops, more than held their own at this'.²⁰⁶

It was the Americans who showed the most improvement, even after receiving a number of stinging blows at Kasserine. In the aftermath of Sidi Bou Zid and despite the near complete rout of CCA, General Ward rallied his division to form a line of resistance east of Sbeitla that held the German advance for over two days, whilst simultaneously executing an orderly withdrawal towards Tebessa.²⁰⁷ In doing so, Ward not only managed to re-unify his previously scattered division, but also inflicted sufficient delay on the Axis advance that it bought Anderson time to move reinforcements south into the crisis area, while Ward's rear-guard, CCB, even managed to ambush elements of 21st Panzer Division advancing against them.²⁰⁸ Waiting until the German tanks were at point-blank range to open fire from their own tanks, concealed in hull-down positions, CCB demonstrated a far more considered approach to the use of armour than other formations from their division had even days prior, evidently having learnt from their experience at Tebourba in December.²⁰⁹ Other American units also showed their quality as the Kasserine battle progressed, Colonel Stark's scratch force repulsing an over-confident thrust from an Afrika Korps detachment, which Rommel had rushed up to try and seize the Kasserine Pass.²¹⁰ Although eventually evicted from their positions, as Rommel renewed the attack with considerably more firepower, that this ad hoc unit managed to hold off some of Rommel's veteran troops for nearly two days, before withdrawing intact, does much to demonstrate that when well led and employed,

²⁰⁴ TNA: WO 204/4237, 'Tunisia Reports on Operations'.

²⁰⁵ Ray, p. 37.

²⁰⁶ TNA: WO 204/4237, 'Tunisia Reports on Operations'.

²⁰⁷ Howe, pp. 430-37.

²⁰⁸ Anderson, p. 145.

²⁰⁹ Howe, pp. 434-35.

²¹⁰ Rolf, pp. 135-36.

American units could be the equal of any other force in North Africa. Indeed, this was to be proven scant days later, as on 21 February, a composite force of infantry and armour under Robinett in the valley of Djebel el Hamra halted the westward wing of Rommel's advance towards Tebessa.²¹¹ Although Major General Bulowius' attacks made some initial headway, potent fire concentrations from Robinett's defenders, dug in in the hills above the valley, stopped their advance, before a counterattack from US 1st Infantry Division drove them back down the valley, taking a number of prisoners.²¹²

This steady refinement of technique was assisted by the arrival of new weapons and formations that significantly augmented Allied firepower. In terms of Armoured Fighting Vehicles (AFVs), the mainstay of this reinforcement was the distribution of large numbers of M4 Sherman tanks, courtesy of the improved supply situation. A well-balanced tank, the M4 Medium offered reasonable armour and decent firepower in a reliable and easily maintained package, and enabled Anglo-American formations to standardise their armour and cast off obsolete designs, such as the Crusader and Valentine tanks of 6th Armoured Division, neither of which was an effective match for the most common German AFV in Tunisia, the Panzer IV.²¹³ The replacement of these anaemic designs, as well as US 1st Armored's inferior M3 Lee/Grant, the M4's stopgap predecessor, closed the technical gap between Allied and German AFVs, enabling Allied armour to more effectively match Axis armour in direct combat.²¹⁴ The arrival of 25th Army Tank Brigade in early February continued this trend, bringing with them the new Churchill Mk.IV. Designed for infantry support and positional assault, the Churchill was slow but heavily-armoured, and from Mk.III onwards carried a 6-pdr gun that allowed it to deal with most Axis armour threats at battlefield ranges.²¹⁵ It also had an incredible hill-climbing capacity and was good at navigating broken ground, making it highly valuable in the rough terrain of Tunisia, where it could break into enemy hilltop positions alongside an

²¹¹ Alexander, 'Despatch' pp. 59-60.

²¹² Macksey, pp. 166, 173-74.

²¹³ Harrison Place, *Military Training in the British Army*, p. 117; TNA: WO 201/823, 'Lessons from Operations in North Africa'.

²¹⁴ David Fletcher and Steven Zaloga, *British Battle Tanks: US-Made Tanks of World War II* (Oxford: Osprey, 2018), p. 36.

²¹⁵ David Fletcher, *British Battle Tanks: British-Made Tanks of World War II* (Oxford: Osprey, 2017), p. 155, 163.

assault.²¹⁶ Although not given a chance to prove the latter during this phase, 25th Army Tank Brigade nevertheless contributed its firepower during Kasserine, aiding in the defence of Sbiba against 21st Panzer Division, where they knocked out four enemy tanks for one loss of their own.²¹⁷

The same combination of reinforcement and renovation in equipment also applied to the artillery, the firepower and flexibility of which was substantially expanded. Already enjoying a more than modest superiority in guns over their Axis opponents, First Army and US II Corps now also began to enjoy advantages in shell weight as well, as new Medium and Heavy artillery regiments with higher calibre guns arrived at the front. For the British, these took the form of the BL 5.5-inch Medium Gun and the BL 7.2-inch Howitzer, while for US forces, the M1 155mm Howitzer and M1 155mm Gun 'Long Tom' fulfilled the same roles.²¹⁸ All of these new guns fired significantly heavier rounds than the field pieces, the 25-pdr and 105mm Howitzer, that both forces used, with shells ranging from three to eight times larger, as well as longer maximum ranges, allowing the Allies to reach and potentially destroy dug-in Axis strongpoints, where previously they could only suppress them.²¹⁹ Moreover, this reinforcement allowed the Allies to engage in more effective counter-battery fire by bringing their guns into close parity with those deployed by the Axis which, while few in number, had up to this point 'consistently outranged our own, and had it been in greater strength this fact would have had a serious effect upon our operations'.²²⁰

To coordinate this increasing weight in artillery, new organisations were also implemented that helped centralise their deployment and usage. These included the Army Group Royal Artillery (AGRA); tested during exercises at home and sanctioned in November 1942, the AGRA was an independent formation of several regiments of Royal Artillery (usually between 5 and 8 Field, Medium or Heavy Regiments), designed to centralise Army and Corps-level artillery assets to better supplement the organic firepower of divisions and corps.²²¹ 1st AGRA's arrival in

²¹⁶ Ibid, pp. 169-70.

²¹⁷ NARA: RG 319, 'Commander-in-Chief's Dispatch'.

²¹⁸ Playfair, p. 273; George Forty, *US Army Handbook, 1939-1945* (Stroud: Sutton, 1995), pp. 140-41.

²¹⁹ TNA: WO 204/1905, 'Lessons from Operations on Tunisia and Italy'.

²²⁰ TNA: WO 204/4237, 'Tunisia Reports on Operations'.

²²¹ Stig Moberg, *Gunfire! British Artillery in World War II* (Barnsley: Pen and Sword, 2017), pp. 66-67.

February represented the debut of this new formation, and early on, it actually fulfilled a dual role, offering Anderson a considerable augmentation to his own army's firepower, whilst also providing much-needed heavy fire support to 19th Corps.²²² The massed fire of these concentrated guns was guided by new fire control methods, employed by Anderson's pioneering BRA Jack Parham, who pushed for the control of massed fire under the direction of proper observation.²²³ This included the use of Air Observation Posts (AOP) equipped with the light Taylorcraft Auster, which had been trialled in the early years of the war and brought for testing in Tunisia by Parham, to provide accurate information to the gunners.²²⁴ To a large extent, these innovations were also mirrored in US artillery tactics, which had also begun the development of air observation in the interwar years, as well as the centralisation of fire control.²²⁵ Although it was only in the final days of this phase that such improvements began to display themselves, going forward US guns would play a pivotal role in the successes of II Corps and would prove 'satisfactory and effective to a high degree'.²²⁶

However, this proliferation of new weapons was not solely confined to the Allies, as Axis forces also benefitted from the deployment of cutting-edge new technology, namely the 21cm Nebelwerfer 42 and the Panzer Mk.VI 'Tiger I'. The former was a multi-barrelled rocket artillery system, whose main advantage lay in its ability to rapidly deliver heavy ordnance, a useful asset given the Axis' deficiency in artillery and made more valuable by the distinct shrieking sound the rockets gave off, which sapped the resolve of enemy troops.²²⁷ Meanwhile, the Tiger I was a new German heavy tank, initially conceived pre-war as a 'breakthrough vehicle' and then progressively upgraded following the Wehrmacht's early campaigns.²²⁸ More powerful than any Axis AFV yet encountered by the Allies, a token number of these vehicles arrived in Tunisia in December, but proper deployment only began in early 1943, with a number of Tigers being identified by First Army in use as spearhead

²²² Playfair, p. 273.

²²³ Moberg, pp. 83-84.

²²⁴ TNA: WO 201/2874, 'Notes by Brigadier Parham, BRA 1st Army', 1942.

²²⁵ Boyd L. Dastrup, *King of Battle: A Branch History of the US Army's Field Artillery* (Virginia: Office of the Command Historian, United States Army Training and Doctrine Command, 1992), pp. 206-207.

²²⁶ NARA: RG 492, 'MTOUSA CIC, Records relating to ops, 1942-44'.

²²⁷ Major William J. Hanks, 'Rockets', in *The Field Artillery Journal*, 34, no.3 (1944), p. 155. Mitcham, p. 73.

²²⁸ Watson, p. 156.

forces during Eilbote, where their resilient armour was noted by British troops.²²⁹ However, while indeed sophisticated, these weapons could be poorly handled, with Nebelwerfers and German artillery in general, being noted as often lacking central direction and concentration.²³⁰ The Tiger meanwhile, required a considerable amount of maintenance and its size proved a double-edged sword, as it formed a large target, and despite its thick armour, it was not impenetrable to Allied anti-tank guns, a point proven by visiting Canadian Captain G.M. MacLachlan, whose men knocked one out with a 6-pdr gun around Robaa on 31 January.²³¹ Moreover, these new weapons were sorely limited in number, with only a single regiment of Nebelwerfers, Werfer Regiment 71, and two battalions of Tigers, the 501st and 504th (around 20 Tigers at any one time), being fielded throughout the entire campaign.²³² Thus, although they were undoubtedly potent weapons, they simply were not fielded in the bulk required to have a significant impact on the fortunes of Axis forces in North Africa, whereas those improvements made by Allied forces were of a far broader scale.

A similar situation to that prevailing on the ground can also be observed in terms of the cooperation between the three services, as while the situation was generally improving, there nevertheless remained some obstacles in the Allies' path. These, as in prior months, remained centred over the struggle of the Allied air forces to achieve dominance over the combat area, Air Marshal Tedder, summarising the problems thus:

Fighters have been frittered away in penny packets to give close cover, bomber and fighter escorts have similarly been frittered away in attacking petty targets, all on the orders of local Commanders. Under such conditions losses have been high, enemy air has been aggressive and impudent despite inferior numbers, and in consequence effective support of the land battle has been quite unattainable, on the scale which should have been possible with the forces available.²³³

However, as Tedder admitted, these were declining problems, as 'the basic remedy is proper organisation and control. This is already beginning to show results [...] Much however remains to be done and it will take time to get the close co-operation here

²²⁹ TNA: WO 204/3971, 'From 1st Army', 1943.

²³⁰ TNA: WO 204/1905, 'Lessons from Operations on Tunisia and Italy'.

²³¹ CMHQ: Reports, 1940-1948, Report no.95, 'Attachment of Canadian Officers and Soldiers to First British Army in Tunisia, 1942-1943', 1943.

²³² TNA: WO 204/10334, 'Lessons from the Tunisian Campaign', 1943.

²³³ TNA: AIR 41/50, 'The Middle East Campaigns; Vol IV'.

between land and air which we have attained [in Middle East Command]'.²³⁴ Nor was this begrudging approval misplaced, as AFHQ continued to make clear strides towards rectifying their interservice deficiencies throughout this period, preparing the ground for more effective cooperation as the campaign moved forward.

Indeed, many of the Allies' difficulties in the air at this time were material instead of organisational. Foremost among these were continuing shortages in airframes, a problem resulting from the high attrition rates suffered during the rush on Tunis. Allied squadrons assigned to air support of the ground forces were consequently in dire straits as regards equipment for much of early 1943, with Spaatz reporting in mid-January that 12th Air Force's nine groups possessed only 270 operational aircraft, under half their nominal strength.²³⁵ Many of these were of obsolescent type as well, such as the P-39 Airacobra, which was 'so inferior to the Luftwaffe's Me-109s and Focke-Wulf 190s that they themselves had to be escorted by the Spitfires on their strafing and fighter-bomber missions'.²³⁶ Although 12th Air Force had initially deployed the much more capable P-38 and P-40 as frontline fighters, the latter had suffered heavy losses during the Allies' winter offensive, while the P-38s had been withdrawn to provide bomber escorts.²³⁷ British units also suffered from a lack of modern hardware, the most egregious example being the Bisley, which despite having been rotated onto night operations continued to prove ineffective, eventually prompting a request from Eisenhower in mid-February that the four remaining squadrons be re-equipped with A-20s or DB-7s, as 'the tactical efficiency of the Group would be many times multiplied'.²³⁸ Promised reconnaissance Mosquitos also failed to materialise, disrupting EAC and 12th Air Force's attempts to escalate strikes on Axis shipping.²³⁹ As a result, many sweeps in January were conducted essentially blind, with the exception of intelligence arriving from Malta or Bletchley Park, greatly limiting their effectiveness.

Limitations in air strength were further compounded by continuing low serviceability rates, a report from 20 February highlighting that most American units

²³⁴ Ibid.

²³⁵ Levine, p. 134.

²³⁶ Ibid, p. 117.

²³⁷ Rein, p. 117.

²³⁸ TNA: AIR 8/1071, 'Campaign in Tunisia Part II', 1943.

²³⁹ Craven and Cate, p. 147.

were seriously understrength, with many cases in first line squadrons where serviceable airframes represented less than one third of their overall establishment strength.²⁴⁰ Part of this problem was ascribed to supply issues, as the influx of reinforcements was comparatively slow, not aided by the low priority placed on transit of RAF personnel and vehicles in AFHQ's convoy requests. According to a note to Air Marshal Welsh from 6 January, the War Office was 'astonished' to find that AFHQ's convoy priorities for K.M.9 placed RAF equipment as the very last item in a list that contained, amongst other things, 'a bath unit and four dental units', leading to the note urging that the 'relative disadvantages of toothache and inadequate air support must be reconsidered'.²⁴¹ Such oversights had a detrimental impact on the ability of Spaatz and Welsh to build up the strength of their respective forces, not only in equipment, but also in manpower, as Welsh in particular had been attempting to bring in additional expert personnel in order to improve coordination.²⁴² The lack of technical experts and seasoned personnel itself was the source of a number of maintenance issues, as although somewhat more effectively organised than during November and December, Allied maintenance units still suffered from a dearth of experience, and lack of development of forward repair facilities prevented the rapid return of damaged craft to service.²⁴³ Such limited return rates thus contributed, 'in a marked degree, to keeping the number of serviceable aircraft at a low level', leading the Chief of Air Staff to conclude that despite steady improvements, at present rates, it was unlikely that an average serviceability rate of more than 50 percent could be achieved by 1 March.²⁴⁴

Difficulties deriving from local infrastructure and climactic conditions also dogged Allied air efforts. Poor weather throughout January and February hobbled the effectiveness of operations in the region, an issue most prominently displayed during Kasserine. Though USAAF assets were mobilised to lend maximum support to the beleaguered American ground forces, many bombers simply could not find their targets to engage them, with one group becoming so badly lost they dropped their bombs on Souk-el-Arba, a town behind Allied lines and more than 100 miles from

²⁴⁰ TNA: AIR 20/8045, 'OPERATIONS; North and East Africa (Code 55_28); Tunisia operations and intelligence', 1942-43.

²⁴¹ Ibid.

²⁴² Ibid.

²⁴³ Playfair, p. 309.

²⁴⁴ TNA: AIR 20/8045, 'OPERATIONS; North and East Africa'.

Kasserine Pass.²⁴⁵ This was of course assuming that squadrons could take off at all, as ongoing conditions largely kept aircraft on the ground. At the height of the Kasserine battle, between 18 and 22 February, 12th Air Force were limited to four missions on 18 February, none over the next two days, and then only limited sorties on the two after.²⁴⁶ Sortie numbers were further curtailed due to the poor condition of landing grounds, as the spring rains turned the ground into glutinous mud, a problem which could only be somewhat fixed by the laying of prefabricated airfield surfaces, such as Sommerfelt track or American Steel Plank. However, this depended on the supply of sufficient quantities of trackway and matting to prepare landing grounds for all-weather operation, an undertaking initially far beyond the logistical capabilities of AFHQ, as 2,000 tons of Steel Plank were needed to furnish a single bomber aerodrome.²⁴⁷ As such, by the end of December, only a portion of Allied airfields had been fully weatherproofed, with a further number, such as Tebessa, being projected for completion by early March.²⁴⁸ Even then, the prefabricated runways were not deemed to be an acceptable long-term alternative to concrete, as while the latter took time to lay, both Sommerfelt track and American Steel Plank invariably sank into the mud with repeated use, making them highly uneconomical and requiring constant maintenance.²⁴⁹ Drier landing grounds in the desert regions further south, such as Telergma and Biskra, were increasingly used as an alternative by USAAF long-range assets, but these came with their own drawbacks, putting strain on lines of communication and prohibiting their use by shorter-ranged aircraft, which had to make do with the limited number of un-waterlogged fields further north.²⁵⁰ Additionally, although mud was far less of an issue, sand proved a challenge in its place, infiltrating the workings of aircraft, forcing continuous engine changes and as the weather dried out, creating dust storms that frequently left runways totally unusable.²⁵¹

The chief barrier to effective air coordination however, was the continued division between the USAAF and RAF elements of the Allied air forces, a problem

²⁴⁵ Eisenhower, p. 161.

²⁴⁶ Rein, p. 119.

²⁴⁷ TNA: WO 204/1059, 'Airfield Construction 1942-45'.

²⁴⁸ TNA: WO 193/843, 'Operations Phase I Part II'.

²⁴⁹ TNA: AIR 23/6563, 'Report on Air Lessons Learnt in Operation Torch'.

²⁵⁰ TNA: AIR 23/6561, 'Problems Connected with Development of Allied Airpower'.

²⁵¹ Levine, pp. 101-102.

which had been identified during the rush on Tunis, but which Eisenhower had largely resisted addressing.²⁵² Eisenhower had, however, eventually appointed Spaatz as his Deputy in Control of Air Operations, a move which he followed in early January by formalising Spaatz as the head of Allied Air Forces.²⁵³ Yet, while this decision looks on the surface like an ideal solution to problems of centralisation, in practice the appointment was only an intermediary step. In many respects similar to the difficulties encountered by Anderson in coordinating his widely scattered subordinates, Spaatz also struggled to exert his will on frontline operations, as his many responsibilities and dispersed formations were simply too numerous to manage effectively.²⁵⁴ Welsh's EAC suffered from much the same problems, as EAC, based in Algiers, lacked a liaison at Lawson's 242 Group Headquarters, and moreover was handicapped in terms of communications by an unsuitable wireless organisation and inexperienced Signals personnel.²⁵⁵ The latter issues were additionally a barrier to the establishment of centralised fighter control, a lack of which, along with forward radar installations, were similarly mirrored in XII Air Support Command (ASC).²⁵⁶ The cumulative impact of such poor cohesion in effect neutralised whatever advantages the Allies had in numbers, thus enabling the Axis, who unified each national command in January, under Fliegerkorps Tunisia and Comando Aeronautica Tunisia, to more effectively dominate the Tunisian airspace.²⁵⁷

Allied ground commanders cannot be entirely absolved from blame for poor air-ground coordination either, as their atavistic and outmoded attitudes to airpower continued to impede efforts to establish air superiority. Although by January, First Army and EAC had largely resolved their issues regarding adherence to outmoded air support doctrines, this debacle was repeated once again further south between II Corps and XII ASC. Unlike the RAF, the USAAF was not only doctrinally, but institutionally shackled to the US Army, a relationship enshrined in April 1942's War Department Field Manual 31-35, *Aviation in Support of Ground Forces*, which subordinated the air force solely 'to ground force needs and to the purely local

²⁵² TNA: WO 193/843, 'Operations Phase I: Part II'.

²⁵³ Ibid.

²⁵⁴ Mortensen, p. 63.

²⁵⁵ Playfair, pp. 308-309.

²⁵⁶ Ibid, p. 310.

²⁵⁷ TNA: AIR 41/50, 'The Middle East Campaigns; Vol IV'.

situation'.²⁵⁸ This included the placement of air units under the authority of army commanders, a decision which, as demonstrated by II Corps and XII ASC, was continually proven to be a critical error, as the officers of the former often demonstrated a stunning ignorance of air operations.²⁵⁹ Fredendall was chief among these, continually demonstrating a blasé disregard for established Army air doctrine, encapsulated in his deployment of tactical reconnaissance aircraft on light bomber missions over enemy lines. This decision had to be urgently belayed by Spaatz, as the capture of these aircraft if shot down would have placed sensitive Allied equipment in Axis hands.²⁶⁰ Fredendall's inflexibility was unfortunately also echoed in his subordinates, as 1st Armored's Robinett lobbied for the placement of air assets at the disposal of ground commanders, arguing that control needed to be centralised under one commander to guarantee coordination.²⁶¹ Such beliefs led to the continued wastage of air assets by ground commanders who were inexpert in air operations, with demands for 'air umbrellas', echoing First Army's previous misconceptions, causing extensive attrition within XII ASC.²⁶² Lack of knowledge of the capabilities and vulnerabilities of aircraft encouraged overreaction from ground commanders who came under air attack. USAAF Brigadier General Kuter reported to Tedder that US troops were regularly instructed to abandon their anti-aircraft guns and seek cover when Stuka dive-bombers appeared, as they were believed to be invincible.²⁶³ Such illiteracy in air operations also extended to an ignorance of their ground establishments as well, as II Corps displayed a signal lack of concern over the security of airfields, leaving them exposed to attack. The latter was amply demonstrated during Kasserine, as the rapid contraction of Allied lines prompted the hurried evacuation of airfields in the line of advance, leading to the loss of some 60,000 gallons of aviation fuel and 18 inoperable aircraft due to the speed of withdrawal.²⁶⁴ Although ultimately necessary to ensure the frontline could fall back on defensible positions, this nevertheless left Allied air forces at a loss for a time, as

²⁵⁸ Craven and Cate, p. 137.

²⁵⁹ Anderson, p. 135.

²⁶⁰ Mortensen, p. 67.

²⁶¹ Rein, p. 109.

²⁶² TNA: AIR 41/50, 'The Middle East Campaigns; Vol IV'.

²⁶³ Orange, *Tedder: Quietly in Command*, p. 210.

²⁶⁴ Rein, p. 118.

the need to reorganise and replace lost supplies, as well as operate from bases further to the rear, impacted heavily upon operations.

However, for all these daunting problems, it is evident that AFHQ not only clearly recognised their shortcomings, but sought to address these issues with long-term solutions. The creation of the Allied Air Force under Spaatz had been the first such step, but this was further built on by the unification of air support assets under a new Allied Air Support Command (AASC). Created on 24 January under Brigadier General Laurence S. Kuter, AASC was made responsible for coordinating the efforts of XII ASC and 242 Group, with its headquarters established at Constantine alongside Anderson.²⁶⁵ This added a crucial link to the command chain that made the employment of airpower considerably more efficient; Kuter's headquarters could now effectively manage the provision of close air support in tandem with the ground commander, whilst reducing the number of subordinates that Spaatz and Welsh had to manage.²⁶⁶ Although this did not completely solve the issue of misuse of air assets, this centralisation nevertheless represented a step towards a more cooperative and unified model of ground-air support.²⁶⁷ Indeed, the collaboration between Anderson and Kuter appears to have been a congenial one, Anderson regarding Kuter's appointment as a 'big step forward' and attempting to render as much assistance as possible, directing 5th Corps' General Allfrey to push on with the construction of airfields near the frontline.²⁶⁸ Moreover, this attitude of cooperation seems to have extended further down the chain of command, as evidenced by a liaison report from 18 February, in which 5th Corps' BGS was 'full of praise for the work that has been done by 242 Group RAF'.²⁶⁹ This sentiment was echoed in American quarters by Colonel Arnold, G-3 of II Corps, and Colonel William, the CO of XII ASC, who 'were both satisfied that liaison between air and ground troops was excellent'.²⁷⁰

However, the formation of the new AASC was but one component of a wider Allied air reorganisation. A number of voices had pushed for closer integration of air

²⁶⁵ TNA: WO 204/1393, 'Operations in Tunisia - Initial Occupation and Organisation'.

²⁶⁶ Mortensen, p. 67.

²⁶⁷ Gladman, *Intelligence and Anglo-American Air Support*, p. 150.

²⁶⁸ Anderson, p. 142.

²⁶⁹ TNA: WO 204/1065, 'Army Air Support Command and Air Liaison, 42-43'.

²⁷⁰ *Ibid.*

forces since the beginning of the campaign in November, chief among them Tedder, who strongly advocated unity of command as the primary building block of operational effectiveness.²⁷¹ He had presented a draft outline for a proposed reorganisation of the Allies' Mediterranean air forces in December, but the ongoing pressures of the campaign meant that it was not until the Casablanca Conference that these concepts were fully discussed. There they found a keen audience among the Allied senior leadership, who ratified Tedder's blueprints for a new air organisation, installing Tedder as Air C-in-C, leading a new Mediterranean Air Command (MAC).²⁷² This new organisation would encompass all available air assets within the Mediterranean basin, comprising the Northwest African Air Forces (NAAF) under Spaatz, Air Headquarters Malta under Air Vice Marshal Sir Keith Park, and RAF Middle East under Air Chief Marshal Sir Sholto Douglas.²⁷³ The NAAF, the largest and most active component, was then further subdivided based on operational role, its key elements consisting of the Northwest African Strategic Air Force (NASAF), the Northwest African Tactical Air Force (NATAF), formed from the WDAF and AASC, and the Northwest African Coastal Air Force (NACAF), as well as a number of other subsidiary and specialist commands.²⁷⁴ In creating this new structure, as Playfair highlights, the Allied leadership deftly sidestepped the thorny issues surrounding command integration, as 'this device provided, on the highest level, for the American principle of army control of the U.S.A.A.F. but did not affect the independence of the R.A.F. nor its freedom of action in Malta, Tripolitania or the Middle East'.²⁷⁵ Furthermore, the provision of a single Air C-in-C and the rationalisation of air assets into coherent formations effectively centralised the control of airpower in one fell swoop, removing the muddled focus that had pervaded Allied airpower since the Torch landings.²⁷⁶ Although these effects would not be felt until the next stage of the Tunisian Campaign, as Tedder's new command was not brought into action until the height of Kasserine, the reorganisation of Allied airpower at the Casablanca conference nevertheless represents one of the key steps forward made by the Allies during this period.

²⁷¹ TNA: AIR 23/1709, 'Talk by Air Vice Marshal Sir A Coningham, 16 Feb 1943'.

²⁷² CAB 122/573, 'Symbol: 'Casablanca Conference'.

²⁷³ NARA: RG 498, 'HQ ETOUSA - History of AFHQ\History of AFHQ Vol.2'.

²⁷⁴ Ibid.

²⁷⁵ Playfair, p. 265.

²⁷⁶ Rein, p. 120.

Aside from organisational changes, the Allies also made revisions to their aerial techniques and equipment. In terms of materiel, fighter wings received a substantial boost with the arrival of the new Spitfire IX, a greatly improved version of the Spitfire airframe over the Spitfire Vs that made up the bulk of British fighter aircraft in North Africa.²⁷⁷ These were to prove a valuable asset in building Allied air superiority, as it was also during this period that Allied air commanders began a steady transition towards a more assertive air policy aimed at building dominance over the Tunisian airspace. Welsh made the first step in this direction in January, ordering Lawson to reserve fighter aircraft for the engagement of other enemy air assets, rather than deploying them against ground targets, a role in which 242 Group had occasionally been employing them.²⁷⁸ This was followed by a steady gravitation away from the costly and uneconomical tactics of fighter patrols and loiters over the frontline and towards more penetrating raids and attacks on airfields to force Axis air forces onto the defensive and overstretch their resources. Such an aggressive policy was codified by Coningham at Tripoli on 16 February, in a lecture which, according to Vincent Orange, had a remarkable impact on senior British and American officers from both the army and the air forces.²⁷⁹ In this speech, Coningham argued powerfully in favour of the necessity of centralised air control under an a single independent air commander, but was careful to stress its value from the perspective of mutual support between ground and air forces, highlighting that there were certain fundamental difference between ground and air operations. The most important of these lay in the fact that ‘an Army has one battle to fight, the land battle. The Air has two. It has first of all to beat the enemy air, so that it may go into the land battle against the enemy land forces with the maximum possible hitting power’.²⁸⁰

Although this change in tactics was met with some protest from ground commanders, it found keen listeners among American airmen, for whom it affirmed concepts that had arisen within the Air Corps Tactical School even prior to the Second World War, but which had been overridden by outdated doctrine.²⁸¹ The

²⁷⁷ TNA: AIR 20/8045, ‘OPERATIONS; North and East Africa’.

²⁷⁸ Playfair, p. 308.

²⁷⁹ Vincent Orange, *Coningham: A Biography of Air Marshal Sir Arthur Coningham* (London: Methuen, 1990), p. 133.

²⁸⁰ TNA: AIR 23/1709, ‘Talk by Air Vice Marshal Sir A. Coningham’.

²⁸¹ Richard Hallion, *Strike From The Sky: The History of Battlefield Air Attack, 1911-1945* (London: Smithsonian Institution Press, 1989), pp. 171-72.

validation of these tactics by Coningham and the RAF, coupled to the increasing freedom enjoyed by the USAAF due to the reorganisation of Allied air forces, was to translate to an increasingly independent spirit within the Army Air Corps, that would ultimately find its expression post-campaign in doctrinal pamphlet FM 100-20, often colloquially known as the Army Air Force's 'Declaration of Independence'.²⁸² Thus, in the short term, while the EAC and later NATAF's change of approach was to pay increasing dividends, thrusting the onus of attrition onto the Axis. This reduced the weight of airpower that could be brought to bear on Allied ground forces and, in the long term, was arguably to result in the birth of a new branch of the American military, the US Air Force.²⁸³

Additionally, this change in tactics was also accompanied by a revision of RAF maintenance arrangements, informed by Western Desert experience. A three-tier maintenance system was created in January comprising a base, intermediate, and forward area, with the forward links being highly simplified to aid mobility, while rearward maintenance hubs were more substantial, enabling more time-consuming tasks to be passed backwards for repair.²⁸⁴ Although still not quite as sophisticated as those employed by the WDAF, this new repair system went some way towards mitigating the heavy attrition suffered by Allied air forces thus far. Another step forward was made in the field of photo reconnaissance, as the expansion of air recon units helped to resolve the ongoing shortage of adequate information on enemy positions, caused by a general dearth of good maps and difficulties with other forms of reconnaissance.²⁸⁵ The arrival of the USAAF's 3rd Photographic Reconnaissance Group in mid-February, as well as additional interpretation units, and the centralisation of these on AFHQ, provided for a far greater rate of acquisition and distribution of photographs to ground forces staffs, assisting in the planning of field operations to a greater degree of detail.²⁸⁶

The cumulative result of these reforms translated to a steadily increasing efficacy in interservice cooperation, in particular through the growing dominance of

²⁸² Hallion, *Strike From The Sky*, pp. 172-73.

²⁸³ TNA: WO 204/267, 'Training, recent operations on the Tunisian front', 1943.

²⁸⁴ Playfair, pp. 309-310.

²⁸⁵ TNA: WO 204/1293, 'Engineers: Technical Instructions, Terrain Bulletins and Organisation of Units, March-September 1943'.

²⁸⁶ Rein, p. 131.

Allied airpower over the Tunisian airspace. Although the reorientation of airpower towards a more aggressive campaign in some respects undermined the improvement of close air support capabilities, by the end of February this was improving, as displayed by the heavy firepower leveraged by the Allies as Kasserine came to a close.²⁸⁷ This was matched by a corresponding growth in the effectiveness of operational and strategic efforts, as bombing, now directed more centrally by Spaatz, struck ever harder blows against Axis ports of reception, airbases and other facilities, with nearly 1000 strikes on key ports of arrival in Tunisia in January alone, seriously affecting unloading efforts.²⁸⁸ Coordination was often achieved through simple means, as Spaatz and Welsh's staffs exchanged brief notes to determine targeting, one example from 12th Air Force on 27 January simply reading 'all heavy and medium bombers will attack docks, shipping and warehouses at Sfax at 1440 hours'.²⁸⁹ Though hardly sophisticated, this system nevertheless enabled Allied bombers to inflict tremendous, coordinated damage across enemy rearward areas, providing for serious disruption of Axis logistics. Attacks on aerodromes also inflicted considerable losses on Fliegerkorps Tunisia, a single raid on El Aouina airfield on 22 January destroying 45 German aircraft.²⁹⁰ Such damage was also repeated across the Mediterranean, with a small proportion of Spaatz's strategic bombing force, occasionally assisted by Air Headquarters Malta, launching raids against targets on Sicily, Sardinia, and even mainland Italy. The first of these forays into European targets struck the weakly defended Sardinian airbase of Elmas on 7 February, 58 Allied bombers, escorted by P-38 Lightnings, claiming 8 German and 17 Italian planes on the ground.²⁹¹ Although comparatively limited in the early weeks of 1943, further raids soon followed, heralding a steadily increasing weight of airpower being brought to bear on continental objectives.

At sea too, air and naval assets combined their efforts with rising efficacy. Despite concerns from Eisenhower in January about the amount of supplies arriving in Axis ports, the interdiction campaign was already experiencing growing success.²⁹² In both January and February, 23% of all Axis cargo to Tunisia was sunk

²⁸⁷ NARA: RG 319, 'Commander-in-Chief's Dispatch'.

²⁸⁸ Playfair, p. 242.

²⁸⁹ TNA: AIR 23/6588, 'El Aouina Aerodrome: bombing mission (photographs) 22 Jan. 1943'.

²⁹⁰ Levine, p. 140.

²⁹¹ Shores et al., p. 304.

²⁹² TNA: AIR 20/4522, 'Sicily and Tunisia; aircraft for operations', 1942-43.

en route, and although this figure was no higher than had been achieved in December, more vessels were caught on the return journey, with the losses inflicted severely reducing the available pool of Axis shipping.²⁹³ Mines, surface warships and other forms of attack all contributed to these sinkings, but submarines and Malta-based aircraft were in particular noted for exacting ‘a heavy toll from the enemy’s short sea lines of communication’, as they possessed the range and freedom of action to target the enemy’s most popular sea routes.²⁹⁴ Indeed, Malta’s ongoing escalation in air activity continued throughout January and February, launching some 260 bomber sorties in each month, along with 271 fighter and fighter-bomber sorties in January, while North African air forces contributed a further 176 bomber and 258 escort sorties.²⁹⁵ These efforts were rewarded by the sinking of 20 Axis ships of over 500 Gross-Registered Tons (GRT), with a combined capacity of nearly 86,000 tons.²⁹⁶ This was nearly equalled by the contributions of Allied submariners, who sank some 26 Axis vessels of 500 GRT in the first two months of 1943, equivalent to nearly 74,000 tons.²⁹⁷ Only a portion of these were destined for Tunisia however, as the heavy defences around convoys navigating the Sicilian strait meant that submarines were obliged to ply the Tyrrhenian and central Mediterranean in search of vessels. Nevertheless, actions in the Gulf of Hammamet off the east coast of Tunisia, as well as attacks on convoys closer to mainland Italy, saw a number of sinkings, further restricting the safe channels in which Axis ships could operate and largely confining them to the narrow corridor between Sicily and Tunis/Bizerte.²⁹⁸ Even this was soon under threat, as Cunningham cannily ordered his minelayers to ‘ladder’ the area between the Axis mine belts with their own mines, 442 being added in January alone, creating a deadly obstacle that further impeded the passage of supply convoys.²⁹⁹

While the first two months of 1943 have largely been regarded as a quiet lull prior to the excitement of Kasserine, a closer examination of this phase reveals it to have been full of activity. Although briefly halted by the winter rains, both Allied

²⁹³ Playfair, p. 250.

²⁹⁴ TNA: WO 106/2730, ‘Tunisia; miscellaneous reports’.

²⁹⁵ TNA: ADM 219/172, ‘Anti-shipping operations in the Mediterranean’.

²⁹⁶ Ibid; Playfair, p. 251.

²⁹⁷ Playfair, p. 251.

²⁹⁸ TNA: WO 204/1394, ‘Operations in Tunisia: Initial Occupation and Organisation’, 1943.

²⁹⁹ Playfair, p. 247.

and Axis forces continued campaigning throughout January and February in a series of low intensity operations, while at the same time making preparations for undertakings of a greater scale in future. However, it is here where the similarities in approach between the two sides diverge, as while Axis commanders raced to build up their numerical superiority in pursuit of a short-term ascendancy over AFHQ, at the cost of their own logistical stability, the Allied leadership by contrast took a more measured approach. Eschewing the immediate action promised by Saito, what can be seen in Eisenhower's command during this period is the conscious and considered engagement by Allied leadership in a process of learning. This had to some extent begun during the rush on Tunis, as AFHQ demonstrated a clear awareness of many of the issues hampering the prosecution of the campaign, but preoccupation with operational goals had confounded attempts to implement long-term solutions to these problems. As such, this period of build-up proved invaluable for AFHQ, as it enabled them to dispense with the reliance on stopgaps that had defined the latter months of 1942 and focus on the effectuation of lasting, foundational change across the breadth of the Allied effort in North Africa, an undertaking that was achieved from multiple directions. At its core, AFHQ itself drove the process of learning and adaptation from a top-down perspective through progressive, incremental steps, particularly within the higher echelons of command, as can be seen in the serious strides made towards resolving those problems of overstretch that had initially left Allied forces without a strong sense of direction. The appointment of Anderson and Spaatz, both of whom then undertook their own programs of reform, went some way towards ameliorating the command divide, restoring a degree of cohesion to Allied efforts on the ground and in the air and improving cooperation between both services. Such advancements were similarly reflected in the control of logistical and air operations, as AFHQ's cognisance of problems of coordination and administration across the vast expanse of Northwest Africa led to the centralisation and subsequent devolution of disparate assets under a range of subordinate commands, such as the Military Railway Service. Many of these innovations would go on to provide faithful service in subsequent theatres such as Sicily and Italy, forming the backbone of an Allied command machinery rapidly growing and diversifying in capacity and capability.

Yet AFHQ also recognised the limits of its competencies, and in order to affect organisational change on a more fundamental level, senior leadership opted to prevail upon their superiors in London and Washington to obtain the necessary leverage. The Casablanca Conference provides the ultimate example of this appeal to authority, as the representations made by Eisenhower, Tedder, and other senior officers utilised the authority of the CCoS and Allied political leaders to oversee a top-down reconsideration of the structure of AFHQ and initiate long-lasting, cross-service changes that were otherwise beyond the C-in-C's remit. The appointment of a trio of deputies beneath Eisenhower and the reorganisation of Allied air forces under the NAAF, did much to address and excise the root of AFHQ's structural problems, setting down solid foundations for future growth. Other requests aided in overcoming ongoing logistical crises; while AFHQ worked to improve North African infrastructure, supply staffs in London and Washington were persuaded to open the convoy bottleneck and provide shipments of MT and other vital materials to replenish Allied forces. Not all reforms were top-down or externally influenced however, as the steady drumbeat of combat at the frontline saw Allied troops beginning to adapt to the tactical challenges of the theatre. While tactical errors and poor judgement continued to reflect the greenness of Allied troops, most prominently at Kasserine, the refinement of battle technique and developing competency of Allied troops in combat in Tunisia can nevertheless be observed, both in larger battles such as those at Sbiba and Thala, and the constant patrol warfare engaged in by both sides. Here too, the Allies made use of assistance from home to bolster their firepower, deploying new formations and weapons, such as the AGRA or the Churchill, that were receiving their first field tests in Tunisia, and which would soon become a staple of Allied fighting methods for the remainder of the Second World War. Although far from flawless as the campaign moved into March, Allied forces were nevertheless looking increasingly confident in combat against the Axis, this combination of new ideas and growing experience forming the key building blocks of an Allied force that was beginning to learn to fight, and win, against the Axis in Tunisia.

Chapter Four

The Allies Rally, 25 February – 31 March 1943

The culmination of the Battle of Kasserine Pass brought to an end the largest Axis offensive of the Tunisian Campaign. Having been fought to a halt on every single axis of advance, Rommel's divisions were obliged to cut their losses and withdraw, harried by Allied aircraft. For Rommel this was the death of Axis aspirations in North Africa; what had originally looked to be a great victory over green American troops had foundered on stubborn Allied defences without achieving any vital objectives. Moreover, the British 8th Army was now on the cusp of reaching the Mareth Line defences in southern Tunisia, and with a continuing stream of men and equipment also reaching Allied forces in the west, the situation seemed increasingly serious. In order to improve the stability of their bridgehead in Tunisia, the Axis needed a major victory but, as Rommel confided to his wife, he feared that the conditions for it simply did not exist.¹

However, this did not prevent the embattled Axis from trying again. No sooner had the battle for Kasserine concluded than another offensive began, this time overseen by von Arnim in northern Tunisia. Hoping to capitalise on the movement of Allied reserves south to counter the Kasserine offensive, on 26 February 5. Panzerarmee launched a series of attacks along the First Army front, codenamed 'Ochsenkopf'.² What followed was a week of savage fighting as 5. Panzerarmee tried to lever First Army out of its positions with mixed results, eventually petering out into desultory exchanges that dragged on throughout early March. At the same time, similar plans were also afoot in southern Tunisia, as Rommel and the newly appointed commander of the renamed German-Italian Panzerarmee (now 1st Italian Army), Giovanni Messe, launched a spoiling attack, 'Capri', against the advancing 8th Army, hoping to buy time to shore up Axis defences at Mareth. Launched on 6 March, this attack was halted within a matter of hours at the Battle of Medenine, as the Axis assault broke apart on prepared Allied positions.³ Following this defeat, Rommel departed North Africa for good on 9 March, leaving von Arnim and Messe

¹ *The Rommel Papers*, ed. by Basil Liddell Hart (New York: Da Capo Press, 1953), p.410.

² Anderson, p. 146.

³ Kitchen, pp. 439-40.

to face down the impending Allied offensive. They did not have to wait long, as on 19 March, Montgomery launched his first attack on the Mareth Line, Operation 'Pugilist'. Although Pugilist initially gained traction, it could not sustain the break-in against concerted counterattacks and had to be called off.⁴ Instead, a left hook around the Matmata Hills that anchored the Axis right flank was devised, 'Supercharge II', which opened on 26 March. Commonwealth forces broke through Axis defences at the Tebaga Gap and rapidly advanced on El Hamma, less than thirty miles from the coast, leaving 1st Italian Army in danger of encirclement and prompting Messe to begin a fighting withdrawal to Wadi Akarit.⁵ In the meantime, Allied forces to the west also launched their own offensives, as on 18 March II Corps, now commanded by Patton, began driving east towards El Guettar, putting additional pressure on Axis forces. These offensives were joined by another from First Army towards the end of the month, commencing a counteroffensive in northern Tunisia on the night of 27/28 March to recapture ground lost to Ochsenkopf.⁶ Over four days, First Army advanced more than ten miles, recapturing virtually all of the territory they had conceded earlier that month and securing good positions from which to launch further offensives.

Thus, by the end of March, the overall picture of the campaign in Tunisia had drastically changed, a fact not lost on many contemporary commentators. Where only five weeks prior, it had been the Axis who held the strategic initiative, it was now the Allies who were pressing their opponents, and it is this reversal of fortunes that sees many Allied accounts view the period as something of a transition phase, with AFHQ gaining the upper hand for the first time since Torch. Eisenhower states this unreservedly in his dispatch, asserting that 'the turn of the tide at Kasserine proved actually to be the turn of the tide in all of Tunisia as well', as although the Allies were 'put to the test by a carefully coordinated Axis strategy which was designed to prevent the development of our own [...] by the middle of March the Axis had definitely lost the initiative'.⁷

⁴ Adrian Stewart, *Eighth Army's Greatest Victories: Alam Halfa to Tunis, 1942-1943* (Barnsley: Leo Cooper, 1999), pp. 168-174.

⁵ Stewart, pp. 182-83.

⁶ Anderson, p. 148.

⁷ NARA: RG 319, 'Commander-in-Chief's Dispatch'.

However, while such a view has found a general consensus among both scholarly and contemporary accounts, opinions have differed on the catalyst for this change. For 8th Army's desert veterans, it was the contribution of their expertise that turned the tables, Montgomery for example suggesting that it was Alexander's elevation as C-in-C 18th Army Group that sorted out the 'terrible mess' at AFHQ, where there was 'no policy, no plan, the front all mixed up, no reserves, no training anywhere, no building up for the future'.⁸ Such opinions were not shared by AFHQ's own formations however, as while they acknowledged the valuable assistance rendered by Middle East forces, this aid was considered to form only part of a wider reformation of command structures and logistical organisations, while the growing combat potential of Allied troops was attributed to the accumulated experience of four months of constant campaigning.⁹ The latter especially was commented on by formation commanders, 38th Brigade's Brigadier Russell writing that even the scratch 'Y' Division he came to command 'which, I am sure – was never intended to get involved in a battle at all – became quite a force'.¹⁰ Axis impressions too diverge drastically from both of these perspectives, reflecting instead on the collapsing supply situation as the key factor in the Axis' declining position. Rommel, Messe and von Arnim's appreciations all highlight worsening shortages of vital materials against growing Allied strength, and while OB Sud and Comando Supremo remained obdurate against their concerns, even Keitel at OKW was forced to concur, in a rare intervention, with the increasingly pessimistic outlook of the field commanders.¹¹

Many of these arguments have also been repeated in the historiography, one particularly strong strand deriving from the Axis' material-centric interpretation. Mitcham's *Blitzkrieg No Longer* is a good example of this school of thought, stating that even as von Arnim took charge, his cause 'was hopeless from the beginning', highlighting the numerical disadvantages in men, tanks and guns faced by the German commander.¹² Although not without merit, as many Allied accounts also acknowledge the import of material to their success, this idea that it was merely an

⁸ Montgomery, pp. 157-58.

⁹ Anderson, p. 146.

¹⁰ TNA: CAB 106/569, '38th Brigade Account'.

¹¹ IWM: EDS Appreciation 12, Ch. 8.

¹² Mitcham, pp. 78-79.

unending tide of men and arms that brought the Allies victory is a highly reductive one, based in a common apologia for defeat that can be found within many Axis narratives. However, whereas such arguments have been challenged or overturned when pertaining to other campaigns, such has not been the case with Tunisia, where the largely disjointed and sparse historiography has seen such narratives continue to be perpetuated. This chapter will address this deeply flawed historiography, eschewing the oversimplified narrative of materiel imbalance in favour of presenting a more holistic picture of the Allies' progress through this phase of operations. In doing so, this chapter will demonstrate that while many of the differing interpretations of this period hold some validity, their narratives often focus only on fragmentary perspectives of a wider whole, as Allied forces enjoyed a resurgence in virtually every corner of the war effort in North Africa. This sea change was driven predominantly by the activation of long-term reforms initiated in previous phases, themselves the results of centrally driven processes of learning, and which were primarily aimed at the reinforcement of Allied command structures in order to better direct the campaign in Tunisia. These provided firm foundations to AFHQ, the logistical system, frontline command, and the air forces, leaving Allied commanders and their subordinate formations free to focus on issues closer to the battlefield, initiating new cycles of learning at varying levels of command and from a variety of different directions. Although refinements continued to be made to Allied command structures and processes, what can be seen during this period is a transition towards reforms dedicated less to establishing internal organisation and more to improving combat efficiency and operational efficacy.

The firmest of the new foundations laid down within AFHQ were to be established at the command level, as the reforms made at Casablanca came into full effect. The core of this new advancement rested primarily on the newly established 18th Army Group Headquarters, which opened on 19 February under the command of Sir Harold Alexander, the former C-in-C Middle East and new Deputy C-in-C of AFHQ.¹³ This new organisation provided significantly greater cohesion in the exercise of command, as now, rather than directives issued from on high in Algiers, or tacit agreements between formation commanders, Allied troops at the frontline had a local, unitary authority around which to rally and from which a unified policy

¹³ Playfair, p. 303-304.

of command could be established.¹⁴ Indeed, the value of this new headquarters was demonstrated almost immediately in 20 February's Operational Instruction no.1, which laid out clear priorities for the forces then engaged at Kasserine. Declaring that 'there will be no further withdrawal except for local adjustments to improve your positions', Alexander immediately stamped a firm stance onto his command, before outlining key positions that needed to be held at all costs, including vital installations such as the Tebessa landing grounds and the base at Medjez el Bab.¹⁵ To this was also married a number of longer term objectives, including the reorganisation of the front into national sectors, the institution of a training program, and the formation of a general reserve to deal with crises. Although none of these were new initiatives, Anderson having outlined many of these objectives in January, their marriage to a coherent overall policy offered a sense of direction to Allied forces that had otherwise been sorely lacking.

18th Army Group HQ's establishment also provided a number of other benefits, not least of which was the reduction of administrative overstretch, as the new headquarters resolved to a great degree the difficulties of distance the Allies had struggled with since the beginning of the campaign. Operated from Constantine, where it sat astride key lines of communication, Alexander's HQ reduced the distance between frontline commanders and their superior officer by at least threefold; where AFHQ was nearly 370 miles distant from II Corps at Tebessa, 18th Army Group was only around 120.¹⁶ While still a considerable span to bridge by the standards of later campaigns, this reduction gave Alexander a far greater degree of granularity and agility in his exercise of control over the frontline than had been available to Eisenhower, shortening communications distances and placing subordinate commanders within physical reach.¹⁷ Moreover, this forward movement of the primary hub of command also had a knock-on effect on subordinate headquarters, enabling them to move closer to the front and exercise more precise control over their troops. Anderson for example, was able to move into his Forward Command Post at Laverdure, reuniting the component parts of his headquarters,

¹⁴ TNA: WO 204/1393, 'Tunisia: Initial Occupation and Organisation'.

¹⁵ TNA: WO 204/1137, '18th Army Group Operational Instructions and Reports'.

¹⁶ TNA: WO 204/1662, 'Directive on organisation of Command After Contact between 1st and 8th Armies, Location of Units', 1943-44.

¹⁷ Howe, pp. 485-86.

which had been split between managing First Army and administering the entire front.¹⁸ Although still responsible for First Army and the neighbouring 19th Corps, the removal of over 100 miles of frontage from his purview, as Alexander took II Corps under direct command, did much to relieve the burden placed upon Anderson.¹⁹ The demands on AFHQ were also reduced, allowing Eisenhower to focus his efforts on the task of coordinating a vast multinational war effort, a task which provided more than enough diversion.²⁰ Although some concerns were raised about the insertion of British commanders to control ground, sea, and air efforts being seen as a means of ‘pushing Eisenhower up into the stratosphere’, Eisenhower was to clamp down on these swiftly, making it clear in a message to Marshall that such changes should not be overstated to avoid encouraging internal disunity.²¹ Indeed, Eisenhower’s dispatch into the ‘rarified atmosphere of a Supreme Commander’ was in many regards a beneficial one, enabling Ike to hone those prodigious talents for high command that, Sixsmith argues, he was increasingly beginning to display.²²

Alongside these benefits, Alexander’s new headquarters also brought with it a number of innovative methods to help coordinate the ground battle. One of these was placing elements of 18th Army Group HQ on a mobile basis, allowing Alexander to shift key parts of his staff closer to the axis of advance. On 9 March, Alexander established his forward post around Ain Beida, roughly halfway between Constantine and Tebessa, from where he could more closely observe the progress of II Corps as it prepared to advance eastward while also retaining contact with rear elements of the HQ.²³ Alexander also utilised close liaisons, staff visits and direct radio in order to maintain clear contact with his senior officers, methods previously unavailable to Anderson, who had had his own First Army to manage, and which gave a much clearer view of the long frontline Alexander had to administer.²⁴ To this was also coupled a vast increase in the collation and output of useable intelligence data, as AFHQ gave 18th Army Group the task of coordinating ‘all intelligence

¹⁸ TNA: WO 204/514, ‘Headquarters 18 Army Group, Formation and Organisation’, 1943.

¹⁹ Anderson, p. 133.

²⁰ Macksey, p. 157, 188.

²¹ Alanbrooke, p. 365; *Eisenhower Papers II*, pp. 942-43

²² Alanbrooke, p. 365; E.K.G. Sixsmith, *Eisenhower as Military Commander* (New York, New York: Da Capo Press, 1972), p. 65.

²³ TNA: WO 204/1137, ‘18th Army Group Operational Instructions and Reports’.

²⁴ Howe, p. 486.

activities of 1st and 8th Armies', including 'Phantom' special reconnaissance and 'Y' and 'J' system intelligence gathering, as well as Ultra decryption, which was sent direct from Bletchley Park.²⁵ While many of these systems had been in operation with Army HQs and AFHQ prior to this time, according to Gladman it was their centralisation and the improvement of inter-unit communications that made them truly valuable tools, particularly when operated by experienced personnel who were familiar with how they functioned.²⁶

This improved grip over the situation at the front enabled Alexander to achieve many of the objectives laid out in Operational Instruction no.1. The creation of a general reserve was completed on 12 March, as the arrival of 9th Corps HQ enabled the centralisation of the reserve under a single headquarters, placing it on a formal Army Group footing, while around the same time, Allied forces finally completed redeployment into national sectors.²⁷ Thusly rearranged, the frontline comprised 5th Corps in the north, followed by 19th Corps in Central Tunisia, and II Corps in the south, with 9th Corps in Army Group Reserve.²⁸ This developing sense of organisation was further bolstered by an initiative to disseminate valuable lessons and experience to all formations within 18th Army Group, by integrating veteran officers from Alexander's staff into the headquarters of his senior subordinates. Patton for example was given Brigadier Dunphie, formerly of 26th Armoured Brigade, as his Assistant Chief of Staff, as well as a number of other British officers 'of proved fighting value'.²⁹ Much as had been achieved in AFHQ, the intermingling of staff throughout II Corps saw the establishment of strong working relationships, even the Anglophobic Patton developing an effective partnership with Dunphie that eventually became firm friendship.³⁰ While obviously helpful to the cause of inter-Allied solidarity, such relationships were also valuable to Alexander by virtue of disseminating similar ways of thinking throughout the Allied armies, enabling him to more easily coordinate action between the different formations under his command.

²⁵ NARA: RG 498, 'HQ ETOUSA – History of AFHQ Vol.2'.

²⁶ Gladman, *Intelligence and Anglo-American Air Support*, pp. 156-59.

²⁷ Earl Alexander of Tunis, 'Field Marshal Viscount Alexander of Tunis' Despatch on the African Campaign from El Alamein to Tunis, 10 August 1942 to 13 May, 1943' in *Operations in North Africa and the Middle East 1942-1944*, ed. by Grehan and Mace (Barnsley: Pen and Sword Military, 2015), pp.1-95 (p. 66).

²⁸ Macksey, p. 179.

²⁹ LHCMA: Alanbrooke 6/2/17, 'Alexander to Brooke, 27 February 1943'.

³⁰ Barr, pp. 232-3.

However, we should be careful of crediting too much of these improvements to 18th Army Group HQ alone, as while it was undoubtedly valuable in strengthening command and control, its influence has been magnified by the careful cultivation of this narrative by Alexander and those in his circle. Richard McCreery, the 18th Army Group Chief of Staff, did much to place the credit on his chief's shoulders in a lecture to fellow officers in June 1943, while Rupert Clarke, Alexander's Aide-de-Camp, claimed Alexander exerted an 'almost magical influence' upon his command.³¹ However, while undoubtedly an able captain, Alexander also had the good fortune to take command at the end of a crisis, as the balance of power swung in the Allies' favour. In the matter of reorganising the frontline, it was just as much the withdrawal of Axis troops from Kasserine that allowed fragmented units to be drawn back together, as it was Alexander's influence, while similarly it was the release of committed reserves that enabled 18th Army Group to form its own.³² Indeed, it was Anderson that beat his chief to the punch with regard to forming a reserve, as he related in his dispatch, stating that no sooner than he had gotten 6th Armoured Division into Army Reserve than General Alexander 'ordered it, with 9 Corps Headquarters and the Corps Troops, into Army Group Reserve almost immediately'.³³

Moreover, the reorganisation of Allied command was not without its own flaws, as the new leaders brought in cast aspersions on the capabilities of their predecessors, a viewpoint at least partially attributable to their tendency for self-promotion. Alexander in particular was highly critical of both his new superior and his subordinates, sometimes unfairly so, an inclination most visible in his treatment of Kenneth Anderson, who he almost immediately wrote off as lacking firm, clear leadership, such that Alexander enquired if Montgomery could send 30th Corps commander Oliver Leese to replace him.³⁴ Although this never manifested, Clarke states that Alexander decided 'that he was going to have to hold General Kenneth Anderson firmly by the hand [...] Anderson simply did not have the flair for army

³¹ TNA: CAB 106/895, 'North Africa, Notes of a Lecture on the Lessons of the Tunisian Campaign given by Maj-Gen. R L McCreery', 1943; Rupert Clarke, *With Alex at War: From the Irrawaddy to the Po, 1941-1945* (Barnsley: Leo Cooper, 2000), p. 85.

³² TNA: CAB 106/545, 'The story of 46th Division'.

³³ Anderson, p. 146.

³⁴ *Montgomery and the Eighth Army*, ed. by Stephen Brooks (London: The Bodley Head, 1991), p. 150.

command'.³⁵ Such statements have had a profound impact on the historiography, leading elements of the secondary literature, particularly more recent contributions, to condemn Anderson and other Allied commanders on the strength of these accounts, Rolf for example arguing that Alexander only 'allowed Anderson to stay by default while others lost their commands'.³⁶ However, this viewpoint does not correlate with the reality, neither in terms of Anderson's performance nor the reasons for his retention. In one of his rare interventions, Playfair states that Alexander was 'too hard on General Anderson', highlighting the strenuous efforts the latter had made to stabilise difficult situations, despite having only had control of the frontline for a comparatively short time.³⁷ Indeed, it seems that Alexander soon discovered, 'as did so many people, that a first impression of Anderson could be misleading', resulting in a message to Montgomery on 29 March stating: 'He [Anderson] knows the French and gets on extremely well with them. He knows a very intricate front and all his people. All things considered I feel it best to leave alone'.³⁸

However, some of these initial impressions proved harder to shake, to the detriment of the Allied effort. Chief among these was the belief, shared among the desert veterans, that the Torch landing forces were poorly led and ill-trained and that the units of II Corps in particular were of a low quality.³⁹ Even as late as April, Alexander was informing Brooke that the American forces: 'simply do not know their job as soldiers, and this is the case from the highest to the lowest, from the general to the private soldier. Perhaps the weakest link of all is the junior leader, who just does not lead, with the result that their men do not really fight'.⁴⁰ Such sentiments came to colour relations between First Army, II Corps, and 8th Army, especially as Montgomery did little to stifle his derisive attitude towards his colleagues.⁴¹ However, the real crux of the problem lay in how these prejudices affected command relations between Allied forces, manifesting primarily in the unnecessary micromanagement of Alexander's subordinates.

³⁵ Clarke, pp. 84-85.

³⁶ Rolf, p. 149.

³⁷ Playfair, p. 304.

³⁸ Macksey, p. 189; *Montgomery and the Eighth Army*, p. 189

³⁹ Barr, p. 232.

⁴⁰ LHCMA: Alanbrooke 6/2/17, 'Alexander to Alanbrooke, 3 April 43'.

⁴¹ Barr, pp. 237-38.

American troops were to suffer the worst from this tendency. On 1 March, Alexander issued Operational Instruction no.4, calling for the preparation of a limited offensive operation, beginning in mid-March, with the objective of seizing Gafsa and providing assistance to 8th Army's attempt to drive north of the Gabes Gap.⁴² Although not itself a slight, as the offensive fit perfectly into 18th Army Group's operational aims, it was the handling of II Corps in executing this plan that demonstrated how little faith Alexander placed in the Americans. Patton had originally envisioned a short thrust to Gafsa by US 1st Infantry, screened by US 1st Armored, with the possibility of a second phase attack through Sened to Maknassy.⁴³ This was accepted by 18th Army Group, but then subjected to continual adjustment, beginning with the changing of the launch day from 15 March to 17 March to coincide with 8th Army's Mareth offensive, despite Patton's concerns that this might give the enemy time to prepare or counterattack.⁴⁴ Although these fears were unrealised and II Corps' attack went ahead as scheduled, by D+2 18th Army Group had decided to change the corps' objectives, asking them to continue on to Maknassy, but not to drive beyond there, Montgomery having demanded that Alexander keep II Corps out of 8th Army's line of advance.⁴⁵ This order was however to change again when it became evident that Pugilist had bogged down, Monty now asking that 18th Army Group 'nourish the eastwards thrusts from Gafsa' so as to 'make my thrust at El Hamma easier'.⁴⁶ Alexander consequently ordered Patton 'late on 22nd March to increase his pressure down Gafsa - Gabes road [...] and down the Gafsa - Maknassy road', prompting yet another adjustment of plans.⁴⁷ Finally, on 29 March, Alexander ordered Patton to halt his attempts to push southeast of El Guettar and through Fondouk, only to countermand these on 1 April and reinstate the original plan.⁴⁸ This did little to endear Patton to his new superior officer, particularly as each successive wave of orders came in exhaustive detail, eventually prompting Patton to reply: 'I feel that I must respectfully call General Alexander's attention to the fact that in the United States Army we tell officers what

⁴² TNA: WO 204/1137, '18th Army Group Operational Instructions and Reports'.

⁴³ Howe, pp. 544-55.

⁴⁴ *The Patton Papers*, p. 188.

⁴⁵ Blaxland, p. 193.

⁴⁶ *Montgomery and the Eighth Army*, p. 183.

⁴⁷ Alexander, 'Despatch', p. 68.

⁴⁸ Howe, pp. 564-73.

to do, not how to do it, that to do otherwise suggests lack of confidence in the officer'.⁴⁹

The short leash by which 18th Army Group held both First Army and II Corps is even more noticeable when contrasted with its laissez-faire attitude towards managing 8th Army. This is made evident in Montgomery's correspondence with Alexander, which frequently took the tone of mere appraisal and indeed often prevailed upon Alexander to make arrangements to fit Montgomery's plans, as displayed in a 27 February letter which states: 'Herewith my plan for "Pugilist"'. It explains itself. From your side I would like assistance on the following lines'.⁵⁰ Such informality undoubtedly reflects the friendship shared between the two commanders, but also throws into sharp relief the gulf between this and Alexander's relationship with his other subordinates, both extremes of which, free rein and micromanagement alike, had their own pitfalls. A prime example of the drawbacks of Alexander's light touch approach with Montgomery can be seen in the planning for Pugilist, the main thrust of which was a 'break-in' attack on the Wadi Zigzaou by XXX Corps' 50th Northumbrian Division.⁵¹ However, already preoccupied with planning for Sicily, Monty paid little attention to the details of the imminent assault, nor did Leese, the pair preferring to focus on how to exploit success from the battle than the battle itself.⁵² The result was that Major General Nichols, commander of 50th Division, was 'largely left to his own devices', leading to an attack that although initially successful, was eventually driven back by German counterattacks.⁵³ Had Montgomery or Leese been more alive to the details for the assaults, or Alexander at all involved in the planning process, it may have been realised that 50th Division's attack was planned on only a single brigade front, meaning that the resulting bridgehead was far too narrow and thus easily contained by Axis reserves.⁵⁴

There were some advantages to the upheaval generated by the arrival of AFHQ's new senior staff however and that was the replacement of some actually inadequate officers. Having badly mismanaged his corps' defence at Kasserine,

⁴⁹ *The Patton Papers*, p. 200.

⁵⁰ *Montgomery and the Eighth Army*, p. 157.

⁵¹ TNA: AIR 23/6488, 'Operation 'Pugilist'', 1943.

⁵² Nigel Hamilton, *Monty: Master of the Battlefield, 1942-1944* (London: Hamish Hamilton, 1983), pp. 186-87.

⁵³ Playfair, pp. 334-41.

⁵⁴ TNA: AIR 23/6488, 'Operation 'Pugilist''.

Fredendall was a prime candidate for replacement, but what made his position truly untenable was his inability to manage interpersonal relationships.⁵⁵ Some of the most damning critique came from within American ranks, Harmon informing Eisenhower that Fredendall was “no damned good. You ought to get rid of him”, while Truscott believed that Fredendall ‘had lost the confidence of his subordinates and that I did not believe the Corps would ever fight well under his command’.⁵⁶ Eisenhower thus organised Fredendall’s relief, sending him back to the US to take command of Second Army, a training formation, ‘so that his ability in training troops, especially after his recent battle experience, might be employed at home’.⁵⁷ As the new II Corps commander, Eisenhower appointed Patton, commander of the Casablanca landings. Abrasive, hot-tempered, and rude, but also energetic and inspirational, Patton soon put that energy to use in re-organising and reinvigorating the battered American divisions, starting by correcting what he regarded as the laxness in discipline displayed by II Corps thus far.⁵⁸ This drive to restore confidence and purpose was also carried to the higher levels of II Corps, where Patton began to clean house of inadequate officers, backed by the advice of Eisenhower, who had told him ‘to be cold-blooded about the removal of inefficient officers. If a man fails, send him back to General Ike and let him worry about it’.⁵⁹ Patton’s adherence to this order manifested in a swift decapitation of much of Fredendall’s former staff, including Chief of Staff Colonel Dabney and G-3 Chief Colonel Hewitt.⁶⁰ Although it is unclear whether these changes were themselves seriously impactful, or if they simply helped to convince the troops they were under a new style of command, the arrival of Patton at the front ‘rapidly rejuvenated II Corps and brought it up to fighting pitch’.⁶¹

Many of the features defining Allied command during this period were also reflected, at least superficially, on the other side of the hill. On 23 February, three days after the creation of 18th Army Group, OB Sud established Army Group Afrika under Rommel, thus uniting 5. Panzerarmee and 1st Italian Army under a single in-

⁵⁵ Christopher Rein, ‘Fredendall’s Failure: A Reexamination of the II Corps the Battle of Kasserine Pass’, *Army History*, no. 108 (2018): 6-21 (p. 20)

⁵⁶ Ernest Harmon, *Combat Commander: Autobiography of a Soldier* (Engelwood Cliffs, N.J.: Prentice-Hall, 1970), p. 120; Lucian Truscott, *Command Missions*, (New York: E.P. Dutton, 1954), p. 173.

⁵⁷ Butcher, p. 234.

⁵⁸ *The Patton Papers 1940-1945*, p. 181.

⁵⁹ Butcher, p. 235.

⁶⁰ Rein, ‘Fredendall’s Failure’, p. 17.

⁶¹ Eisenhower, p. 166.

theatre commander. However, whereas the unification of Allied command had broadly resolved many of the problems displayed in AFHQ, the creation of Army Group Afrika ‘simply multiplied dissent’, a failure in part attributable to the Axis’ choice of commander.⁶² In poor health and having long since determined that the Axis should withdraw from North Africa entirely, Rommel was a shadow of the commander he had been in the Western Desert, a decline made evident in his management of Capri in early March.⁶³ A spoiling attack, Capri called for the Afrika Korps to swing around to the west of Montgomery’s forces, while another combat group sallied from Mareth to launch a pinning attack.⁶⁴ This was scarcely an inspired plan, not helped by the fact that Rommel, much as Monty was to do in Pugilist, largely confined his input to the early stages of planning. This absence of senior direction, aided by the Allies’ forewarning through Ultra, led to a confused and disjointed assault on the 8th Army positions, which was soon repulsed, putting an end to Rommel’s last action in Africa.⁶⁵ Three days later, the Field Marshal departed the continent for good and was succeeded in command of the Army Group by von Arnim.

However, as von Arnim was doubtless aware, the departure of Rommel did little to solve the numerous and endemic problems of the Axis command. It made little difference who occupied the role of Army Group commander, as it was ultimately an empty title, as their authority was undermined by a trio of factors that inhibited the development of a cohesive policy for the defence of the bridgehead. In-theatre, this stemmed from the gulf in priorities between the two Axis armies, which ‘conducted their operations independently of each other’, frequently resulting in disjointed action at the detriment of the other force, particularly as certain strategic assets such as armour, were to an extent pooled between them.⁶⁶ Such was the case with Rommel’s attack at Medenine, which was delayed by a number of days as key elements of the attacking force, the 10th and 21st Panzer Divisions, were held up by von Arnim’s launching of Ochsenkopf in the north.⁶⁷ Had Capri been launched

⁶² Macksey, p. 180.

⁶³ Robert DiNardo, *Germany and the Axis Powers: From Coalition to Collapse* (Lawrence, Kansas: University Press of Kansas, 2005), p. 171.

⁶⁴ Playfair, pp. 322-324.

⁶⁵ IWM: EDS Appreciation 12, Chapter 7.

⁶⁶ DiNardo, p. 170.

⁶⁷ *The Rommel Papers*, p. 414.

earlier, it is entirely possible that it would have enjoyed greater success, as Montgomery initially had only two divisions to hand, leaving himself ‘definitely “unbalanced”, for the first time since I have been out here’.⁶⁸ The delay in Rommel’s plan however, enabled Montgomery to rush forward the New Zealand Division and 8th Armoured and 201st Guards Brigades, leaving Monty with nearly twice the force and around thrice the tanks, with which to meet the assault.⁶⁹ As a result the attack ‘bogged down in the break-in stage’, Rommel eventually conceding that ‘the attack had been launched about a week too late. The operation had lost all point the moment it became obvious that the British were prepared for us’.⁷⁰

Clashing personalities further hindered Axis cohesion. Rommel’s departure in early March and the subsequent elevation of Giovanni Messe to command was the spur to a new conflict within 1st Italian Army, between Messe and Fritz Bayerlein, Rommel’s former Chief of Staff. Well-regarded as possibly the Italian Army’s best field commander of the Second World War, having led with some success in Greece and Russia, Messe’s leadership reinvigorated the tired Italian troops of Rommel’s former army, whose stubbornness in the final months of the North African Campaign rivalled that of their German allies.⁷¹ The latter however were less impressed by Messe, particularly Bayerlein, who ‘had no high opinion’ of his Italian chief, consistently undermining Messe through his position as *de jure* commander of the German portion of 1st Italian Army, taking independent action and disputing Messe’s orders.⁷² This division was not helped by Messe’s often tempestuous relationship with von Arnim, a rift displayed openly in their disagreement over the question of withdrawal from Mareth. On 19 March, Messe reported the mustering of Allied units to the southwest of Mareth to von Arnim, a concentration which gave 1st Italian Army’s commander cause for concern, as they were contested only by a small screening force. Messe argued that if these troops broke through, they could encircle his forces at Mareth, which were largely without transport, before they could withdraw.⁷³ Von Arnim however, refused to

⁶⁸ *Montgomery and the Eighth Army*, p. 161.

⁶⁹ Playfair, pp. 324-25.

⁷⁰ *The Rommel Papers*, p. 415.

⁷¹ MacGregor Knox, *Common Destiny: Dictatorship, Foreign Policy, and War in Fascist Italy and Nazi Germany* (Cambridge: Cambridge University Press, 2000), pp. 164, 180-81.

⁷² Coggins, p. 137.

⁷³ IWM: EDS Appreciation 12, Chapter 7.

countenance the surrender of any sector until it was clearly lost, finally giving the order on the night 25/26 March after Supercharge broke through the Tebaga Gap, with only skilful manoeuvre and leadership from Messe enabling him to successfully disengage and retreat to Akarit.⁷⁴

Such disagreements however paled in comparison to the disorder within Axis high command spheres back on the continent. This had been amply demonstrated by OB Sud and Comando Supremo in previous months, but took on new form as Kesselring and Vittorio Ambrosio, head of Comando Supremo following Cavallero's departure in February, developed an animosity that 'became steadily more acrimonious' over time.⁷⁵ The pair's mutual detestation inhibited a clear development of policy for the defence of the bridgehead, a problem made evident in their argument over the posture 1st Italian Army should adopt with regard to preparing fallback positions. Such suggestions had arisen largely from the contentions of Rommel, on departure from Tunisia, that the Axis front was far too long, and should instead be pulled back to Enfidaville nearly 200 miles north of Mareth.⁷⁶ This was dismissed as impermissible by Mussolini and Hitler, as well as Kesselring, but nevertheless prompted Hitler to order preparations made at the Akarit position in case retreat from Mareth became unavoidable. Kesselring consequently issued orders on 14 March pulling elements of the Spezia and Pistoia divisions back to Akarit to prepare defences, incensing Ambrosio, who after remonstrating with Kesselring issued immediate counter-orders, which also stated that all future directives would come from Comando Supremo.⁷⁷ This position was ultimately accepted by the OKW, but did not prevent continual manoeuvring for influence between competing parties, as well as interference by Mussolini and Hitler, the two dictators having once more become interested in events in North Africa.⁷⁸ The result was a continual stream of half-baked directives and contradictory policy that led von Arnim, much like Rommel before, to effectively ignore his superiors, a process which may have aided decision-making within theatre, but also essentially detached Army Group Afrika from Rome and Berlin. As such, a distant and divided high

⁷⁴ Mitcham, pp. 79-80.

⁷⁵ IWM: EDS Appreciation 12, Chapter 7.

⁷⁶ Rommel, pp. 416-17.

⁷⁷ IWM: EDS Appreciation 12, Chapter 7.

⁷⁸ Ibid.

command was left at home to try and solve strategic problems they could scarcely grasp, while in Tunisia, a similarly fractious Army Group sought to salvage an increasingly dire tactical situation with dwindling support. Goebbels was to summarise this chaos in his diary on 17 March, saying: ‘almost half a dozen command points are functioning one against the other [...] It is simply hopeless to try and wage war with authority and jurisdiction in such a muddle [...] I believe we are facing very serious days in North Africa’.⁷⁹

Nor would such an assessment be inaccurate when one turns to consider the matter of supply, as while the Axis logistical situation continued to decline, the steady improvements made by the Allies over previous months now began to bear fruit. One crucial element of the Allied forces’ growing self-sufficiency was the reaching of a critical peak in convoyed supply tonnage reaching the North African ports. Beginning in late-February with the arrival of the UGF/UGS 5 convoys, American supplies into Tunisia broke the ceiling of 400,000 tons per month, a process repeated again over the course of March, as some 36,585 troops and more than 411,500 tons of cargo were dispatched to AFHQ from America in UGL 1, and UGF/UGS 6, with even larger contributions from Britain, in KMS 10 and 11, and KMF 10A, 10B, and 11.⁸⁰ The reaching of this threshold indicated that routine logistical support had been brought to optimal levels, allowing a steady continued growth. Indeed, by the arrival of UGS 6, American forces at the front were receiving more supply than the entire Axis bridgehead, yet this did not actually represent the bulk of US supply consumption, as ‘much of the materiel being unloaded at the ports in March was intended to remain in Morocco and Western Algeria’, for local consumption.⁸¹ To this mass of routine support was also added a continuing utilisation of special convoys, following on from the success UGS 5½. The sequel, UGS 6½, was dispatched on 19 March, this time carrying predominantly cargo for the rearmament of French forces, with 132,000 tons out of 170,500 total being designated for lend-lease.⁸²

⁷⁹ *The Goebbels Diaries*, trans. by L.P. Lochner (London: Hamish Hamilton, 1948), p. 233.

⁸⁰ Leighton, p. 485; Don Kindell, Arnold Hague Convoy Database, accessed 16/09/21, <http://www.convoyweb.org.uk/kmf/index.html>

⁸¹ Howe, p. 499.

⁸² Leighton, p. 486.

The accumulation of such bounty in supply was also matched by a rapid expansion in available manpower. Chiefly, this was the result of the entry into theatre of 8th Army, which brought some 80,000 experienced troops into Tunisia from Tripolitania.⁸³ 8th Army was also lavishly equipped, possessing 743 tanks, 692 field and medium guns, and 1,033 anti-tank guns, compared to 142, 447 and 652 respectively in 1st Italian Army.⁸⁴ A number of new formations also made their way to the Torch component of 18th Army Group. For First Army, this came in the arrival of 1st Infantry Division in late February, thus enabling the relief and reorganisation of 46th and 78th Division in the aftermath of Ochsenkopf.⁸⁵ The addition of a third infantry division to the strength of 5th Corps was a much-needed fillip to the formation's strength, as the additional manpower, particularly in frontline infantry, was a vital asset in the continuing struggle for the hills of northern Tunisia. Further reinforcement came through the re-equipment of 6th Armoured Division, which finally concluded its refurbishment with Shermans on 20 March following a period of training, after which the division was released for First Army's planned counteroffensive.⁸⁶ To the south, US II Corps also saw some augmentation with new troops, primarily in the deployment of 9th Division to the front in the latter days of February. They were welcomed into a corps badly in need of refurbishment following its losses at Kasserine, as some formations, particularly 34th Division, were badly under-strength in manpower and material.⁸⁷ This was rectified over the course of early March by AFHQ, who 'played up in a wonderful way over arranging a stream of reinforcing or replacement of artillery, tank destroyer units, tanks and personnel', which brought most formations within II Corps back up to strength by mid-March, while also accelerating plans to create a forward reserve at Constantine.⁸⁸ It was also during this period of reorganisation that some thought was devoted to the restructuring of certain divisions. 1st Armored Division, as yet the only American armoured unit to see combat, was singled out as being too unwieldy, consisting as it did of six battalions of tanks (in two regimental combat groups), three of armoured infantry, and three of armoured artillery.⁸⁹ Eisenhower

⁸³ TNA: WO 204/1191, 'Daily Operational Meetings, Dec 42 - May 43'.

⁸⁴ Playfair, p. 334.

⁸⁵ TNA: WO 231/10, 'Lessons Learned from Ops in Tunisia, Directorate of Military Training'.

⁸⁶ Ibid.

⁸⁷ Howe, p. 490.

⁸⁸ Mayo, p. 140.

⁸⁹ TNA: WO 204/1529, 'Orders of Battle, British Forces', 1942-44.

consequently recommended the removal of one of the two regimental combat groups after the campaign, thus evening out the balance between armour and infantry within the division, a change that was subsequently implemented across all American armoured units in September 1943.⁹⁰

Yet the Allies did not rest on their laurels, as AFHQ continued to adapt new methods to improve the flow of materiel to the front. In organisational terms, this was achieved by the ongoing development of a sophisticated system of supply bodies, beginning with the activation of NATOUSA, the North African Theater of Operations, United States Army. Formed at the beginning of the campaign as an organisational construct, NATOUSA was formally empowered as an administrative body on 15 February, with the creation of the Services of Supply, NATOUSA.⁹¹ This was a recognition of the growing strength of US forces in North Africa and the corresponding need for more complex logistical structures to enable their support, an ongoing relationship that AFHQ managed in steady, incremental steps. Over the preceding weeks, a new Communications Zone had been designated to centralise the supply of US troops behind the frontline, as well as a new Eastern Base Section (EBS) to govern the provisioning of II Corps, and these were now unified under an overall command headed by Brigadier General Thomas B. Larkin.⁹² This removed some of the burden of administration from AFHQ by assisting in the separation of theatre and operational responsibilities, leaving AFHQ free to focus on the concerns of the overall inter-Allied force over specifically American issues.⁹³ Moreover, the implementation of this new framework provided a basis on which the logistical system could expand and contract as needed, as the system of Base Sections was broadly modular.⁹⁴ The delineation of such base areas enabled the transfer of materiel between different supply organisations and also facilitated greater coordination between American and British logistical services. Both Larkin and his opposite number, Major-General J.G.W. Clark, now reported to a more senior officer, Deputy Theatre Commander Everett S. Hughes and AFHQ's CAO Humfrey

⁹⁰ TNA: WO 204/1393, 'Operations in Tunisia; Initial Occupation and Organisation'.

⁹¹ NARA: RG 319, 'Item 6-C Logistical History of Natousa-Mtousa'.

⁹² TNA: WO 204/512, 'Lines of Communication Area; administrative responsibilities of A.F.H.Q. and 1 Army', 1943.

⁹³ Howe, p. 495.

⁹⁴ NARA: RG 319, 'Item 6-C Logistical History of Natousa-Mtousa'.

Gale respectively, whose fruitful liaison allowed problems to be met 'as they arose by steady cooperation'.⁹⁵

Nor was it solely in the west that AFHQ made improvements to its logistical structure, as the arrival of 8th Army in southern Tunisia added another line of communication that AFHQ had to be conscious of. In their advance to Tripoli, Montgomery's troops had opened a considerable gulf between themselves and their primary supply base back in the Nile Delta, spanning a distance of some 1,400 miles and more than 1,000 from the nearest railhead at Tobruk.⁹⁶ As such, 8th Army had become increasingly reliant on coastwise supply to sustain their advance, making the capture of port facilities in major cities such as Benghazi a matter of critical importance.⁹⁷ However, once these ports were secured, 8th Army was still faced with the task of bringing their installations back online, as the retreating Axis often inflicted considerable damage on docks and harbour facilities in an effort to render them inoperable. At Tripoli, the harbour had been subjected to an extensive program of demolition by Axis forces, such that all deep water berths had been rendered unusable and the port itself was temporarily inaccessible by sea.⁹⁸ A complex process of salvage was therefore required to reopen the port, a delay that led the impatient Montgomery into a dispute with Admiral Harwood, the C-in-C Levant, which eventually saw the latter's dismissal by Churchill.⁹⁹ Against this background of acrimony however, Tripoli was swiftly brought back online during the first weeks of February and a number of measures instituted to ensure 8th Army's prompt supply. Montgomery's command, although folded under AFHQ, was retained administratively under Middle East Command, thereby limiting disruption to the supply chain, while 18th Army Group took receipt of supply reports to remain appraised.¹⁰⁰ In order to control this lengthy line of communication, a new administrative body was set up in Tripoli, similar to NATOUSA's Base Sections; known as HQ Tripolitania Base, or 'Tripbase', this new organisation was made active on 3 March and placed under the command of 8th Army's experienced Deputy

⁹⁵ NARA: RG 498, 'History of AFHQ Vol.1'; Howe, p. 496.

⁹⁶ Playfair, p. 316.

⁹⁷ TNA: WO 201/577, 'Notes on the maintenance of the Eighth Army and the supporting Royal Air Force by land, sea and air from El Alamein to Tunisia', 1943.

⁹⁸ Ibid.

⁹⁹ Montgomery, p. 156; Blaxland, p. 183.

¹⁰⁰ TNA: WO 175/19, '18th Army Group HQ War Diaries, 'Q' Branch', 1943.

Adjutant and Quartermaster General Brian Robertson.¹⁰¹ Robertson's new command thus served as an intermediary between Middle East Command and 8th Army, receiving maintenance requests and managing the forward flow of goods into and from Tripoli, thus reducing tension at both poles of the logistical system.¹⁰²

These organisational changes were also accompanied by material ones, as new equipment and personnel also arrived to outfit the new establishments and continue the expansion of infrastructure in-theatre. The SoS continued to expand steadily after the initial boom of January and February, growing to encompass nearly 76,000 personnel by the end of March, including the arrival of five new port battalions at Casablanca and Oran to further accelerate operations.¹⁰³ Port infrastructure too was subject to rapid overhaul; by March, the eastern ports of Algiers, Bougie, Philippeville and Bone were handling 11,800 tons of supplies daily, with the latter two handling 53,000 tons of much-needed fuel, a near threefold increase over the previous month.¹⁰⁴ Most of this upsurge was supplied by a further growth of coastwise and convoy traffic to the eastern ports, continuing the trend of prior months, and indeed reached such a scale as to see a decline in receipts in the Allies' western ports of Oran and Casablanca, where in the second three months of the campaign US cargo intake declined from 455,000 to 327,000 tons.¹⁰⁵ The eastward migration of shipping also aided the Allies' overland transport infrastructure, easing the strain on both highway and railway traffic. The establishment of EBS in particular aided with this problem, as II Corps was no longer dependent on transport links stretching as far back as Morocco, with goods instead being routed through Philippeville, a mere fraction of the distance from Tebessa.¹⁰⁶

Refinements to port infrastructure went hand-in-hand with a drastic improvement of overland transportation. Much of this expansion was fuelled by the accumulation of a progressively larger pool of MT; beginning with the 5,400 trucks dispatched in UGS 5½, fresh MT began to arrive in the magnitude of 2,000 vehicles

¹⁰¹ TNA: WO 201/577, 'Notes on the maintenance of the Eighth Army'.

¹⁰² Ibid.

¹⁰³ NARA: RG 319, 'Summary of Activities, North African Theater of Operations, USA'; Howe, p. 497.

¹⁰⁴ Playfair, p. 387; TNA: WO 204/508, 'North African Theatre - A Review of Petroleum Supply'.

¹⁰⁵ Leighton, p. 478.

¹⁰⁶ NARA: RG 319, 'Item 6-C Logistical History of Natousa-Mtousa'.

per month, many of them packed in crates for assembly at new plants constructed in Casablanca and Oran.¹⁰⁷ These were accompanied by a concomitant increase in both locomotives and rolling stock which enabled AFHQ to exploit the capacity of the railway system to its fullest potential.¹⁰⁸ A Military Service Depot had been established at Oran in January, and by March both unassembled railway cars and locomotives were arriving in theatre from where they were constructed and maintained from stockpiled depot supplies.¹⁰⁹ This influx of transport was also accompanied by the continuing reinforcement of local infrastructure, including both railway and road repair and the construction of bulk storage facilities. All major airfields were furnished with substantial quantities of tankage to meet increased petrol demands and cross-country pipelines from port installations to enable the supply of high-octane fuel direct to airfields.¹¹⁰ Other service facilities were opened around 18th Army Group HQ in Constantine, such as tank maintenance centres at Le Kroub and Bone for the servicing of Shermans and Churchills respectively.¹¹¹ Such measures are reflective of the wider adaptation of the Allied logistical system at this time, as AFHQ continued to build an effective support structure behind its operations by both material and organisational means, while cutting out or adjusting those elements that were extraneous or inefficient.

By contrast, such could not be said of the Axis supply situation, which, following failure to secure a convincing victory at Kasserine, began to come unstuck at a rapidly increasing pace. The bridgehead's predicament was highlighted by von Arnim in an appreciation from 26 February, stating that 'if I were General Eisenhower I would not bother to mount an offensive. I would concentrate on strangling our supply lines and on pulverising our ports and Air Force. If no supplies reach us all will be up in Tunisia by 1 July'.¹¹² The untenable nature of the Army Group's position was clear; although von Arnim's forces comprised around 350,000 men, only some 120,000 were first-line combat troops.¹¹³ With these, he was expected to hold a front of nearly 400 miles against twice this number, and although

¹⁰⁷ Howe, p. 498.

¹⁰⁸ NARA: RG 319, 'Commander-in-Chief's Dispatch'.

¹⁰⁹ NARA: RG 319, 'Item 6-C Logistical History of Natoussa-Mtousa'.

¹¹⁰ TNA: WO 204/513, 'Petrol and Oil, Admin Correspondence and Reports'.

¹¹¹ TNA: WO 231/10, 'Lessons Learned from Ops in Tunisia, Directorate of Military Training'.

¹¹² IWM: EDS Appreciation 12, Chapter 7.

¹¹³ Ibid.

another 31,000 troops arrived in March, this was scarcely enough to improve the situation.¹¹⁴ As EDS 12 relates, the Army Group was frequently holding sectors of 4-5 kilometres, the normal assault width of an infantry division, with one company and two guns, with the result that 'the main defence line was thus little more than a series of piquets without depth and without artillery protection'.¹¹⁵ To make matters worse, the Army Group's manpower shortage was complemented by an even worse gap in materiel, as Axis formations suffered from a chronic shortage of artillery, anti-tank guns and AFVs compared to their opponents. This disparity was most pronounced in terms of tank strength, a report from AFHQ on 8 March showing the Allies possessing some 1,086 operational tanks to an estimated 314 Axis.¹¹⁶ This was in fact an overestimation of the strength available to Army Group Afrika, whose contemporary reports placed their total number of operational AFVs at only 157.¹¹⁷ Such slim margins left von Arnim with limited options, as the movement of any significant formations between parts of the front left others dangerously exposed, thus preventing the Army Group from making any particularly ambitious plans. Even Ochsenkopf required von Arnim to temper his expectations, with only 14 battalions of infantry and 77 tanks available for the assault in total.¹¹⁸ As such, von Arnim was placed in a paradoxical situation; without more manpower and equipment, Army Group Afrika could not effect a decisive action that would secure the bridgehead, but as the logistical situation currently stood, the troops required to do so could not be sustained.

The lynchpin to this crisis can ultimately be located in the increasingly parlous state of the Axis supply lines, the rapid decline of which did much to vindicate von Arnim's pessimism. From a peak of nearly 70,000 tons in January and 59,000 in February, arrivals by sea and air dropped precipitately to 43,125 tons in March, with nearly 42 percent of all dispatched cargo being lost on the way.¹¹⁹ Such totals placed Army Group Afrika's supplies well below the 70,000 ton subsistence minimum necessary to sustain modest operations, never mind the fantastical 150,000-200,000 tons demanded by Hitler at a conference at Rastenburg on 14

¹¹⁴ Playfair, p. 416.

¹¹⁵ IWM: EDS Appreciation 12, Chapter 7.

¹¹⁶ TNA: WO 204/1393, 'Operations in Tunisia - Initial Occupation and Organisation'.

¹¹⁷ IWM: EDS Appreciation 12, Chapter 7.

¹¹⁸ Howe, pp. 501-504.

¹¹⁹ Playfair, p. 417.

March.¹²⁰ This placed serious constraints on the operations of the Army Group, as repeated failure to meet even their minimum monthly requirements had rendered it impossible to establish any substantive reserve stocks, leading to the onset of ‘a famine in petrol and ammunition’.¹²¹ Lack of the former was of particularly deep concern to von Arnim, as sufficient fuel not only underpinned the Army Group’s defensive strategy, but the movement of supply within Tunisia itself. An intercepted missive from German Naval Command Tunisia on 29 March highlighted the direness of this situation, stating that the ‘fuel situation from 30th would no longer guarantee supply of ammunition to heavily engaged troops of northern army. For southern army recourse would be necessary to aviation fuel for the withdrawal’.¹²² Nor was shortage of fuel the only issue of mobility faced by Axis forces, as a serious crisis within Army Group Afrika’s vehicle pool also began to coalesce at this time. Although it was already known that many formations were short of MT, attempts to remedy this issue had led to the dispatch of a melange of different vehicles, many with incompatible maintenance requirements. Even prior to the arrival of 10th Panzer Division at the end of 1942, some 200 types of vehicle had been in service with Axis forces in North Africa, a total increased by 92 with the addition of the aforementioned division alone.¹²³ Maintaining such a bewildering array of vehicles posed an insurmountable problem not only to in-theatre maintenance shops, but also to Axis supply officers, who simply could not secure sufficient quantities or varieties of spare parts to enable the repair of such a diverse transport fleet.

There were attempts to salvage the situation however, as the Axis high command finally grasped the seriousness of their position in Tunisia. Following the conference at Rastenburg, Hitler dispatched Grand Admiral Donitz, C-in-C of the Kriegsmarine, to Rome, where, with Mussolini’s consent, he oversaw a radical extension of German-Italian naval cooperation in the hopes of providing some measure of stability to the Tunisian supply line.¹²⁴ To this end, the German Admiral in Rome, Friedrich Ruge, was put in charge of a special Traffic Protection Staff to establish procedures for integrated convoys, while German harbour staff were

¹²⁰ IWM: EDS Appreciation 12, Chapter 7.

¹²¹ Macksey, p. 188.

¹²² TNA: HW 1/1548, ‘North Africa, Army Group Africa has insufficient fuel, Mar 29’, 1943.

¹²³ IWM: EDS Appreciation 12, Chapter 7.

¹²⁴ Ibid.

integrated throughout the supply chain.¹²⁵ However, as Gooch highlights, these efforts were not entirely successful, as Ruge's insertion into an already complex command situation merely exacerbated existing tensions, further muddling Axis attempts to respond to the Tunisian crisis.¹²⁶ Other efforts were directed towards renewed drives to increase the number of ships available to make the crossing to Tunisia. For this purpose, the Axis commandeered a number of vessels from Vichy and Tunisian ports to help reduce the deficit, as well as commissioning additional small ferry craft from French and Italian dockyards. However, of these new vessels, 'less than half the tonnage was remotely seaworthy', and much of the rest required refitting, while a shortage of steel and labour, as well as congestion in the yards, prevented production from covering the remaining deficit.¹²⁷ Nevertheless, these extra vessels did go some way towards alleviating the crisis, while convoy protection was bolstered by the provision of German anti-aircraft guns and crews, as well as mine detection and radio direction equipment.¹²⁸ However, while these measures did prevent a complete collapse of the logistical system, they could only reduce the extent to which the crisis continued to deepen, not prevent it entirely, as 'all these efforts were initiated too late to ensure the armies in Africa a regular flow of supplies'.¹²⁹ This lack of foresight was eloquently summarised by von Arnim in a 30 March conference with Siegfried Westphal, where he stated: 'if I had the stocks which I asked for in December and January we should have no worries now [...] I cannot load my guns with optimism'.¹³⁰

Yet while the trajectory of Allied and Axis logistical systems were heavily polarised, the situation on the ground seemed more uncertain. Although Morgenluft and Frühlingswind had been successfully blunted by Allied forces, the collective trauma inflicted by Kasserine still lingered, casting a long shadow over AFHQ and undermining that burgeoning confidence that had been fostered in prior engagements.¹³¹ The new wave of Axis offensives in March therefore offered a test of Allied resilience and a demonstration of those lessons learned at Kasserine and

¹²⁵ Howe, p. 514.

¹²⁶ John Gooch, *Mussolini's War: Fascist Italy From Triumph to Collapse, 1935-1943* (London: Penguin, 2021), p. 344.

¹²⁷ Hammond, pp. 161-62, 167.

¹²⁸ Ibid, p. 158.

¹²⁹ IWM: EDS Appreciation 12, Chapter 7.

¹³⁰ Ibid.

¹³¹ TNA: WO 201/822, 'Operations, First Army and Second United States Corps in Tunisia', 1943.

earlier, as First Army, 19th Corps, and II Corps sought to stymie these renewed attacks, before moving over to the offensive in mid-March.

The first of the Allies' major challenges during this period came in turning back Army Group Afrika's determined attempts to break the chokehold on the Tunisian bridgehead, beginning with Ochsenkopf on 26 February. Conceived initially as a diversionary probe to shore up the northern frontline and keep First Army on the back foot, this brainchild of von Arnim soon expanded, with Kesselring's blessing, into an ambitious offensive along three main axes, centred on nine ad hoc battlegroups.¹³² The manner in which First Army dealt with each of these attacks is highly revelatory of the lessons in defensive fighting which the Allies had learned thus far, as well as those shortcomings that could still be found. In the latter case, it was von Manteuffel's northern push that found the greatest success against First Army, despite being the weakest of von Arnim's three prongs, as it was defined 'more by skilful use of ground and clever infiltrations than by weight of numbers'.¹³³ Such tactics were ideally suited to the rolling hills, cork forests and dense scrub of Tunisia's northern coast, and consequently, von Manteuffel was able to dislodge 139th Brigade from its positions in front of Sedjenane by a series of probing attacks. 46th Division's account explained this approach: 'once an attack in strength is firmly held it is not pressed again. Instead, steps are taken to shift the weight of the attack to another area as quickly as possible [...] If success on any part of the front is achieved that success is pressed to the full'.¹³⁴

One reason 46th Division proved susceptible to these tactics was due to its fragmentation, as the division's units had been employed individually to shore up holes in the Allied line, leaving only parts of 139th Brigade and the Corps Franc d'Afrique to cover this section of the front. This lack of cohesion was taken advantage of by von Manteuffel, who focused his efforts on the weaker French battalions, thereby 'forcing urgent withdrawals across the front to avert engulfment'.¹³⁵ However, this was not the only shortcoming in First Army's defence, as 46th Division themselves acknowledged. The chief problem identified was one of inflexibility, as 'we are inclined to adhere slavishly to a certain piece of ground

¹³² Playfair, pp. 326-27.

¹³³ TNA: CAB 106/545, 'The story of 46th Division'.

¹³⁴ TNA: WO 204/939, 'Tunisian Campaign, 1942-43: report by 46 Division', 1943.

¹³⁵ Macksey, p. 184.

which in itself is valueless [...] our defence must be more mobile and elastic'.¹³⁶ This was demonstrated consistently as 139th Brigade was pressed back nearly 20 miles to Djebel Abiod, first with the loss of Sedjenane Station, which was situated forwards of the town in a basin overlooked by Axis positions, and then again at Sedjenane itself, which 'was not a place that lent itself naturally to defence'.¹³⁷ Nor would such positions necessarily have been lost had the defenders been more prompt in launching counterattacks, as 'these attacks by infiltration are therefore easy to deal with if taken in time'.¹³⁸ Instead, British counterattacks were often predictable and poorly timed, the 16th Battalion Durham Light Infantry's effort at Sedjenane Station only being launched three days after the initial assault, by which time the Axis were 'in some strength and in commanding positions, and the Durhams were forced back with considerable casualties'.¹³⁹

Yet it should be noted that these experiences were something of an outlier, as elsewhere on the front, First Army was considerably more successful, showcasing their hard-won proficiency. The manner in which 46th, 78th, and the ad hoc 'Y' Division fended off the southern prong of Ochsenkopf is instructive of these lessons, as in many respects these attacks mirrored of von Manteuffel.¹⁴⁰ However, whereas 139th Brigade had been forced into a slow retreat between successive positions, the divisions in the south countered these infiltration attacks by holding onto their advantageous strongpoints even when outflanked, defending them by fire before turning back the breakthrough with prompt counterattacks. These methods, taken from observation of the Germans' own organisation for defence and ubiquitously outlined in First Army Lessons Learned, paid great dividends in turning back the Axis offensive, demonstrating the value of the Tunisian experience for these units.¹⁴¹ North of Medjez, although 755th Grenadier Regiment pushed Algerian troops out of the village of Heidous, creating a dangerous salient overlooking Medjez, 138th Brigade denied any further exploitation, holding their positions north of the Medjerda by dint of fire, thus protecting the town.¹⁴² South of the Medjerda, in Y

¹³⁶ TNA: WO 204/939, 'Report by 46 Division'.

¹³⁷ TNA: CAB 106/545, 'The story of 46th Division'.

¹³⁸ TNA: WO 204/939, 'Report by 46 Division'.

¹³⁹ TNA: CAB 106/545, 'The story of 46th Division'.

¹⁴⁰ Howe, pp. 507-08.

¹⁴¹ TNA: WO 231/10, 'Lessons Learned from Ops in Tunisia, Directorate of Military Training'.

¹⁴² Anderson, p. 147.

Division's sector, strongly held localities under 1st Parachute Brigade and 6th Inniskilling easily turned back subsidiary attacks from a number of German battalions, the fighting becoming less a matter of victory and 'more a question of how many Bosch would be killed'.¹⁴³ Serious penetrations were fought back as Allied units launched prepared counterattacks; although another assault, around El Aroussa, proved more serious, as three paratrooper battalions, aided by tanks, pushed deep into Allied lines, threatening 78th Division's headquarters, this too received short shrift from the defenders.¹⁴⁴ 11th Brigade and Y Division fought delaying actions and launched immediate counterattacks with what reserves were on hand, beginning with a counterassault by 11th Brigade's 2nd Lancashire Fusiliers.¹⁴⁵ This checked Axis exploitation of their gains, as did similar actions by the Derby Yeomanry on the Y Division flank, while the main thrust was turned back by a series of determined infantry/armour actions around Steamroller Farm, additional reserves having been made available by 18th Army Group.¹⁴⁶

Where First Army was arguably most successful was against the lynchpin of the Axis offensive, the central thrust developed by Kampfgruppe Lang towards Beja. Fully aware that a concerted attack could only be launched straight down the Beja-Mateur road that ran through Hunt's Gap, as the ground either side consisted of 'frowning heights which could only be assailed by infantry', 128th Brigade opted to only lightly screen their flanks and instead deploy in depth to curtail any possible breakthroughs.¹⁴⁷ 5th Hampshire and supporting artillery, stationed at a forward outpost near the village of Sidi Nsir, ensured that the main force would have forewarning of any developing offensive, while the placement of the rest of the brigade in mutually supporting positions astride the road enabled the brigade's supporting guns to effectively defilade any advancing force, forcing the enemy into costly assaults to remove them.¹⁴⁸ Lang found this to his cost on 26 February, when his battlegroup, a considerable force of tanks and supporting infantry, advanced down the main road towards Beja, Lang's force requiring an entire day to overrun the outpost at Sidi Nsir. The attackers struggled to make headway through Allied

¹⁴³ TNA: CAB 106/569, '38th Brigade Account'.

¹⁴⁴ Ibid.

¹⁴⁵ Ray, p. 41.

¹⁴⁶ TNA: CAB 106/569, '38th Brigade Account'.

¹⁴⁷ Macksey, p. 182.

¹⁴⁸ TNA: CAB 106/545, 'The story of 46th Division'.

minefields, losing a number of tanks to artillery fired over open sights in the process, forcing Lang's Barenthin Glider troops to assault each hilltop outpost to silence them.¹⁴⁹ This delay gave the defenders of Hunt's Gap more than adequate warning of the impending assault, and thus when the column of German tanks appeared the next day, eleven of them were soon destroyed, 'the guns picking them off as they moved in single file down the road or floundered in the muddy fields'.¹⁵⁰ A further two days of fighting saw even greater loss to Lang's panzers, while additional infantry and armour arrived to shore up the Allied position, prompting 5. Panzerarmee to recall Lang on the night of 1/2 March.¹⁵¹

With Lang's withdrawal came the conclusion of Ochsenkopf, although sporadic fighting sputtered on well into March. Although initially the operation had prompted concern from senior commanders, it is nevertheless to the credit of Allied forces that Ochsenkopf was so handily blunted. Despite aiming to seize vital road junctions at Beja, Teboursouk and Djebel Abiod, by the time von Arnim called off the offensive none of these objectives were in Axis hands, while 5. Panzerarmee had taken heavy casualties, losing well over 1,000 men and suffering unsustainable losses in armour.¹⁵² 71 of the 77 tanks deployed by Lang's battlegroup had been knocked out during the fighting at Hunt's Gap, a total equivalent to nearly half of von Arnim's tank force, with 22 of these being completely destroyed.¹⁵³ It was this crippling of his main striking arm that prompted von Arnim to cancel the offensive, 5. Panzerarmee's War Diary recording that 'our operations in the Medjez el Bab area have not achieved the success for which we hoped'.¹⁵⁴ This tacit admission of defeat serves as a great testament to the growth and capabilities of First Army; they had fought their opponents to a standstill and exacted from them a price too great for them to bear.

Nor was First Army the only Allied formation to enjoy success on the defensive, as II Corps and 8th Army also displayed their defensive proficiency, in actions that offer interesting parallels to First Army's success against Ochsenkopf.

¹⁴⁹ Ibid

¹⁵⁰ Ibid.

¹⁵¹ TNA: WO 204/3972, 'From 1 Army, Adjutant General's Records', 1943.

¹⁵² Howe, p. 508.

¹⁵³ IWM: EDS Appreciation 12, Chapter 7.

¹⁵⁴ Ibid.

8th Army's defence of Medenine demonstrated the value of prepared defence and use of fire, Montgomery declaring 'if he [Rommel] attacks me tomorrow (as he looks like doing) he will get an extremely bloody nose'.¹⁵⁵ This prediction was to prove accurate, as on the morning of 6 March, 1st Italian Army launched five separate attacks on the 8th Army position, 'three of which were repulsed, principally by artillery fire. Two made some progress but prompt counter-attacks soon won back the lost positions'.¹⁵⁶ By nightfall, Rommel called off the offensive, having lost 52 tanks, with many more damaged and a significant number of casualties, for a cost of only 130 men to 8th Army.¹⁵⁷ A smaller effort four days later found equally little success, as a force of armoured cars and infantry, bolstered by tanks, made an attack on 8th Army's 'L Force', General Philippe Leclerc's Free French command, around Ksar Rhilane.¹⁵⁸ 'Although surrounded and attacked on all open flanks from NE, East and South', Leclerc refused to withdraw, and with the assistance of the RAF, conducted a flexible defence of the position, sternly rebuffing the attack and inflicting considerable loss upon the Axis.¹⁵⁹

II Corps' efforts at the battle of El Guettar showed a similar level of growth. Just less than a week after II Corps had launched their eastward offensive, US 1st Infantry Division, advancing from El Guettar, was attacked before dawn on 23 March by 'tanks and self-propelled guns, interspersed with infantry in carriers', which 'rolled westward in a hollow square formation and at a slow but steady pace'.¹⁶⁰ Although initially on the back foot as forward units were caught out of position, 1st Division fell back onto defensive ground around the Chott el Guettar and Keddab Wadi, where pre-prepared positions, including a minefield, halted the advance of 10th Panzer Division, who suffered 'not inconsiderable' losses in both infantry and armour, with 38 tanks destroyed or damaged during the fighting.¹⁶¹ A second attack, launched later that day, was also repulsed, being driven off by concentrated fire from a reinforced defensive line, and although smaller actions on the following days improved the Axis position, the counterattack had been

¹⁵⁵ *Montgomery and the Eighth Army*, p. 162.

¹⁵⁶ TNA: WO 201/580, '8th Army operations: brief summary of events', 1943.

¹⁵⁷ Hamilton, p. 170.

¹⁵⁸ IWM: EDS Appreciation 12, Chapter 7.

¹⁵⁹ TNA: WO 201/656, 'Lightfoot, Weekly summaries of operations', 1942-43; Anthony Clayton, *Three Marshals of France: Leadership After Trauma* (London: Brassey's, 1992), p. 51.

¹⁶⁰ Howe, p. 560.

¹⁶¹ IWM: EDS Appreciation 12, Chapter 7.

effectively blunted.¹⁶² Although, as Blumenson highlights, Patton barely acknowledged this successful action, as ‘he was hardly interested in defensive prowess’, in many respects 1st Infantry Division’s victory at El Guettar was symbolic of the resurgence of II Corps from its defeat a month prior.¹⁶³

Yet perhaps even more important than the victory itself was the way in which it and other actions during this period were won, and how they were demonstrative of the key tenets of defensive fighting learned by Allied forces. In each of these key engagements, the defending Allies fielded predominantly infantry forces, backed by supporting arms, against the archetypal German offensive centred around the aggressive use of armour and infantry in a combined arms setting. Similar actions of this kind had previously gone poorly for the Allies, but by now Allied formations had begun to grasp the mistakes they had made and refine their defensive systems. Perhaps the most important of these lessons was the selection of good ground for defensive positions and its fortification as mutually supporting strongpoints rather than seeking to hold a continuous line. Both of these were highlighted in AFHQ’s Lessons Learned, as ‘disposition and deployment in depth, and the mutual support of all heavy and automatic weapons from positions organized in depth were found essential throughout the campaign. In defense against armored attack, adherence to this principle was vital’.¹⁶⁴

This was further refined by the usage of fire rather than manpower as the means of holding positions to allow greater flexibility in defence; forward outposts were held lightly, with ‘as little as possible in the shop window’, so that reserves could be held back for immediate counterattack should any penetrations occur.¹⁶⁵ Borrowed from the Axis themselves, this approach served as a direct counter to Army Group Afrika’s aggressive infiltration tactics, as Allied outposts could not safely be bypassed, forcing the Axis to attack these localities or leave their flanks and rear exposed. The delay thus inflicted allowed additional reserves to be brought up to shore up defences or effect counterattacks, while the strongpoints themselves could continue to take a toll from the attacker with small arms and emplaced

¹⁶² Coggins, p. 62.

¹⁶³ *The Patton Papers 1940-1945*, p. 197.

¹⁶⁴ TNA: WO 204/1905, ‘Lessons from Operations on Tunisia and Italy’.

¹⁶⁵ TNA: WO 231/10, ‘Lessons Learned from Ops in Tunisia, Directorate of Military Training’.

ordnance.¹⁶⁶ Particularly vulnerable were von Arnim's precious remaining tanks, which were frequently confined to the roadways where they provided rich pickings for Allied guns concealed on high ground, forcing escorting infantry to suffer heavy casualties to dislodge them.¹⁶⁷ This defensive system, visible across all of the Allies' key defensive actions, was ideally suited to repulse Axis attacks, as it effectively nullified the key Axis tenets of shock action and mobility by luring attackers into drawn-out engagements on well-prepared ground, forcing them to take unacceptable casualties to make any headway.¹⁶⁸ Although Allied defences were still shown to be fallible in actions around Sedjenane, the effectiveness of the tactics that they utilised during this period is undeniable.

The creation of a flexible and effective defensive tactical system formed the first pillar of an increasingly visible and coherent operational outlook on behalf of Allied forces, an adaptation which demonstrated a clear understanding of both the opponent they were confronting and the nature of the Tunisian theatre itself. To this was soon added a second defining trait of Allied operations: the use of overwhelming firepower, as the improving logistical situation saw the incorporation of growing material advantages into the Allied tactical system. As ever, a pivotal role was played by artillery, the increasing power, flexibility and sophistication of which proved vital in assisting the infantry in both holding and retaking positions. This was displayed throughout Ochsenkopf, 138th Brigade's defence of Medjez being assisted by 'the sort of artillery barrage which, from now on, would be a feature of every action by the British on the Tunisian front'.¹⁶⁹ The achievement of this weight of fire was founded primarily upon the ability to concentrate large numbers of guns on individual targets at short notice, aided by organisational methods such as the AGRA, which placed guns 'under the highest authority capable of exercising effective control'.¹⁷⁰

Refinements in technique now built upon these advancements, signals communication and simplified fire plans increasing the short-term responsiveness of artillery units to calls for support. Such flexibility was considered axiomatic by both

¹⁶⁶ TNA: WO 204/1905, 'Lessons from Operations on Tunisia and Italy'.

¹⁶⁷ TNA: WO 231/10, 'Lessons Learned from Ops in Tunisia, Directorate of Military Training'.

¹⁶⁸ TNA: WO 204/8275, 'Lessons learnt from Campaigns in Tunisia and Sicily'.

¹⁶⁹ Macksey, p. 185.

¹⁷⁰ TNA: WO 231/10, 'Lessons Learned from Ops in Tunisia, Directorate of Military Training'.

British and American troops alike, the latter's Lessons Learned labelling it 'one of the most vital elements in all artillery operations [...] the marked success of our artillery in the recent campaign can be attributed largely to the achievement of this all-important flexibility'.¹⁷¹ This was well-demonstrated at El Guettar where, forewarned of the second assault by radio intercepts, US artillery 'crucified them with high explosive', responding to 10th Panzer Division's advance with overlapping barrages of time-fuze shells.¹⁷² The arrival of 8th Army further honed this keen edge of Allied firepower, Monty's men contributing their own battle-tested methods, including a technique pioneered at Alamein for a 'quick form of linear concentration, called a "STONK"', a portmanteau of Standard Concentration, that was of great interest to First Army.¹⁷³ As Moberg relates, 'the idea was to record the position of a DF [Defensive Fire] target with one coordinate only, and by a bearing order the direction of the rectangle', giving a quick and handy target for gunners that further added to the artillery's responsiveness and utility.¹⁷⁴ As a result, the Stonk was soon 'adopted, in addition to existing methods, by formations in North Africa', eventually being standardised in size and procedure during 1943 to ensure its maximum ubiquity.¹⁷⁵

Complementary to the still-growing strength of Allied gun power in the indirect fire role, was the expansion of heavy weaponry intended for direct fire, most notable among which was the growth and diversification of anti-tank capabilities. For the first time since the start of the campaign, anti-tank weaponry was plentiful in both quantity and potency, a key factor in the defeat of the Axis' main armoured offensives. Medenine was perhaps the most spectacular example, with Montgomery able to field more than three 6-pdr anti-tank guns for each of the 150 operational tanks mustered by 1st Italian Army.¹⁷⁶ Substantially better than both the anaemic 40mm 2-pdr and the equally poor American 37mm M3, the 6-pdr was entirely capable of engaging Axis armour even beyond normal combat ranges, with Major Cameron of 216 Anti-Tank Battery reporting that several of his unit's guns scored

¹⁷¹ TNA: WO 204/1905, 'Lessons from Operations on Tunisia and Italy'.

¹⁷² Howe, p. 562.

¹⁷³ TNA: WO 231/10, 'Lessons Learned from Ops in Tunisia, Directorate of Military Training'.

¹⁷⁴ Moberg, p. 255.

¹⁷⁵ TNA: WO 231/10, 'Lessons Learned from Ops in Tunisia, Directorate of Military Training'; Moberg, p. 255.

¹⁷⁶ IWM: EDS Appreciation 12, Chapter 7; *Montgomery and the Eighth Army*, p. 162.

kills at up to 1500 yards at Medenine.¹⁷⁷ Growing numbers of the 6-pdr were also complemented by the issue of the new and more potent 17-pdr anti-tank gun, which saw its debut at Hunt's Gap, a pair being deployed by 231 Anti-Tank Battery.¹⁷⁸ Capable of penetrating any Axis vehicle at a range of 1500 yards, the 17-pdr represented the next step in British efforts to counter the increasingly heavy armour displayed by German tanks, and proved to be highly popular, prompting requests for the gun's mounting on a tank that eventually resulted in the Sherman Firefly, which would appear in Northwest Europe.¹⁷⁹

American forces too felt the benefit of this new anti-tank weaponry. Despite protests from Eisenhower's G-3 Chief, Lowell Rooks, that the 37mm was perfectly serviceable and that its replacement would 'introduce considerable complications in the supply of both weapons and vehicles', 18th Army Group began to issue the 6-pdr to II Corps over the course of March.¹⁸⁰ From there, it was soon adopted for general service with US troops under the designation 57mm Gun M1, from where it would provide valuable service for much of the remainder of the Second World War.¹⁸¹ More mobile anti-tank developments were also to make their debut with II Corps' Tank Destroyer units, which had up to this point been equipped with M3 half-tracks wielding 75mm guns, in the form of the 3-inch Gun Motor Carriage M10. Based on a modified Sherman chassis with a high-velocity 76mm gun, the M10 was a significant addition to II Corps' mobile anti-tank defence, although their thin armour made them vulnerable, proven by costly initial engagements at El Guettar.¹⁸²

Another weapon made more widely available at this time was the Vickers Machine Gun, a proven and reliable weapon usually issued to specialist machine gun battalions for the provision of fire support.¹⁸³ However, due to the absence of the battalions that should have been on the strength of First Army's infantry divisions, 4-6 Vickers' were issued unofficially to individual battalions around the time of Kasserine and 'proved to be of enormous value in spite of the establishment

¹⁷⁷ TNA: WO 201/611, 'Operations Reports: Battle of Medenine', 1943.

¹⁷⁸ CAB 106/545, 'The story of 46th Division'.

¹⁷⁹ TNA: WO 175/99, 'C.R.A. 9th Corps, War Diaries', 1943.

¹⁸⁰ TNA: WO 204/1147, 'Weapons: Miscellaneous Correspondence', 1942-45.

¹⁸¹ TNA: WO 193/844, 'Operations: Phase I - Part 3'.

¹⁸² Christopher Gabel, *Seek, Strike and Destroy: US Army Tank Destroyer Doctrine in World War II* (Fort Leavenworth, Kansas: Combat Studies Institute, 1985), pp. 35, 37-39.

¹⁸³ French, p. 86.

difficulties of manning and transporting'.¹⁸⁴ The additional fire support thus offered was greatly appreciated by many battalion commanders, to the point that half of their number stated that they would be reluctant to part with this arrangement even when machine gun battalions arrived to join their divisions.¹⁸⁵ Nor was this the only piece of equipment for which First Army commanders shared a growing affection, as following its debut at Sbiba, the Churchill tank too was quick to find effective employment, showcasing its qualities of robustness and reliability. These were very much in evidence during Y Division's defence around El Aroussa during Ochsenkopf, where a German advance west of Djebel Rihane encountered a single Mk.VI Churchill that hit six of their Panzer IIIs at a range of 800 metres.¹⁸⁶ In response, 'all the remaining Pz IIIs and the 8.8cm Flak of 2/Flak Regt H.G. blazed away at this tank but without effect,' eventually withdrawing when more Churchills arrived.¹⁸⁷ Such episodes set in train a reputation for reliability and protection that prompted a later report to state: 'the Churchill has done very well [...] the presence of the tank gives confidence to the infantry and all users are agreed that it would be a great mistake to stop production of the Churchill'.¹⁸⁸

The advent of even more new equipment in the arsenal of Allied commanders was not, however, a panacea for their difficulties on the offence, as II Corps' offensive towards Maknassy illustrates. While the initial phase of Patton's drive enjoyed smooth progress, 1st Infantry Division seizing a near-defenceless Gafsa in 'an encouraging exercise rather than a hard battle', this wellspring of success soon dried up.¹⁸⁹ Ward's 1st Armored, exhausted by their advance through 'a sea of mud' to take Sened, forced by an impatient Patton, managed to seize Maknassy, but failure to act promptly on the night 20-21 March allowed the Axis defenders to slip away.¹⁹⁰ The latter dug in on the hills surrounding the eastward pass from Maknassy, where, despite numbering only a few hundred, they managed to stymie 1st Armored for three days, much to Patton's chagrin.¹⁹¹ Now 'awfully mad with Pink Ward for his slowness', Patton demanded that Ward lead his men forward in person, and though

¹⁸⁴ TNA: WO 204/4237, 'Tunisia Reports on Operations'.

¹⁸⁵ Ibid.

¹⁸⁶ IWM: EDS Appreciation 12, Chapter 6.

¹⁸⁷ Ibid.

¹⁸⁸ TNA: WO 175/17, '18th Army Group HQ War Diaries, 'G' AFV', 1943.

¹⁸⁹ Howe, pp. 547-550.

¹⁹⁰ *The Patton Papers*, p. 194; TNA: WO 204/1905, 'Lessons from Operations on Tunisia and Italy'.

¹⁹¹ Coggins, pp. 137-39.

this attack enjoyed more success than those preceding it, the position could not be held, 'as it was solid rock and we could not dig in'.¹⁹² Patton blamed the failure of 1st Armored's drive on a lack of aggression, an assessment entirely typical of the bullish general, but in many respects not inaccurate.¹⁹³ Both at Maknassy and elsewhere, the timidity of American units can be held responsible for II Corps' glacial advance, as delays in launching attacks and an unwillingness to press home assaults enabled smaller Axis forces to stymie the American offensive.

Undoubtedly some of this over-caution was rooted in the trauma inflicted by Kasserine, but other components of II Corps' tentative approach stemmed from inadequate training and lack of experience. When US troops advanced beyond Maknassy into broken terrain, they struggled to evict the German defenders, despite often telling material advantages.¹⁹⁴ 9th Infantry Division, advancing from El Guettar on 28 March, found rough going in the high djebels, with a number of battalions simply getting lost because they had never fought at night, while others became pinned down by heavy fire and could make no progress.¹⁹⁵ When interviewed post-campaign, Lieutenant Colonel Treacy of 125th Field Artillery Battalion attributed these failings in part to a lack of junior leadership, as officers needed to be 'ice-clear and specific in instructions and directions, especially with regard to patrolling, scouting and night operations'.¹⁹⁶ However, these were not the only issues raised by II Corps commanders, as units were also indicted for failure to seize prominent positions. Hill 772 for example, just southeast of El Guettar, 'remained in German hands during the first ten days of the battle. As a result the enemy had artillery observation and was able to fire on anything that moved. As soon as Hill 772 was captured, the Germans abandoned the entire position.'¹⁹⁷ Many of these criticisms were highly familiar, First Army having encountered much the same problems in preceding months, highlighting that, much like the lessons the Allies had learned in defensive fighting, the operational challenges faced by formations on the attack were somewhat universal.

¹⁹² *The Patton Papers*, p. 198.

¹⁹³ Omar N. Bradley and Clay Blair, *A General's Life* (New York: Simon and Schuster, 1983), p. 143.

¹⁹⁴ Howe, pp. 547-48.

¹⁹⁵ TNA: WO 204/1158, '1 Army: Operational Summaries', 1943.

¹⁹⁶ TNA: WO 204/4237, 'Tunisia Reports on Operations'.

¹⁹⁷ TNA: WO 204/1905, 'Lessons from Operations on Tunisia and Italy'.

Indeed, even the veteran 8th Army encountered similar pitfalls in their first offensive engagements, as demonstrated by 201st Guards Brigade at Sidi el Guelaa. A subsidiary attack to 50th and 51st Divisions' clearance of Wadi Zeuss, the brigade 'unfortunately had a bad time of it' attempting to take an Italian observation post, suffering over 500 casualties and being forced to withdraw.¹⁹⁸ The failure to take this key position mirrors many of the mistakes made by II Corps, most notably the lack of proper reconnaissance, which left the brigade unaware of an anti-personnel minefield that caused severe losses, and the failure to dedicate sufficient resources to the capture of key observational positions.¹⁹⁹ Failure to appreciate the terrain was also greatly detrimental to 8th Army's efforts to smash through the Mareth Line, as while Mareth's defensive works were undoubtedly formidable, the wadi which they sat behind was an equally imposing barrier. A steep-sided ravine, Wadi Zigzaou 'was a horrible obstacle. It contained water, and had been registered by the enemy's guns and mortars. It was also subject to intensive enfilade fire from the flanks'.²⁰⁰ This proved to be the attackers' undoing, as while 50th Division, issued with scaling ladders, found the wadi to be a practicable, if difficult obstacle, none of their heavier equipment could be brought across without great difficulty. Fascines had been created to allow the bridging of the gap by 50th RTR's Valentines, but many of these caught fire on the tanks' hot exhausts, while several tanks got stuck attempting crossings created by sappers, meaning only four got across during the first night.²⁰¹ A second attempt the next day saw 50th RTR across the wadi, but their Valentines were outgunned by the tanks of 15th Panzer Division, and with casualties mounting and no way to move anti-tank guns forward to contest them, 50th Division was recalled before daylight on 24 March.²⁰²

The failure of Pugilist was, in many ways, testament to Montgomery's own hubris. His biographer, Nigel Hamilton, was to state that 'fame, adulation and a growing feeling of infallibility after Medenine all contributed to a dangerous over-confidence in his tactical genius', that led Montgomery to underestimate the scope of the challenge confronting him at Mareth.²⁰³ Although fully aware that Mareth was

¹⁹⁸ Francis de Guingand, *Operation Victory* (London: Hodder and Stoughton, 1947), p. 247.

¹⁹⁹ Playfair, p. 335.

²⁰⁰ De Guingand, p. 253.

²⁰¹ Blaxland, pp. 198-99.

²⁰² TNA: WO 204/3974, 'From 8 Army, Adjutant Generals Records', 1943.

²⁰³ Hamilton, p. 186.

well-fortified, Montgomery paid little heed to analysis that a frontal attack could prove very costly, sticking instead to his guns and attempting to unhinge the Axis position with brute force.²⁰⁴ In many regards, Monty's plan was little different to that which he had employed at El Alamein, with a main break-in thrust while a secondary hook distracted the enemy in a different sector. That this attempt to repeat Alamein's success came to grief only serves to highlight Montgomery's failure to comprehend the different operational conditions prevailing in Tunisia; whereas Alamein had provided 8th Army with the necessary space to leverage advantages in manpower and materiel, the constrained frontage and more hostile terrain at Mareth neutralised many of these advantages, making a break-in far harder to attain. Yet while failure in Pugilist was a costly setback for an army that was becoming accustomed to victory, it did also serve as an instructive lesson for 8th Army, demonstrating that although their hard-won experience was immensely valuable, not all of the lessons they had learned in the desert were applicable in the more varied and dramatic terrain of Tunisia.

Certainly, it is notable that the most successful Allied force on the offence was the only formation that combined high standards of training with solid experience in local conditions. Reorganised following the defeat of Ochsenkopf, Anderson's First Army planned a series of counteroffensives for the end of March, aimed at reclaiming ground lost to 5. Panzerarmee and capturing preliminary positions for an attack towards Tunis and Bizerte. The first of these operations was assigned primarily to 138th Brigade, who opened their assault towards Sedjenane on 28 March.²⁰⁵ An examination of the attackers' methods shows their utilisation of all the myriad principles in offensive fighting that had been established throughout the campaign, including the need for comprehensive reconnaissance and careful planning and the value of tactical surprise. Opening manoeuvres were conducted under cover of darkness early on 28 March, before the infantry attacked in silence, conducting a two-pronged assault supported by the artillery of two divisions as well as those in Army Reserve.²⁰⁶ These thorough preparations enabled them to surprise the Axis defenders of their first objective, the village of Tamera. The Allies' double envelopment rendered this position untenable, forcing several enemy units to

²⁰⁴ *Montgomery and the Eighth Army*, p. 174; TNA: AIR 23/6488, 'Operation 'Pugilist''.

²⁰⁵ Blaxland, p. 225.

²⁰⁶ Anderson, p. 148.

surrender, a turnabout from Ochsenkopf that offers a poignant marker of how Allied forces were learning to employ Axis tactics against them. This point was further illustrated by 2nd Para's repulse of an immediate German counterattack, as despite a 'desperate tussle', the parachutists held on and forced the Axis to withdraw.²⁰⁷

A further three days of fighting also highlighted other signs of First Army's growing proficiency, as despite the difficult and dense scrubland of northern Tunisia, British forces continued to forge ahead. They did so supported again by the now-ubiquitous Churchill, while 138th Brigade, deployed on a wide right hook, made use of trains of pack mules to move support weapons and supplies through the dense undergrowth, thereby reducing their reliance on road-bound heavy equipment.²⁰⁸ Instead, the infantry utilised mobility and aggression to carry them forward, forcing their way through enemy defences at close quarters as 'it has been proved that the enemy do not take the bayonet'.²⁰⁹ 6th York and Lancasters demonstrated this wisdom during actions to reclaim the mines above Sedjenane, making 'no less than eight bayonet charges to clear a stubborn enemy from these final hills'.²¹⁰ This approach paid clear dividends, as by 31 March, First Army had recaptured Sedjenane, and with it, all of the territory that been lost to Manteuffel's advance only a few weeks prior.²¹¹ Even the normally reserved Anderson was pleased with this result, as it had taken only four days to achieve what the Germans had in three weeks, 'this swift and successful counterattack' proving just how effective First Army, now experienced and well-equipped, was becoming.²¹²

The value of experience and training to the performance of Allied troops was certainly not lost on 18th Army Group's new commander either. Alongside Montgomery, Alexander had been responsible for overseeing the intensive program of tactical and physical training that 8th Army had undergone prior to El Alamein, and now sought to reap the same dividends in Tunisia.²¹³ On 23 February, HQ 18th Army Group issued orders for the formation of a Battle School, aimed at the 'instruction of U.S. and British junior leaders, officers and N.C.Os in minor inf

²⁰⁷ Blaxland, p. 226.

²⁰⁸ TNA: CAB 106/545, 'The story of 46th Division'.

²⁰⁹ TNA: WO 231/10, 'Lessons Learned from Ops in Tunisia, Directorate of Military Training'.

²¹⁰ TNA: CAB 106/545, 'The story of 46th Division'.

²¹¹ TNA: WO 201/822, 'Operations - First Army and 2 US Corps in Tunisia'.

²¹² Anderson, p. 148.

²¹³ Alexander, *The Alexander Memoirs*, p. 20.

tactics, battle inoculation etc'.²¹⁴ Battle Schools had begun to emerge as part of reforms made in the aftermath of Dunkirk, alongside a demand for more realistic and immersive training exercises, and were intended to inculcate basic tactical methods collectively known as Battle Drill.²¹⁵ The first of these schools had been established by Alexander himself within 1st Corps in the autumn of 1940, with training based on a manual of his own design, *I Corps Tactical Notes*, but had aroused only a lukewarm response from his fellow officers.²¹⁶ Nevertheless, the qualities of this initiative were recognised by a small number of Alexander's fellows, including Lieutenant General Sir Bernard Paget, Major-General John Utterson-Kelso, and Major Lionel Wigram, whose efforts saw the proliferation of Battle Schools in Home training and eventually Battle Drill's incorporation into official doctrine in October 1942.²¹⁷

The core tenets of the Battle Drill movement were thus rooted strongly in 18th Army Group's new training establishment when it opened at Clairefontaine (El Aouinet) on 21 March. This relationship was made clearly explicit in 24 March's Training Memorandum No.1, which established another manual of Alexander's own design, *Tactical and Training Notes*, as the basis of in-theatre training.²¹⁸ Contained within were a mixture of general training principles and philosophies, key lessons, and a number of standardised drills, complete with diagrams and simple instructions that could provide the foundation for effective training in the Battle Schools.²¹⁹ Certainly, Alexander was to find a receptive audience in not only First Army, for whom 'Divs were most anxious and Corps and Army agreed in principle for a system of Div schools to be started', but also among his American peers, including Fredendall.²²⁰ Fredendall, whose qualities as a training officer were appreciated by Eisenhower, was also to call for more intensive training in a 10 March report, as while 'the teachings of our training manuals are in general sound [...] the required instruction has not always penetrated down into the smaller units and to the individual soldier'.²²¹ The solution Fredendall suggested bore numerous similarities

²¹⁴ TNA: WO 175/18, '18th Army Group HQ War Diaries, 'G' Training Branch', 1943.

²¹⁵ Place, p. 49.

²¹⁶ Ibid, pp. 49-50.

²¹⁷ Ibid, pp. 50-62.

²¹⁸ TNA: WO 175/18, '18th Army Group HQ War Diaries, 'G' Training Branch'.

²¹⁹ Ibid.

²²⁰ TNA: WO 204/1893, 'Training in North Africa, Policy'.

²²¹ TNA: WO 204/267, 'Training, recent operations on the Tunisian front'.

to those implemented in British training, including physical hardening and inurement to battlefield conditions to promote physical and mental endurance. More interestingly however, was the suggestion that ‘all platoons should be instructed in four or five standard plays just as a football team’, so that ‘even mediocre officers could be successful in average operations’, a concept that bore remarkable resemblance to Battle Drill.²²²

A program of mass expansion of training centres also accompanied these changes in training methodology, in accordance with a directive laid down by Eisenhower on 21 February.²²³ From an initial count of six different training schools in operation under AFHQ, some of them specialised trade establishments, Alexander, in cooperation with Clark’s 5th Army, was to raise this total to thirteen in only a month, including schools for Bridging, Engineer Training, and Signals.²²⁴ A further plan of expansion aimed at doubling this number again in the near future, with a broad range of additional courses that included Aircraft Recognition, Air O.Ps, Camouflage, Chemical Warfare, Intelligence, and other vital tasks.²²⁵ Reforms were also made to the system of reinforcement depots and ‘Left Out of Battle’ personnel, with units being retained in the Base Area for training rather than maintained at the frontline, thus ensuring that a larger proportion of personnel were receiving training when not in combat.²²⁶ Although initially on a small scale, as the pace of operations prevented personnel from attending many courses, these reforms represented the establishment of solid foundations for a robust system of training not only moving forward in Tunisia, but for continued action in the Mediterranean theatre as well.²²⁷

For those troops that already enjoyed the benefits of rigorous training, namely 8th Army, continued battle experience proved to be the most effective route to increased proficiency. Although later insistent that this was his plan all along, following rebuff at Mareth Montgomery demonstrated an oft-uncredited flexibility, switching the focus of his offensive to the subsidiary attack by NZ Corps on his left,

²²² Ibid.

²²³ TNA: WO 204/1893, ‘Training in North Africa, Policy’.

²²⁴ TNA: WO 204/267, ‘Training, recent operations on the Tunisian front’.

²²⁵ TNA: WO 204/1893, ‘Training in North Africa, Policy’.

²²⁶ Ibid.

²²⁷ Ibid.

which was attempting to outflank Mareth through the Matmata Hills.²²⁸ To this end he dispatched 1st Armoured Division, along with 10th Corps HQ, to support the New Zealanders, while the veteran 4th Indian Division, his best mountain troops, cleared the intervening hills.²²⁹ The hasty nature of this move is self-evident, as the preparation of two separate new actions on 8th Army's left flank not only 'threw an already complicated movement plan into traffic chaos', but also caused friction within the command chain, creating an uneasy dyarchy between 10th Corps' Brian Horrocks and NZ Corps' Bernard Freyberg.²³⁰ However, with some careful management from De Guingand, Monty's Chief of Staff, Freyberg and Horrocks managed to cooperate effectively, developing a plan that Montgomery approved the following day.²³¹

The new plan was dubbed Supercharge II, another throwback to Alamein, yet it stands in stark contrast with Pugilist as an exemplar of 8th Army's adaptability. Supercharge called for a 'blitz attack' on the Tebaga Gap, a key bottleneck through the Matmata Hills, on the afternoon of 26 March, and from the plan's outline one can discern its clear inspiration by the namesake German tactics.²³² A heavy artillery barrage, bolstered by significant quantities of air support, would be followed by a strong attack with infantry and armour from NZ Corps, after which 1st Armoured Division would exploit the breakthrough and drive deep into the enemy's rear positions.²³³ This approach was bold, but also calculated, as 8th Army was well aware that Army Group Afrika had no reserves to counter such a thrust. The preliminary stages of the attack also displayed a greater consideration of the conditions and terrain than at Mareth, beginning with an operation by NZ Corps to capture Height 184, to deny the enemy observation.²³⁴ Assembly for the main attack was conducted before dawn, troops lying concealed until 4pm when the artillery programme began, allowing the infantry to make their assault 'with the sun behind us – previously we had always done our attacks at night – and we expected to get some measure of surprise, which we did'.²³⁵ Indeed the attack 'went like a dream',

²²⁸ Montgomery, p. 159.

²²⁹ TNA: WO 201/627, 'Personal reports on operations: Mareth Line', 1943.

²³⁰ Macksey, p. 219.

²³¹ De Guingand, p. 258; Blaxland, pp. 203-04.

²³² TNA: WO 201/627, 'Personal reports on operations: Mareth Line'.

²³³ Blaxland, p. 204.

²³⁴ Playfair, p. 347.

²³⁵ TNA: WO 201/627, 'Personal reports on operations, Mareth Line'.

NZ Corps executing a rapid and timely combined arms assault after several hours of intense air and ground bombardment to secure virtually all of their objectives on schedule, enabling 1st Armoured Division to pass through their positions and continue the advance.²³⁶ The British armour gained a further four miles that afternoon, resuming their drive by moonlight to get within two miles of El Hamma, their ultimate objective, the next morning. Seizing this town would have placed 1st Armoured virtually astride 1st Italian Army's line of retreat, and it was only the timely, and costly, intervention of 164 Light Division and 15th and 21st Panzer Divisions that halted Allied progress, allowing Messe to extricate his troops from Mareth and retreat to Wadi Akarit.²³⁷ Nevertheless, the breakthrough at the Tebaga Gap represented a sterling success for 8th Army, as Supercharge had successfully levered the Axis out of the Mareth position in an effective display of speed and all-arms cooperation, inflicting 'a tremendous mauling' on their opponents in the process.²³⁸

In this way, the unfolding of Pugilist and then Supercharge to some extent mirrors the development of Allied operations throughout the period as a whole. Despite early setbacks, most notably at Kasserine, the troops of 18th Army Group can be seen to have demonstrated an ability to rebound from their reverses, showcasing an increasing proficiency that was beginning to combine not only experience but effective training and operational methods. Although still clearly unperfected, Allied operational art in the latter half of March can be seen to have been significantly more refined than before, yielding a number of impressive battlefield successes that would have been hard to contemplate at the beginning of 1943 and proving that Allied troops could meet and defeat Axis forces on both offence and defence.

The growing competency of the ground forces was also matched by an equal growth in interservice cooperation, particularly thanks to the burgeoning ascendancy of Allied air forces. Such potential was not obvious in the immediate aftermath of Kasserine however, as the newly established MAC and NAAF were forced to wrestle with a range of problems, caused by the air command's radical reorganisation at Casablanca. Not least of these was the lack of manpower to

²³⁶ Ibid.

²³⁷ Alexander, 'Despatch', p. 71.

²³⁸ TNA: WO 201/627, 'Personal reports on operations, Mareth Line'.

adequately staff the plethora of new headquarters, most departments, such as NATAF, initially consisting of only ‘a minimum skeleton staff’.²³⁹ This, coupled with the administrative dislocation caused by the reshuffling of units between different commands thus served ‘as a distraction for higher echelons’ for some time after the implementation of the Casablanca reforms, hampering efforts to get other, more systemic issues under control.²⁴⁰ Lack of suitable airfields remained the most crucial, as despite an ongoing and expanding programme of construction, weather still remained a limiting factor at many airbases, made worse by the loss of the invaluable all-weather fields at Thelepte during Kasserine.²⁴¹ This, combined with continued low serviceability rates served as a practical handicap to mirror the new organisations’ administrative difficulties, severely hindering attempts to employ air formations to their fullest potential, problems further compounded by the need to resolve tactical shortcomings. An early report on the operations of NATAF contained a scathing assessment of the tactics of its subordinate formations, not least of them XII ASC, as ‘this command was wrongly employed in a great many respects’, its failings including a lack of discrimination in target selection, a tendency to send out individual bombers at low level and a complete lack of tactical reconnaissance.²⁴² Similar complaints could be found emanating from each of NAAF’s new organisations, where ‘methods of operation and control of our air forces which have been in vogue in the past do however abundantly explain any shortcomings’ and which would need to be overhauled in order to make the air forces fully effective.²⁴³

Such were the challenges facing Tedder’s new command as it came online in the latter days of February, but these problems were not insurmountable, particularly as they were in large part counterbalanced by the benefits brought by the reforms made at Casablanca. The establishment of properly delineated subdivisions within the Allied air command under NASAF, NACAF, NATAF and others did much to continue the process of rationalisation that had begun with Spaatz’s appointment as Head of Allied Air Forces, finally bringing the USAAF and RAF elements of AFHQ

²³⁹ Ibid.

²⁴⁰ Rein, *The North African Air Campaign*, p. 120.

²⁴¹ Gladman, *Intelligence and Anglo-American Air Support*, p. 166.

²⁴² TNA: AIR 23/1711, ‘Report on operation from inception to the close of the Tunisian campaign, 18 Feb - 12 May’, 1943.

²⁴³ TNA: AIR 20/2568, ‘Operation ‘Torch’: Tunisian air operations’, 1943.

into complete harmony. This spirit of cooperation was emphasised by Tedder himself, informing many of the officers under his command that 'it will be the fusion of us, the British, with you, the Americans, that is going to make the very best air force in the world', and promising in future that it would be "'we" together who will function as Allies, even better than either of us alone'.²⁴⁴ Under Tedder's direction, MAC now provided for fully integrated cross-national command, ensuring closer coordination, while also distinguishing between key air tasks and assets and assigning them to specific commands.²⁴⁵ NACAF, as the NAAF's coastal wing, was given oversight of 'fighter, anti-submarine, deep-sea reconnaissance, strike and air-sea rescue operations', tasks which combined 'the functions exercised in the United Kingdom by both Coastal and Fighter Command'.²⁴⁶ NATAF meanwhile, was established 'to work on an equal footing with 18 Army Group and to control all air forces operating in direct support of the battle'.²⁴⁷ This compartmentalisation helped to prevent duplication of effort by allowing each branch to focus on one strategic priority without compromising any others, a problem that predecessors such as EAC had frequently struggled with. This however did have some future repercussions, as NASAF and NATAF's separation solidified a mental distinction between strategic and tactical bombing, hampering later cooperation.²⁴⁸

This clarity of purpose not only benefitted the efficacy of Allied airpower, but also advantaged the operation of naval and ground forces as well. The new system provided for smoother liaison between different services, as army and navy officers enjoyed closer contact with their counterparts within NAAF, often in terms of actual physical distance. Lloyd's NACAF HQ for example, was placed directly next to those of the new C-in-C Mediterranean in Algiers, while Combined Operations Rooms were established at AFHQ and relevant airfields to facilitate joint air-naval operations.²⁴⁹ This paid significant dividends in the organisation of strikes against targets at sea as it pooled information between all Allied assets operating in the Mediterranean, making it easier to locate targets and coordinate combined forces.

²⁴⁴ Orange, *Tedder: Quietly in Command*, p. 212.

²⁴⁵ NARA: RG 498, 'HQ ETOUSA - History of AFHQ Vol. 2'.

²⁴⁶ TNA: AIR 23/1616, 'Their Victory', six months history of the Northwest African Coastal Air Force', 1943.

²⁴⁷ TNA: AIR 20/5535, 'Tunisian Campaign, report on operations of North African Tactical Air Force', 1943.

²⁴⁸ Rein, *The North African Air Campaign*, p. 120.

²⁴⁹ TNA: AIR 23/1612, 'Operations and tactics 1943-1945', 1945.

Indeed, Cunningham found working with Lloyd an easy task, as the latter was ‘thoroughly acquainted with our naval requirements’ and ‘his arrival made a great difference to our air effort over the sea’.²⁵⁰ On land, the deployment of tactical airpower was also substantially bolstered by the emplacement of air officers at various levels of the command chain, from where they could more effectively direct the provision of close air support. First Army Headquarters for example, was now permanently accompanied by those of RAF 242 Group under Air Commodore Kenneth Cross, Lawson’s replacement, while both NATAF and NASAF placed their headquarters directly adjacent to those of 18th Army Group at Constantine.²⁵¹ According to Tedder, placing these organisations together would ‘enable close coordination of their operations’, as evidenced by the close relationship between Coningham and Alexander, who lived together much as the former had with Montgomery in the Western Desert, ‘with a big pavilion tent in desert camouflage serving as a common plans and operations centre’.²⁵² The solid partnership developed there can be seen in the parallel development of ground and tactical air policy as the campaign moved forward, 18th Army Group’s Operational Instruction No.4 placing the capture of the Thelepte airfields as an essential objective for Patton’s southern offensive.²⁵³ Likewise, Coningham’s 12 March outline plan foresaw a series of successive bounds onto airfields captured by advancing ground troops, from where the air forces could then operate in support.²⁵⁴

The appointment of experienced officers to staff these new departments contributed further benefits to the air effort. Tedder, Coningham, Lloyd, and Cross had all served together under Middle East Command, where the WDAF had developed a highly sophisticated approach to air operations.²⁵⁵ Their promotion thus gave the opportunity to overhaul outdated doctrine more thoroughly, as while Welsh and Lawson had made strides in this direction in prior months, the centralisation of air assets under the NAAF now gave greater scope for reform. Of particular importance was the continued shift towards a more aggressive employment of

²⁵⁰ Cunningham, *A Sailor’s Odyssey*, p. 523.

²⁵¹ TNA: AIR 23/7434, ‘Report on the air operations by 242 Group in support of 1st Army, Tunisia’, 1943.

²⁵² TNA: AIR 20/8045, ‘OPERATIONS; North and East Africa’; Orange, *Coningham*, p. 136.

²⁵³ TNA: WO 204/1137, ‘18th Army Group Operational Instructions and Reports’.

²⁵⁴ Howe, p. 494.

²⁵⁵ TNA: AIR 23/1709, ‘Talk by Air Vice Marshal Sir A Coningham’.

tactical airpower in a bid to establish air superiority over Tunisia, as highlighted by NATAF General Operational Directive no.1, issued on 2 March, which stated that 'maximum air support for land operations [...] can only be achieved by fighting for and attaining a high measure of air supremacy in the theatre of operations'.²⁵⁶ This would require the deployment of NATAF in a continuous offensive against Axis airpower, not only in the air but on the ground, through an intensifying campaign of destruction aimed against Axis airfields and installations, in conjunction with NASAF.²⁵⁷

The chief arm of NATAF in pursuit of this objective was the Tactical Bomber Force, a subordinate headquarters created by Coningham to 'centralise the weak bomber resources and make the total effort available for operations on any sector of the front'.²⁵⁸ This initially consisted of some four squadrons of Bisleys from 242 Group and one understrength squadron of A-20s and two B-25 squadrons from XII ASC, but was soon strengthened by two squadrons of Mitchells transferred from the WDAF, as well as a number of Wellingtons, as Tedder transferred assets from elsewhere into Coningham's command to bolster its striking power.²⁵⁹ At the same time, Tedder also harangued Portal for additional aircraft, including A-20s to replace the Bisleys, and asked that the Chief of Air Staff make demands of his US counterparts to accelerate their own process of replacement, as 'the Americans are overweighted with units without aircraft or badly under strengthened'.²⁶⁰ These efforts soon yielded the intended result, as large numbers of additional airframes shortly began arriving in theatre to reinforce the Allied squadrons, including a large number of American P-40 fighters ferried by the carrier USS *Ranger*, first loaned out in December by Admiral King.²⁶¹ By the end of March NAAF boasted some 1,572 aircraft, against an approximated Axis total of 1,275, 325 of them in Tunisia, marking the first time that the Allies had had a greater number of available aircraft than their Axis opponents.²⁶² NATAF itself was a chief beneficiary of this continued growth, swelling from some 55½ squadrons around Kasserine's conclusion to 75

²⁵⁶ TNA: AIR 20/5535, 'Report on operations of North African Tactical Air Force'.

²⁵⁷ Playfair, p. 311.

²⁵⁸ TNA: AIR 20/5535, 'Report on operations of North African Tactical Air Force'.

²⁵⁹ Ibid.

²⁶⁰ TNA: AIR 20/2568, 'Operation "Torch": Tunisian air operations'.

²⁶¹ Craven and Cate, p. 131.

²⁶² TNA: WO 204/1060, 'Air intelligence'.

three weeks later, although other branches of NAAF also grew in marked fashion.²⁶³ 12th Air Force for example, received two new B-17 Bomb Groups and additional medium bombers in March, raising the number of available heavy and medium groups to four and five respectively, giving 12th Air Force much greater striking power and by extension NACAF, who employed the mediums in low altitude attacks on Axis convoys.²⁶⁴

Not only effective at bolstering aircraft numbers, the WDAF veterans also brought with them more efficient tactical methods refined in the Western Desert. Fighter tactics in particular were overhauled for greater efficacy, with air patrols now being mounted offensively, while defensive interception was to be employed only under the direction of radar, observer posts and other early warning methods.²⁶⁵ These were reoriented to provide maximum forward coverage and were supplemented further by escort and cover sweeps for tactical reconnaissance aircraft and NASAF bomber formations, while fighter-bombers attacked targets designated by the Air Support Network.²⁶⁶ The latter, centralised at 18th Army Group/NATAF HQ by Coningham, was another import from 8th Army and the WDAF, and was connected with each of the Army Air Support Controls, at First Army, 8th Army, and II Corps. Although this did not radically alter the means of air support control, the development of this organisation tied each of the individual Controls into a network through which information could be both collated and distributed, including the Y, Ultra and Phantom intelligence collected by 18th Army Group HQ.²⁶⁷ The new network thus provided NATAF with not only the means, but the intelligence needed to coordinate action across the entire theatre, aiding with target selection and producing a more responsive air effort, as Coningham knew which targets were being attacked, in what strength, and the final results. Access to this theatre-wide and constantly updated view of the overall situation on the ground and in the air, NATAF could thus allocate its resources more efficiently, with Gladman highlighting a

²⁶³ TNA: AIR 20/5535, 'Report on operations of North African Tactical Air Force'.

²⁶⁴ Ibid.

²⁶⁵ TNA: AIR 23/1714, 'North African Campaign: report of operations', 1943.

²⁶⁶ Ibid.

²⁶⁷ Gladman, *Intelligence and Anglo-American Air Support*, pp. 158-59.

‘dramatic increase in the ability of the Allied air forces to deliver close air support or interdiction’, and with a flexibility that was utterly invaluable.²⁶⁸

As a result of this more coordinated approach, aircrews were now also afforded greater periods in which to hone their training, which was heavily emphasised, Coningham demanding ‘small well drilled formations’ of fighters and ‘a very high standard of team work with emphasis throughout on navigation, formation flying, studied controlled bombing and defensive fire’ from his bombers.²⁶⁹ This process was aided by the dissemination of accrued tactical memoranda from WDAF operations, which offered valuable advice on both training and operational tactics, including the concept of ‘shadow firing’, a technique of shooting at an aircraft’s own shadow as a means of improving fighter marksmanship.²⁷⁰ Also adjusted were the strike methods of the tactical bomber forces, aiming to maximise potential damage while minimising risk or wasted effort. On land, this was done by changing the primary targets of bomber and fighter-bomber formations away from armour to softer targets such as troop concentrations and MT.²⁷¹ These targets offered significantly richer pickings by virtue of being easier to target, less protected, and more likely to be destroyed by munitions even if not directly hit, while attacking transport also aided in paralysing enemy lines of communication and operational mobility. Reconnaissance was also overhauled, the highly trained Army co-operation squadrons of 225 Squadron RAF and 154 Recce Squadron USAAF being withdrawn from fighter-bomber service and reassigned purely to tactical reconnaissance, while elements of the recently formed North African Photographic Reconnaissance Wing were brought forward to Souk el Arba to make their intelligence more immediately available to frontline forces.²⁷² Similar changes were applied to methods of naval bombing and interdiction, in which the chief issue was identified as a shortage of reconnaissance aircraft.²⁷³ To combat this shortcoming, NACAF turned over an entire squadron of Marauders for use as reconnaissance aircraft over the Sicily/Tunisia/Sardinia triangle, where most Axis traffic could be intercepted, while

²⁶⁸ Brad Gladman, ‘The Development of Tactical Air Doctrine in North Africa, 1940-43’, in *Air Power History: Turning Points from Kitty Hawk to Kosovo*, ed. by Sebastian Cox and Peter Gray (London: Frank Cass, 2002), pp. 188-206 (pp. 196-200).

²⁶⁹ TNA: AIR 20/5535, ‘Report on operations of North African Tactical Air Force’.

²⁷⁰ TNA: AIR 23/6214, ‘Tactical Memoranda’, 1941-43.

²⁷¹ Rein, *The North African Air Campaign*, p. 120.

²⁷² TNA: AIR 23/1711, ‘Report on operation’.

²⁷³ TNA: WO 204/1393, ‘Operations in Tunisia: Initial Occupation and Organisation’.

NASAF supplied two additional squadrons of Mitchell mediums on a day-to-day basis to give weight to attacks on shipping.²⁷⁴

Western Desert experience also played its part in the continued overhaul of air maintenance arrangements, as despite some strides forward, the Torch landing forces were still hampered by ‘inexperience of mobile operations and the poor airfield situation’.²⁷⁵ The driving force behind these changes was to be Air Vice Marshal Graham Dawson, the RAF’s Chief Maintenance Officer in the Mediterranean and MAC’s new Director of Maintenance and Supply, who had helped organise the WDAF’s highly efficient Repair and Salvage system early on in the Desert War.²⁷⁶ Most notable among Dawson’s initiatives was the exploitation of local industry, a method he had also employed in Egypt, by entering into agreements with local firms to supply parts and undertake overhaul and repair contracts for damaged airframes and engines.²⁷⁷ This, along with the building of an aircraft assembly plant in Casablanca and repair depots at Setif, Blida, and Algiers, set in place an effective supporting organisation in the rearward areas, enabling the Repair and Salvage Units, which were stripped down and made more mobile, to focus on maintaining serviceability at the frontline.²⁷⁸ RAF logistical organisations were also reshuffled, finally taking over control of supply storage from the Army. Three dump sections and an air ammunition park were formed in the forward area, while of six Air Stores Parks, three were preserved to service the frontline, another becoming an Advance Equipment Park and the remaining two moving rearward to Algiers and Setif to service coastal fighter defence.²⁷⁹ These efforts were further backed by a continuing program of construction, a conference on 22 March setting Allied engineers the objective of completing ten new airfields, around Sbeitla, Le Sers, Souk el Khemis and Kalaa Djerda, as well as additional facilities at Bone airdrome.²⁸⁰ This represented significant inroads into the long-term plan put forward

²⁷⁴ Playfair, p. 411.

²⁷⁵ TNA: AIR 20/5535, ‘Report on operations of North African Tactical Air Force’.

²⁷⁶ Gladman, *Intelligence and Anglo-American Air Support*, p. 54.

²⁷⁷ Playfair, p. 312.

²⁷⁸ Ibid, pp. 312-13.

²⁷⁹ Ibid, p. 312.

²⁸⁰ TNA: WO 204/1059, ‘Airfield Construction 1942-45’.

by EAC in December and alongside the steady capture of forward airfields, laid the groundwork for an increasing preponderance of airpower.²⁸¹

All of these newly implemented measures steadily translated into a far stronger Allied position in the air as the period wore on. Over land, this was marked by the increasing measure of air superiority enjoyed by Allied fighter aircraft, as MAC pressed the assault with renewed vigour, striking landing grounds and opposing Axis air sorties. From roughly 300 sorties per day between the end of January and late February, Allied air efforts rose to an average of 705 daily sorties, demonstrating the growing strength of the nascent NAAF.²⁸² In the same time frame, both Axis and Allied forces suffered the loss of some 150 aircraft, totals which actually fell in the Allies' favour, as the air battle was now taking place predominantly over Axis territory and the Axis could afford neither the losses nor the infrastructural damage they were sustaining. Indeed, the growing weight behind the air offensive was of serious concern to Kesselring, who in a message to the Chief of Staff on 21 March highlighted the increasing strain Axis air forces were under simply attempting to stave off Allied attacks, as '4 Fighter Gruppen have to be continually on operations [...] Accelerated bringing up of replacement A/C is urgent'.²⁸³ Forces on the ground also reaped the benefit of a diminishing Axis air presence, particularly in rearward areas, where earlier attacks had 'slowed up very materially, and at times virtually stopped any movement of M.T. columns by day'.²⁸⁴ The breaking of this trend allowed the Allies to deliver an unfettered flow of material to the frontline, ensuring that 'big strategical moves of formations on limited roads and dense concentrations of troops at the decisive point of attack were possible with great rapidity and fair chance of secrecy'.²⁸⁵

Direct interventions by tactical airpower also played their part in maintaining this momentum, through the provision of increasingly intense close air support and the interdiction of Axis communications. Against Operation Ochsenkopf, First Army was able to call upon a sizeable number of air squadrons to provide close air support,

²⁸¹ TNA: WO 193/844, 'Operations: Phase I - Part 3'.

²⁸² Playfair, pp. 247, 319, 355.

²⁸³ TNA: HW 1/1494, 'North Africa, Kesselring Concerned on Mar 21 about situation in central and southern Tunisia', 1943.

²⁸⁴ TNA: WO 204/4237, 'Tunisia Reports on Operations'.

²⁸⁵ Ibid.

242 Group making available its 9 Spitfire, 2 Mitchell, and 1 Hurricane Fighter-Bomber 'Hurribomber' squadrons, along with lavish tactical reconnaissance.²⁸⁶ By the end of the offensive, these units had flown 3,500 fighter, 250 fighter-bomber, and escorted 160 medium bomber sorties, ensuring that 'enemy air was well under control', while strikes on enemy ground forces provided valuable assistance in turning back von Arnim's offensive.²⁸⁷ A similarly strenuous effort was furnished in support of 8th Army's attempt to break through the Mareth line, the newly created Tactical Bomber Force deploying en masse alongside the WDAF. There, No.242 Group and XII ASC, in conjunction with raids by NASAF formations, operated primarily against the enemy's rear lines, taking offensive action against aircraft and airfields, as well as ground strikes on opportune targets and lines of communication.²⁸⁸ These operations tied down many Luftwaffe and Regia Aeronautica assets across southern Tunisia, at a time when Comando Supremo was concerned to preserve its remaining air strength. The combination of these factors thus ensured that around Mareth, 'Axis bombing was virtually nil and their fighters and fighter-bombers were too few in number to seriously harass the enemy', with 'only five enemy aircraft appearing over the 8th Army Front in any offensive role' prior to Pugilist.²⁸⁹ The suppression of Axis air activity thus gave the Allies free rein to strike at the enemy's lines of communication, inflicting mounting material losses that caused severe dislocation. 164 Light Division for example, reported that air attacks had cost them 32 vehicles on 22 March alone, a devastating loss and one which would substantially impact the mobility of Axis forces when it became necessary to withdraw from Mareth.²⁹⁰

NATAF's distraction of Axis air forces also freed up the WDAF to operate 'entirely in support of Eighth Army'.²⁹¹ Moving up rapidly in the wake of 8th Army's advance to airfields close to Mareth, the WDAF began operations in late February with aggressive tactical reconnaissance prior to seizing control of the local airspace. Operations began to ramp up around the time of Medenine, Allied aircraft flying seven three-squadron attacks by P-40 'Kittybombers', and over 280 fighter and

²⁸⁶ TNA: AIR 20/5535, 'Report on operations of North African Tactical Air Force'.

²⁸⁷ Ibid.

²⁸⁸ TNA: AIR 23/6488, 'Operation 'Pugilist'.

²⁸⁹ IWM: EDS Appreciation 12, Chapter 7; TNA: AIR 23/1711, 'Report on operation'.

²⁹⁰ IWM: EDS Appreciation 12, Chapter 7.

²⁹¹ TNA: AIR 23/6488, 'Operation 'Pugilist'.

fighter-bomber sorties in support of Monty's successful defence.²⁹² This high tempo was preserved in the days following, as the WDAF harried retreating Axis formations, before rendering 'splendid support' to Leclerc's L Force at Ksar Rhilane, including raids by Hurricane IID 'tankbuster' aircraft, which knocked out at least 30 Axis vehicles.²⁹³ At Mareth too, air support was furnished in considerable volume, as more than 160 bomber sorties were launched per day in an attempt to reduce the fortifications and enable 50th Division to break into the position.²⁹⁴ However, while these displays were by all accounts impressive, the WDAF were to outdo themselves later that month, in their support of Supercharge. Montgomery's envisioned attack on the Tebaga Gap called for the application of overwhelming firepower on a narrow frontage, a concept which was to find a receptive audience in Harry Broadhurst, the Air Officer Commanding. Broadhurst enthusiastically offered his support, stating to De Guingand that 8th Army 'will have the whole boiling match – bombs and cannon. It will be a real low-flying blitz'.²⁹⁵

Broadhurst's concept called for the provision of air support on a hitherto unseen scale, beginning with several days of round-the-clock tactical bombing to cripple local hostile airfields and attack targets in the battle area, destroying transport and materiel and denying the enemy sleep.²⁹⁶ Alongside the main attack, Allied air forces would then deliver 'a heavy and concentrated attack by light bomber squadrons followed by concentrated and continuous low bombing and strafing by Kittybombers and Hurricane tank-busters for a period of two and a quarter hours'.²⁹⁷ This would involve 22 squadrons of aircraft employed on continuous operations, the WDAF providing 412 sorties in a period of just over two hours.²⁹⁸ Yet it was not merely the level of effort that set Broadhurst's attack apart from those prior, but also its sophistication, employing new methods for the direction of airpower that gave it substantially greater impact. The first of these was the synchronisation of the creeping barrage with air bombardment, the barrage fire providing a crude but effective bomb-line to offer more effective fire direction, a method that was coupled

²⁹² TNA: AIR 41/50, 'The Middle East Campaigns; Vol IV'.

²⁹³ Ibid.

²⁹⁴ Ibid.

²⁹⁵ De Guingand, p. 257.

²⁹⁶ Playfair, p. 346.

²⁹⁷ TNA: AIR 23/1708, 'The Eighth Army break-through at el Hamma 26 Mar', 1943.

²⁹⁸ Ibid.

with the employment of landmarks and coloured smoke, fired by the Allied artillery, to denote friendly forces and enemy strongpoints.²⁹⁹ This was further assisted by the assignment of RAF liaison officers to the ground forces, from where they would observe the battle's progress from a forward observation post, 'in order to give pilots, by means of direct radio link, information about targets and our own troops'.³⁰⁰ Although most of these methods were familiar to the WDAF, their combination in this instance proved to be particularly devastating, Montgomery noting in his diary that 'the brilliant and brave use of our air superiority combined with the fire of 200 guns, completely stunned the enemy [...] enemy resistance in that area completely disintegrated'.³⁰¹ According to Ross Mahoney, the success of the Supercharge air plan marked a transitional point in the integration and synergy of air and ground forces, combining previous lessons of controlling air power and providing close air support in a way that 'laid the blueprint for the army-air force co-operation which would become so effective in later campaigns'.³⁰²

A marked improvement in the Allied position could also be seen at sea, where the interdiction campaign was now being prosecuted by a resurgent NACAF, in cooperation with a reorganised naval command. At the top of the hierarchy, Admiral Cunningham, promoted Admiral of the Fleet in January, became once again C-in-C, Mediterranean Fleet, in charge of all Allied naval forces in the western Mediterranean, with a rank co-equal to Tedder and Alexander, providing Cunningham with undisputed authority 'in what had become the decisive theater of operation'.³⁰³ To this end, Mediterranean Command was also extended eastwards, the boundary with Levant Command being set to a line 'running from the Tunisian/Tripolitanian border to a position in Latitude 35 degrees North, Longitude 60 degrees East, thence to Cape Spartivento (Italy)', changes which brought Malta and the key sea regions around Tunisia under Cunningham's auspice.³⁰⁴ New senior personnel further ensured unity of effort, Vice Admiral A.U. Willis, Cunningham's

²⁹⁹ Ian Gooderson, *Air Power at the Battlefield: Allied Close Air Support in Europe, 1943-45* (London: Frank Cass, 1998), p. 187.

³⁰⁰ TNA: AIR 41/50, 'The Middle East Campaigns; Vol IV'.

³⁰¹ *Montgomery and the Eighth Army*, pp. 186-87.

³⁰² Ross Mahoney, 'A Blueprint for Success: Army-Air Co-operation and the Battle of the Mareth Line, 19-29 March 1943', in *Allied Fighting Effectiveness in North Africa and Italy, 1942-1945*, ed. by Andrew Hargreaves, Patrick Rose, and Matthew Ford (Leiden: Brill, 2014), pp. 31-52 (pp. 32-33).

³⁰³ NARA: RG 319, 'Commander-in-Chief's Dispatch'.

³⁰⁴ *The Cunningham Papers Vol. II*, p. 69.

former Chief of Staff, taking command of Force 'H', while Vice-Admiral Kent Hewitt took charge of US Navy forces in the Mediterranean.³⁰⁵ These measures Cunningham 'very much welcomed', particularly the appointment of Hewitt, who 'was a very able officer and a most loyal and wholehearted co-operator. We became the greatest of friends'.³⁰⁶ This, combined with Cunningham's productive relationship with Lloyd at NACAF and the developing strength of the coastal air forces, provided a promising foundation on which to build a more closely coordinated air-sea interdiction campaign. To this the declining tonnage of supplies reaching Axis forces in Tunisia and the increasing number of sinkings serve as powerful testimony, as over the course of March, Allied forces sank some 36 ships, totalling 111,481 GRT, while just 4 Allied convoy ships were lost within Mediterranean Command's jurisdiction.³⁰⁷ This was a substantial improvement over previous months, particularly in terms of the success enjoyed by Allied aircraft, a surge attributable to the drastic increase in sorties undertaken by NAAF.³⁰⁸ Between February and March, sortie numbers rose from 362 bomber and 139 fighter and fighter-bomber sorties to 577 and 512 respectively, a particularly exceptional effort given that Malta's contributions were actually in decline, with 40 fewer in March than in February.³⁰⁹ Such rapid growth marked the beginning of a growing Allied ascendancy over the shipping lanes of the central Mediterranean, mirroring that which NATAF had established over Tunisia itself, as the coastal air forces, now properly resourced and reorganised, began to reap a terrible toll from Axis shipping.

Though the battle of Kasserine Pass has largely become regarded as the climactic confrontation of the Tunisian Campaign, a closer examination reveals that it served more as a watershed than a decisive battle, delineating the point at which the strategic initiative began to pass from Army Group Afrika into the hands of AFHQ. Much of this sea change can be attributed to the experiences of the preceding phases of the campaign and the resulting cycles of learning implemented by AFHQ, which took the lessons of the campaign to date and sought to build upon them a more effective, formal structure in place of the ad hoc solutions earlier employed,

³⁰⁵ Cunningham, *A Sailor's Odyssey*, p. 522.

³⁰⁶ Ibid.

³⁰⁷ Playfair, p. 417, 421.

³⁰⁸ Ibid.

³⁰⁹ TNA: ADM 219/172, 'Anti-shipping operations in the Mediterranean'.

efforts which now bore fruit. Nowhere can this be more clearly seen than in the upper echelons of AFHQ itself, which was thoroughly remodelled along the lines set forth at Casablanca in January. The addition of new, flexible links to the command chain equipped AFHQ with the means to ensure the clear and coordinated direction of the ongoing campaign, whilst the staffing of these new posts with veteran officers such as Tedder and Alexander provided an influx of valuable experience at the highest levels of command. This expertise could then be brought to bear in rectifying other shortcomings across the breadth of the Allied effort in North Africa, as AFHQ's new senior leadership initiated new cycles of learning that resulted in wide-ranging reforms and refinements. Coningham's creation of a Tactical Bomber Force represented just one of the adaptations that rippled downwards from AFHQ during this period. This had gratifying effects on the cohesion of the Allied cause, which in many respects during this period began to function as a unified whole, a coherency not reflected in their Axis opponents, which despite similar efforts to establish clear overall command, remained riven by internal divides, both laterally and vertically throughout the command chain.³¹⁰ Indeed, it is notable that although both AFHQ and OB Sud/Comando Supremo embarked upon similar strategies to reform their theatre commands, only the former proved successful, as Allied leaders were largely able to put aside their conflicts to present a united front, whereas the Axis, exemplified by Kesselring and Ambrosio, actively undermined cooperation by displays of disunity.

Nor were such polarised dynamics solely confined to the realms of high command, as at other levels of combat and across other aspects of the campaign Allied forces reaped the benefits of determined efforts at learning and reform, while their opponents by contrast lapsed into stagnation. This was particularly evident in the realm of logistics, where AFHQ's continued building on the solid foundations they had established ensured the arrival of ever greater stocks of materiel and manpower, a growing surplus that contrasted strongly with the increasing dearth of provisions reaching Army Group Afrika. The latter, despite the frantic efforts of an Axis high command finally awakening to the direness of the situation, simply began to fall apart under the strain, a collapse in no small part attributable to the rising hegemony of Allied airpower, itself resurgent as a result of deliberate, considered cycles of learning borne from hard-won experience. The impact of airpower was also

³¹⁰ Knox, *Common Destiny*, pp. 160-61

felt on the ground, where it was but one of the factors behind a resurgence in Allied fortunes, 18th Army Group seeing success first on the defence in late February and early March and then on the offence later in the month. Although in places still fallible in method, during this period Allied ground forces, enjoying the benefits of top-down, centrally directed learning through reform, and grassroots learning by experience, began to blend increasingly sophisticated tactical methods with rigorous training and new materiel to score a number of victories over Axis forces. Success in each of these areas lent the campaign in Tunisia a growing momentum, but more poignantly also highlights the efficacy of the Allied learning process, which during this period transitioned from the top-down restructuring of AFHQ, to a broader and more diverse approach to improving Allied military effectiveness. From a haphazard start in winter, AFHQ applied the lessons learnt in combat in January and February in a more far-sighted and technical manner, with change coming rapidly and from multiple directions, as frontline formations and subordinate commands adapted and disseminated ideas on their own initiatives. These concentric processes of learning, built on the groundwork laid at Casablanca and elsewhere, enabled the Allies to begin developing a new and coherent war effort in Tunisia, the component features of which, though still unrefined, were beginning to form a discernibly Allied way of war.

Chapter Five

The End in Africa, 1 April – 13 May 1943

By the beginning of April, the course of the Tunisian campaign had turned decisively in the Allies' favour. With the successful unseating of 1st Italian Army from their position at Mareth, the twin jaws of the Allied trap around the bridgehead had almost completely closed, with only Messe's fallback position at Wadi Akarit preventing Army Group Afrika's complete encirclement. This was but a slender hope for the Axis commanders to grasp, as while the Akarit position represented a formidable natural obstacle, were it to be breached the next viable fallback position, at Enfidaville, would also be the last. Retreat to Enfidaville would confine the Axis to a narrow coastal holdout in northern Tunisia, beyond which there was little more than the shore of the Mediterranean, itself becoming daily more inimical to Axis traffic courtesy of Allied air and naval predominance. With withdrawal thus appearing increasingly unlikely, resurgent and growing Allied forces massing in south and west, and mounting pressure on AFHQ to wrap up the campaign, it seemed that there was nought else to do other than fight it out to the inevitable conclusion.

Certainly, the feeling of impending victory was evident, Montgomery writing to Brooke on 12 April that 'the end of the N. African campaign does really seem to be in sight'.¹ This optimism was tempered however, by the expectation that 'the Bosche intends to stand and fight it out, and there will be a good deal of dirty work before it is over', a sanguine outlook shared by many senior commanders in AFHQ.² In his special order of the day prior to Operation Vulcan on 21 April, Alexander reiterated this expectation, informing the men of 18th Army Group that 'we have grouped our victorious Armies and are going to drive the enemy into the sea', but also that the final battles would be 'fierce, bitter and long, and will demand all the skill, strength and endurance of each one of us'.³ Yet little of the difficulty facing Allied forces in liquidating the bridgehead seems to have been immediately obvious to outside observers, many of whom appear to have regarded victory in North Africa as a foregone conclusion. Eisenhower in particular was perturbed by reports from

¹ *Montgomery and the Eighth Army*, p. 206.

² *Ibid*, p. 208

³ TNA: WO 204/1137, '18th Army Group Operational Instructions and Reports'.

home from Harry Butcher that ‘many people are considering the war already won [...] it seems amazing to me that people do not understand that right here in Tunisia we are still facing a great battle’.⁴

Much of the historiography also acknowledges that the balance of the campaign had tipped inexorably in favour of the Allies. Macksey for example, describes the Allies as riding ‘the crest of the victory wave, with the outcome no longer in doubt and only its swift completion, at minimum cost compatible with meeting the deadline of April 30, really at issue’.⁵ However, while most would agree it was only a matter of time before the Allies claimed victory, the factors behind that victory remain in dispute. One strand, largely predominated by Axis-centred works, maintains the thread developed following Kasserine, placing Allied material superiority against Axis logistical poverty as explanation for Army Group Afrika’s defeat. Citino’s *Wehrmacht Retreats* emphasises this point, stating that ‘Italian forces were by now utterly threadbare, the Germans were not in much better shape’ and consequently ‘opposition across the front was collapsing’.⁶ The alternative perspective, embodied by Mitchell, contests this assumption, highlighting that ‘in retrospect it is far too easy to conclude that by early April the fate of the German and Italian forces in Tunisia would be quickly sealed’, as there were still vast numbers of Axis troops in Tunisia and a shrinking perimeter for them to defend.⁷ Although the bridgehead was fundamentally untenable due to the strangulation of Axis supply lines, Mitchell argues that it was careful planning and hard fighting on behalf of 18th Army Group that brought the campaign to a successful conclusion.

It should be noted however, that these viewpoints are not incompatible, as they differ primarily only in where they place the onus on how the Allies brought von Arnim’s forces to capitulation. Indeed, as this chapter will demonstrate, the very distinction is superfluous, as it has created a false dichotomy between operational technique and material superiority as key factors in Allied victory, when in fact the roots of both are located within the long-term decision-making of both sides of the conflict and the learning process undergone by Allied forces. The latter, as will be illustrated in this chapter, saw the Allied war machine reach a comparative peak of

⁴ *Eisenhower Papers II*, pp. 1070-71

⁵ Macksey, pp. 232-33.

⁶ Citino, pp. 103-105.

⁷ Mitchell, p. 159.

efficiency during this period, functioning with a degree of smoothness and confidence that was leagues ahead of the army that had come ashore during Torch. Armed with the fruits of valuable experience, as those adaptations made in earlier months were employed synergistically to achieve their full effect, Allied forces now had the means and skills with which to finally evict their Axis opponents from North Africa, in the process defining an idiosyncratic Allied style of campaigning. Yet even as the Allies pushed towards final victory, adaptation and learning nevertheless remained an ongoing process. Although many aspects of the Allied war effort were by this point largely regarded as sufficient, refinements continued to be made to command structures, logistical arrangements and particularly tactical methods in response to both new challenges and perennial issues. Perhaps symbolic of the success enjoyed in reforming AFHQ in prior phases, many of the changes that can be seen during this period derived from de-centralised, local initiatives, or personal interventions, as senior Allied commanders now looked ahead to carrying the torch into theatres beyond Tunisia.

One clear indicator that the campaign was now progressing smoothly can be seen in the efficient function of AFHQ's higher echelons. While prior months had seen tectonic shifts in the organisation of Allied command, the final six weeks of the campaign by contrast saw comparatively little alteration to the structure or composition of AFHQ, being defined largely instead by the leadership of individual commanders. Such consistency serves as a ringing endorsement of the efficacy of the reforms set in train at Casablanca, a satisfaction reflected in the accounts of senior staff. Eisenhower for example, stated in his dispatch that the latter part of the campaign 'clearly established the fact that British and American Forces of all arms could unite and work together effectively [...] every day there was a noticeable advance in the coordination of tactical activity, in the growth of mutual understanding, and in the readiness of British and Americans alike to accept orders from military superiors without regard to nationality'.⁸ Certainly, it is hard not to credit Eisenhower's laudatory statements on the efficiency of the post-Casablanca AFHQ, as in all regards it managed the closing stages of the campaign with some measure of skill. Having broken the Mareth Line and with 8th Army poised to break through the Akarit position, the component parts of 18th Army Group had now been

⁸ NARA: RG 319, 'Commander-in-Chief's Dispatch'.

brought into coherency with each other.⁹ Consequently, 18th Army Group could now direct its full effort towards reducing the Axis position in northern Tunisia, Alexander's new outline plan calling first for the exertion of pressure by First Army and II Corps against Axis forces in the west while Montgomery attempted to breach the Akarit position.¹⁰ As part of the offensive, the composite 9th Corps would attack around Fondouk on 7 April, 'with the object of seizing positions which will enable 6 Armd Div to get astride the enemy's L of C in the area Kairouan in order to dislocate the enemy's withdrawal from the South, and inflict the maximum losses upon him'.¹¹

Much as with Alexander's direction of operations in March, to achieve these objectives required careful coordination of the different formations within 18th Army Group, as it was hoped that the development of simultaneous attacks along the length of the front would overstretch remaining Axis reserves, thus enabling a decisive breakthrough. This was a hallmark of Alexander's style of command, likened by Jackson to the 'analogy of the boxing match – wear your opponent down using both hands until an opening for a knock-out blow appears'.¹² This method placed a reasonable degree of autonomy in the hands of subordinates and relied on the Army Group commander to guide their efforts in synchrony. Such an approach was ideally suited to the Tunisian theatre, as the great distances between formations and the composite nature of the multi-national forces under AFHQ required a more diplomatic style of leadership to encourage the fullest cooperation between different commanders. Such qualities Alexander had in spades, Niall Barr describing the latter as a 'suave, immaculately-turned out Guardsman with a strong reputation for courage, sound tactical skills and an acute sense of diplomacy', who, even in the middle of crises 'projected calm, phlegmatic authority'.¹³

Alexander was to demonstrate this deft touch in command following the collapse of the Akarit position on 7 April, as his forces conducted three distinct operational movements to bring the campaign to a close. The first of these saw 18th Army Group loose 8th Army northwards to press the Axis southern flank back against Enfidaville,

⁹ Alexander, 'Despatch', p. 75

¹⁰ Eisenhower, *Papers II*, pp. 1075-77.

¹¹ TNA: WO 204/1137, '18th Army Group Operational Instructions and Reports'.

¹² Jackson, *Alexander of Tunis As Military Commander*, p. 198.

¹³ Niall Barr, *Pendulum of War: The Three Battles of El Alamein* (London: Pimlico, 2005), p. 202.

whilst also initiating First Army operations in the west, designed to secure jumping off points prior to a strong thrust through to Tunis and Bizerte, which would split Axis forces in the bridgehead in two.¹⁴ In the meantime, II Corps was transferred to First Army's northern flank, shortening the latter's front and enabling a greater concentration of force against 5. Panzerarmee's positions around the Medjerda Valley, down which Alexander aimed to make his decisive thrust.¹⁵ Despite the vast distances and hard fighting involved, these preliminaries were accomplished in less than two weeks, enabling 18th Army Group to launch Operation Vulcan on 23 April. As detailed in Operational Instruction no.12 on 16 April, the chief effort would be made by 5th Corps, striking down the Medjez highway towards Tunis, while II Corps launched itself eastward from Beja towards Bizerte.¹⁶ Meanwhile, 9th Corps and 8th Army would launch diversionary operations around Bou Arada and Enfidaville respectively, while 19th Corps attacked an Axis salient at Pont Du Fahs.¹⁷ Despite an Axis spoiling attack, Operation Fliederblute, on the night 20-21 April, Vulcan went in with minimal delay, initiating a week of intense combat along the entire front. Yet despite the heavy pressure brought to bear on Army Group Afrika, Vulcan ultimately began to lose momentum, prompting Alexander to hold his armies' advance at the end of April, before relaunching his offensive in refashioned form as Operation Strike, a heavily-weighted blow by a reinforced 9th Corps down the Medjez road, again supported by diversionary attacks on other fronts.¹⁸ Strike opened on 6 May and swiftly brought about the final rupture of Axis defences, leading to the collapse and final surrender of the bridgehead by 13 May.

It is unlikely that such a swift conclusion to the campaign could have been achieved without the careful staff work and coordination of 18th Army Group HQ, as it was these qualities that made the Allies' swift transition between each successive operation possible. This was well-demonstrated during the interlude between Vulcan and Strike, as while it came as an unwelcome surprise that Vulcan had been unable to secure a breakthrough, it took less than a day after halting Anderson's advance for 18th Army Group HQ, in conjunction with First Army HQ, to devise a plan for the

¹⁴ Alexander, 'Despatch', p. 76.

¹⁵ NARA: RG 319, 'Background Files to the Study American Forces in Action, To Bizerte with the II Corps'.

¹⁶ TNA: WO 204/1137, '18th Army Group Operational Instructions and Reports'.

¹⁷ Ibid.

¹⁸ Anderson, p. 153.

newly christened Operation Strike.¹⁹ Issued on 30 April, Strike also exemplified the degree of flexibility which had been achieved within the 18th Army Group system, as it called for the transfer of 8th Army's 4th Indian Division, 7th Armoured Division, and 201st Guards Brigade into First Army's 9th Corps for the assault, a movement of over 100 miles that was achieved well in advance of the 6 May start date.²⁰ As noted by Anderson, the arrangements made in preparation for Vulcan, not least of which was the rapid transfer of II Corps northwards, were incredible achievements to manage on such a short timescale and for 'which the Staffs concerned have every right to be proud', especially as they were repeated again for Strike 'without a hitch'.²¹

Much of 18th Army Group HQ's efficacy in this regard stemmed from its ability to manage and work with the various formations under its command. Large portions of the outline for Vulcan were built upon the framework laid down by Anderson's First Army staff on 12 April, two days prior to Alexander's Operational Instruction directing the preparation of the offensive.²² By adopting these plans into 18th Army Group's wider strategy, Alexander was making best use of First Army's considerable experience with the conditions of their own front, although he was not averse to imposing his vision upon planned operations when necessary either. First Army's initial proposals for Strike envisioned an infantry break-in either side of the Medjez highway, through which 6th and 7th Armoured Divisions would be fed, but where Anderson 'wanted the armour to turn after breaking through to mop up the enemy strongholds', Alexander 'insisted that it must strike straight for Tunis – and Strike became the codename of the operation'.²³ Strike's subsequent and decisive rupture of the Axis frontline was to prove instrumental in the swift closure of the campaign, as by offering von Arnim no opportunity to regroup, 18th Army Group was able to overrun the remaining defenders in little more than a week.

Alexander's conciliatory but firm approach to command also enabled him to coax round even stubborn and recalcitrant commanders to cooperate with his operational vision. Nowhere is this better exemplified than in Alexander's

¹⁹ Mitchell, pp. 162, 311.

²⁰ Playfair, p. 446.

²¹ Anderson, pp. 152-53.

²² Mitchell, p. 248.

²³ Blaxland, p. 248.

relationship with Montgomery, as the latter's forceful and sometimes abrasive personality often elicited as much ill feeling as it did praise. Alexander himself recognised that Monty 'was not an easy man to deal with', as while 'a first-class trainer and leader of troops on the battlefield, with a fine tactical sense', he also wanted 'complete independence of command and to do what he liked'.²⁴ Alexander had thus given Monty something of a free hand in Libya, as 8th Army's employment had fallen within his broad strategic aims, but as Montgomery's troops moved north and linked up with 18th Army Group, Alexander began to more closely manage Montgomery to ensure his operations conformed appropriately to the overall operational schema. In this, he used a mix of firmness and latitude to ensure Montgomery's acquiescence, definitively rejecting Monty's request for 8th Army to play the major role in reducing the Axis bridgehead, replying instead that 'main effort in next phase operations will be First Army' while 8th Army would exert 'maximum pressure possible against Enfidaville position'.²⁵ These orders made clear to Montgomery the role he was expected to play, but also offered sufficient leeway to allow Monty to interpret his support role liberally. This manifested in 8th Army's offensive against Takrouna and Djebel Garci on 19/20 April, which Monty hoped would not only draw Axis attention, but 'gate crash' the Enfidaville position and secure a breakthrough.²⁶

However, while 18th Army Group HQ proved invaluable in coordinating the actions of the Allied armies, it was less well-equipped to avert the inevitable acrimony that surfaced between individual commanders. An incident at the beginning of April encapsulated this issue neatly, as on 1 April, one of Patton's personal aides, Captain Richard Jenson, was killed in a Luftwaffe raid on a II Corps observation post, a loss that the II Corps commander felt keenly.²⁷ The grief Patton was feeling undoubtedly influenced him to release an ill-judged situation report that complained that his forward troops 'have been continuously bombed all morning' due to the 'total lack of air cover for our units', inflammatory statements that provoked a furious response from Coningham at NATAF.²⁸ Dispatching a circular to

²⁴ Alexander, *The Alexander Memoirs*, p. 16.

²⁵ *Montgomery and the Eighth Army*, pp. 200-203.

²⁶ Hamilton, p. 231.

²⁷ *The Patton Papers*, pp. 203-204.

²⁸ Rein, *The North African Air Campaign*, p. 122.

all recipients of Patton's sitrep, Coningham defended his American subordinates at XII ASC, accusing Patton of falling back on the tired excuse of lack of air support for the failure of ground units.²⁹ 'It is assumed', Coningham stated, 'there was no intention of adopting discredited practice of use Air Force as an alibi for lack of success on the ground', suggesting instead that II Corps' current lack of success could only mean that it was 'not battleworthy in terms of present operation'.³⁰ Both men's statements were damaging enough on their own, but their impact was made a great deal worse by the 'rather wide official circulation' of their dispute, which could have had significant ramifications for inter-Allied relations.³¹ Here, however, the integrated nature of AFHQ showed its value, not just as a means of coordinating between services and nationalities, but also in instilling collegiality, as the senior staff took unified action to contain this potential crisis before it could escalate, Tedder, Eisenhower, and Spaatz forcing both men to publicly retract their statements and make amends.³² The swift action taken by AFHQ underscores the value of the strong inter-service command team that the Allies had developed, enabling individual incidents arising from the injudicious actions of Allied field commanders to be more easily mitigated, thus preserving the smooth function of command.

Undoubtedly the lynchpin of this system was Eisenhower himself, whose unswerving commitment towards inter-Allied cooperation made him a fair arbiter of disputes, Ike stating that 'my method is to drag all these matters squarely into the open, discuss them frankly, and insist upon positive rather than negative action in furthering the purpose of Allied unity'.³³ This even-handedness enabled Eisenhower to diffuse the tension between subordinates before it could have any long-lasting detrimental impacts, a trait put to full use in a number of other incidents, such as that caused by 9th Corps' John Crocker in the aftermath of the messy and ill-coordinated action at Fondouk between 8 and 9 April. Commanding a composite force of 6th Armoured Division, 128th Infantry Brigade and US 34th Infantry Division, Crocker had been ordered to capture the pass near Fondouk el Aouareb so as to cut 1st Italian Army's line of retreat from Akarit.³⁴ Shortcomings in planning and poor

²⁹ Orange, *Coningham*, pp. 146-47.

³⁰ *Ibid*, p. 147.

³¹ Eisenhower, *Papers II*, p. 1071.

³² Orange, *Coningham*, pp. 147-49.

³³ Eisenhower, *Papers II*, p. 1071.

³⁴ TNA: WO 175/16, '18th Army Group HQ War Diaries', 1943.

coordination however caused the offensive to stall and suffer unnecessary casualties, and although by 10 April 9th Corps had fought its way east of Fondouk, it had lost contact with Messe's rearguard. This failure was undeniably a blow to Allied hopes, but the real damage was caused during the offensive's post-mortem, as Crocker supplied a detailed post-battle analysis to a group of visiting American officers. Although intended to be a constructive review, Crocker expounding 'a masterful dissertation exposing every setback in greatest depth', the conference was given an entirely new spin after it leaked onto the pages of American newspapers, arousing a great deal of anger from American quarters at AFHQ.³⁵ This resentment simmered long after the end of the war, Omar Bradley claiming that Crocker had 'bitterly castigated the 34th Division to Allied war correspondents', but the worst at the time was averted by some dextrous handling by the Supreme Commander.³⁶ To counter the initial backlash, Eisenhower requested Alexander release a statement portraying American arms in a positive light, and to ask his subordinates to avoid further comment, because, as he reported to Marshall, 'nothing could be more detrimental [...] than to allow the American people to believe that we were not making a useful contribution in the fighting'.³⁷ He then followed this up by addressing the problem at its root, as it had been the 'stupidity of a subordinate censor' that had allowed the comments to leak to the press.³⁸ To this end, Eisenhower petitioned the Public Relations Bureau in the War Department in Washington for 'capable and qualified men in the censorship and public relations field', while tightening the censorship policy, two moves that greatly reduced the chance of a repeat incident.³⁹

However, while in many respects Allied command during this period was defined by the personal qualities of senior staff, this did not mean that the Allies ceased to experiment with the organisation of AFHQ. Instead, modification efforts now went towards designing the command system that would oversee the next major operation in the theatre, Operation Husky. Husky had been in development since mid-February under a special planning organisation, Task Force 141, but progress had been slow because 'there was no single executive commander dedicated to

³⁵ Macksey, pp. 262-63.

³⁶ Bradley, p. 150.

³⁷ Eisenhower, *Papers II*, p. 1089.

³⁸ Ibid, pp. 1089-91.

³⁹ Ibid, pp. 1089-91.

Husky'.⁴⁰ This was due to the fact that all of the key commanders earmarked to play a role in the invasion were otherwise occupied with the ongoing campaign in Tunisia, and their absence thus slowed progress until the beginning of April, by which point the Allied position had improved sufficiently to allow their participation. Even then there were a number of issues, not least of which was the separation of the chief planning committees, as although the main staff were situated at Algiers 'those of the subordinate commanders were widely separated', with different staffs in Cairo, Algiers and Oran.⁴¹ This substantially slowed down the planning process, but despite these complicating factors, the final plan that emerged on 12 May was ultimately a sound one, accounting for air, sea and land requirements to produce an effective compromise.⁴²

Moreover, while the planning process had been fraught, it had also encouraged Allied leaders to consider the next iteration of the AFHQ system. Here, 'the experience gained by both AFHQ and Headquarters 18th Army Group in solving the problems of command organization proved invaluable', a statement that serves as a ringing endorsement of the system that had been built in Tunisia.⁴³ Indeed, it is near impossible not to recognise the continuities in organisation between the two campaigns, most obviously in the retention of AFHQ as the primary organisational body for further Mediterranean operations. Also preserved was the practice of institutional balance between British and American personnel, as well as the maintenance of centralised ground, naval and air commands.⁴⁴ To this solid framework was wedded a number of further modifications, considered as a result of the planning process. First of these was the establishment of integration and coordination between Allied planning staffs, a development arising from the insufficient nature of Task Force 141, which was to form the core of Alexander's 15th Army Group staff for Husky. Initially created as a subsection of AFHQ's G-3, Force 141 did not become fully operational until the conclusion of the Tunisian Campaign and lacked the manpower and specialist personnel required to develop

⁴⁰ Alexander Fitzgerald Black, *Eagles Over Husky: The Allied Air Forces in the Sicilian Campaign, 14 May to 17 August 1943* (Solihull: Helion, 2018), p. 32.

⁴¹ Cunningham, p. 535.

⁴² Black, p. 35.

⁴³ NARA: RG 498, 'HQ ETOUSA – History of AFHQ Vol. 2'.

⁴⁴ Black, p. 31.

Husky independently.⁴⁵ To alleviate this, AFHQ established close liaison between Force 141 and AFHQ's main departments, most notably G-2 Intelligence and the JPS, partnerships which proved crucial to 'welding into an over-all plan elements affecting three services'.⁴⁶ Alongside this, arrangements were also made to ensure contact between the leaders of each Allied service during Husky, as it was realised that Tedder, Cunningham and Alexander, would each be located on entirely separate landmasses, in Tunisia, Malta and Sicily respectively. As such it was decided that the necessity for face-to-face communication should be resolved by weekly meetings, beginning on 26 July, which increased in frequency to become daily during key stretches of activity.⁴⁷ Although comparatively minor additions, the continued iteration of AFHQ even as it moved beyond the bounds of Tunisia, does much to demonstrate the value of not only the evolving Allied command system, but the learning process from which it originated.

Certainly, when viewed alongside the state of the crumbling Axis command structure, the efficacy of the Allied system seems thoroughly enviable. What little cohesion the Axis campaign had enjoyed had, by April, entirely evaporated, as the chain of command began to fragment at an ever-increasing pace. The most prominent example of this disintegration was the worsening conflict between Kesselring and Ambrosio, the relationship between whom continued to prove a barrier to effective theatre command. In a reversal of their previous debate over Mareth, when it became time to consider retreat from Wadi Akarit, it was now Kesselring that wanted 1st Italian Army to stand firm, forbidding retreat until 'an enemy breakthrough of 'operational magnitude' was unavoidable'.⁴⁸ Ambrosio by contrast was more sanguine. As such, while he informed von Arnim and Messe that 'any idea that the Schott Positions [Wadi Akarit] had only a delaying function was to be strongly resisted', Comando Supremo nevertheless authorised preparation of a fallback line at Enfidaville.⁴⁹ However, even this arrangement, while more realistic than Kesselring's outlook, was in Messe's words 'easier to express in an order than to carry out in reality', a gulf that merely demonstrated the disconnect between the

⁴⁵ NARA: RG 498, 'HQ ETOUSA – History of AFHQ Vol. 2'.

⁴⁶ Ibid.

⁴⁷ Ibid.

⁴⁸ IWM: EDS Appreciation 12, Chapter 8.

⁴⁹ Ibid.

theatre commanders in Rome and their subordinates in Tunisia.⁵⁰ A stormy conference between von Arnim and Westphal in early April further highlighted this yawning rift, as Westphal accused Army Group Afrika of ‘squinting over its shoulder’ instead of standing and fighting where they stood. Von Arnim retorted that they were constantly ‘squinting for ships’, as the supplies much promised to them simply never arrived and without these his troops could do little other than fall back.⁵¹

Relations between the forces in the bridgehead and their distant superiors continued to worsen, as despite the clear indications that continuing to hold the bridgehead was a lost cause, the Axis high command simply would not countenance thoughts of retreat. Indeed, Allied concerns about the possibility of Axis withdrawal were to be proven entirely unfounded; although evidence was noted that a ‘considerable number of jetties have been constructed along the eastern shore of Tunisia’, the British Chiefs of Staff were completely correct in their 7 April assessment that the Axis high command intended ‘to retain a footing there as long as possible’.⁵² In fact, this was almost exactly the theme of a conference held at Klessheim between Hitler, Mussolini, and their senior staff on the same day, in which the Führer asserted that they would ‘turn Tunisia into the Verdun of the Mediterranean’.⁵³ Although it was becoming increasingly plain that the situation in Tunisia was irretrievable, the binding decisions of the Führer and the Duce constrained any attempt to explore alternatives, Mussolini informing Kesselring on 12 April that it was necessary to resist in Africa ‘not only until 12 o’clock but until 15 minutes past 12 o’clock’, to deny the Allies the freedom to deploy their forces elsewhere.⁵⁴ Similar orders continued to trickle through until the very end of the campaign, exhorting von Arnim to hold to the last and ordering the Army Group to improve its positions as best it could by local offensives.⁵⁵ Such talk was, however, little more than fantasy, and as the Allied ring began to close, von Arnim began to dispatch home on a variety of pretexts those senior officers who wished to leave, including Generals Weber, Bayerlein, von Manteuffel and Hildebrandt, as well as

⁵⁰ Ibid.

⁵¹ Macksey, p. 234.

⁵² TNA: WO 193/844, ‘Operations; Phase I - Part 3’.

⁵³ DiNardo, ‘Germany and the Axis Powers’, p. 171.

⁵⁴ IWM: EDS Appreciation 12, Chapter 8.

⁵⁵ Playfair, p. 394.

Gause, his Chief of Staff.⁵⁶ Such turnovers of personnel did little to help the Army Group's cohesion in the final days of the campaign, but ultimately meant little in the grand scheme of things. Manoeuvred into a corner, unable to do much more than resist, by the point these replacements occurred the Axis command structure was already collapsing.

It should thus come as little surprise that, as the Allies consolidated their hold on the strategic initiative and the Axis command structure began to break down, a similar trajectory was being plotted in their respective supply systems. Indeed, during this period, the interdependent relationship between logistical provision and operational capability can be seen on full display, as the abundance provided by the Allies' much-improved infrastructure enabled AFHQ to sustain intensive operations on land, sea, and air, while the Axis' state of logistical poverty only further constrained their ability to manoeuvre. These developments were noted by senior staff on both sides, Bradley stating that by April 'our ragged uncertain supply lines had been shaped into a well-oiled machine, delivering more than adequate stocks'.⁵⁷ By contrast, even the optimistic Kesselring could not avoid acknowledging the direness of the Axis supply situation. In a 23 April appreciation, he stated that supply, 'the decisive factor for the war in Tunisia, was now in increasing jeopardy', and that the situation could only be salvaged if this and other deficiencies, could be speedily remedied.⁵⁸

Certainly, Kesselring's miracle was not going to come from a collapse in Allied momentum, as the continuing deluge of materiel into North African ports stands testament. As ever, the foundation of the Allies' logistical strength stemmed from its reliable convoy system, shipments from which now reached their apogee. Between the beginning of April and the end of the campaign, Allied forces took receipt of some six convoy arrivals from the United States, UGS-6½, 7, & 7½, UGF 7 & 8, and OT-4, which between them brought a combined total of 950,000 tons of cargo and nearly 110,000 troops into the theatre.⁵⁹ Arrivals from the UK were of a similar magnitude, three slow convoys, KMS 12G, 13, and 13G, and one fast convoy, KMF 13, supplying 847,000 tons to First Army, while a further 607,000

⁵⁶ Mitcham, pp. 83-84.

⁵⁷ Bradley, p. 153.

⁵⁸ IWM: EDS Appreciation 12, Chapter 8.

⁵⁹ Leighton, p. 485.

tons of supply arrived in ports and airfields behind 8th Army's line of advance. This overwhelming concentration of materiel enabled AFHQ to support a vast force, strength returns from 30 April placing overall Allied numbers in-theatre, including rear echelon and 5th Army units, at more than 750,000 men.⁶⁰ Indeed, such was the Allies' logistical largesse that by April all American servicemen possessed their full equipment allowances and most supply backlogs had been resolved, allowing the stockpile of goods ready for Husky.⁶¹ Consequently, with the dispatch of UGS-7, American supply dispatches were switched over from automatic shipments to requisition supply, meaning that only subsistence supplies alongside those specifically requested were dispatched from the US.⁶² The space and tonnage thus freed up could therefore be used for other vital purposes, such as accelerating the flow of equipment needed to refit French forces, for whom February and March's small trickle of materiel was to give way to a flood. Equipment receipts in April alone were sufficient to equip 'two infantry divisions, two armored regiments, three tank destroyer battalions, twelve anti-aircraft battalions (40mm.), and ten truck companies', as well as the beginning of shipments of 60 American aircraft per month to re-equip the French air force.⁶³

Yet despite the logistical wealth now available to AFHQ, the Allies nevertheless continued to devote considerable attention to improving the flow of goods to the frontline. Of particular importance was the rapid acquisition and organisation of captured port facilities, especially for 8th Army, as by the time Montgomery's troops reached the ports of Sfax and Sousse, they were operating over 300 miles from Tripoli.⁶⁴ Operations beyond this point would have been considerably more difficult had it not been for the Royal Navy's swift clearance and opening of the two captured ports. Despite heavy damage to installations and a number of blockships sunk in the harbours, both ports were rapidly cleared, the reopening of Sfax being especially noted for its alacrity, taking fewer than three days from its capture on 10 April.⁶⁵ The first convoy arrived coastwise from Tripoli the next day (14 April), and by 14 May, 8th Army had accounted more than 40,000 tons

⁶⁰ TNA: WO 204/2042, 'North Africa, British Forces, Strength Returns and Maintenance Tonnages'.

⁶¹ Leighton, p. 477.

⁶² Ibid, p. 478.

⁶³ Howe, p. 499.

⁶⁴ *Montgomery and the Eighth Army*, p. 201.

⁶⁵ NARA: RG 319, 'Commander-in-Chief's Dispatch'.

discharged there.⁶⁶ These strenuous efforts were carried on even after Axis surrender, with the ports of Tunis and Bizerte receiving a great deal of attention to fit them for use preparatory to Husky. Bizerte, though found 'in ruins without electricity, water or drainage' on 10 May and with 26 ships sunk in the harbour entrance, was brought back online for 1,000 tons of stores per day by 14 May, and within another two weeks salvage efforts had cleared the port sufficiently for 10,000-ton Liberty ships.⁶⁷

In addition to the refurbishment of port facilities, administrative staff also undertook further endeavours to develop the movement of goods. On the 8th Army front, Tripoli was the primary recipient of these attentions, as additional construction and repair works were undertaken to expand storage, particularly with regard to bulk petrol, which increased from a maximum of 11,100 tons to over 26,000 by the end of May.⁶⁸ The clearance of new berths also enabled the receipt of additional ships into the harbour, the Karamanli Mole being made capable of discharging two tankers simultaneously, while the arrival of additional lighters and other small craft made cross-harbour movement considerably easier.⁶⁹ As a result, supply discharges within Tripoli rose sharply within the latter month and a half of the campaign, reaching a total of 199,000 tons, and a weekly peak of 36,000, more than double March's average, even as shipping was progressively diverted further north into newly cleared ports.⁷⁰ Behind the First Army front, work along the northern coast of Algeria and Tunisia also continued apace, as AFHQ sought to increase the volume of its coastwise shipping. Previously supplied largely by the four LSI *Royal Scotsman*, *Royal Ulsterman*, *Queen Emma* and *Princess Beatrix*, in mid-April the pool available to AFHQ's North African Shipping Board was substantially increased by the addition of five new British LSTs and six American LCTs, dramatically increasing lift to near-front ports such as La Calle, Tabarka, and Bougie.⁷¹ This increased coastal capacity was complemented by enhancements to the local rail network, as two Railway Grand Divisions and three Railway Operating Battalions arrived at Oran in May, greatly bolstering the strength of the Railway Service. With

⁶⁶ TNA: WO 201/577, 'Notes on the maintenance of 8th Army'.

⁶⁷ Cunningham, p. 531.

⁶⁸ TNA: WO 201/577, 'Notes on the maintenance of 8th Army'.

⁶⁹ Ibid.

⁷⁰ Ibid.

⁷¹ Playfair, p. 420.

them came additional railroad construction supplies and locomotives, intended to overhaul the main line between Morocco and Tunisia, so that supply transfers and local administration could be undertaken with greater rapidity.⁷²

The continued expansion of an already substantial logistical system thus provided Allied forces with an unparalleled range of action as they moved to liquidate the bridgehead. In terms of concentration, the availability of supplies made it possible for 18th Army Group to sustain forces in far greater density along its key axes of advance. Between First Army and II Corps, Allied troops along the northern front disposed of some nine divisions, three of them armoured, 4th Mixed Division having joined First Army in early April, enabling them to leverage significant, concentrated offensive power over their Axis opponents.⁷³ This stood in stark contrast to the sparse frontline that First Army had maintained during the rush on Tunis, as 'First Army at last had a total superiority of men and material [...]' Divisions were now packed into sectors we had once had to hold with battalions; three corps – one American and two British – held the sixty-mile front that the Division [78th], two brigades strong, had occupied in November'.⁷⁴ To bring together this strength required feats of logistical accomplishment from 18th Army Group, including the redeployment of II Corps, a formation of some 100,000 men and 10,000 vehicles, from the southern end of the Allied line to Tunisia's northern coast, an average distance of over 150 miles and across First Army's line of supply.⁷⁵ The port of Bone was thus turned over to EBS to establish the corps' main supply base, while II Corps G-3 and First Army Movement Control worked to create a movement plan that maximised speed of transfer without congestion, establishing two routes between Tebessa and Roum es Souk with a tentative schedule for up to 2,400 vehicles per day.⁷⁶ These preparations ultimately proved more than adequate, as II Corps' move was completed in less than two weeks, the corps occupying a position already well-stocked for their arrival, round-the-clock work having ensured that a six-day level of accumulated supply was established in forward dumps ready for the corps' drive on Mateur.⁷⁷ That all of this was achieved at minimum disruption to the

⁷² NARA: RG 319, 'Item 6-C Logistical History of Natousa-Mtousa'.

⁷³ Anderson, p. 156.

⁷⁴ Ray, p. 48.

⁷⁵ NARA: RG 319, 'To Bizerte with the II Corps'.

⁷⁶ Howe, pp. 605-607.

⁷⁷ Ibid, p. 607.

supply of First Army and well in time to launch Alexander's planned attack, was rightfully labelled as being 'one of the outstanding achievements of transport and supply in the North African campaign'.⁷⁸

Nor was this the only exemplar of the Allies' flexibility in the realm of supply, as the assistance received by Montgomery's 8th Army from other Allied forces demonstrates. 18th Army Group HQ had recognised in March that 8th Army's advance would invariably strain the latter's lines of communication back to Tripoli, and as such had directed II Corps to establish a supply dump at Gafsa with 2,000 tons of petrol and ammunition to alleviate potential shortages.⁷⁹ Another dump was established further north at Bou Chebka, near Tebessa, with an additional 2,500 tons, 7,000 more being held at Constantine to meet exigencies.⁸⁰ This injection of supplies made Monty's advance into northern Tunisia a significantly smoother experience, 8th Army making the nearly 200 mile vault from Akarit to Enfidaville in scarcely a week, arriving there on 13 April.⁸¹ By being able to maintain close contact with their retreating opponents, 8th Army thus prevented them from fortifying their position, already a formidable natural barrier, in too great a depth, Messe's forces only being able to deploy 'little more than 3,000 mines and an incomplete anti-tank ditch' by the time Montgomery's vanguard reached them.⁸² This support was soon repaid however, as 8th Army was to provide additional units for Alexander's final offensive, dispatching the 1st and 7th Armoured Divisions, 4th Indian Division, and 201st Guards Brigade to bolster First Army in its execution of Operation Strike.⁸³ These were also accompanied by vast amounts of 25-pdr artillery shells, as First Army's ambitious artillery programme for Vulcan called for an equally ambitious dumping programme to ensure adequate stockpiles of ammunition. Some 343,000 rounds of 25-pdr ammunition were allotted to the final offensive, 'virtually the entire amount in North Africa', but even this turned out to be insufficient as Vulcan gave way to Strike, prompting the loan of 100,000 more from 8th Army to make up the shortfall.⁸⁴ Their stores thus replenished for the final breakthrough, First Army could deploy vast

⁷⁸ NARA: RG 319, 'To Bizerte with the II Corps'.

⁷⁹ TNA: WO 204/1137, '18th Army Group Operational Instructions and Reports'.

⁸⁰ TNA: WO 201/577, 'Notes on the maintenance of 8th Army'.

⁸¹ Alexander, 'Despatch', p. 75.

⁸² Playfair, p. 394.

⁸³ TNA: WO 201/577, 'Notes on the maintenance of 8th Army'.

⁸⁴ Playfair, p. 433.

amounts of firepower in support of their attack, with a staggering 550 rounds-per-gun dumped in preparation, quantities which 9th Corps' Commander, Corps Royal Artillery (CCRA) rather understatedly said 'was probably a decisive factor'.⁸⁵

Such largesse was not however mirrored on the Axis side of the lines, where, faced with collapsing supply tonnages courtesy of the Allied blockade, Army Group Afrika was being denuded of the fuel, ammunition and other materiel needed to fight on. Shipments in March had fallen some 40% below the minimum subsistence estimated by Army Group quartermasters, a shortfall that von Arnim had described as 'shattering' in signals to Rome, but these were to fall ever further as more and more supply vessels were interdicted en route to Tunisia.⁸⁶ Cargo tonnages plummeted to 29,000 in April and then to a truly disastrous 3,000 tons in the two weeks of May before the campaign concluded.⁸⁷ Supplies by air, although marginal compared to sea transfers, also suffered a concomitantly devastating drop, from some 5,000 tons in April to barely more than 600 in May, and although there is some variance between recorded figures, these are fractional and only underscore the complete collapse of the Axis logistical system.⁸⁸ Such small levels of supply made it practically impossible to maintain combat readiness; following the retreat to Enfidaville, virtually all units save for the Army Group's tactical reserve were paralysed in place, as there were not the supplies to move them.⁸⁹ Even the Panzer Divisions, which von Arnim hoped to use to seal breaches in his frontline, were sorely deficient of fuel, the shortage having become 'so desperate that his supply staffs were distilling fuel from low-grade Tunisian wines and liquors' to top off the limited stocks.⁹⁰ By 18 April, most units in 5. Panzerarmee, as well as 21st Panzer Division, held only 0.4 units of fuel, just over 20 miles worth, with those in 1st Italian Army faring little better at 0.6, and 10th and 15th Panzer with the comparatively lavish quantity of 1.2 units, a total that would still cover scarcely half the overall length of the Axis front.⁹¹ Ammunition states were little better, 5. Panzerarmee holding between 0.8-1 issues of artillery ammunition between its

⁸⁵ TNA: WO 175/99, 'C.R.A. 9th Corps. North Africa'.

⁸⁶ Ellis, p. 304.

⁸⁷ Playfair, p. 417.

⁸⁸ IWM: EDS Appreciation 12, Chapter 8.

⁸⁹ Ibid.

⁹⁰ Mitcham, p. 83.

⁹¹ IWM: EDS Appreciation 12, Chapter 8.

various guns, and 1.2 issues for all other weapons, with 5957 tons of ammunition stored in forward dumps and 662 tons en route forward.⁹² Such paltry quantities contrasted visibly with the vast stores that could be drawn on by the Allied armies to lend weight to their offensives; at the same time as von Arnim was issuing orders for 'extreme economy' in the expenditure of ammunition for its heavy guns, First Army was earmarking half a million 25-pdr shells for its final offensives, a combined weight amounting to only slightly less than the entire ammunition store for half the Axis forces in North Africa.⁹³

Unsurprisingly, the total disintegration of Axis logistical support generated considerable acrimony within an already fractious command chain, as last-minute, desperate attempts were undertaken to salvage a spiralling situation. Here again, Axis senior leadership were found to be at cross-purposes, as while exhortatory messages were sent to the troops calling for them to keep fighting, epitomised by Hitler's final 10 May missive to von Arnim commanding him to fight 'to the last bullet', some, particularly in the Italian camp, were reticent to commit additional resources that might be needed to repel the feared-forthcoming invasion of Italy.⁹⁴ Thus, while German troops continued to arrive in Tunisia, the number of Italian reinforcements dried up precipitately; whereas 11,800 Germans arrived in April and a scant 300 in May, only a trickle of Italian troops were sent in the first month, and none at all in the second.⁹⁵ Similarly, in an effort to conserve his dwindling destroyer force, Mussolini decreed on 30 April that they would be withdrawn from the Tunisian route, a position he maintained despite pleas from both Donitz and Kesselring, the latter of whom was trying to convince the Duce to recommit to this desperate effort even as his own Luftwaffe units withdrew.⁹⁶ Yet even without this internal discord, it is doubtful that OB Sud and Comando Supremo could have brought any tangible succour to the impoverished forces in Tunisia. Attempts were made, particularly by Donitz, to employ alternate methods of bringing in supplies, including the use of his few operational U-boats, but these could not compensate for the constriction of the shipping lanes and while long-term solutions were being

⁹² Ibid.

⁹³ Ibid.

⁹⁴ Ibid.

⁹⁵ Playfair, p. 416.

⁹⁶ IWM: EDS Appreciation 12, Chapter 8.

explored, these were simply too late to have any impact.⁹⁷ The final evidence of the complete disintegration of Axis lines of communication came in late April, as von Arnim, aware that his men were, as he had told Westphal on 30 March, 'without bread and ammunition, as was Rommel's army before', issued final orders that clearly recognised that his force's lifeline had been cut.⁹⁸ On 21 April each army was made responsible for its own administration, while Generalmajor Schnarrenberger, the Commandant Lines of Communication, was given command of 'Fortress Tunis', designated a stronghold to be fortified against Allied attack.⁹⁹ With no supplies to allocate and no ability to move troops around to counter the Allies, this was little more than a tacit acknowledgement that Army Group Afrika had effectively ceased to exist.

Yet despite the irreparable fragmentation of both the logistical footing and senior leadership of Army Group Afrika, Axis forces on the ground continued to fight with considerable tenacity. As such, going into the final weeks of the campaign, Allied forces faced possibly the most intense and challenging period of fighting they had thus far encountered, the reasons for which Eisenhower summarised in a letter to Marshall, stating: 'Even the Italian, defending mountainous country, is very difficult to drive out, and the German is a real problem [...] the enemy with his use of innumerable land mines and skilful utilizations of the ground for emplacing machine guns and mortars, has made our task a tough one.'¹⁰⁰ Eisenhower concluded that these were challenges the Allies could overcome however, as 'while we still have certain deficiencies in the battle coordination of the various arms, and in speed of action, these things are showing steady improvement'.¹⁰¹ Indeed, while unable to completely obviate certain tactical difficulties and engaged in some of the bloodiest fighting of the campaign, Allied forces nevertheless demonstrated the value of their acquired experience and continued innovation while bringing the campaign to a close, in the process shaping a distinctive operational method that would characterise future Allied endeavours.

⁹⁷ Ibid.

⁹⁸ Mitcham, p. 80.

⁹⁹ IWM: EDS Appreciation 12, Chapter 8.

¹⁰⁰ Eisenhower, *Papers II*, p. 1114.

¹⁰¹ Ibid.

One of those tactical difficulties that continued to trouble the Allies, was the defensive advantage conferred by the terrain. Although a constant factor throughout the campaign, the problems posed by Tunisia's dramatic geography became even more pronounced as Army Group Afrika withdrew into the tight ring of hills surrounding Tunis and Bizerte. This position, running 'from the sea just north of Enfidaville to the Gebel Fkrine massif', presented 'a continuous wall of abrupt peaks', while from Gebel Fkrine north the terrain was dominated by a mix of defiles, salt marshes, mountain passes and broken country.¹⁰² The obstacles thus presented ensured that offensives had to be mounted down a limited number of avenues of approach, preventing the Allies from fully exploiting their advantage in numbers, while enabling Axis forces to concentrate their limited resources against the most likely points of penetration. Even that ground which was suitable for offensive action was still rough going, as every hill was 'large enough to swallow up a brigade of infantry' and consolidation and movement of equipment proved very difficult.¹⁰³ Such conditions greatly aided the Axis defence, the lavish equipment of German infantry with machine guns and mortars proving well suited to hilltop defence, as was demonstrated against 128th Brigade around Bou Arada during Vulcan. Despite promising starts, the brigade 'suffered considerably from deadly mortar fire, and were held up on the nearer slopes all day', while some elements that did get forward, like 1st/4th Hampshires, were 'caught in a gully, where they lay out under heavy machine gun fire'.¹⁰⁴ Of the two weapons, the mortar drew the most concern from Allied forces, First Army considering the Axis' 81mm mortars 'the only weapon employed in this theatre which our infantry held in awe', a statement corroborated by its effect on morale, with more than 40 percent of all psychiatric casualties among British forces inflicted by mortar fire.¹⁰⁵ Italian forces too proved difficult to shift from their entrenched positions, as the static nature of the fighting helped to compensate for their sometimes crippling deficiencies in equipment, unit organisation, sluggish and inflexible command system, and the overly-centralised nature of their Intendenza supply apparatus.¹⁰⁶ Despite shortages of telephone wire,

¹⁰² Alexander 'Dispatch', p. 76.

¹⁰³ Anderson, p. 148.

¹⁰⁴ TNA: CAB 106/545, 'The story of 46th Division'.

¹⁰⁵ TNA: WO 201/823, 'Lessons from Operations in North Africa'.

TNA: WO 201/2875 'Report by Colonel Welch on his visit to First Army', 1943.

¹⁰⁶ Knox, 'The Italian Armed Forces, 1940-3', p. 140, 152, 154-55, 157-59, 162-66.

which crippled their antiquated communications system, the Italian infantry, led by competent commanders, fought remarkably well in the final battles of the campaign, putting up dogged resistance often comparable to their more well-equipped German allies.¹⁰⁷

Nor could the Allies simply drive the Axis from their hilltop positions by reliance on firepower. Although undeniably devastating, the primary effects of Allied artillery fire were suppressive and psychological rather than lethal, especially against dug-in troops. As post-campaign tactical notes highlighted, even vast numbers of shells falling on a target did not guarantee that the defenders would be wiped out; an earlier action had seen 4,000 shells, fired on a strong locality, produce only six fatalities.¹⁰⁸ This meant that while heavily concentrated barrages could assist an infantry advance and even break the defenders' morale, it was distinctly unlikely that objectives could be cleared by artillery fire alone. Despite support from 120 25-pdr guns and a battery of medium artillery, 128th Brigade's attack on the first day of Vulcan was staunchly opposed, and it was only when 138th Brigade, attacking to the north, turned the enemy flank, that resistance began to collapse.¹⁰⁹ The use of supporting armour was no panacea either, as while tanks formed a highly valuable means of supplying firepower and weight to an assault, they were nevertheless limited by the terrain and vulnerable to anti-tank guns and mines. During the same action around Bou Arada, 51st RTR were repeatedly held up by small numbers or even single anti-tank guns and artillery pieces firing over open sights, while C Squadron, attacking Mehallah had all but one tank knocked out by mines which littered the slopes of the hill.¹¹⁰

The incapability of the supporting arms to completely neutralise the inherent strengths of Axis defensive positions meant that it was down to the infantry to deal with the enemy with their own personal weapons. These small actions were often highly protracted, the battle for Bou Arada lasting a gruelling 33 hours, as individual companies and even squads were obliged to vie for positions often widely separated,

¹⁰⁷ Knox, *Common Destiny*, pp. 165, 178, 181.

¹⁰⁸ *Notes from Theatres of War No.13: North Africa – Algeria and Tunisia, November 1942-March 1943* (War Office, 1943)

¹⁰⁹ TNA: CAB 106/545, 'The story of 46th Division'.

¹¹⁰ Bryan Perrett, *The Churchill* (London: Ian Allan, 1974), pp. 38-47.

necessitating long periods of continual fighting.¹¹¹ Such fragmentation of the battlefield saw many actions in this final phase become exceedingly bloody, as Axis troops fought bitterly to hold their positions, producing heavy casualties on both sides.¹¹² Some 13,000 of the 23,000 total casualties suffered by First Army occurred between 1 April and the end of the campaign, highlighting the fevered pitch of the fighting during the Allies' final offensives, while Axis forces, both German and Italian, lost three men for every seven taken prisoner, a high ratio indicating their commitment to the fight.¹¹³ Although able to absorb such casualties, the continued difficulty Allied forces had in seizing positions in harsh terrain, both in Tunisia and in later campaigns, suggests that this was a challenge that simply could not be overcome by technological means or tactical flair, but only by dogged persistence and ruthless attrition.

However, while Axis defensive tactics and challenging terrain presented a perennial problem for Allied forces on the attack, flaws in Allied battlecraft sometimes made this task even more difficult. Chief among these were issues of coordination, not only between different arms, but across national lines as well, both of which were well demonstrated at Fondouk by 9th Corps. Failure to include Djebel Rhorab, west of Fondouk, in orders to 128th Brigade to sweep into Fondouk from the north, meant that this key peak remained in Axis hands when US 34th Division advanced east from Pichon towards Djebel el Aouareb, allowing Axis observers there to direct a curtain of fire onto the division's concentrations, stopping their advance dead.¹¹⁴ This was not helped by 34th Division's failure to follow their preparatory artillery barrage, which left them exposed to fierce defensive fire, while intrusions into the area by British and American tanks only worsened the confusion.¹¹⁵ Although 3rd Battalion Welsh Guards finally took Rhorab at first light on 9 April, albeit unsupported and at high cost, the delay inflicted set Crocker's attack significantly behind schedule, prompting undue haste that further hindered cooperation.¹¹⁶ Orders from Alexander arrived on the second day that 6th Armoured Division was to blast its way through the Fondouk Pass, irrespective of the infantry's

¹¹¹ TNA: CAB 106/545, 'The story of 46th Division'.

¹¹² Alexander, 'Despatch', p. 78.

¹¹³ Anderson, p. 156; Knox, *Common Destiny*, p. 181.

¹¹⁴ Howe, p. 587.

¹¹⁵ Howe, pp. 586-87.

¹¹⁶ Blaxland, pp. 220-21.

progress, a rash manoeuvre that caused consternation among the division's officers, Macksey recording that the 17th/21st Lancers, which had served at Balaclava, 'felt a sense of fatalistic predestination' pass over them at the prospect.¹¹⁷ While this final throw of the dice did eventually succeed, 6th Armoured Division suffered heavy casualties from anti-tank guns and mines, brought about by the impatience of Allied leadership.¹¹⁸ The lack of effective cooperation at Fondouk represented a nadir in Allied operations during this period, and while few of the mistakes displayed here were repeated elsewhere, it nevertheless had cautionary value in demonstrating what could happen if operations went in without proper cohesion or preparation.

A final factor restraining the developing efficacy of Allied operational art was overconfidence, a failing largely peculiar to Montgomery's 8th Army, although perhaps understandable, as many of their hallmark methods remained thoroughly effective in Tunisia. Operation Scipio, the assault on Wadi Akarit, stands testament to this fact, as 8th Army's devastatingly effective artillery produced an 'apocalyptic hurricane of steel and fire' that pinned the defenders in place and allowed the British infantry, well-drilled and experienced in night assaults, to break into the position.¹¹⁹ These were also augmented by innovations inspired by months of campaigning, the need to rapidly consolidate anti-tank weapons on a captured objective for instance producing the expedient of towing the guns behind advancing infantry tanks, which was trialled with mixed success at Akarit, but given serious consideration post-campaign.¹²⁰ However, while 8th Army's confidence had turned it into a highly effective fighting force, this same self-belief also fostered a dangerous arrogance, as 8th Army contrived to look down on their less-experienced comrades while taking little heed of the root causes of their setbacks. 9th Lancers Major Scott exemplified this attitude in commenting on Strike, claiming that its success was because of the involvement of 8th Army formations, as 'the whole thing was under entirely new management: it was a proper Eighth Army noise'.¹²¹ Such a boast was curious at best, the actual 8th Army having butted its head against the Enfidaville position to no

¹¹⁷ Alexander, 'Despatch', p. 75; Macksey, p. 252.

¹¹⁸ Blaxland, pp. 221-22.

¹¹⁹ Rolf, pp. 202-03.

¹²⁰ TNA: WO 232/14, 'North Africa: Reports and lessons learned'; TNA: WO 204/1144, 'Tanks - Requirements and Availability'.

¹²¹ TNA: WO 201/607, '9th Lancers, personal accounts of Tunisian campaign by Major J Scott'.

avail on 29 April, as Montgomery threw the inexperienced 56th Division against the peak of Djebel Srafi, only for them to be rebuffed by staunch counteroffensives.¹²²

Nor was 56th Division's defeat an isolated setback either, but rather a concluding salvo in a series of engagements that had seen 8th Army struggle to oust 1st Italian Army from a variety of commanding positions. The chief reasoning behind this was a continued misapprehension that fighting in the Tunisian hills was much the same as in the Western Desert, a trait highlighted by Macksey, who commented on 'Eighth Army's inherent tactical limitations when asked to cope with any sort of terrain that was not flat or mildly undulating', leading to a tendency to revert to 'brute force where subtlety might have been more profitable'.¹²³ Akarit was planned in the same unimaginative way as Mareth and by extension Alamein, with three divisions under 30th Corps launching a night-time assault with heavy artillery preparation, 10th Corps' armour passing through to exploit the breach.¹²⁴ However, Montgomery's plan neglected to take account of the dominant peak of Djebel Fatnassa, an oversight which likely would have frustrated the attack had 4th Indian Division commander Francis Taker not intervened, arguing that his division could capture Fatnassa in a silent night attack.¹²⁵ This they achieved handily, but even so Montgomery could not prevent Messe from slipping away again, as poor infantry-armour coordination saw 10th Corps fail to exploit the attack and complete the victory.¹²⁶ Most of these mistakes were repeated again at Enfidaville, which Horrocks called 'one of the strongest defensive positions I have ever seen'.¹²⁷ Monty's plan, another three-division advance, once again failed to appreciate the difficulties of seizing commanding terrain, choosing to disperse each division among the hills to fight separate battles against well dug-in opponents. Moreover, two of these divisions, 4th Indian and New Zealand Division, were only two brigades strong, with motorised artillery and transport, Playfair commenting that 'they were, in fact, so unsuitably equipped for a long mountain battle that the bold and ambitious plan was also impracticable'.¹²⁸ Indeed, despite brave fighting from all three divisions and

¹²² Playfair, p. 443.

¹²³ Macksey, pp 240-41.

¹²⁴ De Guingand, p. 266.

¹²⁵ Playfair, pp. 364-65.

¹²⁶ TNA: WO 106/2730, 'Tunisia; miscellaneous reports'.

¹²⁷ Brian Horrocks, *A Full Life* (London: Collins, 1960), p. 162.

¹²⁸ Playfair, p. 403.

heavy losses, 8th Army made little headway against a ferocious defence, forcing Montgomery to consolidate what few gains he had made, while waiting for First Army to cave in the bridgehead from the west.¹²⁹

However, while the Allied approach to battle was often far from perfect, these shortcomings should not be allowed to overshadow the great strides in operational art made up to and during the last weeks of the campaign. One key element to this development was the establishment of a high standard of training, facilitated by the expanding battle school system instated by Alexander. Upwards of 15 training schools were now active in North Africa, with nearly 2,100 total places mostly for junior officers and NCOs, and which offered a variety of short courses aimed at the training of specialists and boosting the quality of junior leadership.¹³⁰ These were supplemented further by divisional schools established in British units and also II Corps, courtesy of the dispatch of training officers from 18th Army Group HQ's G Branch.¹³¹ At divisional schools, units were instructed in a range of topics, a week's course for an Infantry Rifle Company including small arms instruction, minelaying and lifting, patrol drill, section battle drills, and anti-gas exercises, among others.¹³² These were intended to serve as a refresher for troops hardened in the field, equipping them with a stereotyped method to fall back on in common battlefield situations. For units in need of an improvised fire-plan for positional assaults, battle schools taught the 'lane' and 'pepper-pot' methods, which split units into separate groups moving forward sequentially while others delivered suppressing fire, thus permitting the infantry to maintain an advance where the artillery barrage had not enabled them to close in.¹³³ Moreover, teaching could be a two-way street, as unit experience was used to refine training methods; following the campaign, 1st Infantry Division was to report that the 'lane' method was too complex for employment in the field, particularly in broken terrain, recommending instead the 'pepper-pot' approach, a note taken account of when designing future courses.¹³⁴ This aside, the battle drill system was considered to have 'unquestionably paid a handsome dividend' in preparing Allied troops for the campaign's concluding

¹²⁹ TNA: WO 106/2730, 'Tunisia; miscellaneous reports'.

¹³⁰ TNA: WO 204/267, 'Training, recent operations on the Tunisian front'.

¹³¹ TNA: WO 175/18, '18th Army Group HQ War Diaries, 'G' Training Branch'.

¹³² Ibid.

¹³³ Place, pp. 69-73.

¹³⁴ TNA: WO 231/10, 'Lessons Learned from Ops in Tunisia, Directorate of Military Training'.

operations, as veteran divisions now augmented their practical experience with sound methodological grounding.¹³⁵

The subsequent performance of American troops suggests that this training had tangible benefits, as the four US divisions deployed in the drive on Bizerte demonstrated both tenacity and sophistication. Fighting primarily in the Tine River Valley, II Corps faced deep defences dug by Division von Manteuffel, arrayed above exposed plains bottlenecked by ridgelines that created a tempting but dangerous route soon dubbed ‘the Mousetrap’.¹³⁶ However, whereas before the Americans may have taken the bait, seeing the valley floor as an easier route for the passage of vehicles, II Corps instead launched its infantry divisions up the hillsides to clear out Axis positions, recognising that it was easier to work along the valley sides than fight an uphill battle.¹³⁷ The Corps’ first attack, launched on 23 April to capture the hills covering the valley mouth, demonstrated this painfully acquired wisdom, with an assault on a two-division wide front that concentrated significant numbers of infantry for concerted assaults on major hilltop positions, backed by the focused firepower of the entire corps’ artillery.¹³⁸ This combination of mass and firepower helped to ensure that each attack put in on the defended peaks succeeded, and moreover denied the enemy the opportunity to take them back when they inevitably counterattacked. 18th RCT, for example, captured Hill 350 and Hill 306 over the course of ‘5 hours of stiff fighting, marked by numerous counterattacks’, before attacking Hill 407 the next day, 24 April.¹³⁹ Despite stubborn resistance at the latter, 407 fell by 0400hrs, as ‘its power to resist had been weakened by poundings from our artillery’.¹⁴⁰

Well-coordinated and determined, the first two days of II Corps’ offensive saw 1st Division force von Manteuffel’s men from the mouth of the Tine valley, while 9th Division drove several miles north and east towards Bizerte.¹⁴¹ Although the offensive slowed as momentum began to drain, the Americans continued to demonstrate significant tactical flexibility as they forged ahead. Bringing forward

¹³⁵ Ibid.

¹³⁶ NARA: RG 319, ‘To Bizerte with the II Corps’.

¹³⁷ Ibid.

¹³⁸ Howe, p. 614.

¹³⁹ NARA: RG 319, ‘To Bizerte with the II Corps’.

¹⁴⁰ Ibid.

¹⁴¹ Howe, pp. 618-27.

34th Division, which ‘had spent every day [since Fondouk] in intense remedial training, practicing night attacks, tank-infantry tactics, and – led by the divisional commander, Charles Ryder, marching 50 yards behind rolling artillery barrages,’ Bradley tasked them with taking Hill 609, a pivot position between 1st and 9th Division.¹⁴² Sweeping clear the surrounding hills, 34th Division employed Sherman tanks, borrowed from 1st Armored, as mobile artillery as they fought their way onto Hill 609 on 30 April.¹⁴³ 1st Armored Division was thus free to push up the valley, capturing Mateur on 3 May, but breakout attempts into the coastal plain soon fell afoul of well-deployed anti-tank defences, 13th Armored Regiment losing 14 tanks, while their Commanding Officer, Lieutenant Colonel Gardiner, was marked as missing.¹⁴⁴ Here too, the benefits of intense training displayed themselves, as the regimental Executive Officer, Lieutenant Colonel Howze, rallied his forward elements, organising a 54-gun artillery barrage along with a smoke screen, under cover of which he could bring forward his armour.¹⁴⁵ Employing his tanks in a trapezoidal formation, with tank destroyers following, Howze was making use of ‘battle plays’, pre-practiced formations that enabled officers to exert tactical control in changing battlefield situations, a practice that bore more than a passing resemblance to the battle drill II Corps had become acquainted with in recent weeks.¹⁴⁶ Howze’s attack broke through the Axis strongpoints, opening the road to Ferryville and allowing 1st Armored to maintain its advance, cutting the road between Bizerte and Tunis.¹⁴⁷

II Corps was not the only formation to display its growth as a fighting unit either. First Army’s familiarity with German operational methods, particularly their penchant for spoiling attacks, set them in good stead for von Arnim’s final gambit of the campaign, Operation Fliegerblut. Attacking on the night of 20/21 April with five battalions of the Hermann Goring Division and roughly 70 tanks, von Arnim achieved tactical surprise against First Army, then mustering for Vulcan, infiltrating assault units penetrating as far as the British gun lines and even 4th Division

¹⁴² Atkinson, p. 506.

¹⁴³ Bradley, p. 157.

¹⁴⁴ Howe, p. 656.

¹⁴⁵ Barry, p. 150.

¹⁴⁶ Ibid, pp. 150-53.

¹⁴⁷ NARA: RG 319, ‘To Bizerte with the II Corps’.

headquarters.¹⁴⁸ Yet by now British troops were well-practiced in fending off such incursions, holding fast to their positions before an organised counterattack, supported by tanks and artillery, drove off the enemy.¹⁴⁹ By first light 5. Panzerarmee had been forced to withdraw, leaving behind at least 25 destroyed tanks and over 450 prisoners, while preparations for Vulcan, save for a brief postponement of 46th Division's attack, remained unimpeded.¹⁵⁰ However, the true measure of First Army's growth lay in the efficacy of its offensive operations, as demonstrated in Vulcan's preliminary operation, Sweep. Here too, the same principles of all-arms cooperation and steadfastness against German shock tactics were put into full practice and married to intense training and sophisticated tactical plans. 38th Irish Brigade's 6 April attack on Djebel Mahdi exemplified this approach, beginning with a period of intense patrolling that identified significant numbers of mines and booby traps, as well as the ranging of the valley adjacent by German mortars.¹⁵¹ Having reconnoitred the ground, Brigadier Russell's offensive opened with a silent assault by 2nd Hampshire on the observation point of Mount Kachiba, allowing the Brigade's other two battalions, 6th Inniskilling and 1st Royal Irish, to make a silent approach march up the valley on the night 5/6 April.¹⁵² The following evening, 6th Inniskillings led the assault on Djebel Mahdi, supported by 58 guns, which delivered suppressive fire on the objective and then lifted to blanket the surrounds, allowing the Inniskillings to steadily push up the hill and hold the objective, Point 355, despite a local counterattack.¹⁵³ From there, the Royal Irish took point, following another artillery concentration on the peak, Point 437, before dispatching C and D Company around the hill's flanks. Using one platoon each to advance while the other two provided fire support, C Company was able to capture the crest, while D Company consolidated this victory by driving the Germans back down the hill, an impromptu bayonet charge eliminating a key hold-out position and allowing 38th Brigade to consolidate their gains.¹⁵⁴

¹⁴⁸ Alexander, 'Despatch' pp. 79-80.

¹⁴⁹ Blaxland, pp. 235-36.

¹⁵⁰ TNA: WO 193/391, 'Daily summaries of operations', 1942-45.

¹⁵¹ Mitchell, p. 83.

¹⁵² TNA: CAB 106/569, '38th Brigade Account'.

¹⁵³ Mitchell, pp. 84-87.

¹⁵⁴ *Ibid*, pp. 90-93.

The success of the attack at Djebel Mahdi was however but one example of a multitude of similar engagements played out in April which displayed the continuing maturation of First Army. Closer integration of tanks into the infantry assault was a prime example of this improved coordination, the Churchills of the North Irish Horse for instance supporting 78th Division throughout much of April. The Irish did their most brilliant work however during Vulcan, aiding attempts to take Longstop Hill's twin peaks, Djebel el Ahmera and Djebel el Rhar, and the hill of Tanngoucha between 22 and 26 April.¹⁵⁵ In each of these three engagements, the Irish demonstrated great versatility, occupying first a long-range supporting role as 36th Brigade assaulted Djebel el Ahmera, before deploying in close support of the Royal Irish Fusiliers on 25 April to take Tanngoucha.¹⁵⁶ This turned the tide of the battle, as according to the divisional historian: 'it was not tank country [...] it was scarcely mule country [...] they [three Churchills] lumbered up Butler's Hill and Hill 622, blazing at everything, with the Fusiliers advancing alongside. The Inniskillings charged up the Tanngoucha cheering, and the defenders surrendered'.¹⁵⁷ Finally, on 26 April, the Churchills themselves took the lead, escorting 5th Royal East Kent to the summit of Djebel el Rhar, taking the surrender of 'a flabbergasted commanding officer, four company commanders, and some 300 grenadiers of the 334th Mountain Division' and securing Longstop Hill.¹⁵⁸ These successes not only highlight the effective integration of infantry and armour in the assault, a feat made easier by the long affiliation between the units involved, but also underscore the quality of the Churchill tank, which had initially been viewed unfavourably due to its troubled design history. The redemption of the Churchill by its faithful service in Tunisia represents one of the valuable technical experiences of the campaign, best reflected in the cancellation soon after of the Assault Tank project's search for a replacement.¹⁵⁹ Nor was this the only experiment to be cancelled, as British authorities concluded that the new 'Mixed Division' structure, consisting of two infantry brigades and one army tank brigade, had been unsuccessful. Trialled in theatre by 4th Division, it was noted that, despite no lack of valour on 4th Division's part, Mixed Divisions simply did not have enough manpower to seize objectives, nor

¹⁵⁵ TNA: CAB 106/569, '38th Brigade Account'.

¹⁵⁶ Ibid.

¹⁵⁷ Ray, p. 53.

¹⁵⁸ Blaxland, pp. 239-40.

¹⁵⁹ Fletcher, pp. 268-9.

enough tanks to function independently as armour, and as a consequence, 4th Division and its four counterparts were reverted to traditional infantry divisions post-campaign.¹⁶⁰

Improving infantry/armour cooperation was further complemented by the expanding capability of Allied artillery, which reached a pinnacle of ability during this phase of operations. Part of this strength was numerical, as the bridgehead's contraction enabled progressively more guns to be deployed in greater density, producing barrages of exceptional weight, further bolstered by increasing sophistication in communications and command and control.¹⁶¹ 5th Corps' fire plan for Vulcan suitably exemplifies this mix of raw firepower and incredible flexibility, coordinating a total of 372 guns, consisting of 300 25-pdrs, 48 5.5" Medium Guns, and 24 7.2" Heavy Howitzers, drawn from three different divisions and one AGRA.¹⁶² These would be employed in various configurations in support of three separate attacks, beginning with a preparatory bombardment for 78th Division before 0200hrs on D+1 (23 April), then splitting to cover both 78th Division and 1st Division during their advance, before a final barrage in support of 4th Division on D+2. Regiments and batteries would thus be switched between commands as needed to provide a mixture of on-call, pre-planned and counter-battery fire, 56th Heavy regiment for instance being utilised in full during 78th Division's preparatory fire and then split into two for the stage following. This was facilitated by a simplified method of centralisation and de-centralisation under the CCRA and his divisional juniors (CRAs), as well as 1st AGRA, with wireless and wire communication direct between each for maximum flexibility. Fire direction was informed by a wide range of observation methods, including aerial photography and regular and air observation, as well as Survey, Flash-Spotting, and Sound-Ranging Batteries. The latter units, intended to guide counter-battery fire, were further augmented by the use of shell reports, which triangulated enemy gun positions by calculation of angle, and the placement of a Counter-Battery Officer at the photographic interpretation centre to feed information forward to the CCRA. Finally, forward elements were accompanied by Forward Observation parties and liaison units, which fed requests and information back to the CRAs and CCRA, allowing for the provision of fire

¹⁶⁰ TNA: WO 231/10, 'Lessons Learned from Ops in Tunisia, Directorate of Military Training'.

¹⁶¹ TNA: WO 175/99, 'C.R.A. 9th Corps. North Africa'.

¹⁶² TNA: WO 175/86, 'H.Q. 5th Corps. Royal Artillery'.

support on call. 5th Corps in fact took this concept even further by having each division accompanied by a liaison group from the divisions flanking them, enabling maximum concentration of firepower as needed along the width of the front. The sum total of these preparations ensured that when the corps attacked on 23 April, they were backed by a lavish offering of artillery support, the combined guns of the entire corps firing some 276,000 shells in support of the attack.¹⁶³ The development of such powerful fire support was noted in First Army's Lessons Learned, which stated approvingly that 'our concentrations have proved devastating, and our methods of fire have stood the strain of war'.¹⁶⁴

All of these refinements were combined in the final major operation of the campaign, Strike. Following on the heels of Vulcan, Strike envisioned a straight thrust south of the Medjerda towards Massicault, before driving on to Tunis.¹⁶⁵ Although initially intended to have been a First Army affair, Strike 'for the first time, brought the two estranged British Armies into proper unison', a fusion long delayed but no less valuable for that, as the two forces were able to exploit their combined experience to great effect.¹⁶⁶ Preparations for the offensive saw the retention of 1st Armoured Division in the Goubellat plain, along with a large concentration of dummy tanks, which alongside a renewed 19th Corps offensive against Zaghuan aimed to keep Axis reserves pinned to the southern sector.¹⁶⁷ This was followed by a subsidiary action on D-1 by 5th Corps which seized the final dominant peak north of the river, Djebel bou Aoukaz, thus clearing the way for 9th Corps' advance.¹⁶⁸

Fire support for the offensive was provided by no fewer than 652 guns for an attack of only 3,000 yards frontage, a concentration exceeding that of El Alamein by near five-fold.¹⁶⁹ 9th Corps' CCRA was in overall command of a force encompassing the artillery of seven divisions, two AGRAs and more than half a dozen other regiments, which began work on 3 May with a deliberate deception operation, 5th Corps' counter-battery units 'purposely shooting wide for three days before zero'.¹⁷⁰

¹⁶³ Ibid.

¹⁶⁴ TNA: WO 231/10, 'Lessons Learned from Ops in Tunisia, Directorate of Military Training'.

¹⁶⁵ TNA: WO 204/1137, '18th Army Group Operational Instructions and Reports'.

¹⁶⁶ Macksey, p. 289.

¹⁶⁷ Alexander, 'Despatch', pp. 82-83.

¹⁶⁸ TNA: WO 204/1137, '18th Army Group Operational Instructions and Reports'.

¹⁶⁹ TNA: WO 175/99, 'C.R.A. 9th Corps. North Africa'.

¹⁷⁰ Ibid.

This encouraged Axis batteries to remain where they were, allowing aerial reconnaissance and observation units to locate 72 likely sites for enemy artillery and pre-register these for engagement during the barrage.¹⁷¹ The artillery plan itself was guided by the objectives tasked to the leading infantry, which had two shared objectives, followed by an individual objective for each division. More than 30 key positions and likely centres of resistance were pre-registered for concentration fire, using either animal callsigns such as Horse and Tiger on 4th Indian's front, or birds such as Robin and Owl on that of 4th British.¹⁷² This enabled the maximum amount of fire support to be directed towards where it was needed, a task further facilitated by FOOs and the establishment of lateral communications between both advancing divisions' CRAs, thus replicating the same integrated network utilised during Vulcan.¹⁷³

Thus, when 4th Indian and 4th British division advanced at 3am on 6 May, they were preceded by a curtain of fire that blanketed Axis positions; in the first two hours, 16,632 shells fell on Axis units facing 4th British Division alone.¹⁷⁴ Further back, those sites denoted for counter-battery work were also engaged, with 51 of 72 being fired on three times for two minutes on a scale of 10:1, while others not previously identified were given similar attention.¹⁷⁵ The efficacy of this work was later attested to by survey, which revealed evidence in all sites hit that they had not only been occupied, but also neutralised by fire, while the 21 deliberately omitted were found to have been correctly assumed deserted.¹⁷⁶ With much of the Axis' defensive fire nullified, the two assault divisions could make their advance unhindered, Tucker's veteran 4th Indian making their approach in silence with artillery concentrations fixed on key points, while 4th British Division were guided onto their objective by a traditional creeping barrage.¹⁷⁷ Both divisions' advance was further aided by the tracer fire of Bofors anti-aircraft guns shot parallel to the line of advance, an 8th Army trick to help the infantry navigate in the dark, as the 'whole plain soon became shrouded in a thick pall of smoke and dust'.¹⁷⁸ Leading units had

¹⁷¹ TNA: WO 204/1905, 'Lessons from Operations on Tunisia and Italy'.

¹⁷² TNA: WO 175/99, 'C.R.A. 9th Corps. North Africa'.

¹⁷³ TNA: WO 204/1905, 'Lessons from Operations on Tunisia and Italy'.

¹⁷⁴ Mitcham, p. 84.

¹⁷⁵ TNA: WO 175/99, 'C.R.A. 9th Corps. North Africa'.

¹⁷⁶ TNA: WO 204/1905, 'Lessons from Operations on Tunisia and Italy'.

¹⁷⁷ Blaxland, p. 251.

¹⁷⁸ TNA: WO 204/1905, 'Lessons from Operations on Tunisia and Italy'.

secured the first set of objectives by 0500, against light resistance, finding as the sun rose that there 'were many more abandoned weapons than the prisoners yet taken', the barrage having done its work to thoroughly break German morale.¹⁷⁹ Where more determined resistance was encountered, the infantry made careful assault upon those positions, supported by 21st and 25th Army Tank Brigade.¹⁸⁰ As a result, both divisions had secured their latter objectives by 1100hrs, opening the road for the armour to strike towards Tunis.¹⁸¹ In this regard, Strike appears to have remedied the problems of coordination of previous engagements, as 6th and 7th Armoured rapidly capitalised on the breach the infantry had opened, passing through the leading infantry not long after they had secured their final objectives.¹⁸² By nightfall 6th and 7th Armoured had reached Massicault, roughly halfway to Tunis, which was entered the next day.¹⁸³ From there and against crumbling Axis resistance, the advance split into two, 7th Armoured sweeping north and 6th Armoured sweeping south to encircle the remaining opposition, joining with renewed advances by II and 19th Corps in swift and fluid operations that forced the piecemeal capitulation of remaining Axis units.¹⁸⁴

The success of Operation Strike marked the end of Axis resistance in North Africa and serves as a fitting capstone to a concluding month and a half of fighting in which the Allied armies demonstrated their growth as a fighting force. Although there still remained tactical challenges which could not easily be overcome, 18th Army Group confronted some of the staple features of German and Italian doctrine and devised effective solutions and countermeasures to these problems. In doing so, Allied forces not only leveraged, but systematised all of those advantages available to them, not least of which was their material wealth, and combined these with developments made throughout the campaign, such as improved communications and overhauled training, to create a new and substantive Allied approach to battle. This fused a considered approach to operations with broad tactical flexibility, overwhelming firepower, and all-arms cooperation to deliver a powerful and capable force equally at home on the offensive as well as the defensive. All of these qualities

¹⁷⁹ Blaxland, p. 252.

¹⁸⁰ Ibid.

¹⁸¹ Alexander, 'Despatch', p. 154.

¹⁸² TNA: WO 204/1905, 'Lessons from Operations on Tunisia and Italy'.

¹⁸³ Anderson, p. 154.

¹⁸⁴ TNA: WO 201/822, 'Operations, First Army and Second United States Corps in Tunisia'.

were amply demonstrated in the final weeks of the campaign, as Allied forces employed the lessons taught to them throughout to finally destroy Army Group Afrika.

Nor was this much-improved cohesion solely limited to a single armed service, as air, sea, and ground forces all played equal part in bringing the campaign to its final conclusion, summarised poetically by Harry Butcher, writing: 'I would draw a parallel from Edgar Allan Poe's poem *The Pit and the Pendulum*, the pendulum our air force, the ever-closing walls of the pit the ground and sea forces'.¹⁸⁵ Such was an apt metaphor for the activities of the Allied forces, as the combination of shrinking bridgehead and severed supply lines, all under the auspice of the increasingly dominant NAAF, serves to emphasise the complementary roles played by all three services, a partnership not lost on senior Allied commanders. Alexander stated that alongside the strong fellowship of British, French and American troops 'there is also to be noted the degree of cooperation achieved between the three services. The battle of Tunis gave the fullest scope for a demonstration of this, for it was so designed and planned as to enable the Navy and Air Forces to play their full part and produce their full strength simultaneously with the supreme effort of the Army'.¹⁸⁶ This praise was not without merit either, as during this final phase Allied forces operated in close cohesion across all battlefield domains, honing earlier methods of cooperation and maximising efficient employment of resources to bring the campaign to a decisive conclusion.

One key aspect of this efficiency was founded in the Allies' substantial materiel advantages, which was reflected in NAAF's continued development, both in number of airframes and dispatched sorties. The squadron strength of NASAF, NAAF's most powerful strike force, rose to a total of 34 squadrons from 22 over the course of April, during which time the force launched 400 daily sorties against airfields and tactical targets, as well as additional strikes against ports and shipping.¹⁸⁷ The assistance of Middle East Air Command's 14 bomber squadrons brought this number up to nearly 1,000, the latter being less hindered by the mercurial Tunisian weather, lending further weight to an already powerful bombing

¹⁸⁵ Butcher, p. 243.

¹⁸⁶ Alexander, 'Despatch', p. 88.

¹⁸⁷ Playfair, p. 391.

effort.¹⁸⁸ This rate of growth was mirrored throughout NAAF, as by 16 April, less than three weeks after the previous tally, NAAF had received nearly 200 new aircraft, bringing its strength to 1,758 airframes and Allied forces overall to 3,241.¹⁸⁹ This dwarfed the number available to the Axis, whose position was made worse by the imbalance of serviceability rates between both sides, as only around 50 percent of Axis aircraft remained serviceable, compared to over 80% for the Allies.¹⁹⁰ Such a disparity in functioning aircraft only further widened the gulf in strength between the two air forces, as Luftwaffe and Regia Aeronautica pilots effectively faced an enemy that outnumbered them more than four to one, an overwhelming superiority which explains the almost total dominance of NAAF in the final weeks of the campaign.

Allied naval forces also saw the benefit of this material largesse, Cunningham's Mediterranean Command taking receipt of five flotillas of motor launches during April, two based on Algiers, two on Oran, and one on Bougie, joining four Motor Torpedo Boat flotillas operating out of Bone and Malta.¹⁹¹ This provided much greater coastal security for Allied shipping destined for North African ports, as these light coastal forces, assisted by the deliberate routing of air reinforcements over the shipping lanes, were well-suited to disrupting Axis submarine activity due to their speed and manoeuvrability. These characteristics also gave the light flotillas substantial offensive potential, allowing them to disrupt coastal traffic and even engage convoy shipping, Cunningham commenting that 'hardly a night passed but they were off Tunis and Bizerta; mining, harrying the patrols, attacking and sinking vessels carrying the stores, ammunition and petrol so badly needed by Rommel's army'.¹⁹²

The task of harrying Axis supply lines was made easier by the continued advance of the ground forces, whose capture of airfields and ports provided the naval and air commands with bases ever closer to their primary targets. The re-opening of Sousse enabled light craft from Malta to use the port as an advanced striking base from 22 April, with one attack managing to damage or destroy two Italian minesweepers, a motor launch, several beachside aircraft, and an enemy

¹⁸⁸ Ibid.

¹⁸⁹ TNA: WO 204/1060, 'Air intelligence including ground to air cooperation'.

¹⁹⁰ Playfair, p. 400.

¹⁹¹ Ibid, p. 420.

¹⁹² Cunningham, pp. 525-26.

merchantman in a daring daylight raid.¹⁹³ Most forward airdromes were also captured by the Allies by 7 April, a total that was to rise to 22 before the end of the month.¹⁹⁴ This provided Allied air squadrons with greater access to the Gulf of Hammamet and the straits of Sicily, thus tightening AFHQ's control over the sea lanes between the bridgehead and continental Europe. Coordination between these widespread bases was assisted by the overhaul of NAAF wireless communications, as laid out in a 12 April signal plan. The new arrangement comprised a central Control Station for all air operations, with three separate self-contained signals centres, Advanced NAAF HQ, Rear NAAF HQ, and Telecommunications Centre North Africa, providing 30 mobile and 20 transportable or static radio channels.¹⁹⁵ This would 'provide a complete W/T organisation to handle all traffic for the North West African Air Forces' and was progressively and effectively implemented across the period, alongside similar reforms to specific air services within MAC.¹⁹⁶

These advantages were subsequently leveraged by the Allies to extend their dominance over all three battlefield domains, beginning with the systematic exclusion of the Luftwaffe and Regia Aeronautica from the theatre's airspace. Efforts in this regard intensified greatly in April, as shrinking numbers of Axis airfields and increasing Allied sortie numbers enabled the NAAF to concentrate their efforts with far greater striking power. Bombing raids consequently had a devastating effect on remaining Axis installations and squadron strength, demonstrated by a series of attacks on Sfax and K.41 airfields in early April which reduced the Italian 16 Gruppo to only four operational aircraft, two of which soon departed for Sciacca in Sicily.¹⁹⁷ They would find little shelter there however, as Sicilian airfields and other targets were also heavily engaged, with raids on Bari and Grosseto, the first on 20 April, claiming to have destroyed 107 aircraft and damaged 46, while the latter put the Luftwaffe torpedo-bomber base and school there out of action for months.¹⁹⁸ Although invariably claims were exaggerated, the constant stream of losses suffered by the Luftwaffe and Regia Aeronautica nevertheless severely curtailed any remaining Axis aspirations to contesting the Tunisian

¹⁹³ Ibid, p. 525.

¹⁹⁴ NARA: RG 319, 'Commander-in-Chief's Dispatch'.

¹⁹⁵ TNA: AIR 24/473, 'Administration, Signals, Operations Records', 1943.

¹⁹⁶ Ibid.

¹⁹⁷ Shores et al., p 436.

¹⁹⁸ Ehlers, p. 283.

airspace, a task made even harder after 15 April, as damaged aircraft had to be returned to Sicily to receive repairs.¹⁹⁹ These aggressive strikes were also paired with a vigorous campaign against Axis air sorties, as Allied fighter squadrons now routinely assailed any enemy aircraft that dared appear over Tunisia. Between 1 April and 11 May, NATAF units claimed some 431 enemy aircraft destroyed, an additional 83 rated probable, and 277 more damaged, for a loss of 192 of their own.²⁰⁰ Such a rate was immensely favourable to the Allies, who already possessed a significant edge in numbers, but totally untenable for the Axis, a collapse visible in the steady dwindling of Axis fighter numbers active over Tunisia and the equipment of ground crews to serve as reserve infantry.²⁰¹

A key target in this struggle were the frequent transport flights undertaken to try and alleviate the supply crisis afflicting Army Group Afrika, as not only did their destruction contribute towards interdiction efforts, the vulnerability of the transports also lured Luftwaffe escort fighters into battle. Operation Flax, a concerted effort against these flights, opened on 5 April, combining ground strikes at terminal aerodromes with interception of the air convoys themselves. Actions on the first day included an aerial melee between P-38 Lightnings and an escorted transport group, as well as attacks on four aerodromes, resulting in an estimated 68 enemy transport destructions among other enemy air casualties.²⁰² Over the following days, a number of similar engagements were engineered by NATAF, as study of enemy methods revealed that most transport sorties were launched in a routine pattern, with between 100 and 250 sorties per day.²⁰³ The use of a system of overlapping fighter patrols during this window of opportunity enabled Allied fighters to intercept and engage these flights consistently and in sufficient numbers to deal substantial damage.²⁰⁴ These cost the Axis a steady stream of lost aircraft, two engagements on 10 and 11 April bringing down another 22 transports, but the most telling blows were inflicted on 18 and 22 April, which brought Flax to its conclusion.²⁰⁵ On 18 April, in the 'Palm Sunday Massacre', P-40s and Spitfires engaged over 100 enemy transports,

¹⁹⁹ Playfair, p. 400.

²⁰⁰ TNA: AIR 23/1710, 'Report on operations in the Tunisian campaign 18 Feb - 12 May', 1943.

²⁰¹ IWM: EDS Appreciation 12, Chapter 8.

²⁰² TNA: AIR 8/1071, 'Campaign in Tunisia Part II'.

²⁰³ Ibid; TNA: AIR 40/2080, 'GAF Air Transport in Tunisian Campaign, Dec 1942 - May 1943', 1943.

²⁰⁴ AIR 8/1071, 'Campaign in Tunisia Part II'.

²⁰⁵ Rein, *The North African Air Campaign*, p. 128.

destroying 32, damaging 19 others, and wrecking 16 fighter escorts, while on 22 April Allied fighters shot down 16 of 21 of the massive Me-323 'Gigant' transports.²⁰⁶ This proved to be the final straw for an over-stretched Luftwaffe transport service, which had suffered crippling losses, Allied estimates placing the total at 432 transports destroyed since 5 April, at a cost of only 35 aircraft of their own.²⁰⁷ Goring now consequently forbade any further transport flights to North Africa, and while Kesselring was eventually able to persuade him to resume night-time supply runs on a much-reduced scale, the damage had been done; the Axis' air transport link to Tunisia had been all but severed.²⁰⁸

The denial of airspace to the Axis consequently gave Allied forces on land and sea a great deal more room to manoeuvre, at sea enabling the Mediterranean Fleet, aided by NACAF, to step up interdiction efforts in the Tunisian shipping lanes. Admiral Cunningham noted that during this final phase, 'the German air effort over the sea was a waning shadow of what it had been in the days of Greece and Crete', and indeed had declined in strength so much that his vessels could operate with near-impunity.²⁰⁹ While sinkings remained largely consistent throughout April, with the loss of 42% of all cargo during passage and the destruction of 33 vessels of over 500 GRT, to a combined total of 116,000 tons, this percentile rose sharply to 77% in May, with the loss of 39 ships of 500 GRT for a total of 112,000 tons.²¹⁰ Part of this rise in destructions was owed to the greatly increased sortie rate put forth by NACAF, with 2404 aerial sorties launched against ships at sea during April and 4466 from 1-13 May, an exponential growth that accounts for why 90% of vessels destroyed during May were sunk due to aerial action.²¹¹ The naval forces also played their part in securing the ring around Tunisia, as Cunningham initiated Operation Retribution in early May, which saw the deployment of standing patrols off the coast of Tunisia to completely blockade all naval traffic.²¹² Establishment of these patrol areas was conducted in cooperation with the Air C-in-C and stood five miles from the coast, beyond which Allied airmen were given free rein to attack at will.²¹³ The

²⁰⁶ Ibid, p. 128.

²⁰⁷ Richards and Saunders, *The Royal Air Force Vol. 2*, p. 269.

²⁰⁸ TNA: AIR 20/5535, 'Report on operations of North African Tactical Air Force'.

²⁰⁹ Cunningham, pp. 528-29.

²¹⁰ Playfair, p. 417.

²¹¹ TNA: ADM 219/172, 'Anti-shipping operations in the Mediterranean'.

²¹² TNA: WO 204/1393, 'Operations in Tunisia; Initial Occupation and Organisation'.

²¹³ *The Cunningham Papers Vol. II*, pp. 99-100.

creation of this cordon with the signal 'sink, burn and destroy. Let nothing pass', put this instruction into clear practice, preventing any and all shipping into, or out of, Tunisia within the final days of the campaign, the capture of a thousand prisoners from 'motor, sailing and rowing boats, rafts and even rubber dinghys' testament to the thoroughness of the Mediterranean Fleet.²¹⁴ Much like the skies above, the seas surrounding Tunisia now belonged firmly to the Allies.

The securing of these battlefield domains left only the campaign on Tunisian soil to bring to a close, with Allied airpower operating in close concert with the ground forces to finally liquidate the bridgehead. This was achieved with no small amount of vigour, the squadrons under NATAF putting forth their largest effort yet in both tactical and close air support roles. Between the beginning of April and 11 May, NATAF launched some 37,500 sorties of all kinds, a significant increase over previous phases of the campaign, and this weight of airpower proved invaluable in assisting the advance of 18th Army Group.²¹⁵ Following the capture of Mareth and the commencement of Scipio, 8th Army's march up the coast was made far smoother by the fighters and bombers of the WDAF, which between 20 March and 16 April claimed the destruction of 31 tanks and 473 transport vehicles, with a further 899 damaged, for the loss or damage of only 50 aircraft.²¹⁶ Interventions by Allied strike aircraft made the Axis tactic of trading space for time a highly costly one, compounding Allied tactical victories by exacting a steady toll of retreating Axis forces. 1st Italian Army's withdrawal from Akarit to Enfidaville, for example, received considerable attention from both NATAF and NASAF, the latter dispatching Wellington bombers on 135 sorties to drop 266 tons of bombs on Messe's fleeing troops between 6 and 9 April.²¹⁷

Direct interventions into the land battle by Allied airpower were often equally devastating, best displayed in Strike, which deployed a greater weight of air support than any other operation thus far, NATAF sending up 2,154 aerial sorties over the course of 6 May alone.²¹⁸ Aerial support was arranged on a flexible basis, beginning with night bombers, assisted by First Army 'landmarks' comprising rows

²¹⁴ Cunningham, pp. 529-30.

²¹⁵ TNA: AIR 23/1710, 'Report on operations in the Tunisian campaign 18 Feb - 12 May'.

²¹⁶ TNA: WO 193/679, 'Air Requirements of the Army'.

²¹⁷ Playfair, p. 392.

²¹⁸ TNA: AIR 23/1710, 'Report on operations in the Tunisian campaign 18 Feb - 12 May'

of flares 100 yards deep in the shape of a capital letter, pounding Axis rear line positions and communications.²¹⁹ Further waves of bombers then contributed to the creeping barrage, before moving on to add to the destruction wrought on Axis defences, with 18 bombers arriving every two minutes over a period of four hours, starting at 0530.²²⁰ Finally, as the battle moved into the breakout phase, aerial support transitioned into a free-roaming stance, with squadrons of fighters and fighter-bombers striking targets of opportunity along the line of advance, Allied leading elements burning yellow smoke to mark their own positions.²²¹ A call for support from First Army also saw the dispatch of 108 bombers to attack St Cyprien, where units of 5. Panzerarmee were attempting to organise a new defensive position, the prompt assembly and deployment of which merely underscores the level of capability and flexibility developed by NAAF at this time.²²² Although, as 242 Group recorded ‘it is apparent that little material damage was done during these heavy and concentrated attacks’, this was amply compensated for, as ‘the moral effect, however, both on our own troops and the enemies, was terrific and contributed greatly to the successful result of the battle’.²²³

The capture of Tunis and Bizerte effectively marked the end of organised Axis resistance in Tunisia. The quiet capitulation of much of the remaining Axis forces, many of them ignoring the high command’s orders to fight to the last man, stood in contrast to the spectacular intensity of the campaign’s final operations.²²⁴ Major Scott, who was present as many of these formations marched into captivity, remarked that it left: ‘rather a feeling of anti-climax: it is hard to believe that the North African campaign is over and the whole enemy army destroyed or captured’.²²⁵ The subdued nature of the Axis surrender may have helped contribute to the enduring perception that the Tunisian Campaign was always a lost cause for the Axis, as the crumbling nature of their fighting power and increasing preponderance of Allied materiel has often lent the campaign’s closing acts the feeling of a foregone conclusion. To ascribe such a fatalistic trajectory to the

²¹⁹ TNA: AIR 41/50, ‘The Middle East Campaigns; Vol IV’.

²²⁰ Ibid.

²²¹ TNA: AIR 23/7434, ‘Report on 242 Group Support of 1st Army Feb - June 43’.

²²² TNA: AIR 41/50, ‘The Middle East Campaigns; Vol IV’.

²²³ TNA: AIR 23/7434, ‘Report on 242 Group Support of 1st Army Feb - June 43’.

²²⁴ TNA: WO 106/2730, ‘Tunisia; miscellaneous reports’.

²²⁵ TNA: WO 201/607, ‘9th Lancers, personal accounts of Tunisian campaign by Major J Scott’.

operations leading to Allied victory is however to ignore the often-ferocious resistance put forth by Army Group Afrika, as Axis troops fought to hold every scrap of ground possible, while strenuous efforts were made to try and sustain them. Instead, the erosion of the Axis position can only be attributed to the cumulative impacts of Allied and Axis decision-making, and in particular, the processes of institutional learning undergone and indeed still ongoing within AFHQ and across the breadth of its subordinate formations and organisations. Although by the final weeks of the Tunisian Campaign, the drive for Allied adaptation had somewhat lessened in intensity, improvisations continued to be made at all levels of command, driven predominantly in a decentralised manner by officers and men by now thoroughly experienced with the challenges posed by their own professions, the local environment, and the enemy they were facing. Much of this later learning took the form of unifying those lessons learned in previous phases, synergising adaptations made to organisations, methods, and equipment in order to maximise operational efficacy. Such an outlook was visible at the highest levels of Allied command, where it formed the driving force behind the long-term strategy that had developed and then subsequently leveraged, those potential assets at AFHQ's disposal, utilising a reorganised command structure to effectively coordinate ground, naval, and air services in execution of a unified operational concept. A reorganised air command was employed to wrest control of the skies from the Luftwaffe and Regia Aeronautica and, in conjunction with Allied naval forces, conduct a simultaneous offensive against Axis supply lines. The conjunction of these strategies thus provided Allied ground forces with sufficiently favourable conditions to attain an ascendancy over Army Group Afrika, which they combined with material and numerical advantages, overhauled tactical methods built on experience, improved training, and the integration of new technology to offset the defensive advantages enjoyed by Axis forces. So armed, 18th Army Group was thus in a position to whittle away at the bridgehead until it could deliver a decisive blow, rupturing the Axis frontline and bringing the Tunisian Campaign to a swift and timely end, allowing General Alexander to report to the Prime Minister:

Sir, it is my duty to report that the Tunisian Campaign is over. All enemy resistance has ceased. We are masters of the North African shores.²²⁶

²²⁶ Alexander, 'Despatch', p. 88.

Conclusion

The final surrender of Army Group Afrika was taken from von Arnim at Sainte Marie-du-Zit on 12 May, followed by that of Messe's 1st Italian Army at Enfidaville a day later. Their forfeit, two days ahead of General Alexander's forecast schedule, marked the conclusion of the Tunisian Campaign, as well as three years of fighting in North Africa. Victory for the Allies finally put an end to the Axis threat that had loomed over the Mediterranean basin since the Italian declaration of war in June 1940 and tipped the balance of power in the region firmly in the Allies' favour. No clearer sign of this shift in control can be found in the reopening of the shipping lanes between Suez and Gibraltar, the first flotilla passing through the straits on 17 May and arriving safely in Alexandria nine days later.¹ The clearance of the Mediterranean, Roskill estimates, saved the Allies roughly a million tons of shipping capacity which, alongside the 500,000 made available by the former Vichy French and the freeing up of warships and maritime aircraft, was invaluable to the development of the Allies' future strategy.² The Axis' loss of their foothold on the African continent also exposed their southern flank to Allied invasion, Tunisia serving as a springboard for actions across the western Mediterranean. The Allies' next major offensive, Operation Husky, which commenced in July, brought about the capture of Sicily and the collapse of Mussolini's regime within little more than a month, forcing Germany to shoulder virtually the entire burden of the Axis defence in Europe.³ Thus, by striking at the periphery of Axis rule the campaign in Northwest Africa served as a vital stepping-stone for later, more ambitious ventures, eroding Axis strength ahead of the Allies' much anticipated return to Europe.

Indeed, Allied forces were able to inflict substantial losses on the Axis over the course of the campaign. Although estimates vary, AFHQ casualty counts from 24 May suggest that German and Italian forces suffered 56,400 casualties killed or wounded during the fighting, at a cost of 68,303 killed, wounded and missing for the combined British, French and American forces.⁴ At first glance, this might appear to be a relatively favourable exchange for the Axis, but to this must also be added the

¹ NARA: RG 319, 'Commander-in-Chief's Dispatch'.

² Roskill, p. 443.

³ Black, p. 159.

⁴ TNA: AIR 8/1071, 'Campaign in Tunisia, Part II'.

estimated total of 266,600 unwounded prisoners, over half of them German, that resulted largely from the unconditional surrender of Army Group Afrika.⁵ Axis manpower losses therefore reached the staggering total of over 320,000 men, a defeat similar in magnitude to that of Stalingrad, a resemblance not lost on some German soldiers, who bestowed the campaign with the ironic moniker of ‘Tunisgrad’.⁶ In both cases the loss of manpower was devastating to not only the German Army, accelerating the already horrendous rates of attrition it was suffering, but also the Italian Army, for which the destruction of the Italian 8th Army at Stalingrad and 1st Italian Army in Tunisia were but the culmination of a litany of disasters that all but destroyed Italian military strength.⁷

Axis losses in manpower were further compounded by the materiel damage wrought by the demands of the campaign. Between 8 November 1942 and 13 May 1943, Germany dispatched 574 tanks, 10,238 vehicles and 1,295 artillery pieces to Tunisia, as well as nearly 250,000 tons of fuel, ammunition and other supplies, all of which was eventually lost.⁸ Added to these losses was the remaining material strength of Rommel’s German-Italian Panzerarmee, the German components of which, on crossing into Tunisia, possessed 129 tanks, 78 scout cars, 392 guns, 1,522 machine guns and mortars, and 7,907 vehicles of all types, including a handful that arrived, along with 27,000 further tons of supplies, in Libyan ports during the course of their retreat.⁹ The Italian Army also suffered terrible wastage in equipment; on retreat into Tunisia, the German-Italian Panzerarmee’s Italian formations disposed of 44 tanks, 40 scout cars, 106 mortars, and 855 guns, with an indeterminate amount of MT possibly pooled across the Panzerarmee.¹⁰ Units already in Tunisia added further to this total, with Mareth Command and 30th Corps supplying an additional 391 guns, 600 mortars and machine guns, and 5 companies of self-propelled anti-tank guns.¹¹ The arrival of the Centauro division and a handful of anti-tank units contributed the bulk of Italian armour losses, adding roughly 100 further tanks and a

⁵ Ibid.

⁶ Ibid.

⁷ Daniel Todman, *Britain’s War: A New World, 1942-1947* (Oxford: Oxford University Press, 2020), p. 335.

⁸ Howe, pp. 682-83.

⁹ IWM: EDS Appreciation 12, ch.8; Howe, p. 682.

¹⁰ IWM: EDS Appreciation 12, ch.5.

¹¹ Ibid.

similar total of Semovente assault guns to the tally of Italian equipment eventually lost in the bridgehead.¹²

To these were also added Axis air and naval losses, which reached similarly shattering proportions. The demands of the Tunisian 'route of death' exacted a devastating toll from both the Regia Marina and the Italian Merchant Marine, which had borne the brunt of the desperate effort to supply Army Group Afrika.¹³ As a result they suffered the majority of Axis losses, which totalled 170 merchant ships of over 500 GRT and 506 vessels, including lighters, e-boats, submarines, and surface warships overall.¹⁴ This attrition simply could not be sustained, as neither Italian nor German shipbuilding programs, short of resources, workers, and most importantly time, could keep up with the alarming rate of destructions achieved by the Allied interdiction campaign.¹⁵ Such was also the case for the Luftwaffe and Regia Aeronautica, who by the final week of the campaign had lost a combined 1,696 aircraft in combat and a further 633 captured on the ground, giving a total of 2,329 losses to a combined Allied loss of just 657.¹⁶ Loss rates for both forces were considerably higher than in any other theatre, and proved a continual drain on resources, with the Luftwaffe needing to divert 40% of new aircraft production to maintaining unit establishments, nearly double the relative proportion of forces deployed to the Mediterranean.¹⁷ These were assets that the Luftwaffe could scarcely afford to lose; as the Allied bombing campaign and Soviet airpower began to be felt more strongly, losses in the Mediterranean, including the Luftwaffe's invaluable air transport fleet, started straining Axis airpower beyond its limits.

Taken thusly, these cumulative impacts are more than enough to conclude that the Tunisian Campaign made an important contribution towards final Allied victory. However, as this thesis has shown, the Tunisian Campaign's true importance lay in its value as a learning experience for the Anglo-American alliance. What can be seen, tracked across each of its five chapters, is a continual evolution of Allied methods of command, logistical organisation, operational technique, and interservice

¹² Andrea Saccoman, *La Guerra in Africa Settentrionale* (Milan: Hobby & Work, 2007), pp. 87-90.

¹³ Hammond, p. 160.

¹⁴ Levine, p. 196.

¹⁵ Hammond, pp. 166-69.

¹⁶ Ehlers, p. 286.

¹⁷ O'Brien, pp. 290-92; Ehlers, p. 286.

cooperation while on campaign in Tunisia, thus lending credence to previously unsubstantiated claims, both contemporary and within the historiography, that ‘it has been an entirely new kind of warfare in Tunisia. New tactics, new weapons, new armies, and new terrain’.¹⁸ Beginning with a blank slate prior to Operation Torch, the Allies put together an innovative and indeed unprecedented combined war effort to tackle the most ambitious amphibious invasion up to that point ever attempted. A new and pioneering integrated command structure in AFHQ was installed to oversee this extraordinary effort, while advancements in technology and technique were applied to help guarantee the operation’s success. However, as with any novel experiment, there were oversights and flaws within the Allies’ new organisation, with shortcomings in planning, inexperience, and confusion at the command level working to frustrate attempts to capture Tunis and halt the flow of Axis reinforcements into Tunisia. Yet while stalemated as 1943 began, and hard pressed by Rommel and von Arnim through the early months of the year, AFHQ worked to rebuild and reform the Allied effort in North Africa, eventually allowing Allied forces to overpower and destroy Army Group Afrika in early May.

The key to this turnaround, as this thesis has shown, was the process of learning undergone by Allied forces, as AFHQ was consistently able to acquire, adapt, apply, and disseminate lessons learned during combat in Tunisia to improve its operational efficacy and hence obtain victory over Axis forces. This learning process occurred in a number of ways and manifested in reforms and initiatives as varied as the wholesale restructuring of AFHQ, the abandonment of standing air patrols, and the construction of bulk tankage and flexible fuel pipelines. However, while diverse in cause and resolution, these reforms can all be seen to have derived from the same process of learning which, returning to Boyd’s OODA loop, forms a cycle of four stages, in which the corporate body or organisation observes a problem, analyses the issue and its root causes, decides a course of action, and then executes this plan. Although somewhat simplistic, this Observe-Orient-Decide-Act loop provides a broad framework for the understanding of corporate learning, and in its application to the Tunisian Campaign, has enabled this thesis to gain some insight into the mechanics of the learning process. As such, it is prudent now to consider some of the wider implications, and discuss the motivating factors in initiating

¹⁸ TNA: WO 204/5430, ‘Lessons of the Tunisian Campaign, Newspaper Cuttings’.

change, how the Allies considered these, the implementation of reform, and the resultant consequences, and reflect on what these mean for understanding corporate learning more generally.

Firstly, we must consider how a cycle of learning is initiated, and the galvanising forces that impel an organisation to contemplate reform. For AFHQ, these motivators originated from a number of sources, as shortcomings within the Allied effort were identified at different levels of seniority and varied in the potency of the reaction they elicited. Failures resulting from enemy action for example, often provoked the most rapid of responses from Allied and Axis forces, as the shock and trauma inflicted by battlefield reverses aided in overcoming institutional inertia. The reverses experienced during Operation Eilbote for example, enabled Eisenhower to push through adjustments to frontline command arrangements, the defeat of French forces aiding in overruling previous objections to their subordination under General Anderson's command. Similarly, although ultimately too late, the dispatch of Admiral Donitz to Rome to aid in the organisation of convoy traffic represents a decisive Axis response to concerns over the tightening Allied blockade, which had become so severe as to merit Hitler's personal intervention. The latter's influence could also form its own catalyst for change, the influence of the CCoS or the Axis dictators, Comando Supremo, and OKW, placing pressure on commanders in-theatre to adjust their operational approach. The CCoS' concerns about Spanish intervention for example, proved both a decisive force for change in the Torch planning process and a noteworthy exemplar of a negative influence on learning, as the Allied command's misplaced apprehensions forced the Torch planners into preparing countermeasures that ultimately limited the potential of the landings. Internal factors could also provide the impulse to change, as organisational inefficiencies, or failure at a specific objective often aided with the identification of areas in which reform could be effected. Failure to capture Tunis during the winter phase of operations proved to be a powerful motivator for AFHQ, as their inability to conclude the campaign forced the Allies to reflect on their failings, many of which had been revealed during the course of the frantic and messy actions that characterised November and December. To this could also be added environmental factors, often relational to internal failings, but which reflected the influence of the theatre upon operational activity, a prime example in French North Africa being the limited

infrastructure with which the Allies had to contend. The restrictions placed on logistical movement and aerial activity by poor roads and airfields, served to encourage actions towards rectifying these, often in parallel to attempts to improve logistical organisation or operational efficiency overall.

These catalysts directly influenced the form of response it generated from Allied and Axis forces, as different organisational strata analysed and reacted to challenges in their own unique ways. Often the most clearly defined and sweeping of these were top-down responses, as command organisations directly recognised problems and analysed means of overcoming them. In their most formalised incarnation, such analysis could be conducted through official studies, such as AFHQ's November paper on 'Problems Connected with Development of Allied Airpower', or the appreciations of the declining position authored by Army Group Afrika's Chief of Staff, Alfred Gause.¹⁹ Such studies provided detailed and thorough attempts to grapple with problems sometimes concerning the entire war effort, identifying the root causes of issues and outlining potential solutions and their possible implementation. In a more informal manner, orientation around a problem could occur from the bottom of an organisation upwards. This more organic style of learning often resulted from a process of trial and error, as individual units or formations gained experience in the field and reflected upon it, disseminating these lessons across the army through official reports and informally by cooperation and inter-communication. Such grassroots initiatives could vary widely in effect, be it adjustments to patrol warfare methodology and minor tactics, or sweeping conclusions eventually incorporated into official doctrine. The after-action reports of the British 4th Division for example, were fed back to the Directorate of Military Training, who promptly cancelled the Mixed Division project in its entirety due to the difficulties the 4th encountered in Tunisia.

Nor was the creation of knowledge limited to initiatives developed within the Allied and Axis forces fighting in the Tunisian theatre, as change could also be initiated from outside this closed system. Most commonly, this took the form of new technology or organisations, created and refined at home before being dispatched to the combat zone for field-testing and integration into existing forces. Perhaps more

¹⁹ TNA: AIR 23/6561, 'Problems Connected with Development of Allied Airpower'; IWM: EDS Appreciation 12, Ch.8.

than most theatres, Tunisia saw an abundance of home innovations receiving their first field employments, with the AGRA, M10 Tank Destroyer, and M1 Bazooka anti-tank rocket launcher providing potent examples of equipment and organisations incorporated into Allied forces during the campaign. Even AFHQ could be considered to belong to this category of learning, due to its formation by the CCoS, taking its place alongside the plethora of other innovations, from landing craft to the employment of paratroopers, put in place for Torch. However, while change often resulted from the careful analysis of a real or perceived problem, it could also occur in a more arbitrary fashion, as psychological and cultural predispositions, or external interference, encouraged the drawing of sub-optimal conclusions by forces in Tunisia. The former can be seen among units of US II Corps in the aftermath of Kasserine, as while the experience rightfully discouraged American units, especially armour, from over-extending and relying on brute force, in the short term the trauma inflicted by the battle led to over-caution and an unwillingness to engage the enemy closely. Similar difficulties in analysis could also result from overlapping problems within the learning process, as conflicting priorities and limited resources prevented certain problems from receiving scrutiny. AFHQ's preoccupation with logistical and command level issues during winter for example, served to obfuscate difficulties encountered on the tactical level, as Anderson's First Army struggled as much against mud and poor communications as it did in dislodging von Arnim's men from their positions in front of Tunis.

The various factors underpinning the response of Allied and Axis organisations often directly determined the form and function of the changes that were implemented. These could vary dramatically, from organisational level reforms to structures such as AFHQ, to methodological changes such as the adaptation of infantry tactics and operational strategy, and material developments such as the arrival of new divisions and military hardware. Yet perhaps more important were the ways and means by which changes were implemented. Responses from senior command organisations often resulted in far-reaching directives, instituting fundamental overhauls of official systems with long-term and permanent consequences, thereby reflecting the institutional power wielded by higher strata of the military organisation. The formation of the SoS, NATOUSA, reflects this type of decision-making, as AFHQ formally empowered this theatre-wide organisational

body to take charge of all logistical matters pertaining to American troops, thereby relieving pressure on AFHQ's own administrative staffs. Yet while potentially seismic in impact, the introduction of formalised revisions was frequently a cumbersome process, requiring time and institutional strength to implement. Most small-scale decision-making therefore manifested through tacit arrangements and short-term initiatives, which provided flexible responses to immediate problems, such as Eisenhower's temporary appointment of Spaatz to the command of Allied air forces in late December. These seldom resolved problems in the long-term however, as such ad hoc measures were often predicated on one-time expenditures of material or as stopgaps which served as a prelude to wider, more properly instituted reforms.

The intermeshing of such different types of adaptation was therefore crucial to determining the permanence, efficacy, and scope of corporate learning, and the means by which this was handled can be directly linked to institutional mindsets and inertia. Early in the campaign, Allied forces predominantly adapted ad-hoc, short term changes aimed at solving crucial operational issues, a conscious decision derived from AFHQ's choice to focus on the immediate capture of Tunis. Key problems afflicting Allied forces, such as poor communications and ineffectual command arrangements, were thus deliberately subordinated to overall operational needs, as highlighted by Eisenhower's comments that attempts to gain Tunis should not be compromised 'by deliberate study' of potential reforms to the Allied air command.²⁰ This method of extemporisation effectively offset the impact of serious operational problems in the short term, in the hopes that long-term solutions could be developed in the aftermath of a successful campaign, but such hopes were dashed when Anderson's last-ditch offensive petered out atop Longstop Hill on Christmas Day. The Allies therefore faced a number of daunting challenges as 1943 opened, but ultimately this reverse was just the impetus needed to encourage a change in mindset at AFHQ, overcoming the corporate inertia that prevented the implementation of thoroughgoing reform. With it evident that no amount of ad hoc problem solving could surmount the challenges Allied forces now faced, AFHQ was obliged to change its outlook, recognising that its short-term, extemporising approach to operations was no longer viable.

²⁰ TNA: WO 193/843, 'Operations Phase I: Part II'.

To do so however, required foundational organisational change, the most important aspect of which was the structural reform of AFHQ, as the fragmented nature of the Allied command structure not only hampered frontline operations, but actively inhibited the efficacy and extent of attempts at reform. Such a task arguably exceeded AFHQ's own authority, but Eisenhower circumvented this problem by appealing above AFHQ to the Allied supreme leadership, presenting the case for reform to the CCoS, as well as both Churchill and Roosevelt, at the Casablanca Conference. Their assent provided the institutional authority necessary to implement paradigm-shifting change, creating a template for a new and improved Allied command organisation that unified authority under one supreme commander whilst still retaining a strong degree of flexibility and responsiveness. The rationalisation of the chain of command and the improvement of both lateral and vertical intercommunication between strata of leadership, enabled the fostering of a learning culture not just in Algiers, but across the entire Allied war effort in North Africa, as problems could be recognised more quickly and solutions to them developed and implemented with greater efficacy. Although in the short term the effort expended in reorganising Allied forces cost them a number of unfortunate setbacks, culminating at Kasserine Pass, AFHQ had, by February, laid foundations for a more resilient and evolving Allied effort that set it on firm footing for the continuation of the campaign. From March onwards, Allied forces continued to evolve their methods of fighting, albeit in a more organised manner than before, adjusting tactics and organisational styles to better suit the task at hand. Early ad-hoc adaptations were built upon with solid foundations of reform that enabled the Allies to continue the campaign in Tunisia with renewed confidence, and ultimately drive their opponents from Tunisia.

Such was not the case for Axis forces however, who proved chronically unable to adapt their own organisations in a similar manner in order to match pace with the Allies. The centralisation of authority in organisations outside of Tunisia, who were often preoccupied with strategic problems on other fronts, slowed the development of effective responses to problems and indeed sometimes resulted in the drawing of incorrect conclusions entirely. The involvement of Hitler and Mussolini in key decision-making processes did initially expedite the formulation of strategy, but their continued interference as the campaign wore on frequently confounded their generals and compromised Axis defensive strategy, with their stand

fast orders ultimately leading to the complete destruction of Army Group Afrika. The influence of the two dictators was but a symptom of a wider issue though, as dysfunction and personal conflict pervaded the entire Axis chain of command. Despite nominally heading a joint effort, OB Sud and Comando Supremo rarely acted in concert, and these fractious relations were often replicated in theatre as well, producing a disjointed relationship between each link in the command chain. This had an ossifying effect on the flexibility of the Axis effort in Tunisia, as a lack of adequate cooperation between theatre-level and frontline commands meant that the formulation of a unified response to problems was near impossible. Instead, Axis forces found themselves locked into a sclerotic and inflexible mindset, in which the short-term defence of the bridgehead, and any limited gains that could be made therein, superseded any substantive efforts at reform. Directives from above were aimed at micromanaging the frontline situation, instead of addressing the root problems underlying the crumbling Tunisian front, problems which the Axis leadership understood, but could never develop the institutional cohesion to address. It was only as the situation slid towards disaster that serious attempts were made to overcome the many problems plaguing the Axis bridgehead, but by then these were far too late to save Army Group Afrika.

It is important to note, however, that these learning cultures were by no means monolithic. Although in many respects definitive of the means and impact by which learning took place, the institutional character pervading the Allied and Axis causes in Tunisia was but one factor influencing the scope of corporate learning, which could also vary between the national groups within each coalition, as well as between the different military services and formations comprising it. Thus, although in terms of systemic learning the Allies outstripped the Axis in almost every category, in some conceptual areas Allied operational practice saw comparatively little change, either due to entrenched institutional cultures, lack of impetus, or other such factors. At sea for example, although progress was made in combining air and naval efforts and refining methods for amphibious landings, the Allies' largely unchallenged naval hegemony meant that the Royal Navy and US Navy saw little need to deviate from existing practice. What refinements were made were hence comparatively limited, and largely material or situational innovations, such as the deployment of motor torpedo boats to sweep the Tunisian coastline, or the decision

to 'ladder' the Axis mine belts with the Allies' own charges, adaptations which improved efficiency but had little enduring relevance. By contrast, those services that did learn the most often had often possessed glaring flaws in their operational technique and doctrine or enjoyed leadership keen to embrace new ideas and innovations. Such was the case for the Allied air forces, which arguably learned the most out of any of the three services, in part due to the parlous state in which they arrived in Tunisia, with no use having been made of experience from the Western Desert to refine home doctrine or improve their organisation.²¹ This gave the men of 12th Air Force and the EAC a substantial amount of ground to cover to make up for their deficiencies, a process exacerbated by the consistent pressure placed on them by the Luftwaffe and Regia Aeronautica, and eventually accelerated by the dissemination of ideas from the WDAF and the installation of officers from the latter into senior command roles. These impetuses provided the context for rapid, iterative learning, as the air forces under AFHQ utilised external knowledge to enhance their operations and eventually build on them more fully, utilising the effective communicative structure provided by the formation of MAC to carve out new and innovative approaches to air combat.

Between these two poles lies the learning undertaken by Allied ground forces, which while not comparatively limited, like the navy's, or fundamental and thoroughgoing, like the air forces', was still substantive, combining an affirmation of existing doctrine alongside the incorporation of new lessons and equipment. In the former case, Tunisia demonstrated that many of the central doctrinal concepts developed by both British and American forces at home were fundamentally sound, holding up to the test of a hard-fought campaign in varied conditions. This provided a solid core upon which the Allies could build, expanding upon that conceptual base to confront new operational challenges or develop counters to existing Axis tactics, by cultivating skills like patrol warfare and night attacks, and integrating new technologies into existing practice. Although some of these innovations were universal, with British and American forces both learning to tackle Tunisia's dramatic terrain, some adaptations remained largely confined to their respective nation, a cleavage common to Allied learning in all three services. Although it is impossible to say which nation learned more, some observations about the types of

²¹ TNA: AIR 41/50, 'The Middle East Campaigns; Vol IV'.

learning each alliance partner undertook can be made. For the British, many of the lessons they derived from the campaign were found to reaffirm those learned in other theatres, particularly with reference to the Fall of France and the Western Desert, or developed at home in the interim. The benefits of realistic training and effective integration of supporting arms were found to be invaluable in preparing British troops to face robust Axis hilltop defences, with the Royal Artillery proving to be a frequently decisive asset on both the attack and the defence, while lessons in maintenance and organisation from the WDAF helped EAC find its feet in Tunisia. In-theatre adaptations hence largely built on these firm foundations with incremental evolutions, adapting organisations, and learning to utilise new technologies and ideas, such as AOPs and Churchill tanks, within these frameworks to achieve maximum effect. By contrast, if the British experience of Tunisia was akin to honing a blade, the American experience was like forging one. While much of the raw material was already in the possession of US forces, with a clearly defined doctrine, motivated troops, and effective equipment, these constituent parts needed to be hammered into a cohesive whole in-theatre. This entailed not only the creation of the administrative machinery necessary to control US forces, exemplified by the formation of NATOUSA and SoS Base Sections, but also the acquisition of the experience necessary to refine largely untested US methods and blood their green divisions. Trial by fire in operations such as Eilbote, Fruhlingswind, and El Guettar provided US forces with the perspective needed to iron out flaws in their methodology, a progression easily visible in the improving battlefield performance of American troops, the eventual triumphant entry of II Corps into Bizerte serving testament to their rapid growth.

Leaving aside the variable learning rates of the constituent elements of AFHQ, it was ultimately the overall approach to learning taken by the Allies and Axis that was to shape the Tunisian Campaign as a whole. Early oversights in the Torch planning provided the Axis with a window to intervene in Tunisia, forcing AFHQ into a desperate contest of strength against an opponent with superior internal supply lines, the result of this extemporisation producing a stalemate that left both sides exhausted at the beginning of the new year. However, following this watershed the two forces began to diverge in approach, as the Allies embraced a more long-term strategy whilst the Axis continued to seek short-term advantage. This allowed

the latter to claim the upper hand briefly, leveraging a higher rate of reinforcement to gain limited tactical victories, in operations such as Eilbote, and later seek to inflict more telling blows in more ambitious ventures such as Frühlingswind and Morgenluft. However, when this gambit failed, Axis forces were left in a precarious position, as their manpower in Tunisia had outgrown their capability to supply, their command structure was deeply unstable, and their supply lines were under increasing threat from Allied air and naval efforts. In the meantime, AFHQ had been able to thoroughly reorganise itself, entrenching a robust learning culture at the heart of their organisation and beginning to develop a methodological and material ascendancy over their opponents. These two opposing trajectories made themselves felt slowly at first, as the Axis' final offensives were turned back, before AFHQ began a steady push towards final victory, with a gathering pace that culminated in the wholesale destruction of Army Group Afrika.

It is likely, as von Arnim observed to Westphal in late April, that this result was inevitable.²² Once Rommel's attempt to achieve a decisive victory at Kasserine had been thwarted, the campaign was ultimately destined to become one of ruthless attrition as, trapped in a pocket of their own making, Axis forces were ground down by an enemy with a far greater ability to supply manpower and material than they could match. However, it is unlikely that the campaign would have concluded quite so swiftly, or in so decisive a manner had the Allies not wholeheartedly embraced those lessons taught to them early on in the conflict following the failure of Operation Torch and built from them a robust system of learning that allowed them to not only outnumber but outfight Axis forces in the latter half of the campaign. It is perhaps ironic that had Operation Torch gone according to plan, the Axis would have had little opportunity to intervene in Tunisia, an occurrence which, save for the loss of much of Rommel's retreating army, would have saved them from a shattering defeat. This would have allowed the Axis to husband resources and manpower much needed for the defence of Europe against Allied invasion, instead of pouring them into a slender bridgehead from which there was no retreat, and no foreseeable victory. As it was, the Axis suffered a crippling blow of their own making in Tunisia which delayed Allied invasion by only a scant few months, time bought at the steep price of a quarter of a million men, thousands of tons of invaluable weapons and

²² EDS Appreciation 12, Ch. 8.

equipment, hundreds of ships, and the precarious stability of Mussolini's regime. Nor would the Allies have been so well-prepared for later campaigns had Torch occurred without error, as while the Allies were able to glean some important lessons from the experience of the landings, it was only following the experience of failure in the Rush on Tunis that AFHQ was able to adapt its institutional mindset and truly kickstart the process of learning. Had this not occurred, it is possible that Allied forces would have made their assault on Sicily, or even Normandy, without the benefit of the six months experience they gained in Tunisia, an endeavour likely to have been all the harder for lack of it. While Torch saw some crucial innovations, including the creation of a combined Allied headquarters in AFHQ, much of what the Allies learned during Torch was concerned with getting their forces established on the beach, not beyond it, a distinction made clear in the operation's aftermath and subsequent failure to capture Tunis. It was only after this painful reverse that the Allies were able to learn more integral lessons and develop organisationally, as the campaign in Tunisia challenged Allied capabilities across the board, encouraging growth and adaptation in operational technique, logistical provision, institutional flexibility, and interservice cooperation. These lessons would see the Allies through to claim victory over Axis forces, and in doing so, create the foundation for Allied efforts in the future, forming a corpus of knowledge which could be drawn on as the alliance prepared to take the fight back to the continent.

Indeed, victory in Tunisia, Citino argues, 'would become a model for all later Allied campaigns [...] it did not rely on surprise, complex maneuver, or brilliant generalship', but was rather a lesson on 'turning resources into fighting power'.²³ In this assessment, he was half right, as the Tunisian Campaign saw the Allies begin to articulate a coordinated and developing way of war, a key element of which was the ability to bring their powerful material strengths to bear on an operational and strategic level. This was amply proven over six months of campaigning, beginning with the assembly of the vast Torch invasion armada, an unmatched outpouring of resources even as the U-boat threat reached a critical peak, and which was followed thereafter by an expanding torrent of material as the Allies claimed control of the North African ports and began to develop local infrastructure. AFHQ consequently was able to fight much of the campaign on the back of a comfortable stock of

²³ Citino, p. 105.

logistical largesse, allowing field commanders the luxury of providing extensive material support to the fighting troops, including lavish ammunition expenditures necessary to blunt Axis attacks and shift determined defenders from their positions. However, it would be wrong to assert that this raw power was the sole decisive factor in Allied victory in Tunisia, or the definitive element on which Allied strategy rested, as material strength formed but one pillar of a far more complex and sophisticated operational approach. As this thesis has proven, the Tunisian Campaign saw the construction of an Allied way of war which encompassed far more than just the application of manpower and material. While the Allies did learn lessons on how to turn resources into fighting power, they also learned lessons in every other aspect of warmaking, from the tactical to the strategic level. Overhauls to logistics provision were mirrored by developments in command organisation, evolutions in doctrine, and refinements in interservice cooperation to create a mutually supporting and integrated whole, in which no individual element was held greater than any other, but which combined together to become more than the sum of their parts.

In this way, Citino was perhaps right to claim that the Allies did not rely on concepts like surprise or complex manoeuvre, not because they were absent in Allied warmaking but because the Allies' repertoire encompassed a sufficiently wide array of talents that they were not dependent on any single aspect to secure victory. By the time of Army Group Afrika's surrender, AFHQ possessed a versatile and flexible basis from which the Allies had built their successful campaign. This combined a multi-national, integrated command structure, coordinating the actions of large, well-equipped, and relatively flexible ground forces, backed by lavish quantities of material, furnished by a powerful logistical infrastructure, and supported by a versatile and increasingly dominant air arm, producing a balanced and efficacious style of campaigning able to respond to a range of challenges. These characteristics would go on to define the Allies' archetypal operational approach, not only in Tunisia, but in the campaigns beyond, articulating an Allied way of war that would continue to evolve and grow as the Allies marched towards victory.

Ultimately, each of these hallmark elements found their roots in the developments of the Tunisian Campaign, perhaps the most notable of which was the refinement of inter-Allied command in AFHQ. The innovation of Allied Force

Headquarters for the Torch operation, and its subsequent refinement in Tunisia, saw the construction of a multinational headquarters system that was both flexible and properly integrated, allowing the Anglo-American partnership to truly flourish at both the operational and strategic level. Under the auspice of General Eisenhower, and the adaptive, flexible command structure constructed beneath him, Allied forces were able to rebound from the setbacks that occurred following their inability to capture Tunis, building an effective and well-coordinated campaign on air, sea, and land that brought the Tunisian Campaign to a satisfying conclusion. This success was to ensure that AFHQ remained a perennial part of Allied organisational methodology for the remainder of the Second World War, serving as a template for SHAEF and Southeast Asia Command, and continuing in its oversight of Mediterranean operations into Sicily and Italy. This machinery was operated by an experienced command team who also cut their teeth in the Tunisian theatre. Alongside Eisenhower, who had experienced his first real taste of operational command and properly stepped into the shoes of Supreme Commander, AFHQ saw experienced officers elevated into senior positions that they would retain for the rest of the war. A key example of the latter was the appointment of Arthur Tedder to the command of the MAC, a position he would occupy for the rest of 1943, before moving to take up post as Deputy Supreme Commander in SHAEF.²⁴ Tedder's influence and experience proved invaluable in establishing the direction and cohesion of Allied air forces, an impact that was matched by the addition of other experienced leaders, such as Carl Spaatz and Harold Alexander, to the Allies' pool of senior talent. Similarly, alongside Bernard Montgomery, whose star had continued to rise from El Alamein in Tunisia, the Allies also saw new and talented field commanders such as George Patton and Omar Bradley show their mettle in combat, while those who proved unable to stand the strain, like Lloyd Fredendall, were relieved of their posts and sent home. These commanders would form the backbone of a cadre of experienced officers that would see the Allies successfully through the latter half of the war, holding the most important field commands and presiding over the most decisive operations.

However, while structure and personnel were some of the most visible benefits Allied command derived from the campaign, they were far from the only

²⁴ Orange, *Tedder: Quietly in Command*, pp. 249-51.

ones. The experience of Operation Torch provided the Allies with a great deal of experience that allowed them to refine the process for planning and executing inter-Allied campaigns, a point proven by the rapidity and success with which AFHQ subsequently undertook the invasions of Sicily and Italy. While flaws inevitably remained in the planning process, such as the tendency to overestimate the feasibility of D-Day objectives, a point proven by the marking of Caen as a first-day objective during Operation Overlord, there were few miscalculations on the same scale as the rush on Tunis in those campaigns planned thereafter.²⁵ Similarly, the Allies' time in Tunisia also equipped them to deal with another, more tangential aspect of campaigning, by forcing AFHQ to deal with matters of civil maintenance. The need for soldiers to become governors in North Africa prompted the rapid expansion of AFHQ administrative machinery in order to meet the challenge, with the creation of committees such as the North African Economic Board, to oversee effective civil governance in regions under Allied occupation.²⁶ The lessons garnered in this field in North Africa were to prove invaluable as the Allies prepared for their return to continent, with senior Allied leaders noting the need for greater coordination between civilian boards. This resulted in an array of different reforms, with the US War Department unifying civil management under the Civil Affairs Division in March 1943, while in July, a Combined Civil Affairs Committee was created in Washington to coordinate inter-Allied occupation policy.²⁷ However, the Allies' greatest civil affairs coup in Tunisia was the realignment of Vichy French forces into joining the Allied cause. Their defection, and subsequent reconciliation with the Free French under the Committee of National Liberation served to resurrect the French army as a tangible fighting force, and once supplied with American equipment proved a highly motivated and effective component of the Allied armies.

In a similar vein, Allied achievements in the realm of logistics proved equally invaluable in the long term. The need to develop and organise an entirely new supply system in hostile territory, and without the benefit of pre-existing installations, challenged Allied logistical capabilities on land and sea and produced innovative and resilient frameworks for the provisioning of Allied forces. The organisation of efficient convoy routines, port facilities and administrative units enabled AFHQ to

²⁵ Buckley, *Monty's Men*, pp. 51-54.

²⁶ TNA: WO 193/843, 'Operations: Phase I – Part 2'.

²⁷ Coles and Weinberg, pp. 66-69, 123-4.

oversee a rapid expansion in available manpower and materiel within the theatre, while growing experience in infrastructural development and movement control enabled that power to be conveyed effectively to the frontline. Their success in this regard was summarised by a War Office report from July 43, which stated that ‘the Axis have complained bitterly that they were outnumbered in men and material [...] The fact that the Axis was outnumbered in Africa is in itself a victory’.²⁸ These experiences were carried forward into later theatres, with much of the logistical organisation created under AFHQ surviving into those successor commands established to manage the campaigns in Normandy and Southeast Asia, and indeed being retained by AFHQ itself in Italy, where it continued to function virtually unchanged.²⁹ A testament to this continuity was the retention of many of its chief architects, including Thomas Larkin, the Commanding General, SoS NATOUSA, and CAO Humfrey Gale, the latter of whom was taken with Eisenhower to fulfil the same role in SHAEF. Bedell Smith reported that ‘Eisenhower was unwilling to undertake any large scale operation without Gale’s administrative assistance’.³⁰ On a national level, both the British and Americans benefitted from the Tunisian experience, with the British enjoying the validation of the supply system with which they had fought much of the North African campaign, but also deriving key lessons in areas such as over-beach supply and organisation in the aftermath of a landing, which would serve well in operations such as Husky.³¹ American forces by contrast gained by the organisation of entirely new machinery for the provision of supply, with the development of theatre-wide administration such as NATOUSA, and the organisation of communications zones and base sections, modular frameworks which would continue to serve following the return to Europe.³²

Nor was it only the administrative machinery and personnel that were taken forward beyond Tunisia, as the experience gained in logistical operation and engineering work was also to serve the Allies well in future campaigns. As the history of SoS NATOUSA highlights, the Allies’ understanding of port and convoy organisation, which had seen constant refinement in Tunisia, were invaluable in

²⁸ TNA: WO 106/2730, ‘Tunisia; miscellaneous reports’.

²⁹ NARA: RG 319, ‘Item 6-C Logistical History of Natousa-Mtousa’.

³⁰ Crosswell, *Beetle: The Life of General Walter Bedell Smith*, p. 560.

³¹ TNA: WO 201/577, ‘Notes on the maintenance of 8th Army’; TNA: WO 232/14, ‘North Africa: Reports and lessons learned’.

³² NARA: RG 319, ‘Item 6-C Logistical History of Natousa-Mtousa’.

ensuring the smooth flow of supplies into Sicily and Italy, while the Royal Engineers and USACE's tireless efforts in civil engineering ensured that supplies continued to find their way to the fighting troops as they fought their way through the Apennines.³³ Innovations such as the Bailey Bridge not only enabled Allied troops to make rapid crossings of defended obstacles, but also provided clear routes for the passage of traffic, allowing the Allies to keep pace with retreating Axis forces, who, as in Tunisia, increasingly turned to demolition work in an attempt to hinder their enemy's advance. The Bailey, and other Allied engineering projects would become a ubiquitous sight in post-war Europe, as their relative simplicity and endurance saw many survive into civilian use. However, perhaps the most ambitious Allied engineering innovation came in the form of the Mulberry Harbour. Due to difficulties in over-beach supply generated during Operation Torch, the CCoS commissioned two artificial, prefabricated harbours, designated Mulberries, which, despite one's destruction by a storm, allowed the daily discharge of several thousand tons of much-needed supply throughout the early months of Operation Overlord.³⁴

Frontline operations too benefitted significantly from the fighting in Tunisia, as the hard fighting in the country's varied terrain tested Allied capabilities rigorously. Although still a comparatively small theatre compared to later battlefronts, Tunisia provided a number of key Allied formations with valuable combat experience and gave the Allies opportunity to test many of the doctrinal concepts they had developed at home, the British since Dunkirk and the Americans over the interwar period. Although it was acknowledged that there was plenty of room for improvement, as different tactical methods and equipment were trialled in battle for the first time, both American and British doctrines were found to be on the whole, sound, with First Army's Lessons Learnt documents remarking that 'the first and outstanding lesson of the campaign is its proof of the general soundness of the Army's training and equipment, staff work and administration, and of the soundness of the leadership and fighting morale of its personnel.'³⁵ This validation offered a degree of confidence to Allied troops and leadership alike, as the knowledge that

³³ Ibid.

³⁴ Ruppenthal, *Logistical Support of the Armies Vol I*, pp. 414-15.

³⁵ TNA: WO 231/10, 'Directorate of Military Training, 1st Army Lessons Learnt'.

their way of warfare had found success instilled faith in their training methods and boded well for eventual intervention on the continent.

Although, as Forrester argues, some of this accrued wisdom was to go unheeded by Montgomery in Normandy, ‘who overrode the experience of 1st Army and discounted the value of its commander’, the lessons and innovations derived from Tunisia nevertheless formed a foundational element of British doctrine as the war progressed.³⁶ As Buckley highlights, the operational approach employed by 21st Army Group in Normandy, which combined a firepower-heavy, material-centric method designed to reduce casualties, with an emphasis on careful planning and set-piece battles, owed its roots to the techniques developed in the Western Desert and Tunisia ‘and then employed in Sicily and Italy to considerable effect’.³⁷ An understanding of German tactics, paired with advancements in communications greatly assisted Commonwealth offensives, utilising concentrated and rolling bombardments to help the infantry onto German positions before blunting the inevitable, and by now predictable, enemy counterattack.³⁸ At lower levels of command, experience with mountainous terrain and patrol warfare, as well as the dissemination of battle drill, also proved advantageous for Allied soldiers. First Army veterans such as 78th Division put the knowledge they had acquired in the Tunisian djebels to good use in Sicily and Italy.³⁹ During the former campaign, ‘which was like Tunisia all over again’, the 78th Division broke the deadlock around Centuripe in a night attack reminiscent of Sweep and Vulcan, deploying two brigades in silence to drive through and beyond the town, which was carried successfully after three days of bitter fighting.⁴⁰ Similar developments in fighting technique can also be seen in American quarters, as the Tunisian Campaign provided a vital first blood for US troops entering the fight against the Axis in Europe, allowing them to smooth out the rough edges in their doctrine before taking to the continent in earnest. Shortcomings in initial training were identified and addressed in time for Sicily. Steven Barry highlights the efforts that Clark’s 5th Army made to prepare for battle utilising the lessons learned and fed back to them from their sister

³⁶ Forrester, *Monty’s Functional Doctrine*, p. 57.

³⁷ Buckley, *Monty’s Men*, p. 29.

³⁸ *Ibid.*, pp. 30-31.

³⁹ TNA: WO 204/8275, ‘Lessons Learnt from Campaigns in Tunisia and Sicily’.

⁴⁰ Ray, *Algiers to Austria*, pp. 64-69.

units then fighting in Tunisia, including a 40-hour continuous exercise that targeted a range of essential skills, such as night fighting.⁴¹ This paid dividends during Husky, as a combination of experienced and un-blooded units landed at Licata and Gela and fought their way ashore effectively, a success that American observers and commanders attributed to the excellence of their mid-level leadership and training.⁴² This was matched by improvements on the operational level, as well as in synchronisation between different arms, that encouraged flexibility and adaptiveness in the face of changing battlefield situations. The adoption of a more decentralised model, in contrast with the British, enabled American commanders to tackle problems in a less formalised manner, placing the initiative in the hands of officers who could adapt around existing doctrine to meet situations as they arose.⁴³

Technological and organisational advancements were also woven into the operational system that arose from Tunisia. Following experience with German tanks, Allied infantry units now benefitted from a range of countermeasures, including the M1 Bazooka and Projector Infantry Anti-Tank (PIAT), portable anti-tank weapons which became standard issue following their field testing in Tunisia, and provided effective close-in anti-armour defence. Heavier pieces complimented this man-portable equipment, with the 57mm M1, 6-pdr and 17-pdr providing capable long-range defence against Axis AFVs, while more powerful artillery such as the 7.2" howitzer gave the Allies the means with which to reduce Axis fortifications more effectively. The latter were also bolstered by organisational means, with innovations such as the Army Group Royal Artillery and Air Observation Post proving perennially valuable as 21st Army Group blasted its way through the Normandy bocage, with no fewer than six AGRAs providing the firepower that made the British artillery such a devastating and flexible weapon.⁴⁴ Allied armour also received a much-needed fillip, as Allied forces took receipt of large numbers of M4 Shermans, as well as the Churchill Infantry Tank and M10 Tank Destroyer, reliable weapons platforms which could more easily contest Axis armour and provide valuable infantry support. These would continue to be developed as the war progressed, with both the Churchill and Sherman seeing continuous

⁴¹ Barry, *Battalion Commanders at War*, p. 162.

⁴² Ibid, p. 176.

⁴³ Ibid, pp. 182-83.

⁴⁴ Buckley, *Monty's Men*, p. 41.

upgrades in firepower and armour in order to stay relevant, perhaps the most notable of which was the arming of the M4 with the 17-pdr gun to produce the Sherman Firefly, which would be deployed in Overlord a year after its conception was originally envisaged in Tunisia.⁴⁵

Such was also the case in cooperation between the services, particularly with regard to the Allied air campaign, as the creation of integrated forces under MAC, ‘established a pattern that will be valuable to us in the future’ and was further strengthened with the addition of tactics and practices derived from the WDAF.⁴⁶ In organisational terms, the merits of a unified air command were clearly recognised, with MAC’s continuation throughout the rest of 1943, before being essentially renamed as the Mediterranean Allied Air Forces. Meanwhile a force of a similar model was set up to govern air operations in Northwest Europe, the Allied Expeditionary Air Forces. The development of coastal, close air support, tactical, and strategic capabilities in Tunisia, and the assimilation of lessons learned in the Western Desert, enabled Anglo-American air forces to refine their doctrines and provided the Allies with another means to tilt the balance of power in their favour across all fighting domains, as well as laying the foundations for the establishment of an independent US Air Force.⁴⁷ The systematic denial of airspace to Axis aircraft via an aggressive and coordinated air policy, as espoused by Tedder and Coningham, and embraced across Mediterranean Air Command, was to become a staple element of Allied operations in future, enabling ground forces to operate freely without the fear of attack from the skies. In the month prior to Operation Husky, the NAAF flew thousands of sorties aimed at suppressing enemy air activity, striking airfields as far north as Foggia on the mainland, and driving Axis air units to relocate increasingly further north, thus minimising the risk to the Allied invasion build-up and allowing Husky to go ahead with minimal disruption.⁴⁸ Conversely, the refinement of Allied tactical and strategic efforts increasingly hampered Axis operational mobility. From its initial, powerful employment supporting Montgomery’s attempts to break the Mareth line, Allied tactical interdiction reached its apogee during Operation Overlord, where weeks of preparatory bombing paralysed railway networks and

⁴⁵ TNA: WO 201/823, ‘Lessons from Operations in North Africa’.

⁴⁶ TNA: AIR 8/1071, ‘Campaign in Tunisia, Part II’.

⁴⁷ Gladman, ‘The Development of Tactical Air Doctrine in North Africa, 1940-1943’, pp. 200-203.

⁴⁸ Rein, *The North African Air Campaign*, pp. 143-48.

destroyed bridges, while during the operation itself, tactical and fighter-bombers disrupted the movement of German forces, preventing their reinforcement of the beachhead.⁴⁹

However, it was not solely in an independent role that airpower became progressively more valuable and well-coordinated, as the Tunisian Campaign also encouraged more effective integration and cooperation between air forces and ground and naval forces. In the latter case, the need for joint action in order to locate and engage targets effectively encouraged naval and air commands to pool their assets more closely. This fruitful partnership was showcased during Torch, where Allied air and naval forces operated together according to a complex combined plan, which successfully shielded the troop convoys prior to the amphibious assault, but was elaborated on further by the Allies' subsequent embarkation on a campaign of interdiction against Axis shipping to Tunisia. The creation of a Combined Operations Room under NACAF and the Mediterranean Fleet enabled Allied forces to coordinate strikes against enemy convoys with increasing success, while also retaining assets for joint action in defence of the Allies' own naval supply lines, tasks which they would continue to undertake as Allied forces hopped from Tunisia to Sicily and then the Italian peninsula.⁵⁰ Air support of the ground forces also plotted a similar trajectory, as AFHQ incorporated lessons learned from the WDAF with new innovations developed in Tunisia. The creation of the AASC and subsequent establishment of NATAF helped to centralise the control of air support resources and intelligence, enabling the effective allocation of tactical airpower, a provision further bolstered by the establishment of effective vertical and lateral intercommunication between services. The use of air observers attached to the ground forces, for example, allowed Allied airpower to intervene in the land battle more directly and with greater precision, a process demonstrated in Operation Supercharge, where a 2½ hour 'air blitz' added to the havoc caused by the New Zealand Corps' artillery.⁵¹ Such attacks were replicated in later campaigns, such as

⁴⁹ Orange, *Coningham*, pp. 190-195.

⁵⁰ TNA: AIR 23/1612, 'Operations and tactics 1943-1945'; TNA: AIR 23/1618, 'The Work of Mediterranean Allied Coastal Air Force, Feb 1943-Sep 1944'.

⁵¹ Gooderson, *Air Power at the Battlefield*, pp. 186-87.

operations around Forlì in November 1944, where the flying blitz collapsed German resistance in front of 12th Brigade, enabling 8th Army to continue its advance.⁵²

All of these elements, though still developing, provided the foundations on which ultimate Allied victory could be built, although their articulation owes a debt to arguably the most important lesson learned by the Allies in Tunisia: learning how to learn. Although perhaps too neat to adequately convey the extent of the cultural and organisational shifts undergone by AFHQ, it is nevertheless an apt description of how the Allies adapted to optimise the efficacy of their institutional learning, a lesson that may otherwise not have been learnt had Operation Torch been fully successful. The frustrations suffered by Allied forces at the outset of the North African invasion engendered a change in outlook within AFHQ that encouraged adaptation and reform in the face of operational challenges, eschewing short-term gain in favour of greater devotion to long-term strategic goals. This cultural shift enabled the Allies to recast their command organisations in the same image, providing intercommunication and flexibility that enabled innovation across the whole breadth of the Allied effort. This commitment to learning lessons was enshrined deeply at the core of AFHQ and was reflected thusly in the outpouring of Lessons Learned documents in the aftermath of the campaign, much of it initiated by the order of General Eisenhower. One such document, eloquently summarises the prime motivation behind this culture of self-reflection:

It is only by being thoroughly candid, and rectifying faults as they occur, that we can hope to produce a weapon that will enable the war to be brought to an early and victorious conclusion with the greatest economy in men and material.⁵³

This thesis has sought to examine in microcosm the process by which armies and organisations learn. In doing so, it has shown that such a process is varied and multifaceted, as learning can take a number of forms and is influenced by a range of factors. However, it can be rationalised as a multi-stage process, requiring a prime motivation, the recognition of problems and their analysis, an identification of solutions, and the ability to implement these reforms. Although such a process can and does occur organically, changes of substantive scale, scope, and longevity can

⁵² Ibid, pp. 187-88.

⁵³ TNA: WO 204/10334, 'Lessons from the Tunisian Campaign'.

only result from a deliberate act, requiring not only the organisational power to enact reform, but the institutional will to adapt and change. These features, once systematised within an embedded culture of learning, enable an organisation to continually evolve, as repeated cycles of learning provide for change on a continual basis. This concept, although applied here to the Tunisian Campaign, could easily be employed as a framework for the examination of learning in other theatres of war, exploring the extent to which learning was systematised and the means by which other organisations grapple with change.

In examining this process of learning, this thesis has explored the experience and evolution of Allied forces during the Tunisian Campaign. Although rarely examined in detail by scholars, the campaign has often been accorded the comment that valuable lessons were learned there. This thesis has proven this narrative, demonstrating that the Tunisian Campaign was valuable not just on its military merits, but for building a learning organisation within Allied forces, enabling them to hone their skills for a return to the continent. In this way, Tunisia acted as an Allied sandbox, providing the Anglo-American coalition with an arena in which it could mature and adapt, a process which not only played a key role in Allied victory in the North African theatre, but enabled the Allies to begin building the way of warfare that would carry them on to final victory.

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Appendix I

Maps of the Tunisian Campaign

All maps reproduced here are creations of the United States Center for Military History.

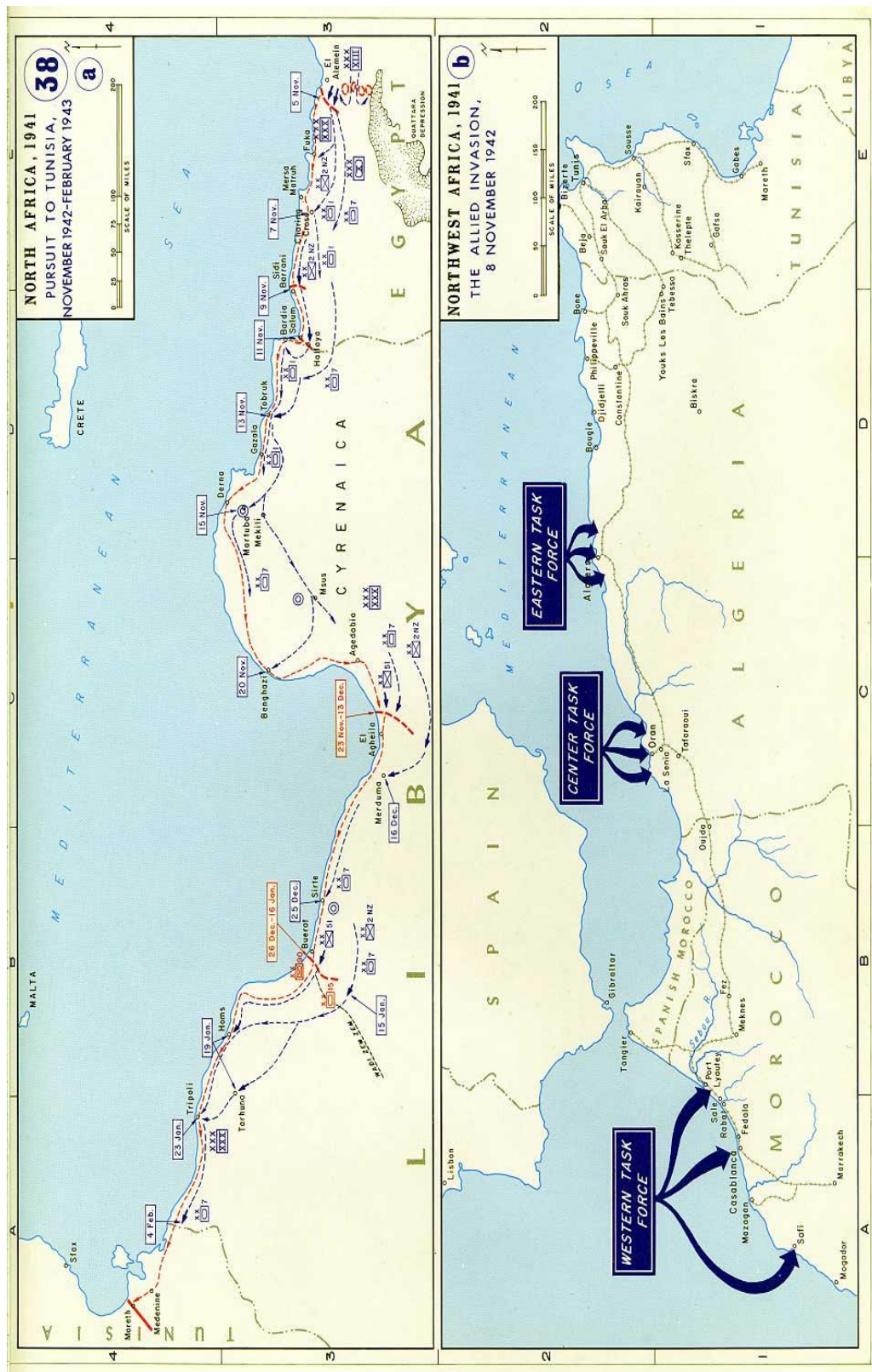


Figure 1: Dual Map of the North African Theatre in November 1942.



Figure 2: Map displaying the Rush on Tunis, November 1942.

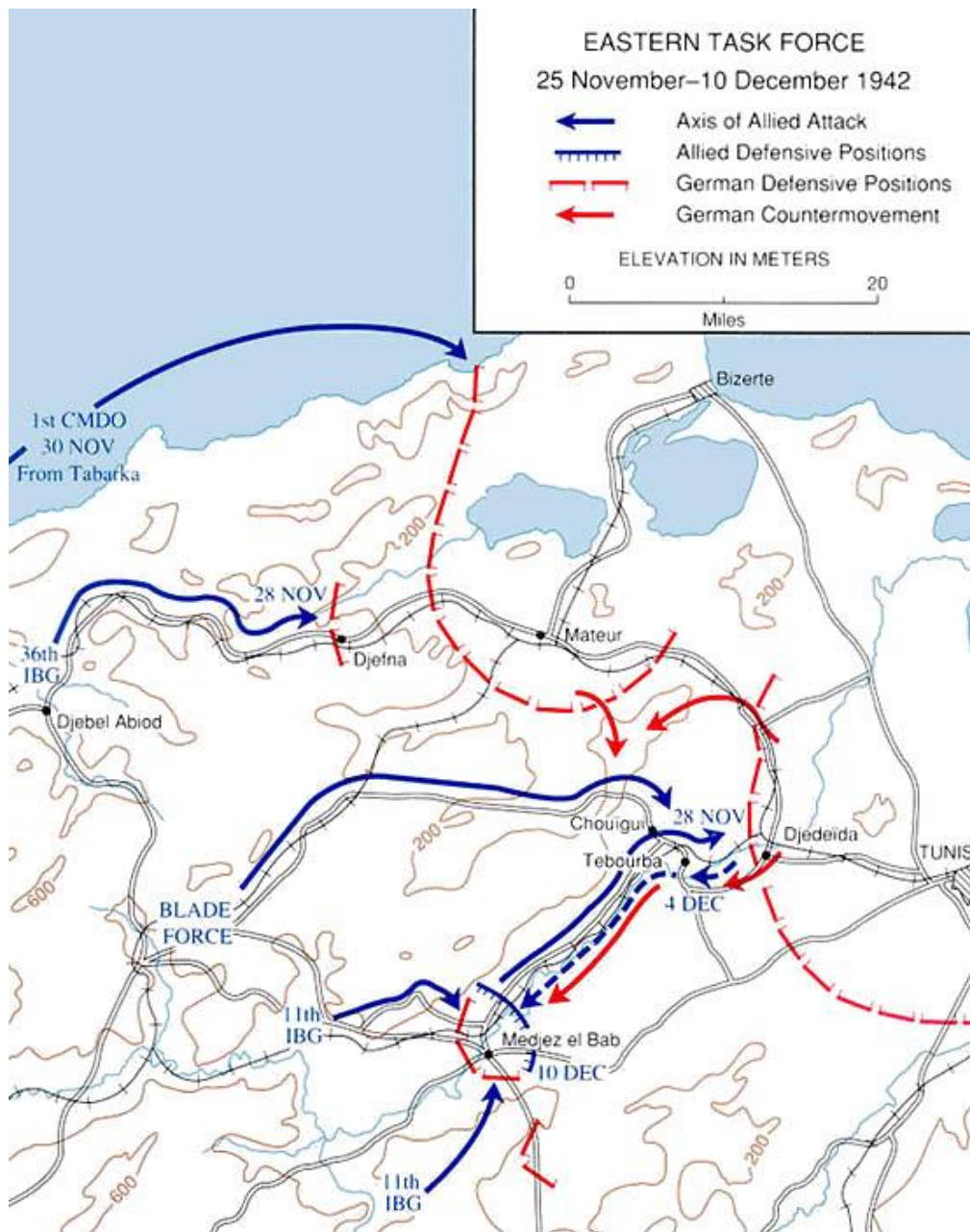


Figure 3: Map showing actions in northern Tunisia, November-December 1942.

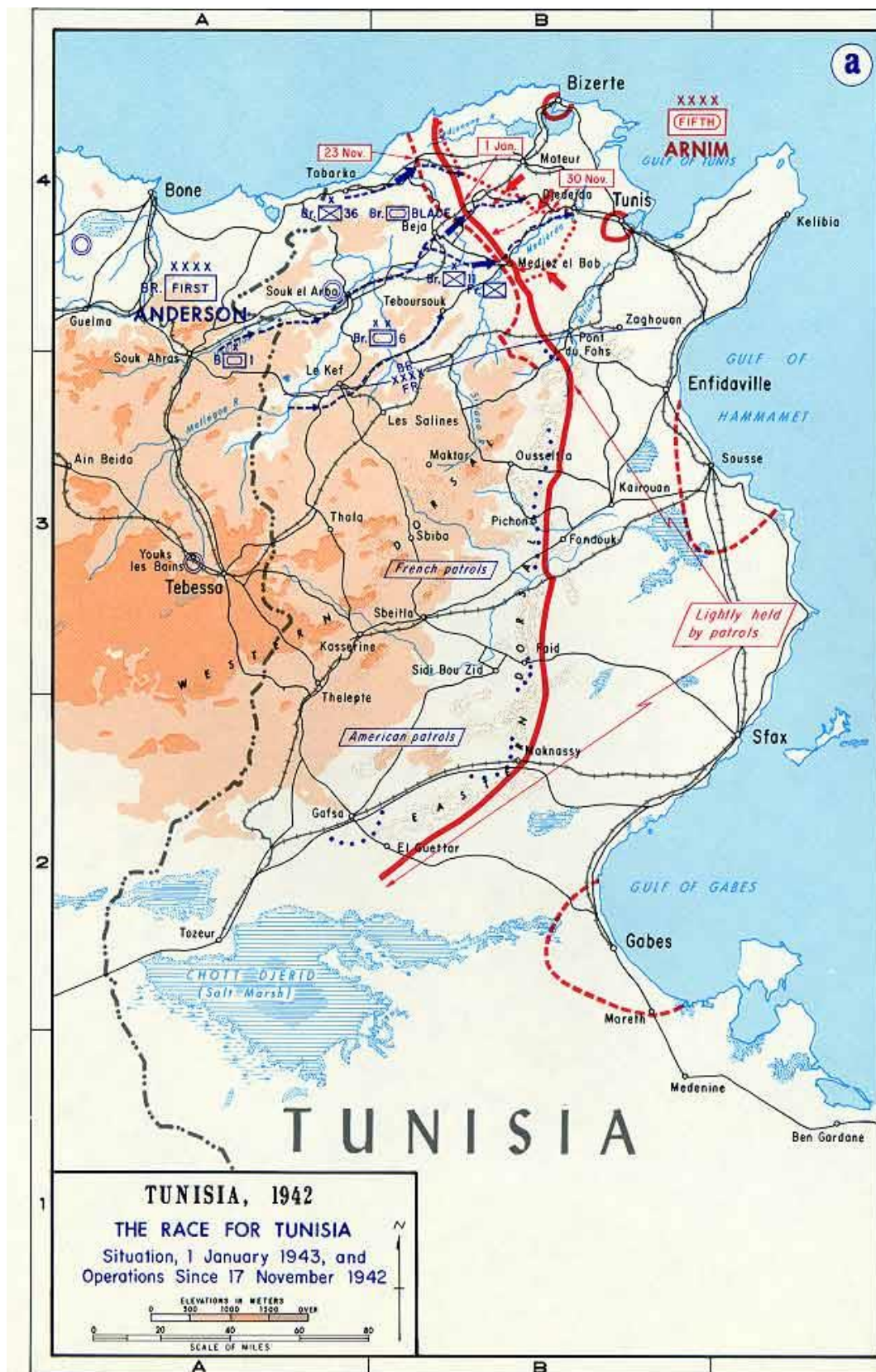


Figure 4: Map displaying the frontline situation on 1 January 1943

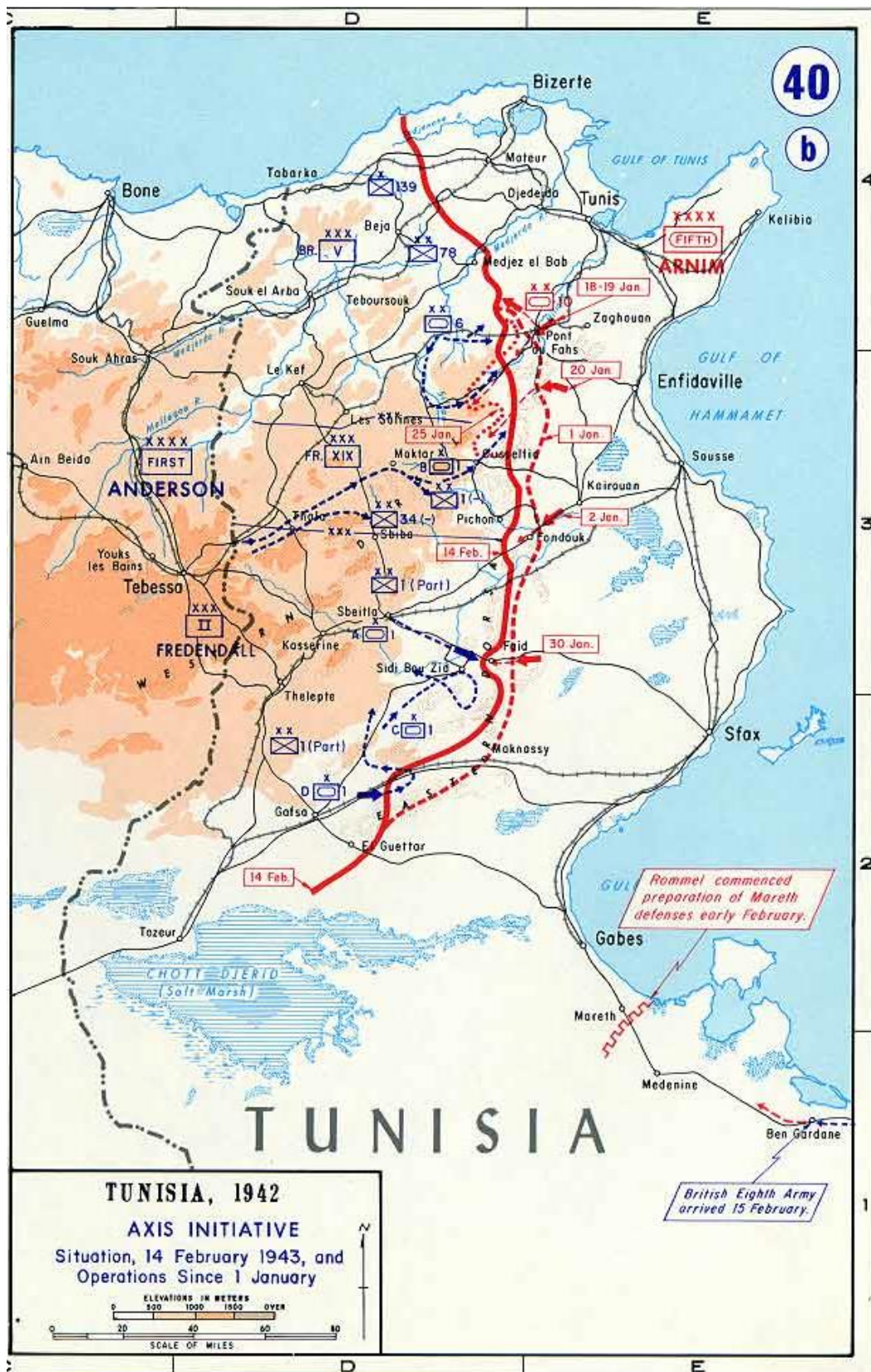


Figure 5: Map displaying the frontline situation on 14 February 1943

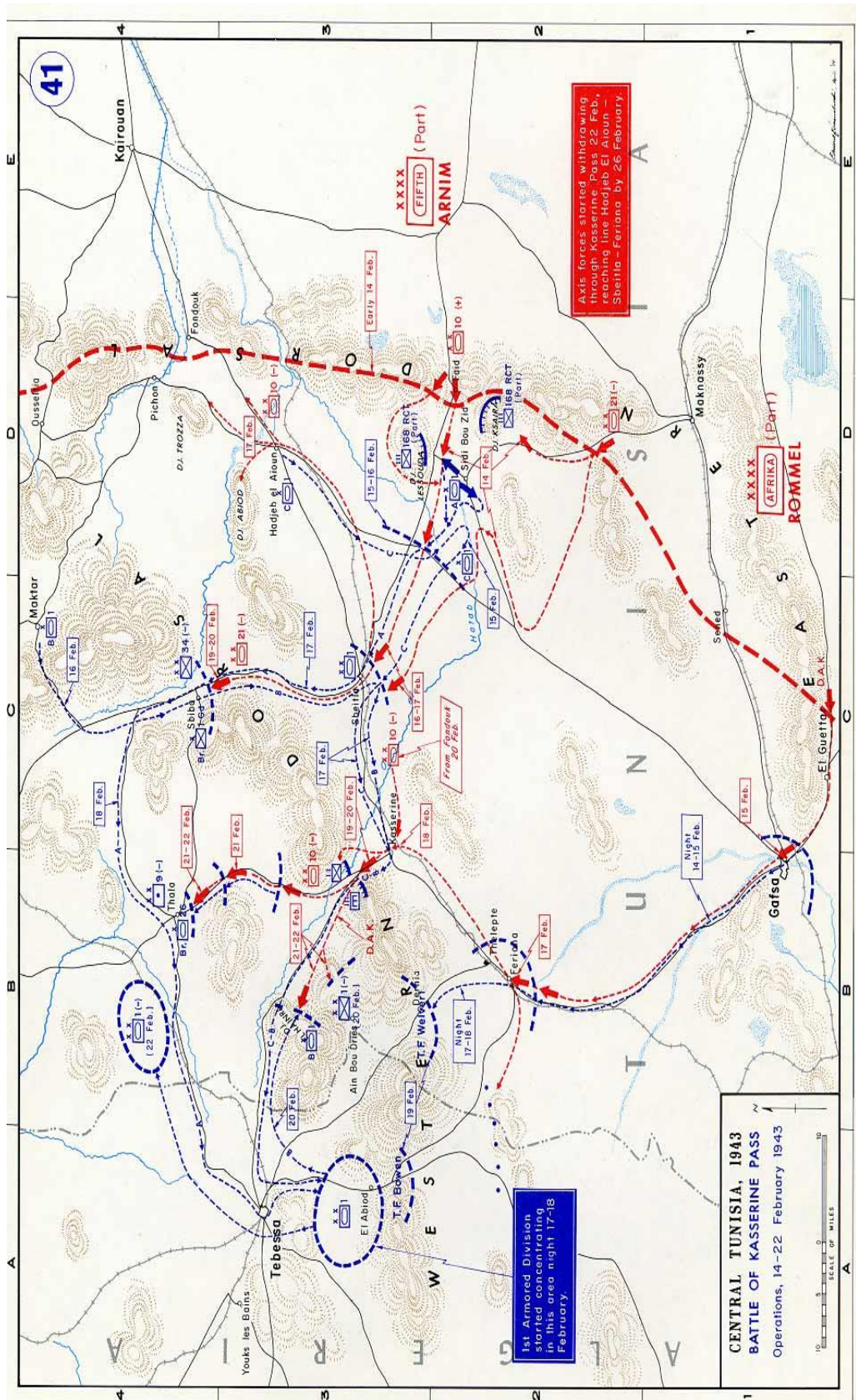


Figure 6: Map showing actions at the Battle of Kasserine Pass, mid-February 1943

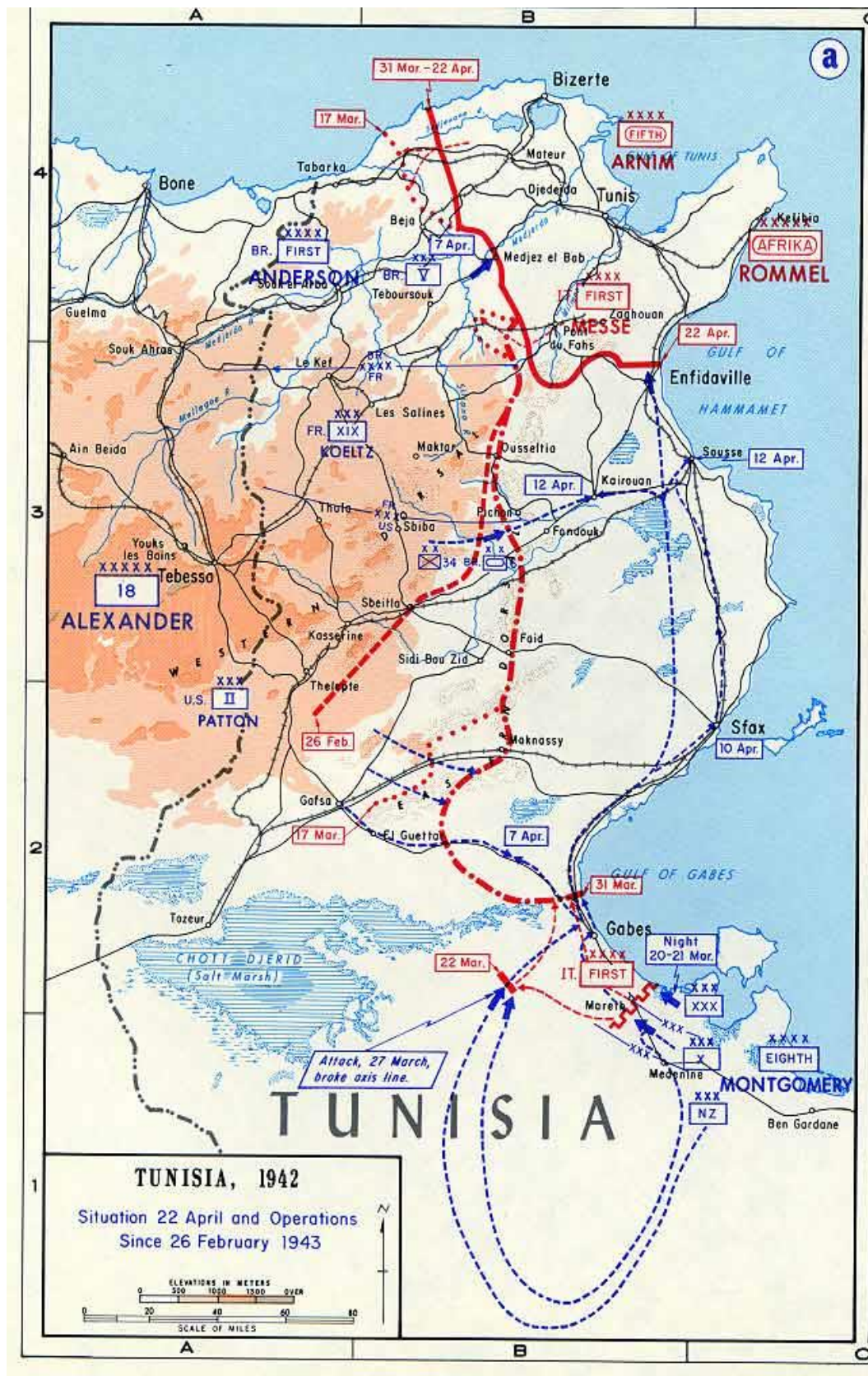


Figure 7: Map displaying the frontline situation on 22 April 1943

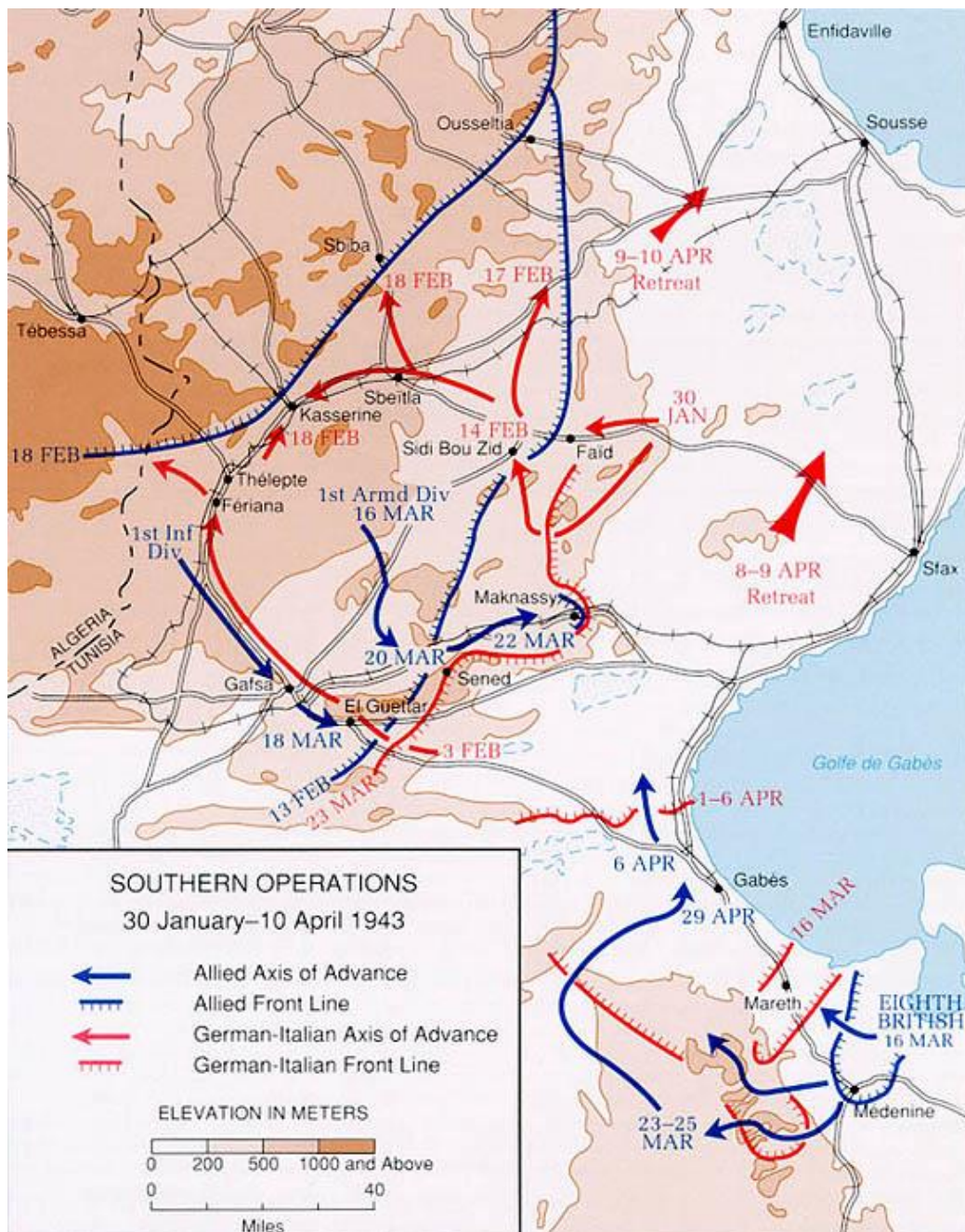


Figure 8: Map showing operations in southern Tunisia, January – April 1943

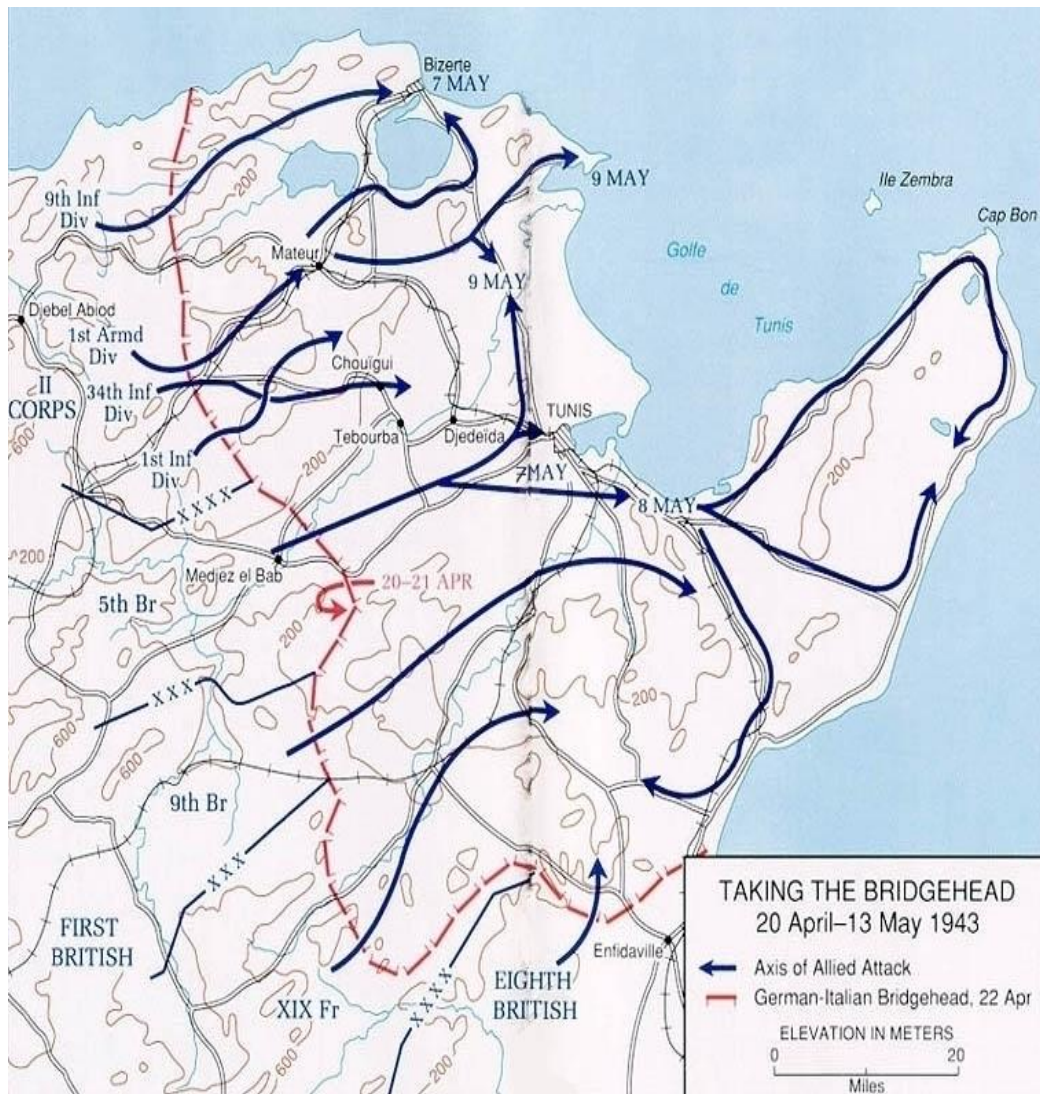


Figure 10: Map showing operations in northern Tunisia, 20 April – 13 May 1943