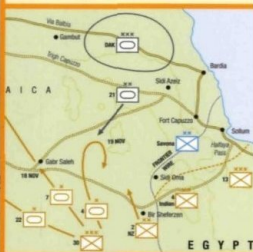
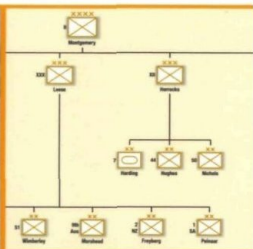
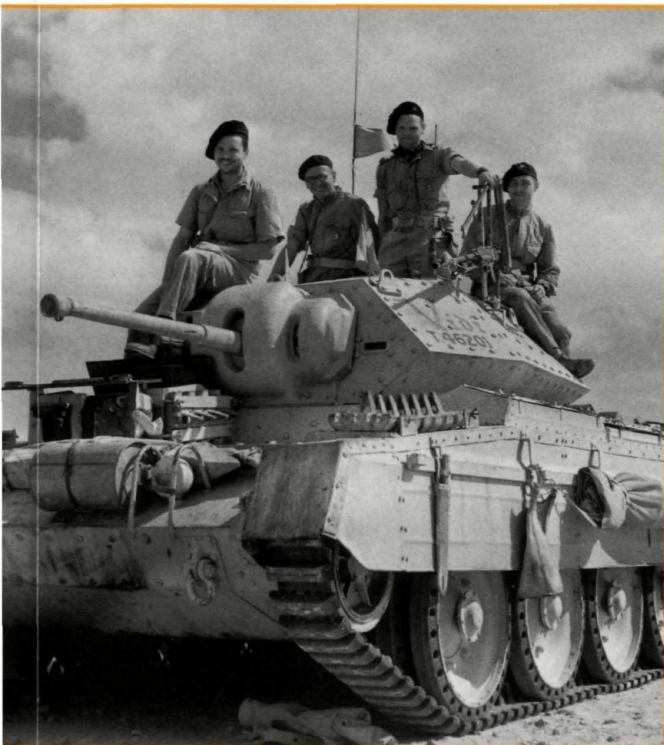


Desert Rats

British 8th Army in North Africa 1941–43



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Battle Orders • 28

Desert Rats

British 8th Army in North Africa 1941–43

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Key to military symbols

Army	Corps	Division	Brigade	Regiment	Battalion	Company/ battery/squadron	Platoon/ troop
Section	Sub-section/ squad	Infantry	Artillery	Armour	Engineer	Weapons	Machine gun
Mortar	Medical	Intelligence	Service	Postal	Motorized	Anti-tank	Anti-aircraft
Ordnance	Armoured car	Supply	Signal	Administration			
Scout	Pioneer						

Key to unit identification



(+) with added elements (-) less elements

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Introduction

The Eighth Army was probably the single most famous military formation raised by Great Britain and its Commonwealth during World War II. Formed in September 1941 from veterans of Western Desert Force and newly arrived troops, it went on to wage an extended hard-fought campaign against German and Italian troops across the desert wastes of North Africa, with fierce fighting taking place in Libya, Egypt, Tripolitania and finally the mountains and plains of Tunisia. It was the only theatre where the British Army could take the war to the Axis powers, whose armed forces were led by perhaps Nazi Germany's most able and charismatic Panzer general. It was also, in many respects, a campaign as much against a hot, dusty and unforgiving climate and environment in which British Commonwealth troops lived, moved and fought, as against the enemy.

This Desert War waged by Eighth Army was decidedly an imperial war effort carried out for much of the time without significant US support. The polyglot composition of Eighth Army, composed of British and a range of other Commonwealth troops – Australian, Indian, New Zealand and South African, as well as smaller Free French and Polish contingents – in itself helped Eighth Army build a distinctive identity. Only by the Second Battle of El Alamein did British divisions make up the majority of Eighth Army, and even then a



Lt. Gen. Neil Ritchie, C-in-C of Eighth Army standing on the steps of his command caravan in the Western Desert. 23 March 1942. (4700-32 E 9572)

considerable proportion remained from the Commonwealth. By the end of the Desert War, Eighth Army had its own style, a slang peppered with Arabic terms, a distinctive ethos, and a 'lived-in' uniform adapted to the heat of the desert.

Eighth Army was thrown into battle immediately in November 1941 in Cyrenaica and engaged in a seesaw war fought back and forth along the Mediterranean littoral, under a succession of senior British commanders (including Alan Cunningham, Neil Ritchie, Claude Auchinleck and Bernard Montgomery), during which its fortunes waxed (with an initial hard-fought victory during Operation *Crusader*) and waned (arguably reaching its nadir in June 1942 with the fall of Tobruk). Eighth Army experienced a sharp learning curve. Indeed, it initially displayed amateurism of the worst sort, suffered poor leadership and experienced repeated abject defeats. Defeat, however, was ultimately crowned with victory following the decisive battle of El Alamein. Much had to be learnt by trial and error about command and control, fighting methods, doctrine and training in the harsh school of experience. It was a campaign unlike any other fought by a British Army, involving highly mobile operations covering vast distances in which tanks played a central role. Indeed, the war waged across the 'great sand table' (a device used by the military to teach students tactics) as one former officer has described it, was the great testing, learning and proving ground for the British Army during the early war years, without which success in its later stages may have been far harder. By its end Eighth Army had acquired a new professionalism that stood it in good stead during the invasions of Sicily and Italy.

The Mediterranean theatre of war.



Combat mission

Axis forces in North Africa, 1941

The combined German and Italian troops making up the Axis armies in North Africa had already proved themselves formidable adversaries during 1941. The German troops serving in the all-mechanized Deutsches Afrika Korps (DAK), commanded by the gifted German Panzer General Erwin Rommel, were arguably at the peak of their professional skill and had proved highly adept at waging fast-moving armoured warfare employing blitzkrieg methods in the desert, and were equipped with some of the best tanks, anti-tank guns and artillery available in the world. While underrated by some following the dramatic success of Operation *Compass* in 1940–41, the Italian troops, making up the mainstay of the Axis forces in Libya, were dangerous opponents who could not to be dismissed out of hand. While the majority were still organized in comparatively immobile, poorly armed, badly led and ill-equipped infantry divisions, the best trained and equipped were organized in armoured and motorized divisions capable of giving as good as they received.

The fundamental task or combat mission first assigned to Western Desert Force and then its successor Eighth Army in September 1941 remained virtually unchanged throughout the Desert War. For Middle East Command, from 2 July commanded by Gen. Sir Claude Auchinleck, the defence of Egypt and the Suez Canal, the vital maritime link between the United Kingdom and the far-flung eastern part of the British Empire, was always of key strategic importance. A purely defensive attitude, however, was anathema to the Prime Minister and the British High Command, who placed successive Commanders-in-Chief under intense, sustained pressure to mount offensive operations. Eighth Army, commanded by Gen. Sir Alan Cunningham, was given an immediate task on its formation, like its predecessor Western Desert Force, with relieving the beleaguered garrison of Tobruk, establishing airfields in the 'bulge' of Cyrenaica to provide air cover for convoys plying between Alexandria and Malta, and most immediately of defeating the Axis forces operating along the Mediterranean littoral. To do so a range of combat formations drawn from the British Commonwealth armies – British, New Zealand, Indian and South African – were placed at its disposal, including infantry and armour, as well as a range of supporting arms and services. A smaller number of formations from other countries under Axis occupation also formed part of Eighth Army from time to time, including the Polish Carpathian Brigade, Free French troops and Greeks.

The task of carrying out this combat mission assigned to Eighth Army – indeed the whole character of the Desert War – was dominated and vastly complicated by the sheer scale of the theatre of war, and by the difficult climate and terrain across which for three long years it fought what was, in many respects, a novel form of conflict. The backdrop of this extended fighting



Gordon Highlanders of the Eighth Army cross the border into Tunisia in 1942. (4700-32 E 22431)



A British Crusader tank passes a burning German Panzer Mk IV tank during Operation Crusader. (4700-32 E 6751)

between Eighth Army and the Axis powers stretched along the Mediterranean littoral in Tunisia in the west, across Italian Tripolitania and Cyrenaica, and then into Egypt, ending at El Alamein. Tripoli and Cairo were separated, for example, by a distance of 1,200 miles. Despite its size, the theatre of war was largely free from human habitation, except for a few small towns and villages scattered along the coast and tiny bands of Senussi nomads, who eked out a bare living in the interior. In the west, the area around Tripoli was more highly cultivated, as was that westwards into the mountains of Tripolitania. During the endgame in Tunisia fighting took place in more open cultivated areas.



Lt. Gen. B.L. Montgomery, General Officer Commanding Eighth Army, watches the beginning of the German retreat from El Alamein from the turret of his Grant Tank. He is wearing his famous tank beret. (4700-32 E 18980)



The North African littoral – Tripolitania to Egypt.

A line of Bren gun carriers equipped with Boyes anti-tank rifles moving off in the Western Desert, 8 March 1942. (4700-32 E 9140)



The theatre of war

The area popularly and largely inaccurately known as the Western Desert (a name correctly just applying to the area within the western confines of Egypt) formed the main arena for fighting between the heterogeneous British forces and the Axis powers. This was a rough rectangle some 240 miles long and at the greatest 150 miles in width. It was divided into two distinct areas: the coastal strip, and the desert proper lying above a line of steep escarpments.

The coastal strip (of varying width) lying between the escarpments and the Mediterranean sea formed generally a low-lying plain, consisting of a limestone pavement thinly overlaid with sand and scattered rock fragments, with areas of open sand and sand dunes nearer the coast. Access to the sea was blocked in places by salt marshes. Some rainfall meant the area supported limited cultivation around which small settlements existed.

The twin escarpments, varying widely in height and precipitousness, that separated the coastal strip and the desert proper (lying on the limestone plateau above) had particular tactical and operational significance throughout the war in the desert. These dominating natural features, rising to a height of 500ft in places, faced northwards towards the sea and provided valuable points of observation, and places of concealment and were largely impassable to wheeled and tracked vehicles, except at a few gaps. These natural choke points – such as at Fuka, Halfaya and Sidi Rezegh – provided vital access from one area to another and because of this formed the focus of much fighting during the Libyan campaign.

The desert terrain lying on the Libyan plateau above the escarpments, standing on average 500ft above sea level, was extremely flat with only a few low-lying ridges and depressions breaking up a largely monotonous landscape. The surface of the desert on the limestone plateau varied widely from area to area, presenting differing going for both tracked and wheeled vehicles. The desert had relatively few landmarks of significance and next to no vegetation, except near oases deep in the interior. This made desert navigation an essential skill for all combatants.

The desert environment

The Western Desert was a hostile environment. A period of mental and physical adjustment was necessary for newcomers to accustom them to the silence, immensity and loneliness of living, moving and fighting across the wide desert expanses. The climate was variable. During daylight hours unremitting intense heat posed a major problem, especially to crews operating within already baking hot, noisy and airless vehicles, while sunstroke and sunburn affected the unwary. At night

and particularly during the winter months temperatures often plummeted. Heavy rainfall during the winter was not unknown, suddenly causing the barren desert to flower, flash floods to run down otherwise dry river courses, and turning parts of the desert surface into quagmires. During the spring and summer hot fierce desert winds often blew up from the south – the khamisin – creating sandstorms that tested the mental resilience of individuals and posed a threat to equipment, with fine sand and grit pervading eyes and lungs, clogging

machinery and smothering foodstuffs. Visibility fell to a minimum providing useful concealment for the movement of mobile forces. At other times dust thrown up by the movement of vehicles cloaked men from head to foot, while clogging engines, weapons and other equipment. Although generally a healthy environment a desert soldier had to contend with a range of medical problems, such as dysentery and other stomach problems, desert sores, and jaundice – not to mention the nuisances of scorpions and vipers.

The main area of intensive combat operations fought by Eighth Army was demarcated to the south of the Western Desert by the oases of Jarabub and Siwa, lying at the edge of the great sand sea, a tract of deep sand and high dunes impassable to wheeled or tracked vehicles, which stretched hundreds of miles. To the south of the railway halt at El Alamein in Egypt the Quattara Depression, a vast area of salt marsh lying 200ft below sea level, passable only to camels along a few tracks, created a natural bottleneck some 40 miles wide.

The barren, unpopulated and wide open expanses of the open desert gave unparalleled free scope for manoeuvre for fast-moving armoured and motorized units and meant mobility was always at a premium. It often proved difficult to know where anybody was at a given time and also very difficult to judge distances in the desert, and engagements often took place at long range. The desert also imposed massive logistical constraints on commanders, given the few roads and complete absence of railways until they were constructed during the war, making comprehensive maintenance and supply arrangements of paramount importance. As one German commander purportedly declared: 'The desert was a tactician's paradise, but a quartermaster's nightmare.'



Valentine infantry tanks training in the Western Desert. 27 March 1942. (4700-32 E 9768)



A soldier watches an approaching sandstorm from beside his jeep, October 1942. (4700-32 E 17825)

Unit organization

Formation and early Eighth Army organization

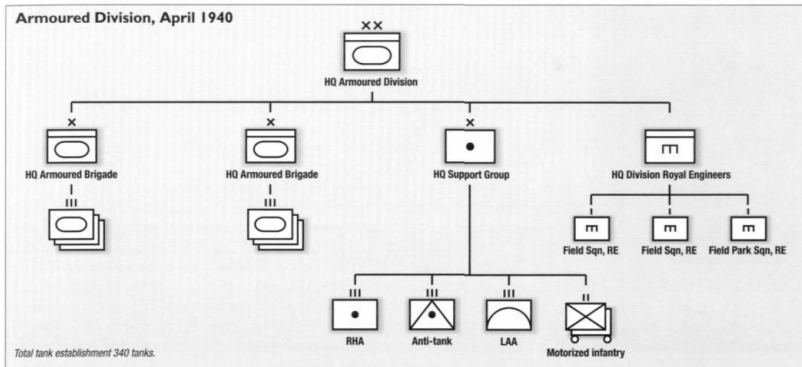
Eighth Army formally came into existence at midnight on 26 September 1941, following the massive expansion of British forces in Egypt carried out under the command of the newly appointed Gen. Sir Claude Auchinleck (who had held the appointment of Commander-in-Chief, Middle East since July). Following earlier disastrous defeats in Cyrenaica at the hands of the newly arrived DAK, commanded by the formidable Gen. Erwin Rommel, and the failure of Operations *Brevity* and *Battleaxe*, Western Desert Force, originally an under-strength division and then an improvised corps, had been hurriedly reinforced from nearly every part of the British Empire. It had also been rebuilt with large quantities of eagerly awaited tanks, guns and vehicles on a scale unknown in the Western Desert before.

The new Eighth Army, commanded by Lt. Gen. Sir Alan Cunningham (fresh from a successful command in East Africa), had on its formation two fully established army corps consisting of armoured and infantry divisions, independent brigades and supporting arms and logistic troops. It was a heterogeneous force drawn from every corner of the far-flung British Empire. While command of Eighth Army and its armoured units, medium and heavy artillery, corps and support troops were British, the bulk of the divisions in Eighth Army were initially Australian, New Zealand, South African and Indian. A hard core for this new army was provided by the highly experienced and desert-worthy former divisions of Western Desert Force – the veteran 7th Armoured Division and 4th Indian Division.



Australian troops occupy a front-line position at Tobruk. Between April and December 1941 the Tobruk garrison, comprising British, Australian and Polish troops, was besieged by Rommel's forces. It fell to the Germans after the Battle of Gazala on 21 June 1942 but was recaptured five months later. (4700-32 E 4792)

Armoured Division, April 1940

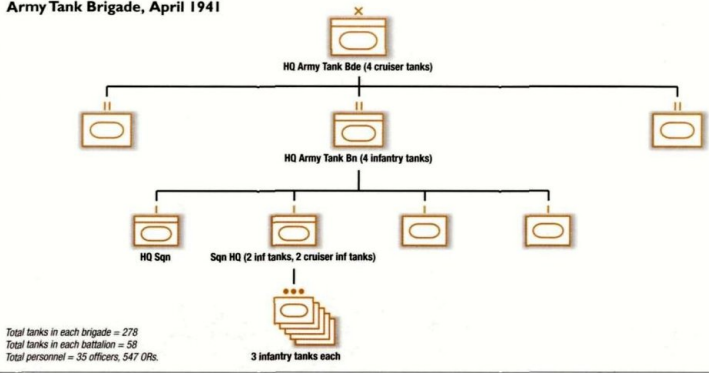


The Western Desert Force (once more) became 13th Corps from 18 September under the command of Lt. Gen. A.R. Godwin-Austin. It was predominantly an infantry formation and consisted of two infantry divisions – the 2nd New Zealand Division and 4th Indian Division – with the 1st Army Tank Brigade in support. Neither infantry division was motorized and they were dependent upon the provision of 3-ton troop-carrying lorries for mobility. Like other formations of the Indian Army, 4th Indian Division was not composed solely of manpower from the subcontinent, containing a substantial contingent of British troops. A new corps – later numbered 30th – was formed under Lt. Gen. Vivian Pope (an acknowledged expert in armoured warfare), with the intention of it being the main armoured and motorized striking force in Eighth Army. Its HQ mobilized in Egypt at the beginning of October, with its staff officers drawn

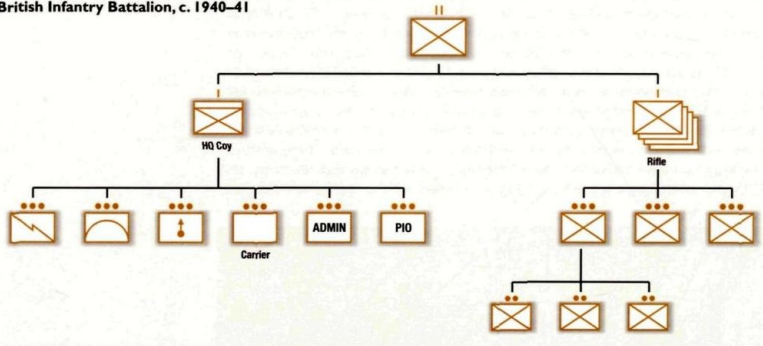


Soldiers of the 4th Indian Division decorate the side of their lorry 'Khyber pass to Hellfire Pass'. 'Hellfire Pass' was the nickname for the strategically important Halfaya Pass, fortified by the Germans and which the British attacked, unsuccessfully, during Operation Battleaxe. (4700-32 E 3660)

Army Tank Brigade, April 1941



British Infantry Battalion, c. 1940-41



from the remnants of the recently destroyed 2nd Armoured Division. An unfortunate air accident near Cairo, however, killed its designated commander and his principal staff officers, and in his place Maj. Gen. Willoughby Norrie, formerly GOC 1st Armoured Division en route via the Cape, was appointed corps commander. By 21 October this new higher formation HQ had moved into the desert and began to operate. It consisted of the veteran 7th Armoured Division, commanded by Maj. Gen. W.H. 'Strafer' Gott, and 1st South African Division, commanded by Maj. Gen. Brink, and lastly 22nd Guards Brigade. 1st South African Division was fully motorized, but it lacked a full complement of vehicles. 2nd South African Division, commanded by Maj. Gen. I.P. de Villiers, remained in army reserve. A third Corps HQ – the 10th – was also formed in August, but its officers were quickly robbed to form the new HQ of Eighth Army and it was sent to the Levant to join 9th Army. In addition, the beleaguered garrison of Tobruk, commanded by Maj. Gen. Scobie, was part of Eighth Army's command. It consisted of the British 70th Division, the 1st Polish Carpathian Brigade and the 32nd Army Tank Brigade.

Divisional and brigade organization

The organization of British higher formations in Eighth Army – brigades and divisions – generally conformed with that of the rest of the British Army throughout the Desert War, although local variations in War Establishments were introduced meeting the requirements of this demanding theatre of operations. This applied to all British and Commonwealth units and formations, who, despite their varied country of origin, were deliberately organized along identical lines in accordance with pre-war policy laid down by the Imperial General Staff. This dictated that troops through the British Empire should be organized, equipped and trained on standard lines, and was deliberately intended to ensure that all could easily operate alongside each other with the minimum tactical and administrative fuss. Although strict War Establishments were laid down, it must be remembered that it was always intended to be a flexible system with units added or taken away from formations as the situation demanded. The 4th Armoured Brigade during Operation *Crusader*, for example, was considerably augmented in strength. Similarly 7th Armoured Division was very tank heavy in relation to the other arms when it fought during Operation *Crusader*.

The deeply held belief in Britain amongst tank proponents before World War II broke out (inspired by the visionary theories of Maj. Gen. J.E.C. Fuller and Capt. Basil Liddell Hart) in the ascendancy of the tank and 'pure' armoured warfare, was reflected in the way British armoured divisions (the most important formations in Eighth Army given the nature of desert warfare) were organized during the opening stages of war in North Africa. According to this view future battles would be fought primarily between tanks alone, exploiting the shock effect of mobility, manoeuvre and dispersion upon the enemy of mechanized forces. The main function of an armoured division would be to seek out and destroy enemy armoured formations unaided, employing manoeuvre and mobility to the maximum effect. In such engagements tanks would always play the predominant role with other arms occupying a very subordinate position. Early experience in the Western Desert appeared to bear this out. As Gen. Auchinleck informed Churchill soon after he assumed command:

It is quite clear to me that infantry divisions, however well trained and equipped, are no good for offensive operations in this terrain against enemy armoured forces. Infantry forces are and will be needed to hold defended localities after enemy armoured forces have been neutralized and destroyed, but the main offensive must be carried out by armoured formations supported by motorized formations.¹

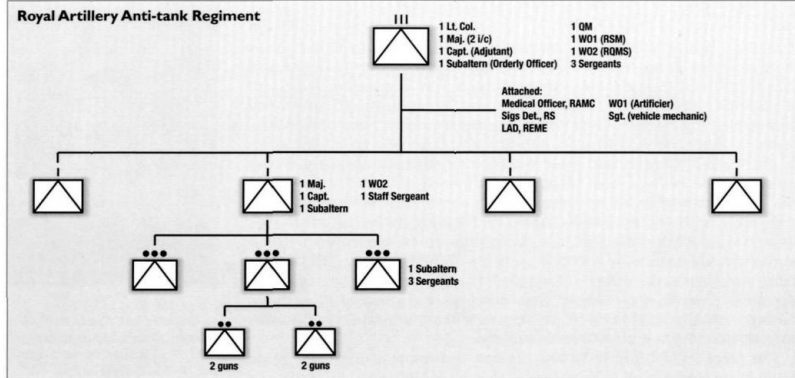
The War Establishment of armoured divisions, equipped with various types of fast-moving and lightly armoured cruiser tanks for maximum mobility, serving in the Middle East was extremely tank heavy as a result of the above pre-war assumptions about the nature of armoured warfare. Indeed, this belief had been reinforced by earlier successes in the Western Desert against the ill-equipped, poorly led and extremely reticent Italian Army. An armoured division, in accordance with its War Establishment, normally had two complete armoured brigades, each having three armoured regiments with a grand total of 330 AFVs. All the other supporting arms were concentrated in a Support Group. This, however, consisted of just two regiments of field artillery equipped with 25-pdrs, a single Royal Artillery anti-tank regiment equipped with 2-pdrs, an anti-aircraft battery equipped mostly with 40mm Bofors light anti-aircraft guns, and just two motorized infantry battalions. A Support Group was normally handled as a separate manoeuvre element in battle, although in practice some of these assets were parcelled out to the armoured brigades for



Lt. Col. John 'Jock' Campbell in the Western Desert, 21 November 1941. This photograph was taken after he had been presented with the VC by the Commander-in-Chief Gen. Sir Claude Auchinleck. (4700-32 E 8263)

¹ Quoted in Carver, *Michael Dilemmas of the Desert War* (London, Batsford, 1986), p.27.

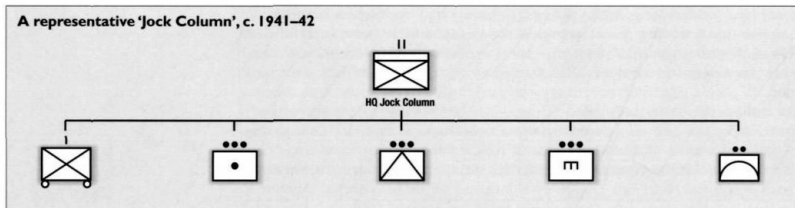
Royal Artillery Anti-tank Regiment



operations. During Operation *Crusader* 7th Armoured Brigade, for example, went into battle with a single infantry company, 16 25-pdrs, and a troop of AT and LAA guns attached. This very low provision of other arms reflected the prevalent idea that tanks would always shoulder the burden of the fighting, leaving the remainder of the formation far to the rear – which would only come forward to shoulder defensive duties such as protecting nightly leaguers.

The organization of independent Army Tank Brigades, equipped with heavily armoured and slow-moving infantry tanks that had a very limited radius of action, mirrored in some ways those equipped with lighter and faster cruiser tanks, although they were organized, equipped and trained for a very different role. Each Army Tank Brigade consisted of a Brigade Headquarters and three tank regiments, but lacked any supporting arms since they were only ever employed in direct support of other formations. A complete Army Tank Brigade was normally allocated to an infantry division for offensive operations, for example, with one regiment attached per brigade. In practice, constant demands from infantry commanders during the Desert War for protection from enemy armour meant infantry tanks often remained with infantry formations for long periods of time. A close relationship frequently developed as a result with each of the two arms, considerably enhancing the ability of the other to take its place on the battlefield. This close relationship meant co-operation between infantry tanks and infantry generally worked well during the Desert War. Indeed, a good infantry brigade accustomed to working with a good unit of the Royal Tank Regiment was in many ways the equivalent of a full-blown armoured Brigade Group.

A representative 'Jock Column', c. 1941–42



The infantry divisions serving in Eighth Army arguably underwent the least organizational changes during the Desert War, although considerable uncertainty, as already noted, always existed over just how the infantry was to be used in the attack and in turn how it should be organized and equipped. For much of the Desert War its main function remained the defense of fixed positions in the desert and assaults against enemy prepared positions backed by the full panoply of other supporting arms and services.

All the British and Commonwealth infantry divisions that fought in the Western Desert were organized into three infantry brigades, each having three infantry battalions. Each standard British infantry battalion during the early years of the war in North Africa consisted of a Headquarters Company, containing a Signal, Anti-Aircraft, Mortar, Carrier (equipped with Bren or Universal tracked carriers), Pioneer and Administrative platoons, and four Rifle companies that marched on foot. When motor transport was required it was provided from a central pool provided by divisional RASC companies. The only anti-tank capability within infantry units was provided by mines, sticky bombs and the largely ineffective 0.55in. Boys anti-tank rifle, which in practice was supplemented whenever possible by captured enemy ordnance.

The infantry division had powerful supporting arms. A reconnaissance regiment equipped with armoured cars of various types provided its own means of gathering valuable intelligence and to a limited degree of exploiting success, and a Machine Gun Battalion, equipped with further Vickers .303 MMGs provided additional fire support for infantry both in the attack and in the defence. Three Royal Engineer Field Squadrons and one Field Park, a holding unit for various types of heavy equipment, provided the engineer component of a division. A single Royal Artillery Anti-Tank Regiment, equipped with 48 2-pdr anti-tank guns, shouldered the burden of anti-tank defence in each infantry division. Each regiment was organized into four batteries, in turn each having three troops of eight guns, whose weapons were parcelled out to infantry units as and when the situation demanded. These units had originally formed in 1938 when it had been decided that infantry units already had too many different types of weapon on strength. An Anti-Aircraft Regiment, equipped with 50 40mm Bofors light anti-aircraft guns, was similarly parcelled out to provide air defence for other divisional assets. The main source of organic firepower within each infantry division came from three Royal Artillery field artillery regiments, equipped with 25-pdr gun/howitzers, each deploying 24 guns organized into three batteries of eight guns each. These highly effective weapons, however, were often sucked into the battle because of deficiencies of existing anti-tank guns, whose 2-pdrs lacked both range and penetration against new variants of German armour.



Grant tanks and scout cars of an armoured brigade headquarters in the Western Desert, 31 May 1942. (4700-32 E 12637)



Lt. Gen. W.H. 'Strafer' Gott, who commanded 7th Armoured Division, and then XIII Corps in the Western Desert. (4700-32 E 2623)

The officers and men of Eighth Army did not always fight in the desert in conventionally structured formations, but also served in a number of small ad-hoc groupings. This included such irregular formations as the Long Range Desert Group and the Special Air Service. This was a reflection of a common British practice of forming ad-hoc groupings known as 'forces' or 'columns' for specific tasks, which was in many ways a hangover from colonial campaigning.

The 'Jock Column' – named after Lt. Col. 'Jock' Campbell of 4th RHA, who initially pioneered them – was perhaps the best known, and was a product of conditions during the early stages of the Desert War when men and equipment were in short supply. It quickly became part of the tactical system used by British forces during the Desert War and proved highly popular amongst junior officers, since they provided an ideal opportunity of exercising independent command. A Jock Column normally consisted of a single company of motorized infantry, a battery of field guns and a handful of armoured cars, whose task was to prevent enemy reconnaissance units from discovering friendly dispositions, misleading them as to British intentions and lastly for harassment. These small motorized and highly mobile independent columns also helped convince an enemy that they were facing a much larger force than was really the case and conserve equipment in periods between major operations.

The success achieved by Jock Columns against the Italian Army during the early war years, however, led the British commanders in the desert to over-exaggerate their fighting power when confronted by a far better organized, equipped and trained German opponent. As a result, Jock Columns and their ilk were employed by Eighth Army long after they had outlived their usefulness. Jock Columns were resurrected again in November 1941, for example, during Rommel's dash for the wire during Operation *Crusader*, where they did 'excellent work and inflicted considerable damage and casualties on enemy formations and Transport.' In a letter dated 5 December 1941, Auchinleck wrote in glowing terms: 'These "Jock" columns of which more and more are being organized are just what we want ... They seem to suit our particular genius for fighting, and are certainly going at the enemy with the greatest relish and vigour.'² Unfortunately the formation of Jock Columns often led to the weakening of more and more regular formations at crucial moments and reinforced the existing widespread tendency to split up units with all too disastrous effects, especially for the artillery. In April 1942 Auchinleck laid down an authoritative policy for organizing and employing Jock Columns, clearly stating they were suitable for harassing or pursuing weak enemy rearguards, but they could not drive home an attack, except against very weak enemy forces, nor deny ground except for short periods of time. Their use, moreover, dispersed artillery support and made troops far too accustomed to tip-and-run raids, so that they regarded all-out attacks or protracted defences as exceptions rather than the rule. Accordingly, Auchinleck directed that henceforward Jock Columns should be used sparingly for suitable tasks, such as raids, harassing, covering and delaying operations in front of defensive positions on a definite plan, in support of armoured cars on reconnaissance, and lastly in particular circumstances in the pursuit.³ By mid 1942 opinion had decisively turned against them. In the words of Maj. Gen. Frank Messervy, who had employed them to harass Rommel's advancing troops when commanding 1st Armoured Division as the British withdrew from El Agheila to Gazala in January–February 1942: 'We are very liable to send out columns hither and thither; they achieved little and use up a large proportion of our guns, which are not then available, or at any rate are not fit and fresh for the main battle.'⁴

² Connell, John Auchinleck (London, Cassell, 1959), p.393.

³ Major-General ISO Playfair et al. *The Mediterranean and the Middle East. Volume III: British Fortunes reach their Lowest Ebb* (London, HMSO, 1960), p.254.

⁴ Quoted in French, David *Raising Churchill's Army. The British Army and the War against Germany 1919–1945* (Oxford, OUP, 2000), p.216.

The post-Operation *Crusader* changes in organization

The aftermath of Operation *Crusader* in November/December 1941 showed that the British High Command still had a great deal to learn about organizing and handling large armoured formations on a desert battlefield, especially regarding using tanks en masse, practising effective combined armed tactics and massing forces at the decisive point.

The tank-heavy 7th Armoured Division – bolstered on and off with a third armoured brigade – did not perform particularly well during Operation *Crusader*. Indeed, the Armoured Division, periodically organized in three tank brigades and a Support Group, proved too large, unwieldy and difficult to command and control, especially in relation to concerting the action of its constituent formations. Time and time again its widely dispersed armoured brigades acted alone and repeatedly failed to overcome German anti-tank screens and suffered heavy losses at the hands of skilfully handled, concentrated German formations consisting of tanks, motorized infantry and guns. As David French has written: 'British tanks repeatedly charged, unsupported by infantry or artillery, against German and Italian anti-tank guns, and time and time again they sustained disproportionate losses.'⁵ When 22nd Armoured Brigade, for example, charged Italian troops in a prepared position at Bir-el-Gubi on 19 November 1941, it lost 25 Crusaders to anti-tank guns to no result. Indeed, without any supporting infantry to escort captured Italian gunners, these men quickly put their weapons back into action against the formation.

The failure to concert the action of the teeth arms – tanks, infantry and artillery – had been marked. As shown during the Sidi Rezegh battles all too often the three arms had failed to concert their action on the battlefield resulting in heavy loss. The Support Group often fought battles of its own completely independent of the armour, despite its name. During the Sidi Rezegh battles, for example, and again during Gazala, in the attack it was frequently left out of battle completely leaving its anti-tank guns largely wasted. On 27 November, while 22nd and 4th Armoured Brigades had successfully checked the withdrawal of the DAK from the frontier, the absence of the Support Group meant it escaped that night when tanks withdrew to leaguer and no infantry and anti-tank guns were available to block the Trigh Capuzzo.

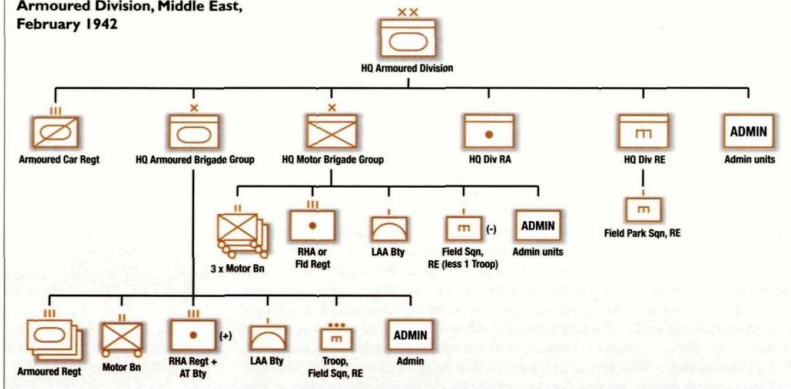
The hard-won experience gained during the winter fighting of 1941–42 quickly convinced Gen. Auchinleck that changes were badly needed in the organization of armoured and infantry formations in Eighth Army, with the intention of improving flexibility, co-operation between tanks, infantry and artillery and lastly to 'associate the three arms more closely at all times and in all places.' In the view of many British officers something akin to a German Panzer Division was required, with supporting anti-tank and field artillery far more closely affiliated to other teeth arms. The solution, Auchinleck believed, lay in organizational decentralization. Early in 1942 he wrote:

Everything we have learned from our operations in Libya goes to show that the association between armoured units, infantry and artillery must be far closer than it has ever been before, and that any attempt at segregation is wrong and most dangerous. I have definitely come to the conclusion, and so has everyone else with a position of responsibility here, that the Armoured Brigade Group as a permanent organization is a necessity and I am not prepared to put armoured troops into battle in any other form.⁶

⁵ *Ibid.*, p.221.

⁶ *Playfair*, op. cit., p.225.

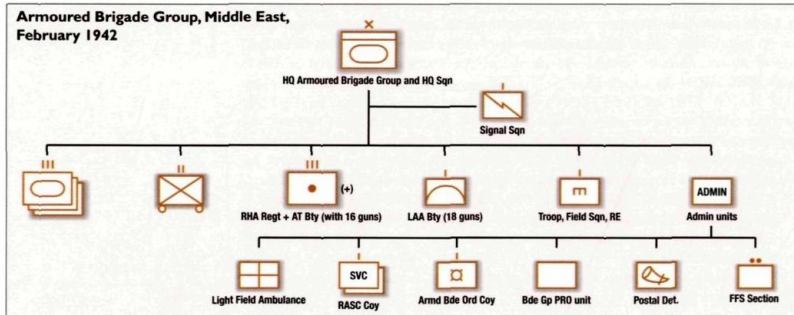
**Armoured Division, Middle East,
February 1942**



Henceforward it was intended that the Brigade Group would become the standard tactical formation of Eighth Army, capable in theory of being self-sufficient and of fighting independently of the rest of its parent division. In many ways this was not a completely new departure. The Brigade Group idea had in practice been tried by a few formations before and during *Crusader*, with small groups of guns providing intimate support to attacking armour and infantry. Indeed, the adoption of the brigade group organization antedated the desert campaign of 1941 and was a follow on from the Kirke Report following Dunkirk and mirrored changes implemented in the UK. It was an idea, moreover, much in favour in the Indian subcontinent, where GHQ India had developed various pamphlets on what it termed Extensive Warfare using widely dispersed armoured forces. This reflected an increasing awareness that enemy tanks were not the only, or even the principal, threat with which armour had to contend in North Africa.

The British armoured division was reorganized into a more balanced formation in accordance with Auchinleck's decision by drastically reducing the amount of tanks and increasing the amount of supporting infantry and artillery. To do so a complete armoured brigade was struck off the War

**Armoured Brigade Group, Middle East,
February 1942**



Establishment and replaced by a Lorried Infantry Brigade. A further casualty of this reorganization was the Support Group, whose two battalions of infantry and other supporting arms had been found insufficient; it was disbanded once and for all. Each armoured division now consisted of an armoured brigade group and one motor brigade group, in accordance with the belief that permanently grouping the various arms together would improve co-operation between them. Henceforward each division contained three armoured regiments and four infantry battalions.

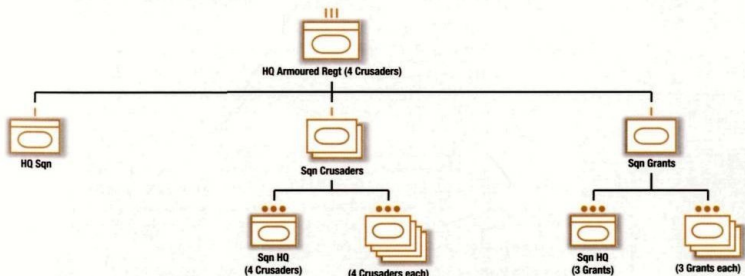
The Armoured Brigade Group in an armoured division contained three tank regiments, a single new motor infantry battalion and an affiliated artillery regiment, equipped with both field and anti-tank guns. It was also allocated a proportion of light anti-aircraft, engineer, and administrative units sufficient for its needs. It formed the main striking force of an armoured division, although considerable uncertainty remained over how to use the infantry effectively, especially in the attack. A Lorried Infantry Brigade Group was organized with three Lorried Infantry Battalions and a regiment of field and AT guns, in addition to light AA, engineers and administrative units.

The organization of several types of subordinate units within armoured divisions underwent alteration to fit them for their new tactical role, as well as the availability of new and far more effective equipment.

The tank regiments in armoured divisions in Eighth Army also underwent some reorganization consequent upon the arrival of newer and more powerful tanks from the USA. Despite the obvious tactical and administrative advantages of equipping a regiment with just one type of AFV, the slow arrival of sufficient Grant tanks, and the psychological and tactical advantage of issuing such better armoured, better gunned and far more reliable tanks, it was decided to issue every regiment some of these AFVs. Some regiments were equipped with two squadrons of Grants and one of Stuarts, while others had two squadrons of Crusaders and one of Grants. Ultimately it meant some armoured brigades would have regiments with just US tanks and others a mixture of Crusaders and Grants.

The Motor Infantry Battalion included in an Armoured Brigade Group was largely a new departure. It consisted of three motor companies and one anti-tank company equipped with 16 new and far more lethal 6-pdr anti-tank guns. Each Motor Company had a reconnaissance platoon mounted in Bren carriers, which gave it the capability of operating decentralized from the parent battalion attached to an armoured regiment. Each fighting section in a motor battalion had its own truck to carry it, along with its weapons and basic administrative equipment. Since this allotment of transport matched the units' tactical organization motor battalions were often described as 'tactically

British Armoured Regiment equipped with Crusaders and Grants, March 1942



Sikh infantrymen, equipped with a 2in. mortar, training in the Western Desert, 6 August 1941. (4700-32 E 4667)

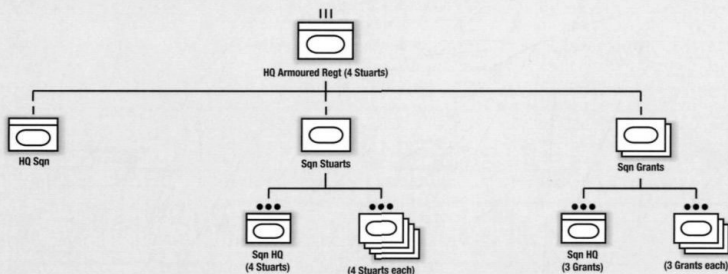


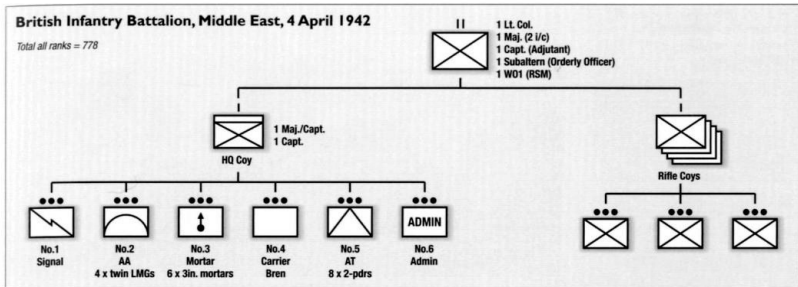
mounted.' Although some trucks had armour-proofing against small arms, they were not fighting vehicles and had had limited off-road mobility. The main function of the Motor Infantry Battalion was to restore mobility to tank units by mounting an attack to clear the way through obstacles or destroy anti-tank defences when the former met resistance beyond their capability to handle it unaided. Other tasks allocated to them included mopping up, holding objectives captured by tanks and defending localities as pivots for armoured operations. None of these tasks involved intimate infantry-tank co-operation, despite the fact that Motor Infantry Battalions might have provided considerable support with their lavish scale of anti-tanks guns.

The three infantry battalions forming part of Lorried Infantry Brigades were organized identically to conventional infantry units, except they had their own motor transport for all men, arms and equipment. They performed a role similar to those given to Motor Battalions, which the Lorried Infantry were to relieve to free an armoured brigade for future operations. In addition, they provided protection to leaguers of an armoured brigade at night.

The experience gained during Operation *Crusader* convinced the British High Command that armoured brigades needed far greater artillery fire support than before, especially to overcome German anti-tank defences. As a result, a single RHA artillery regiment, equipped with 25-pdrs, was permanently affiliated to each brigade group. This was a major step forward in terms of building mutual confidence and ensuring close tactical co-operation. In practice, however, it quickly became clear that a single regiment could not produce a sufficient

British Armoured Regiment equipped with Stuarts and Grants, March 1942





volume of firepower on its own to suppress or destroy German anti-tank gun screens since it was extremely difficult to locate and neutralize such small targets with a bombardment. As a result the artillery was normally used to lay smoke, and then tanks still rushed in to make their own attack.

The infantry divisions in Eighth Army had also displayed some of the same problems during Operation *Crusader* and its aftermath. A particular difficulty was the absence of organic anti-tank capability within infantry battalions, which led to repeated frantic calls from their commanders for tank support or the allocation of 25-pdrs from divisional artillery regiments and their misemployment in a direct fire role to provide protection. As Michael Carver has written: 'The "Crusader" operation was fought to an unending accompaniment of screams from one infantry division headquarters, or field maintenance centre, after another for tanks to come and protect them against the presence or threat of enemy tanks.'⁷

The War Establishments of Infantry Divisions in Eighth Army were also reorganized on similar lines into three Brigade Groups, each containing a permanent grouping of the three arms in an endeavour to improve co-operation between them and therefore improve tactical flexibility and in turn combat effectiveness. An infantry division henceforth consisted of three infantry brigade groups, each of three infantry battalions. A regiment of field and anti-tank guns and a proportion of light anti-aircraft guns, engineers and administrative units were added to each brigade group on a permanent basis to bolster firepower and enable it to fight as a self-contained tactical unit.

These changes also made the reorganization of certain units within infantry divisions essential. A major defect revealed in standard marching during the early days of the Desert War was the lack of an effective anti-tank capability. Relying on 0.55in. anti-tank rifles and anti-tank guns allocated from the divisional RA anti-tank regiment as and when required had proved insufficient. Accordingly infantry battalions also underwent important changes during the spring of 1942, with the intention of improving anti-tank capability and improving mobility. A standard infantry battalion henceforth consisted of an HQ company, three rifle companies and a support company, with the latter including a mortar platoon, a Bren gun carrier platoon and its own anti-tank platoon of 8 2-pdr anti-tank guns. Transport when required was still provided by divisional RASC companies. The belated formation of anti-tank platoons at last made infantry battalions 'tank proof' to a reasonable degree, especially after 6-pdrs were issued, remedying one of the major tactical problems in Eighth Army. An indirect benefit was that it freed 25-pdrs from anti-tank defence, which could now concentrate on providing indirect fire support in attack and defence.

⁷ Jackson, W.G.F. *The North African Campaign 1940-43* (London, BT Batsford, 1975), p.147.

The 8th Hussars testing their new American M3 Stuart tanks in the Western Desert, 28 August 1941. (4700-32 E 5065)



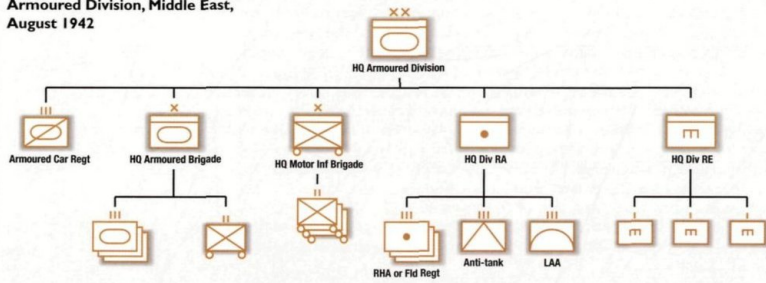
The Royal Artillery Field regiments in infantry divisions also underwent alteration in accordance with these changes. A regiment of horse or field artillery now contained three batteries of 8 25-pdrs and one battery of 16 new 6-pdr anti-tank guns (the latter found from existing RA anti-tank regiments).

The Battle of Gazala and its aftermath

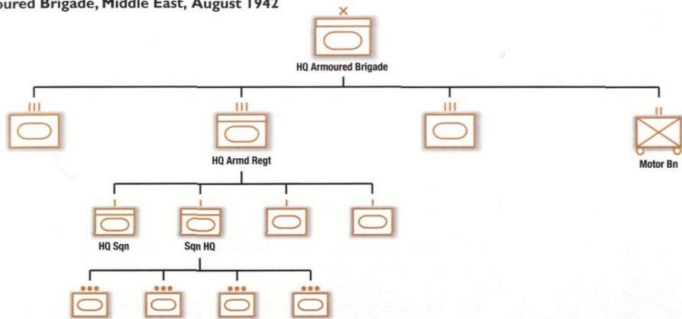
The setbacks experienced in the winter of 1941-42 in North Africa led to further changes in the structure of Eighth Army, as a result of a combination of losses in battle, the need to rest and reorganize formations and the despatch of formations to other theatres of war.

The Eighth Army that occupied the defences of the Gazala Line and prepared for an offensive was still organized into two army corps and supporting army troops, although their character and composition had changed considerably. 13th Corps still remained predominantly infantry and 30th Corps an armoured formation. A significant number of formations had departed for other theatres of war, including the Australians, New Zealanders, and 4th Indian Division now serving in Cyprus. The veteran 7th Armoured Division and the hurriedly reconstituted 1st Armoured Division (after the disasters of January) made up 30th Corps, in addition to 201st (Guards) Motor Brigade, 3rd Indian Motor Brigade Group, 29th Indian Infantry Brigade and the 1st Free French Brigade Group. 13th Corps consisted of 50th Infantry Division, 1st South African Division, 2nd South African Division, 1st Army Tank Brigade and 9th Indian Infantry Brigade. A much higher proportion of the available troops were from the United Kingdom than before. This included 50th (Northumberland) Division and 1st Armoured Division, in addition to those

Armoured Division, Middle East, August 1942



Armoured Brigade, Middle East, August 1942



British troops in command positions, independent armoured formations and in the supporting arms and services.

The Eighth Army's constituent formations' basic organization was much the same as before in terms of War Establishments. Indeed, the various proposed changes in the organization of formations and units outlined above had not progressed far. The Gazala battles began before all these organizational changes could be fully implemented. Neither armoured division had completely changed over to the new organization. 1st Armoured Division, for example, still fielded the two armoured brigades it had formed with in the UK. Some progress had been made in the brigade group organization, but since only 112 6-pdrs had been issued many anti-tank batteries still only had 2-pdrs and many infantry and motor battalions still lacked organic anti-tank guns. Many artillery regiments also still remained the same. The three armoured brigades were up to strength in tanks, although some regiments had barely received all their Grants when battle was joined.

The fundamental changes in War Establishment underway during the summer (and in turn fighting methods) could not have come at a worse time, with Eighth Army reeling from the shock of battle and attempting to cobble together a defensive line against the advancing Panzergruppe Afrika. As Paddy Griffith has written: 'A change of tactics in the middle of a battle can sometimes be a salvation, but on this occasion the change was not properly



A highly effective 6-pdr anti-tank gun and its crew prepare for battle in the Western Desert, 3 November 1942. (4700-32 E 18895)

prepared, disseminated or understood. It added confusion to an already confused situation and often remained a dead letter.⁸ Indeed, the new Brigade Group organization adopted by the armoured divisions and infantry divisions did not prove universally popular and criticism mounted, especially after experience of using it in battle grew. To some officers the formation of Brigade Groups seemed another manifestation of the tendency towards dispersion and fragmentation that Eighth Army had displayed on frequent occasions before, and virtually ignored the principle of concentration of force. It dissipated fighting power and especially militated against the concentration of artillery, which was now the most powerful arm at the disposal of British commanders. The obvious downside of a Brigade Group organization was that all too often small groups of armoured forces, employed in 'penny-packets', had been defeated piecemeal by German Panzer divisions operating in compact masses of all arms. When attacked Brigade Groups simply could not call down enough supporting artillery firepower or mass sufficient anti-tank guns to prevent being overrun and defeated in detail.

The Eighth Army's HQ resorted to further tinkering with organization during the summer of 1942 to help improve combat effectiveness, instead of addressing fundamental changes in doctrine and fighting methods. The tendency towards dispersion and fragmentation of British forces manifested itself again as the Eighth Army struggled to halt Rommel's onrush. Following the withdrawal from Gazala, Ritchie revisited the idea of Jock Columns and ordered the creation of mobile columns from his existing divisions, given the battered state of the remaining armoured formations, to concentrate all the available firepower. Since it was believed enemy tanks were much superior to his few remaining own AFVs, these were built around the 25-pdr field gun as the main offensive weapon. On 16 June he instructed infantry divisions to split into two parts, with an advanced mobile element consisting of regimental groups (or columns) of all arms and a rear or static element that would occupy a sector of the Egyptian frontier defences. A regimental column would consist of the HQ of a battalion or field regiment, a field battery, an anti-tank battery, an anti-aircraft troop, and a battalion of infantry (less a company), to provide local protection for the guns. They were to carry out a roving role towards Tobruk. With Eighth Army under immense enemy pressure, however, little progress was made in actually forming these columns. On 22 June Ritchie issued fresh instructions for all infantry divisions to form 'brigade battle-groups', in which his most powerful remaining teeth arm – the artillery – would play the major role, with small detachments of other troops just to protect them. Progress again, however, was limited in forming them. All these changes had the unfortunate effect of weakening further and further corps and divisions.

⁸ Griffith, Paddy 'British Armoured Warfare in the Western Desert, 1940-43' in Harris, J.P. and Tasse, F.H. *Armoured Warfare* (London, BT Batsford, 1990), p.83.

Crusader tanks and other vehicles out on patrol in the Western Desert in highly dispersed 'desert formation', 26 August 1942. (4700-32 E 16132)



The assumption of command of Eighth Army on 25 June by Gen. Sir Claude Auchinleck led to the adoption of a new policy of mounting a fluid defence. He quickly endorsed his predecessors' idea of reorganizing divisions into forward and rearward portions and ordered the latter into the El Alamein defences. The forward elements of 10th Corps, for example, consisting of 50th and 10th Indian Division, were to consist of the divisional headquarters, one brigade group and all the divisional artillery. Similarly 5th Indian Division and 2nd New Zealand Division were reorganized, although Maj. Gen. Freyburg strongly resisted this change, kept two brigades forward and exercised his right of appeal to his home government. Auchinleck also proceeded with the centralization of artillery at the highest practical level, more than ever before in the Desert War, and employed in accordance with a single artillery plan. 1st South African Division's successful defence during First El Alamein in July in large part resulted from the massing of its divisional artillery and medium regiments as they became available.

The Eighth Army at El Alamein, August–October 1942

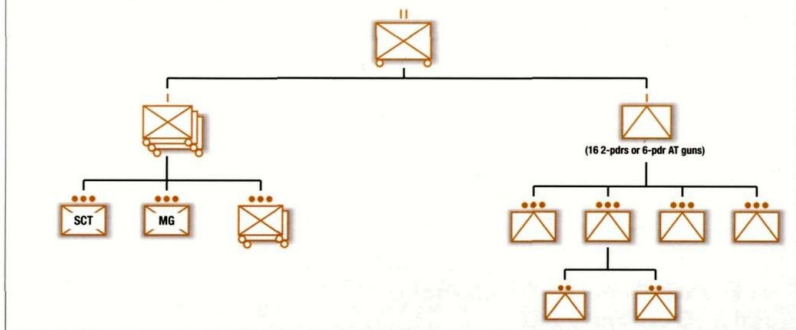
The appointment of Gen. Alexander as Commander-in-Chief, Middle East and Lt. Gen. Bernard Montgomery as GOC Eighth Army in August 1942 saw an almost immediate end to the tinkering with organization of British and Commonwealth formations that had characterized the period since Eighth Army's formation. A new policy on organization was laid down that remained in force until the end of the Desert War. Montgomery quickly stamped on the idea of Jock Columns and small battle groups. An edict almost immediately went out that the division henceforward would be the tactical unit and fight as a whole in future engagements with the Panzerarmee Afrika, with Corps and Army Headquarters exercising a proper control of artillery and engineer assets rather than being parcelled out to lower formations. This was particularly important in the case of the artillery, enabling its firepower to be quickly switched to and fro as the situation demanded. It finally marked the end of Jock Columns and the disastrous Brigade Group experiment that had cost Eighth Army dear.

The primacy of regular divisional organizations and the principle concentration of force were firmly re-asserted again. Indeed, during the



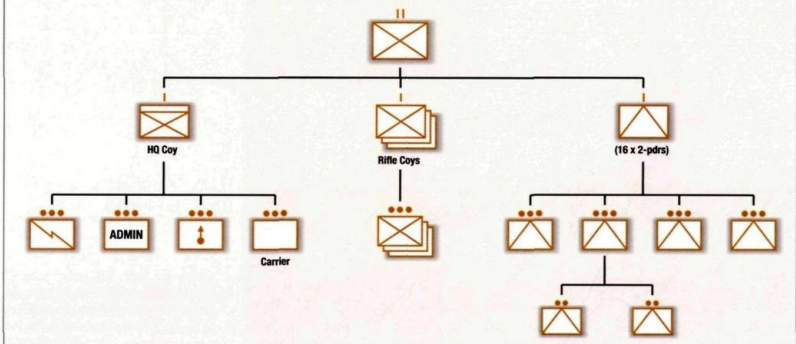
Sherman tanks of the Eighth Army move across the desert at speed as the Axis forces begin to retreat from El Alamein. (4700-32 E 18971)

Motor Battalion, Middle East, 16 October 1942

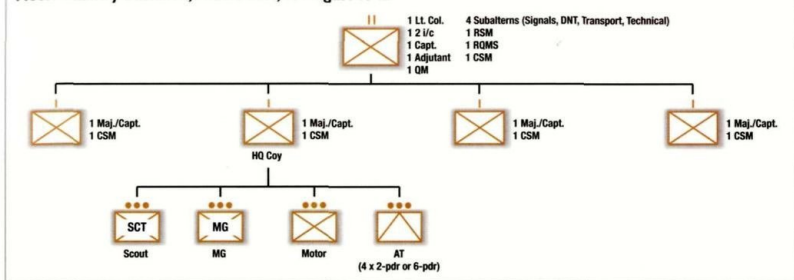


autumn the armoured and infantry divisions finally completed reorganization on the new War Establishments initially proposed early in 1942, although they would be handled very differently in terms of tactics. Henceforward the constituent brigades of divisions would fight coordinated battles in close proximity, with the full weight of supporting arms and services brought to bear as and when needed. Only for a temporary and particular purpose would brigades be detached in practice from their parent formation. By October 1942 three types of division existed in Eighth Army: Armoured, of one armoured and lorried infantry brigade; Mixed, of one armoured and two infantry brigades; and Infantry, of three infantry brigades. Each type also had the appropriate slice of divisional and administrative troops to fight a battle on its own. The Mixed Division – effectively a halfway house between an armoured and an infantry formation – was the only real departure in organization. It proved a short-lived development, however, and was abolished the following year. Apart from the two Fighting French and one Greek Infantry Brigade Groups, the Brigade Group organization was abolished.

Lorried Infantry Battalion, Middle East, 20 September 1942



Motor Infantry Battalion, Middle East, 15 August 1942



The Eighth Army by October 1942 had a very different composition from when first formed, with at long last British divisions forming the majority of its fighting strength. A large Commonwealth contingent remained, however, and given its experience remained a key part of its fighting strength. Eighth Army totalled some 230,000 men, with an order of battle of 11 divisions, of which seven were British. These included 1st, 7th, 8th and 10th Armoured divisions, 44th (Home Counties) Division, 50th (Lowland) Division and 51st (Highland) Division, as well as smaller brigade-sized formations. The Commonwealth contingent included: 4th Indian Division, 5th Indian Division, 9th Australian Division and the New Zealand Division. A far higher amount of supporting arms and services also took the field, with growing numbers of medium artillery regiments adding considerably to available firepower in both attack and defence. *In total over 900 field and medium pieces were ready for action.* 554 2-pdrs and 848 6-pdrs had been issued to the troops. The tank strength of Eighth Army had also been vastly increased in terms of numbers – 1,029 ready for action and 200 replacements in reserve – and quality, including large numbers of Shermans and Crusader Mk IIIs equipped with a 6-pdr gun.

Following the Battle of Alam El Halfa the Eighth Army underwent considerable reorganization, specifically to fit it for the task of breaking through the deep belt of Axis fixed defences running from the Mediterranean coast to the Quattara Depression. In October 1942 it consisted of three corps, which were deliberately organized as flexibly as possible so that their composition could be changed at the drop of a hat. XXX Corps, commanded by Lt. Gen. Sir Oliver Leese, had five infantry divisions under command, in addition to 23rd Armoured Brigade Group. The former included 51st Highland Division, 4th Indian Division, 9th Australian Division, the New Zealand Division (including 9th Armoured Brigade on strength) and 1st South African Division. XIII Corps, commanded by Lt. Gen. B.G. Horrocks, was smaller and consisted of the veteran 7th Armoured Division, 50th Infantry Division and 44th Infantry Division. A new reserve corps, commanded by Lt. Gen. Herbert Lumsden, had also been formed soon after Montgomery assumed command – X Corps – strong in armoured formations, which he later referred to as his ‘corps de chasse’ capable of taking on the Afrika Korps at its own game. It originally consisted of the New Zealand Division, 1st Armoured Division, 8th Armoured Division and 10th Armoured Division, but as the latter could not be given a Lorried Infantry Brigade it was broken up. The New Zealand Division, moreover, was lent to XXX Corps for the breakthrough operations. Although formations were chopped and changed as the situation demanded for the rest of the Desert War, Eighth Army retained this corps organization. Substantial support was available to Eighth Army from the Desert Air Force, whose strength had been considerably increased.

Doctrine and training

Fighting methods during the early Desert War

The British Army had begun the Desert War in June 1940 knowing surprisingly little about waging highly mobile operations using mechanized forces under the peculiar conditions imposed by the desert. Indeed, it appeared virtually a new form of conflict carried out using predominantly tank and motorized formations fought in an area where no one had previously believed large-scale military operations possible. The basic source of written doctrine employed by all the British Commonwealth armies – Field Service Regulations and the manuals for each arm of service (as amended by various Military Training Pamphlets produced by the Directorate of Military Training at the War Office since World War II began) – contained next to nothing of specific guidance. Although FSR contained much of general value about war fighting, this was often largely discounted by men on the spot due to a pervasive distrust of written doctrine, the fact that doctrine was not imposed from the top down by senior commanders, and that it was left to commanding officers to interpret official sources. Tank warfare using highly mobile AFVs was a new and virtually unknown quantity, with contending theories abounding within the Royal Tank Corps about the correct organization and employment of armour, especially in independent mobile operations. Recent experience in France had yet to be fully digested and lessons learned. Perhaps most seriously a pervasive idea quickly became established that the desert was a unique combat environment and caused serious difficulties; this in part explains why FSR were largely ignored. To many observers it appeared the tank and the desert presented a whole new challenge in terms of devising a workmanlike doctrine with which to both prepare troops for combat and to direct the fighting itself. With little authoritative advice from senior officers, much was left to commanders on the spot. As Michel Carver has accurately described: 'In default of experience, the army had to either to rely on theory or, as most commanders did, on what they regarded as pragmatic common sense or even happy-go-lucky intuition.'⁹ The result was that techniques were gradually evolved and various new methods perfected.

⁹ Carver, *Michael Dilemmas of the Desert War* (London, Batsford, 1986), p.13.



A Humber Mk II armoured car in the Western Desert, 14 July 1942. (4700-32 E 14407)



Men of the Leicestershire Regiment man a defensive position armed with a .303 Bren gun, near Tobruk, 10 November 1941. (4700-32 E 6436)

The newcomers who joined Western Desert Force could draw on some, albeit limited, advice from troops who had served in Egypt in its small pre-war garrison about both fighting methods and doctrine for armoured warfare, and living, moving and fighting in the desert. Before June 1940 these units had carried out exercises in the Western Desert during which much had been learnt about 'desert lore', what constituted 'desert worthy vehicles' and the movement of small, highly mobile, mechanized forces across featureless desert terrain. A great deal still remained to be learnt about the desert, however, especially in relation to a war using large numbers of vehicles.

These troops in Egypt were heavily influenced by Maj.Gen. Percy Hobart, a doyen of the Royal Tank Corps in the 1930s and GOC of the Mobile Division (Egypt), later re-designated 7th Armoured Division. Inspired by the ideas of Maj. Gen. J.F.C. Fuller and Basil Liddell Hart, this prickly and strong-minded individual fervently believed that forces exclusively consisting of tanks would exert a decisive effect on all fighting, with armoured formations operating widely dispersed across a battlefield and suddenly concentrating at decisive points. By using manoeuvre and surprise alone, tanks would play a key role in securing victory. Unfortunately this belief meant Hobart badly neglected inter-arm co-operation, largely relegating infantry and artillery to a very subordinate role, and little thought was ever given to how the other teeth arms could assist in destroying enemy armour or be used in the desert. As Carver has noted: 'The problem of how to employ infantry in the desert, and therefore how to organize and equip it, was never satisfactorily solved.'¹⁰ Under his command this formation was intensively trained in accordance with his bullish belief that armoured units would have a paramount role in a future conflict. Although Hobart was dismissed in November 1939, over differences with his commander on doctrine, his

Troops of the King's Own Regiment man a carefully camouflaged Vickers machine gun position near Tobruk, 10 November 1941. (4700-32 E 6442)



¹⁰ *Ibid.*, p.53.

ideas about the supremacy of the tank were widely accepted in 7th Armoured Division and lived on during the early war years. It proved a very unfortunate legacy and ultimately cost the Desert Army dear. Indeed, according to Tim Place: 'The tactics in which Major General Hobart trained the Mobile Division in Egypt in 1938–39 set the pattern for the tactics which would bring defeat after defeat at Rommel's hands in 1941 and 1942.'

The influence of doctrine – the effect of Operation Compass

The experience gained by Western Desert Force during early operations against the Italian Army in Libya, culminating in the Battle of Beda Fomm in February 1941, exerted a powerful influence on the Desert Army until late 1942. These operations showed all the strengths of the pre-war army and, along with what the Germans had achieved in 1939–40, apparently fully vindicated the doctrine developed by Hobart, clearly showing that the British armed forces possessed considerable skill at waging fast-moving armoured warfare under desert conditions. To many officers it appeared that O'Connor had perfected a completely new style of mobile warfare and that the British had particular skill at or affinity for desert fighting. As Perrett has noted: 'This was simple minded nonsense. If Wavell's troops had lived, fought and maintained themselves with less difficulty than the Italians it was because they had been trained to do so in a hard school – Hobart's.'¹¹ Against an opponent labouring under immense and myriad difficulties imposed from poor leadership, diabolical equipment and lacking sufficient motor transport to operate effectively in the desert, the British armed force appeared far better fitted to the peculiar demands of living, moving and fighting under desert conditions in terms of tanks, motor transport, command, control and intelligence.

¹¹ Perrett, Bryan Wavell's *Offensive* (London, Ian Allen, 1979), p.78.



Stuart tanks of 22nd Armoured Brigade, 7th Armoured Division, in the Western Desert, 28 July 1942. (4700-32 E 14947)



Infantry of the 2nd New Zealand Division link up with Matilda tanks of the Tobruk garrison during Operation Crusader. (4700-32 E 6918)

7th Armoured Division and other troops in Western Desert Force learnt much that was simply wrong from the defeat of the Italians. Those who believed manoeuvre and mobility and shock effect by tanks alone could achieve a decisive result on an enemy's mind found their faith fully justified in the early desert campaign against the Italians. It also showed that the wide dispersal of armoured formations could bring major tactical benefits. Indeed, a wide degree of dispersion, adopted originally from sheer lack of numbers and low ratio of forces to space and accentuated both as a means of reducing vulnerability to air attack and of deception where concealment was impossible, became the hallmark of the desert veterans. The use of Jock Columns also appeared vindicated. The downside of Operation *Compass*, however, was that it taught the Commonwealth armies nothing about tank infantry cooperation or the proper handling of the artillery in support of mechanized formations. Neither did the use of anti-tank guns feature in the lessons of the campaign. Last but by no means least, it taught officers of the RTC that great undue risks could be taken with apparent impunity.

Harsh German lessons

The arrival of the German Wehrmacht in February 1941, in the shape of the mechanized Deutsches Afrika Korps (the nucleus of Panzerarmee Afrika), ushered in a radically new phase of the war in the desert. Early painful encounters quickly showed the British still had much to learn about armoured fighting methods, in particular about handling large tank formations in the desert, combined arms tactics and concentrating force at the decisive point. The Germans, with considerable experience of successful all-arm mechanized operations, quickly showed, that they were tougher, more determined and better skilled at armoured combat than their Commonwealth opponents, exploding the myth that the British had mastered desert warfare. They displayed a quite remarkable ability to quickly adapt to the desert and its ways. Indeed, the Germans ruthlessly exposed the shortcomings of British fighting methods and doctrine during their counteroffensive and the ill-fated operations *Battleaxe* and *Brevity*. Whereas the British still clung to the notion that tank battles should be fought as all-tank affairs by a dispersed armoured 'queen' of the battlefield, the Germans were more aware of their limitations. The Germans placed considerable emphasis on concentration for force, effective combined-arms tactics and massing their strength at the decisive point. In particular, the Germans had realized the full potential of the offensive use of anti-tank guns as the real killers of enemy armour, rather than tanks themselves. As Paddy Griffith neatly put it:

A Humber Mk II armoured car of 4th Light Armoured Brigade (formerly 4th Armoured Brigade) on patrol in the Western Desert, 10 August 1942. (4700-32 E 15509)



This profound imbalance in operation and practice between the two sides made for combats in which the British tended to rush forward into the fray while the Germans sheltered behind or between the fires of their concealed, low-lying anti-tank guns. This was not a tank battle at all but a shooting gallery.¹²

Initially, confusion and bafflement ensued during the summer of 1941 while the British High Command tried to understand the reasons for German battlefield success and to 'close the doctrine gap' between the two sides. Few realised the real enemy of the British tanks was the German anti-tank gun.

The lessons of Operation *Crusader*

The erroneous lessons and tactics learnt in the early stages of the Desert War against the Italians still exerted a baleful influence on the early battles waged by Eighth Army. Indeed, Operation *Crusader* showed that its fighting methods had considerable shortcomings and it suffered repeated defeats at the tactical and operational level. Many Commonwealth units and formations were slow to manoeuvre, lacked the flexibility and the aggressiveness of their German opponents, and failed to seize fleeting opportunities when offered. A trenchant critique by Panzergruppe Afrika of its opponents following *Crusader* noted: 'The slowness and clumsiness, the lack of initiative and tactical versatility observed up to date has not changed. There was no alteration in tactical planning as the battle developed in a way which had not been expected beforehand.'¹³

The Eighth Army displayed particular shortcomings vis-à-vis their opponents during *Crusader* and into the spring of 1942, especially in placing far too much emphasis on the fighting power of tanks unaided and a continuing deeply entrenched belief that armoured warfare was exclusively a tank versus tank affair. Repeated unsupported attacks had been made by British armour against unsuppressed German and Italian anti-tank guns, fighting in defensive positions of their own choosing, which made up a high proportion

¹² Griffith, Paddy 'British Armoured Warfare in the Western Desert, 1940-43' in Harris, J.P. and Toase, F.H. *Armoured Warfare* (London, BT Batsford, 1990), pp.77-78.

¹³ French, David *Raising Churchill's Army: The British Army and the War against Germany 1919-1945* (Oxford, OUP, 2000), p.217.

of all German combat units. Effective combined-arms tactics were marked by their absence during such 'Balaclava' charges. To quote one eyewitness:

Time and time again tanks motored or charged at the enemy on a broad front until the leading troops were knocked out by enemy tanks or anti-tank guns: the momentum of the attack immediately failed. Such artillery as was supporting the tanks indulged in some spattering of the enemy ... after which the tanks motored about or charged again with the same results as before ... the infantry taking no part, their task being to follow up and occupy the objective after it had been captured by the tanks.¹⁴

A heavy penalty was paid in destroyed tanks for the failure to coordinate supporting infantry and artillery fire and lack of realization that the Germans were using their anti-tank guns as the main killer of British armour. Indeed, the latter in North Africa accounted for a higher proportion of British tank losses (40 per cent) than did hostile tanks (38 per cent), according to an Operational Research report produced after the war ended. Following the Gazala battles the second in command of a squadron in 22nd Armoured Brigade reported: 'A frontal attack by armour on a defended position, and an attack of this kind by cavalry tanks, though even then considered part of their role, is one of the surest methods of suicide that exists.'¹⁵

The fighting during the winter and later during the spring showed that Eighth Army still placed far too much emphasis on mobility and manoeuvre and wide dispersal of its forces, which militated against concentration of force at the decisive point. An obsession with passive air defence still gripped the British Army long after its real need had passed, resulting in wide tactical dispersion. In particular, Eighth Army's fighting strength was badly fragmented by a tendency to employ independent brigades in combat, often operating at a considerable distance from its neighbours, to fight its battles, rather than in divisions. All too often brigades were set upon by complete German divisions and destroyed in detail. It was also shown by the continued widespread use of Jock Columns, which effectively dissipated the fighting power of formations. A heavy price, for example, was paid for dispersing 7th Support Group into Jock Columns during the later stages of Operation *Crusader* to harass German forces operating throughout the battlefield. Perhaps the most serious downside of this tendency was that it prevented the concentrated use of artillery, in which the British enjoyed growing superiority in quality, quantity and professionalism.

The tendency towards dispersion was also reflected in the defensive methods employed by Eighth Army during 1942. The immensity of the featureless desert and low force to space ratios made a linear defence an impossibility for much of the Desert War. Instead, the British developed the idea of defensive 'boxes', invented by Maj. Gen. Frank Messervy, consisting of all-round defensive localities containing dug-in infantry, anti-tank guns and artillery protected by thick belts of anti-tank and anti-personnel mines. These were normally constructed at a key position on the battlefield blocking a line of approach, defile or similar key terrain feature. Vulnerable motor transport was normally sent away, since it could not be protected from enemy fire without each vehicle being dug in, leaving a garrison largely immobile in the fluid conditions of desert warfare. A box, moreover, was intended to act as a pivot of manoeuvre around which mobile armoured forces could advance or retire, attacking enemy penetrations, and if necessary collect ammunition and petrol from dumps. These defensive localities were in themselves an effective response to battlefield realities, but only if they were within supporting range of similar defences and/or sufficiently powerful counter-attack forces capable of

¹⁴ Bidwell, Shelford and Graham, *Dominic Firepower: British Army Weapons and Theories of War 1904-1945* (London, George Allen & Unwin, 1985), p.225.

¹⁵ French, *op cit*, p.223.

A Crusader tank of 4th Light Armoured Brigade in the Western Desert, 20 September 1942. (4700-32 E 17110)



giving them succour. If left isolated they proved all too vulnerable to massed enemy attack, which simply overran or destroyed them.

The main lesson Eighth Army learnt from Operation *Crusader* was that improving combined-arms tactics, especially in the attack, was essential. No longer was armoured warfare diagnosed exclusively as an armoured business. On 30 January 1942 Auchinleck wrote:

We have got to face the fact that, unless we can achieve superiority on the battlefield by better co-operation between the arms, and more original leadership ... we may have to forego any idea of mounting a strategic offensive, because our armoured forces are incapable of meeting the enemy in the open, even when superior to him in number.¹⁶

Overcoming belief in 'pure' tank battles and therefore improving combined arms was particularly difficult, since it was so deeply entrenched in the minds of old desert hands. Following *Crusader* the HQ of Eighth Army directed that 'tanks must never move, once contact has been made, unless adequately covered by artillery.' The main function of tanks remained to seek out and destroy enemy armour, but 'tanks alone cannot win battles ... In the armoured divisions tanks must act in the closest co-operation with infantry and artillery in order to defeat the German armoured forces.'

The British High Command sought to improve flexibility and combined arms primarily by tinkering with organization rather than fundamentally changing fighting methods and doctrine, with the formation of Armoured Brigade Groups as discussed previously. While potentially a major step forward in improving combat capability, the downside was that it dispersed the available supporting artillery and exacerbated the problem of dispersion already evident in Eighth Army. It was magnified by the resurrection of Jock Columns during the summer and small formations by Auchinleck.

Eighth Army made an effort to identify its mistakes, learn and make changes in its doctrine and fighting methods during 1942, although what had actually happened and the measures needed in response were not always agreed upon. The main medium for passing on information was via guidelines, issued by

formation commanders and distributed to subordinate units, that provided training instructions. Later new lessons learnt were laid down in periodically produced Middle East Command Army Training Memoranda, albeit often only after a lengthy time delay. In turn these lessons learnt by Eighth Army passed on to Cairo and then onwards to the War Office in London. The progress actually made in making the requisite changes was slow and haphazard due to a number of factors. It was difficult – virtually impossible – to make major changes while fighting was in progress. A capable senior commander – with sufficient clarity of mind, experience and authority to recognize the need for and oversee such far-reaching changes in thought, doctrine and action – was marked by his absence. Indeed, to an extent commanders' ideas were still in flux, with Auchinleck still approving, it appears, a degree of dispersion of the battlefield. A follow-on from this was that Middle East Command and Eighth Army lacked a unifying authority to identify what was happening on the battlefield and as a result still made serious errors about what the Germans were actually doing. Lastly, Eighth Army suffered from a high turnover in commanders, staffs and formations during the Desert War, which militated against learning from experience and making changes. Part of the problem delaying much needed changes in Eighth Army's approach to battle was that senior RAC officers blamed reasons other than combined arms for failure. These included the inexperience of commanders, lack of training, a dearth of arms and equipment, lack of air superiority and lastly the supposedly poor quality of British tanks, especially in armament and mechanical reliability.

The Eighth Army made some progress in improving some of the faults identified during *Crusader*, but it was too little and too late and these efforts were largely overtaken by events. No time was available for a revision of doctrine and essential retraining to put new ideas into effect. As a result it repeated many of the same errors during the Gazala battles and the precipitate withdrawal to El Alamein during the summer of 1942, in terms of dispersion and failure to concert action between the teeth arms, especially during attacks against German positions on ground of their own choosing heavily defended by anti-tank guns. Indeed, the British never developed a successful method of making a concerted attack using infantry and tanks, least of all in fluid mobile fighting, backed by massed firepower of field artillery to neutralize powerful enemy anti-tank guns/other defences until Second El Alamein. This was largely due to continued over-emphasis on dispersion, which fragmented the firepower of the most effective arm – the gunners. The British armour suffered its greatest defeats of the Desert War on 12–13 June 1942, when in a series of confused actions, tanks of 2nd, 4th and 22nd Armoured Brigades, fighting under 1st Armoured Division, impaled themselves yet again on Rommel's anti-tank guns. On 22 July, 2nd and 22nd Armoured brigades failed to support 6th New Zealand Brigade, which was overrun. 23rd Armoured Brigade charged once again into the attack, and overall the British lost 121 tanks compared to German losses of three. A profound distrust between infantry and armour quickly emerged.

Montgomery – a return to attrition

The Eighth Army still appeared baffled as to how to conduct a fluid open battle in the Western Desert in August 1942. Efforts to devise an effective doctrine and improve combat effectiveness had still largely failed. Fortunately it never had to really do so ever again. The Eighth Army that had rebuffed Rommel's advance at First El Alamein perhaps fortunately now faced a very different stage of the Desert War, and was under a new commander who had firm ideas about war fighting. Indeed, Lt. Gen. Bernard Montgomery was the first senior desert commander of Eighth Army who really had the time, opportunity, will, ruthlessness and confidence to impose his own ideas about doctrine and fighting methods. A common doctrine, standard operating procedures and



Lt. Gen. Bernard Law Montgomery, photographed shortly after his arrival by air in Cairo in 1942. (4700-20 CM 3327)

battle drills modelled in large part on their opponents were introduced on an army-wide basis.

The war machine he commanded was very different from that before, with new and far greater tanks, powerful support artillery and far more troops. By late 1942 the majority of Eighth Army units, moreover, had combat experience and had built up a cadre of trained and experienced officers, NCOs and ORs who knew the business of desert warfare.

The new GOC Eighth Army faced a very different and arguably easier task than his predecessors who had fought in the limitless, open desert – breaking into and through a short, linear German defensive position resting on secure flanks running from the Mediterranean to the Qatarra Depression. It meant that unlike previous commanders Montgomery did not have to fight a fast-moving war of manoeuvre in the desert. Instead, he had to mount a breakthrough attack on a limited front against fixed flanks held by an opponent of inferior strength and in dire logistical shape. The Eighth Army from El Alamein onwards adopted fighting methods and largely fought the type

of war – based on ‘older and sounder principles’, according to one historian – it and the British Army as a whole knew, understood and was good at, namely massed attacks employing heavy artillery firepower on a comparatively narrow front. Many commanders were keen to return to them, especially those at sea in mobile desert warfare. In place of manoeuvre, firepower was used to batter down Axis opponents in an attritional battle, and thereby reduce their ability to inflict losses. Indeed, in many ways these battles it fought and won bore a similarity to those on the Western Front during World War I, in which the British pitted their strengths against Axis weaknesses rather than fighting the Germans on their own terms as before. Several important differences, however, existed, with the British deploying far less artillery, but having powerful support from tactical air forces and new and improved tanks.

The approach that worked so well at El Alamein was followed for the rest of the Desert War, such as at Medenine and the Mareth Line. Henceforward British attacks in North Africa were carefully stage-managed, and were reliant on superior massed firepower and meticulous planning at all levels. These methods were necessary for other reasons. For the armoured brigades the pendulum had swung from one extreme to another in terms of their approach to battle. Following earlier heavy combat losses, many now wisely abandoned charging enemy positions and adopted instead a policy of extreme caution, in part explaining the bogged pursuit after the battle, and a failure to exploit after later battles such as Wadi Akarit. While not as glamorous as earlier tank battles in the open desert, Montgomery’s methods worked.

Training for desert warfare

The senior British commanders who served in North Africa were well aware of the critical importance of a high level of individual instructions and collective training, carried out at unit and formation level, as a key means of improving combat effectiveness. Training was always an ongoing process carried out whenever an opportunity offered in the line, or on the rare opportunities when units and formations withdrew into the rear areas. A major training deficit, however, existed in most British Commonwealth formations throughout the Desert War. This was not an isolated problem and reflected the overall poor standard of instruction in the British armed forces as a whole during the early war years. The British Army in 1940–43, like the rest of the Commonwealth

armed forces, was the victim of the massive expansion since the outbreak of war, which caused a massive slump in overall combat effectiveness. Hard training was required to rectify this shortfall. All too often during the early war years the British Army had to train and use its troops on the battlefield at the same time. Instruction respectively was the responsibility of unit and formation commanders and was an ongoing process carried out at all times – even on active service in the desert – whenever an opportunity offered itself.

Such instruction was based upon written sources of doctrine such as FSR, training instructions issued by formation commanders, and, lastly, advice gleaned from experienced officers and units. The willingness of individuals to learn by actually reading the manuals or listening to and acting upon the advice of others, however, was also an important element in ensuring that a high standard of efficiency was reached.

The Western Desert Force had already learnt the hard way the danger of committing inexperienced and poorly trained formations to battle, and that much still remained to be learnt by Commonwealth troops. In large part the destruction of the ill-fated 2nd Armoured Division in March–April had been largely due to a lack of individual and collective training. A Training Memorandum issued by Middle East Command in June 1941 began: 'A war of movement such as this one requires troops to be trained to a considerably higher degree than was necessary in the last war.'

The Western Desert Force had already identified key personal skills and knowledge that needed to be imparted during training to the desert soldier, in addition to a high standard of individual and collective training for modern warfare.

The conduct of military operations in the 'Blue' required distinctive training, as well as a period of physical and psychological acclimatization for Commonwealth troops for whom this was a challenging environment. To the majority, life in a desert environment came as a profound shock, with few realizing what it would be like in advance. For most the desert was a tedious and unfriendly place posing a range of threats to life and limb in itself that required training and experience to overcome. A period of time was needed for all ranks to adjust to the extremes of heat and cold, dust, flies, shortages of water and the limited unpalatable diet. As one desert veteran later wrote:

Newcomers to the desert with their 'white knees', were urged to become 'desert-wise' or 'desert-worthy', to learn to navigate, to cook for themselves, to conserve water, to 'harbour' or 'leaguer' in the accepted way. At the same time they absorbed a healthy, or unhealthy, respect for Rommel and his tanks imparted by the old desert hand.¹⁷

The development of 'desert sense' – a term vaguely defined as an ability to live and move in the desert with confidence and ease – was judged an essential part of preparation for life in the desert. It involved the possession of different skills and knowledge. The ability to move and navigate across the featureless desert was an essential skill, using the stars, sun, magnetic or sun compasses, milometers, and map reading, as well as good memory. Indeed, it was a matter of life and death, given the harsh terrain and absence of drinking water, that required careful conservation and water discipline essential. Hygiene discipline was of key importance, with water shortages limiting washing and endemic skin diseases; in particular, desert sores resistant to treatment abounded.

The infantry needed particular skills for desert fighting, which always demanded a high level of discipline, skill-at-arms and careful fieldcraft to find or make cover in such open terrain. In particular, marksmanship was of particular importance given the long ranges at which most engagements took place.

A Crusader tank of 22nd Armoured Brigade moves at speed through the Western Desert, 28 July 1942. (4700-32 E 14950)



The mechanized war waged in the desert required other skills such as driving in widely dispersed desert formations spread out over miles of ground and leaguering at night for protection. A practised eye was needed to recognize undulations, depressions and other accidents of ground providing covered approaches, positions for defensive layouts and hull-down positions for tanks. The conduct of armoured warfare under desert conditions placed great demand on crews and high levels of training were required in driving, navigation, tank gunnery, inter-communications and vehicle recognition. For AFV crews an essential skill was to find cover in the slightest undulations in the ground and hull-down positions, and desert driving. The maintenance of vehicles formed part of essential desert skills and of greater importance than elsewhere given the high rate of wear and tear caused by desert grit and sand – letting air out of tyres as they heated, almost constantly checking engines were free from dust or gravel, and carefully checking weapons for dust that might jam the mechanisms.

The necessity for higher-level formations – brigades, divisions and corps – to carry out a period of collective training, during which constituent units learnt to work together as a team, was also judged essential for successful desert fighting. It became more important as pre-war regular army formations at a high pitch of training were either destroyed or heavily diluted by replacement officers and men. Such time was frequently unavailable, however, during the early days of Western Desert Force and Eighth Army. The Commonwealth formations arriving in theatre for the first time in particular needed good individual and collective training to fit them for desert fighting. Although the War Office requested that formations be supplied with the latest tactical lessons and general information from the Middle East to enable them to study fighting under such conditions, there were limits as to what training could be done in the temperate climate of the UK where few large training areas existed. When formations arrived in theatre they often required much training before they were ready for combat. A consensus quickly developed that it was necessary to give troops three months' training after they arrived from Europe before they could confidently be committed to battle. Writing in June 1942 under intense pressure to commit newly arrived troops to battle, Auchinleck fought back: 'We have learned by experience that troops fresh from the UK are a liability rather than an asset in desert fighting until they have had the requisite training.'¹⁸

The Eighth Army still had a major training deficit when it was first formed and was still largely unable to practise fast-moving armoured warfare and combined-arms operations. Indeed, following the disappointing Operation *Battleaxe* Auchinleck deliberately resisted pressure to commit Eighth Army to battle before progress had been made in remedying this serious fault. As one historian has observed: '*Battleaxe* was for the more experienced British armoured units, and above all for higher commanders ... a grim lesson in how expert one now needed to be to wage war, and how long a lead the enemy seemed to have acquired. The British Army was still inadequately trained.' Indeed, Eighth Army was still badly in need of an effective battlefield doctrine for waging a fast-moving armoured warfare under the conditions imposed by the Desert War. It also needed intensive, appropriate training given the wide variation in training standards in living, moving and fighting under desert conditions.

This training deficit affected all levels of Eighth Army – commanders and staffs, formations and individually. The commanders and staff of Eighth Army, for example, had only been together for eight weeks before being committed to Operation *Crusader*, while XXX Corps had had only six weeks to work up. Neither had trained together adequately before being committed to battle and badly needed practice in the handling of units and formations together and in co-operation with the three arms.

The standard of training and overall battle worthiness of formations serving in Eighth Army varied widely. 7th Armoured Division and 4th Indian Division still provided a highly experienced hardcore in November 1941. A combination of battle casualties, sickness and cross-posting of officers, NCOs and men, as the entire British Army underwent massive expansion, meant that while still good neither of these formations was of the same high quality. The remainder of Eighth Army was of widely differing combat effectiveness, however, with many having much to learn. 22nd Armoured Brigade in October 1941 still lacked training as a brigade in the totally unfamiliar conditions of the desert. 1st South African Division, commanded by Maj. Gen. G.E. Brink, was thrown into battle during Operation *Crusader* before it was really ready for action and suffered accordingly. It was deemed insufficiently trained under desert conditions, largely as it had not received all its motor transport. As Norrie reported on 2 November: 'The spirit of the division and the desire to fight could not be better. However, unless more time for desert training is provided, I cannot see how this division can be expected to succeed on the battlefield.'¹⁹ Such problems were exacerbated by the frequent chopping and changing of units and subordinate brigades between brigades, divisions and corps. It meant few units or formations had had an opportunity to get to know or operate alongside each other before battle began and prevented building up institutional experience and amassing experience.

The British paid a heavy penalty for lack of training during Operation *Crusader*, although the battle was ultimately a success. The Germans certainly thought Eighth Army troops were good basic material. A German battalion IC later wrote: 'The English and Australians are tough and hard opponents as individual fighters, highly skilled in defence, unimaginative and inflexible in attack, cold-blooded and skilled in in-fighting, experienced in assault, and capable of standing hardships of all kinds.'²⁰ The Germans firmly believed, however, that the overall poor combat performance of Commonwealth troops was primarily due to lack of training. This was a powerful and accurate critique. A serious effort was made to improve during the spring of 1942, but was largely overtaken by events. The level of training in Eighth Army did not undergo massive improvement for a considerable period of time. By the time

¹⁹ *Ibid.*, p.329.
²⁰ Connell, *op cit.*, p.599.



Polish engineers laying mines in the desert, 16 February 1942. (4700-32 E 8416)

of Gazala, battle had taken its toll and the remainder had been replaced by a large influx of inexperienced, ill-trained new blood, who were thrown into battle before they were ready.

The lessons learnt during Operation *Crusader* about fighting methods and doctrine were eagerly studied, especially since they revealed that much remained to be done in terms of training, with particular problems highlighted. In January 1942 the BGS Eighth Army directed: 'Every opportunity will be taken to carry out training ... so as to develop an established technique in this type of operation, and to ensure that different units can carry it out in combination even if they have not had an opportunity of training together beforehand.' To assist in instruction a Training Branch at GHQ Middle East was set up under Maj. Gen. John Harding, which set up and ran several training establishments teaching the lessons of the Desert War. Middle East Command also produced a series of Middle East Training Pamphlets to meet the demand for the latest up-to-date information, although technically in-theatre publications were forbidden by the War Office to prevent confusion and diversion from official sources of information. Several desert training areas were developed near Ismailia, Port Tewfik and the Pyramids for collective training by larger formations, especially those new to the theatre of war.

The ability to train formations before being committed to battle remained a luxury denied British High Command for most of 1941–42. Given the high tempo of operations for much of the Desert War and constant demands for fresh troops and equipment after heavy losses in battle, most new formations were thrown into battle as soon as they were deployed in North Africa. Pleas to give them the three months collective training under desert conditions was simply ignored. Much, therefore, still had to be learned the hard and costly way – in battle. The inexperienced and poorly trained 1st Armoured Division was quickly destroyed south-east of Agedabia, for example, when DAK struck back after *Crusader*. The British High Command knew what was needed, but an

opportunity to effect real and meaningful changes and remedy the continuing training deficit was largely denied them. The hurly burly of the Desert War simply robbed British commanders at all levels of a sufficiently long quiet inactive period for rest, reflection and training. While some meaningful instruction was carried out by some motivated commanders of formations out of the line for rest it was not enough. Indeed, not everyone was clear about what was happening and how to correct battlefield mistakes. Logistical problems and shortages of equipment hampered training efforts. Petrol shortages and fear of wear and tear to vehicles was also a problem.

The Eighth Army Montgomery inherited in August 1942 had made considerable progress in improving overall training standard, but was still in need of work. Indeed, the new GOC quickly judged his troops as being 'somewhat untrained' with the result that he scaled back his original plans for his offensive as he feared he might be asking too much of them. Following the Battle of Alam Halfa Montgomery had an opportunity denied previous commanders of Eighth Army to carry out a period of rigorous training needed to prepare for the offensive that drove the Axis out of Egypt and Libya. In some respects the scope of training required was more limited given the breakthrough battle planned. As a result, with only a short time before battle began, he insisted it focused on the type of battle that lay ahead at El Alamein. To do so the armoured divisions and New Zealand Division in 10th Corps were withdrawn behind the lines, but the remainder were tied down in the forward defences at El Alamein. To give them some instruction, a complex system of reliefs was arranged a brigade at a time. The importance of combined-arms training was clearly recognized by the new GOC. In an Army Training Memorandum issued on 30 August 1942 he directed: 'It cannot be emphasised too strongly that successful battle operations depend on the intimate co-operation of all arms, whether in armoured or unarmoured formations. Tanks alone are never the answer; no one arm, alone and unaided can do any good in battle.' Great attention was paid to passing through minefields at night. An Eighth Army Minefield Clearance School was formed to study and train for this specialized task.

The careful training carried out before Second El Alamein built enormous confidence and in turn reaped enormous dividends throughout the remainder of the Desert War. Training remained an ongoing process as new lessons were learnt. By the end of the war in North Africa Eighth Army had achieved a new confidence, professionalism and skill it had never possessed before, which stood it in good stead for the invasion of Sicily and the Italian campaign.

Weapons and equipment

Dress

The officers and men serving initially in Western Desert Force were largely indistinguishable from other British Army units serving in tropical garrisons, wearing standard British tropical uniform – sola topis, spine pads as protection from the sun, baggy shorts, and 37-pattern webbing and equipment. By the time Eighth Army was formed in September 1941 the exigencies of living, moving and fighting in an arid desert environment, with its extremes of heat and cold and dust that permeated everywhere, however, had led to widespread modifications in uniform and considerable ad-hoc adaptations. Sun helmets and other items of normal issue, for example, were rapidly abandoned and replaced with far more practical, lightweight and serviceable clothing. As a result an Eighth Army soldier often wore (with considerable pride) a sloppy lived-in outfit that could only loosely be described as 'uniform'.

The greatest variation in uniform was perhaps in headgear, reflecting the disparate countries of origin of many troops and regimental traditions. Officers had the greatest free rein to experiment when it came to uniform. Many removed stiffeners from caps to give a 'lived-in' look. A wide range of headgear existed from the black berets of tank crews, Australian slouch hats, Gurkha bush hats, khaki turbans of Sikhs and the small-brimmed pitch sun helmet worn by South Africans. Within the British Army headgear also varied enormously depending on regimental traditions, such as the Balmoral hat worn by some Highland regiments. On active service steel helmets were



The crew of a Valentine tank have a wash and shave in the Western Desert, 27 March 1942. (4700-32 E 9754)

painted sand yellow and sometimes covered with string camouflage nets or hessian to break up the outline and prevent shine.

The standard regulation issue khaki drill shirt and shorts often formed the basis of the uniform worn by Eighth Army soldiers of all nationalities in the field, but a wide variation in other clothing was worn, such as battledress, thick coats, sleeveless leather or sheepskin vests and wool pullovers at night and during cold spells. Superfluous equipment was simply left behind (such as large, cumbersome and heavy packs and anti-gas protective equipment). Items of uniform worn reflected the disparate countries of origin and even traditional items of uniform belonging to regiments of the British Army, with items of national equipment/uniform supplementing standard issue. Troops from some dominions initially wore slightly outdated service dress, for example, but this was soon abandoned as new equipment was issued from British stocks. Other accoutrements included corduroy trousers, shaggy sheepskin coats and brightly coloured scarves. Particular items of kit were issued for the desert, including cellophane sand goggles. Distinctive Arab-style keffiyah scarves proved highly practical and popular amongst officers and men. Footwear varied enormously from the heavy ammunition boot worn by ORs to the flexible soft suede 'desert boots' with rubber soles adopted by many officers.

Weapons

The infantry battalions serving in Eighth Army during the Desert War employed standard British weapons, including the .38 revolver, the bolt-action .303 short magazine Lee-Enfield rifle with long sword bayonet, small numbers of .45in. Thompson sub-machine guns and the bipod-mounted .303 Bren light machine gun.

The .38 revolver formed the standard sidearm available to officers and tank crews. Although having an extremely limited effective range – about 25 yards – it was a workmanlike weapon for close-range fighting. The tried and tested venerable short magazine Lee-Enfield rifle Mk III, with a 16in. sword bayonet, originally introduced into British service in 1903, remained standard issue during the early war years. With an effective range of up to 3,000 yards this highly accurate, rugged and extremely reliable weapon was probably the finest, manually operated, bolt-action rifle in the world. With a muzzle velocity of 2,440 ft/sec, its .303in. bullet had great stopping power, and in the hands of a marksman could fire effectively at long range. Although only having a ten-round magazine, in skilled hands a high rate of fire was achieved of up to 15 rounds a minute.

The Thompson M28 sub-machine gun or 'Tommy-gun', capable of providing a devastating volume of short-range fire, was also widely issued to NCOs. Instead of 50-round drum magazines, which were prone to jamming, more reliable 20-round box magazines were employed that were also easier to carry in web equipment. A small supply of Sten SMGs, first produced in June 1941, trickled through towards the end of the Desert War.

The superb, highly effective .303-calibre gas-operated Bren light machine gun provided the main source of portable firepower used by infantry sections and could fire single rounds or full automatic bursts. Indeed, given the poor performance of other infantry weapons, it formed the main source of firepower. Based on a Czech design developed at Brno and later manufactured at Enfield (hence the name), this extremely reliable automatic weapon weighed in at 23 lb. and was fitted with a bipod for greater accuracy at ranges up to 550m. With a magazine of 30 rounds this highly accurate automatic weapon had a crew of two – one to fire the weapon and a second to carry further magazines filled with ammunition, tools, and spares. A single Bren gun was carried in combat by each infantry section, and with a practical rate of fire of 120 rounds a minute provided a powerful and highly accurate source of firepower.



The Jerboa flash

The Jerboa shoulder flash was proudly worn by the officers and men of 7th Armoured Division throughout the Desert War. The Jerboa is a small, long-tailed rodent that lives in the desert.

The types of grenades carried by the infantry included the No. 36 bomb or Mills bomb, No. 69 concussion grenade, and No. 77 phosphorous grenade used to produce a smoke screen. Depending on the individual No. 36 grenades could be thrown around 25 yards and were highly effective. Fitted with a discharger cup and firing a ballistite cartridge, special SMLEs were retained to fire No. 36 grenades up to 200 yards.

The main source of close-quarter, indirect-fire support at the disposal of infantry platoons was the lightweight 2in. mortar, firing smoke, high explosive and illumination rounds. This highly effective weapon consisted of little more than a short tube, a simple firing mechanism and a base plate. It was operated hand-held with the spade or base plate held firmly against the ground. A round was fired by dropping the shell down the short barrel after which the angle was readjusted for the next shot. It had a maximum range of 500 yards, although it had far greater accuracy up to 300 yards.

The bolt-operated .55in. Boyes anti-tank rifle provided the only anti-armour weapon in Commonwealth infantry battalions up to the spring of 1942 (anti-tank guns were operated by the RA). Although man-portable, its heavy weight (36 lb.), length (72in.), limited effectiveness against all but the most lightly armoured vehicle even at close range, and powerful recoil when fired made it an unpopular weapon from the start and many were simply abandoned. Indeed, Eighth Army Staff could not find a single example of it being employed successfully against German AFVs following the Operation *Crusader* offensive. Its obvious limitations largely accounted for infantry units to employ sticky bombs, captured enemy weapons and increasingly lay mines, which proved a novel and increasingly essential weapon.

The main source of organic fire support came from the Vickers machine gun and 3in. mortar in each infantry battalion. The venerable tripod-mounted and belt-fed (but still highly effective and reliable) water-cooled .303 Vickers medium machine gun was capable of producing a greater volume of sustained small-arms fire than any other infantry weapon. It could fire at a rate of up to



The burnt remains of the radio-operator of a German PzKpfw IV tank is hoisted out of his compartment, 30 March 1942. (4700-32 E 9986)

500 rounds a minute directly or indirectly at ranges up to 3,000 yards, but was extremely heavy at 88.5 lb. It was fired by a crew of two men – one to fire the weapon and a second to ensure the smooth feeding of its belt of ammunition. A total of four men, however, were needed to move the gun, its tripod, ammunition, spare parts and the water needed to cool the weapon.

The 3in. mortar fired smoke and HE bombs at high trajectory into enemy positions. It consisted of a hollow tube with a firing pin at its bottom, a bipod stand and heavy base plate to absorb recoil. This comparatively crude heavy weapon could be broken down and manhandled in three loads during an assault, but a major drawback was that each bomb weighed 10 lb. With a range of up to 2.5km and a maximum rate of 15 rounds a minute when used by a well-trained crew, it was a powerful source of indirect fire support.

Armour

The armoured regiments serving in Eighth Army employed a wide variety of different AFVs during the Desert War, nearly all of which were severely criticized by the British crews that operated them largely due to poor mechanical reliability and repeated defeats at German hands. It would be dangerous and misleading, however, to accept that inferiority in quality of British tanks was the simple cause of British battlefield failure, as crews at the time and some historians have argued. Eighth Army generally enjoyed superiority in tank numbers, moreover, especially when replacements are factored into the equation, than its Axis opponents for much of the Desert War. Contrary to myth the British enjoyed a qualitative advantage in many respects, with indeed an advantage in both quality and quantity swinging relentlessly to the Allied side. Only in one respect did the 2-pdr main gun armament for most early British tanks enjoy a marked disadvantage, since this gun was incapable of firing an HE round so badly needed to suppress Axis anti-tank guns. The often poorly designed equipment used by the RAC resulted from decisions made about tank procurement and design before the outbreak of World War II, which resulted in the development of two distinct classes of tank: cruiser and infantry, with very different thickness of armour, weight and top speed. The General Staff decided the main role of tanks was to fight tanks, and to do it a cruiser tank with optimum anti-tank capability and capable of carrying out fast-moving mobile operations was needed, with speed gained at the expense of armoured protection. A far slower and heavily armoured AFV was also needed, trained and intended to act in the role of supporting infantry attacks, which largely prejudiced its use in any other role. Close-support variants of both types of tank were also produced armed with 3in. howitzers, having a 1,000-yard range capable of firing HE and smoke shells, in place of an anti-tank gun.

The various marks of British-made cruiser tanks deployed by Eighth Army from November 1941 onwards were all the products of over hasty design and decisions made long before the outbreak of war. All fast light cruiser tanks – Cruiser Tank Mk I (A9), Cruiser Tank Mk II (A10), Cruiser Tank Mk IV and IVA (A13) and new Cruiser Tank Mk VI (A15) Crusader I – proved far too weakly armoured for a modern battlefield and were all extremely vulnerable to German tanks, AT guns, and later Italian weapons. They were, moreover, extremely unreliable mechanically, often resulting in the total loss of the vehicle after a breakdown, and all were prone to burst into flames quickly. All the older models were suffering from general debility by the time of Operation *Crusader*. Indeed, during this fighting the remaining serviceable A10s had to be carried on transporters and had only a top speed of 16mph and just 30mm of armour. The A15 Cruiser tank or Crusader II, arriving in-theatre in mid 1941, was marginally better than its predecessors, having the same gun and two Besa MGs, a top speed of 26mph and 40mm of armour. Unfortunately like its predecessors it was still mechanically unreliable. The greatest defect of all these

Crusader tanks moving to forward positions in the Western Desert, 26 November 1941. The Crusader first entered battle during Operation *Battleaxe* and was widely used by British tank units. Unfortunately it displayed many of the shortcomings of early British cruiser tanks having only a 2-pdr main armament, thin armour (40–50mm) and poor mechanical reliability. It had a maximum speed of 27.5 mph and a maximum range of 200 miles. It was quickly outclassed by new German tanks, but remained in service despite its obvious problems. Like other British cruiser and infantry tanks, a close-support version was also deployed armed with a 3in. howitzer. A 6-pdr armed variant entered service during the summer of 1942 and remained in use until the end of the Desert War. (4700-32 E 6724)



British cruiser tanks was the main armament. While 2-pdr AT rounds could penetrate the turret, sides and rears of all German tanks, they could not defeat the frontal armour, especially after it was face-hardened during 1942. The other main drawback was it lacked an HE round, making it ineffective against soft targets. At the time of Operation *Crusader* the 2 lb. was slightly superior in armour-piercing performance to the guns carried by most German tanks, but this advantage was steadily lost as German tanks up-gunned and up-armoured. Since they were underpowered it proved extremely difficult to simply up-armour them or add a larger and more powerful main armament, although a 6 lb. variant – the Crusader III – was introduced during the summer of 1942 in time for the Battle of El Alamein. The handful of close-support cruiser tanks in each regiment, armed with mortars with a range of 1,000 yards, proved insufficient in number and less effective than the German 75mm in the Mk IV Panzer, and were themselves vulnerable to German anti-tank guns.

The Eighth Army employed two types of infantry tank (issued to Army Tank Brigades), during the Desert War, both of which were slow, unreliable and had a very short range before refuelling. The heavily armoured Matilda II, armed with a 2-pdr gun as main armament and a coaxial Besa MG, had proved a highly effective infantry support tank in the early stages of the Desert War,



A Valentine tank which has thrown a track undergoing repairs in the Western Desert, 10 December 1941. (4700-32 E 7002)



A British Matilda tank in the Western Desert, recaptured from the Germans, who had used it against the British in Bardia, 3 January 1942. Captured AFVs were regularly employed by both sides in the Desert War, given the chronic shortages of tanks. (4700-32 E 7482)

although like cruisers its combat effectiveness was largely limited by its inability to fire an HE shell. This heavily armoured tank – with armour up to 78mm thick (greater than any German tank) – weighed in at 26.5 tons and had a maximum speed of 15 miles per hour. Until the deployment of German 50mm PAK guns and the dual-purpose 88mm it was the undisputed queen of the battlefield, being virtually invulnerable to standard enemy anti-tank weapons. A very limited radius of action – approximately 40 miles before refuelling was needed – and very poor mechanical reliability badly undermined its battlefield effectiveness. The Matilda's replacement – the Valentine – possessed armour 65mm thick, had a 2-pdr gun and a coaxial Besa MG and a maximum speed of 15 mph. It weighed in at 17 tons. Until some 6-pdr variants appeared at the end of the Desert War it did not comprise a major advance, suffering the same problems as the Matilda, and for a while was used as both a cruiser and an infantry tank given shortages of other AFVs.

The introduction of various types of far better designed US AFVs gave RAC units a far better fighting chance during the later stages of the Desert War. The first US-made tank to enter service was the M3 Stuart light tank – christened the 'Honey' by British tank crews, delighted by its many virtues compared to British designs; it proved an extremely welcome addition to armoured units and first saw



A Grant tank in the Western Desert, 17 February 1942. The US-made Grant tank proved a massive improvement over all British tanks in service when early models began re-equipping armoured units in Eighth Army in April/May 1942, in terms of armoured protection, reliability and firepower. Originally intended as an infantry support tank, the Grant had a curious design. The Grant had a turret-mounted 37mm gun similar to the Stuart Light tank, in addition to a 75mm gun in a hull sponson capable of firing both HE and AP rounds. This weapon at last gave tank crews a weapon that could outrange and penetrate the frontal armour on enemy tanks, as well as engage hostile anti-tank guns with a real prospect of suppressing or destroying them. A significant drawback, however, was the Grant could not engage from hull-down positions, and it had a very high profile making it also difficult to hide from view. (4700-32 E 8475)

A Matilda tank on patrol in the Western Desert, 1942. The Matilda II was a slow-moving tank, equipped with a 2-pdr main armament, intended to provide close support to infantry units and as such was heavily armoured (78mm maximum). Indeed, it initially proved invulnerable to enemy anti-tank guns and was the undisputed 'Queen of the Battlefield'. This massive advantage proved short-lived, however, after the German 88mm gun was deployed and newer Axis tanks entered service. A short range and poor mechanical reliability limited its effectiveness, but even so it was retained in use until November 1942. A close-support variant was also manufactured equipped with a 3in. howitzer capable of firing HE rounds. (4700-32 E 9560)



service in Operation *Crusader* in the role of a cruiser tank. This fast-moving AFV (capable of up to 40 mph), armed with a 37mm main gun comparable to the 2-pdr in performance, was far more mechanically reliable than British light tanks. A major drawback, however, was that its thin armour (1.5in.) limited its usefulness in direct engagements against German main battle tanks.

The M3 or General Grant tank – first deployed in May 1942 during the fighting at Gazala – was a massive improvement over every design previously employed by Eighth Army. Originally designed as an infantry support tank, the Grant was armed with a turret-mounted 37mm gun (like that in the Honey) and a 75mm main gun mounted in a sponson on the right-hand side of the hull capable of firing both 14 lb. AP and HE rounds. It was the first British tank during World War II to mount a dual purpose anti-tank/anti-personnel gun, giving the RAC at last a weapon capable of engaging both hostile battle tanks and anti-tank guns. The Grant's frontal armour – up to 2.25in. thick – was proof against the short 50mm tank gun at 250 yards and against the long 50mm at 1,000 yards, but its own gun could penetrate armour of all German AFVs as far out as 850 yards and certainly at 650 yards. Although slower and less manoeuvrable than its German counterparts – it weighed 26.75 tons fully loaded – it proved highly effective from Gazala onwards. A major drawback, however, was that the main armament in the sponson had limited traverse and it prevented the AFV taking up hull-down defensive positions.

The M4 Sherman tank was by far the best tank deployed by Eighth Army during the Desert War. It was first deployed in British service at the Battle of El Alamein and had all the same virtues as the Grant in terms of speed (maximum 23mph), 75mm armour and great mechanical reliability, but also had the massive advantage of having its 75mm main armament mounted in a rotating turret, along with a coaxial MG. This gave this 29.5-ton AFV far greater tactical flexibility and it could engage hostile AT guns from the safety of hull-down positions at ranges of up to 2,700 yards using HE rounds. Its only drawback was that its armour (up to 75mm) was bettered by enemy anti-tank weapons of 50mm and above, and when hit was prone to burst into flames due to ammunition stored in the turret and its petrol fuel.



Two Stuart tanks advancing in the Western Desert, 18 June 1942. The Stuart or Honey Light Tank was an AFV of US design (the M3) that came into British service in North Africa just before Operation Crusader in November 1941. Unlike contemporary British tanks it was fast and mechanically reliable, earning a nickname of Honey from its crews, but had a short range of only 40 miles before needing a refill. The Stuart proved an extremely versatile light tank, but its 37mm main gun and coaxial machine gun had limited effectiveness against increasingly better armoured enemy tanks, and it quickly proved too lightly armoured to survive in tank-versus-tank engagements. (4700-32 E 13534)

Artillery

The Royal Artillery was arguably the most professional arm in Eighth Army during World War II, which initially bore responsibility for providing both anti-tank defence and indirect fire support. Indeed, the artillery was the British arm of service the Germans most feared and respected.

The high-velocity Royal Ordnance QF 2-pdr anti-tank gun of 40mm calibre (capable of firing an AP round) was the main gun equipping Royal Artillery and other Commonwealth anti-tank regiments in Western Desert Force and Eighth Army for destroying enemy AFVs. Early in 1942 it was issued to infantry units. With an innovative three-legged mounting that could be quickly folded down to form a pedestal base, this handy, lightweight, towed gun had a very low silhouette and could easily swing 360 degrees to point in any direction. Others were carried 'portee' on the back of flat-bed lorries, enabling them to come into action far more quickly, but these soft-skin vehicles were difficult to conceal and extremely vulnerable to enemy action. With a muzzle velocity of 2,650 ft/sec and excellent sights, its AP round could penetrate 50mm of armour plate at 500 yards and 40mm at 1,000 yards. Although when issued in 1936 it was a state-of-the-art weapon and performed well when used in close country in North-West Europe in 1940, its limitations soon became clear in the Western Desert when used against increasingly better-armoured enemy tanks in open terrain at long range. Dubbed by one senior officer as a 'pernicious pop-gun' the 2-pdr proved incapable of defeating the frontal armour on most German AFVs after they were up-armoured in 1941-42; the bolted-on or welded face-hardened armour caused a 2-pdr round to break up on impact. Even so it could still penetrate the turret, sides and rear of German AFVs, but this required careful tactical handling. Despite its recognized shortcomings the 2-pdr, however, was retained in service for a year after becoming obsolete, since the production of its planned replacement was deliberately delayed, given the urgent need to manufacture large numbers of weapons to re-equip the BEF following Dunkirk.

The far more effective and long-awaited QF 6-pdr anti-tank gun, superior in performance to the German 50mm PAK, only became available in April/May

A 25-pdr field gun and 'Quad' artillery tractor in the Western Desert, 8 March 1942. (4700-32 E 9119)



1942 in sufficient quantities to make an impact on the battlefield, when 112 guns were issued to motor infantry battalions and RA anti-tank regiments in armoured divisions. This 57mm gun – a highly effective compromise between firepower and lightness – was towed into battle, and had a split trail and shield to protect its crew. With greater armour penetration than its predecessors – 60–140mm at 1,000 yards – it could engage German AFVs at longer ranges with a far better chance of achieving a kill. It could fire anti-tank rounds, and later an HE anti-personnel shell was produced. Lack of a good sight and opportunity for training, however, initially limited effectiveness, but the action at SNIPE at El Alamein showed when well handled how effective these guns could be against Axis armour.

The 6-pdrs and those 2-pdrs remaining in service were supplemented by a handful of the highly effective 17-pdr guns towards the end of the North African campaign, initially mounted on improvised 25-pdr carriages, that were rushed into service in RA anti-tank regiments to counter the new generation of heavily armoured Mk VI Tiger I tanks. This large, heavy and powerful towed weapon – 76.2mm in calibre and mounted on a split trail carriage with gun shield weighing in at three tons – first saw action in February 1943 and proved capable of defeating all German tanks to date in service and was superior in performance to the legendary German 88mm gun.

25-pdr field guns in action in the Western Desert, 22 March 1942. The 25-pdr gun/howitzer was arguably one of the best artillery pieces to see service with the Royal Artillery. With a range of 13,400 yards, and easy to handle in action, it provided effective indirect fire support to the infantry and formed the mainstay of Field Artillery regiments through World War II. This highly effective field piece was capable of firing a wide range of ammunition, including white and coloured smoke, flare, incendiary, propaganda and squash-head shells, as well as the normal HE, shrapnel and AP shot. It was heavily employed during the opening rounds of the Desert War as an anti-tank weapon firing a solid 20 lb. AP shot, given the shortcomings of the 2-pdr anti-tank gun. (4700-32 E 9535)





The mainstay of British Commonwealth field artillery regiments throughout the Desert War was the redoubtable 25-pdr gun/howitzer, introduced in 1937 into British service. The early 25-pdr used in North Africa was a re-tubed 18-pdr on an improved carriage with a range of 11,800 yards. The 25-pdr Mk II, introduced into service in late 1941, was far superior to the earlier model and could throw a 25 lb. shell a distance of 13,400 yards. Blast effect was limited by the small amount of explosive in each shell (only 7 per cent), however, which limited the destructiveness of the weapon against fixed defences. A simple light turntable or platform made it an effective light howitzer and it proved highly effective in killing troops caught in the open and neutralizing those behind cover. The 25-pdr, employed in a direct-fire role, came to be relied upon as the principal and most effective AT weapon given the shortcomings of the 2-pdr. In this role it had a mixed record, since its solid AP round was only effective under 1,200 yards. It diverted 25-pdrs away from their true role, moreover, and in particular the suppression of German anti-tank guns and batteries.

The 25-pdr shouldered much of the burden of providing indirect fire support in the Western Desert, with the availability of modern medium and heavy guns (firing a heavier shell at longer ranges) very much limited by the pre-war army's determination to restore mobility to the battlefield. Until newly



Lorry-mounted 2-pdr anti-tank guns on a practice shoot in the Western Desert, 3 May 1942. The 2-pdr anti-tank gun equipped RA anti-tank regiments and later infantry battalions for much of the Desert War. This 40mm-calibre weapon was mounted on an ingenious three-legged carriage, giving it a low profile and which allowed the travelling wheels to be lifted clear of the ground so that the gun could easily traverse through 360 degrees. An armoured shield fitted with an ammunition box protected its 5-man detachment and it weighed 1,760 lb. in action. Many were carried portee on the back of lorries during the Desert War, but when used this way often proved vulnerable to both small arms and shrapnel. Firing a solid AP round and with a penetration of 40mm at 1,000m, the 2-pdr was highly effective against lightly armoured cars and tanks, but as the Desert War progressed it was quickly outclassed and could only engage with a hope of success from the flank at close range. (4700-32 E 11223)

A truck-mounted 6-pdr anti-tank gun during training in the Western Desert, 31 May 1942. Although sometimes carried portee, it was normally fired from the ground. (4700-32 E 12643)



A 6-pdr anti-tank gun in action in the Western Desert, 29 October 1942. This 57mm anti-tank gun proved a highly effective new addition to the British arsenal in the Western Desert when it was first deployed in April 1942, able to defeat 74mm of armour at 1,000m. For the first time British units had a weapon capable of defeating the frontal armour of nearly all German AFVs. With a superior penetration to the 25-pdr gun/howitzer, the 6-pdr's deployment meant Royal Artillery field regiments could at last concentrate on their correct role of providing indirect fire support. (4700-32 E 18802)

designed weapons went into production World War I-vintage 60 lb. guns retro-fitted with new barrels and pneumatic tyres filled the breach. The first modern, carefully designed 4.5in. guns were not issued until 1941, with the first 5.5in. howitzers later in May 1942. These were major improvements and highly effective in a counter-battery role at long range. The modern 4.5in. guns were capable of firing a 55 lb. shell up to 20,500 yards, and the general-purpose 5.5in. howitzers were capable of firing a 100 lb. shell up to 16,000 yards and a 80 lb. shell 18,600 yards. It was only when such modern weapons were available in sufficient quantities that it was possible for gunners to use massed concentrations of fire (refuting criticism of Eighth Army's inability to use massed firepower beforehand).

Command, control, communications, and intelligence

Command and control

The senior British officers who led Eighth Army arguably faced the greatest challenge of their professional careers. To nearly all, armoured warfare was virtually a new form of combat, and living, moving and fighting in the desert was in itself a strange, demanding and novel experience. At the start of Operation *Crusader*, for example, the army commander and both his corps commanders had no experience of desert fighting or armoured warfare. They faced perhaps the greatest German commander of World War II leading the highly professional DAK. Their work was closely overseen throughout the fighting by the Commander-in-Chief, Middle East, who in turn had Prime Minister Winston Churchill and the Chiefs of Staff breathing down his neck. The leaders of Eighth Army in North Africa also contended with a range of fundamental difficulties affecting this formation. Eighth Army was the product of the massive expansion of the British Commonwealth armies from a small cadre into a new large wartime army with a resultant plummet in combat effectiveness that took considerable time to remedy. They also had to contend with chronic shortages of arms, equipment and ammunition resulting from pre-war decisions and the priority accorded to rebuilding the Home Army following Dunkirk. Commanding the polyglot Eighth Army, moreover, made up of heterogeneous forces drawn from many different countries and nationalities, posed serious difficulties. Great care had to be taken, for example, in exercising authority over troops drawn from the new dominions – Australia and New Zealand – whose able and successful commanders unhesitatingly looked to their own national leaders when they disagreed with command decisions. To complicate matters in this respect relations were also embittered and distrustful by the fact that commanders and staffs at all levels above division were British, as were all tank units and units of the armoured divisions, except two South African armoured car regiments. Given these myriad difficulties it should come as no surprise that not all were up to the challenge. Indeed, North Africa proved a graveyard for many reputations of commanders at all levels.

The Eighth Army suffered markedly in terms of continuity of command and control, as well as of gaining institutional experience, during the Desert War. A combination of sackings, casualties during combat, capture, and transfer elsewhere meant there was often a rapid changeover of senior commanders. Indeed, between 1940 and 1943 Western Desert Force and its successor Eighth Army had no less than six different commanders – Wavell, Richard O'Connor, Cunningham, Neil Ritchie, Claude Auchinleck, and finally Bernard Montgomery – in 16 months and during the period 1941–42 no less than 20 different divisions or equivalents went into battle under its command. Only four – 1st and 7th Armoured Divisions, 4th Indian Division and 1st South African Division – fought in more than two battles. In comparison, Rommel commanded an army throughout the Desert War whose constituent German formations remained pretty much unchanged. According to David Belchem the result of such changeovers was that the British 'seemed incapable of profiting by our experience. No one seemed able to analyse our weaknesses, and those of the enemy; there was no development of a dynamic tactical policy.'²¹ On occasion, dismissals were undoubtedly necessary – Cunningham

²¹ French, *David Raising Churchill's Army, The British Army and the War against Germany 1919–1945*, (Oxford, OUP, 2000), p.217.

and Ritchie in particular – especially of men simply not up to the job or else who had lost the confidence of their superiors. Other senior commanders resigned when they believed their advice was being ignored. Cumulatively these changes had an unsettling effect on subordinate commanders and the army as a whole.

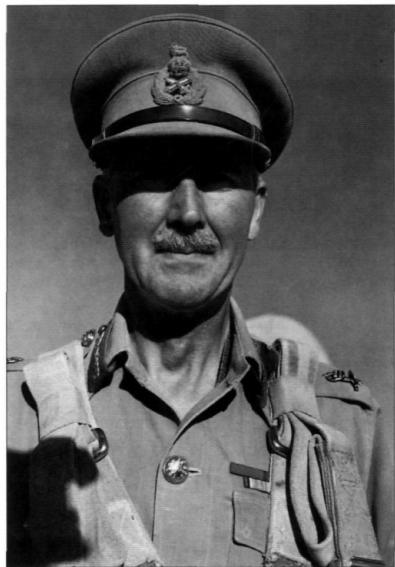
The unique conditions of desert warfare demanded initiative, flexibility and independence of mind from leaders of small formations upwards. The British Army clung, however, to a very rigid hierarchical top-down system of command in North Africa, although lip service was paid to the devolution of authority. Senior officers believed bringing order to the chaos of the modern battlefield was only possible by practising an autocratic and highly centralized command and control system. Discipline and instant obedience to orders was the key. This belief permeated the entire fabric of the army from the top down to the lowest level and was a product of the regimental system, training and the general system. The resulting rigidity meant the initiative of junior commanders was stifled and latitude denied them. Although this command and control system worked very well at the outset of the Desert War against the slow and pedantic Italians, against the Germans it was another matter. Indeed, Eighth Army's cumbersome command and control system proved incapable of reacting as quickly to rapidly changing situations as could the German. Col. Fritz Bayerlein, the DAK's Chief of Staff, noted following Operation *Crusader* Eighth Army's 'unwieldy and rigidly methodical technique of command, their over-systematic issuing of orders down to the last detail, leaving little latitude to the junior commander.' The practice of issuing often cumbersome and very detailed written orders, instead of by word of mouth, exacerbated the situation and in many respects played into Axis hands by limiting subordinate HQs freedom of action on the battlefield. At the outset of the Desert War the British Army also lacked tactical battle drills used so effectively by the Germans that enabled them to work as a coordinated whole. Writing in February 1942 Auchinleck insisted: 'The old system of issuing orders and of control in general is not suitable for the swift moving warfare on very wide fronts which is likely to obtain in this theatre.'

The style of leadership practised in Eighth Army left much to be desired. During the early stages of the Desert War the majority of British field commanders in Eighth Army did not lead from the front, preferring instead to exercise command from far behind the lines in accordance with FSR, largely due to the limitations of signals technology and shortages of suitable equipment. Indeed, following O'Connor's capture in April 1941 GHQ Middle East enjoined senior commanders and staff officers to exercise considerable care so that they did not become unnecessary casualties. During Operation *Crusader* and the Gazala battles the location of Eighth Army's HQ was largely dictated by requirements of supporting the Desert Air Force and of maintaining good communications back to Cairo. In the end it proved too far back and both Cunningham and Ritchie lost touch with Corps HQ and the battlefield. Similarly the majority of subordinate commanders followed a remote approach to command and control, with many reluctant to delegate command or go forward themselves to monitor a developing battle. A few honourable exceptions existed. During Operation *Crusader* Lt. Gen. Willoughby-Norrie, GOC XXX Corps, led from a small tactical HQ of four vehicles carrying staff officers, a wireless on the corps forward net and another tuned to intercept messages from Rommel's armoured divisions. Similarly Maj. Gen. W.H. Gott, GOC 7th Armoured Division, led from a tank up to 20 miles in advance of his Advanced HQ. Attempts made to emulate the Germans and lead from the front had serious drawbacks given communication problems. A small and ill-protected party constantly on the move had great difficulty in keeping touch, moreover, with the changing situation and maintaining effective communications with its own HQs and supporting arms and services – but if

they remained in the rear in contact with GHQ at Cairo or air support they risked losing contact with forward units. A major problem, however, was the increased risk of death, injury or capture. During Rommel's dash to the wire Cunningham came very close to falling into enemy hands and only escaped by air with minutes in hand. In May 1942, for example, Maj. Gen. Frank Messervy, GOC 7th Armoured Division, was captured when his forward HQ was overrun by the DAK. Fortunately in this instance he concealed his rank and escaped back to British lines. The vital necessity of senior commanders leading from the front and maintaining close control over fast-moving armoured battles was clearly recognized by mid 1942. A Court of Enquiry convened to investigate the reasons for the collapse of the Gazala Line and the fall of Tobruk in June 1942 concluded unequivocally that commanders had to lead from the front. By the time of Alamein the HQ at Eighth Army had at last signals communications sufficient to command near the forward edge of the battle area, enabling them to receive information and issue orders in a timely fashion. The British did not have good command tanks and radios, however, until very late in the day. By Alamein it had at last become common practice for formation commanders in Eighth Army to exercise command in battle from a small Tactical HQ.

The ability of the British command and control structure in North Africa to function effectively and impose a firm, effective directing intelligence and will, was badly hampered by poor relations between commanders and a far too democratic approach to command. While the command structure worked relatively smoothly during Operation *Crusader*, the seeds of future difficulties permeating from the top down through the chain of command had been sown in terms of the relationship between the Commander-in-Chief, Middle East and the GOC Eighth Army. The first commander of Eighth Army appointed by Gen. Sir Claude Auchinleck – Cunningham – proved not up to the task despite his success in East Africa and was dismissed after losing the confidence of his superior. The appointment of Maj. Gen. Neil Ritchie (his DCGS at GHQ Middle East) as his replacement proved controversial and perhaps badly mistaken. Although conversant with the plans for the operation and the Commander-in-Chief's ideas, he lacked operational experience of commanding large formations under desert conditions and was junior to his corps commanders. In large part due to this inexperience during Operation *Crusader* Auchinleck flew to Ritchie's HQ on 1 December and stayed for 10 days, starting a practice of giving his subordinate 'advice' which undermined his authority in the eyes of his subordinates. It was an impossible position and meant Ritchie never exerted an effective grip on his army. Mutual trust and confidence between British senior officers broke down in the later stages of Operation *Crusader*. Both Maj. Gen. Leslie Morshead and Maj. Gen. Bernard Freyburg, for example, lost confidence in British leadership and especially the ability of the armoured units. A growing atmosphere of lack of confidence, mistrust and recrimination was exacerbated when Godwin-Austin, GOC XXX Corps, at his own request was relieved of command over a difference of opinion with Ritchie, despite many believing he was in the right. His replacement, Gott, was a close friend of Norrie and the two of them clubbed together against the GOC Eighth Army practising 'a sort of joint command by confabulation, at one stage co-locating their headquarters.' On several

Lt. Gen. Sir Alan Cunningham (1887–1983), who commanded the Eighth Army for much of Operation *Crusader*. (4700-32 E 6661)



occasions it appeared both Corps commanders ganged up on Ritchie since they believed he was little more than Auchinleck's mouthpiece. This effectively undermined the GOC Eighth Army, who hesitated to shake off his previous appointment as a senior staff officer at Middle East Command, assert his own authority by insisting he should be given freedom to command his army in his own way or be replaced or curb the flow of advice from above. As a result the Gazala Battles were fought in an unhappy atmosphere of distrust and recrimination, which meant teamwork within Eighth Army suffered badly. At a higher command level Gazala was characterized by the failure to impose, from top down, a directing intelligence and will. Ritchie was all too fond of holding long, lengthy and inconclusive conferences rather than issuing direct commands. A fatal ambiguity and lack of authority spread downwards through the chain of command. Orders were received, doubted, questioned, discussed and time and initiative was thereby lost.

The fall of Tobruk and the rapidly deteriorating position thereafter as the DAK raced into Egypt meant that on 25 June Auchinleck relieved Ritchie, whom he correctly felt was too slow and had lost the confidence of his troops, and took over command of Eighth Army himself. While still remaining the titular Commander-in-Chief he left Lt. Gen. Corbett, his CGS, to act as his deputy on all matters in Cairo, except those of the highest political and strategic importance. The assumption of command by Auchinleck of both Eighth Army and Commander-in-Chief Middle East proved effective in bringing Rommel to a halt, but was proved an awkward system of command in practice. Auchinleck realized the importance of actually commanding his subordinates, rather than constant discussion and making reference to subordinates. The burden of command was simply too great, however, for one man.

The appointment of Lt. Gen. Bernard Law Montgomery as GOC Eighth Army and Gen. Sir Harold Alexander as Commander-in-Chief, Middle East in August 1942 ushered in a whole new phase of the Desert War and a period of far more effective command and professional control of Eighth Army. A close working relationship was enjoyed by these old friends and colleagues, who perhaps most importantly understood and had complete confidence in each other. It meant Montgomery was largely left alone to exercise command of Eighth Army. This highly professional and experienced officer introduced a new style of leadership that dominated this formation until the end of the Desert War. As GOC Eighth Army Montgomery quickly proved himself a highly able commander who radiated confidence, inspiration and calmness to his shaken and confused command, and brought with him a whole new authoritarian approach to command. Unlike his predecessors he proved steel-willed and brooked no criticism or discussion from his fractious subordinates. Indeed, Montgomery was well aware of the prevalent habit of disregarding and questioning, or delay in complying with unpalatable orders, and he was determined it would be stamped out. Those not up to the mark were quickly replaced by new men amenable to his will, whom he knew, trusted and were judged capable of performing the jobs allocated to them. No undue criticism or deliberate procrastination was brooked. Indeed, Montgomery was well aware of the previous tendency displayed by senior commands to discuss

Maj. Gen. John 'Jock' Campbell and Gen. Sir Claude Auchinleck, Commander in Chief, Middle East, in the Western Desert. (4700-32 E 8454)



and debate orders and issued an order forbidding 'bellyaching'. Orders were orders and not to be discussed. To drive home his point in due course he sacked Lt. Gen. Herbert Lumsden from X Corps for failing to fully carry out the GOC Eighth Army's instructions. He quickly realized the importance of inspiring confidence amongst his troops, showmanship, and making them feel he held a winning hand and that his methods would secure final victory.

The new GOC Eighth Army broke with standard British practice at Eighth Army's HQ by appointing a Chief of Staff responsible for coordinating the whole work of this headquarters, although the Army Commander remained available for consultation by senior officers. The appointment of Brig. Freddie de Guingand proved an excellent choice, effectively freeing the Army Commander to tour his units and devote considerable time and energy to improving fighting spirit throughout Eighth Army. His HQ was quickly co-located with the Desert Air Force at Burg el Arab to improve communications and liaison, which began the formation of a close inter-service team that eventually oversaw the development of army-air doctrine in North Africa. A section of personal liaison officers was also formed at Eighth Army's HQ, tasked with touring frontline formations and monitoring progress, as a supplement to radio reports, and reporting whether orders had actually been fully carried out.

Overall, Montgomery's method of command proved ideally suited to fighting deliberate battles in which the British enjoyed considerable material superiority, very unlike those mobile engagements that had bewildered and confused his predecessors. His command style quickly inspired confidence under the men he led, whose belief in him was cemented by victory at Alam el Halfa.

Communications in the Desert War

The exercise of effective command and control in the Western Desert by successive commanders at all levels, during the confusion and chaos associated with fast-moving armoured warfare, always depended in large part on good communications to transmit orders and pass on accurate, timely and vital information, thus allowing informed choices to be made about rapidly changing battlefield situations. The Eighth Army suffered from serious defects in communications technology during the Desert War largely beyond the



Maj. Gen. Frank W. Messervy (1893–1974), GOC 4th Indian Division, giving orders to a staff officer, south-west of Gazala, Libya, early in 1942. (4700-32 E 7236)

control of its commanders, which was all the more problematic given the sheer scale of the theatre of war, the wide dispersal of combat units and the high tempo of operations.

The use of traditional and most secure methods of transmitting information – telephone, morse key and teleprinter – functioned effectively above army level in North Africa. The fast moving nature of desert warfare, however, largely limited the use of cable, the most reliable, secure and quickest form of communications, for transmitting information below this level of the chain of command. It was simply too slow to lay cable as HQs shifted rapidly from location to location and it was extremely vulnerable to shellfire or the passage of tracked vehicles. Only during periods of static operations did it come into its own, such as during the siege of Tobruk or at El Alamein. Visual signalling methods were often of limited utility in the clouds of dust and sand that cloaked the battlefield.

The Eighth Army was forced to rely on radiotelephony (RT) to an extent never before appreciated by the pre-war British Army, which had not fully developed or explored the full potential of this mode of communication. Indeed, only the Royal Tank Corps had paid much attention to radios and forced the Royal Signals to develop sets for vehicles. Most infantry units knew little about the use of RT at the start of World War II. During the first years of the Desert War it proved a slow, erratic and often unreliable means of communication with its short range in the wide expanses of the desert liable to interruption at crucial points. The virtual collapse of Eighth Army's command network in the first week of Operation *Crusader* largely accounts for the commitment of armoured brigades in dribs and drabs rather than as a coordinated whole. Even small breakdowns in technology or systems could wreak havoc given the poor state of radio communications. On 22 November 1941 when 4th Armoured Brigade lost four radio sets, for example, command and control virtually collapsed for the remainder of the day. As a result commanders were frequently out of touch with their own units and the situation. Situation reports were often long outdated when they reached Army and Corps commanders, effectively limiting their ability to coordinate subordinate formations, even when signals were operating at peak

Gen. Sir Leslie Morshead (left), commander of the Australian 9th Division in North Africa, with Brig. Palmer of the 3rd Brigade, during a visit to the headquarters of the South African Brigade at El Alamein, July 1942. Gen. Morshead went on to command Australian forces in New Guinea and Borneo. (4700-32 E 14096)



performance. Inadequate radio communications, particularly between higher commanders, was a major factor which arose in the two 'Msus stakes' of 1941 and February 1942. The Eighth Army initially, due to pre-war economy, had too few of the right kind of sets, too few trained operators, and security procedures badly delayed the speed of transmission of vital information. More channels were required for effective operational and administrative control in highly mobile desert warfare and not enough sets were available to go round. Many sets could only transmit Morse Code, lacked sufficient range and were too cumbersome for mobile operations. With the exception of short-range sets for tank-to-tank and intra-unit communications, wireless equipment lacked range and was prone to interruption at night due to atmospheric conditions, while 'dead' areas caused serious fading of transmissions. In particular, pre-war medium-range sets proved quite unsuited to the desert. Although the availability of trained personnel and the quality and quantity of radio sets available gradually improved from 1940 to 1942, speech over a distance of more than a few miles remained often indistinct, at night often impossible, and was always insecure. A chronic shortage of radios, spare parts and charging sets for those available, moreover, also badly undermined communication. Sets on many British vehicles were found incompatible with those on US ones. The infantry were in an even more parlous state with regard to radios than armoured units, with widespread shortages of radios throughout 1941-42, and those that were available were so bulky as to not be easily manhandled. To compound difficulties, during most of the Desert War skilled and highly trained members of the Royal Signals were thin on the ground.

The downside of relying extensively on voice transmissions in Eighth Army, however, was that it was the least secure means of passing on information, and the capture of substitution codes by the Germans or else a failure to use them meant radio traffic provided a fruitful source of vital information for DAK intercept units. Indeed, a highly effective German intercept service meant *Axis commanders often read British signals long before British commanders received and acted upon them.* It proved an uphill struggle for the Royal Signals to impose strict radio discipline on the wayward combat arms. The use of cipher instead of code words below corps level, moreover, caused further intolerable lengthy delays in the transmission of orders, which often arrived far too late as a result.

The Eighth Army had greatly benefitted from improved communications by the time of Second Alamein, as wartime production kicked in and further developments in signals technology occurred. The availability in far greater numbers of good, reliable radio sets sufficient for all the teeth arms dramatically *improved command and control.* A combination of experience and training meant skilled operators were also freely available, while the Royal Signals had also greatly expanded.

Intelligence

The availability of accurate, timely and reliable intelligence to the British High Command played an important role during the early Desert War against the Italians. However, on balance intelligence did not confer a decisive advantage on either side following the deployment of German forces in North Africa and the formation of Eighth Army, although it provided valuable information about the enemy's order of battle, intentions and combat effectiveness.

Gen. Sir Claude Auchinleck, Commander-in-Chief, Middle East June 1941–August 1942. (4700-32 E 4559)



General Ludwig Cruewell, who was captured after his plane was shot down, dining with British officers, 1 June 1942. (4700-32 E 12659)



The British High Command enjoyed the benefit of ULTRA decrypts during the Desert War. In April 1941 the Enigma key for army-air cooperation was broken, providing a fruitful source of intelligence, but this was not passed on below GHQ Cairo. Far more useful information was provided post-September 1941 when German Army enigma cyphers were cracked. This source provided key information about the supply situation, German air strengths and occasionally battle plans. ULTRA was much less useful, however, when it came to German battle planning, given the great fluidity of operations in the Western Desert and was often outdated by the time it filtered slowly down to the GOC Eighth Army.

The most timely and valuable source of intelligence about the conduct of the land campaign in North Africa was provided by intercepted signal traffic (less useful during quiet periods when use of RT was limited), patrolling by armoured cars ranging deep across the desert, aerial reconnaissance, and POW interrogations, and was on occasion a major force multiplier. However, until January 1942 any advantage the British gained from reading German traffic was cancelled out because Germans were reading British messages, largely because of poor British wireless security. A range of Special Forces – the LRDG in particular – operating deep behind enemy lines also provided a steady flow of valuable information about the enemy order of battle and some information about intentions.

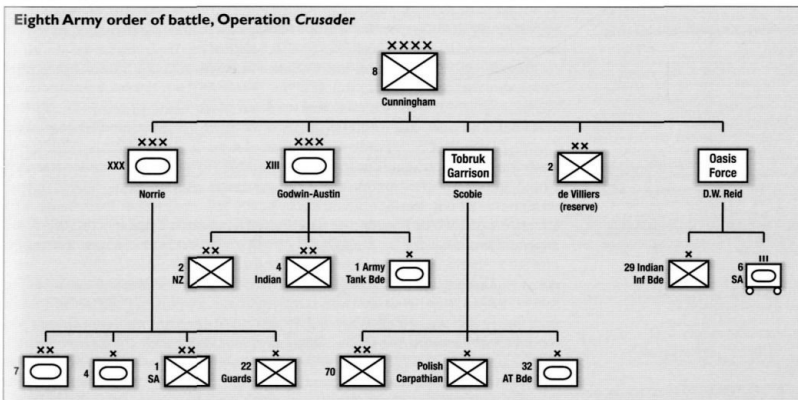
Combat operations

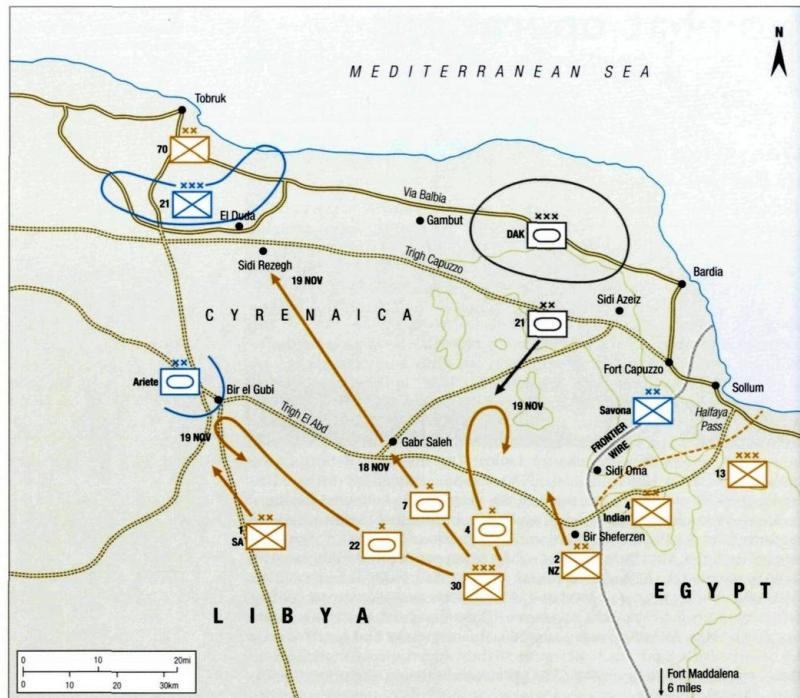
Operation Crusader – Eighth Army's debut in battle

The British High Command in the Middle East had prudently resisted political pressure during the late summer and autumn of 1941 for major offensive operations in the Western Desert to relieve Tobruk until all preparations were completed. Much work remained to be done following the acute disappointments of operations *Brevity* in May 1941 and *Battleaxe* in June 1941, in terms of carrying out a major reorganization and remedying serious deficiencies in arms, equipment and training.

The rapid expansion of Commonwealth forces in the Western Desert to carry out an offensive led to the formation of Eighth Army, commanded by Lt. Gen. Sir Alan Cunningham, in September 1941. By November 1941 it consisted of two army corps, in addition to the Tobruk garrison. XIII Corps, led by Lt. Gen. Godwin-Austin, fielded two infantry divisions – 2nd New Zealand Division and 4th Indian Division – with the 1st Army Tank Brigade in support (equipped with infantry tanks). The majority of fast-moving cruiser tanks were concentrated in XXX Corps, commanded by Lt. Gen. Willoughby Norrie, which consisted of the veteran 7th Armoured Division, bolstered by the leading armoured brigade of 1st Armoured Division, and the motorized 1st South African Division. 70th Division, 1st Polish Carpathian Brigade and the 32nd Army Tank Brigade (equipped with Matilda infantry tanks) composed the beleaguered Tobruk garrison. 2nd South African Division remained in army reserve. A total of 724 tanks were available for the coming offensive, with a further 500 in reserve. These consisted of various marks of cruiser tanks, including new Crusaders, infantry tanks and newly arrived US Stuarts, with 2-pdr or 37mm guns slightly superior in performance to their opponents' Mk IIIs. With 118,000 troops available, Eighth Army was

Eighth Army order of battle, Operation Crusader



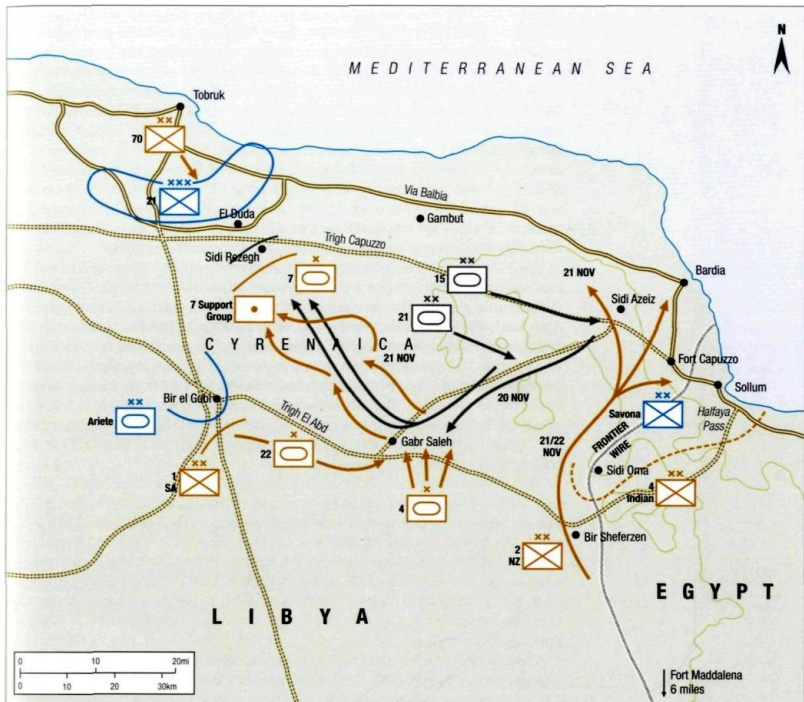


Operation *Crusader* – the opening moves.

significantly stronger than its opponents, but it contained many new and inexperienced troops in addition to the veterans of the Desert War.

The objective of Operation *Crusader* was to relieve Tobruk, recapture Cyrenaica and open the way to clear the North African littoral. It involved an advance by XIII Corps to attack and mask the Axis frontier defences at Sollum and Halfaya, which the 2nd New Zealand Division, commanded by Maj. Gen. Freyberg, would sidestep and then advance westwards to join its sister corps near Tobruk. 4th Indian Division, commanded by Maj. Gen. Frank Messervy, would mop up the remaining Axis garrisons. XXX Corps would swing southwards of the frontier defences, cross the frontier at Maddalena and then advance northwards astride the Trigh el Abd towards Tobruk. 7th Armoured Division, commanded by Maj. Gen. W.H. Gott, would lead the way, with three armoured brigades under command. The rather nebulous objective of this corps was to engage and 'destroy the enemy tank forces' after which it was to relieve Tobruk. 7th Armoured Division would do so by advancing to Gabr Saleh and then await a German reaction. At an opportune time the Tobruk garrison would break through the Italian XXI Corps and link hands.

The opposing Axis forces in Cyrenaica, since 15 August 1941 organized as Panzergruppe Afrika under General Rommel's command, consisted of both German and Italian troops. The Deutsches Afrika Korps, commanded by Gen.



Cruewell, consisted of 15th Panzer, 21st Panzer, and 'Div ZBV' (later renamed 90th Light) which was concentrated in north-west Cyrenaica undergoing intensive training near Gambut. The Italian Savona Division, deployed in the frontier defences along with smaller German detachments, was also under its command. A group of heavy artillery batteries, known as Artillery Command 104, had also been recently organized for the attack on Tobruk. The Italian XXI Corps, composed of four immobile infantry divisions – Brescia, Pavia, Trento and Bologna – stiffened by German troops, was investing Tobruk. The Italians' 20th Mobile Corps, led by Gambarà, with the Ariete armoured and Trieste motorized division under command, was nearby at Bir el Gubi and Bir Hacheim, preventing a deep outflanking manoeuvre in the desert, but was not under Rommel's command. Both Panzer divisions had 179 tanks on strength, excluding light tanks, while the Italians had 146 M13s in the Mobile Corps.

The British Eighth Army commenced Operation Crusader in strength never before fielded by the British Army in North Africa. This offensive – the largest armoured operation the British had ever conducted – initially met little resistance when it began on 18/19 November 1941, thanks to strict security precautions that completely fooled its opponents, who believed it was a reconnaissance in force. Indeed, Rommel was completely surprised, since he was focussed on capturing the fortress of Tobruk. A further advance was

Operation Crusader – the Germans strike back.

ordered on 19th November to provoke a German reaction, resulting in the dispersal of 7th Armoured Division's three brigades to find the missing enemy tanks, with 22nd Armoured Brigade heading towards Bir Gubi, 7th Armoured Brigade towards Sidi Rezegh and 4th Armoured Brigade towards Gabr Seleh. 1st South African Division moved up behind in support. 4th Armoured Brigade lost heavily, however, when Battle Group Stephan (part of 21st Panzer) counterattacked and was steadily ground down in strength by well-handled enemy tanks and guns. 22nd Armoured Brigade did somewhat better near Bir el Gubi when it attacked the Italian Ariete Division, inflicting losses on its AFVs, but in doing so suffered a bloody nose. 7th Armoured Brigade reached Sidi Rezegh within 10 miles of Tobruk, meanwhile, largely unopposed. By the end of the day 7th Armoured Division was widely dispersed across the battlefield, which was to have a baleful effect on later operations.

The DAK finally reacted to the British offensive on 19 November, albeit in a confused and disorganized way. It quickly seized the initiative. Div. ZB was ordered to recapture Sidi Rezegh, while the two concentrated Panzer divisions dealt with British armour reported at Gabr Saleh and incorrectly identified at Sidi Azeiz. 7th Armoured Brigade at Sidi Rezegh was reinforced on the 20th by 7th Support Group, in the belief that the road to Tobruk lay open. The 22nd Armoured Brigade, however, after being relieved by 1st South African Brigade, was ordered to support the 4th Armoured Brigade at Gabr Saleh, as intelligence of advancing enemy armour reached Eighth Army's HQ. An encounter battle took place between the 4th Armoured Brigade and 15th Panzer Division's leading tanks, however, before it arrived.

The situation on 21st November still looked favourable to Eighth Army's HQ, with a brigade and the support group of 7th Armoured Division at Sidi Rezegh ready to attack and to link hands with a sortie from Tobruk. To assist them 5th South African Brigade was ordered forward in support. Incorrectly it appeared the two other armoured brigades near Gabr Saleh had inflicted damage on the German tank forces opposing them. Orders were issued by Gott for an attack on Tobruk, in concert with a breakout, and for the two armoured brigades at Gabr Saleh to continue the battle against the German armour on their front.

The Germans had at last realized the threat posed by British forces at Sidi Rezegh, however, and both Panzer divisions were ordered to move north-west. They successfully broke contact, leaving both British armoured brigades behind. On 21 November, while Div. ZB and the Italian Bologna Division contained fierce attacks from Tobruk and also from British troops at Sidi Rezegh, Cruewell attacked Sidi Rezegh from the south-east, inflicting heavy losses on the defenders holding the escarpments north and south of the airfield. Despite the heavy fighting, both the 4th and 22nd Armoured brigades still failed to intervene. By nightfall 7th Armoured Brigade had only about 15 tanks still running and had suffered heavy infantry casualties fighting around the escarpments to the north and south of the airfield. Scobie's thrust from Tobruk, moreover, had stalled. 5th South African Brigade on orders had also stopped short of the airfield, given its inexperience and vulnerability to enemy tanks.

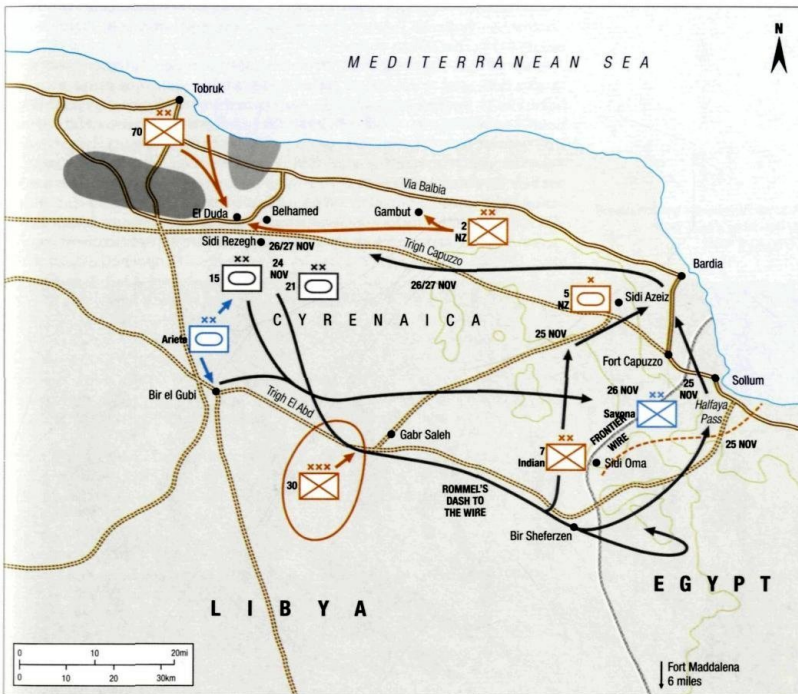
The developments at Sidi Rezegh on the 21st caused serious anxiety to Cunningham and his staff, but misleading estimates of the relative strengths of the opposing forces gave false hope. A similar false picture of what was going on was shared by Rommel, who ordered Cruewell to form a defensive line along the escarpments. The growing concentration of British forces south of Sidi Rezegh, however, convinced both Rommel and Cruewell independently of the need to act against it without delay, with 21st Panzer Division ordered to make an attack from the western flank, and later that day 15th Panzer Division from the eastern flank. Fierce fighting ensued as 7th Support Group's infantry were forced off the ridge and airfield by 21st Panzer Division, and 22nd Armoured Brigade's tanks failed to make an impact. 4th Armoured Brigade,

moreover, failed to intervene. 15th Panzer Division attacked later that night and added further chaos to the battlefield by attacking the HQ of 4th Armoured Brigade and putting it out of contact with its superiors. By the end of the 22nd the position appeared much less favourable to Eighth Army, whose armoured formations had suffered heavy losses.

The Germans thought they had to make one last major effort on 22/23 November at Sidi Rezegh, believing enemy tank losses to have been severe, by preparing a pincer movement. While 21st Panzer held Sidi Rezegh airfield, 15th Panzer Division would move around Gott's rear to join hands with Ariete Division and then together both formations would drive northwards forcing Gott's surviving forces into the hands of German troops at Sidi Rezegh.

This manoeuvre was successfully carried out by 15th Panzer, which, after successfully joining hands with Ariete, advanced northwards at 1500 hours on 23 November side by side. En route fierce fighting erupted as the supply echelons of 7th Support Group were encountered and then 5th South African Brigade was discovered near the southern end of the Sidi Rezegh escarpment. This formation offered desperate resistance, but was quickly overrun and taken into captivity. Although it had been a disastrous day for Eighth Army, it cost Cruewell heavy tank losses – 72 out of his remaining 162 – as well as crippling losses of many battalion and company officers, NCOs and men.

Operation Crusader – the dash to the wire.



Only 90 of the 249 DAK tanks that began the fighting five days before were runners. The remainder of the DAK was now badly disorganized and in need of rest and reorganization.

The GOC Eighth Army had become deeply worried, anxious and depressed about Operation *Crusader* as news of mounting tank losses and the fate of 5th South African Brigade reached his HQ. Indeed, Cunningham gave serious thought to withdrawing to Egypt as his earlier optimism vanished in a puff of smoke. His undaunted CGS and both corps commanders, however, thought otherwise. XIII Corps was in a far better condition and its progress gave the HQ of Eighth Army some grounds for optimism. By 21 November it had outflanked the frontier positions and 4th Indian Division began steadily mopping up the defenders, while the 2nd New Zealand Division advanced as planned westwards towards Tobruk along the coastal strip without meeting serious opposition. This progress meant Cunningham tasked XIII Corps with joining hands with Scobie, while XXX Corps guarded its flank and completed the 'destruction of the remaining German armour'. To do so XIII Corps was bolstered by 1st South African Division transferred from XXX Corps. It would not, however, be carried out by Cunningham, whom the Commander-in-Chief had found mentally and physically exhausted when he visited his HQ for consultation. As further events unfurled Cunningham was relieved of his command and placed on the sick list for not having 'the mental resilience to cope with the built-in crises of desert warfare'. In his stead Maj. Gen. Neil Ritchie, Auchinleck's Deputy Chief of Staff, was appointed GOC Eighth Army on 26 November 1942.

The Germans upset British plans for continuing the offensive and their hopes that XXX Corps would have a brief respite while XIII Corps took the lead. On 24 November the DAK and Ariete Division boldly attacked eastwards, with Rommel at their head, from Sidi Rezegh down the Trigh el Abd towards the frontier, believing Eighth Army to be already badly disrupted. This so-called 'dash to the wire' had the aim of encircling the 2nd New Zealand and 4th Indian divisions between the DAK and Savona in the frontier defences. It caught the British completely off-guard and smashed through the rear area of XXX Corps scattering its supply echelons, but missing its dumped supplies. A sense of acute alarm and despondency immediately spread, with no combat

A South African rifle section makes its way along a sand dune. (4700-32 E 4350)





Men of the Essex Regiment relaxing at El Duda, 15 December 1941. (4700-32 E 7084)

units between the DAK and the airfields and supply depots on which Eighth Army depended. The dash, however, had little lasting physical or moral effect, with the German armour spending two largely fruitless days swanning around both sides of the frontier defences. It suffered heavy losses from artillery and air attack, moreover which caused the wide dispersion of remaining German tanks before it withdrew westwards to refuel at Bardia. The presence of the DAK had little effect on the advancing New Zealand brigades, supported by 1st Army Tank Brigade, whose tough infantrymen pushed onwards towards Tobruk against fierce resistance from Div. ZBV and Artillery Command 104. It did not completely escape, however, German attention. On 27 November the HQ of 5th New Zealand Brigade and one battalion was overrun near Sid Azeiz by 15th Panzer Division. The same day, however, 4th New Zealand Brigade made contact with the Tobruk garrison.

The DAK, responding to calls for assistance from the rest of Panzergruppe Afrika against attacks by the 2nd New Zealand Division and the deteriorating situation near Tobruk, finally withdrew along the Trigh Capuzzo from the frontier area on 27 November. As it did so the reorganized 7th Armoured Division struck back, for the first time with its armour concentrated. Heavy losses were inflicted by 22nd Armoured Brigade and 4th Armoured Brigade when it ambushed 15th Panzer Division, but when they withdrew at night to leaguer the DAK escaped westwards to pose a potent threat to the rear of 2nd New Zealand Division. As Carver notes: 'For the sake of performing a nightly ritual, therefore, the fruits of the first occasion on which the British armour had been able to forestall the German, and concentrate against a portion of it, were thrown away.'²²

The DAK was now able to pose a significant threat to the advancing New Zealanders near Tobruk, although this was not initially perceived by senior British officers, who thought it was making good its escape. On 30 November 6th New Zealand Brigade at Sidi Rezegh was virtually destroyed and the 2nd New Zealand withdrew temporarily into the fortress, closing the corridor to Tobruk.

The writing was on the wall for Panzergruppe Afrika, however, with further attempts by the Germans in the Sidi Rezegh area during the first week of

²² Carver, *Michael Dilemmas of the Desert War* (London, Batsford, 1986), p.45.

December to dislodge the British proving fruitless. Although further local successes were achieved against the New Zealanders near the escarpments, the combat strength of the DAK had been steadily ground down and its remaining troops were physically and mentally exhausted. Less than half the original tanks remained and two-thirds of the guns that had begun the battle remained. A combination of attacks by the Royal Navy and RAF had made the German logistical position all but unsupportable. While Eighth Army could draw on substantial reserves of men, vehicles and tanks to make good its own losses few were available to the Axis forces after its dumps in Cyrenaica were exhausted. Rommel recognized the inevitable, that he could not help the beleaguered frontier garrisons, isolate Tobruk and effectively oppose XXX Corps. By 6 December his forces had withdrawn from areas north of Via Balbia and Sidi Rezegh. On 7 December Rommel finally acknowledged defeat and ordered a withdrawal towards Gazala and in turn El Agheila, with DAK covering Panzergruppe Afrika, leaving the field of battle in Eighth Army's victorious hands and abandoning the Axis frontier garrisons to their fate. Unfortunately, the pursuit was not well managed and the Germans reached Agedabia on Christmas Day.

The Eighth Army emerged victorious from Operation *Crusader* having achieved a notable success, albeit after a bruising engagement that had tested the mettle of its officers and men. It had achieved its objective of evicting the Germans from Cyrenaica and relieving Tobruk. A taste of 'muddle and failure' was left, however, in the mouths of many participants by this complex and hard-fought battle that had ranged backwards and forwards across the desert. Although Eighth Army did not achieve a decisive victory, Rommel lost 2,300 killed, 6,100 wounded and 29,000 prisoners, with 1,300 secured from the abandoned frontier garrisons. In comparison, Eighth Army lost 17,700 casualties (15 per cent), 2,900 officers and men dead, 7,300 wounded, and the rest prisoners. The Germans had appeared superior tactically throughout Operation *Crusader*, although this was not due to technical superiority in tanks as many then and later have claimed. A significant advantage was conferred on the Germans, however, by the possession of superior anti-tank guns, artillery and armoured personnel carriers. The Germans also displayed considerably better skill at handling these weapons, especially 88mm and 50mm AT guns that inflicted the great majority of British tank losses, in close cooperation with other arms of service. The battle had some unfortunate effects, including a serious loss of faith in the 2-pdr anti-tank gun, resulting in the misuse of 25-pdrs in this role and constant demands from the infantry for tank protection. The victory hid other problems with Eighth Army, including its command and control, lack of co-operation between formations, poor combined-arms tactics, the wide dispersal of artillery assets, and lastly the failure to concentrate armoured formations at the decisive point.

The Battle of Gazala – Eighth Army on the defensive, May–June 1942

The opportunist Axis counter-offensive that had begun in January 1942 culminated in the recapture of western Cyrenaica from a surprised and bewildered Eighth Army. It finally ground to halt on 4 February 1942 in front of a line of prepared defences stretching from Gazala on the Mediterranean coast southwards to an isolated defensive position deep in the open desert at Bir Hakeim. The so-called 'Benghazi Stakes' had shown once again the strengths and limitations of Eighth Army and its Axis opponents. A lull ensued between February and mid May 1942 as both sides rested, recovered and regrouped following the previous high-tempo operations, with the British High Command busily preparing Eighth Army for a renewed all-out offensive to recapture vitally needed airfields in the bulge of Cyrenaica.

Those British Commonwealth troops making up Eighth Army, commanded by Gen. Sir Neil Ritchie, were a mixture of tired veterans of the Desert War and many inexperienced newcomers following the heavy losses of the months before and transfer of units and formations to the Far East. They occupied an inter-connected system of defensive boxes, each containing a single brigade group, prepared for all-round defence and protected by extensive, deep minefields and belts of barbed wire. Given the vulnerability of motor transport in the open, few had their accompanying First Line transport with them. Behind them echeloned in depth were supporting armoured and motorized formations. Large field maintenance centres packed full of fuel and supplies were located throughout the rear areas in anticipation of a further advance. Although strong the Gazala defences were by no means a continuous line and had been intended rather as a springboard for a British offensive than a protracted defence. Large gaps existed between defensive positions, through which it was intended British armour would manoeuvre, and to the south a yawning 13-mile gap existed between Bir Hakeim and its northern neighbour.

Eighth Army had grown considerably in size. In May 1942 it consisted of two corps – XXX Corps, commanded by Lt. Gen. Willoughby Norrie, and XIII Corps, commanded by Lt. Gen. W.H. Gott. The former contained most of the armour, with the infantry in the latter. The Gazala line was held by XIII Corps, with 1st South African Division deployed in the north from Gazala to Alem Hamza. Two brigades of the newly arrived 50th (Northumbrian) Division were immediately to the south of the Trigh Capuzzo. A third brigade – 150th

An infantryman takes the surrender of the crew of an enemy supply truck in the Western Desert. 2 June 1942. (4700-32 E 12810)



Infantry Brigade – was located to the south near Sidi Muftah, separated by five miles of minefield. Each division had an army tank brigade in support, with 110 Matilda and 167 Valentine tanks in total. Further extensive minefields continued southwards at the end of which was located Bir Hakeim held by the Free French Brigade, commanded by Brig. Gen. M.P. Koenig, after which the Gazala line ended hanging in the open desert. To the rear Tobruk was held by the 2nd South African Division, although it was no longer such a formidable fortress since many of its minefields and other defensive stores had been stripped for use in the Gazala defences.

XXX Corps consisted of 1st Armoured Division and 7th Armoured Division and was deployed to the rear of the Gazala line. It had 573 tanks – 257 Crusaders, 149 Stuarts and 167 new Grant medium tanks. This was a powerful addition to British tank strength since its excellent armour and powerful main armament effectively nullified any advantage the German up-armoured Mk III Ausf. H and even Mk III Ausf. J up-gunned tanks possessed. A further armoured brigade was en route to the battle area with 145 more tanks. The 1st Free French Brigade at Bir Hakeim came under Messervy's command, as did three further brigades in other defensive localities in its area at Retma (7th Motor Brigade), Knightsbridge (201st Guards Brigade), Bir el Gubi (29th Indian Infantry Brigade) and just south of Bir Hakeim held by 3rd Indian Motor Brigade.

Overall Eighth Army enjoyed a numerical superiority vis-a-vis Panzergruppe Afrika in manpower, armour and artillery while the available air forces were approximately equal in strength. It had 849 tanks against Rommel's 560 (half German). Eighth Army importantly also had Grant tanks, qualitatively far superior to anything the Germans had to hand. The arrival of the first 6-pdr anti-tank guns also gave Commonwealth troops a weapon capable of defeating the frontal armour of German AFVs for the first time. The Eighth Army also began the Gazala fighting, moreover, with an 8:5 superiority in artillery, but it was widely dispersed throughout the frontline area.

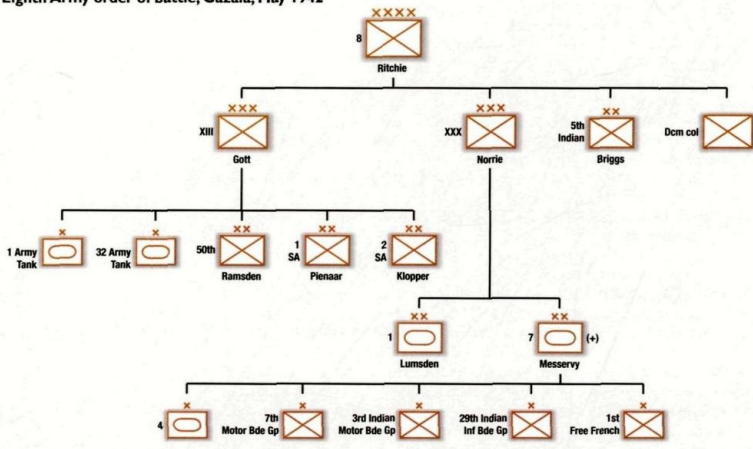
The growing strength of Eighth Army convinced Rommel of the need to strike hard and fast before his forces were outnumbered, using his mobile forces to bring to battle and defeat the British armour. Axis intentions did not escape the attention of intelligence officers. As news reached the HQ of Eighth Army of an Axis build up in May, it was welcomed with some relief and it prepared to meet the German advance on ground of its own choosing. The Panzergruppe Afrika began its planned assault on the Gazala position in the late evening of 26 May, with a diversionary frontal attack launched in the north by Group Cruewell (Italian infantry bolstered with German units), against South African troops in the Gazala-Sid Muftah area, intended to pin down the defenders. This was where Eighth Army had expected its attack. Later that day under cover of darkness the German armoured formations in the Afrika Korps, commanded by Erwin Rommel, began a wide outflanking movement deep in the desert to the south of Bir Hakeim, intended to bring to battle British armoured formations and then cut off the bulk of Eighth Army occupying its defences to the east. The Italian Ariete Division would deal with the Free French before moving up in support.

This bold German offensive began well, with the DAK quickly sweeping past Bir Hakeim as planned and then moving northwards towards Tobruk, Acroma and El Adem, while Ariete attacked the beleaguered garrison. Initially, the British reaction to this powerful armoured thrust was slow, lacked urgency and was uncoordinated, with indecision and uncertainty gripping the British High Command, in part due to poor relations between both corps commanders and Ritchie, of whom they were highly critical. XXX Corps was thrown badly off balance. A series of piecemeal attacks were launched on 27 May by the widely dispersed armoured brigades as a result, which the Axis were able to defeat in detail unit after unit, effectively squandering British superiority in tank numbers and leaving the battlefield littered with burning AFVs. 3rd Indian

Motor Brigade was overwhelmed by 21st Panzer and the Italian Ariete Division, the 7th Motor Brigade by the whole of 90th Light Division, 4th Armoured Brigade by the whole of 15th Panzer Division, and lastly 22nd Armoured Brigade by the 15th and 21st Panzer divisions. Similarly 7th Armoured Division HQ was overrun, although Maj. Gen. Frank Messervy later made good his escape by first disguising himself as an aged batman and then seizing an opportunity to slip away. The Free French at Bir Hakeim, now astride the Axis lines of communication, fought on despite heavy attacks by Italian troops. Within 24 hours the German formations were deep behind the frontline astride the British line of communications, throwing the British High Command completely off balance, despite meeting stronger resistance than anticipated and suffering significant losses of tanks largely at the hands of new US Grant tanks. Bir Hachiem remained defiant while columns of British motorized troops savaged his exposed lines of communication.

The Germans pressed their attacks towards Tobruk, despite ever more grave shortages of fuel and ammunition as they were isolated from their supply echelons; they were themselves under heavy British attack, back with the Italian XX Corps at Bir el Hamat. On the 28th the DAK pushed past the Knightsbridge Box, and 90th Light Division reached El Adem. A series of counter-attacks by 1st Armoured Division on the DAK from the east, however, effectively checked its advance. Despite the early German successes, the situation offered much potential to the Eighth Army with Rommel's spearheads effectively cut off from his supply lines by the presence of a box occupied by 150th Infantry Brigade at Dahar el Aslag; this was astride his proposed direct line of communication through the minefield belt, something that German intelligence had completely missed. Until it could be destroyed the German armoured forces, already having lost 200 tanks, on 28–29 May concentrated in a defensive position in a depression four miles by two miles, quickly dubbed the 'Cauldron', lying between the Trigh Capuzzo and Trigh el Abd, with its back to the British minefields. With great stoicism the hapless 150th Infantry Brigade, commanded by Brig. C.W. Haydon, composed of Territorial Army battalions, endured the full

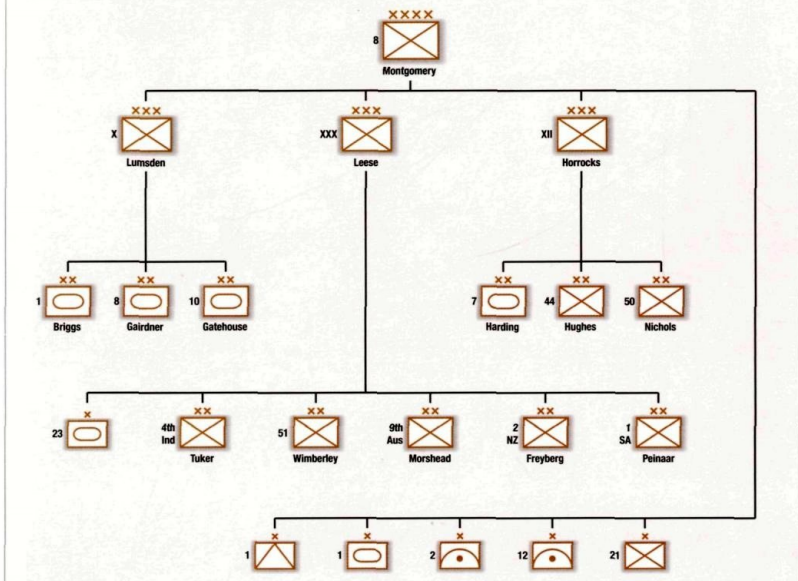
Eighth Army order of battle, Gazala, May 1942



fury of the Luftwaffe, the DAK and the Trieste Division advancing through the minefield for nearly 72 hours until sheer weight of enemy numbers and shortages of ammunition told. On 1 June the box fell into German hands, opening a supply line to the beleaguered armoured units in the Cauldron.

The British High Command had, however, failed to seize the glowing opportunity that had presented itself of destroying the DAK in detail, while it was effectively cut off by 150th Infantry Brigade. Indecision and uncertainty reigned supreme at Eighth Army's HQ. On 5 June the Eighth Army finally launched a major counter-attack – Operation *Aberdeen* – intended to destroy the DAK in detail. A series of poorly planned and executed attacks were launched, however, without adequate infantry and artillery support, largely because the armoured brigades had not been trained to work with infantry. A heavy price was paid by armoured units for poor inter-arm co-operation, and yet again they were decimated by skilfully handled German 50mm and 88mm anti-tank guns, mines and carefully concerted counter-attacks by German armour. By the time this ill-fated attack was over Eighth Army had lost another 200 tanks, four artillery regiments and an infantry brigade. On the afternoon of 5 June the rejuvenated DAK, now concentrated, confident and with a secure supply line, attacked the much-reduced British formations opposing them, with 21st Panzer Division smashing through the defences towards the Knightsbridge Box, while 15th Panzer Division swung round through Bir el Hamat in another outflanking manoeuvre. Unable to offer effective resistance the demoralized Eighth Army struggled to prevent the Gazala defences being overwhelmed. Following the destruction of the British armour, the box at Bir Hakeim, moreover, felt the full

Eighth Army order of battle, Gazala, July 1942



fury of the DAK seeking to clear its rear area. Following a desperate resistance it fell, effectively marking the end of the Gazala battles, with 2,700 Free Frenchmen breaking out on 10 June with the assistance of XXX Corps' surviving armour. Those German forces investing the box quickly moved north adding to the weight of the main German attacks.

The British formations in the nearly intact XIII Corps, still occupying the Gazala defences to the north, turned their flank 90 degrees along the Trigh Capuzzo. Even though the British still enjoyed tank superiority it was ordered to fall back, while the DAK advanced on El Adem and Acroma. On 12 June the DAK inflicted a decisive defeat on British armoured forces near the Knightbridge Box, destroying 120 tanks. By the evening of the following day the Germans had a 2:1 superiority in tanks and began turning their attention towards Tobruk. The game was up for Eighth Army armoured forces, largely destroyed; Ritchie grasped the nettle and ordered his still intact infantry and logistical troops to withdraw. It was by no means an easy task. On 13/14 June 1st South African Division successfully escaped entrapment and withdrew

Casualties being tended at a field dressing station, June 1942. In the background is an Austin K2 ambulance. (4700-32 E 13327)



eastwards. Similarly 69th Infantry Brigade (part of 50th Division) moved back along the coast road towards Tobruk, but the 151st Infantry Brigade instead advanced westwards into the Axis positions before swinging south of Bir Hakeim and eastwards towards Egypt through the desert. Although it lost most of its vehicles and heavy weapons en route, 90 per cent of its men reached British lines unscathed.

Eighth Army yet again had been out-generalled and out-fought by the Axis forces during three weeks of bitter battle. Following the failure of 4th Armoured Brigade's counter-attack on 17 June near Sidi Rezegh, it fell back in considerable disorder towards the dubious safety of the Egyptian frontier. A far greater disaster quickly followed the Gazala battles when the hitherto much-vaunted fortress of Tobruk, together with 32,000 troops, mostly of 2nd South African Division, and mountains of supplies, fell on 21 June within hours to a lightning German assault. Its loss was a massive disaster for British arms and cast a pall of gloom over Eighth Army. Little alternative remained other than a further withdrawal. Eighth Army was harried back to the Egyptian frontier having lost in total 50,000 men, and masses of tanks and equipment. By 23 June it had taken up a defensive line by Mersa Matruh closely pursued by the Axis forces flushed with success. Two days later Auchinleck relieved Ritchie of command and ordered a further withdrawal to positions at El Alamein closely pursued by the DAK. Although few organized units remained, discipline and morale still stood up well in Eighth Army.

The Battle of Gazala was a calamitous defeat for Eighth Army that resulted in heavy losses, the fall of Tobruk and a pell-mell retreat to El Alamein. The way to Egypt and the Suez Canal and beyond now seem open to the Axis forces. The battle had begun with the British stronger in terms of numbers and quality of equipment, especially in the Grant tank, than their opponents. A poor defensive layout had cost it dear. The battle had begun with British troops occupying positions largely unsuitable for defence due to the planned offensive, and throughout troops had been tied to protecting stockpiles of arms, ammunition and equipment that would have supported an advance into Cyrenaica. The German High Command, however, had shown superior generalship throughout, with Rommel in particular exercising sure and sound control of his forces. In comparison, Ritchie and the British high command had effectively squandered the advantages with which it began the battle. A direct result of poor communications and intelligence, divided loyalties and decision by committee, and bickering between senior officers had played a key role in preventing the GOC Eighth Army exercising effective command. A serious lack of mutual trust and confidence was endemic in the command structure during the Gazala battles, contributing to the piecemeal destruction of the superior British armour and the failure to mass tanks and artillery at the decisive point. In the final analysis, British Commonwealth troops had fought, moreover, less well than during Operation *Crusader*. This prior experience had made many veterans much warier than before in combat and a large influx of inexperienced new blood in terms of replacements for casualties and new units and formations had compounded the problem by further reducing combat effectiveness.

The Battle of Alam el Halfa, 31 August–7 September 1942

The bruising battle of First El Alamein ended in July 1942 in a virtual stalemate, leaving both British Commonwealth and Axis forces exhausted and badly in need of rest and recuperation. A build up immediately began of fresh troops, equipment and supplies on both sides, with the avowed intention of returning to the lists once again. The Eighth Army, now commanded by Lt. Gen. Bernard Law Montgomery, laid extensive, deep minefields and constructed further elaborate field defences to prevent a renewed Axis attack into Egypt. In the

north 9th Australian Division held front-line positions anchored on the Mediterranean coast and then in turn 1st South African Division and 5th Indian Division down to the Ruiweisat Ridge (all belonging to XXX Corps). Behind them 22nd Armoured Brigade lay in reserve. Further south XIII Corps held the line towards Himeimat, with 2nd New Zealand Division and 7th Armoured Division in the line and 1st Armoured Division in immediate reserve.

The speed with which the British Eighth Army was thickening up its already formidable defences in the north and his own deteriorating supply situation convinced Erwin Rommel of the need to strike quickly (in what one historian has termed 'The Gambler's Last Throw') in a mobile operation, which would favour the DAK, rather than attempting a perilous breakthrough battle. With the British growing stronger by the day, time was of the essence. By the end of August the Germans fielded 200 tanks, with an additional 243 medium and 38 light Italian tanks. The former included 26 Mk IV specials (armed with long 75mm guns), 10 older Mk IVs, 71 Mk III Ausf. J specials (with long 50mm guns) and 93 of the older variant. An additional 29 light and 5 command tanks completed the available force.

The German High Command selected the southern part of the front at El Alamein as the site of a renewed offensive, using the tried and tested approach of outflanking the British positions, since its defences were still weaker than those in the north. A surprise night attack by the DAK, commanded by Gen. Walter Nehring, exploiting the light of the full moon, was to be followed by a rapid advance on a broad front 45km eastwards, brushing aside British resistance, past the Alam el Halfa Ridge, the key to the El Alamein position, around Eighth Army's southern flank; it would then strike northwards into its rear towards the coast near Ruiweisat Station. The northern flank of this advance would be protected by the Italian XX Corps, commanded by Maj. Gen. Giuseppe de Stephanis, and 90th Light Division, who would carry out shorter hooks into the British defences conforming to the main attack. To the south a screen of German and Italian reconnaissance units would provide security. The Italian XXI Corps, commanded by Gen. Navarini, in the far north, meanwhile, would pin down the Allied formations facing it by mounting diversionary raids. Ultimately it was hoped Eighth Army would be trapped and cut off from its supply lines and its motorized units forced to fight a mobile battle on German terms. The way to Cairo would then be open for Rommel's armoured and motorized divisions, while his German and Italian infantry formations mopped up around El Alamein. From the outset it was realised surprise, speed and sufficient supplies, especially petrol, to wage a mobile battle were the keys to success.

The British High Command had already anticipated what Rommel had planned, however, with ULTRA intelligence providing further confirmation, and careful steps had already been taken by Eighth Army to counter it. The Alam el Halfa Ridge had been heavily fortified under Auchinleck's orders and this was continued by Montgomery, who deployed two newly arrived brigades of 44th Division along its length, backed by its artillery and anti-tank guns. On the western end 22nd Armoured Brigade (part of 10th Armoured Division) was also deployed, with the reinforced New Zealand Division holding a further position at Alam Nayil to the west. XXX Corps' reserve – 23rd Armoured Brigade – was deployed just to the north and to the east was located 8th Armoured Brigade around Point 87. The armoured units on and around the Alam Halfa Ridge (mostly equipped with Grants) were to be dug in and used to stiffen the anti-tank ground defences. The front line between Alam Nayil and the Quattara Depression was held by elements of 7th Armoured Brigade, which was to initially hold a German attack, but in the face of heavy pressure was to withdraw intact to positions around Samaket Gaballa. 7th Division would then carry out a mobile defence harrying the advancing German's flanks.

The German offensive finally began in the early hours of 31 August 1942, with light provided by the full moon, having effectively already lost all element

A British soldier with his rifle and kit, newly-arrived in Egypt, 19 August 1942. (4700-32 E 15766)



of surprise on which it was largely based and despite worrying shortages of fuel. A deeper than expected minefield belt, fierce resistance from British outposts belonging to 7th Armoured Division and intense artillery fire, however, almost immediately halted the advance while engineers gapped the obstacle. A series of bombing raids and artillery fire inflicted serious casualties on the Germans as they waited, including the commander of the DAK. The lead elements of 21st Panzer Division breached the obstacle at half-past four in the morning after a renewed attack, but the vital elements of speed and surprise had been completely lost and none of the first objectives were reached by morning. As planned, elements of 7th Armoured Division fought a successful delaying action as the DAK advanced eastwards. Although a gloomy Rommel seriously entertained thoughts of completely abandoning the attack during the early hours of the 31st, he instead ordered a reduction in the depth of the thrust since both flanks were threatened by alerted British formations. Instead, Alam el Halfa was selected as the DAK's immediate objective since it could no longer be easily bypassed. While the Italians struggled to penetrate the minefields, shielded by a dust storm, DAK made further albeit very slow progress eastwards on 31 August, but spirited opposition, air attacks and the need to re-supply made progress slow. The Italian XX Corps and 90th Light Division made even slower progress on the left flank, being delayed by fierce resistance, minefields and difficult terrain.

The headquarters of Eighth Army had much to be happy with, with the Germans having attacked where expected and already having suffered serious loss and delay. The Italian XXI Corps and 90th Light Division were still embroiled in the minefields. The direction in which the identified DAK was heading was now known and was exactly as Montgomery had anticipated. The British defenders on the heavily fortified ridge stood-to on 31 August awaiting sight of the advancing German armour, with 22nd Armoured Brigade around Point 102, west of Alam el Halfa, expecting contact all day. 23rd Armoured Brigade, moreover, was ordered forward to fill the gap between the

22nd Armoured Brigade and the New Zealanders. A short, sharp skirmish occurred shortly before dusk, after which both sides drew apart and leaguered for the night.

The ensuing defensive battle fought by Eighth Army beginning the next day took the course Montgomery had planned, with 15th Panzer Division and then 21st Panzer Division effectively impaling themselves on anti-tank defences manned by two armoured brigades and 44th Division, backed by devastating powerful divisional and corps artillery support. Heavy losses were inflicted on the German armour by dug-in anti-tank guns and hull-down tanks along the ridge occupying carefully prepared defensive positions, who refused to be enticed out of their defences and engage in a *mêlée* as the Germans, by past experience, hoped. When the Germans retired to refuel at nightfall, fierce bombing raids on their leaguers again caused serious losses amongst manpower, tanks and especially soft-skin vehicles, which were especially targeted. The next day German attacks were equally unsuccessful, pounded by intense artillery fire, while further north the supporting Italians were still struggling to clear the minefields. 90th Light had also made little progress further northwards. The British defences were steadily reinforced, meanwhile, with elements of divisions further north shifted in support of those engaged near the Alam el Halfa feature. Furthermore, 151st Brigade was ordered from the Delta to the eastern end of the ridge. Orders were issued to the New Zealand Division to prepare an attack southwards from Alam Nayl towards Himeimat. Spoiling attacks were also made by XXX Corps in the north to throw the Axis forces off-balance.

The end was clearly in sight for the German offensive, with the DAK effectively penned in by Allied formations and forced to fight an offensive battle against superior forces on ground of British choosing. With stocks of fuel and ammunition plummeting, under sustained bombardment and aerial attack and lastly with intelligence that British armoured forces were massing, Rommel accepted the fact British forces could not be tempted from their positions into the open to fight a fluid and mobile battle. Early on 2 September the German High Command ordered a gradual withdrawal, under heavy attack by the Desert Air Force, back to the western edge of the British minefields. By midday on 3 September it was fully underway. Fortunately for the Germans, Montgomery proved extremely cautious given the large armoured forces at his disposal. Given the low state of British training for offensive operations he only ordered a vigorous pursuit of the withdrawing enemy forces, apart from a deliberate attack by the New Zealanders and 132nd Infantry Brigade on the night of 3/4 September towards the Munassib Depression. Heavy fighting ensued, with the German and Italian defenders offering fierce resistance, and ultimately 6th New Zealand Brigade withdrew having suffered heavy losses, including its commander. Similarly 132nd Brigade lost heavily with its commanding officer severely injured, and 697 officers and men were casualties.

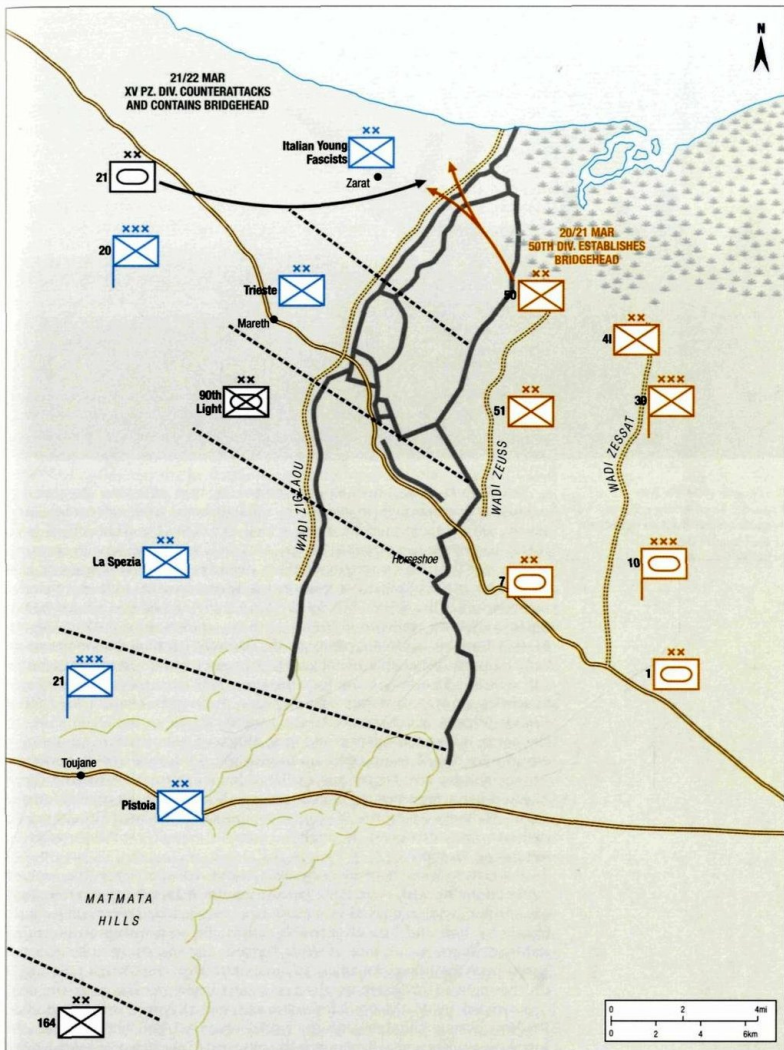
The Battle of Alam el Halfa was a resounding success for British arms, with Panzerarmee Afrika ending its last major offensive directed towards Egypt back behind the British minefields, apart from positions around the peak of Himeimat. The careful preparations begun by Auchinleck and completed by Montgomery to meet this attack had paid massive dividends. It had cost the Germans 369 dead, 1,163 wounded and 272 missing, and the Italians 167 men killed, 587 wounded and 197 missing. A total of 36 German and 11 Italian tanks or armoured reconnaissance vehicles were lost. Large numbers of soft-skin vehicles were also destroyed. In comparison, Eighth Army lost 1,750 casualties and its tank strength remained pretty much as before. Perhaps most importantly it was a psychological victory for British arms and established mutual trust between Eighth Army and its new leader, who had assumed command just three weeks before. In this short period of time he had gripped Eighth Army and impressed upon it the vital importance of

standing firm on ground of its own choosing. A now reorganized, rejuvenated and confident Eighth Army had shown it was more than capable under the leadership of Montgomery of defeating Rommel and the Axis forces at its own game, especially when provided at last with ample firepower. With morale restored, Eighth Army now turned to preparing itself for its own decisive offensive in the Western Desert. In comparison, Rommel had not shown his customary drive and enthusiasm; Panzerarmee Afrika had shot its bolt and was now only capable of standing firm and awaiting the inevitable British offensive it knew was coming.

Operation Pugilist – Eighth Army and the Battle of the Mareth Line, March 1943

The victorious Eighth Army's advance into Tunisia began well in March 1943, when 7th Armoured Division, part of XXX Corps, captured Ben Gardane and then the villages of Tatouine and Medenine. Little opposition was initially encountered. The Axis forces in Tunisia, however, were far from cowed. On 6 March the Germans launched a fierce counterstroke at Medenine across open desert terrain against the lead elements of Eighth Army. This attack, about which Montgomery had warning from ULTRA decrypts, never stood a real chance of success since meticulous defensive plans were already in place by the time it began. For its assault on XXX Corps the Axis deployed elements of three Panzer divisions – flushed with success after Kasserine-Gafsa – fielding 160 tanks, and four two-battalion battlegroups, which attacked under cover of an early morning fog cloaking the ground. The initial German waves, however, foundered against a well-prepared defensive position containing dug-in infantry and massed anti-tank guns – 2-pdrs, 6-pdrs and the first 17-pdrs – after the sun burned through the fog. Massed field and medium artillery fire, moreover, opened at short range caused heavy losses on the accompanying Panzer Grenadiers. Although three more attacks were made the German Panzers, each suffered the same fate and by the end of the day 55 German tanks littered the battlefield. By dawn on 7 March the remaining German troops had fallen back to the Mareth Line, ending Rommel's last battle in North Africa. It had been a highly successful defensive action for Eighth Army, demonstrating the growing steadiness, skill and professionalism of its infantry and artillery, with only 130 ORs killed or wounded and heavy losses in tanks and manpower inflicted on the enemy.

The British planning staffs immediately resumed work for breaching the heavily fortified Mareth Line, blocking the only practicable line of advance into Tunisia, following the German repulse. Originally built by the French to repel an Italian attack from Tripolitania, this strong line consisted of defensive localities containing mutually supporting concrete blockhouses, steel gun cupolas, trenches, barbed wire and extensive anti-personnel and anti-tank minefields located in naturally strong defensive terrain. It stretched 12 miles westwards from the Mediterranean coast and was anchored in the south on the mountainous Matmata Hills, to the west of which was a sand sea assessed by the French military authorities as impassable. The Wadi Zagzaou, 60–200ft wide and 20ft deep, formed a natural tank ditch immediately to its front, behind which another had been artificially constructed. Although Rommel had lobbied for a withdrawal, believing stronger positions existed elsewhere, the Italian High Command had stood firm and this formidable defensive position was held by four Italian and two German divisions, forming part of the Italian First Army. This fielded approximately 80,000 men equipped with 450 field or medium guns and 720 anti-tank guns. Two weak Panzer divisions were held in reserve ready to counter-attack any Allied incursion, with 15th Panzer Division located five miles north of Mareth. Intercepted British signals had alerted them to British outline plans.



The Battle of the Mareh Line, 20–22 March 1943, showing the attack on the main defences.



A 4.5in. gun of 64 Medium Regiment, Royal Artillery, Eighth Army, bombards the Axis defences of the Mareth Line. (4700-39 NA 1008)

The Eighth Army, fielding two corps for this offensive, possessed a considerable advantage in numbers: 160,000 men, nearly 750 tanks and nearly 700 field and medium guns, as well as 1,000 AT guns, mostly 6-pdrs. It was backed by the powerful Desert Air Force, which possessed command of the air. The sheer strength of these defences meant Montgomery also looked for other alternatives than just a frontal assault. Indeed, intensive reconnaissance using the LRDG of the sand sea lying east had already begun on his orders to gather intelligence, with the intention of outflanking the Mareth Line by advancing through the Tebaga Gap and then northwards to El Hamma. Although difficult going, they reported movement was feasible for vehicles. The final plan for Operation *Pugilist* involved XXX Corps, consisting of 50th Division, 51st Division, 4th Indian Division and 201st Guards Brigade, which would launch a frontal attack on the Mareth Line in the north, roll up the defences and then advance towards Gabes. A subsidiary advance by New Zealand Division, meanwhile, reinforced by 8th Armoured Brigade and the Free French and artillery – known as the New Zealand Corps – would flank the Matmata Hills to the south and then put a block on the Gabes–Matmata road. The X Corps, composed of 1st and 7th Armoured divisions, would remain in reserve, ready to exploit a breakthrough by advancing on Sfax.

The Eighth Army, buoyed up by the German defeat at Medenine, entered battle brimming with confidence percolating down from its highest ranks to the lowliest soldier. Operation *Pugilist* was preceded by several preparatory attacks by 50th and 51st divisions to capture the enemy outpost line along the Wadi Zeuss, in advance of Wadi Zigzaou, and Horseshoe Hill, with the latter involving heavy casualties. The main attack on the Mareth Line began on the night of 20 March as planned amidst heavy rainfall. 50th Division, commanded by Maj. Gen. Nichols, would lead the way, with 4th Indian Division passing through after the initial objectives had been secured. An intensive artillery and aerial bombardment to soften the defences preceded the attack, involving 13 field regiments, 3 medium regiments and 50 British and US aircraft. The assault by 151st (Durham) Brigade, supported by 51 Valentine

tanks and a squadron of Scorpion flail tanks to breach enemy minefields in advance of the Wadi, immediately encountered determined and well-organized Axis resistance. Similarly the attack by 69th Brigade to seize the Basin, east of Wadi Zigzaou, to protect its flank met determined resistance.

The leading infantry battalions made steady progress into the Mareth Line's main defences despite fierce enemy resistance, securing a bridgehead a mile wide and 800 yards deep. Behind them engineers struggled to break down the sides of the anti-tank ditch and clear mines for the supporting armour under intense mortar and enfilade machine-gun fire. With dawn approaching further operations were postponed until nightfall, with the lead battalions consolidating their hard-won positions. On 21 March two further battalions entered the bridgehead, and as the advance continued Italian morale slumped and large-scale surrenders occurred. The sappers, moreover, passed through supporting Valentine tanks, despite intense rainfall that impeded their work. On 22 March the bridgehead was subjected, however, to an intense artillery bombardment followed by an attack by 30 tanks from 15th Panzer Division, which quickly destroyed the supporting British armour and pushed the defenders back to the anti-tank ditch. A supporting attack by 69th Brigade was stillborn. On the night of 23 March the remaining tanks and infantry fell back across the Wadi Zigzaou leaving the defences firmly in German hands.

The main effort by Eighth Army now switched from the right to the left flank, given the sudden reversal of fortunes in the bridgehead in the Mareth Line. While 50th and 51st Divisions, supported by 7th Armoured Division, contained the enemy near the coast, the remainder of Horrocks' X Corps joined the New Zealanders in the outflanking manoeuvre. The New Zealand Corps had already advanced through Wilders Gap and headed north on 19 March towards Ksar Rhilane. Unfortunately its presence and outflanking manoeuvre had already been detected as it raced northwards south of the Matmata Hills towards the Tebaga Gap. On the 21st it secured an important outpost near this defile, but before it could breach it elements of 21st Panzer Division and 164th Light Division were transferred to block its advance. Despite this setback Montgomery ordered his 'left hook' to be reinforced with 1st Armoured Division. 4th Indian Division also advanced, meanwhile, into the Matmata Hills to outflank the Mareth Line. A heavy aerial bombardment of the defences took place and the newly strengthened New Zealand Corps launched an attack on 26 March against the Djebel Melab, with 8th Armoured Brigade in close support. 1st Armoured Division passed through and advanced at night towards El Hamma, suffering negligible losses against a confused and disorganized enemy, leaving the New Zealanders to mop up the remaining enemy. On 27 March it was held up short of its objective, while elements of 21st and 15th Panzer Divisions attacked its tail some distance behind the leading troops. A concerted attack with 8th Armoured Brigade and the New Zealanders was made the following day, with 1st Armoured Division on the defensive, who thrust towards Gabes over difficult terrain. At the same time 4th Indian Division reported enemy rearguards were in retreat from the Mareth Line. On the 28th 1st Armoured Division found El Hamma empty and by midday the King's Dragoon Guards had reached Gabes.

The Battle of the Mareth Line ended in a complete victory for Eighth Army, with the enemy remnants withdrawing in some disorder northwards back to Wadi Akarit line, where they prepared to make a further determined stand. It was Eighth Army's first experience of assaulting a stronghold consisting of strong fixed defences, and an extremely painful one at that. Although his first plan had ended in defeat, Montgomery had demonstrated considerable flexibility after the initial attack had stalled, by switching his main effort to the left flank and then employing armoured units in a dash to Gabes. Although Montgomery later claimed this was all part of his original plan, it clearly was not. The effect on Eighth Army of Medenine, the Battle of

Mareth and the 'left hook' was to greatly increase confidence in themselves and their leader. A key feature of the battle, moreover, was also the close co-operation between the Desert Air Force and ground troops throughout.

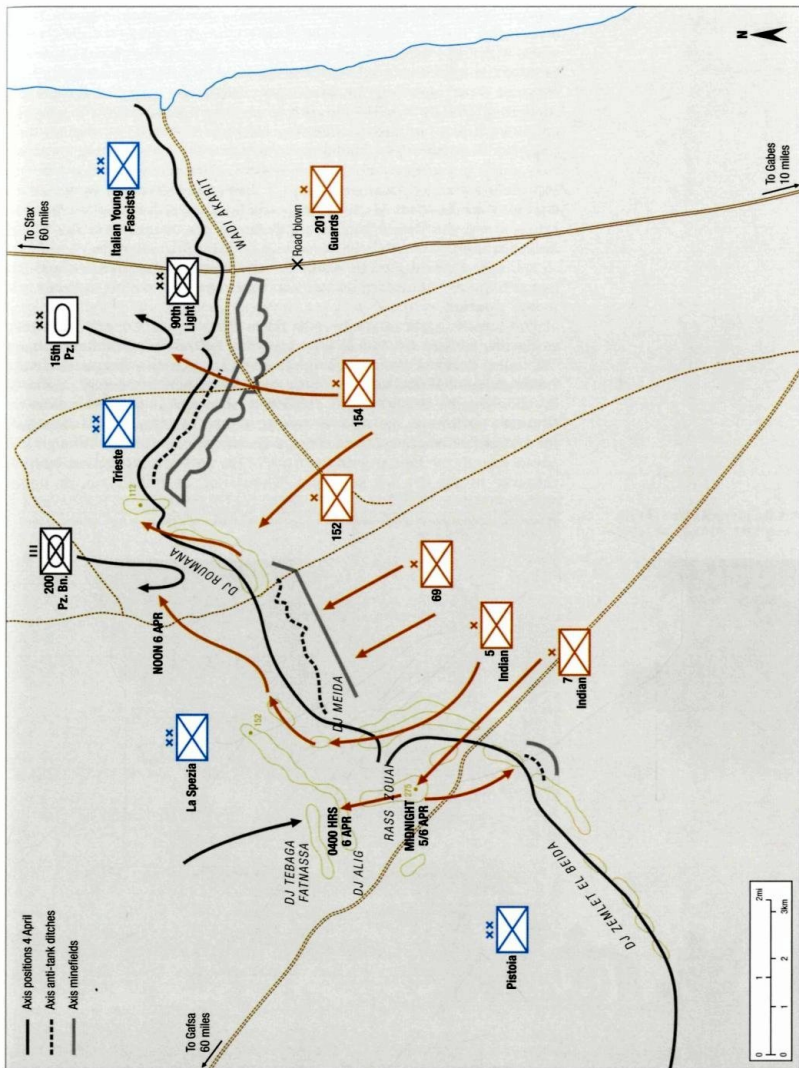
Eighth Army's last battle in North Africa: Wadi Akarit, 5–6 April 1943

The GOC Eighth Army had originally hoped to force the Gabes Gap 'on the run' following the capture of the Mareth Line. By the time 1st Armoured Division and the New Zealand Division reached the Wadi Akarit position on 29 March, after a slow advance across very difficult terrain, it had been prepared for defence. This was another formidable, naturally strong, 18-mile-long defensive line, partially running along the deep Wadi Akarit, with one flank resting on the Mediterranean coast and the other by impassable salt marshes and lakes of the Chort Djerid. Indeed, Rommel had wanted to make a stand here instead of the Mareth Line. It formed the last natural barrier preventing access to the coastal plain of Tunisia from the south and a junction between the Eighth Army and the other Allied forces in Tunisia.

The eastern section near the coast ran along the four-mile-long Wadi Akarit, which had been deepened, widened and mined to make a formidable obstacle. Two hill features dominated the coastal sector. The Djebel Roumana, a steep-sided bare ridge running parallel to the coast road about 500ft in height, was impassable to wheeled vehicles. Between the Djebel Roumana and the next hill feature was a two-mile gap of rolling open country. The most important part of the position was a wide, craggy salient about Fatnassa and Zouai – 800ft high – in the centre of the Wadi Akarit position known as the Djebel Tebaga Fatnassa, which commanded the whole front to the east and west. As one observer described: 'A series of transverse crests merges in a labyrinthine tangle of pinnacles, escarpments, counter-escarpments, deep fjord-like chimneys and corridors.' To the north-west of Djebel Fatnassa a system of saddleback ridges ran five miles inland, known as the Djebel Semlet el Beida, to where the Djebel Haidoudi guarded a metalled road. The western end rested on the great salt marshes at the Chott el Fedjadj. To complete the defences, an anti-tank ditch ran from the Wadi Akarit to the Jebel Roumana, and another from Roumana's western end to Djebel Tebaga Fatnassa. Over 4,000 anti-tank mines had also been laid by Axis engineers along the position.

The defending troops of AOK I had taken up position in the Akarit positions on 29 March, deploying elements of 20th and 21st Italian Corps. The Wadi Akarit position was held near the coast by 20th Corps, which consisted of the Young Fascist Division, two battalions of 90th Light Division, Trieste Division, and La Spezia Division. 21st Corps held the western end of the defences with (from east to west) Pistoia, a detachment of 15th Panzer Division, the remnants of 164th Light Division and the Saharan Group. In reserve were the remaining weak units of 90th Light Division and 15th Panzer Division. While on paper formidable, the defenders lacked tanks, artillery and other equipment, as well as being critically short of arms and ammunition.

The British High Command began planning immediately for a deliberate frontal attack using XXX Corps, commanded by Lt. Gen. Oliver Leese, with X Corps, commanded by Lt. Gen. Horrocks, in reserve to exploit a breakthrough, since this 12-mile-long position could not be outflanked. This initial plan of attack, however, was quickly discarded after patrolling by 4th Indian Division, commanded by Maj. Gen. Francis Tuker, discovered weaknesses in the defences on the Djebel Fatnassa, which was quickly identified as the key to the position. Although this craggy salient was well defended by elements of the Italian Pistoia and La Spezia Divisions and the remnants of the German 64th Light Division, too few troops were available to mount an effective defence, and its defences were sited looking out eastwards and westwards, since it was judged



The Battle of Wadi Akarit.

impossible to penetrate the successive ravines, cliffs and steep ridges in front. A new plan of attack was quickly adopted on 3 April relying on a silent night advance, using infiltration to get into and between the enemy defensive positions, and then an attack would be launched on those defences behind the anti-tank ditch, rendering the low-lying centre of the position untenable. No supporting artillery was laid on apart from some bombardments to give the advancing troops an idea of direction. As the official historian has written: 'The plan demanded great boldness, stamina and first-class training including that almost unconscious mountain craft with which tradition and experience had endowed many Indian regiments.'²³ Two other divisions would attack elsewhere on the Wadi Akarit, with an attack on the anti-tank ditch between Fatnassa and the Djebel Roumana and an assault mounted on the Djebel Roumana itself.

X Corps, consisting of 1st Armoured and New Zealand divisions and the mixed French 'L' group, would await an opportunity to exploit successes and mount a pursuit.

The surprise night attack by 4th Indian Division on 5/6 April went like clockwork, with its 7th Indian Brigade seizing hilltop position after position. The Italian defenders were taken unaware and completely unprepared, having expected Eighth Army to wait until a period of moonlight before attacking. By midnight the heights of Ras Zouai had fallen and the attacking infantry advanced northwards and then eastwards, and by 0400 had seized the rest of the Djebel Fatnassa. 5th Indian Brigade, meanwhile, had passed through and advanced into the hills around the flank of the anti-tank ditch running from Fatnassa to the Djebel Roumana. Thousands of Italian troops began

A 4.5in. gun opens fire in Tunisia, spring 1943. (4905-03 TR 1004)

²³ Major-General ISO Playfair et al, *The Mediterranean and the Middle East, Volume IV, The Destruction of the Axis Forces in Africa*, (London, HMSO, 1966), p.366.



surrendering. Complete surprise was obtained and no German counter-attacks materialized. A route onto the Djebel Maida for tracks and wheels was constructed and the anti-tank ditch was breached by Indian sappers, to allow forward elements of 10th Corps to advance. Unfortunately it remained inactive despite repeated calls from 5th Indian Division that the way now lay open onto the Sfax plain and the enemy was in full flight. Only at 1pm did the lead regiment cross and by nightfall had still not advanced past the infantry positions secured by the Indian troops. The Indian troops, meanwhile, pressed on, seizing further positions from the disorganized Italians.

The attacks elsewhere by XXX Corps began at 0330, initially silently, although powerful artillery support was immediately on hand ready to open fire at 0600. Fifteen field and four medium regiments were in support.

50th (Northumberland) Division, commanded by Maj. Gen. Nichols, attacked in the gap between 4th Indian Division and the Djebel Roumana, with its 69th Infantry Brigade tasked with crossing the anti-tank ditch in an area defended by the La Spezia Division. It quickly seized an outlying enemy outpost on Point 85, but intense machine-gun, mortar and artillery fire held up two battalions before the anti-tank ditch. A combination of a flanking tank attack and pressure on the left by 4th Indian Division eased the situation, however, and the anti-tank ditch was passed allowing engineers to make a crossing and gap the minefields. By 1100, 69th Infantry Brigade had secured its objectives and the enemy was broken in front of them. At 1225 the divisional commander reported enemy resistance in front of his division had broken.



A piper of the Gordon Highlanders plays from a Valentine tank as it drives into Tripoli past crowds of cheering locals, 26 January 1943. (4700-32 E 21592)

The assault mounted by two brigades of 51st Highland Division, commanded by Maj. Gen. Wimberley, initially went well, with its leading troops clearing the ridge of defenders dazed by a heavy bombardment, and work on gapping the anti-tank obstacle below began. Large numbers of surrendering Italians caused problems. Further progress, however, was halted by fierce German counter-attacks using local reserves and tanks from 15th Panzer Division, that steadily increased in intensity as inactive Italian positions came to life forcing British troops back below the crest. Heavy fighting continued all day and into the night, which for the division was the fiercest it had encountered to date.

The pursuit phase of the Battle of Wadi Akarit was to be sadly mismanaged. Although Taker reported the way was clear for X Corps to advance over the crossing it had secured, doubts as to whether the last line of hills ahead had been cleared remained and stopped an advance, although this was later done so by the 4/6th Rajputana Rifles. A handful of German 88mm anti-tank guns, moreover, also remained active in the rear of the Roumana feature, holding up a limited advance by 8th Armoured Brigade.

The 10th Corps finally passed through 4th Indian and 50th Division's fronts at 0700 on 7 April in the hole in the Axis defences created for them, and renewed the attack; however, apart from men waiting to surrender the enemy had already gone. With the main defences already in British hands and too few troops to organize an effective counter-attack to restore its positions, the Axis position was untenable. On the night of 6 April AOK disengaged and pulled out, with its withdrawal skilfully covered by a series of local counter-attacks.

The Battle of Wadi Akarit was a remarkable achievement for Eighth Army. A daring surprise night attack had mauled and quickly put to flight enemy troops, including elements of six infantry divisions and three armoured divisions – albeit all weak – from a naturally strong position located in largely difficult mountainous terrain. It was a tribute to the high state of training and skill of Commonwealth infantry in Eighth Army, especially those in 4th Indian Division. Fortunately the 'butcher's bill' had been light. Eighth Army suffered 1,289 casualties in total and lost 32 tanks, but it had taken 7,000 (mostly Italian) prisoners. Losses in Axis guns had been heavy. Perhaps most disappointing was that Eighth Army yet again had failed to finish the enemy off by mounting an effective pursuit using X Corps, despite arguably having had the best opportunity to do so to date.

Lessons learned

The war waged by Eighth Army in the far-flung arid wastes of the Western Desert occupies a special place in the history of the British armed forces during World War II. For three long years it represented the single most important land campaign the British were fighting and the only opportunity to strike back on land against the might of Nazi Germany. Although in the final analysis the Desert War was a sideshow, with the defeat of Nazi Germany determined in the Soviet Union and later North-West Europe, it played an important part in the development of British arms. A vital tradition of success and belief in the ability of British Commonwealth troops to win was firmly established at the Battle of El Alamein as well as a firm belief that British soldiers could and would defeat their Axis opponents. It was also a massive fillip to morale for the British public. Eighth Army rounded off this victory by carrying out a remarkable pursuit of the remaining enemy forces to Tunisia, where it shared, along with US and British landed during Operation *Torch*, the final destruction of the Axis forces in North Africa.

The Eighth Army played a pivotal role in the process of improving the combat effectiveness of the British Army as a whole during World War II, with the Western Desert acting as a vital training and proving ground for war-raised officers, men, new equipment and concepts of war. Although it began well with Eighth Army securing a victory during Operation *Crusader*, British Commonwealth forces suffered defeat after embarrassing and bewildering defeat at the hands of Axis troops, from which much had to be learnt. The Desert War provided the vital first experience of using predominantly tank-based forces spread out over the period June 1940–May 1943. Lessons learnt



An Australian soldier with a captured German MG 34 machine gun, 25 July 1942. (4700-32 E 14847)

fighting in the 'the great sand table' and the experience gained played an important role in preparing it for a long-awaited second front in Europe. Indeed, it has been compared to the 1808–14 Peninsular campaign in many ways. In a sense, the Desert War was a decisive loss of innocence, from which was born the new Montgomery era.

The Eighth Army had learnt much by the end of the Desert War. Indeed, a new sense of professionalism, confidence and will to win pervaded it in the spring of 1943. Even so, Eighth Army in general, without doubt, never achieved the same degree of professionalism as its German opponents. The British had adapted well to living and moving in the harsh, difficult and unforgiving terrain and climate of North Africa and life in the 'Blue', but the same cannot be said of its ability to wage armoured warfare against the highly skilled Wehrmacht. Indeed, successive commanders of Eighth Army arguably never really understood and came to grips with the tactical and operational conduct of high-tempo, fast-moving, armoured warfare waged across a broad featureless desert landscape, which in many ways appeared the acme of what pre-war visionaries had predicted for tank warfare. Senior British officers proved slow in identifying and learning from painful experience the right lessons about waging armoured warfare under desert conditions. It took too long to rectify glaring defects in British organization, equipment, command and control, fighting methods and training. A powerful defence can be mounted of British generalship, however, given the myriad difficulties it operated under. Eighth Army, like its predecessors, struggled in overcoming the massive expansion of the small peacetime army, with its consequent lowering of general efficiency and training, and chronic shortages of and the unsuitability of existing equipment. A constant turnover of formations and commanders also militated against a good understanding of the conduct of armoured warfare in the desert. As a result Eighth Army never really settled down until Montgomery arrived. This contrasts sharply with the Axis who kept pretty much the same commanders and formations in the field throughout the Desert War. Twenty different formations went into battle between Sidi Barrani and Second El Alamein. Only 11 were present at Second Alamein, of which three were making their desert debut. Only 11 fought in more than one major battle and only four fought in more than two battles. Many formations also suffered from frequent changeovers in their constituent units. 7th Armoured Division, moreover, had some 17 different armoured regiments and nine infantry battalions under its command at different times. All these changes militated against institutional familiarity or continuity of experience.

The final defeat of Rommel ironically was not won in a fast-moving armoured battle, instead being achieved in old-fashioned attritional battles, bolstered by very superior numbers, powerful concentrated artillery support, close air support, the availability of modern AFVs and vastly superior logistics around El Alamein. The set-piece fighting methods, operational doctrine, and techniques developed by Montgomery lacked the same glamour of armoured warfare but proved in the final analysis highly effective. They exploited the full capability of better combined-arms tactics, qualitatively superior weapons at his disposal, massed artillery, air support, careful planning, and superior logistics, at which the British excelled.

The campaign fought and won by Eighth Army helped establish a particular kudos for the desert soldiers, whose experiences were shaped by the desert and fighting against Axis troops. Following El Alamein, to be a member of Eighth Army was (and still is) regarded as a particular distinction. Indeed, many former Desert Rats looked down on other British soldiers, especially those of 1st Army newly sent out from the UK. It is indeed fortunate that the best traditions of Eighth Army and its officers and men live on to the present day. 7th Armoured Brigade still proudly wears the Jerboa flash and bears the nickname 'the Desert Rats' with pride.

Chronology

1940

- 10 June** Italy declares war on France and Great Britain.
24 June France signs Armistice with Italy.
28 June Graziani appointed Italian Commander in Libya.
13 September Italians invade Egypt, capturing Sollum.
16 September Italians occupy Sidi Barrani.
9 December Operation *Compass* begins.
10 December Sidi Barrani recaptured.
12 December 7th Armoured Division pursuit to Buq Buq.
17 December Sollum reoccupied.
24 December Bardia invested.

1941

- 3–5 January** 6th Australian Division captures Bardia, 40,000 POWs captured.
21–22 January 6th Australian Division captures Tobruk.
5 February 7th Armoured Division establishes roadblock at Beda Fomm.
7 February Italian Tenth Army surrenders.
12 February Generalleutnant Erwin Rommel lands at Tripoli.
20 February British and German patrols make contact.
31 March German offensive in Cyrenaica begins.
10 April Advance elements of Afrika Korps reach Tobruk.
27 April Halfaya Pass occupied and British retire into Egypt.
15 June Operation *Battleaxe* launched to relieve Tobruk.
5 July Auchinleck replaces Wavell as Commander-in-Chief, Middle East.
18 November Operation *Crusader* begins, intended to defeat Axis in Cyrenaica and relieve Tobruk.
23 November Auchinleck takes direct control of Eighth Army.
8 December Rommel decides to withdraw from *Crusader* battle to avoid destruction.
10 December Tobruk relieved.
28–30 December German counter-attack inflicts rebuff on British vanguard.

1942

- 21 January** German second offensive begins and achieves immediate success.
7 February Axis advance halted at the Gazala line.
26 May Germans attack Gazala line, which is outflanked.
30 May German armour withdraws into the Cauldron.
5 June Eighth Army launches attack on the Cauldron.
13 June British withdraw from Gazala defences.
20 June Germans launch attack on Tobruk.
21 June Tobruk garrison surrenders. 30,000 POWs taken along with vast dumps of supplies.
25 June Gen. Ritchie relieved of his command by Auchinleck, who takes direct control of the battle.
28 June Germans capture Mersa Matruh.
1 July Eighth Army makes a stand at El Alamein (First Battle of El Alamein).
22 July Germans break off the battle.
13 August Lt. Gen. Bernard Law Montgomery assumes command of Eighth Army and Gen. Alexander becomes Commander-in-Chief, Middle East.
30 August Axis forces make last attempt to breakthrough at Alam el Halfa.

6 September	Germans retire to start line.
23 October	Second Battle of El Alamein begins and rapidly becomes an attritional struggle.
1/2 November	Eighth Army begins Operation <i>Supercharge</i> and overwhelms the German defences.
8 November	Operation <i>Torch</i> begins in North Africa.
11 November	British units reach the Libyan border.
13 November	Rommel withdraws from El Aghella.
25 December	Eighth Army occupies Sirte.
1943	
23 January	Eighth Army enters Tripoli.
4 February	Advance units of Eighth Army cross into Tunisia.
20 March	Eighth Army assaults the Mareth Line.
5-6 April	The Battle of Wadi Akarit.
12-13 May	Axis forces in North Africa finally surrender.

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Abbreviations

AFV	Armoured fighting vehicle
AOK	Armee Ober Kommando
AT	Anti-tank
BGS	Brigadier General Staff
Brig.	Brigadier
C-in-C	Commander-in-Chief
CO	Commanding Officer
DAK	Deutsches Afrika Korps
FSR	Field Service Regulations
Gen.	General
GHQ	General Head Quarters
GOC	General Officer Commanding
LAA	Light anti-aircraft
LMG	Light machine gun
LRDG	Long Range Desert Group
Lt. Col.	Lieutenant-colonel
Maj.	Major
ME	Middle East
MEC	Middle East Command
MG	Machine gun
Mk	Mark
MMG	Medium machine gun
NCO	Non commissioned officer
OC	Officer commanding
OR	Other ranks
PAK	Panzer Abwehr Kanone
Pz	Panzer
QF	Quick firing
RA	Royal Artillery
RAMC	Royal Army Medical Corps
RAOC	Royal Army Ordnance Corps
RASC	Royal Army Service Corps
RE	Royal Engineers
RQMS	Regimental Quartermaster Sergeant
RSM	Regimental Sergeant Major
RT	Radio telephony

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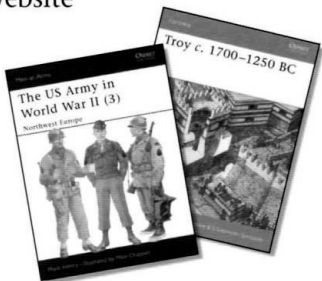
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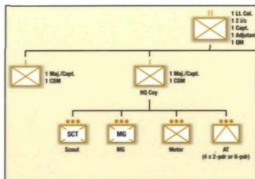
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