

## 7 The End in North Africa and the Shipping Crisis

December 1942–May 1943

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### **The Road to Tunis**

While Rommel was extricating his battered forces from Alamein, the Allies launched Operation ‘Torch’. The full-scale invasion of north-west Africa began on 8 November with landings at three points along the Moroccan and Algerian coasts, around Casablanca, Oran and Algiers. The venture had a long and troubled birth, marred by Anglo-American differences over the priority of the Mediterranean in Allied grand strategy. Many senior US strategy-makers, including the Joint Chiefs of Staff (JCS), questioned why they should be dragged into the Mediterranean war at all. Yet crucially, President Franklin Roosevelt agreed with the venture and his subordinates fell into line.<sup>1</sup> The landings transformed the war in the Mediterranean into a truly allied venture as American men and materiel poured into the theatre, and the war in North Africa morphed into a conflagration fought on not one, but two fronts.

The Axis response to this new situation was swift, acting to deny any other unoccupied French territories in the Mediterranean to the Allies. Operation ‘Anton’ was launched on 11 November, and involved the seizure of Tunisia, Corsica and southern France, including the vital port of Toulon, where the bulk of the French Navy was stationed. Although most of the French ships there were defiantly scuttled, the occupations were otherwise a great success; the French offered no resistance and Corsica was taken by the Italians on the 12th, while southern France was fully under control by the 14th. German airborne forces started arriving in Tunisia on the night of the 11th to secure key airfields and the port of Tunis, and were soon joined by other units sent by sea and air.<sup>2</sup>

The changed strategic situation now raised a new question for Axis strategy: was the aim in Tunisia to secure a bridgehead through which to allow evacuation of their forces from Africa back to Italy over the shortest route, or to use it as a position from which to hold on to a permanent place in North Africa? There were senior proponents on both sides; Rommel felt by this stage that keeping any kind of permanent position

in North Africa was no longer possible and requested preparations for evacuation, much to Hitler's fury. General Jodl, Chief of OKW's Operations Staff, favoured holding a strong bridgehead, stating that 'North Africa, being the approach to Europe, must be held at all costs', a view that was echoed by Mussolini in his instructions to Rommel. For his part, Hitler held the fantastical view that the build-up in Tunisia offered a base from which to launch a decisive westward offensive to drive the Allies back into the sea, before then focusing on the Eighth Army once more.<sup>3</sup> Ultimately Axis strategy crystallised around a rather vaguely defined aim of holding a position in Tunisia, and the ideas of either a breakout or evacuation seem to have received no serious consideration. General Walter Nehring was initially given command of Axis units in Tunisia in November, and early in December, they were given the rather grandiose title of Fifth Panzer Army. His orders from Kesselring were to expand the bridgehead and delay the Allies by conducting an 'active defence'. Kesselring later relieved him of command on 8 December, replacing him with Hans von Arnim, whose task remained the same.<sup>4</sup>

Whereas previously anti-shipping operations had been given a prominent position in British priorities in order to degrade the *Panzerarmee* and aid the war in Libya and Egypt, now new sea lanes were opened up between Italy and Tunisia. As the Eighth Army reclaimed Cyrenaica, the need to refocus on the Tunisian routes was recognised at both the strategic and operational level, and, given the westward shift in focus, Malta was once again the best-positioned base for such forces. After a brief diversion of some aircraft to cover the Malta convoy of Operation 'Stoneage', the COS were in complete agreement that all Malta-based aircraft, now replenished with supplies, should focus their efforts solely on attacking shipping to Tunisia.<sup>5</sup> They communicated this view to the theatre-commanders on 22 November: 'It is evident that if the First and Eighth Armies are to achieve speedy and decisive victory, the objective of prime importance at the present time must be the stoppage of sea borne supplies to Tunisia and Tripolitania.' Tedder was clear that Malta must be exploited fully for this purpose, something which the theatre commanders assured him they were in the process of implementing, albeit with some difficulty.<sup>6</sup>

Churchill was also quick to urge Portal to dedicate greater air power resources to the task, by transferring more medium and heavy bombers to the theatre to attack the primary destination ports at Tunis and Bizerte. In addition, he advocated sending more torpedo aircraft to attack the shipping directly at sea. Portal concurred, as did Pound.<sup>7</sup> Discussions in Whitehall on the issue of torpedo aircraft had been ignited after Cunningham complained directly to Pound about the need for a

more powerful air striking force to interdict the Tunisian routes.<sup>8</sup> As a result, twelve additional Wellington bombers, capable of either port bombing or direct attacks, were sent to Malta in late November, while Churchill also approved the relocation of two more Wellington squadrons from Bomber Command to north-west Africa in early December. Space was made at the island's facilities for these new arrivals by the transfer of Beaufort torpedo bombers to airfields near Bône in north-east Algeria. From here, the shorter-range Beauforts would be better placed to attack the Tunisian routes, while additional Beaufighters were also sent there from the UK.<sup>9</sup> A 'sink at sight' zone was also approved in November that declared the whole western basin an 'operational zone' for Allied submarines. This included the waters off southern France, Corsica and near Spain, so long as Spanish territorial waters were not infringed. The move allowed the use of submarines to disrupt Axis sea communications in a broad sense – with Tunisia, with Corsica and to discourage Spanish trade with Italy.<sup>10</sup> Finally, Force K was re-established at Malta in late November after renewed pressure from Churchill, boasting three cruisers and four destroyers with the express aim of hunting down convoys. Another task force, Force Q, was based at Bône with the same purpose and a similar strength.<sup>11</sup>

These changes were due to both Allied recognition of the growing importance of the Tunisian routes, and also intelligence that indicated the rate of Axis build-up in Tunisia during November. A report by the Joint Intelligence Committee suggested that a daily average of 1,000 men and 100 vehicles had been brought across by air and sea, although they were in a disorganised state and likely only capable of limited offensive action. On hearing this, Churchill expressed irritation that it had been allowed to happen.<sup>12</sup> British intelligence also correctly identified at the end of November that Tunis and Bizerte had become the main Axis destination ports, with Tripoli only receiving very restricted service. They expected, correctly, that use of Tripoli would only decrease further over time. Based on this information, the decision was made to focus all efforts on the Tunisian routes.<sup>13</sup>

After this recognition, the Tunisian routes overtook those to Tripoli in Allied targeting priority in December. This was a shift in focus that was soon mirrored in changes by the Axis. On 24 December, they declared Tripoli was closed to direct shipping from Italy, meaning all trans-Mediterranean shipping had to go to Tunisia. Tripoli could only receive whatever was sent from Tunisia by coastal shipping and submarine.<sup>14</sup> This decision reflected the realities of the Axis position, as they undertook a complete withdrawal from Libya. Rommel had been forced to retire from his temporary position around El Agheila on 12 December thanks to

a lack of fuel making any prospective defence realistically impossible. He had hoped to begin a full-scale withdrawal on the night of 5 December, but the lack of fuel was so severe that it was impossible at that point. Instead, a phased retirement began with Italian infantry units on the 7th. By 19 December the first units were back at the temporary defensive line at Buerat in Tripolitania. They had crossed the central region of Libya in a week with minimal fuel, and narrowly avoided encirclement from the vanguard of the Eighth Army with the help of local counterattacks and a liberal sprinkling of mines. By 29 December, the entirety of the *Panzerarmee* was behind the Buerat line as Montgomery, now at the end of his own elongated supply chain, once again embarked on a programme of methodical build-up and preparation.

It was only on 2 January that Rommel was finally given the permission that he had so desperately sought: to fall back (albeit slowly) to the much more defensible terrain of south-eastern Tunisia, around Gabes. After implementing a phased withdrawal, Tripoli was abandoned on 22 January in the face of a two-pronged British advance. The *Panzerarmee* took whatever supplies they could with them and left the port with demolitions only partially completed. By 26 January, most of the slower-moving Italian and German infantry units were already in Tunisia at the now-reinforced 'Mareth Line', the site of old French frontier defences. Rommel's few remaining Italian and German tanks, supported by small numbers of other armoured vehicles and motorised infantry, continued to act as a rearguard, and the last remnants of 15th Panzer only left Libya on 15 February. Battered, shorn of supplies and very low on tanks and vehicles, the *Panzerarmee* had nevertheless escaped. Rommel's reward for this remarkable feat was to be informed that he would be placed in command of 'Army Group Africa', the new unified command for all Axis forces in Tunisia.<sup>15</sup> He was replaced as head of the *Panzerarmee*, later renamed First Italian Army, by the Italian General Giovanni Messe. Reorganisation at operational-level command took place among the Allies as well. American General Dwight Eisenhower was installed as the Supreme Allied Commander in North Africa, at the head of the newly created Allied Forces Headquarters.

By 1943, the war in North Africa was thus solely confined to Tunisia, as Army Group Africa sought to conduct its 'active defence' on two fronts, against General Kenneth Anderson's Anglo-American First Army in the west, and Montgomery's Eighth Army in the south-east. The Axis 'active defence' had begun almost immediately after 'Torch', with Nehring quick to launch a counterattack westward against the advancing Allies. It succeeded in first halting the most advanced elements twelve miles from the vital city of Tunis on 27 November, before forcing them

back to a more stable position further west on the night of 10 December. First Army spent the remainder of the year attempting poorly coordinated ineffectual attacks, and stalemate reigned in the north as the rainy season set in.<sup>16</sup> To the south-east, Rommel looked to conduct his own 'active defence', but was struggling to organise it in the manner that he wished.

As the remainder of the *Panzerarmee* withdrew to the Mareth Line, Rommel first launched attacks into central Tunisia against the First Army, combining elements of both the *Panzerarmee* and Fifth Panzer Army. The results were the Axis seizing the Fäid Pass on 30 January, and delivering a bloody nose to the Allies at Sidi Bou Zid and the Kasserine Pass in February. Although the Axis powers themselves had suffered unwelcome losses, these efforts had unified their front, halted the possibility of an Allied breakthrough in central Tunisia and bought time. At the end of February, Rommel asked his two army commanders, von Arnim and Messe, for their appreciations of the situation. Both agreed that it was hopeless to try and defend a front of 625 kilometres with just 120,000 men and 150 panzers in the face of 210,000 Allied troops and over 1,200 tanks. Getting sufficient supplies to sustain more than 350,000 men over such a widely dispersed area would be impossible. Rommel agreed, and saw withdrawal to a much shorter front as essential, yet this represented something of a deadly Catch-22. Shortening the front would ease the overland supply difficulty but would simultaneously remove all depth from their defensive position, cede important airfields to the enemy and expose them to increased air attack. Rommel maintained that withdrawal was the best and indeed only option. His repeated requests, however, were rebuffed by both Kesselring and Hitler.<sup>17</sup>

On 9 March, Rommel flew out of Tunisia to try and personally persuade Hitler to reconsider. Little did he know that Hitler, Mussolini and Keitel had just agreed that Tunisian territory should be held for as long as possible as a buffer while the defences in Italy were strengthened in preparation for the next Allied move. Despite the degrading situation on the ground, both Hitler and Mussolini continued to agree on the need to hold as much Tunisian ground as possible in March. Hitler even made the nonsensical claim that keeping the Axis forces there supplied by sea should be easy, citing a highly unfair comparison with the German campaign in Norway in 1940. He felt it only required greater efforts to be made by the Italian Navy and Merchant Marine, and streamlining of the supply organisation. Accordingly, he sent the new C-in-C of the German Navy, Karl Dönitz, to Italy in an attempt to 'fix' this problem.<sup>18</sup> Clearly, although there were still differences among the senior Axis leadership, overall perceptions of Tunisia had shifted towards those of

near-inevitable final defeat. In spite of this, the Allies were finding the campaign there a very hard slog, and recognised the need to intensify anti-shipping efforts to aid the war on land.

The Allied political leaders and their military staffs had convened at a major conference at Casablanca in January, to discuss future strategy. One of the outcomes of the conference was an agreement, including grudging acceptance from the American JCOS, was for an Allied landing on Sicily, following completion of the Tunisian campaign.<sup>19</sup> As planning staffs prepared for Operation 'Husky' and earmarked resources, Eisenhower sounded a note of caution to Churchill in February regarding problems of training and sufficient landing craft. He also warned that the clearance of Tunisia required a 'major operation', and an expedited build-up of force and supplies but that the Tunisian campaign could not be rushed. Bringing forward an attack by the Eighth Army on the Mareth Line to a date earlier than 15 March would not be possible, and overall, he felt the destruction of Army Group Africa would not be achievable before the end of April.<sup>20</sup> He was to be proven right.

Eisenhower's telegram drew an immediate reaction of anger from Churchill over what he perceived as pessimism, but it also persuaded the Allies to expedite reinforcements for the fight in Tunisia, not just those to prepare for Husky.<sup>21</sup> It also led to a further intensification of focus on the Tunisian routes. Eisenhower had already warned in January that the volume of supplies and reinforcements reaching the enemy was 'a matter of grave concern. Unless this can be materially and immediately reduced, the situation both here and in Eighth Army area will deteriorate without doubt.' He urged yet more reinforcement of reconnaissance and torpedo aircraft, which should be based in north-east Algeria.<sup>22</sup> The combined COS agreed that it would be 'worth heavy air losses if a substantial proportion of the merchant shipping can be sunk', and a fresh squadron of FAA Albacores was ferried to Algeria by aircraft carrier as a first step.<sup>23</sup>

In order to foster a more co-ordinated use of Allied air power, a new theatre-level combined Mediterranean Air Command was created, with the experienced Tedder at its head. This organisation would sit atop both RAF Middle East and the newly created Northwest African Air Force. Allied airmen, including many in north-west Africa who were new to the theatre, were made aware of the importance of the anti-shipping role when Tedder set out a list of six objectives for Allied air power. Number three outlined the importance of attacking enemy shipping at sea and in port, as well as bombing both ports of departure and arrival.<sup>24</sup> Similarly, Bomber Command agreed to increase the number of raids against targets in northern Italy, including the port of La Spezia, which housed

important shipbuilding and repair yards, as well as having become the main base for Italian capital ships. Overall, with an influx of new resources and new airfields available, 1943 saw a great increase in the bombing of southern European ports compared to 1942.<sup>25</sup>

As Allied aircraft, submarines and surface forces descended on the Tunisian sea lanes in an ever more concentrated effort into early spring, the offensive on land also restarted. The Germans had launched their last notable offensives, Operation 'Ochsenkopf' and 'Capri', in late February and early March. The former was an attempt to mount a spoiling attack in the north-west against Anderson's First Army and involved sending much of their best remaining armour, along with infantry and air support, against a natural defensive position in the mountainous terrain around Sidi Nsir. Although it succeeded in taking ground and pushing the frontline further away from Tunis and Bizerte, it fizzled out in early March a long way short of its stated objective at Beja. The losses suffered by the Axis were intolerable, amounting to 90 per cent of the tanks used, including some of the new heavy Tigers. The ground lost was promptly retaken by the Allies in early April. 'Capri' was an abortive frontal assault from the Mareth Line against an Eighth Army forewarned by intelligence, which ran into massed firepower and included the loss of fifty-five tanks for no gain, instead hastening the end of the Mareth Line position.<sup>26</sup> These efforts marked the end of any proactive Axis activity in Tunisia and were followed by the final Allied offensives to end the campaign.

Von Arnim had received orders from Comando Supremo that the Mareth Line must be held 'to the last', despite the vastly overstretched front. Yet in his orders to Messe, von Arnim stressed the importance of the defence, but also that a withdrawal would be allowed under his express orders.<sup>27</sup> After a week of preparatory air attacks on the line, the Eighth Army's assault began on the night of 16 March with Operation 'Pugilist'. Combining a frontal assault with a 'left hook' to flank the line, this successfully broke into the enemy positions before stalling. The follow-up Operation 'Supercharge II' was launched on 25 March and quickly took key heights and broke through the line in several places. With the position now completely untenable, Messe ordered a withdrawal on 28 March, which saw a retreat forty miles north to Wadi Akarit, the last natural defensive barrier against access to the coastal plain of Tunisia from the south.<sup>28</sup>

The Axis withdrawal had left them with a much-constricted foothold in northern Tunisia and allowed the two Allied armies to link up in a continuous front for the first time. The Allied emphasis was now on concluding the Tunisian campaign as quickly and effectively as possible,

by securing victory on land and ensuring that there was no escape by the Axis forces back to mainland Europe.<sup>29</sup> All available means were to be used for interdiction of shipping to ensure there was no let-up in Army Group Africa's logistical crisis. As the Allies prepared for their final offensives, the Northwest African Air Force was issued with four key priorities, two of which were 'To disrupt the enemy's supply lines by air and sea' and 'To use every available aircraft to attack shipping or air transport if the enemy attempted a Dunkirk.' It was with this support that the Eighth Army launched its new assault on Wadi Akarit on 6 April, pushing the Axis back to Enfidaville, even further north. From 22 April, as part of Operation 'Vulcan', Anderson's First Army attacked all along its front. Although it met with fierce resistance in places, Axis positions were soon breached under the weight of superior land and air power. With the campaign clearly drawing to a close, some of the Allied anti-shipping efforts were in fact redirected against supplies to Sicily and Sardinia in late April, which represented potential future targets for invasion.<sup>30</sup> British troops entered Tunis, and American forces Bizerte, on 7 May, depriving the Axis of their two main ports. At the same time, Admiral Cunningham ordered the commencement of Operation 'Retribution', a series of intensified naval and air patrols in the straits to catch any attempted evacuation. He did so with the now famous Nelsonian line, 'Sink, burn, destroy. Let nothing pass.'<sup>31</sup>

Over 12–13 May, the remaining Axis forces bottled up in the Cape Bon peninsula surrendered. Accounts of the final number of prisoners vary but the most commonly cited total is around 250,000–275,000. The vast number is even larger than those who finally laid down their arms at Stalingrad earlier in the year, earning the moment the moniker 'Tunisgrad'.<sup>32</sup> The war in North Africa had finally ended.

### **'La rotta della morte': Anti-shipping Operations, December 1942–May 1943**

From December onwards, the contribution to sinkings was shared much more between the different arms, as demonstrated by Table 7.1. Aircraft and submarines continued to be the main protagonists but there was a much-increased role for surface vessels, and a small but consistent contribution through mining. Having been formed at Bône in late November, Force Q quickly managed a spectacular success. On the night of 1–2 December, guided by intelligence and reconnaissance aircraft that illuminated the target convoys with flares, it struck a convoy of four merchant ships and three escorts. In a short but frantic night action, all four merchant ships, totalling 7,800 tons, were sent to the bottom along with

Table 7.1 *Numbers/tonnage of Axis shipping sunk, December 1942–May 1943*

	Surface vessel	Submarine	Aircraft	Mine	Shared	Total
December	5/8,382	16/37,198	21/29,846	5/10,350	3/10,761	50/96,537
January	13/15,223	30/39,873	13/41,605	3/14,383	1/6,107	60/117,191
February	0/0	29/52,259	28/44,433	3/1,734	0/0	60/98,426
March	2/6,912	43/49,873	46/68,776	2/145	0/0	93/125,706
April	5/9,944	32/53,630	53/63,020	3/664	3/11,904	96/139,162
May	4/5,344	19/14,129	94/101,086	1/3,099	0/0	118/123,658

Source: Calculated from TNA AIR 20/9598, Table 3: 'Analysis of Enemy Merchant Shipping Sunk by all Causes, Scuttled, Captured or Surrendered in the Mediterranean'; Röhwer, *Allied Submarine Attacks*.

an escorting destroyer. The success was greatly aided by the advantage of SIGINT and RDF, but also by superior night-fighting tactics and clever use of flash-less munitions to extend the confusion for the Italian escorts once battle was joined.<sup>33</sup>

The ships of Force Q suffered no damage whatsoever during the attack, although the destroyer *Quentin* was sunk by a torpedo bomber on the route home. The Axis response to such a devastating attack was to temporarily curtail lightly escorted night-time sailing and substitute day-time convoys with the maximum possible air escort. The decision wrested the initiative from the surface striking forces, but handed the advantage again to submarines and aircraft. The change was only brief however, while the Axis laid defensive minefields around the flanks of the Tunisian routes to hamper intervention from warships. Once this was completed, the emphasis returned to night-time sailings.<sup>34</sup>

The spectacular success of Force Q coincided with the decisive shift in focus to interdicting Tunisian, rather than Libyan, routes. Similar results from Forces K and Q were not immediately forthcoming, however. A combination of bad weather hampering reconnaissance aircraft and effective use of defensive mining by the Italians frustrated such hopes, and instead they were often sent out in a series of piecemeal 'sweeps' involving two to three warships each. Rather than targeting a specific and important convoy, these smaller operations generally consisted of destroyers being sent to patrol a busy shipping lane or area in the likelihood of encountering some easy targets. For example, two destroyers of the reformed Force K were repeatedly detached and sent to conduct anti-shipping sweeps in the target-rich area off the Tunisian and Tripolitanian coast throughout December and January.<sup>35</sup> The operations were simple – a sortie from Malta to the relevant coastal area where a two-hour sweep

Table 7.2 *Losses in anti-shipping operations, December 1942–May 1943*

	Surface vessels	Submarines	Aircraft
December	1	3	25
January	0	1	27
February	0	0	25
March	1	3	19
April	2	3	20
May	3	0	38

was conducted before returning. While rather haphazard, these could be very efficient operations when targets were located, achieving multiple sinkings of relatively small vessels for no loss in such a short time at sea. For example, one such sweep by HMS *Kelvin* and *Javelin* on the night of 19/20 January 1943 reported sinking two schooners, four small naval auxiliaries, a motor launch, one small merchant ship and three unidentified small steamships.<sup>36</sup>

The inclement weather and the need to adapt to completely new routes and conditions initially had detrimental effects on all forms of attack as they were switched to the Tunisian routes. Submarine patrols proved difficult, especially at first, as the waters were narrow and often difficult to navigate. This was coupled with the multiple defensive minefields laid by the Axis to cover the routes to Tunis and Bizerte, which hampered submarines just as much as surface forces. Finally, Italian ASW techniques had shown some notable improvement. Consequently, one submarine Captain called it 'quite the nastiest patrol area I have ever endured', while another admitted he hit a 'bad patch' in the period after 'Torch'.<sup>37</sup> These factors help explain the loss of three submarines in December, as shown in Table 7.2. Their scoring remained strong, however, quickly recovering from the difficulties of November, and was helped by the relocation of S8 from Gibraltar to Algiers in January, giving the flotilla easier access to the sea communication routes and a sole focus on the Mediterranean rather than its previous split remit with the Atlantic.

Having definitively switched to targeting Tunisian routes and ports of arrival in December, air power was wielded against them with increasing weight. In the first week of December alone, 128 aircraft bombed Bizerte, thirty-five attacked Tunis and twenty-four USAAF bombers hit Naples, all while eighty-two aircraft made direct attacks at sea.<sup>38</sup> Smaller Tunisian ports like Sfax and Sousse also started to receive attention that month, as Axis coastal shipping was passed down to them from the main ports, as did Palermo, which was regularly used as a stop during passage from Naples to Tunisia. Tunisian ports received 789 attacks in January,

while 340 sorties were made against shipping at sea, and others against Italian ports. Although another 340 were made against shipping at sea in February, attacks on Tunisian ports declined to 185.<sup>39</sup>

Part of the reason for this decline was the fact that both senior leaders and aircrews operating out of north-west Africa lacked experience in the co-ordination and conduct of anti-shipping operations. This was evident in the initial decision to use some lumbering heavy USAAF bombers against shipping at sea rather than against ports, and the resulting failure to deliver results thanks to their lack of manoeuvrability. They were later reassigned to port bombing when it was recognised that they were much more suited to that role. It was also belatedly discovered that FAA Swordfish operating from Bône lacked the necessary range to cover most of the sea lanes, and time was lost while replacement Albacores were brought in.<sup>40</sup> Finally, the ongoing bad weather remained a factor over January and February. It was directly blamed by Tedder, and this was later repeated by Portal in response to a query from Churchill about the comparative lack of results despite such huge efforts by air power.<sup>41</sup> An improvement in the weather was certainly one factor behind the improved results from March onwards, as was the arrival of Wellingtons equipped with the new ASV Mk III set to overcome ASV jamming. The Axis had been able to concentrate their ASV jamming efforts more successfully over the Tunisian routes as they were closer to the jamming stations, hampering efforts in January and February.<sup>42</sup>

Portal himself expressed concerns about the augmented air defence of Axis convoys, stating that this was the greatest cause of loss of aircraft, a claim subsequently supported by operational research. This reflects increased Axis efforts to counter the threat of aircraft that had been instituted by the 'Comitato per la organizzazione e la protezione dei trasporti per l'Africa' since its creation in September.<sup>43</sup> By early 1943, convoys thus generally exhibited greater anti-aircraft firepower. At this stage, much of the new building taking place were of smaller Siebel Ferries and F-Lighters that possessed powerful armaments of German built guns ranging from 20mm to 88mm, and were often crewed by German specialists. In part this dated from the ongoing efforts spurred by the Comitato, but also from increased pressure from senior German voices into 1943, including Hitler, Dönitz and the Reich Commissioner for Shipping, Karl Kaufmann.<sup>44</sup> Operational research records indicate that over January and February this was indeed the greatest cause of loss among strike aircraft, and Table 7.2 demonstrates a small monthly increase over those two months compared to late 1942.<sup>45</sup>

The Axis also benefited from the constriction of the area of operation in North Africa, as it allowed them to concentrate their remaining air

power assets and hold an advantage or rough parity in the air over northern Tunisia and the straits through to late January.<sup>46</sup> For some on the Allied side, this very intensification of air defence was itself a marker of success and the subsequent Axis desperation, despite the problems it caused. In Tedder's words:

The degree of air protection now being given by the enemy to his shipping both at sea and in port is clear indication of the crippling effect of our successful shipping strikes on his land operations in Tunisia. Our pressure, if maintained, will prove decisive, but we have now been forced almost entirely off day strikes.<sup>47</sup>

From late December, a concerted effort was made by the Allied Air Forces in north-west Africa to wrest aerial superiority from their opponents, by attacking enemy airfields in greater strength and conducting aggressive fighter sweeps. By February the Axis were at a 3:1 disadvantage in aircraft and also had to contend with dwindling fuel stocks, meaning they had definitively ceded a contest that they recognised as vital to ensuring the supply situation.<sup>48</sup> In this context, monthly Allied losses in anti-shipping operations dropped over March and April, and while they ballooned to thirty-eight in May, many of these came from more dangerous operations in the straits of Messina or around Sardinia, as some aircraft were switched to this role in late April.<sup>49</sup> There were also aerial attacks on shipping in the Aegean by No. 201 Group over March–May, which one operational research report claimed were a 'blow ... aimed at enemy morale'. In fact, it seems likely that they were intended as part of the deception operations to suggest an impending Allied landing in Greece, rather than Sicily. Beaufighters, Wellingtons and Baltimores were all used to attack traffic in Aegean and off the west coast of Greece. The report estimated at least 2,340 tons of shipping was sunk plus another 3,385 damaged and that by mid-June day sailings in these areas had almost ceased. It therefore concluded that the effect on morale on the islands was 'probably considerable', although it offered no clear evidence of this.<sup>50</sup>

Along with aircraft, concerns dogged the Axis about British submarine operations, and similar efforts were made to counter these. Mussolini outlined the need for more escorts and Kaufmann ordered the conversion of some seized French vessels into submarine chasers in January, but urged that more of the building capacity was given to the creation of specialised ASW vessels. Concurrently, a report for the Italian high command stressed the 'capital importance' of defending sea communications and the need for more ASW vessels and increased anti-submarine mine-laying.<sup>51</sup> These increased countermeasures had an effect, with six submarines lost over March and April: four of them to ASW vessels and the other

two mined.<sup>52</sup> Yet this was not nearly enough to stem the tide of shipping losses. Axis production, especially from Italian shipyards, was very slow. The conversions from French vessels were of relatively low quality, and the escorts themselves suffered grievously. In the first six weeks of 1943 alone, fifteen were either sunk or put out of action for the remainder of the Tunisian campaign.<sup>53</sup> British submarines were thus able to inflict their heaviest losses of the war to date over March and April, although their opportunities were rather more restricted in May after the Axis surrender.

During March and April, with such overwhelming air and naval superiority, the Allies descended on the Tunisian routes in an orgy of destruction. Aircraft and submarines were again the primary contributors, although surface forces and mining also contributed. Over those two months alone, 189 vessels of 264,868 tons were sunk, almost exclusively on the Tunisian routes. May eclipsed all other months to that point or to follow, however, with 118 sinkings totalling 123,658 tons, although many of these came after the surrender in Tunisia. Given these devastating losses, it is hardly surprising that Italian sailors nicknamed the Tunisian route 'La rotta della morte': 'The route of death.'<sup>54</sup>

### **'Supplies Disastrous': Operational Effects during the Tunisian Campaign**

Withdrawal to Tunisia meant that the Axis now relied on fewer and shorter sea approaches, while the overland distances they were faced with were nothing like those suffered previously across Libya and Egypt. Nevertheless, Allied superiority in the air and at sea enabled their ability to interdict them, especially from March onwards, and the supply needs remained great. In mid-January, Kesselring claimed that 60,000 tons a month reaching Tunisia would be enough to defend the region, while Hitler promised a highly improbable monthly delivery of 150,000.<sup>55</sup> Other estimates differed. Rommel later retrospectively claimed that 140,000 tons of supplies would have been required per month to defend the position in Tunisia from a major combined offensive from both sides. Admiral Riccardi made a similar claim at the end of January 1943, saying that 132,000 tons (including 35,000 of fuel) were required at that stage, but did not expressly state that was a requirement for each month. He also went on to claim that the Navy could only transport a maximum of 70,000.<sup>56</sup> Warlimont claimed in February that a minimum of 70,000 tons a month could sustain the forces and proposed offensive actions on the south-eastern front so long as it was strictly used for military purposes. He, von Arnim and the new chief of the Italian armed forces General Ambrosio all agreed that 80–90,000 tons would be a much more

Table 7.3 *Cargo tonnages despatched and landed in Tunisia, November 1942–May 1943*

	Ammunition			Fuel			Total sent	Total landed	% Lost
	Sent	Landed	% Lost	Sent	Landed	% Lost			
November	5,166	5,166	0	11,947	11,947	0	34,339	34,339	0
December	13,993	8,278	41	23,911	14,838	38	84,804	60,619	29
January	15,139	11,268	26	29,522	25,580	13	88,933	70,193	21
February	14,802	12,406	16	25,598	14,798	42	77,781	60,038	23
March	18,661	12,010	36	22,912	16,634	27	77,193	49,361	36
April	15,877	11,481	28	17,678	10,052	43	48,703	28,623	41
May	8,511	2,197	74	954	623	35	14,416	3,359	77

Source: Calculated from USMM, *LMI*, Vol. 1, *Dati Statistici*, Table LX, p. 135.

comfortable total for this though, while up to 150,000 would be required if civilian populations were included.<sup>57</sup>

As Table 7.3 demonstrates, while there was no effect in November, Allied efforts prevented 20–30 per cent of supplies arriving in Tunisia each month from December to February. Although these were significant proportions, the question of whether they prevented the Axis from receiving their required supplies depends on which set of requirement figures is used. The 60,000 per month specified by Kesselring for Fifth Panzer Army was met in each of these months, albeit just barely. The Axis clearly attempted to ship enough to meet Warlimont’s minimal 70,000 or preferred 80–90,000 tons per month over December–March. Yet sinkings at sea prevented the minimum of 70,000 from actually arriving in Tunisia in every month except January, when that mark was narrowly achieved. As for any of the higher figures of over 100,000, no month ever saw that amount being attempted in the first place. If the immediate effect of losses at sea at these times is a little ambiguous, what is clear is that the total losses of shipping were impacting on the ability to send the required resources in the first place. By December, only 140,000 tons of shipping was immediately serviceable for the Tunisian route thanks to the losses to date and the extremely high proportion of vessels under repair; as much as 53 per cent of all shipping space in the Italian area, according to some sources.<sup>58</sup>

While this situation was partly relieved by the acquisition of French shipping (initially 450,000 tons, later over 700,000) from late November onwards, this was a slow process. Less than half of the tonnage was ‘even remotely seaworthy’ according to Kaufmann, and most of that which was seaworthy still needed work first, slowing its introduction. Some were



Illustration 7.1 Sunken vessels litter Bizerte Harbour, May 1943. Anti-  
shipping operations reached their peak intensity during the Tunisian  
campaign, while the major destination ports there received repeated  
bombing raids. The losses suffered during the period led Italian sailors  
to christen the journey ‘*le rotte delle morte*’, or ‘the route of death’.  
Source: [www.gettyimages.co.uk/detail/news-photo/bombed-out-buildings-  
sunken-vessels-in-lagoon-after-allied-news-photo/50864420?adppopup=true](http://www.gettyimages.co.uk/detail/news-photo/bombed-out-buildings-sunken-vessels-in-lagoon-after-allied-news-photo/50864420?adppopup=true)  
Credit: Margaret Bourke-White / The LIFE Picture Collection via Getty Images

also large liners, which were unsuited or unable to be used for the task at hand, while others were required for use in the Adriatic or Aegean.<sup>59</sup> Ultimately, only a small proportion of this seized tonnage, possibly even below 100,000 tons, was ever used on Tunisian routes.<sup>60</sup> Given that the combined maximum capacity of the five largest Tunisian ports was 225,000 tons per month when unmolested, it is clear that the total shipping losses had a major impact, as rarely more than a third of this quantity was attempted in any one month. This stands in stark contrast to claims made by the Italian Official History, among others, that the quantities delivered to North Africa were only significantly limited by the maximum capacity of the ports.<sup>61</sup>

As has been noted, the impact of this failure to receive the required supplies did not translate into immediate Allied success in Tunisia, as progress on both fronts was slow over the winter. On Tunisia’s western front, this was due to a number of factors. The fact the Allies landed so far

to the west for Operation 'Torch' (over 600 miles from Tunis) gave Nehring and his successor von Arnim vital time to prepare an active defence, while the Anglo-American build-up and concentration was also slow. First Army also attempted the first major combination of Anglo-American forces in the field, and they approached this new task by integrating units right down to the battalion level. This led to chaos thanks to differing British and American (and later French) equipment, doctrine and styles of command, along with frictions at all levels. The results in terms of combat effectiveness were so poor that it was never tried again. Furthermore, it was by necessity led by inexperienced commanders and consisted of largely green troops who struggled to integrate tanks and infantry, in comparison to their more experienced opponents who were also able to concentrate their limited air power resources at first to gain a degree of parity. Finally, torrential rains in December put paid to offensive hopes for several months.<sup>62</sup> To the south-east, the issue was simpler. Montgomery's Eighth Army was far more experienced and lacked the immediate complexities of large-scale alliance warfare, but in line with the slow pursuit after El Alamein, the advance into Tunisia was gradual and methodical. Given that a significant defensive position would have to be dealt with, Montgomery continued his preferred method of waiting for a major build-up of forces and supplies, hampered by his own long logistical chain.<sup>63</sup>

The Axis did suffer from supply shortages over December–February, notably of fuel, but these were not enough to prevent them from exploiting their superior fighting effectiveness over the First Army in particular. They achieved a series of tactical successes in these months, most notably at Longstop Hill, Sidi Bou Zid and the Kasserine Pass.<sup>64</sup> While these frustrated the Allies, they were far from decisive victories for the Axis, which failed to build the necessary supplies or requested reinforcements, thanks to the paucity of remaining operational shipping. By early February, von Arnim complained to Kesselring that 'The Army could not fight with shells which were at the bottom of the Mediterranean' and was forced to notify Warlimont that this and the lack of fuel meant that Fifth Panzer Army was no longer fit for major operations. Kesselring recommended that von Arnim's force needed at least two more major mobile formations, ideally divisions, as soon as possible. While efforts were made, the lack of shipping ensured they never fully arrived, elements instead gradually appeared piecemeal and often under-strength over January–April. By the end of January, there were just 74,000 Germans and 26,000 Italians in northern Tunisia, plus 30,000 and 48,000 respectively in the south-east. In 1943 efforts to increase the transport of manpower by using fast destroyers and aircraft allowed quicker and in some cases safer transit for a time, but could not solve the problem of vital tanks, vehicles and heavy equipment, which still had to come via slow, vulnerable merchant ships.<sup>65</sup>

The lack of sufficient supplies and combat mass meant that the Axis victories achieved up to February were of a limited nature, even their famous success at Kasserine Pass, and contributed only to stalemate in Tunisia. From then onwards, the ongoing supply problem became completely unsustainable and the tide shifted inexorably towards their ultimate defeat. As Warlimont himself put it in a visit to Tunisia, the logistical situation would soon lead the entire position to collapse 'like a house of cards', before hinting that an evacuation should be mounted.<sup>66</sup> When the Axis spoiling operations 'Ochsenkopf' and 'Capri' were launched in late February and early March, it was without sufficient forces and supplies thanks to shipping losses on both the main routes, and along the Tunisian coast to the smaller ports of Sfax, Sousse and Gabes. These latter ports were effectively neutralised by February, thanks to Allied bombing and coastal interdiction by aircraft and submarines.<sup>67</sup> The operations quickly resulted in costly failures and only hastened the end in Tunisia.

The botched 'Capri' was Rommel's last direct involvement in North Africa, and he was not present for the subsequent Battle of the Mareth Line in late March, which the Axis had to face while suffering from critical shortages. Reports from 10th Panzer division highlighted the 'gravest concern' regarding these shortages which were forcing them to be extremely conservative with what they had. The entire First Italian Army was down to less than one issue for all types of ammunition, with stocks for armoured and anti-aircraft units especially low at 0.5 and 0.6 issues respectively.<sup>68</sup> The fuel situation was little better. Diesel supplies for the Italian units were felt to be 'urgently necessary', as stocks were almost depleted, and aviation fuel was desperately short. The Army did have a slightly better fuel supply overall by 26 March, but it was still just 1.6 CUs.<sup>69</sup>

The fuel situation quickly worsened, and the loss of tanks, vehicles and spares at sea was adding to the Axis losses in the land war itself, greatly hampering serviceability among armoured and motorised units. On 27 March, the Panzer Grenadier Afrika formation reported it was down to just 0.8 CUs of fuel and its last two serviceable vehicles. Nothing was available to be sent from elsewhere in Tunisia to address this crisis; all depot stocks in Tunisia were empty of ammunition for 20mm weapons and medium field howitzers, while stocks for the infantry and anti-tank units were just 0.4 and 0.3 issues respectively. Anti-aircraft and heavier artillery stocks were little better. Von Arnim made an urgent appeal for additional fuel, artillery ammunition and mines to be sent across the Mediterranean, but even if there had been the shipping to do this, it was too late.<sup>70</sup> The last major defensive position on the south-eastern front was lost by the end of the month.

Von Arnim kept up his futile efforts after the battle, complaining directly to OKW 'Supplies disastrous. Ammunition for 1–2 days,

nothing left in the depot for heavy artillery. Petrol similar, major movements no longer permitted. No ships for several days. Supplies and provisions only for one week.<sup>71</sup> Yet fewer than 50,000 tons of all types had reached Tunisia in March, followed by just 28,623 in April. Armoured and motorised units soon lacked the fuel to conduct anything other than basic movement, and later not even that. The regiments of 21st Panzer division, for example, were variously down to between 0.2 and 0.5 CUs of fuel. This meant they did not even have the necessary fuel to bring up supplies, vehicles and artillery from rear areas, let alone conduct effective combat operations.<sup>72</sup> By 1 April, German Naval Command Tunisia confessed that due to lack of fuel for MT, any ammunition that did arrive from Italy could no longer even be delivered to the nearby forces of the Fifth Panzer Army.<sup>73</sup> Given that nearly half of the fuel sent that month was lost at sea, and little more than 10,000 tons of fuel and 11,000 of ammunition were successfully shipped, only miniscule amounts were distributed by various improvised means. Increasingly desperate pleas thus came from frontline units; 10th Panzer division had less than one CU of fuel and reported that some munition types were completely exhausted and others nearing it, 15th Panzer 'urgently' requested medium artillery shells, but over a third of the ammunition shipped in March had been sunk.<sup>74</sup>

Despite the arrival of some fuel supplies early in April, thanks largely to a special effort to ensure the arrival of the tanker *Regina*, by the night of the 7th, the German divisions in Tunisia still only each held between 0.4 and 0.8 CUs. The remaining Italian armoured and motorised units were soon reduced to acting in static defence roles while the mobility of the German armoured divisions was felt to have been 'crippled'. Von Arnim advised Kesselring that only short movements were possible for the better-supplied units, but most units were being forced to move on foot.<sup>75</sup> By the middle of April the Axis forces were crippled by the lack of fuel, ammunition and transport as anything other than token shipping efforts virtually ceased. The Chief Quartermaster of Army Group Africa reported at the end of April that all units were down to just 0.2 CUs, while depots were virtually empty. By 2 May, all divisions except 10th Panzer had run out of fuel entirely. Five days later, the last remaining serviceable Axis aircraft in Tunisia were ordered to evacuate under the cover of darkness, while the last Italian aircraft left on the 12th.<sup>76</sup>

In light of these crippling shortages, the Allied offensives on both fronts brought quick success despite certain instances of bitter Axis resistance where the terrain favoured static defence. The resource-starved Axis forces eroded under constant pressure from the massive Allied superiority in all arms, and there were occasions when the Allies were able to exploit greater manoeuvrability alongside their greater firepower.<sup>77</sup> As the

end approached, Operation 'Retribution' was launched to prevent any evacuation by sea, alongside Operation 'Flax' to stymie any efforts by air. The question of a full-scale evacuation had been discussed by various Axis political and military leaders at several points over spring, and was urged by some, including Rommel, but was never very seriously considered. Both Hitler and Mussolini seem to have clung to the hope that Tunisia could have been held right up to May, probably encouraged by overly optimistic reports from some quarters. Hitler then issued one of his characteristic 'fight to the last round' orders, officially precluding any attempt.<sup>78</sup>

It is highly unlikely that a different policy would have mattered, however, as even ignoring Allied control of the air and sea, they simply lacked the shipping to pull off an 'Axis Dunkirk'. Kesselring had admitted as much to Messe on 16 April, noting they lacked anything like the means required to remove nearly 300,000 men. By late April, the Italians could offer only around 70,000 tons of shipping for Tunisia, with nothing additional immediately forthcoming from the French tonnage.<sup>79</sup> Other, more realistic options were considered, such as evacuating only selected German units or senior staff, but this proved impossible.<sup>80</sup> Even von Arnim's hope to ship 7,000 sick, wounded and civilians fell apart, as the three ships he had assigned to the task were all damaged or sunk by air attack before loading had even started. Orders for a limited evacuation of German headquarters personnel on 7 May suffered a similar fate.<sup>81</sup> Ultimately, evacuation never got further than a few scattered, very small-scale attempts at improvised endeavour. Men tried to slip past the naval cordon in the darkness in a variety of small craft and even rowboats, and around 800 were captured in groups ranging in size from a handful to over 100. Some other vessels were sunk or rounded up by patrolling coastal forces. Efforts at airlift suffered even worse, as 'Flax' accounted for the destruction of more than 400 Axis transport aircraft. Only a few succeeded in escaping by air and sea, with sources giving totals ranging from 600 to 800.<sup>82</sup>

The anti-shipping campaign, now pursued with the aid of American air power, had clearly positively influenced the war in Tunisia for the Allies and prevented any Axis escape, but the ramifications of attrition to Axis shipping were actually much wider.

### **For Want of a Ship: Shipping Losses and the Collapse of the Axis Position**

By the end of September 1942, it was clear to the Axis that they were approaching a shipping crisis in the Mediterranean. They had lost a total

of 486 ships totalling 1,188,206 tons to enemy action since June 1940, to which must be added the losses by other or unknown causes, and the large quantity of shipping under repair. By contrast, the Italians only launched 295,303 tons of newly constructed shipping over the whole of 1940–42, supplemented by those vessels they purchased, those constructed or transferred to the theatre by the Germans and those seized from defeated nations.<sup>83</sup>

In an attempt to stem the impact of shipping losses, a renewed programme of construction for the Italian Merchant Marine was announced in September, to be accompanied by an increased focus on escort units in naval production. It planned for 129 ships of 577,210 tons made from steel, plus thirty ships of 54,000 tons constructed from reinforced concrete. The highly ambitious project (which was ultimately unrealised) required a vast input of additional material, notably 25,000 tons of steel over October–December 1942 alone, which only Germany could provide. Even if that was provided, and the full quota of 11,000 workers assigned to the merchant marine focused solely on the project, it could not be completed before February 1944 at the earliest. It was thought that the addition of 3,000 more workers would expedite this to November 1943, but it was not clear where this skilled manpower could be found.<sup>84</sup> The emergency construction programme was planned to run alongside the construction already scheduled for 1943, pushing the timetable back further to August 1944 and exacerbating Italy's perennial problem of paucity in raw and semi-finished materials. It also retained an imbalance in the assignment of skilled shipyard workers. Of the 48,242 shipyard workers as of 1 August, 25,650 were assigned to new military construction and just 10,932 to mercantile construction. In an indication of just how much damage had been inflicted during the anti-shipping campaign and against the Navy, the remaining 11,660 were dedicated to repair work.<sup>85</sup>

The emergency programme, therefore, did not seem likely to fix the immediate problem of shipping requirements for North Africa, let alone across the whole Mediterranean. As Mussolini pointed out at a high-level conference on 1 October:

Remember that in addition to supplying the ongoing war we must supply Sardinia and Sicily, Dalmatia, Albania and Greece, not to mention the coastal shipping which must continue to take place, albeit in small scale. The problem which the Merchant Marine has therefore been faced with is that related to the different armed forces, because it is closely connected to them.

It was admitted that in order for the programme to be realised there would need to be a great increase in raw materials, expanded plants and machinery, sufficient workers, and most of all help from Germany.<sup>86</sup>

Taking the floor at the meeting, Italy's Minister of Communications, Giovanni Host-Venturi, emphasised that leaving aside new construction, there was a deficit of 167,000 tons of merchant shipping for the minimum needs across the theatre and at home. Increasing traffic to somewhere like Tunisia would further degrade the situation elsewhere, as 'Any additional demand for ships for military needs affects transport for food and of those for the war industry.' He warned against the temptation to reduce transport for non-military purposes as doing so would then impact the import of raw materials, which were needed for the construction of new shipping, among other things. It was a vicious cycle that seemed to lack any quick solution. Host-Venturi could not even say whether the new construction would actually result in an overall increase in shipping or form only a replacement of losses, as it depended on whether enemy action continued in terms of scale and efficacy. Mussolini's mournful, and rather belated, response to Italy's myriad problems was simply that they should not have entered the war until 1942!<sup>87</sup>

Similar concerns were expressed by the Germans around this time, with Kaufmann warning in October that with the current rate of loss, the time would soon arrive when there was simply not enough shipping to keep North Africa supplied. The OKW was clear that plenty of materiel was sitting in Italy awaiting transit to keep the Axis forces supplied, but the question of actually transporting it was vexing.<sup>88</sup> The solution to the crisis seemed to lie in the form of French tonnage, and many were initially confident that seizing what was available after the occupation of Vichy territories would rectify the shortage of capacity. Kaufmann boasted to Hitler in December that the process of seizing, readying and utilising it would be quick and easy. Kesselring offered his Führer similar assurances and the more cautious Host-Venturi, although bemoaning in January the loss of six ships for every new one being built, noted that 'we can look with some serenity to the situation due to the availability of 400,000 tons of French shipping'. The reality proved extremely different. It soon became apparent that not all the vessels were in a seaworthy condition, while the vast majority were incapable of carrying the tanks and heavy equipment that was needed in Tunisia.<sup>89</sup>

By early February, Kaufmann reported a total of 742,037 tons as having been 'procured', yet only 107 vessels of 356,610 tons were actually seaworthy and had been transferred to Italian ports. The rest needed further refit, or more serious repair, while some were considered too damaged or unseaworthy to be worth the effort. The vessels were split roughly 60:40 between Italian and German control, although some were

still not ready for full service, while others were earmarked for the Aegean and the Black Sea. Given the increasing losses on the Tunisian route, Kaufmann was also forced to repurpose fifteen of the smaller vessels to be used as makeshift escorts. He warned that despite the increase in tonnage, the current rate of loss would make it 'impossible to ensure the necessary supplies for Tunis'. Kesselring also recognised that the French tonnage did not represent a panacea and made a similar admission, much to Hitler's fury.<sup>90</sup> Numerous efforts were made to reinvigorate emergency building programmes, stimulate the repair of damaged shipping, to improve the management and administration of shipyards (generally by increasing German control), or to bring the parts to construct small vessels from Germany to southern France and Italy by rail or inland waterways. Hitler even urged the abandonment of all safety regulations in ship design in order to speed construction, as 'life jackets were much easier to make than bulkheads'.<sup>91</sup>

It was too late to save the situation in the central Mediterranean, however. By mid-April a total of 132 former French or neutral merchant vessels of 464,000 tons had been taken over and made serviceable. Of these, 34/145,000 were heavily damaged and in long-term repair, and 37/118,000 had been sunk. A further 18/49,000 were sent to the Adriatic and Aegean and 2/4,000 to Black sea, leaving just 41/148,000 for the Tunisian route, Sardinia, Corsica, Sicily and coastal shipping combined.<sup>92</sup> Although this could be supplemented by some of the remaining original Italian tonnage and the efforts to concentrate very small vessels in the theatre, it was clearly insufficient for Axis needs and the ramifications were great, reaching beyond the shores of Tunisia.

The combined impact of sheer attrition to shipping and the Axis focus on Tunisia with what was available led to dire shortages elsewhere. These were perhaps most evident in the case of Sardinia, despite the fact that only limited attempts had been made to attack its supply routes directly. The heavy losses sustained by Axis shipping meant they were forced to economise on shipping space to Sardinia in order to free up more vessels for North Africa, particularly from October 1942 onwards.<sup>93</sup> The squeeze on supplies quickly made itself felt on the island, and as the greatest Axis need in North Africa was fuel, it was this resource that saw the greatest economisation. By late November, German authorities in Sardinia were complaining that the fuel situation had become 'very strained'.<sup>94</sup>

This was problematic for the Axis powers, as Sardinia remained an important air base from which to menace Allied convoys through the western basin to Algeria or to Malta. The former was particularly crucial if there was to be a serious attempt to retain a long-term foothold in

Tunisia. Sinking ships carrying supplies to the Allied First Army would have a detrimental effect on their ability to mount major offensives, and thus aid the Axis defence. In March 1943, Kesselring thus emphasised the 'importance to smash Allied seaborne supplies' as 'Every ship destroyed gives most effective support to the defensive battle.'<sup>95</sup> The dearth of incoming supplies, however, greatly hampered the ability to prosecute such efforts. Much of this was simply the result of a lack of shipping due to losses and commitments elsewhere, but it was exacerbated by several major bombing raids. The key Sardinian port of Cagliari was attacked multiple times from February to May. Ten large vessels were sunk in the harbour, along with an unknown number of auxiliaries. After a raid on 28 February, it was concluded that greater use would have to be made of the port of Olbia in the north due to damage an obstruction by wrecks. By the aftermath of the raid of 13 May, the majority of quays and moles were unserviceable, and the cumulative damage had rendered the port 'almost completely useless'.<sup>96</sup>

By late March, fuel stocks were sufficiently low to significantly hamper air operations. Not only that, but insufficient spares were arriving in order to keep the aircraft serviceable. Of the sixty-two German aircraft on the island on 7 April, only thirty-three were in a serviceable state.<sup>97</sup> The situation continued to worsen, with an appreciation on 5 May showing that for all but one of the airbases on the island, stocks of aviation fuel were very low, and in one case held just two tons. Olbia, the one exception, had 193 tons, but the central tank depot for the island was completely empty. Daily consumption even for restricted operations was placed at 29 tons, meaning stocks at Olbia would have to be shared around in order to keep some of the airfields operational at all.<sup>98</sup> During November 1942, the Allies did lose over 100,000 tons of shipping to a variety of causes including air attack, but due to this strangulation of Axis supplies and to Allied air raids on airfields, this threat quickly diminished the following spring. While forty-five Allied merchant ships were lost over January–March 1943 the tonnages were much lower, and just nineteen were lost in the following three months.<sup>99</sup> While unwelcome, these losses were well within the Allied capacity to cope and much lower than some of the early concerns about potential loss rates, particularly from the American JCOS. The Allies were comfortably able to meet and exceed their supply demands by sea to the Algerian ports for the First Army and attached air forces.<sup>100</sup>

Similar issues were felt in Corsica, although as its supply routes with Italy were shorter and more distant from Allied air and naval bases, supplying it was a safer prospect. Even Sicily was feeling great strain,

partly due to the attrition to shipping, and partly to Italy's general lack of raw material and the exportation of so much war materiel out of the country. Weichold claimed that in February, 'there were days in which, throughout the whole of Sicily, there was not even a ton of fuel to be found'.<sup>101</sup> Just after the Axis surrender in Tunisia, Admiral Dönitz estimated the monthly supply requirements of Sardinia at 80,000 tons and Corsica 20,000. He felt that the period of 'relative calm' after the fall of Tunisia should be used to build up stocks of supplies in Sicily, Sardinia and Corsica. However, he also appreciated that due to heavy losses, there was not sufficient shipping available in the Mediterranean to do this, and greater efforts should be made to increase the amount available.<sup>102</sup>

This was problematic given that the ramifications of the shipping crisis stretched as far as the Aegean, where the shortage of tankers was especially felt. By August 1942 aviation fuel on Crete was sufficiently low that air transport to Africa had to be suspended, which had further exacerbated the supply problem for Rommel. The situation quickly worsened, and intercepted GAF signals demonstrated that they laid the blame on the breakdown of the tanker service in the Aegean.<sup>103</sup> From September to November, a crucial period of the war in North Africa, the fuel situation in Crete was 'in crisis', greatly curtailing the operation of transport aircraft.<sup>104</sup> In such a situation, even the small number of sinkings in the Aegean could have a direct effect. The torpedoing of the tanker *Arca* in October further worsened the situation and forced another tanker to be transferred there.<sup>105</sup> Not only were transport flights suffering, but the lack of fuel being delivered to Aegean territories affected the ability to fly convoy escort sorties there and in the eastern basin.

While they remained small, sinkings in the Aegean did increase in 1943, as aircraft from No. 201 Group and submarines of S1 intensified their attacks from March onwards. While attacks did increase, the potential threat to shipping was often considered worse by Axis authorities than the actual results. The paucity of escort forces available meant that a handful of attacks in a concentrated area often caused the suspension of shipping, even on very short routes. This was further exacerbated by the increased mining efforts; while still limited, they resulted in further Axis shipping suspension due to a lack of minesweepers. The sinkings and shipping suspensions worsened the supply situation on the islands, and by early April the Axis naval commander in the Aegean warned that ASW operations were being curtailed and would soon have to cease due to lack of fuel.<sup>106</sup>

The reverses on land in North Africa had been highly damaging to the Axis, but the attrition to shipping was precipitating a collapse of the broader Axis position in the Mediterranean. As will be shown in the next chapter, hopes to sustain Sardinia and Corsica after the loss of North Africa proved impossible, and the seeds for their abandonment were already being sewn. The Axis position in the central Mediterranean was soon to collapse entirely.