The Other Ultra

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Signal Intelligence and the Battle to Supply Rommel’s Attack toward Suez

Vincent P. O’Hara and Enrico Cernuschi

Since the revelation of the ULTRA secret in 1974, it has been widely accepted that ULTRA intelligence—that is, high-grade Axis codes decrypted by a centralized British interservice unit called the Government Code and Cypher School (GC and CS) at Bletchley Park—gave Great Britain a decisive advantage over its Axis foes and that this advantage was particularly significant in the battle against shipping to North Africa. As early as 1977, Harold C. Deutsch, a historian and head of research for the OSS (or Office of Strategic Services, the World War II forerunner of the U.S. Central Intelligence Agency), concluded that the “systematic strangulation of [Rommel’s] services of supply” due to knowledge of Axis schedules and convoy routes was a “decisive ingredient of British . . . victory in the Mediterranean.” Deutsch’s conclusions, reached thirty-six years ago, have been affirmed in official and popular histories and remain essentially unchallenged today.¹

The geography of the North African campaign, which was fought from June 1940 to November 1942 between the forces of the British Empire and the Axis powers of Italy and Germany, dictated that nearly all materiel had to reach the front over water. In the case of the Italo-German army, shipments could only arrive at the widely separated ports of Tripoli, Benghazi, and Tobruk. These

¹ O’Hara and Cernuschi: The Other Ultra

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harbors had the capacity to handle just a few freighters at a time, which limited convoy sizes, and during the period of the greatest Axis advance, July–October 1942, they were far behind the front line. An additional difficulty the Axis powers faced was that a British base, Malta, lay astride the shipping lanes from Italy to Libya. Nonetheless, in June 1942 an Italo-German army advanced two hundred miles into Egypt and threatened the Suez Canal. The Axis planned to continue its advance to Cairo, Suez, and maybe beyond. But to do so it would need fuel, ammunition, men, vehicles, and other materiel, and this, except for some men and tiny quantities of fuel and munitions, could arrive only by sea.

At this critical juncture the British made every effort to deny Field Marshal Erwin Rommel’s Panzerarmee Afrika the materiel it required. According to the official history British Intelligence in the Second World War, written mainly by F. H. Hinsley, a Bletchley Park analyst, the ability of the British to intercept and decipher many Axis secret communications, especially those encrypted by the supposedly unbreakable ENIGMA device, gave them knowledge of the course and composition of every Axis convoy to Africa before it sailed. ULTRA contributed to the defeat of the Axis thrust to Suez because it allowed the targeted sinking of tankers and denied Panzerarmee Afrika the fuel it needed just prior to its last attempt to reach the Nile River on 30 August 1942. Hinsley writes, “Of the 48 Axis ships sunk in the period from 2 June to 6 November . . . only one (766 tons) was not reported to the Middle East by GC and CS, while for all but two of the remaining 47 GC and CS provided either the location in port or anchorage, or the timing or routing of the final voyage, in good time for the operational authorities to reconnoiter and attack.”

However, historian Ralph Bennett—a Bletchley Park translator, and the author of a work about ULTRA intelligence—writes, “But it is again permissible to wonder why [given such an advantage] the sinking rate was not higher.” Indeed, few historians have asked how Italy, with some German assistance, managed as it did to deliver the great majority of supplies dispatched to Africa. Over the course of thirty-six months, 2.67 million tons of materiel, fuel, and munitions were shipped to Africa—nearly all in Italian vessels and under Italian escort—and 2.24 million tons arrived. Deliveries exceeded 90 percent for seventeen months, and only twice, in November 1941 and May 1943, did the percentage of deliveries dip below half. Even during the decisive months of July and August 1942, prior to Rommel’s last offensive, with ULTRA in full effect, with Malta basing offensive forces, critical supply ports within easy striking distance of Egyptian airfields, and submarines operating from Haifa, Malta, and Gibraltar, more than 85 percent of materiel dispatched from European ports reached Africa.

This article examines the impact of intelligence in the war against Axis shipping in the two months leading up to the battle of Alam el Halfa, which concluded
on 2 September 1942. It demonstrates that ULTRA information was not always accurate or timely and that Hinsley overstates ULTRA’s impact by crediting it with sinkings that had nothing to do with either signals intelligence (SIGINT) or traffic to Africa. It also casts light on the role of the Italian navy’s intelligence service, the Servizio Informazioni Segreto (SIS). The SIS provided intelligence that often offset the timely and relevant ULTRA SIGINT that Britain did possess. Its code breakers enabled Supermarina, the operational headquarters, located in Rome, of the Regia Marina, the Italian navy, to read, often in less than an hour, intercepted low-grade radio encryptions from British aircraft, and, more slowly, first-class ciphers from warships and land bases. Supermarina’s communications and command system disseminated information in near real time, thereby amplifying the operational value of its SIGINT. This is a fact that the British were unaware of at the time and that has remained virtually unknown since.

THE SIS
The story of Great Britain’s Government Code and Cypher School at Bletchley Park has been told in numerous histories. Italy’s SIS is less famous. By 1940 it was organized into six sections (uffici). Section A was administration, Section B intercepted and deciphered enemy radio communications, Section C assessed and distributed intelligence, Section D operated foreign-based intelligence networks, Section E conducted counterespionage, and Section F supervised censorship. The SIS manned 150 radio-interception stations throughout Europe, North Africa, and the Middle East and operated motor fishing vessels in the Atlantic and Mediterranean as spy ships. As the war progressed Section B became the navy’s most important source of intelligence, and its personnel grew from two dozen in 1940 to over two hundred by 1942, within an overall SIS staff of about a thousand. The SIS handled the bulk of naval intelligence activity in the Mediterranean, because German Abwehr (military intelligence) efforts were concentrated on Allied Atlantic radio traffic and Russian signals. Past practice had established a procedure wherein the Axis partners made a joint effort to crack high-value messages via teleprinter link between the two navies’ intelligence services. Such coordination, however, diminished with time, and by July 1942 cooperation was minimal: the Germans considered the Italians undisciplined, the Italians found the Germans arrogant, and neither trusted the other.6

ALAM EL HALFA BUILDUP, JULY 1942
In July 1942, 94 percent of the 97,794 tons of materiel, fuel, and ammunition shipped from Italian and Greek harbors safely arrived in North African ports. The impact of SIGINT, both British and Italian, on this traffic can be demonstrated by examining how it affected the month’s major convoys.
A convoy for Libya consisting of the motor ships Monviso, Nino Bixio, and the German Ankara, escorted by three Italian destroyers and five torpedo boats, departed Taranto on 2 July at 1300. At 1418 that day an Enigma decryption alerted the British that this convoy had sailed. Route and escort details followed in an Ultra dispatch timed 1523/2 (that is, 1523, or 3:23 PM, on the 2nd): “Ship Monviso and Monviso convoy . . . to follow coastal and safety routes until nought four three nought [0430, or 4:30 AM] July third when Sagittario and San Martino having carried out sweep from point Apple . . . are to join convoy which is to pass a point possibly to south westward of Cape Gherogambo at one one hours Friday third, when previous routes and instructions . . . are to apply.” This was specific and timely intelligence, and the convoy subsequently ran a gauntlet of attacks delivered by high-level and torpedo bombers from Malta and Egypt and by the submarine Turbulent. Nonetheless, it arrived at Benghazi unscathed—an outcome greatly influenced by the code breakers of the SIS’s Section B, Ufficio Beta.

It was British policy that to protect special intelligence, only convoys that had been first sighted via conventional means could be attacked. Thus, Ultra was often used to position reconnaissance aircraft so they could “discover” convoys. On the evening of 2 July the SIS intercepted a radio message timed 2040/2 from Malta.
to the reconnaissance aircraft YU3Y and 86KK ordering them to change course and search thirty miles east of their present positions. The British communicated with operational units in such situations using a mechanical encryption system called SYKO. It consisted of lists that were moved by hand to disclose letters or numbers beneath them. The SYKO cards were changed daily, but combinations of them were often repeated after a brief time, helping the Italian code breakers in their task. As the messages were being decoded, radio direction finding (RDF) pinpointed the position of the reconnaissance planes as bearing 350 degrees from Benghazi, distant 150 and 90 miles, respectively. At 2140 on the 2nd, Supermarina issued a PAPA (*Precedenza Assoluta sulla Precedenza Assoluta*, or top-priority) warning to the convoy commodore, who immediately altered course to frustrate the enemy search.\(^8\) Despite the course change, the reconnaissance aircraft H3TL radioed Malta at 0330 on the 3rd that it had found the convoy. The SIS intercepted this transmission, and Supermarina issued an alert within thirty minutes, resulting in another course alteration.\(^9\)

Supermarina protected the security of its own communications by using pre-arranged hidden meanings for uncoded messages. For example, a plain-language message on a frequency the convoy commander monitored sent to the Venice arsenal checking the availability of a specific spare part could mean that the convoy had been discovered and had freedom to maneuver independently. If more information was needed, a signal in the main Italian navy cipher—the *Stato Maggiore 16 Segreto* (SM 16 S)—or in the SM 19 S cipher followed. The high-grade SM 16 S code consisted of forty-five thousand groups, while the more commonly used SM 19 S comprised sixteen thousand. After a new edition was introduced in July 1940, neither code was ever broken. By the summer of 1942, in contrast, Bletchley Park could penetrate German Luftwaffe and railroad *Enigma* codes in a few hours, and German army and navy *Enigma* ciphers in up to forty-eight hours. These sources accounted for the large majority of *Ultra* dispatches. Ciphers transmitted via Italian C 38 M, a medium mechanical code device first purchased by Italy from Sweden in 1940 to relieve traffic pressure on the one surviving telegraph cable between Italy and Libya and now used by the navy for administrative and transportation matters, was also vulnerable.

The interval between the reading of a PAPA dispatch by naval command and the dispatch of the first warning by the flag officer on duty in the Supermarina situation room was small, as the distance between the code breakers and the situation room was less than ten meters. This economical and effective method of disseminating intelligence, which Supermarina had evolved through two years of war, was dependent on Section B’s ability to break British low-grade codes rapidly. Such codes by nature are less secure than high-grade codes, but part of their purpose is to delay the reading of traffic long enough to render the contents
of any given message of little value. Section B’s ability to routinely produce transcripts in well under an hour compares with times of more than three hours for interceptions made in Alexandria and Malta of radio transmissions from Italian reconnaissance aircraft.  

After the course change that followed the PAPA alert sent soon after the 0330 interception, the Monviso convoy steamed south without incident throughout the morning and afternoon of the 3rd. Then the SIS intercepted wireless messages transmitted by XZ3D at 1515/3 and 1613/3, reading them after eighteen and thirty-two minutes, respectively. These indicated an imminent threat; Malta had indeed ordered a strike of eight Beauforts into the air. At 2010 six of the raiders found the forewarned convoy and lost half their force. While the survivors claimed a probable hit, in fact they missed.

Eighteen minutes after midnight on 4 July, aircraft N1KL broadcast a sighting followed by another at 0042; ZZ7P sent a third at 0100. Five Wellingtons from Malta, two armed with torpedoes and the others with five-hundred-pound bombs, were on the way, but the convoy’s escorting destroyers had a thick smoke screen in place, and the best the Wellingtons could claim were near misses and a torpedo dropped blindly into the smoke. Finally, the next morning, the Royal Air Force (RAF) dispatched three Wellingtons and three B-24s from Egypt. The Wellingtons could not find the convoy, and the B-24s dropped bombs but missed.

On the 4th, as the convoy coursed south, the submarine Turbulent intercepted and attacked at 1030 and again at 1415. The sonar-equipped torpedo boat Pegaso counterattacked both times and drove the submarine off. The merchant vessels finally entered Benghazi Harbor at 1845 on 4 July, bringing 8,182 tons of munitions and other materials, 1,247 tons of oil and lubricants, 439 vehicles, and seven tanks. ULTRA had given the British timely notice of the convoy’s departure and provided route and escort details, but Italian SIGINT had allowed the convoy to avoid at least one air attack and foil two others.

The next air/sea action was fought around a convoy consisting of the Italian freighters Città d’Agrigento, Città di Alessandria, and Città di Savona, the tanker Alberto Fassio, and the German steamers Delos and Santa Fè, protected by three Italian and three German escorts. This large force was the subject of an “Ultra Emergency” decrypt, timed 1756/7, that specified departure time and routing. The convoy departed Crete’s Suda Bay bound for Tobruk at 2140 on the 8th and proceeded peacefully throughout the 9th, as German fighters intercepted the sole British response, a flight of five B-24s from Egypt.

Supermarina anticipated renewed attacks after the SIS deciphered transmissions made at 1715 and 1815 by reconnaissance plane 7XGD reporting seven steamships and four destroyers heading south. A subsequent report by the same aircraft at 2000 (8 PM) generated a PAPA alert twenty-five minutes later.
Meanwhile, Egypt launched ten torpedo- and six bomb-armed Wellingtons. Of the torpedo bombers only two found the convoy, reporting that “smoke screen hampered attack and results unobserved”; the bombers released their weapons and incorrectly claimed two hits on a destroyer. Supermarina followed the action by reading signals made by individual bombers to Alexandria at 2245/9, 2349/9, and 0105/10. A second night attack by four Albacores (of eight that took off) incorrectly claimed one probable and two possible hits. A force of nine Hudsons could not find the convoy (with one exception) until after dawn and their attack was “driven off by intense A.A. [antiaircraft fire].” Finally, six Beauforts sortied but could not locate the enemy. The undamaged convoy entered Tobruk’s wreck-filled harbor at 1350 on the 10th. SIGINT had kept Supermarina informed of what the enemy knew and had forewarned the convoy commander of attacks. An Ultra dispatch of 1927/10 (2127 local) informed Cairo that the convoy had arrived, invalidating the claims of the Wellingtons and Albacores.

The sheer volume of decrypts that flooded the British at the Middle Eastern command was daunting. To take the day of the convoy’s arrival as typical, Cairo received sixty-eight Ultra dispatches—sixteen of them categorized as “Emergency” or “Ultra Emergency”; twenty-six of these related to Axis shipping. A typical emergency message read, “Auxiliary sailing vessel Arria was expected to sail probably at nought two nought nought hours today tenth. Its cargo, intended for Panzer Army[,] included one nought nought tons orange fuel in cans. Comment, port of departure is probably Derna, destination possibly Mersa Matruh” (2019/10 in July 1942). The vessel’s name was actually Arria, and its seventy-five tons of cargo arrived in Matruh on 15 July.

THE COASTAL ROUTES
Mersa Matruh, captured by Rommel on 28 June, was important because its tiny harbor was only a hundred miles behind the front line. On 3 July the Regia Marina command at Tobruk dispatched to Matruh the small steamship Pontinia with desperately needed munitions. The voyage, under the escort of an Italian gunboat, was uneventful—perhaps helped by a PAPA message sent on 4 July at 2300, forty-eight minutes after the interception of orders from Alexandria for two aircraft to attack the ship. The planes searched vainly, and 535 tons of munitions were landed on 5 July. Pleased by this initiative, Vice Admiral Eberhard Weichold, chief German liaison with Supermarina and commander of German Naval Command, Italy, ordered the German freighters Brook and Sturla to ferry 1,200 tons of munitions to Matruh. They arrived on 8 July and had discharged their cargo by the morning of the 11th. No escort was immediately available for their return voyage, so the freighters remained and were sunk on the night of 11/12 July in a bombardment delivered by British destroyers.
Hinsley cites this action as a case where ULTRA intelligence produced a British success, on the basis of a dispatch timed 1025/9, the day after the transports arrived, indicating that both would be sailing to Mersa Matruh.\textsuperscript{21} \textit{Sturla} and \textit{Brook} were completely unloaded when sunk, and the British destroyers caught them in port only because (unknown to the British) maintenance issues prevented the German motor minesweepers that were supposed to escort them back to Tobruk from sailing. Subsequent ULTRA dispatches also indicated that “this action blocked Matruh even to supply submarines” and that the sinking of \textit{Brook} and \textit{Sturla} and the destruction of a tank depot in Tobruk Harbor had caused the loss of two hundred tons of ammunition and 180 tons of fuel. These dispatches are examples of the unreliable information that ULTRA often generated: in fact, the motor ship \textit{Città d’Agrigento} arrived at Matruh on 16 July with 460 tons of artillery and munitions, while, as related, the two transports were empty when sunk.\textsuperscript{22}

Weichold retained \textit{Città d’Agrigento} at Matruh, thinking to use the vessel as bait for an S-boat (fast motor-torpedo boat) ambush in conjunction with a newly established German-manned Freya radar station. S-boats foiled a bombardment on the night of 18/19 July, but the Royal Navy returned the next night with two cruisers and six destroyers, including two of the Hunt class assigned to deal with the small torpedo boats, and sank \textit{Città d’Agrigento}. The British learned of their success in an ULTRA dispatch timed 0452/22. In another example, however, of how the German messages the British were reading often contained provisional or inaccurate information, this one indicated that the ship had received four hits when in fact there had been only one.\textsuperscript{23}

During the following weeks a constant flow of Italian and German landing craft, small steamers, and trawlers arrived at Matruh. Numerous ULTRA dispatches dealt with the subject of “lighter” traffic, but many of these transits were also supported by opportune PAPA messages. By 1 September ninety-one small-craft voyages had delivered more than ten thousand tons of materiel to Matruh. Although some craft were damaged or stranded in dozens of attacks by RAF fighters and bombers, their cargoes were preserved, or losses occurred in harbor (where the cargoes were recoverable), or in transit empty back to Tobruk.\textsuperscript{24}

\textbf{THE HIGH SEAS: CONVOY BATTLES CONTINUE}

The motor ship \textit{Rosolino Pilo} sailed from Brindisi at 2150 on 20 July, escorted by two destroyers and two torpedo boats. An ULTRA dispatch timed 1124/21 based on the decryption of a Luftwaffe ENIGMA message advised Cairo that the Germans were arranging an air escort for the convoy on the 22nd. However, at 1130, a dozen Beaufort torpedo bombers of 217 and 39 Squadrons attacked \textit{Pilo} off Navarino, Greece. There was no PAPA warning. The pilots claimed a hit, and an ULTRA dispatch timed 1558/21 indicated that \textit{Pilo} had been torpedoed and was to...
meet a tug, but the attack had actually failed. Less than an hour later a follow-up “Emergency Plus Z” ULTRA decryption disclosed that there was a “slight indication” that Pilo was continuing to Benghazi. This was confirmed by another emergency transmission at 1816/21 that in fact the Beauforts’ torpedo had missed and the convoy was “almost certainly continuing to Benghazi.” At 2003/21, however, a third ULTRA Emergency message stated that Pilo was now heading for Navarino, where two torpedo boats would supplement its escort.  

Pilo did make a detour to Navarino, but it then circled back toward Benghazi. An ULTRA dispatch timed 0334/22 disclosed the new route. On the 23rd, twelve B-24s ineffectively attacked Pilo off Benghazi. The motor ship moored in Africa at 1700/23 with nineteen tanks, 106 other vehicles, 717 tons of fuel, 146 soldiers, and 2,907 tons of materials and munitions. Although ULTRA had meticulously tracked the ship’s passage, in several cases it had broadcast wrong or confusing information about its fate and route.

At 1300 on 23 July, the motor ship Vettor Pisani and two torpedo boats departed Taranto for Tobruk. At 0140 on the 24th the reconnaissance aircraft QZ7J—acting on ULTRA dispatches timed 1701/22 and 0023/23 specifying estimated departure time, course, and speed—sighted the little convoy. The SIS intercepted the aircraft’s report and generated a PAPA alert at 0210. A 0103/24 broadcast from a different British aircraft led to a second PAPA at 0235, while a follow-up report from QZ7J at 0237 provoked a third PAPA, at 0405. Despite these alerts, six Malta-based Beauforts found the Pisani convoy at 0730. After dropping five torpedoes they observed an explosion, dark smoke, and a reddish blaze. One weapon had struck, and Pisani was stranded at Cephalonia. At first it seemed the damage could be repaired, but the fire continued to burn uncontrolled, and the vessel became a total loss. ULTRA confirmed the attack’s success at 1051/24.

On 25 July the steamships Milano and Aventino, each loaded with vehicles, materiel, and more than nine hundred troops, and escorted by seven destroyers and torpedo boats, departed Bari for Benghazi via Piraeus. At 0325/26 a PAPA advised that three torpedo bombers from Egypt were searching for the convoy. Knowledge of the enemy’s radio frequencies and the liberal use of radio by pilots flying over the night sea allowed the Regia Marina RDF station at Porto Palo in Sicily to track the searching aircraft. The next evening Porto Palo detected a British submarine positioned on the convoy’s route and sent at 1950/27 a PAPA alert that resulted in an evasive course change. Meanwhile, Cairo had received an ULTRA dispatch timed 1713/27 that the two steamships were bound for Piraeus and “thence for a port unknown.” This was confirmed at 2127. The SIS rapidly broke four more air reconnaissance messages on 29 July and directed the convoy around threats. On the 29th the Milano convoy entered Suda Bay, where it experienced an unsuccessful attack by eleven B-24s. The ships then sailed at
 Milano arrived safely at Benghazi at 0945 on the 31st, followed by Aven­tino, slowed by engine damage, three hours later. An emergency dispatch timed 0736/30 had advised Cairo of their departure from Suda, but the next ULTRA message, timed 2015/30, stated that the ships were scheduled to return to Piraeus from Benghazi at 1000 on the 31st. Considering this was before Aventino even arrived at Benghazi, the message was clearly incorrect. A subsequent dispatch timed 0355/31 clarified that they were expected to dock in Benghazi on the 31st. News of Aventino’s engine problems arrived in Cairo at 1321, nearly three hours after the ship had made port.30

On 28 July at 1210 six Beaufort torpedo bombers and three Beaufort bomb­ers attacked Monviso, which had departed Brindisi at 1515 the day before. The interception was based on a routine sighting made at 0700 on the 28th and not on special intelligence. The aircraft scored one torpedo hit from five dropped, disabling the motor ship, which was subsequently towed to Navarino. The only related ULTRA dispatch, timed 1917/28, informed Cairo that Monviso had been hit and towed to Navarino.31 On 1525 on 3 August the submarine Thorn sank Monviso, which—its air-attack damage being slight—had departed Navarino for Benghazi the day before, escorted by two destroyers. The ULTRA dispatches pertaining to Monviso after the air attack were one of 29 July, disclosing that the ship would be repaired and continue its voyage, and another sent on 1230, 3 August, specifying that it had been due to arrive at Benghazi on the 2nd.32

For July, Hinsley credits ULTRA with contributing to the sinking of five Axis transports in the Mediterranean.33 During the month forty transports and tank­ers departed Italian and Greek ports bound for Africa. Thirty-eight arrived. The destruction of Vettor Pisani was properly attributable to ULTRA information. In the cases of the other vessels claimed—Brook, Sturla, Città d’Agrigento, and Delos (sunk after it had unloaded by a bomber night raid at Tobruk on 30 July)—ULTRA provided administrative information, such as the fact that a vessel had arrived at its destination, or the results of a prior attack. It did not provide information that contributed to the ship’s actual destruction.

AUGUST CONVOYS
During the first two weeks of August, traffic continued to pass routinely to Africa. An ULTRA dispatch timed 1858 on 30 July had provided Cairo with the departure date and route of the motor ship Tergestea, which sailed at 1200 on 1 August from the Corinth Canal. Nonetheless, it arrived at Benghazi on the 3rd after a peace­ful voyage. On 4 August the steamship Tagliamento docked at Benghazi. ULTRA had alerted Cairo to the steamship’s sailing arrangements on 29 July. However, its safe voyage was aided by a PAPA warning, transmitted at 2150/3, of a suspected submarine threat; this followed an urgent British broadcast made by Malta to all
boats at 2125/3 on the basis of a sighting report generated by aircraft QZ7J. That message was followed by a 0100/4 communication from the same aircraft that it had attacked but had not observed any results. On 3 August at 0600 the motor ships *Sestriere* and *Nino Bixio*, protected by two destroyers and three torpedo boats, departed Brindisi. Three hours before, *Ankara*, accompanied by four destroyers, had left Taranto. Cairo had news of these sailings from ULTRA dispatches of 31 July and 1, 3, and 4 August giving sailing arrangements, courses, and projected arrival data. The two convoys united at 1930 on the 4th and underwent a series of air strikes, starting with an ineffective high-level dusk attack by ten B-24s 150 miles northwest of Derna. Ten torpedo-armed Wellingtons, from Malta, struck later that night. A PAPA warning sent at 0115/5 arrived after the British pathfinders had already illuminated the convoy with flares. Nonetheless, using very-high-frequency ship-to-ship radiotelephone communications and the flotilla leader *Legionario*’s German-made radar, the convoy commander confounded the torpedo bombers. The Admiralty War Diary noted, “Smoke screen from Destroyer escort prevented observation [of] results.” In fact, there were no results to observe. The convoy completed its voyage without further incident, docking that afternoon in Tobruk and Benghazi. The

![Map of the Traffic War—August 1942 Transport S sinkings and Arrivals in African Ports](map.jpg)
ships discharged eighty-eight tanks, 340 motor vehicles, 4,381 tons of fuel and lubricants, and 5,227 tons of materials and munitions.\textsuperscript{36}

On 6 August the submarine \textit{Thorn} attacked and missed the Italian tanker \textit{Rondine}, sailing from Africa to Greece. On the 7th the same boat launched against the freighter \textit{Istria}, again without success, and was sunk by \textit{Pegaso}'s counter-attack. On 7 August the submarine \textit{Proteus} fruitlessly stalked the lucky \textit{Rondine}. On 8 August the submarine \textit{Unbroken} attacked without result the steamer \textit{Algerino}, returning to Italy in ballast. On 10 August the submarine \textit{Utmost} missed the freighter \textit{Siculo}. None of these encounters were the result of special intelligence, although an ULTRA dispatch dated 4 August had disclosed the sailings of \textit{Rondine} and \textit{Istria}.\textsuperscript{37}

On 7 August, \textit{Proteus} sank the German freighter \textit{Wachtfels}. Hinsley considers this an ULTRA contribution to Axis shipping losses, on the basis of a dispatch dated 4 August that \textit{Wachtfels} would be leaving Suda for Tobruk on the 8th or 9th. \textit{Proteus} was in the area when \textit{Wachtfels} got under way on the 6th and sank the large German steamer on the next morning. Notice of \textit{Wachtfels}'s departure was deciphered and forwarded to Cairo twelve hours later. This episode is an example of how ULTRA often repeated outdated information. Moreover, \textit{Wachtfels} was sailing in ballast north from Suda to Piraeus, not south to Benghazi as ULTRA indicated.\textsuperscript{38}

On 9 August the steamer \textit{Aprilia} entered Tobruk. It had departed Suda at 1905 on the 7th and had changed course that night after a PAPA warned it that it had been discovered by an aircraft, which was urgently requesting a torpedo-bomber attack. On 10 August \textit{Santa Fè} docked in Benghazi, a fact noted in a dispatch timed 2204/11 that stated, “An unidentified ship arrived Benghazi from Italy on Monday tenth.” This was accurate, but a follow-up emergency message timed 1803/16 reported that “the unknown ship mentioned [on the 11th] left Benghazi on fifteenth in ballast for Suda.” If this message inspired any offensive activity it was in vain, because no ships departed Benghazi that day. A signal advising that the mystery ship’s departure had been delayed was received the morning of the 17th (along with a provisional identification). \textit{Santa Fè} actually departed Benghazi on the 20th.\textsuperscript{39}

Acting on good information, \textit{Porpoise} sank the Italian steamer \textit{Ogaden} on 12 August off Ras el Tin. The critical dispatch, generated at 0233/12, had stated that the target was bound for Tobruk along the coastal route and would be off Derna at 0430 on the 12th. \textit{Porpoise} was laying mines off Sollum and command had advised the submarine to expect its eventual quarry. There was no offsetting PAPA.\textsuperscript{40} On the night of 14/15 August the submarine \textit{Taku} missed the German freighter \textit{Menes}, which was returning to Europe. Next it sighted the Italian navy tanker \textit{Stige} and attacked, again without result; \textit{Stige} passed the booms of Tobruk on 15 August. At sunset that same day the submarine \textit{Porpoise} attacked a convoy
formed by the motor ships Lerici and Ravello, escorted by a destroyer and three torpedo boats. Porpoise sank Lerici and was then damaged in a counterattack by the torpedo boat Polluce. An ULTRA dispatch timed 0712/9 had advised Cairo of the convoy’s escort and ports of departure, and another at 1801/13 gave course details. Supermarina generated two PAPA messages to the commander warning that his convoy had been discovered by enemy air reconnaissance, but this notice did not allow him to avoid the submarine.41

On 16 August Menes avoided another submarine attack, this time by Porpoise. The same day, Ravello arrived at Benghazi and the steamer Davide Bianchi made Tobruk. Bianchi’s escort, the German destroyer Hermes and the Italian torpedo boat Partenope, repulsed a daylight torpedo-bomber attack on the 15th and another one the following night. Both enemy air raids had been preceded by PAPA warnings broadcast to Partenope only, as Supermarina withheld its decrypting abilities from the increasingly distrusted Kriegsmarine (in part because of a suspicion that German ENIGMA transmissions were compromised). An additional wireless message, sent to the torpedo boat at 0315/16, twenty minutes after the SIS intercepted it, read: “I lost touch with the enemy.” This helped reduce the tension of those endless dark hours at sea.42

At 1633 on 17 August Turbulent launched torpedoes against Nino Bixio and Sestriere, which were returning from Libya. The attack damaged Bixio, which was taken in tow. This convoy was the subject of a number of ULTRA dispatches, the most relevant being ones timed at 2104/16 and 0101/17 GMT stating that the convoy would be receiving an air escort and giving route details.43

SPECIAL TARGET: TANKERS
As British aircraft and submarines stalked Italian transports, a battle was brewing among the Axis leadership. After concluding the action against the mid-August PEDESTAL convoy to Malta, Marshal Ugo Cavallero, the Comando Supremo’s (high command’s) chief of staff, and Marshal Albert Kesselring, commander of Oberbefehlshaber Süd, returned to their top priority—the capture of Suez before the constantly monitored British buildup rendered such a conquest impossible. Following the end of the Axis offensive at El Alamein on 2 July, Rommel had received supplies in volumes 50 percent greater than the army’s monthly consumption. He had, however, doubts about a renewed offensive. Sixteen months of stress and hard living in the desert had undermined his own health.44 Kesselring landed in Egypt on 17 August to persuade Rommel to undertake this last effort. In response the latter complained about a lack of supplies and the Italian navy’s failure to deliver them. It was an old song, one that played well in Berlin but not with Kesselring, a former artillery officer well versed in logistics. Despite the tale told by the actual numbers, Rommel stated that he needed thirty thousand...
additional tons of fuel, 2,672 tons of munitions, and five hundred vehicles. Everything would have to be at the front by the day of the attack, scheduled to start on the night of 30 August. It was an unrealistic request, as fuel deliveries to North Africa had never exceeded twenty-four thousand tons during a fortnight. After haggling, the two field marshals finally agreed that in the thirteen days before the offensive began Kesselring and Comando Supremo would arrange for the delivery of an additional 5,700 tons of fuel, 2,000 tons of munitions, and 295 vehicles.

As these increased goals were being negotiated, routine deliveries continued. On 1540 on the 17th, six Malta Beauforts attacked the motor ship Rosolino Pilo and two destroyers bound for Tripoli. After long-range Spitfires and Beaufighters drove off the convoy’s Ju 88 air cover, the Beauforts dropped their weapons from six hundred yards. One torpedo struck, leaving Pilo dead in the water and down by the stern. Later that night the submarine United found the stricken freighter and torpedoed it from close range, sparking a gigantic explosion. An ULTRA dispatch from 14 August had disclosed that Pilo was ready to sail and gave cargo details. There was no PAPA alert.

This sinking did not affect the agenda for Rommel’s offensive, as Pilo’s cargo had been intended for units in Tripolitania. The motor ship Città di Alessandria, however, was loaded with a portion of the promised additional supplies. It departed Suda on 18 August. A PAPA message transmitted at 2200/18, twenty minutes after the interception of an RAF sighting, arrived too late: twelve Wellingtons (five of them torpedo bombers) had already found the ship and its two escorts. However, and although a “possible torpedo hit on 6,000 ton M/V [motor vessel], followed by smoke and sparks,” was claimed, their attack failed. The merchant vessel arrived at Derna the next morning and continued to Tobruk. An ULTRA dispatch timed 2230/18 contained some tentative information regarding its sailing arrangements: “Sometime previous to 1650 Tuesday 18th [convoy] was to proceed on course of 270 degrees for 40 miles to make landfall at Derna. . . . Composition of convoy not known.” After that there was nothing until a dispatch confirmed its arrival in Tobruk four hours after the fact.

On 19 August the tanker Pozarica received a PAPA warning that helped it and its escort avoid an air attack, but at 0856 the next day off Corfu a dozen Beauforts of 39 Squadron and ten Beaufighters out of Malta attacked and hit Pozarica with one torpedo out of twelve dropped. Despite the damage, Pozarica gained the Ionian coast. On 21 August nine Beauforts from the same squadron with five bomb-armed Beaufighters struck again. They dropped nine torpedoes from seven hundred yards and claimed three successes. Despite all, Pozarica remained afloat and later returned to Italy. The sailing of this vessel, its route, escort, and cargo had been the subject of a series of ULTRA dispatches, the most critical being timed 0311/19 (sailing arrangements) and 0450/20 (departure).
had not been lost, but it had not been delivered to Rommel’s tanks, and the field marshal’s nervous entourage began to protest loudly.\textsuperscript{50}

Just before noon on 23 August the steamer \textit{Pugliola}, escorted by two destroyers and one torpedo boat, entered Tobruk. A PAPA message generated at 1740/21 told Supermarina that an hour earlier 7XGZ had sighted the convoy south of Crete. This helped offset an ULTRA dispatch timed 1431/21 that \textit{Pugliola} was at sea.\textsuperscript{51} The vessel delivered 1,860 tons of munitions and materiel, all of which was loaded onto motorized barges and immediately transshipped to Mersa Matruh. Also on the 23rd, seven barges arrived in Tobruk directly from Italy with a hundred tons of munitions, which they delivered to Matruh the following day. On the 22nd the barges had received a PAPA message advising that an RAF aircraft had sighted them. The 23rd was a busy day at Tobruk, as the tanker \textit{Alberto Fassio} also arrived after a layover at Derna. Sixteen B-24s, ten of them U.S. Army Air Forces (USAAF) aircraft, had unsuccessfully attacked that ship on 21 August.\textsuperscript{52} The tanker pumped 2,740 tons of fuel ashore that day. The passage of this vessel was well documented by ULTRA dispatches—its sailing arrangements on the 19th, its departure on the 21st, and details about its air escort on the 22nd—and Italian counterintelligence was lacking; the unsuccessful attack shows that even under the best of conditions, stopping a targeted vessel was never a given.\textsuperscript{53}

These events highlighted a dilemma the British and Italians both faced—resource allocation. The Italians never had enough ships to provide the strong escorts that could defeat most air and submarine attacks. As for the British, while they could send nightly strikes of up to forty Wellington and Halifax bombers against Tobruk—raids that accomplished little, notwithstanding extravagant claims filed regularly about ships blowing up and fires burning unchecked—the Admiralty felt it necessary to withdraw its two naval air torpedo squadrons, nine Albacores, from Malta because “they had insufficient Albacores to permit maintaining 9 in Malta.” Thus, despite ULTRA intelligence, a steady stream of freighters and tankers arrived in African ports without undergoing any attack whatsoever—like the German steamer \textit{Kreta}, which arrived at Tobruk on 25 August with 382 tons of fuel, or \textit{Savona} at Tripoli on the 27th, \textit{Sibilla} at Tobruk on the 27th, the tanker \textit{Caucaso} at Benghazi on the 28th, or \textit{Armando} at Tripoli on the 1st of the following month.\textsuperscript{54}

At 0240 on 27 August the tanker \textit{Giorgio}, which had departed Piraeus at 0615 the day before, received a PAPA indicating that at 0208 aircraft T6RX had sighted it off Cape Spada, Crete’s western extremity. This intelligence was hardly news, because, as the escort commander later reported, “you can pretty much say that the convoy was, at night, continuously followed by aircraft from the first attack off Cerigo to until her arrival.” This surveillance was a consequence of multiple ULTRA dispatches regarding the tanker’s course and escort. Five Wellentons out
of Egypt attacked first off Antikythera (Cerigotto), north of Cape Spada, and incorrectly claimed a hit. After an unsuccessful raid by ten USAAF B-24s and a strike by six Egypt-based Wellingtons off Derna the next night, the tanker and its escort ducked into Derna, finally reaching Tobruk on 28 August bringing 2,345 tons of fuel, with an extra two hundred tons in barrels stored on deck. Not so fortunate were the freighters *Istria* and *Dielpi*. They departed Suda at 2300 on 26 August protected by the German destroyer *Hermes* and two Italian torpedo boats; the two separated shortly thereafter, *Dielpi* heading to Benghazi and *Istria* to Tobruk. Early on the 27th Cairo received an emergency dispatch specifying Luftwaffe convoy-escort assignments for the upcoming day. This long and important message betrayed the route of a number of ships, including *Istria*, *Giorgio*, and *Tergestea*. In some respects, being given a German air escort guaranteed trouble for an Italian convoy, as GC and CS rapidly broke Luftwaffe messages that contained such useful details as rendezvous points and schedules (although these were sometimes later changed). Moreover, in this instance the convoy commanders were not favored by a PAPA warning. At 1830 on the 27th nine Malta-based Beaufort torpedo bombers of 39 Squadron and five bomb-armed Beaufighters jumped *Dielpi*. They hit the freighter with two torpedoes and one bomb, accurately reporting that they had left the motor vessel “ablaze and sinking with decks awash and back broken.” This outcome rendered superfluous a follow-up ULTRA dispatch timed 2132/27 disclosing the rendezvous point where German fighters from Africa were to meet the convoy. Nine Egypt-based Wellingtons found *Istria* at 2348. They claimed two torpedo hits and observed explosions and clouds of smoke. In fact one torpedo struck astern and detonated the cargo of munitions; *Istria* sank in just four minutes.

These losses provoked a storm of criticism in Berlin against the protection provided by the Italian navy, even though one of the convoys had been a German responsibility. Mussolini, seriously ill since June and in mental and physical decline, ignored the protests of Marshal Cavallero and the navy’s chief of staff and adopted his powerful ally’s point of view.

On the 27th the submarine *Umbra* sank the motor ship *Manfredo Camperio*, which was sailing with *Tergestea*. The details of this convoy had been contained in the same alert that betrayed the *Istria* and *Dielpi* convoys, and *Umbra’s* captain was ordered to the spot, where he eventually made the interception. That afternoon, after the loss of *Camperio*, a PAPA message reached *Tergestea*, which changed course to avoid a forecast air attack. No further threat materialized, and *Tergestea* arrived at Benghazi on the 28th with 279 vehicles, 117 tons of fuel, 520 tons of munitions and materials, and 206 soldiers. The arrival of *Tergestea’s* cargo meant that despite the nonarrival of *Istria*, *Dielpi*, *Camperio*, and *Pozarica*, Rome had delivered the extra fuel Rommel had requested to conduct his 30 August offensive.
Italian naval SIGINT sometimes served an offensive role. On the morning of 26 August the SIS detected unusual radio activity emanating from a British destroyer flotilla. The naval commandos of Decima Flotilla MAS had just activated near Matruh a unit with three MTSMs—eight-ton, torpedo-armed motorboats. At 2250 on the 27th, after a delay of 110 minutes, the SIS cracked an order broadcast with the utmost urgency from Alexandria ordering a sortie by two units believed by the analysts to be surface warships. A pair of MTSMs ventured to sea that night but waited for the enemy in vain. The next day Italian marines seized near the Decima Flotilla MAS base an enemy agent who was there to spot for a naval bombardment against the base scheduled for the night of 28/29 August. The British flotilla duly sortied, noted the planned light signal, and opened fire against open desert. During the action the prepositioned MTSM 228 torpedoed the Hunt-class destroyer *Eridge*, damaging the ship beyond repair.

During this episode the usual traffic to Africa continued. In fact, on 27 August the British learned that “great congestion” in Tobruk Harbor was causing a backlog in the unloading of supplies, another confirmation of the fact that the most stringent limitation on Axis resources in Africa was port capacity and transportation infrastructure, not the destruction of shipping. On 28 August the steamer *Unione*, protected by two destroyers and two torpedo boats, entered Benghazi. On 29 August the slow steamer *Algerino* made Tripoli with a cargo of local needs, followed on 1 September by *Armando*. These voyages received some mention in ENIGMA decryptions, but none were the subject of emergency ULTRA dispatches. On 30 August the steamer *Anna Maria Gualdi* entered Tobruk loaded with 1,600 tons of fuel for the German army. Its voyage was the subject of six ULTRA dispatches discussing the ship’s cargo, its projected departure and course, revisions to its course, and details of its escort. However, the *Gualdi* convoy benefited from two PAPA messages, avoiding on the 27th the submarine *Umbra* and then, over the night of 29/30 August, a series of air strikes. First Wellentons from Egypt made four single attacks, followed by one attack of four planes and another of five. Reports described explosions and a stationary motor vessel on fire, but in fact the last attack, wherein the bombers could not locate their target owing to a smoke screen, went the same way as all the others—without results.

Rommel launched his offensive on 30 August, immediately encountering from the Eighth Army stiffer resistance than anticipated. In fact, thanks to ULTRA, the British obtained his plan of attack on 17 August, lacking only the exact date. On the offensive’s launch date *San Andrea*, a tanker carrying fuel for the anticipated advance beyond the Nile, departed Taranto at 0530. Thirteen hours later, eight 39 Squadron Beauforts from Malta jumped *San Andrea* and its escort, the torpedo boat *Antares*, and hit the tanker with one torpedo from four dropped. The aircraft reported leaving their target “in flames having exploded throwing debris high
into the air.” The air umbrella of eight Italian C. 200 fighters could not break up the attack. *San Andrea* had been mentioned in six ULTRA dispatches, the most important, timed 2138/29, covering course and schedule.  

This loss caused uproars in Rome and Berlin. The Regia Aeronautica was openly accused of carelessness. The air force chief of staff replied that the loss had to have been caused by espionage, as no British reconnaissance aircraft had been sighted before the strike. Mussolini and Kesselring embraced this explanation, which relieved them of any responsibility, and the witch hunt was on. Rommel learned of this sinking the next day, and though *San Andrea*’s load would not have affected the battle fought on the night of 30/31 August, he too embraced the idea that Italian traitors had sabotaged his surprise attack.

On 31 August an important convoy of two tankers, *Picci Fassio* and *Abruzzi*, protected by two torpedo boats departed Suda, planning to arrive at Tobruk on 2 September. Though Rommel had canceled his offensive by the time of their scheduled arrival, their fate is often associated with his defeat. After the criticism sparked by the loss of *San Andrea*, all the SIS’s resources were dedicated to their protection. The convoy received three PAPA warnings but could not avoid a raid by a trio of USAAF B-24s at 1930 on 1 September. In a rare instance of effective high-altitude strike, near misses brought *Abruzzi* to a stop. However, five RAF Hudsons were unable to locate their target. *Abruzzi* was eventually towed to RaHilal Bay, where its cargo of 484 tons of fuel was recovered; the ship returned to Italy three months later. A dozen Wellingtons attacked *Picci Fassio* on the night of 1/2 September, and one scored. The tanker sank with the loss of thirteen men and 2,945 tons of fuel, betrayed by a German air force message of 1500/1, specifying the convoy’s route for the following day, that GC and CS passed on to Cairo in an ULTRA “Emergency + Z” dispatch timed 0105/2. These two ships were mentioned in at least ten other ULTRA dispatches, the most important being timed 2327/28 and 0327/29, discussing their route and escort arrangements.

On 2 September the freighter *Bottiglieri* arrived at Benghazi. It had been part of the *Picci Fassio* convoy until the evening before, when it and its torpedo-boat escort went their separate way. Although its voyage had been detailed in the Luftwaffe message that was *Picci Fassio*’s undoing, *Bottiglieri* made port unmolested, assisted by a PAPA message that day. On 3 September the navy tanker *Stige* entered Tobruk Harbor with 630 tons of gasoline. Its original departure date, course, and escort had been specified in a message timed 2355/31 but two PAPA messages helped it and its escort, the destroyer *Hermes*, avoid trouble during their slow crossing of the Mediterranean.

The battle of Alam el Halfa ended in stalemate on 2 September. The numbers for August 1942 were 77,134 tons of supplies shipped, of which 51,655 tons, or 67 percent, arrived, including 22,500 tons of fuel (59 percent) and 3,628 tons of
munitions (77 percent). Thirty-seven transports and tankers departed Italian and Greek ports bound for Africa during the month, of which twenty-seven arrived. Of the ten that did not make it, ULTRA figured in the loss of seven: Lerici, Rosolino Pilo, Ogaden, Manfredo Camperio, Istria, Dielpi, and San Andrea. However, as Kesselring stated after the war, it was not fuel or munitions that lacked at Alam el Halfa but surprise and will against an enemy that was too strong. The myth of Rommel’s tanks being halted by the ULTRA-directed sinking of tankers has, however, dramatic appeal and has become a persistent article of legend.

After Alam el Halfa the tonnage war continued. In September the Axis forces received 77,526 tons of supplies, or 80 percent of the amount shipped, but in October receipts dropped to 46,698 tons, only 56 percent of shipments. In November the British finally broke out of the El Alamein position, and the Anglo-Americans invaded Algeria and Morocco. These events guaranteed the doom of the Axis African bridgehead, although six months of hard combat and bitter convoy battles remained to be fought before the last Axis soldiers passed into captivity.

A GAME OF INCHES

The content and detail of the thousands of ULTRA dispatches sent to Cairo in July and August 1942 are truly impressive, and it is not surprising that the assertion of historians like Hinsley and Bennett that ULTRA played a decisive role in denying Panzerarmee Afrika the supplies it required to conquer Egypt has been so universally accepted. However, their histories and those based on them do not consider the thousand-plus dispatches the SIS generated each month from decryptions of British radio traffic, the remarkable timeliness of these decryptions, or Supermarina’s system to exploit that timeliness and the impact that it had on the operational value of Italian decryptions.

This detailed examination of SIGINT’s role—both British and Italian—in the traffic war fought during these critical months suggests that Great Britain’s offensive use of SIGINT was largely negated by Italy’s defensive SIGINT. ULTRA did not deny the Axis armies the supplies they needed to reach the Nile—if indeed a lack of supplies was the cause of the Axis failure. This reality is obscured by the fact that historians have overreached for evidence to prove the power of signals intelligence. Hinsley, for instance, adds to the ULTRA bag of Axis shipping losses on North African routes the Italian steamer Paolina, sunk on 27 August 1942. In fact, Paolina was ferrying a cargo of phosphates from Tunisia and foundered after striking an Italian mine—an outcome due to a navigational error, not ULTRA. The case of Wachtfels is similar. The ship was sunk not because of ULTRA but despite it, falling victim to a submarine while heading to a port in the direction opposite to that which ULTRA indicated. Bennett writes that “the primary advantage of Ultra over all previous types of military intelligence was its reliability. . . .
It was completely trustworthy.”

But in fact ENIGMA decryptions abounded with red herrings. Sometimes decoding, translation, or transcription errors resulted in bad information. On other occasions information was ambiguous or superseded, or represented chatter, even gossip. Dispatches were sometimes of little operational value because they referred to events that were already past.

In many cases ULTRA guided British forces to targets and facilitated attacks. And in many cases SIS PAPAs enabled targets to avoid attacks or to meet them fully prepared. Convoys attacked repeatedly by ULTRA-guided bombers and submarines survived without loss. Strongly escorted convoys forewarned by PAPAs suffered losses. The war against traffic to North Africa was a game of inches, and intelligence was one factor of many—it was never, by itself, decisive.

NOTES


7. “Intelligence from intercepted German, Italian and Japanese radio communications, WWII,” DEFE/3/760, MK 7939, and DEFE/3/761, MK 8006 and 8015, The National Archives, Kew, England. All DEFE materials are at The National Archives [hereafter TNA]. All ULTRA signals were date and time stamped in the format “1523/2/7/42 GMT”—that is, 1523 (3:30 PM) on 2 July 1942, Greenwich mean time. Italian signals were stamped with local time, which was GMT plus two hours. Local times given in intercepted German or
Italian messages were translated into GMT by Bletchley Park and transmitted back to Cairo in that format. In this article all times cited as part of an ULTRA dispatch are GMT, and all other times are local.

8. Fondo Supermarina, “Intercettazioni, estere e informazioni” no. 6, a 18 dal 24-5-1942 al 8-1-1943, message 23265, Archivio dell’Ufficio Storico della Marina Militare, Rome [hereafter Intercettazioni, and message number]. These are sequentially numbered forms with decryption transcriptions sent by the SIS Section B to Supermarina.


10. For example, see Mediterranean Operation Insect (“You were reported by enemy aircraft at 0945C today Tuesday”), Alexandria to Eagle 1258C/21, MK 6C, reel A2147, “Admiralty War Diary,” 21.7.1942, ONI, National Archives and Records Administration, Washington, D.C. [hereafter Diary]. Eagle thus learned it had been reported, three hours and thirteen minutes after the fact.


12. Intercettazioni, 23314, 23315, and 23317; AIR 22/366, Night 3/4 July.


15. AIR 22/366, 9 July. DEFE 3/762, MK 8532 warned that five night fighters were assigned to the convoy’s protection.

16. Intercettazioni, 23577 and 23580.

17. Intercettazioni, 23584, 23587, 23588, and 23592; Diary 11.7.42 Bi-Weekly Opsum No. 37.

18. AIR 22/366, Night 9/10 July; DEFE 3/762, MK 8650.


20. Intercettazioni, 23357.

21. DEFE 3/762, MK 8554.


23. DEFE 3/763, MK 9594.

24. See Gino, “I rifornimenti dal mare,” p. 84.


26. DEFE 3/764, MK 9589; AIR 22/366, 23 July; Cocchia, La difesa del traffico, p. 443.

27. Intercettazioni, 24131, 24132, and 24136.


30. Intercettazioni, 24339; Cocchia, La difesa del traffico, p. 445; DEFE 3/767, MKA 584, 657, and 698.


32. DEFE 3/766, MKA 483 and 865.

33. Hinsley et al., British Intelligence, p. 729.

34. Intercettazioni, 24528 and 24537; DEFE 3/767, MKA 515.

35. DEFE 3/767, MKA 657, 746, 886, and 978.

36. Intercettazioni, 24570; Cocchia, La difesa del traffico, p. 310; AIR 22/366, 4 August; Diary, 6.8.1942, Cositrep No. 473.


38. Cocchia, La difesa del traffico, p. 308; Hinsley et al., British Intelligence, p. 730; DEFE 3/767, MKA 914.


40. DEFE 3/768, MKA 1431; DEFE 3/769, MKA 1607; Hinsley et al., British Intelligence, p. 731.
41. Intercettazioni, 25001 and 25003; DEFE 3/768, MKA 1375; DEFE 3/769, MKA 1523 and 1754.

42. Intercettazioni, 25015, 25016, and 25021.

43. DEFE 3/770, MKA 2021 and 2028. See MKA 2100 and 2127 for information regarding the submarine attack and subsequent towing.

44. Gino, “I rifornimenti dal mare,” p. 85; DEFE 3/771, MKA 2615, timed 0649/24/8/42, disclosed that the field marshal was suffering from “low blood pressure with tendency to fainting attacks due to stomach trouble aggravated by strain of recent weeks and climatic conditions.”


46. AIR 22/366, Night 16/17 August; Cocchia, La difesa del traffico, p. 314; DEFE 3/769, MKA 1833.

47. Intercettazioni, 25103; AIR 22/366, Night 18/19 August; Diary 20.8.1942 Cositrep No. 487.

48. DEFE 3/770, MKA 2181 and 2290.

49. Intercettazioni, 25134; AIR 22/366, Night 20/21 August.

50. AIR 22/366, Night 20/21 August; AIR 27/407, Operations Record Book, 39 Squadron; DEFE 3/770, MKA 2196 and 2268, also 1946, 2208, 2280, and 2313.

51. Intercettazioni, 25208; DEFE 3/770, MKA 2385, also 2308 and 2494.

52. Intercettazioni, 25254; AIR 22/366, 21 August.

53. DEFE 3/770, MKA 2208, 2385, and 2494.

54. For example, DEFE 3/770, MKA 2728, reported Kreta’s expected arrival (“convoy composition not known”) ten hours before the fact. At 1901 on the 25th there was a report that it was stopped off Tobruk with engine damage; DEFE 3/772, QT 26. For Albacores at Malta see War Diary 22.8.1942, Situation Report, Mediterranean.

55. Intercettazioni, 25377; AIR 22/366, Night 26/27 August, 27 August, and Night 27/28 August; Cocchia, La difesa del traffico, p. 322. See DEFE 3/770, MKA 2596 (expected arrival), 2612 (sailing arrangements), 2648 (escort details), and 2691 (air escort), all generated on 24 August. See also DEFE 3/722, QT 120, 0719/27 (course) and QT 181 (air escort details and expected arrival time).

56. Hinsley et al., British Intelligence, p. 732; Cocchia, La difesa del traffico, p. 457; AIR 22/366, 27 August and Night 27/28 August; AIR 27/407, Operations Record Book, 39 Squadron; DEFE 3/772, QT 100 and 182. MKA 2627 and 2628, both sent on the morning of 24 August, gave the sailing arrangements for Istra and Dielpi, respectively.

57. Hezlet, Submarine Operations, chap. 15.

58. Intercettazioni, 25393; Cocchia, La difesa del traffico, p. 327. The fuel delivered to make up the promised 5,700 tons consisted of 117 in Tergestea, 2,545 in Giorgio, 2,749 in Alberto Fassio, and 382 in Kreta.

59. Intercettazioni, 25347.

60. Intercettazioni, 25416, 25467, and 25468.

61. DEFE 3/772, QT 137.

62. For Unione see DEFE 3/772, QT 110, 220, and 272, giving its arrival. Algerino was the subject of QT 290, which stated that it was expected in Tripoli.

63. Intercettazioni, 25432 and 25433; AIR 22/366, 29 August and Night 29/30 August; DEFE 3/772, QT 106, 162, 177, 202, 229, and 277.

64. DEFE 3/772, QT 337, also 229, 289, 367, 417, and 425; AIR 27/407, Operations Record Book, 39 Squadron.

65. Intercettazioni, 25575, 25576, and 25594; AIR 22/366, Night 1/2 September.

66. Hinsley et al., British Intelligence, p. 732; DEFE 3/773, QT 581; DEFE 3/772, QT 280 (routes), 284 (escort and route), 354 (sailing arrangements), and 505 (position and route).

67. Intercettazioni, 25603 and 25623; AIR 22/366, Night 1/2 September; DEFE 3/773, QT 513.


69. Hinsley et al., British Intelligence, p. 732.

70. Bennett, Ultra and Mediterranean Strategy, p. 17.