RECALL

B–17s bombing Messina, Sicily

U.S. Air Force

Air Support of the Allied Landings in Sicily, Salerno, and Anzio

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This study analyzes the operations of the Twelfth Air Force in the Mediterranean theater from 1943 to 1944, specifically in regard to the three Allied amphibious operations at Sicily, Salerno, and Anzio. These landings illustrate a wide range of tactical and operational innovations, doctrine, and coalition air warfare. In the interwar years, the Army Air Corps had given virtually no thought to supporting amphibious operations, yet it had to develop a doctrine for such operations.

Amphibious assaults are the most complex of all military operations to execute because they demand detailed coordination and planning among

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the Army, Navy, and Air Force. Allied planners in the Mediterranean had few historical models as examples in early 1943. The large amphibious landings in North Africa in 1942 had experienced only sporadic resistance from the Vichy French both on the ground and in the air, and the defense never mounted a serious air or naval threat.

Many U.S. Army planners were reluctant to embrace the idea of amphibious operations and believed that landings against an opposed shore had little chance of success. The British were not strong advocates of amphibious operations because the failures at Gallipoli in 1915 and Dieppe in 1942 continued to haunt them. Yet amphibious landings would be critical to the operational success of the Allies in the Mediterranean. General Dwight Eisenhower and his commanders had limited experience in their planning and coordination, and Airmen had not developed a doctrine to support them. The learning curve would be steep and innovation was essential.

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The story of Twelfth Air Force support of the Allied landings contains valuable lessons for today's coalition warfare environment as well as issues of air-ground coordination, close air support, and the strategic effects of airpower. This study is not intended to be an operational history of Twelfth Air Force; rather, it follows the early evolution of the tactical and operational techniques and procedures used and the development of doctrine that influenced the organization of the U.S. Air Force.

The conclusion addresses some of the more important issues of interest today. Twelfth Air Force entered the war with no combat experience, untested doctrine, and tactics that frustrated Airmen and ground commanders alike. As the war in the Mediterranean theater progressed, the Airmen of the Twelfth Air Force developed effective doctrine and tactical innovations that made significant contributions to the Allied strategy and established precedents that are employed in the 21st century. In the end, the study shows the importance of sound doctrine, innovation, and leadership.

Air Operations in North Africa

Operation *Torch* and the eventual Allied victory in Tunisia were executed with considerable friction among the Americans, British, and forces of the Free French. Initial procedures regarding command and control, doctrine, logistics, and employment of airpower were not universally agreed upon, which caused considerable debate between the planning staffs as well as between air and ground commanders. However, the doctrine and procedures developed by the end of the African campaign served as the basic model for campaigns in Sicily, Italy, and northwest Europe. The airpower doctrine advocated by American Airmen laid the foundation for changes to the U.S. Army Air Forces standing field regulations for air superiority, interdiction, and close air support. Twelfth Air Force and the Royal Air Force (RAF) Eastern Air Command were initially unable to achieve air superiority, and poor coordination of the overall air effort frustrated Allied commanders. It became imperative for Eisenhower to resolve these issues and adopt a doctrine providing for employment of air assets to gain and maintain air superiority and provide close air support to ground commanders.[1]

Prewar airpower doctrine for the Army Air Force and RAF focused on strategic bombing and aerial interdiction; thus, both air forces were organized around a substantial fleet of bombers. However, the Mediterranean theater had few strategic—that is, industrial—targets for Airmen to attack. What it did have were vital transportation centers, especially ports. The long-range American heavy bombers were ideal for striking the vulnerable transportation network the Axis armies required for all their supplies.

What American and British airmen lacked was a well-considered doctrine for tactical support and amphibious operations. Allied planners had to adjust their doctrinal mindset and adopt command and control procedures to allow for the integration of all aircraft. Airmen were required to develop air plans in support of winning air superiority, interdiction, close air support, and strategic bombing not just in North Africa, specifically Tunisia, but also in the central Mediterranean.[2] The British Desert Air Force had been operating in the Middle East since 1940 and gained combat experience, but the American Twelfth Air Force arrived in North Africa as an inexperienced and hastily organized unit.

Major General Carl Spaatz, commander of U.S. Eighth Air Force, was directed to organize, train, and equip a new air force, consisting primarily of Eighth Air Force units, to support Operation *Torch*. This force was designated as Twelfth Air Force and given the code name *Junior*. Brigadier General James Doolittle arrived in England on August 6, 1942, to command the new force, which consisted of two heavy bomb groups, two P–38 groups, two Spitfire groups, three medium bomb groups, one transport group, and one light bomb group.[3] U.S heavy bombers in the Mediterranean theater gave Twelfth Air Force the capability to hit vital interdiction targets deep in Italy as well as Axis airfields in southern France.

On October 24, 1942, the headquarters deployed to North Africa with a doctrine well versed in strategic bombing but lacking in tactical support. The Army Air Force had no doctrine for supporting amphibious operations. Issues of command, control, tactics, doctrine, and coordination with the British had been overlooked,

Courtesy Naval Historical Foundation (Collection of ADM H. Kent Hewit)

British LtGen. Bernard L. Montgomery and LTG George S. Patton, Jr., USA, study map of Sicily, July 1943

and Doolittle and his staff initially embraced prewar tactical doctrine. The Twelfth entered the war with a doctrine that gave the supported ground commander control of air assets assigned to support his maneuver while relegating the gaining and maintaining of air superiority to a lesser priority.

FM 31–35 essentially subordinated the role of the air force to the requirements of the ground force commander

During operations in North Africa, the Army Air Force used three primary doctrinal publications specifying employment of air forces: Field Manual (FM) 1–5, *Employment of Aviation of the Army* (1940); FM 1–10, *Tactics and Techniques of Air Attack* (1942); and FM 31–35, *Aviation in Support of Ground Forces* (1942). FM 1–5 addressed the major principles of gaining and maintaining air superiority and of centralized command but, did not emphasize air as an offensive weapon, nor did it identify specific procedures and requirements for close air support, maritime operations, or air interdiction missions. The manual did stipulate that "combined operations of air and ground forces must be closely coordinated by the commander of the combined force and all operations conducted in accordance with a well defined plan." FM 1–10 addressed close air support, maritime interdiction, and bomber escort missions, but the procedures identified were not realistic in terms of effectiveness. FM 31–35 was a joint ground and air attempt at stipulating a doctrine for air support. The manual paid only slight attention to the techniques of close air support, ignoring procedures for battlefield operations and prioritization of targets and missions.

FM 31–35 essentially subordinated the role of the air force to the requirements of the ground force commander:

The ground force commander, in collaboration with the air support commander, decides the air support required. . . . The final decision as to priority of targets rests with the commander of the supported unit. The decision as to whether or not an air support mission will be ordered rests with the commander of the supported unit.

British and American airmen advocated centralized command of all air assets by the air commander, while most ground commanders believed they should control all ground support aircraft to prevent airmen from tasking these aircraft with other missions. The air forces supporting the Allied invasion of North Africa had little time to train and prepare for the unique support that would be required during Operation *Torch*. Airmen of Twelfth Air Force and Eastern Air Command would have to develop many tactical and joint procedures, while simultaneously convincing ground commanders of the importance of adopting the principle of a centralized air command.

Operation *Torch*

General Eisenhower, following a course that was consistent with Army doctrine but frustrating to Airmen, did not designate a senior Airman to command the air forces supporting Operation *Torch*. General Doolittle commanded the Twelfth, and Air Marshall Sir William Welsh commanded Eastern Air Command. The headquarters of

Waiting to load tanks in Tunisia 2 days before invasion of Sicily, July 1943

NARA/War & Conflict

the two air forces were not collocated, contributing to command, control, and coordination problems for providing air support. Neither commander was able to develop a clear understanding of events taking place ashore. Eastern Air Command provided air support to Eastern Task Force while XII Air Systems Command provided support to Western Task Force and elements of XII Fighter and Bomber Commands supported Central Task Force.

Subordination of the air assets under the ground task force commanders and lack of unity of command of air assets prevented Eisenhower's air planners from developing a coordinated air plan to support the theater of operations. Individual ground commanders saw the enemy to their front and associated air operations as the most vital area of the campaign and wanted the air forces in their area to support them exclusively. Ground commanders agreed that gaining and maintaining air superiority, as advocated by Airmen, was essential, but none wanted to give up tactical air support to achieve it.

During the first weeks of fighting ashore, ground commanders continually complained about being attacked by German Stuka dive-bombers and demanded that the air force provide air umbrellas to cover their front. Air commanders argued that the most efficient way to eliminate the threat was to concentrate on gaining air superiority and attack the Stukas at their airfields. Many ground commanders were not familiar with the capabilities of individual aircraft and assigned missions to planes that could not effectively execute them, often suffering severe loss in the attempt. While the Germans reaped the benefits of air superiority in the winter of 1942–1943, the Allied air forces remained subordinated to the ground commanders executing an uncoordinated air campaign with minimal effectiveness.

Northwest African Air Force

By December 1942, Eisenhower had grown increasingly frustrated with coordinating the efforts of Twelfth Air Force and Eastern Air Command. The time had come to embrace the theory of American and British airmen. He informed General George Marshall, Chief of Staff of the U.S. Army, that in order to better coordinate his air assets, a single air commander was required, and he recommended General Spaatz. On January 5, 1943, Spaatz was appointed Air Commander in Chief of the Allied Air Forces of *Torch*, commanding

Twelfth Air Force, Eastern Air Command, and various French air units.[4]

Also in January, President Franklin Roosevelt and Prime Minister Winston Churchill met at Casablanca to discuss the direction of Allied strategy after the Tunisian campaign. Among issues decided was the reorganization of the air forces supporting *Torch*. The Combined Chiefs of Staff agreed that Eastern Air Command and Twelfth Air Force should be organized into one air force. On February 3, Spaatz ordered the formation of a planning committee to identify the exact composition required for a single air force. The committee recommended that a combined American and British headquarters be formed and designated the Northwest African Air Command, consisting of Twelfth Air Force (to include all Allied heavy and medium bombers and long-range fighters), Tunisian Air Command, Coastal Defense Command, Moroccan Air Command, and a consolidated Air Service Command.

Roosevelt and Churchill decided at Casablanca to designate General Eisenhower as Commander in Chief of the Mediterranean theater of operations and adopt the organizational command structure used by the British Desert Air Force and Eighth Army. British Air Chief Marshal Sir Arthur Tedder was designated as Commander in Chief, Mediterranean Air Command (MAC), which commanded all aviation assets in the Mediterranean.

The Northwest African Air Force (NAAF) was officially activated on February 18, 1943, with six subordinate units: Northwest African Strategic Air Force (NASAF), Northwest African Tactical Air Force (NATAF), Northwest African Air Service Command; Northwest African Coastal Air Force, Northwest African Training Command, and Northwest African Photographic Reconnaissance Wing.[5] The creation of NAAF allowed implementation of a coordinated air campaign, providing increased operational and tactical flexibility. Air superiority became the priority, and an offensive mindset dominated the employment of air assets. This doctrine set the precedent for future air operations and would soon receive its initial test.

An Airpower Victory

Operation *Husky* was the first operation in which air commanders exercised centralized control of air assets under NAAF, employing them in a coordinated effort supporting all aspects of the invasion. Air assets were used to provide cover for the naval armada, interdiction to isolate the battlefield, and close air support for ground forces. Gaining and maintaining air superiority was the top priority and was achieved by the bombardment of enemy airdromes on Pantelleria and Sicily. The relentless pressure of Allied air forces destroyed hundreds of enemy aircraft and compelled the Germans and Italians to evacuate their Sicilian airfields, leaving behind some 1,100 aircraft. Embracing lessons learned in Tunisia, the Allied air plan for *Husky* was designed around four primary missions: neutralizing enemy air forces, disrupting lines of communication, isolating the battlefield, and providing close air support. Other tasks included protecting the Allied naval armada, coordinating naval and air operations, reinforcing convoys, performing airborne assaults, protecting rear areas from enemy air attacks, and conducting air-sea rescue. The air plan consisted of four phases covering preparatory operations, assault phase, assault on Catania, and the reduction of the remainder of Sicily.[6] Preparatory operations included conducting Operation *Corkscrew* (capturing the island of Pantelleria and its critical airfield), interdicting enemy reinforcement and supply of Sicily and Sardinia, neutralizing Axis airfields and gaining air supremacy, building up air facilities to make Malta an "aircraft carrier" for invasion support, and training troop carrier and glider pilots to transport airborne forces.

NATAF assumed planning responsibility for employing tactical air forces while Doolittle planned strategic operations. The *Husky* air planners had over 4,000 operational aircraft at their disposal, divided among 146 American squadrons and 113.5 British squadrons, against up to 1,600 Axis aircraft.[7] In order for Allied aircraft to operate freely over the Sicilian Straits and eastern Tunisian plains, airmen would have to eliminate German radar direction-finding stations on Pantelleria and destroy enemy air assets on the island.

Seizing Pantelleria would neutralize German long-range radar stations and allow Allied fighters to use the airfield and help aircraft from Malta protect the invasion convoys and beaches during the assault phase of *Husky*. It would also eliminate the ship-watching stations that reported Allied shipping movement. The Axis defense consisted of 15 batteries along the coast of the 42.5-square-mile island, with guns ranging from 90mm to 120mm, with the largest concentration in the north where any amphibious assault would have to occur. A contingent of approximately 100 aircraft, predominantly Italian fighters, was stationed at the airfield.[8]

The NAAF objectives for *Corkscrew* were to destroy any possibility of air interference from the island, blockade

British Ministry of Defence

Royal Air Force crew services British Spitfire on captured Sicilian airfield

it against reinforcement by sea, reduce the coastal defenses to permit landing operations, reduce morale of the garrison by continuous bombing, and provide air cover for naval vessels and landing craft. Strategic bombing began on May 15, and 1,267 tons of bombs were dropped by May 30, which almost neutralized the airdrome and prevented the movement of Axis shipping. Air sorties by medium and fighter-bombers, 50 to 60 per day, rendered the port unusable. Heavy bombers began bombing on June 1, focusing on the coastal gun positions. The period from May 30 to June 11 saw over 4,770 sorties, which saturated the sky with so many aircraft that planes had to circle the target area until their turn to attack. Bomber runs were immediately followed by antipersonnel and strafing attacks. The British First Infantry Division embarked on amphibious shipping on June 10 and began sailing toward Pantelleria for an assault at 1100 on June 11. As the first assault craft reached the shore, enemy resistance ceased except for sporadic small arms fire on one landing beach. The island was declared secured on June 13, the first strategic position the Allies captured through the use of airpower.[9]

Operation *Husky*

Immediately following operations in Tunisia, the strategic air force began modest operations against enemy airdromes in Sicily, Sardinia, southern Italy, and the eastern Mediterranean, as well as submarine bases and communication and industrial targets, until D–7. Winning and maintaining air superiority was the objective of the bombing. From D–7 until D–Day, the focus of strategic bombing was to eliminate the enemy air force, with priority given to German rather than Italian airdromes. These operations were conducted day and night, keeping unrelenting pressure on the *Luftwaffe*. A tactic called *Intruder* operations was introduced, aimed at aircraft approaching their airdromes after dark. A single fighter, or "lone wolf," would locate an enemy formation and follow the aircraft to their home base. As the formation circled over the airfield preparing to land, the lone wolf attacked from the rear, destroyed as many aircraft as possible, and disengaged.[10]

The ports of Messina, Palermo, and Catania were vital enemy lines of communication and were bombed continuously. Other targets of interest were rail marshalling yards and industrial and communication targets. The pre-invasion bombardment by the strategic air force caused the opposing air force to withdraw from Sicilian airfields and seek shelter on the Italian mainland. That significantly reduced enemy ability to provide air support to ground forces defending the island.

While the strategic air force neutralized enemy airfields, fighters assigned to the Coastal Air Force and others based on Malta provided convoy protection to the massive Allied naval armada approaching Sicily from North Africa, which included 945 ships and landing craft of the U.S. Navy and 1,645 ships and landing craft of the Royal Navy. On D–2 and D–1, some 570 sorties covered the western convoys and 540 provided local defense. The convoy protection the air forces provided prevented the enemy from attempting any significant attacks. Only one strike by six enemy aircraft attempted to disrupt the convoys on D–1, and it was easily defeated.[11] NATAF aircraft were used extensively for interdiction prior to the main assault. XII Air Systems Command and British P–51s participated in newly implemented daylight intrusion raids known as *Rhubarbs*. These missions were carried out under low overcast conditions, 500 to 1,000 feet, against aircraft on the ground, motor transport assets, locomotives, and shipping. Two aircraft executed the mission, one providing cover and the other attacking the target at a speed of 270 mph. The elements of surprise, observation, and coordination were essential to these missions, and intense training was developed that made them highly successful.

air superiority became the priority, and an offensive mindset dominated the employment of air assets

Allied assault forces encountered minimal resistance on D–Day, and by 0600 on July 10 all landings were complete and the infantry began advancing inland. Air planners were not able to provide enough fighter aircraft for continuous coverage over the assault beaches due to the operational conditions of the Pantelleria and Malta airfields, short time on station due to the distance of these airfields from Sicily, and the large number of fighters assigned to bomber escort. Air and ground commanders agreed that fighters would provide continuous cover over two of the landing beaches during daylight. All landing areas had continuous coverage from 0600–0800, 1030–1230, and 1600–1730, the last hour and a half daylight; and a reserve wing was to be ready to provide support as required. Enemy air attacks on D–Day were limited to about a hundred sorties, compared to 1,092 Allied sorties, and sank 12 ships by the evening of July 10 at a price of 15 aircraft destroyed and 11 damaged.[12]

Although the presence of enemy aircraft over the beaches and shipping was minimal, the Navy argued that tactical air support for the amphibious assault was inadequate, saying that there were only 10 aircraft over the beaches on average and often none. It also complained about the limited number of aircraft that prevented the air force from providing patrols at more than one altitude. NAAF airmen pointed out to the Navy that because many aircraft had been fired on by naval and merchant vessels, combat air patrols were moved from 5,000/8,000 feet to 10,000/14,000 feet. Because many ships were anchored up to 6 miles from the beaches, it was difficult for the air force to cover the beaches, landing craft, and ships simultaneously.[13]

Air superiority was obtained through the unrelenting punishment of airfields, causing the enemy to abandon most Sicilian airfields and withdraw to Italy while leaving behind 125 fighters to operate from Sicily. Although aircraft from Italy participated in the defense of the island, their time on station was significantly reduced due to the distance from the southern Italian airfields to Sicily. That minimized the threat to the invasion force and strengthened the airmen's argument for making the destruction of the enemy air force a top priority. The conduct of airborne operations was a fiasco during the insertion phase and revealed that extensive training, coordination with all units, and less complex flight plans were required to ensure future success and avoid fratricide. Coordination between ground and air commanders improved, but tension remained. Ground commanders still desired partial control of tactical aviation supporting their units, although few could deny the success of the *Husky* air plan. A more efficient tactical air request system was needed to process requests for close air support in a more timely fashion and get planes over the target in minutes versus hours. Still, *Husky* was a strategic success and contributed to the resignation of Mussolini on July 25 and the armistice the Italians signed on September 3, 1943.

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Operation *Avalanche*

The success of *Husky* opened the door for the Allies to invade Italy and caused Germany to shift forces from Western Europe and Russia to defend against the Allied offensive in the Mediterranean. With the collapse of the Vichy French in North Africa and the surrender of Italy, Germany was compelled to fight alone on multiple fronts with decreasing resources. Operation *Avalanche* allowed the Allies to maintain the momentum gained in Sicily, secure airfields that would be used to support operations in southern France, Austria, and the Balkans, force Germany to move forces from the Eastern Front to Italy, and provide a shorter sea supply route to the Soviet Union. The soft underbelly of Germany was exposed.

The air plan for *Avalanche* consisted of pre-invasion operations, D–Day operations, and operations subsequent to D–Day. Air Marshal Tedder assigned Spaatz and NAAF to develop the air plan. The principal tasks were to neutralize the enemy air forces, protect the landing beaches, assault convoys and subsequent operations ashore, prevent/interdict movement of enemy forces into the assault area, provide close/direct air support, and furnish air protection to the Baytown assault force. NAAF planners estimated that the *Luftwaffe* had approximately 380 fighters and fighter-bombers and 270 bombers in the immediate vicinity to defend against the invasion, with an additional 60 fighters and 120 bombers from Sardinia. The Italian Air Force consisted of some 365 day fighters and 275 bombers. NAAF had over 2,060 aircraft, to include 346 heavy bombers, 388 medium day bombers, 122 medium night bombers, 140 light bombers, 528 fighters, 160 fighter-bombers, and 32 night fighters. Aircraft supporting *Avalanche* came from British units based at Malta and the Middle East, and the XII Air Support Command (ASC).[14] An additional 12 British Barracudas, 12 Albacores, and 56 Martlets operating from the 2 British fleet carriers were available to support the invasion.

The commander for all tactical aviation from NATAF for *Avalanche*, Major General Edwin House, was not tasked with supporting any operations until D–Day. The mission of XII ASC was to destroy enemy air strength in aerial combat, bomb Axis airfields, and disrupt communications throughout Italy to prevent enemy reinforcements from reaching the assault area. Increased night attacks were ordered to destroy enemy equipment and defense installations, provide fighter cover over the assault convoy and assault areas, and provide direct support to the ground forces. Night operations by Allied airmen proved vital throughout *Avalanche*. House would exercise control over a coalition air force of 3 groups of U.S. P–38s, 2 groups of A–36s, 7 squadrons of P–51s, 1 group of U.S. Spitfires, 4 squadrons of British Beaufighters for night operations, and 18 squadrons of RAF Spitfires.

During May, NASAF bombers intensified their efforts against targets in Italy, striking airfields, marshalling yards, harbors, lines of communication, shipping, and other facilities to reduce the Axis ability to reinforce troops in Sicily. Doolittle's bombers maintained a concentrated effort until D–Day of *Avalanche*. NASAF airmen flew over 7,000 sorties and dropped in excess of 10,000 tons of bombs during the preparatory period.[15] The NAAF preparatory air campaign significantly reduced enemy air strength prior to *Avalanche* and helped break the morale of the Italians, contributing to Rome's surrender on September 8, 1943.

The Invasion of Italy

D–Day for *Avalanche* was September 9, 1943. General House's primary mission was to maintain continuous air cover over the assault beaches, which proved difficult due to the distance between Salerno and the Sicilian airfields. The bulk of coverage came from the P–38 squadrons, and House assigned two sorties per day per aircraft, providing an hour of coverage each over the assault area. The British carrier-based Seafires operating from HMS *Unicorn*, *Battler*, *Attacker*, *Hunter*, and *Stalker* were used to augment the aircraft operating from Sicily and conducted 713 sorties during the first 4 days of *Avalanche*.

D–Day operations were successful, and the ground forces, encountering heavier German resistance than expected, established a beachhead and

began advancing inland to assigned objectives. NAAF airmen flew 1,649 sorties on D–Day and dropped over 450 tons of bombs, while carrier aviation flew over 200 sorties. The *Luftwaffe*, flying only 60 to 70 sorties, harassed the invasion force throughout the day but did not have a significant impact.

The *Luftwaffe* used new radio-controlled glide bombs. The Fritz X (PC 1400 FX) was a 3,000-pound armor-piercing, radio-controlled bomb for hitting warships. The Henschel 293 was a rocket-propelled, radio-controlled glide bomb with a 660-pound warhead for use against merchant ships and transports. Glide bombs were guided visually by radio from an observer flying at 20,000 to 23,000 feet. Allied commanders had little information on glide bombs and had not developed tactics to defend against them.

To prevent enemy air penetration of the assault beaches and convoys, XII ASC provided three layers of coverage. House ordered high cover to be provided by Spitfires from 16,000 to 20,000 feet, medium cover by P–38s and Seafires from 10,000 to 14,000 feet, and low cover by P–51s from 5,000 to 7,000 feet. With this plan, House was able to ensure continuous air coverage over the assault area with an average of 36 land-based aircraft. The additional 110 carrier-based Seafires increased the number of aircraft over the beaches to 58 during the daylight hours of D–Day. The effectiveness of the fighter protection is evident in the fact that only one vessel was sunk and one landing ship damaged.[16]

Forward air controllers were employed during *Avalanche*. They were used in the Mediterranean by the British Desert Air Force in North Africa but not by the U.S. Army Air Force until Salerno. This command and control system was referred to as "Rover Joe" by U.S. troops and "Rover David" or "Rover Paddy" by the British. The forward air control team, usually consisting of a combat-experienced pilot and one army officer, positioned itself overlooking the front line. Infantrymen encountering resistance that required air support radioed the Rover unit, which passed the request to the fighter control center.

GEN Dwight D. Eisenhower, USA, and British LtGen. Bernard L. Montgomery viewing Italian mainland from Messina

U.S. Army (Longini)

If a request was approved, the Rover unit contacted designated aircraft on station and directed them to the target.

As in Sicily, the focus on gaining and maintaining air superiority, combined with convoy protection, meant aircraft for close air support of the infantry were not always available. Indeed, it was not until D+4 that day close air support bombing was feasible.[17] Fighters and fighter-bombers provided the most responsive close air support and could usually be over the target within 30 to 45 minutes of request. Cooperation between ground, air, and naval commanders improved, but the Navy still complained about inadequate air cover and the Army about the lack of timeliness in processing air requests.

The Germans counterattacked on September 12 with four *Panzer* divisions in an effort to cut the Allied line in half and push it back to the sea. NAAF aircraft then began a massive carpet-bombing effort on September 13, delivering over 1,300 tons of bombs on German forces. On September 14, the Germans penetrated the Allied front and advanced to within 1,000 yards of the beach. Tedder, recognizing the severity of the situation, directed all NAAF efforts to the Salerno fight. The most intense combat took place September 14–15. NAAF airmen flew hundreds of missions with devastating results and severely damaged the *Panzer* units and virtually destroyed the 1st Battalion, 3d German Paratroop Regiment. The German losses were so heavy that they were forced to pull back by September 16, allowing the Allies to go on the offensive.[18]

The Allies established significant combat forces on the Italian mainland with *Avalanche* and continued to attrit the German war machine. However, the initial success soon turned into a stalemate and the tenacity of the German defenders further challenged the ability of air and ground commanders to coordinate operations optimizing the combined effects of available combat power.

The Mediterranean Air Force

On December 10, 1943, the MAC was disbanded and the Mediterranean Allied Air Force (MAAF) was established. Tedder was appointed Air Commander in Chief Mediterranean with Spaatz as his deputy. On January 12, 1944, Lieutenant General Ira Eaker, previously commander of Eighth Air Force, assumed command of MAAF, which consisted of Mediterranean Allied Strategic Air Force (MASAF), Mediterranean Allied Tactical Air Force (MATAF), and Mediterranean Allied Coastal Air Force. The primary missions of MAAF were to support the combined bomber offensive, support ongoing ground operations in the Italian campaign, keep the sea lines of communication open, and protect supply points. Twelfth Air Force also reorganized during this period with Major General John Cannon assuming command on December 21, 1943. On November 1, 1943, Fifteenth Air Force was established, consisting of the six heavy bombardment groups and two long-range fighter groups previously assigned to Twelfth Air Force. Fifteenth Air Force would primarily be part of the combined bomber offensive. The transfer of aircraft from Twelfth Air Force began the process of changing it from an all-purpose to a strictly tactical air force.

Air Plan for Operation *Shingle*

Operation *Shingle* had three phases. Phase I, from January 1 to 13, 1944, focused on attacking communication targets in northern Italy to conceal the Allied intention to land at Anzio and make the Germans believe an assault against Civitavecchia was imminent. Phase II, when airmen aimed to destroy airfields, aircraft, and communications and isolate the beachhead, ended on D–Day, January 22. Phase III extended to the end of the operation and included maintaining air cover over the beachhead, supply convoys, and naval vessels and providing close air support to the assault forces.[19] Planners estimated that the Germans had some 270 combat aircraft in Italy, 95 in southern France, and 190 in Greece and the Aegean.

MAAF airpower overwhelmed the Germans with over 2,600 aircraft. The XII ASC had 500 fighters and fighter-bombers plus 369 medium bombers in the tactical bomber force. During Phase I, interdiction of German bridges, rail lines, and marshalling yards was the primary mission of the bomber force. Aircraft of MASAF and MATAF flew 12,974 sorties, dropped 5,777 tons of bombs, and destroyed over 90 enemy aircraft.[20]

During Phase II, Allied bombardment of German airfields intensified, and MAAF aircraft flew 9,876 sorties, dropped 6,461 tons of bombs, and destroyed over 50 enemy aircraft. The XII ASC, reinforced with 7 Desert Air Force squadrons, flew 3,340 sorties during the week prior to D–Day and more than 5,500 during Phase II. Airfields were made unserviceable by cratering the runways with 500-pound demolition bombs, and aircraft were destroyed on the ground with 20-pound fragmentation bombs an hour later.

Another tactical innovation was bombing airfields. B–17s and B–24s escorted by P–38s flew at normal altitudes to be picked up by German radar. P–47s then took off behind the bombers and flew below enemy radar, overtook the bombers, and climbed to a higher altitude while approaching the target area. The P–47s were to arrive over the airfield 15 minutes early to catch the enemy fighters scrambling to intercept the bombers. After the P–47s destroyed the fighters, the bombers arrived over the target to drop their bombs unimpeded.

D–Day Operation *Shingle*

On January 22, the assault forces landed at Anzio and Nettuno and encountered minimal resistance, thanks to complete surprise. An armada of 154 American vessels and 215 British and Allied ships supported the invasion force. Allied airmen flew over 1,200 sorties while the *Luftwaffe* managed only 140. General Cannon delegated control

U.S. and British troops landing near Gela, Sicily, July 10, 1943

U.S. Army (Osborne)

of all tactical aircraft of the MATAF to XII ASC, assigning it responsibility for support to the assault force and Fifth Army, while the Desert Air Force supported the British Eighth Army.

To enhance cooperation between the ground and air commanders, Fifth Army and XII ASC personnel met nightly to discuss that day and plan for the next. They built a plan identifying targets for destruction and establishing the order of attack. That improved coordination between the air and ground teams and fostered understanding of objectives, air support, and potential problems. Another new method to enhance air support was the "call targets" system, which consisted of a telephone call from Fifth Army to XII ASC when emergency air support was needed. The XII ASC then directly called a unit standing by for "call targets" and assigned it to the attack.

Using lessons learned from *Avalanche*, and recognizing the difference in spotting procedures practiced by the Army and Navy, U.S. P–51s were used to spot for the ground forces while British Spitfires spotted for the Navy. The Rover units developed "Cabrank" procedures to enhance their proficiency. Fighters on Cabrank missions were assigned alternate targets prior to takeoff. Cabrank aircraft arrived over the battlespace at 30-minute intervals. Once on station, they waited 20 minutes for Rover tasking. If they did not get it, they attacked previously assigned alternate targets. Rover units often had difficulty locating observation positions to direct aircraft onto targets threatening the infantry. The solution was the "horsefly" technique, which consisted of an L–5 flying at 6,000 feet either *over* or 5 miles *behind* the front lines with an Army observer aboard. Although the horsefly maintained contact with the Rover unit, it could direct aircraft forward to designated targets. Aircraft of MATAF also flew "pineapple" missions against moving targets. Reconnaissance aircraft identifying these targets reported to the Army Air Control Center and passed the information to pineapple-designated aircraft on alert. This proved extremely efficient, and often the aircraft were over the target within 15 minutes of the request.[21]

The German Counterattack

Field Marshal Albert Kesselring launched a vigorous counterattack on February 4 that lasted until early March. The most intensive fighting took place February 16–22. German forces struck with tenacity and at one point penetrated the American lines and advanced to within a few miles of the Allied beachhead. Due to the desperate situation on February 16, XII ASC, augmented by the strategic and tactical air force, committed 813 bombers and fighter-bombers, which dropped over 970 tons of bombs to repulse the counterattack.

On February 29, the Germans attacked with three divisions and penetrated 1,000 yards into the line of 3d Infantry Division. The MAAF airmen flew 796 sorties on March 2, dropped over 600 tons of bombs, and helped Allied ground forces stop the offensive.[22] Although Kesselring failed to break through, nearly 3 months would pass before the Allies could finally breach the Gustav Line and advance on Rome.

The XII ASC and MAAF airmen dominated the skies over Anzio and

Italy. Although the *Luftwaffe* made sporadic harassing raids over Allied shipping and the battle area, MAAF won air superiority and did not relinquish it. From D–Day until February 15, 1944, its airmen flew 27,204 sorties, dropped 13,035 tons of bombs, and destroyed 326 enemy planes at a cost of 96 Allied bombers and 133 fighters, lost mostly to German antiaircraft artillery.[23]

The Mediterranean theater of operations proved to be a testing ground for American Airmen in the development of tactics, techniques, and procedures for the employment of airpower in a combat environment. The air-ground operations yielded some of the same lessons gathered earlier by Allied forces in New Guinea in the Southwest Pacific beginning July 1942. Additional lessons gained over the Mediterranean in coordination with ground commanders benefited airmen and soldiers landing in Normandy and southern France.

Twelfth Air Force, within 3 months of activation, deployed to North Africa in October 1942 to participate in Operation *Torch*. Its Airmen arrived without experience in combat or in joint, coalition, or amphibious operations. Dogged determination, innovative thinking, and sound leadership helped them overcome the friction and fog of war. The *Luftwaffe* fought cleverly and tenaciously while introducing new weapons such as the radio-controlled glide bombs. Twelfth Air Force adapted quickly and became an efficient and effective combat force that helped bring the collapse of Italy and of *Wehrmacht* forces in the Mediterranean theater.

the Mediterranean theater proved to be a testing ground for American tactics, techniques, and procedures

The coordinated air campaigns that supported the amphibious landings of Sicily, Salerno, and Anzio allowed the Soldiers of Fifth and Eighth Armies to secure beachheads and advance inland with minimal interference from enemy aircraft. Allied airmen quickly established air superiority and denied the enemy the ability to use their rapidly declining air assets effectively. As in the Pacific and Southwest Pacific theaters, the skies over Italy and the Mediterranean were by no means devoid of enemy aircraft; however, the sorties the Germans could fly inflicted only moderate damage and failed to keep the Allies from achieving their strategic objectives.

The intensity of the Allied air campaign compelled the Germans to withdraw most of their aircraft first from Sicily, then from southern Italy. That reduced their ability to mass their air effort to oppose the landings due to the distance from the airfields to the beaches. The Allied air effort in the Mediterranean, along with ground operations, drained German combat power that could have been used on the Eastern front or to reinforce France. Berlin was forced to fight a three-front war with inadequate resources.

The Italian capitulation forced the Germans to defend Italy alone with their overstretched forces. Twelfth Air Force and their British counterparts helped secure the Mediterranean lines of communication, and with most of Italy under Allied control, U.S. and Free French forces were able to invade southern France in August 1944. This invasion secured the port of Marseilles, which played a major role in relieving the Allied logistic crisis of late 1944. The aerial interdiction campaign in the Mediterranean disrupted the flow of supplies for the German army. Reopening the Mediterranean greatly economized on shipping around Africa with major benefits for the antisubmarine war. Allied airmen helped achieve major strategic goals. More important, the lessons learned in Italy helped refine Air Force doctrine and enhanced the effectiveness of the air-ground team. **JFQ**

NOTES

[1] David Syrett, "Northwest Africa, 1942–43," in *Case Studies in the Achievement of Air Superiority*, ed. Benjamin Franklin Cooling (Washington DC: Office of Air Force History, 1994), 224.

[2] Ibid., 225.

[3] *History of the 12th Air Force*, vol. 1, chap. I, 2, in USAF HRA Doc. 650.057–3, 1942–1945.

[4] Ibid., chap. X, 5.

[5] Daniel R. Mortensen, *A Pattern for Joint Operations: World War II Close Air Support North Africa* (Washington, DC: Office of Air Force History and U.S. Army Center of Military History, 1987), chart 2.

[6] Wesley Craven and James Cate, *The Army Air Forces in World War II. Europe:* Torch *to* Pointblank *August 1942 to December 1943* (Chicago: The University of Chicago Press, 1949), 445.

[7] *Twelfth Air Force in the Sicilian Campaign*, 1, in USAF HRA Doc. 650.01–2, 1942–1944.

[8] Ibid., 430.

[9] Ibid., 8.

[10] C.J.C. Molony, *History of the Second World War: The Mediterranean and the Middle East* (London: Her Majesty's Stationary Office, 1973), vol. V, 34.

[11] Ibid., 100.

[12] Ibid.

[13] Ibid., 451.

[14] *Fifth Army History*, 52, in USAF HRA Doc. 680.01, vol. I, 1 October–15 November 1943.

[15] *Operational Plan* Avalanche, Headquarters, XII Air Support Command, 81, in USAF AHRA Doc. 651.430–3, August 1943.

[16] Molony, 283.

[17] Alan Wilt, "Allied Cooperation in Sicily and Italy 1943–1945," in *Case Studies in the Development of Close Air Support*, ed. Benjamin Franklin Cooling (Washington, DC: Office of Air Force History, 1990), 116.

[18] Colonel Rudolf Boehmler, Commanding Officer, 4th German Paratroop Regiment, 21, in USAF HRA Doc. K113.310.8, 1943–1945.

[19] Mediterranean Allied Air Forces, *Operations in Support of* Shingle, 6, in USAF HRA Doc. 622.430–1, 1 January–15 February 1944.

[20] Ibid., 7.

[21] Wilt, 219.

[22] "Brief of Report by Fifth Army to HQS. Allied Central Mediterranean Forces" in USAF HRA Doc. 680–619–2, March 4, 1944.

[23] *Operations in Support of* Shingle, 17.