

Air and Space this Week

Item of the Week

TARANTO: PRELUDE TO PEARL

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A small group of obsolete attack planes, launched from a British aircraft carrier, made a bomb/torpedo attack on the entire Italian battle fleet in Taranto harbor, causing considerable damage and demonstrating the danger to surface ships posed by attack planes. This attack came more than a year before a similar attack on Pearl Harbor. Other nations took notice...

WAR SITUATION IN 1940

War clouds gathered over Europe in the late 1930s, foreshadowing the global conflict to come. Germany's invasion of Poland on September 1, 1939, set off a conflict that would soon go global. Britain and France declared war on Germany. Britain's RAF staved off invasion, but their ground forces had to be evacuated from Dunkirk. Transport and communications by sea with other British presence in Egypt and the Middle East was maintained at first via the Mediterranean and the Suez Canal, unmolested.

Then, Italy entered the War on June 10, 1940.

ITALY DECLARES WAR

The British Mediterranean Fleet was inadequate to protect the sea lanes to Suez against Italian battleships. Fleet attention was also split when aircraft based in Italy began bombing the important British naval base at Malta. Some of the BMF's ships had been transferred to the Home Fleet, leaving only a small naval force comprising a few smaller warships and an aircraft carrier converted from a battleship.

The Italian Navy was built around its six battleships. Two were brand new, the *Littorio* and the *Vittorio Veneto*. The other four were the *Giulio Cesare*, *Caio Duilio*, *Andrea Doria*, and the *Conte di Cavour*, two of which had just completed an upgrade. Several cruisers and destroyers rounded out the fleet.

The Italian forces had the strength to block access to the Suez, but they needed a base that was near the action, capable of providing the support needed in a timely fashion, and capable of being defended. The Italians chose to concentrate their entire navy in a defensible base from which to sortie as needed. That base chosen was in a place called Taranto, right where the Italy boot heel attaches to southern Italy. It was a double harbor; the outer section was large enough

to accommodate battleships, and the inner part could handle smaller warships. It had enough fuel and other logistical assets to support the fleet. It had formidable anti-aircraft guns, but it did not have much in the way of air support. Fighter bases were too far away for defensive aircraft to be summoned on short notice. Taranto did have some supporting aircraft, but none of them, near or far, could fly at night.

The Italians chose to berth its ships in a cluster for mutual anti-aircraft fire support. They wanted to be able to get into the proper position for mutual protection quickly. The battleship captains had been told to be cautious in the deployment and actions, since the Italian military construction infrastructure could not replace them, or even repair their battle damage quickly. Of course, bringing all the naval forces together in one place also made them a bigger collective target. Considerable effort was made to make the base more secure, including the installation of anti-torpedo nets, barrage balloons, and numerous anti-aircraft guns. Combined fire from both base and ships could be quite formidable.

THE AIR RAID: PREPARATION

Admiral Andrew B. Cunningham commanded the British Mediterranean Fleet. It was his job to neutralize the threat to Allied operations posed by the Italian battleships. He was outgunned, but he had an asset that could prove decisive, he had an aircraft carrier, the *HMS Eagle*. The original attack plan was amended with joy when the modern aircraft carrier, *HMS Illustrious*, became available for Mediterranean operations, but that increase was partially reduced by a breakdown in the *Eagle*. Cunningham wanted to strike a strong blow against the Italian fleet using airplanes launched from *Illustrious* alone.

Aviation technology was in a state of flux in 1940. The conversion from fabric-covered wooden airframes to all-metal construction, and from two wings to one, was still underway. All of the attack planes on the *Illustrious* were former. They were obsolete, they were slow, but they could carry the extra fuel needed for the distance and a bomb or torpedo, too.

The airplane was called the "Fairey Swordfish." Although obsolete, a group of them, properly armed and led, could cause a lot of damage to a massed target.

The battle plan was for the *Illustrious* and *Eagle* to carry a total of 30 Swordfish and launch them for an attack on Taranto. Boldly, the mission planners set October 21 as the day of the attack, the anniversary of Nelson's victory at Trafalgar. A portent of success, indeed maybe, but the thought of closely following that anniversary path would not necessarily hearten Admiral Cunningham, given [Nelson's fate](#) ...

The number of planes involved would require both carriers to launch waves, one where each carrier supplied planes an additional wave from *Illustrious*. Some would carry torpedoes or bombs for sinking the battleships. Others would carry a set of flares they would lay inshore of the ships so as to backlight them, making them easier for them to be seen and targeted. A third group of Swordfish would carry a mixed load of flares and bombs. The large distance from Taranto to the launching ships required the Swordfish to carry extra fuel, reducing their bomb load capacity.

A series of problems had to be solved for the attack to have a chance of success. Extra tanks of fuel solved one of them, but at the expense of a crewperson staying behind. The attack was planned for nighttime, using only moonlight to see their targets. The biggest problem, however, was the fact that when aerial torpedoes were dropped, they would make a deep dive in the water before coming back to the depth set on its controls before launch. The book said that the deep dive would go to 75 feet or so; Taranto's harbor was only 40 feet deep, and less in some of the parts of the inner harbor.

The shallowness of the harbor led to the (mis)perception that ships there were invulnerable to torpedo attack. The Italians had little air cover, but they had a lot of anti-aircraft guns and 90 barrage balloons; their mooring cables would pose a serious danger to low-level attackers.

THE AIR RAID

The *Illustrious* was a front-line aircraft carrier. The *Eagle* was not, it was a conversion from a cruiser. Three days before the strike date, a hangar fire destroyed two Swordfish and badly damaged three others. There were spares aboard, which were prepared hastily. However, the damage caused Cunningham to cancel the strike and wait for the next full Moon, a requirement since this was to be a night attack. November 11, 1940, would be the big day, the first aerial attack launched from aircraft carriers.

Then more bad news came in. The *Eagle* had been involved in several battles in the preceding months, and had suffered more damage than originally thought, so much so that *Eagle* was withdrawn from the mission, now called Operation Judgement. The strike force was reduced to 24, all that *Illustrious* could handle.

Yet more bad news was in store. One of the aviation fuel tanks on *Illustrious* had contaminated fuel, use of which would disable an aircraft engine. They had found this out the hard way, now only 21 Swordfish were available for the strike.

Not all of the pre-strike luck was bad for the British. The Taranto barrage balloon fleet had suffered severe damage from a storm on November 6, where 60 balloons broke away and were lost. Thirty barrage balloons spread to cover a harbor the size of Taranto's was a much less potent defense. Further, the Italian fleet had conducted a gunnery exercise at sea on the 11th; they cancelled the exercise and were in the process of re-rigging the protective anti-torpedo netting, but only one-third of the net was deployed by nightfall.

A number of naval maneuvers and the Italian invasion of Greece provided some distraction from the approaching carrier task force. Since the *Illustrious* could only handle 12 planes on deck at once, two waves of attacks were needed. The first would comprise 12 aircraft. Their armament and targeting were different. Six Swordfish carried a torpedo; they would go after the battleships in the outer harbor. The bomb-carrying Swordfish would attack smaller ships in the inner harbor. The flare-carriers would go in first, illuminate the harbor for the others, then bomb shore facilities. A second wave, comprising nine Swordfish, was organized similarly.

Reconnaissance aircraft had detected the ships in Taranto harbor earlier. One was sent in on November 10, to make sure the fleet was still there. It was good intel for Cunningham, but the plane was seen and the Italians were on full alert.

The plan was for the strike to be in two closely-spaced waves, of 12 planes in the first and nine in the second. The first wave got off OK, but additional trouble for the attackers arose when the last two aircraft to be launched had what was thought to be a minor collision getting into launch position. However, the damage was worse than thought for both planes. One had already launched when it became clear that the second needed some repair work in order to be combat worthy. The pilot stood by while repairs were made then took off, thirty minutes behind the rest. The plane that had already departed had suffered damage to the extra fuel tank it carried, which ended up dropping out of the aircraft, forcing it to return to *Illustrious*.

The weather was a problem for the raiders, too. Low-flying clouds made navigation difficult for the first wave, so they climbed to fly above it. However, one plane did not see the others climb and continued on in the soup. When he had flown a while, the pilot figured he was lost somewhere behind the rest, and went to full throttle to catch up. All that did was make him 15 minutes too early, further alerting the fleet of the impending attack. However, the anti-aircraft tracers could be seen by the rest of the attacking force, which helped them find the fleet.

The two Swordfish with flares made their drops expertly. The flight leader swept in very low, dodged a few balloon tethers, and released their torpedo, which tracked directly into the side of the *Conte di Cavour* and blew a 10-meter hole in her hull. At that same time, the leader's plane took considerable defensive fire and was shot down; both the flight leader and his crewman survived and were quickly captured.

The harbor was in chaos. The attacking planes flew so low that defensive gunfire became more of a threat to friendly ships than to the attacking Swordfish. The attackers were difficult to see in the moonlight, and any use of searchlights only blinded the gunners and gave the attacker a point of aim.

The attack of the first wave took about twenty minutes. It would be another half-hour before the second wave arrived. Their attack lasted 20 minutes, with more hits being made for the loss of one Swordfish and its crew. The one plane that had needed hasty repairs came in five minutes after the second wave departed. The pilot hit a cruiser in the inner harbor, but his bomb failed to explode. The torpedoes in the raid had worked well, but several of the bombs dropped were hits, but were duds.

The RAF flew several reconnaissance missions to assess the results of the air raid. Three battleships showed serious damage. The *Littorio* had been hit by three torpedoes. It sank by the bow in shallow water. The *Caio Duilio* was hit hard; her captain intentionally ran her aground to keep her from sinking. Both had suffered significant damage, but Taranto was a big and capable base, and both were back in service within three months. The *Conte di Cavour* was worst hit; its damage was so severe that she was out of the War for good. Two cruisers and two destroyers were hit and damaged heavily. The flare-droppers were good with bombs, too, and managed to set fires in the dockyard and oil storage depot.

Three battleships at least temporarily out of action, damage to a major naval base, serious damage to supporting ships and facilities, and only two airplanes and one crew were lost. Not bad for a small group of obsolete attack aircraft!

AFTERMATH

The overconfidence of the Italian naval leaders about the shallowness of the harbor at Taranto preventing an aerial torpedo attack came from their own experience with torpedo bombing. Of course, had the bombs used at Taranto had functioned properly, losses would have been as much or more, torpedo or no torpedo. Further, the Italians didn't realize, but should have, that the deep-diving problem might be solvable. The Brits did it by attaching a thin wire to the nose of the torpedo to be dropped. Tension on the wire at the drop point, before the wire broke, caused the tail to fall faster than the nose and hit the water first, reducing the dive upon hitting the water.

Even though the Italians were able to repair much of the damage inflicted on their main battle fleet, their high command realized that Taranto was too exposed to be used as a naval base. The surviving ships were relocated to Naples, taking them farther from the place they were needed. British convoys bound for Egypt, the Middle East, and India were safe, for now.

Meanwhile, the British were hailing the action; Cunningham said, "(our) twenty aircraft had inflicted more damage on the Italian fleet than was inflicted upon the German High Fleet in the daylight action at the Battle of Jutland." After this action, Cunningham returned to Britain as First Sea Lord, a position he held through WWII and beyond. VAdm Inigo Campioni, commander of the Italian fleet fared less well; he was relieved of duty and became the Governor of the Dodecanese Islands.

The *Illustrious* and its supporting ships reached Alexandria on November 14. Foreign naval attachés were close behind, along with their British and American counterparts. *The Japanese took a readily-apparent interest in the battle, too!* The Japanese figured out that the Brits had solved the deep-dive problem, and investigated on their own. They contrived a wooden cradle that the torpedo was in when dropped that did the same thing, reduced the depth of the dive upon entering the water. They used it to good effect at Pearl.

U.S. Navy LCdr Opie was one of the few Americans to really study the battle. He sent a four-page report up the chain of command, pointing out that ship AA is not particularly effective, especially at night; that firing at low-flying planes leads to unacceptable friendly-fire accidents; and that the RN prefers torpedo attack to dive bombing for a reason. He even mentioned that he had heard that some were recommending that fleets put to sea during times of full Moon rather than to try to defend their home harbor! The report was little noticed where it counted.

The attack may not have made a sufficient impression on the brass, but it made front-page headlines around the world. The news also generated some communications between Washington and U.S. naval bases. One senior admiral recommended the use of anti-torpedo nets at Pearl Harbor, but was rebuffed, with the Base commander citing the shallow depth of Pearl Harbor (the same as Taranto), the difficulty in mounting netting with the configuration of the docks there, and the distance between Battleship Row and the harbor entrance (a problem

for subs, not planes). Other high-ranking officers expressed concern about an aerial attack on Pearl, more as a gesture of butt-covering than anything useful, so nothing was done. Others recognized at Taranto the potential value of the torpedo as a weapon from both subs and planes, and urged the development of improved torpedoes. Many listened, but few heard. [The U.S. Navy would be caught off guard by the performance of Japanese ordinance, especially torpedoes; it would be **two full years** after Pearl Harbor before the Navy received a torpedo that would run well, run at the depth specified, run in the direction set, and go boom at the right time. In my opinion, the (response to the) torpedo problems were a bigger scandal than the lack of preparation at Pearl Harbor, or the debacle at Wake Island, or the debacle at Savo Island, or any other battle since. WWII sub skipper, "Red" Coe said it best, "To make a round trip of 8,500 miles into enemy waters, to gain an attack position undetected within 800 yards of enemy ships only to find that the torpedoes run deep and over half the time will fail to explode, seems to me to be an undesirable manner of gaining information which might be determined any morning within a few miles of a torpedo station in the presence of comparatively few hazards."] But make no mistake, the warnings of Taranto, and other signs that should have led to greater preparedness, went unheeded due to a combination of noise, bureaucratic inertia, and personal and professional and group overconfidence.

In any case, the warnings about the dangers to ships in harbor from torpedo- and bomb-carrying planes, like so many other important clues, were lost in the torrent of noise of 1940/41. Don't take my word for it, just ask Rebecca Wohlstetter.

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