Air and Space this Week Item of the Week

THE BATTLE OF MIDWAY

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The Battle of Midway was the turning point of the Pacific War. Admiral Yamamoto's prediction that he could "run wild" for six months after Pearl Harbor, but after that, he was not so confident, was proving particularly prophetic. Midway would be fought a mere couple of days short of six months after December 7. The battle has been covered in great detail in a large number of books, professional articles, websites, movies, and more, and it is not my desire to go deep on such a broad topic; I generally focus on a smaller, less well-known topic for Items. But this is the **80**th **anniversary** coming up, and I would be remiss if I didn't help everyone to know the basics of the battle, why it was important, and where to find more detailed information should you desire to dig on your own.

BACKGROUND

Admiral Yamamoto had visited the United States as an attaché before the War, and was quite familiar and deeply impressed by the oil fields of Texas, the steel mills of Pittsburgh, the assembly lines of Detroit, and the bold poker tactics of his American counterparts. He knew Japan could never win against the full might of America, hence the hedge in his bold prediction above. Japan's best chance was to hit hard and fast, then build an impenetrable defensive perimeter and negotiate their victory from a position of strength.

Yamamoto was right, almost to the very day. It took months for our military-industrial complex to begin to gear up to the productivity levels needed for victory. In the meantime, we built out Pacific infrastructure (supply lines, fueling facilities, etc.) and learned a lot of tough lessons the hard way.

The United States had four major advantages, although thinking positively was difficult the first few months: the industrial capacity previously mentioned, submarines, an almost-universal experience with team sports, and one other.

The submarines the Navy had at the time of Pearl Harbor were pretty good, and more advanced models were on the drawing boards. They would allow the U.S. to interdict the shipment of food and raw materials into Japan, and the shipment of instruments of war outward. Provided the weapons on the subs were up to the task, which they weren't.

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Torpedoes of that era were "fire and forget" weapons; they had to do four things correctly: run, run at the set depth, run in the set direction, and go boom at the right time. The torpedoes we had at Pearl Harbor could only do the first of the four reliably, and the subs wouldn't get good torpedoes until the end of 1943. The Japanese High Command overlooked how dependent they were on ocean shipping, and were further lulled by the early failures of American torpedoes, so when the subs got torpedoes that worked well (and better radars and other ancillary equipment), shipping losses skyrocketed and the Japanese could not counter quickly enough.

The American pilots grew up with baseball, football, and basketball, all team sports that had different roles in the team effort. The Japanese did not have that tradition. The Americans developed planes and tactics suited to particular functions to a much higher degree than did the Japanese, whose planes, tactics, and pilot training emphasized quality in a one-on-one situation. Their emphasis on quality also crippled their pilot training program — it was more desirable when attrition was high to have as more pretty-good pilots than fewer really good ones.

The U.S. had other advantages, too, but the one that really mattered at Midway was intelligence. We knew what the Japanese were planning, because we had largely broken the codes they used for naval communications.

We took a beating at Pearl Harbor and got run out of the Philippines and Java. We were able to score a propaganda coup with the <u>Doolittle Raid</u> and made pin-prick raids in the south and central Pacific. We knew of the plans to attack New Guinea well in advance and were able to thwart their main effort with the strategic victory in the <u>Battle of the Coral Sea</u>, even though we lost more men and ships.

And we knew where the Japanese would be attacking next: Midway Island.

CODEBREAKING

The U.S. Navy had three radio intelligence facilities set up before the War, in Hawaii, in Manila, and in Washington. The Manila unit had to be evacuated along with their gear immediately after Pearl Harbor. They played a more important role later in the War, but in early 1942, they were not a factor. The Washington unit was not particularly competent, and was beset by some less-than-fully-patriotic infighting. But the Hawaii unit, led by Joseph Rochefort, was superb. His team was intercepting and decrypting many of the messages sent by High Command to units at sea and bases.

[NOTE: Radio intelligence in those days consisted of two parts: traffic analysis and decryption. One can glean a lot of information on capabilities and intentions just by knowing who is talking to whom – traffic analysis. Of course, if you can actually read the coded messages (decryption), you can get a much deeper understanding, but you can also be more prone to being fooled.]

U.S. High Command knew the Japanese order of battle and ships list for the Battle of the Coral Sea, and the Navy was able to interdict the planned invasion of Port Moresby, the Australian

base in southern New Guinea. We lost the aircraft carrier *Lexington* and the carrier *Yorktown* was badly damaged, the Japanese suffered damage to only one of their carriers and lost a lot of aircrews. Their inability to manage their aircrew resources efficiently put both of their carriers at Coral Sea out of action for several months. They could have taken the surviving pilots and crewed the undamaged carrier and had it available at Midway, but they didn't.

U.S. carriers *Hornet* and *Enterprise* were rushing back to Pearl for replenishment and the return of *Hornet*'s normal air complement (they had taken the Doolittle B-25 squadron to Japan). *Yorktown* made best speed home, too, and every welder at Pearl worked three days straight to get her repaired enough to fight. *Yorktown* would not be restored fully (such repairs would normally take a few months), but the quick patch-job would allow her planes to take part in the coming battle.

The codebreakers had been just as busy as the shipwrights. Rochefort had been a lot of radio intercepts about a place code-named "AF," and by mid-May he was certain that the next move by the Japanese would be an invasion of "AF," aka Midway Island. His command was not convinced yet, so he cooked up a classic ruse to demonstrate the correctness of his identification and prediction. Midway was connected to Pearl by an undersea cable, allowing secure communications without having to radio the messages so others could hear. He had the Midway commander broadcast a radio message, in the clear, requesting fresh water because the only distillation plant on the island had broken down. Two days later, the intelligence team intercepted a radio message from the Japanese base on Wake Island, in a code they could read, telling the Japanese command to supply more fresh water to the invasion force. Now everyone believed Rochefort's identification of Midway as "AF." The only piece missing was the date, which had been specially-encrypted in the intercepted message. Rochefort's team worked around the clock on that one part of the code. Admiral Layton briefed Nimitz on May 21, giving him an accurate order of battle, along with a prediction of the distance and direction from Honolulu of their approach. The codebreakers solved the date code soon thereafter, and on May 24 informed Nimitz that the Japanese would be in a position where search PBYs from Midway could find them: Azimuth from Midway: 325°; distance from Midway: 175 miles; time of sighting: 0600 hours Midway time on June 4.

Advanced warnings only help when one is in a position to be able to act effectively on them. The pressure was on. The Japanese were coming, with four their four front-line carriers covering an invasion force aimed at Midway. The carrier task forces sailed from Pearl on May 28 and 29. We had as many planes on Midway as we could, but we were still at a numerical disadvantage in total planes available. But our prior knowledge of their attack plans allowed us to set a trap. Our carriers would remain to the east of Midway during the initial carrier strike against our base, then launch their full strike at the Japanese carriers so that our planes would get there after their strike landed, so we could catch the carriers with refueling lines and weapons bays wide open.

A Midway PBY sighted the Japanese invasion force exactly as the codebreakers predicted. Well, OK, not *exactly* as predicted. They were off by five degrees, five miles, and five minutes!

U.S. codebreakers had delivered one of the most important single pieces of military intelligence in history. We name supercarriers and highways and more for Admiral Nimitz, Rochefort's superior, for one reason: he listened to his intelligence and acted intelligently, in spite of Washington misreading the same data and "suggesting" that Nimitz defend, not Midway because that was deemed a diversion, but Pearl and the West Coast, because they felt that those places were Japan's true objectives. Rochefort never received the accolades he deserved; others took credit, and Rochefort was eventually promoted to the command of a floating drydock.

ATTACKS ON/FROM MIDWAY

Coral Sea was the first naval battle where the ships of either side never saw one another; the flighting was done entirely by carrier-based aircraft against the enemy's carriers, and secondarily their other ships. There was no land mass or island involved. This difference turned out to be quite important, since an airborne attack against land targets use bombs, but an attack against ships uses torpedoes. Bombs are used, too, but the Japanese had really good torpedoes and they caused more damage to ships than bombs.

Japanese battle plans were often more complex than was strictly necessary and/or desirable, and Midway was no different. The intended to strike the western Aleutians just before Midway, to distract our attention, and our codebreakers kept American command fully informed. There was a desultory naval battle and the Americans lost Kiska and Attu, but those places proved more of a detriment to Japan's war effort rather than an asset.

Admiral Halsey had suffered a medical problem during the Doolittle mission (likely severe shingles) that precluded him leading TF 16 (*Enterprise* and *Hornet*); he recommended Raymond Spruance, a cruiser skipper, as his replacement. Frank Fletcher was in command of TF 17 (*Yorktown*). Carrier air combat doctrine was in its infancy; each of the three U.S. carriers approached the air defenses somewhat differently, and several air commanders had no actual combat experience. Everyone knew the benefits of hitting first and hitting with a coordinated attack (dive bombers with torpedo planes coming in from two directions), but the mechanics of actually making that happen were not well understood.

In some cases, the pilots knew the best way forward more certainly and correctly than their leaders. This was particularly true with respect to strike escort by fighters. In *Hornet's* case, the torpedo squadron commander, John Waldron, CO *Hornet's* Torpedo Squadron 8 (VT-8) clamored for more fighter close support than Admiral (Mitscher) desired, who wanted the fighters to support the dive bombers instead. VT-8 was flying an early model torpedo plane, called the "Devastator." It had to fly low and slow to make its drop, suicide against Zero fighters. Without fighter protection, the only thing the Devastators would devastate is their own very brave aircrews.

THE CARRIERS SLUG IT OUT

The two American task forces had joined up at "Point Luck," a spot 325 miles northeast of Midway, in the afternoon of June 2. Fletcher was the senior admiral present, so he took command of the entire combined group (although the two task forces would continue to act semi-independently), the three carriers, seven heavy cruisers, one light AA cruiser, and fifteen destroyers. The group had a total of 221 aircraft of all types available. *Enterprise* and *Yorktown* would provide the main strike force; *Hornet* would supply the group's scouting force and air defense.

Midway Island had 23 PBY search planes, four B-26s, 17 B-17s, and a number of dive and torpedo bombers. On the morning of June 3, one of the search PBYs found the invasion force exactly where Rochefort predicted, and the fleet got word that an attack on the Aleutians was underway. Thanks to the PBY and the codebreakers, everyone knew the Aleutian attack was a diversion.

The Japanese force bound for Midway was in three distinct pieces, with Admiral Yamamoto in overall command. He was in the super-battleship *Yamato*, with two smaller battleships, a light carrier, a cruiser, and nine destroyers. His section would follow the Striking group and the Invasion group. The former was commanded by Admiral Nagumo, with the four big carriers, two battleships, three cruisers, a dozen destroyers, and eight tankers. His group would attack any American naval forces present. Admiral Kondo's Invasion group had two battleships, a light carrier, a cruiser, eight destroyers, four tankers, and 15 transports with 5000 invasion troops.

Except for the carrier *Zuikaku*, this was a full-strength effort by the Japanese Combined Fleet. This operation, including the Aleutians diversion, would consume more fuel oil than was used the entire preceding year!

The Americans left little to chance in the days prior to the battle. The Japanese had planned on using two long-range seaplanes to reconnoiter Pearl Harbor in an attempt to find the U.S. carriers. To accomplish their mission, they would have to refuel from a supply submarine at French Frigate Shoals, a small guano-covered rock pinnacle northwest of Hawaii. The codebreakers ferreted that part of the Japanese plan, too, and on their recommendation a naval minelayer was stationed at FFS, negating the prospect of refueling the seaplanes, whose mission was then cancelled. The Japanese were coming in "blind." They knew that Yorktown had been hit hard at Coral Sea, and assumed that it would be out of action under repair (since their own ship repairs took so much time). They had no idea where Hornet and Enterprise went after Coral Sea. The Americans knew of the Japanese prowess with radio interception and direction finding, so they sent two ships to the Solomon Islands where they sent a number of decoy radio signals, so that the Japanese listening-in would think the two carriers were not near Midway. Yamato's radio team picked up actual carrier transmission from the direction of Pearl during their approach, but Yamamoto opted not to warn either Nagumo or Kondo, since it would require breaking radio silence. He had been receiving intelligence by radio from the Home Islands during this period, and assumed that the groups ahead of him was copying the same messages.

But he couldn't be sure...

The Japanese Striking Force was in a deep fogbank on the morning of June 4. A patrolling PBY detected Kondo's Invasion Force that morning. Midway immediately launched their B-17s to attack it, while Nimitz warned Fletcher that the PBY had seen the Invasion Force, not Nagumo's Striking Force. The B-17s, bombing from high altitude, scored no hits. Four PBYs were then armed with torpedoes and sent out to attack the troop ships late in the afternoon. They managed to damage a tanker, but the Invasion Force was not slowed.

Everyone knew that June 4 was going to be a Big Day, but each side had a very different expectation of what "Big Day" meant. The Americans knew what, when, and where of the attack; the Japanese believed that there was no U.S. task force anywhere near Midway.

The Fates began to intervene, to the detriment of the Japanese. The attack would have been led by Commander Fuchida, who had led at Pearl Harbor. He was recovering from appendix surgery and was in no condition to fly. He was replaced by the extremely-capable Joichi Tomonaga, leader of the carrier *Hiryu*'s dive bombers.

The Striking Force launched their first raid against Midway before sunrise. The 72 attack aircraft involved carried land bombs, and were escorted by 36 fighters. Two PBYs were searching in that direction, and gave advanced warning to Midway. One of them, a few minutes later, sighted the Striking Force.

The air staff of both American task forces went to work. *Yorktown* had already sent out one group of dive bombers for a now-unnecessary search; they would be delayed slightly until they returned (wisely, no radio recall was sent, lest the Japanese find out about the closeness of our carriers prematurely). *Enterprise* and *Hornet* moved closer to Midway, and of course, Midway launched its 27 defending fighters and its strike aircraft immediately. The Zero attack escorts dominated the antiquated fighters sent out, knocking down seventeen outright, and another seven were damaged beyond repair. The Japanese dive bombers and bomb-laden torpedo bombers caused considerable damage to Midway facilities, but it wasn't enough to knock Midway out of action. Tomonaga radioed that another strike against Midway facilities would be needed before the invasion could safely proceed. He led his planes back to their carriers, where the deck crews would immediately go to work refueling and re-arming them.

The American attack planes came in from Midway before Tomonaga's return. They were unescorted, and suffered accordingly. Their torpedoes were just as crappy as those on American submarines, and they caused no hits. Ship's guns shot down almost all of them. The brave attacks underscored Tomonaga's message that another strike was needed. He would lead it, in spite of the damage to his plane's fuel tanks; <a href="https://example.com/he-knew/message-the-knew/messa

Nagumo had held a significant percentage of his strike aircraft in reserve, armed with torpedoes, in case American combat ships were sighted during the attack. He had sent out some search planes early in the foggy morning, but had received a "no contact" message from most of them, so he felt safe in ordering an armament change (torpedoes to bombs) and launch against Midway facilities.

The American carriers were only two hundred miles away, normally a bit too far for a full-scale attack, but this was not a normal situation. Spruance boldly ordered a full-deck strike from his two carriers just before 7 AM, retaining 36 fighters as defense CAP.

[Back in the days of sail, it was a tactical advantage to be upwind of one's opponent; the wind could let you approach at will, and keep your downwind opponent from following suit. But in carrier operations, especially without catapults, being downwind of one's opponent was a tactical advantage, because you didn't have to turn away to have a headwind to assist plane launches.]

Spruance's launch of aircraft required the carriers to turn away, into the wind, and took over an hour. At first, his planes were circling, awaiting all of the *Enterprise/Hornet* planes and hoping to rendezvous with *Yorktown*'s strike to make one large attacking force. But a Japanese scout plane was seen during Spruance's launch, so he sent in his strike without waiting for *Yorktown*. Fletcher aboard *Yorktown* had similar thoughts; he immediately launched his attack force, retaining a fighter CAP.

By 8:30 AM, the American carriers had dispatched 155 strike aircraft toward the Japanese Striking Force. Not a single Japanese plane was as yet heading toward the American carriers. The cruiser-based search plane Spruance had seen had been delayed by a balky catapult. Its contact report was woefully incomplete; it reported the shocking presence of American naval units east of Midway, but it did not mention any Navy carriers. Nagumo could take no chances, and immediately a halt to the re-arming of the strike aircraft from torpedoes to bombs. The scout aircraft was ordered to maintain contact and ascertain ship types. The reply was lackadaisical, to say the least. It took ten minutes for a report of "five cruisers and five destroyers" to come back. Nagumo's relief turned to despair ten minutes later, when the scout reported that the enemy force appeared to have a carrier. Nagumo immediately dispatched another scout to follow up on the first's report. Alas, that one, too, was ineffective. Instead of a launch delay, the second scout, specially built for scouting rather than attack, had a faulty radio, and could not report the presence of three American carriers in time. When it returned to its carrier and reported the presence of more than one U.S. carrier, it was much too late.

Nagumo has seriously mismanaged his carrier assets, and they were now in a really bad quandary. The first Midway strike was just getting back, skosh fuel. Two of the four of his carrier decks were clogged with strike planes changing armament. Hobson's Choice! If Nagumo launched a strike, the first attack wave would have to land in the ocean, out of fuel. If he landed the first strike and re-armed all planes, the Americans might catch him with his decks "locked," with open fuel lines and bomb strewn around.

Nagumo was frantically discussing his limited options with his air staff when another attack wave from Midway came in. His CAP downed a number of dive bombers, the high-flying B-17s missed again, and a wave of Marine torpedo bombers made a suicidal attack, low and slow. The Marines were even more poorly equipped than the Navy fliers; their antiquated Vindicator torpedo planes were older than the Devastators. Their stoic pilots referred to their mounts, with prescient gallows humor, as "Wind Indicators," and that was about as fast and

maneuverable they were. They couldn't fly fast enough to attack the carriers effectively, so they targeted one of the escorting battleships, to no avail.

The carriers *Hiryu* and *Soryu* had full strike forces, properly armed, all this time, waiting for a full four-carrier raid. Admiral Tamon Yamaguchi, on *Hiryu*, impudently suggested that his strike be launched immediately, without fighters (they were engaged as CAP). Nagumo didn't take that advice, and in so doing, lost the battle.

The refueling and rearming had taken a lot of time, but only a few more minutes were needed to initiate launches, when the alarm came up. American carrier attack planes were coming in!

The prevailing American carrier attack doctrine at the time called for a simultaneous divebombing attack and torpedo attacks from opposing directions. The presence of torpedoes in the water would limit evasive dodging of the bombs, and coming from two directions prevented the targets from "combing" the incoming torpedo tracks – one direction's torpedoes would miss, but the maneuver that caused that miss would set the carriers up broadside to torpedoes coming from the other direction. Such an attack was difficult to set up under fire, mainly because the cruising speed of the torpedo bombers was much slower than either the dive bombers or the fighter escort. Further, the torpedo planes attacked on the deck, the dive bombers from high altitude, making visual coordination difficult.

The Hornet's attack group had gotten separated en route to their attack. Their eight Devastator torpedo planes got there first and bored straight in (the other half of the squadron had been flown to Midway and had attacked, ineffectively, from there). The Japanese CAP responded aggressively, diving down low to shoot down all eight. Only George Gay survived, to enjoy a watery ringside seat for the battle to follow. [He would be rescued, patched up, and sent out on the War Bond show circuit.]

Fourteen Devastators were next, from *Enterprise*. They had been among the first launched, and were now running low on fuel, so their commander ordered an attack on two of the carriers, without waiting for the escorts 20000 feet above (who had not heard their radio call for help). They fared no better than *Hornet's VT-8*; they scored no hits and ten of the fourteen were shot down. Lance Massey arrived a few minutes later with eight *Yorktown* Devastators; they, too, were ineffective, but they did have a fighter escort of six Wildcats, all of which were shot down. Six Devastators fell, and no torpedoes hit.

Nagumo started to breathe a little easier after seeing so many American planes go down without any damage to his ships. But the CAP had used up a lot of fuel and ammo, and were down very low killing Devastators. What danger still lurked up high, and could he get his strike force launched in time?

Two large groups of American dive bombers had been launched toward the Striking Force. The one from the *Hornet* had flown northwest, south of the Japanese, wandered around searching, and eventually had to go to Midway for fuel; they played no positive role in the action. Their flight, and the direction it took, are still controversial today.

Dive bombers from the *Enterprise* would save the day, but they actually had a little bit of otherwise worthless help from one of the Navy's submarines.

Prior to the battle, the Navy had stationed all available submarines in a ring cordon around Midway. The plan was incredibly faulty, because the single ring used meant that only the one submarine that happened to be where the Japanese came in would possibly get a shot. By the time they could report, or attack and report, the other subs in the ring would be too far away to do any good. A multi-ringed set up would have been better because the penetration of the outer ring could be reported to the inner ring subs in time for them to get into position for a second attack.

The sub that did make a sighting was an ancient boat, the *Nautilus*. It was sighted, and a destroyer came over to hold it down for a while to allow the task force to get out of harm's way. After the task force was clear, the destroyer hurried back to re-join the attacking fleet, leaving *Nautilus* far behind.

The *Enterprise* dive bomber group was searching around for the Japanese Striking Force, just like the group from *Hornet* was doing. But Wade McClusky, the CO for the *Enterprise* group, happened to see the Japanese destroyer moving fast, and figured correctly that it was rejoining the attackers, so he led his dive bombers in that direction. Soon thereafter, the Striking Force rolled up over the horizon, just about the time the last of the Devastators were hitting the waves. All told, forty-one planes and 80 airmen had been killed in the torpedo bomber attacks. But now there was a squadron of dive bombers directly overhead, and all defending planes and guns were busy shooting at targets down low.

At this moment, the *Yorktown*'s dive bombers also made their appearance. They had launched later than McClusky's group, but had flown directly to the carriers. They started their bomb runs just after his.

The Japanese did not notice McClusky and company until 10:24 AM, when they were already well into their dives. There was no time for defense or evasive action, and the decks of carriers Akagi, Kaga, and Soryu were covered with fully-fueled and armed planes, bombs, and fuel lines when the bombs started hitting. The Enterprise bombers picked the two largest carriers, Akagi and Kaga, leaving smaller Soryu for the late-comers. By 10:30, all three carriers had suffered multiple hits and fatal damage. All the while, George Gay was cheering himself horse, holding a life preserver over his head so as to not attract attention from a Zero on the deck. Some of the American planes had to ditch on the way home, out of fuel, but our losses were tiny compared to those of the Japanese.

Three top Japanese carriers were on fire and in the process of sinking by the time the attacking planes headed back to their carriers or Midway. The undamaged *Hiryu* was heading north, hoping to rendezvous with the two smaller carriers in the Aleutian task force; perhaps some damage could yet be done to the Americans.

The *Hiryu* had been separated a bit from the other three carriers, and thus avoided getting hit when they did. They landed the few surviving aircraft, and readied a strike against the

American carriers, whose position was now known. They got the strike launched just before noon, twenty Val dive bombers escorted by six Zeros. American search planes reported the strike, and *Yorktown* immediately began preparing by stowing fuel and ordinance, filling fuel lines with carbon dioxide and more. *Yorktown*'s CAP downed six Val dive bombers and three Zero fighters before they could attack, and ship's guns shot down another two Vals. Six survived long enough to drop bombs, three of which hit. The *Yorktown* was badly damaged, but their pre-attack preparations, prompt flooding of magazines, and excellent damage control soon had the fires under control and the ship underway. Admiral Fletcher had to transfer his flag to an escorting cruiser, since battle damage wrecked the communication facilities that he would need to direct his task force. Pilots returning to *Hiryu* reported a sinking, so it was now 3-1 in favor of the Americans, at least from the Japanese perspective. While that was going on, a scout bomber force from *Yorktown* found *Hiryu* at 2:45 PM local.

The sighting report was heard by Spruance, who immediately assembled a striking force of twenty-four dive bombers, including ten from *Yorktown* who landed on *Enterprise* after *Yorktown* was hit. That strike got off at about 3:30 PM local, and they would arrive over *Hiryu* 90 minutes later. Yamaguchi had also assembled a scratch attack group, exhausted for their efforts and ordeal earlier in the day, along with five torpedo planes and six escort fighters. Nobody had eaten for hours, so Yamaguchi put on a special meal of sweet rice balls, a favorite. The crews were just into their first bites when a lookout espied American planes directly overhead. Yamaguchi called out evasive action, and made the first four bombs drop miss. But the next four were direct hits, blasting the flight deck and elevator to pieces. A photo taken of the attack showed the forward elevator plastered over the front of *Hiryu*'s bridge, blasted their by the force of bomb and secondary explosions. *Hiryu* was finished, and sank a few hours later, after a group of Midway B-17s bombed and missed. Admiral Yamaguchi had been directly ordered NOT to go down with his ship, because he was one of the few really good admirals in the Japanese Navy, but he did anyway. [Had he lived, he likely would have been the replacement for Admiral Yamamoto after the Mitchell ambush.]

Yamamoto was far astern of the action, and the chaos at the battle site precluded him having an accurate picture of the situation. He ordered Nagumo to attack and immediately destroy the enemy, an almost-comical demand in light of the condition of Nagumo's force. Yamamoto was hoping that a night attack by surface ships could knock off a few damaged American ships and make the final tally more even. Spruance had no desire to accommodate Yamamoto's dreams, especially since the B-17s that missed *Hiryu* reported attacks on them by carrier-based planes, perhaps from another carrier, as yet unseen. Spruance had won a great victory, trying to ice the cake might result in serious losses.

Yamamoto got better information later that evening, and learned of the fate of *Hiryu*, so by midnight he ordered the entire Midway operation to be cancelled.

CODA

The *Nautilus* and other submarines provide a coda to the story of Midway, although the battle was almost completely an aircraft and aircraft carrier affair.

I already mentioned how the ancient *Nautilus* getting depth charged helped American dive bombers find the Striking Force. The sub and its torpedoes were lousy, but its captain and crew were brave. They slowly approached to site of the main battle and were almost in torpedo range by the time the bombs started falling. One of the damaged carriers was finally within reach, so *Nautilus* fired a salvo of torpedoes at it and submerged. The captain reported at least one hit, which sank the damaged carrier. In reality, the captain had misidentified the carrier, and only one of the torpedoes actually hit it. Like too many other American torpedoes of the day, its magnetic exploder failed, and it hit too squarely for its defective impact exploder to operate. The warhead broke off the torpedo and its afterbody with intact air flask inside floated harmlessly alongside. Several of the sunken sailors used it as a life raft!

The submarine *USS Tambor* fared somewhat better. It was moving in from its position in the ring, and encountered four of the cruisers escorting the Japanese Invasion Force. The cruisers detected the sub and scattered in a panic. Two of them collided, the *Mogami* hitting the *Mikuma*, with serious damage to both, watched with glee from *Tambor*'s periscope. Destroyers chased the *Tambor* away, and the two cruisers were attacked the next morning by planes looking to mop up remnants of the Japanese force. *Mikuma* was sunk outright, but the *Mogami* escaped, in spite of additional damage being inflicted upon it by the morning bombs. *Mogami* must have had dreams of being on our side. Not only did her colliding with *Mikuma* cause damage that led to *Mikuma*'s demise, later in the War, *Mogami* collided with the cruiser *Nachi*, which led to *Nachi* being sunk in shallow water. Important papers and other intelligence were recovered from *Nachi*, but most of it came in too late to affect the course of the War.

The final act of the Coda fell to yet another submarine, the Japanese I-168. Yorktown's damage was severe, and her damage prior to Midway wasn't helping the situation. Yorktown had been abandoned, but was still afloat, at dawn on June 5. Spruance hoped that tugs arriving from Pearl would be able to get Yorktown to safety. Gunfire was heard from Yorktown, and the destroyer Hughes approached to investigate. Two wounded sailors, left for dead in the sickbay, had rallied enough to fire a rifle to attract attention. Hughes rescued the sailors, and her captain put a salvage party aboard to search for any other survivors and assess the chances of salvaging the carrier. At dusk, destroyer Hamman came alongside, providing a larger damage repair team and power. By dawn on the 6th, they had corrected *Yorktown*'s list and it looked like they might actually be able to save her. But a reconnaissance floatplane launched by one of Nagumo's retreating cruisers had seen Yorktown on the morning of the 5th, and the nearby sub I-168 was ordered to get to Yorktown and sink it. I-168 approached to within firing range on the afternoon of the 6th and fired a full salvo of Japan's excellent "Long Lance" torpedoes. At least one torpedo hit Yorktown, and another hit the Hamman alongside. The destroyer broke in two and sank like a stone, with heavy loss of life. The Yorktown, damaged as it was, could take no more, and sank beside the bubbles coming up from Hamman.

FINAL REMARKS

Midway is often referred to as "the turning point of the Pacific War." While true, that name is somewhat misleading, IMO. The War for Japan was lost at Pearl Harbor. The fact that the attack could be characterized as a "stab in the back" made the hoped-for negotiated settlement after major advances impossible, and once America had the will to do what was necessary to win, Japan had no chance. Racial animus may also have been in play; a topic beyond the scope of this Item. Midway was the turning point because the Japanese lost so badly; they won a few battles (e.g. Savo Island), but the tide had turned and the Allied advance was relentless. Had they won a victory at Midway, they would have eventually lost at some other juncture soon thereafter and that would have been the turning point, the forces, resources, and industrial capacities were just too imbalanced. Our subs were starving both the Japanese civilian population and the Japanese war industries, and the Japanese could not replace easily the loss of leaders of the caliber of Tomonaga and Yamaguchi.

The heroism, efforts, and betrayal of Captain Joseph John Rochefort will be the topic of a future Item of the Week. Thinking about it, even now, turns my stomach.

Today, much of Midway Island is a National Wildlife Refuge, home of the famous Laysan Albatross, the "gooney bird." See: https://www.smithsonianmag.com/science-nature/where-the-gooney-birds-are-50427690 [Remember the old Disney show with the awkwardness of the albatrosses on display, all to wacky music?]

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