

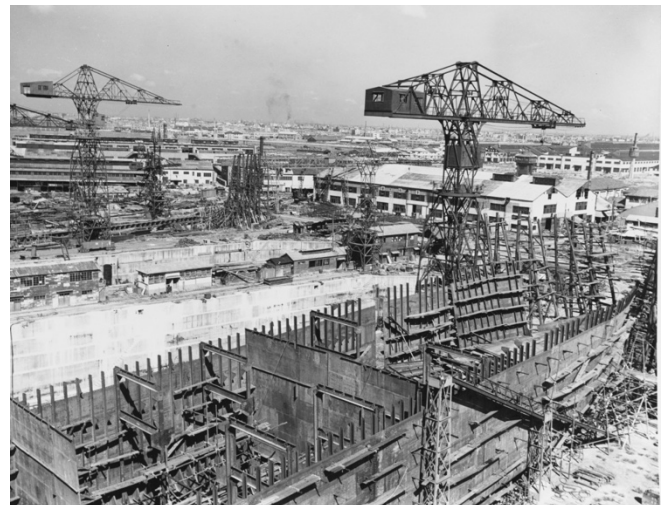


H-Gram 057: The 75th Anniversary of WWII: Operation Downfall and Operation Cherry Blossoms at Night, the 150th Anniversary of the *Saginaw* Gig, and the 75th Anniversary of the Loss of Flight 19.

6 January 2021

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Ishikawajima Shipyard, Tokyo, Japan. October 17, 1945. View from atop a gantry crane control house, showing a partially plated up hull in the foreground. (SC 215971)

*This H-gram focuses on the U.S. plan to invade Japan on 1 November 1945 (Operation Downfall), as well as the Japanese plan to wage biological warfare against the U.S. in World War II using submarine-launched kamikaze aircraft with plague bombs (Operation Cherry Blossoms at Night); also covered is the epic tale of survival following the grounding of the sidewheel steam sloop-of-war *Saginaw* on Kure Atoll in 1870, as well as additional detail on the disappearance of the five Avengers of Flight 19 in December 1945 (as promised in H-Gram 056).*

Operation Downfall: The Planned Invasion of Japan

In this season of “Peace on Earth, Good Will Towards Men” it is fitting to contemplate and give thanks that Operation Downfall, the U.S. plan to invade Japan, never happened. Instead of what would have been the bloodiest battle in U.S. naval history, hundreds of thousands of U.S. servicemen actually were going to be “home for Christmas” in Operation Magic Carpet.

Operation Downfall had two phases. The first phase, Operation Olympic, was a massive amphibious assault scheduled for 1 November 1945, to seize part of the Japanese home island of Kyushu for use as a staging base for the second phase, Operation Coronet, intended as the decisive landing near Tokyo, scheduled for 1 March 1946. Japanese Intelligence provided a very accurate prediction of where, when, and in what strength the U.S. planned to invade, and they made defensive plans accordingly.

The planned invasion force for Olympic included almost 3,000 ships, carrying over 700,000 U.S. Army and Marines, under the command of Admiral Raymond Spruance, Commander U.S. FIFTH Fleet. At the same time, Admiral William Halsey's THIRD Fleet would have been striking targets on Honshu and Shikoku to isolate Kyushu from the rest of Japan. But it would already have been too late, as the Japanese actually did reinforce Kyushu with over 900,000 troops and a massive number of civilian "volunteers" who were expected to fight and die to the last along with the soldiers. Although U.S. Intelligence provided increasingly high estimates of the number of Japanese troops and aircraft involved, these estimates were still lower than what the Japanese were actually doing.

The Japanese strategy was to inflict the maximum number of casualties on the American force, regardless of the cost to the Japanese (military and civilian) with the intent to break the resolve of the American people to continue to support the Allied objective of "unconditional surrender." The Japanese hope was that a massive death toll would lead to a negotiated end to the war, one that did not involve foreign occupation of Japan, something that had never happened in over 2,000 years of Japanese history. The Japanese defense plan, Ketsugo, called for the ultimate effort to defeat the U.S. amphibious invasion force just as it approached the beachhead at Kyushu, with the troop transports as the highest priority targets just when they were most vulnerable. Every aircraft that

could fly would be committed to kamikaze suicide attacks, along with a surprisingly large number of suicide boats, midget submarines, manned suicide torpedoes, and suicide frogmen while the invasion force was trying to come ashore, where it would be met with very extensive and carefully prepared defensive positions, specifically sited and constructed to withstand heavy naval and aerial bombardment.

There were many casualty estimates prepared for Operation Downfall. These have become "politicized" over the years in the argument over whether the use of the atomic bombs was necessary. All of the various estimates contain huge assumptions (most wrong) and it is impossible to say with any degree of accuracy how the battle would have turned out, other than that the cost to both sides would almost certainly have been staggering. For example, the Japanese had been hiding and hoarding aircraft and aviation fuel for the final defense of Japan. Their plan called for throwing as many kamikazes against the amphibious ships in the first three hours as were thrown against U.S. Navy forces in three months off Okinawa. If the kamikaze aircraft alone had achieved the same hit per sortie ratio as at Okinawa the result would have been as high as almost 100 ships sunk, 1,000 damaged, and 12,000 Sailors killed. Subs, mines, suicide boats, frogmen, and the Japanese "home field advantage"—all would have only added to the toll. Well aware of how the Japanese had fought to the death at every island in the Pacific, but especially Saipan, Peleliu, Iwo Jima, and Okinawa, Fleet Admirals Leahy, King, Nimitz, and Admiral Spruance all argued against an invasion; they understood what was going to happen.

For more on Operation Downfall, please see attachment H057.1.



Aichi M6A1 Seiran at the Udvar-Hazy Center. Aichi chief engineer Toshio Ozaki designed the Seiran (Clear Sky Storm) during World War II to fulfill a requirement for a bomber that could operate exclusively from a submarine. (Photo from Udvar-Hazy Center; Smithsonian web ID: WEB10862-2008)

Coast would have caused similarly high casualties is unknown, but quite likely could have provoked substantial psychological terror amongst U.S. civilian population, which to that point had been spared the horrors of war experienced by the Japanese civilian population. Given the advanced state of U.S. "Ultra" code-breaking and radio intelligence by that point of the war in tracking Japanese submarine general operating areas, it is also likely that the Japanese would not have achieved surprise in the attack (although the biological weapons might very well have been a very nasty surprise). Fortunately, the atom bomb prevented what might have happened. For more on the I-400 submarines and Operation Cherry Blossoms at Night, please see attachment H057.2.

Operation Cherry Blossoms at Night

On 22 September 1945, the Japanese planned to attack San Diego, California, with 15 Seiran float planes launched from five of their massive I-400-class aircraft-carrying submarines (largest in the world) on kamikaze missions to spread millions of fleas infected with bubonic plague, in retaliation for the fire-bombing of most of their major civilian population centers. The raid never happened, for the most obvious reason that Japan surrendered before the plan, code-named Operation Cherry Blossoms at Night, could be executed. The other big reason was that the Japanese didn't have five I-400s ready; only two had been completed and in service as aircraft carrier submarines (a third was completed as a tanker). Nevertheless, the planning for the raid was extensive and it was probably technologically feasible as even in 1945 the Japanese still had surprises up their sleeve; for example, U.S. and Allied Intelligence did not know the specially-built Seiran existed.



The Gig of the Saginaw, by Stanley Owens Davis, Sr., USNR (1917-1958), oil on canvas, painted in 1937. Gift of the artist's wife, Margaret Davis, and his son, LCDR Stanley Owens Davis, Jr., USN, to the Naval War College Museum.

Japan's biological weapons program was extensive, led by the notorious "Unit 731" which conducted horrific experiments on live humans and deployed biological agents against the Chinese, causing an undetermined but believed-to-be very high casualty count. Whether a bubonic plague weapon deployed against the U.S. West

150th Anniversary of the Saginaw Gig

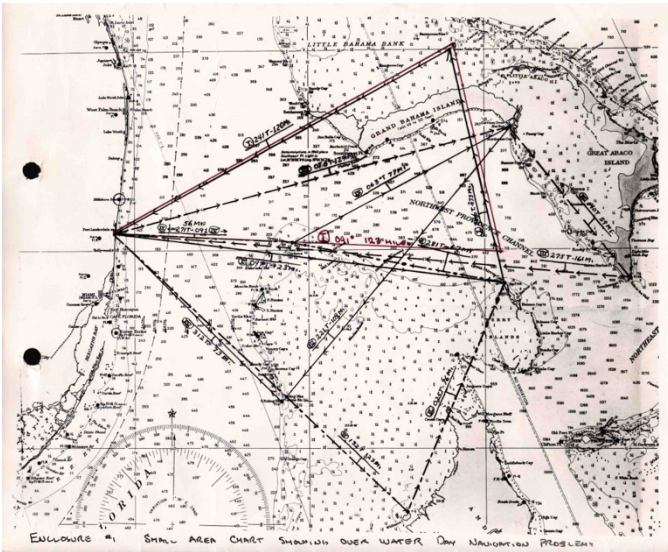
On 18 December 1870, the extensively modified captain's gig of the Saginaw, with five volunteers on board, completed a 1,400-mile, 28-day voyage under sail from Kure Atoll, where the sidewheel

steam sloop-of-war Saginaw had wrecked on 29 October. Severely debilitated by malnourishment and sickness after the provisions spoiled, four of the men died as the boat tumbled ashore in the crashing surf of Kauai's north shore; only Coxswain William Halford barely survived. By that narrow margin, ships were dispatched by the American Consul and the Kingdom of Hawaii, which rescued 88 other survivors of Saginaw (half USN crewmen and half civilian contractors); all of Saginaw's crew, except the four on the gig, survived the sinking and 68 days on the atoll, including Saginaw's captain, Commander James Sicard, who went on to serve many years as the chief of the Bureau of Ordnance, make rear admiral, and served with credit during the Spanish American War. Halford was awarded the Medal of Honor for his gallantry (he was recalled to active duty during WWI, serving as an acting lieutenant at the age of 77). The gig still exists, and after an almost 150-year odyssey of its own, is now in the custody of the Naval History and Heritage Command undergoing preservation work. For more on this epic tale of courage and survival, please see attachment H057.3.

75th Anniversary of the Loss of Flight 19

In H-Gram 056 I provided a brief synopsis of the mystery of Flight 19; five TBM Avenger torpedo bombers that were lost on a training mission over the Bahamas on 5 December 1945. I promised more detail, so if interested please see attachment H057.4.

As always, you are welcome to forward H-grams to spread these stories of U.S. Navy valor and sacrifice. Prior issues of H-grams, enhanced with photos, can be found here [<https://www.history.navy.mil/about-us/leadership/director/directors-corner/h-grams.html>]... plus lots of other cool stuff on Naval History and Heritage Command's website [<https://www.history.navy.mil/>].



Map of Navigation Problem No. 1 for Flight 19. Flight 19 was a flight of five Navy Avenger aircraft lost off the coast of Florida on 5 December 1945. National Archives identifier 73985447.



Vought F4U-4B Corsair Fighter (Bureau # 62924) landing on USS Philippine Sea (CV-47) after attacking targets in Korea, circa 7 December 1950. This plane belongs to Fighter Squadron 113 (VF-113). Official U.S. Navy Photograph, now in the collections of the National Archives. (80-G-423961)

H-057-1: Operations Downfall and Ketsugo – November 1945

H-057.1

Samuel J. Cox, Director Naval History and Heritage Command
January 2021

“The sooner the Americans come, the better... One hundred million die proudly” – Japanese propaganda slogan, summer 1945.

Fortunately, at Christmas 1945, Operation Magic Carpet was in full swing, with December the peak month as over 700,000 U.S. servicemen were returned in that month to the United States from

the Pacific aboard several hundred U.S. Navy ships. Were it not for the end of the war in August 1945, the alternative would have been the bloodiest battle in U.S. and U.S. naval history had the first phase of Operation Downfall (the invasion of Japan) been executed as planned on X-day (1 November 1945) in Operation Olympic (the invasion of the southernmost Japanese home island of Kyushu). The U.S. invasion force, with British participation, for Olympic would have significantly exceeded that of Operation Overlord, the invasion of Normandy in June 1944. An even bigger operation, Coronet, was planned for March 1946, an invasion of the Kanto plain area near Tokyo. Fortunately, 100 Million Japanese didn't have to die a “glorious death,” nor tens of thousands of Americans, nor 5,000

U.S. Sailors (Fleet Admiral Nimitz's estimate) since neither Olympic or Coronet, nor the Japanese defensive plan, Ketsugo, were executed.

Japan's situation in 1945 was desperate. Although Japan still had 4 million men under arms, well over half were essentially trapped in China and Manchuria (thanks to the U.S. Navy, especially submarines) and unavailable for the defense of the Japanese Home Islands. Nevertheless, in over two thousand years, Japan had never been successfully invaded. The most serious previous threat came from two Mongol invasion attempts in 1274 and 1281, both of which were thwarted by typhoons that caused massive ship and manpower losses. Although the story of the "Divine Wind (Kamikaze)" is what is most remembered, in each case the Japanese put up ferocious resistance ashore. In the 1274 invasion attempt, the Mongols were actually withdrawing when the storm hit, destroying some 200 out of 500–900 ships and killing as many as 13,000 of 30,000 men.

The 1281 invasion attempt went even worse for Kublai Khan's Mongol invasion force (reputed to be over 4,400 ships and 142,000 men—probably greatly exaggerated but still a massive force for the time). By 1281, the Japanese had made extensive defensive preparations and the Mongol fleet sailed around for months trying to find a place to get ashore before the great typhoon finally wiped out most of the fleet. The Japanese executed any Mongols (and Koreans and Northern Chinese) who made it ashore, sparing only Southern Chinese, who the Japanese believed had been coerced by the Mongols; the Japanese made them slaves. Some accounts claim Mongol losses at over 100,000 men.

Ironically, had Operation Olympic gone forward with X-day on 1 November 1945, it too would have been severely impacted by a typhoon. The Pacific typhoon season in 1945 was very active with 26 named storms, lasting from April into November. The first typhoon to hit after the

Japanese surrender was Typhoon Ursula (7-15 September 1945) during which six transport aircraft flying from Okinawa to Manila were lost; all 120 recently liberated U.S. prisoners of war and aircrew aboard the aircraft died, the worst peacetime aerial disaster to that date.



USS LCI(R)-771 at Okinawa, Japan, October 1945, following Typhoon "Louise." (UA 538.04.02)

However, in early October, Typhoon Louise took a sudden unexpected turn and on 9 October 1945 hit Okinawa full force, with hundreds of U.S. ships and vessels in Buckner Bay that didn't have time to escape to sea. Twelve ships and craft were sunk, 222 were grounded, and another 32 severely damaged beyond repair. Casualties included 36 killed, 47 missing, and over 100 with serious injuries. Three destroyer-minesweepers and a destroyer escort were driven aground. The destroyer escort, *Oberender* (DE-444), was refloated, but the three destroyer-minesweepers were deemed not worth repair. About 107 amphibious craft were grounded, many of them wrecked beyond salvage, including four of six LSTs that were driven aground. Eighty percent of the buildings on Okinawa were destroyed or severely damaged, many still packed with war supplies. All 60 aircraft on Okinawa airfields were damaged. Only a month earlier, hundreds of aircraft were crammed on Okinawa airfields as well as many more ships and amphibious craft.

The toll would have been far higher had Operation Olympic been underway. Instead, the vast majority of ships and aircraft were gone. Estimates shortly after the typhoon concluded that Operation Olympic would have been delayed by 45 days, which then would have put it in the teeth of winter storm season (in planning for Olympic, 1 December had been assessed as the last feasible date for the operation).



Japanese *Terutsuki* class destroyer in Moji harbor, Kyushu, 15 September 1945. Photo by USS *Haven* (AH-12). (80-G-346356)

Operation Ketsugo (“Decisive Operation”)

Although the U.S. invasion force for Operation Olympic was massive, so too were Japanese preparations to counter it. Japanese Intelligence correctly estimated that the main objective for the initial U.S. landings would be southern Kyushu, specifically the Kagoshima Bay area, in order to establish an anchorage for Navy units and airfields to provide better air cover and close air support for the operation and follow-on operations. Southern Kyushu was just within the maximum range of U.S. fighters flying from Okinawa, one reason the Japanese assessed southern Kyushu would be the initial objective. The Japanese also correctly assessed that the U.S. would not attempt to take the entire island, but at some point would assume a defensive posture (to defend the new airfields) in preparation for the next planned major landings, which the Japanese also correctly believed to be near Tokyo.

The Japanese also with uncanny precision predicted the exact beaches on Kyushu that would be the target of the first landings. Although the Japanese initially thought the landings might occur as early as July, they changed their estimate based on the length of time it took the U.S. to capture Okinawa and of the usual end of typhoon season (October). The Japanese accurately predicted that the landings would occur at the very end of October or the beginning of November. As a result, the Japanese had ample time to reinforce Kyushu, which they did, going from one army division in the spring of 1945 to over 15 divisions by late summer. (Of note, some of the low-end U.S. casualty estimates, cherry-picked by those who argue the atomic bomb was not necessary, were derived before the full scope of Japanese defensive preparations on Kyushu became apparent).

The strategy for Operation Ketsugo was delineated in an Imperial Japanese Army directive of 8 April 1945. The Japanese determined that the strategic center of gravity for the operation was the will of the American people to continue to support the Allied goal of “unconditional surrender” in the face of massive casualties. The Japanese assessed that the critical U.S. weakness was the ability to sustain such extremely high casualties. Thus, the primary objective of Ketsugo was not to hold territory or destroy equipment, but to kill as many Americans as possible regardless of the cost to the Japanese. The objective was to break the will of the American people to sustain such high casualties so that the war could be ended with a negotiated settlement that did not lead to foreign occupation of Japan. It is also apparent from Japanese plans that they intended to throw everything they had (at least in terms of aircraft and naval vessels) into the defense of Kyushu with the intent to kill as many Americans as possible at the beachhead. Thus, American troop transports and amphibious ships were identified as the primary targets. Although the Japanese did not have the means to get their entire army onto Kyushu for logistical (and air

threat) reasons, the Japanese did not intend to hold back aircraft or naval vessels for the expected follow-on landings near Tokyo.

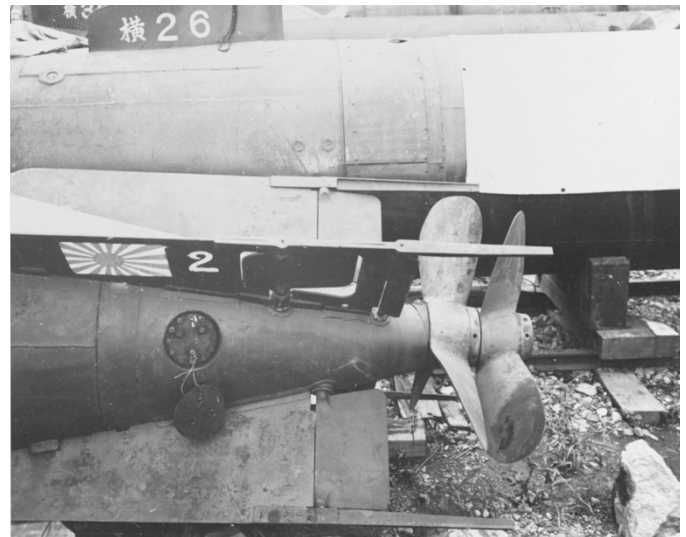
The specific plan for the defense of Kyushu was Ketsugo No. 6 (there were other Ketsugo plans for potential landings in other locations, but No. 6 was given the highest priority). The defense of Kyushu was the responsibility of the 16th Area Army, made up of three armies with a total of 15 divisions, seven independent mixed brigades and independent tank brigades, and two coastal defense divisions. By the time of the Japanese surrender, this force had reached a strength of over 900,000 men. This exceeded the 582,500 men in 13 U.S. assault divisions planned for the landings on Kyushu. The total U.S. force on Kyushu was planned to top out a 766,700.

The effects of U.S. naval gunfire figured prominently in Japanese defensive planning. The Japanese battle plans envisioned fighting in such close contact with U.S. forces that the battle lines would be so confused that U.S. advantages in close air support and naval gunfire support would at least be partially mitigated.

During the course of the war, the Japanese had learned much the hard way. The defensive preparations on Kyushu were based on the "Three Basic Principles on How to Fight Americans" derived from previous combat experience. In a nutshell, these principles were:

- Positions should be constructed beyond the effective range of enemy naval bombardment.
- Cave-type positions should be constructed for protection against air raids and naval bombardment.
- Inaccessible high ground should be selected as protection against flame-throwing tanks.

The Japanese first line of defense against the invasion of Kyushu was what was left of the Imperial Japanese Navy, as aircraft were not expected to be committed until troop transports were in close proximity to the beachhead. Of the 46 remaining Japanese submarines, about 38 were operational in Japanese waters and would be the first thing U.S. forces would encounter. Although an opportunity to sink a carrier would not be passed up, the troop transports were top priority. A few of the Japanese submarines were equipped to carry Kaiten manned-suicide torpedoes and about 120 Kaitens would be immediately available for use, although some estimates for the number of Kaitens that would have been available by November range as high as 1,000. Although the Kaitens had proved largely ineffective in open-ocean use, the Japanese anticipated much better success in confined and crowded waters of an amphibious beachhead, which probably would have been the case.



Japanese Kaiten Type 2 or 4 Human Torpedo View of the afterbody, showing rudders and propellers, with other Kaiten in the background, at the Yokosuka Naval Base, Japan, 7 September 1945. Japanese kanji character painted on the fairwater of Kaiten number 26 is yoko, probably a unit marking for Yokosuka naval base. Top fin of the Kaiten in the foreground features a painted Japanese navy flag. Official U.S. Navy Photograph, now in the collections of the National Archives. (80-G-339854)

The Japanese already had quite a few midget submarines, which had been held back thus far, and were building more. The Japanese expected

to have about 540 five-man "Koryu" midget submarines (two torpedoes or explosive charge) and about 740 of the more advanced "Kairyu" midget submarines (also two torpedoes or explosive charge) ready for use by November. However, Koryu production was severely impacted by bombing and only 110 were complete when the war ended, and only 250 of the Kairyu had been completed.



Japanese Type D (Koryu) midget submarines in a partially flooded dry dock at Kure Naval Base, Japan, February 1946. The larger vessel in the drydock, right background, appears to be a barge. Flooding, deposit of debris (including a bulldozer) and other damage was done after mid-October 1945. Official U.S. Air Force photograph. (USAF K-6023)

Once the American assault was underway, the Japanese navy would shift to phase two, expecting to commit all 19 of their surviving operational destroyers to one-way suicide attacks on the amphibious ships. The Japanese also intended to commit about 3,300 Shinyo suicide boats (most army-manned and some navy-manned). Shinyo's came in various versions; the navy boats generally had a 550-pound explosive charge in the bow, while the army ones had two depth charges that could be rolled off the stern as the boat made a getaway (the army boats were not originally intended as suicide craft). The estimated numbers of Shinyo are very squishy, with some as high as 6,300. What is pretty firm is

that by the end of the war 800 Shinyo had been assigned to the 16th Area Army on Kyushu.

The Japanese navy also intended to employ suicide frogmen, "Fukuryu," operating from prepared underwater shelters in the beachhead area (some of these shelters were designed to hold as many as 18 frogmen). Equipped with diving suits and oxygen, the Fukuryu would swim to the surface with explosive charges to take out landing craft as they went overhead. The navy expected to have about 4,000 Fukuryu equipped and trained by November 1945 for the "Water's Edge Surprise Attack Force."

Air operations in support to Ketsugo No. 6 were the responsibility of the 5th Naval Air Fleet and 6th Air Army, both under centralized control of the Air General Army. (Unlike how the Japanese fought the rest of the war, Ketsugo stressed joint operations and unified command and control instead of the army and navy each doing its own thing.) There were numerous airfields available for use on nearby Shikoku and Honshu Islands. However, the 60 or so airfields on Kyushu, which were under almost daily U.S. air attacks, would be used only for staging kamikaze attacks.

During the kamikaze attacks during the battle of Okinawa the majority of Japanese kamikazes fell to U.S. Navy fighters during the long transit to Okinawa, well before they reached U.S. ships off Okinawa. The Kyushu situation would be different. The Japanese intended to hold back air attacks until U.S. ships (especially troop transports) were in close proximity to the beach. The Japanese would make maximum use of short flight times and terrain masking to achieve surprise and negate the U.S. radar advantage. Although Fleet Admiral Nimitz had a plan to conduct a feint on Kyushu in October with intent to draw out Japanese aircraft to be downed by battleships and cruisers festooned with anti-aircraft weapons, the Japanese had no intention of taking the bait. Aircraft were to remain dispersed, camouflaged, and hidden until the amphibious ships were close

to shore. (The lack of Japanese air activity in the last months of the war resulted in an erroneous U.S. assessment that the Japanese were out of aviation fuel. In fact, the Japanese had hoarded enough to execute the Ketsego plan.)

The Japanese army air attack plan called for aircraft to attack in waves of 300-400 aircraft, at a rate of one wave per hour, day and night, until all aircraft and pilots were gone. The navy preferred to conduct attacks at twilight, and the discussion was still inconclusive at the end of the war. Nevertheless, this level of effort would have resulted in more kamikaze attacks in three hours than in the three months of the Okinawa campaign, and would have had a good prospect of saturating the defenses of transports when they were most vulnerable.

Estimates of how many aircraft the Japanese had at the end of the war vary considerably, although the common theme was that the U.S. underestimated the number. Throughout the summer of 1945, the Intelligence estimates kept growing at an alarming rate. Many Japanese aircraft destroyed on the ground by U.S. air strikes were actually wooden dummies. The Japanese probably had about 12,700 aircraft of all types (5,600 army and 7,000 navy - yes they don't add up). Many of these were not combat aircraft. However, the Japanese had shown during the Battle of Okinawa that even wooden bi-plane trainers could sink destroyers, and such aircraft would be even more uniquely well suited for attacks close-in to shore against troop transports. Such wood and canvas aircraft also had the advantage of low radar-cross section and greatly impeded the effectiveness of U.S. radar-proximity fuzes. At the end of the war, Japan only had about 8,000 decently-trained pilots (this number is squishy too). The Japanese had crash programs to train more pilots and some estimates indicate they may have had 18,600 trained well enough by November to conduct a one-way suicide attack. The Japanese intention was to throw every aircraft that could fly into kamikaze attacks against U.S.

ships while they were most vulnerable trying to get troops ashore, and were modifying almost all their aircraft to do so.

At Kyushu, the Japanese ground forces intended to use a layered defensive strategy that combined defenses at the beach with extensively dug-in positions inland and foot mobile reserves for eventual night counterattack. Earlier in the war, such as at Tarawa, the Japanese learned that trying to defend at the beach was not a good idea in the face of U.S. naval gunfire. However, they had also learned how to build better-concealed and constructed beach defenses that could withstand all but a direct hit by a heavy caliber shell. The Japanese had even sent a team to Germany in late 1944 to learn from the German experience at Normandy. Behind the beach defenses was the "foreground zone," much like the Japanese defenses on Iwo Jima and Okinawa, with mortars and artillery sited on the reverse slope of the first ridge (and camouflaged from air attack), close enough to engage the beachhead before U.S. troops could dig in. Further inland was the "main zone of resistance," outside the range or inaccessible to naval gunfire, deeply dug-in against air attack, with caves and extensive tunnel systems enabling infiltration behind the lines of advancing U.S. forces.

Lastly, the Japanese intended to mobilize the "Civilian Volunteer Corps," which weren't actually volunteers. Under the repeated bombardment of variations of the slogan, "The glorious death of the 100 million," all males ages 15-60 and all females ages 17-40 were to be mobilized. Many had already been trained in the use of hand grenades, swords, knives, bamboo spears, or anything with a sharp point, with special emphasis on night infiltration behind U.S. lines. The Japanese deliberately had no plan to evacuate civilians from the battle area or to declare "open cities." The civilians were expected to fight and die to the last with the soldiers, and as a result of extensive Japanese propaganda most Japanese civilians by late 1945 were resigned to that fate.

The civilian population of Kyushu was 2,400,000. Whether they died fighting, were caught in the crossfire, committed suicide (as had many on Saipan and Okinawa), or were executed for not fighting, many tens of thousands of them were going to die. The Japanese also planned, that in the event of an invasion of Japan, all Allied prisoners of war were to be executed; that would have been about 15,000 dead Americans (and 100,00 total Allied), not counting any in the invasion force.



Japanese kamikaze pilots prepare for battle. A comrade tightens the "HACHIMAKI" for a Japanese Kamikaze pilot ready to sortie, 1944-45. The ancient Samurai, in preparing for battle, wound this folded white cloth about their heads to confine their long hair and to keep perspiration from their eyes. The "HACHIMAKI" thus came to symbolize manly composure, and so was worn by all the Kamikaze pilots. (NH 73096)

Operation Downfall

The intent of Operation Downfall was to invade, occupy, and bring about the unconditional surrender of Japan within 18 months of the defeat of Germany. It would require 1,700,000 U.S. troops, according to the plan. American political and military leaders believed that it was essential to bring about the end of the war as quickly as possible, as war fatigue in the American population was becoming increasingly apparent. The Japanese assessment that high casualties were America's strategic vulnerability was to a large degree correct. In the first years of the war (aside from Pearl Harbor), overall U.S. casualties were relatively light (especially compared to other major combatant nations). However, this changed

in mid-1944 with the invasion of Normandy and the Marianas, the Battle of the Bulge, the campaign in the Philippines, Iwo Jima, and Okinawa. By late 1944, U.S. Army casualties had skyrocketed to 65,000 per month. There was increasing concern whether the U.S. could induct enough new manpower to keep up with losses at that rate. Hence, the U.S. Army leadership in particular was in no mood to drag out the war against Japan with the Navy's preferred approach of slow strangulation with sea blockade and aerial bombardment.

Although General of the Army Douglas MacArthur, Commander-in-Chief of the Southwest Pacific Area of Operations, was an outspoken critic of high-casualty, Navy-led operations like Tarawa, Saipan, Peleliu, and Iwo Jima, he was the most vociferous proponent of an invasion of Japan, despite the expected cost. Chief of Staff of the Army George Marshall was less enthusiastic, but firmly believed that an invasion was necessary. Marshall did become increasingly concerned as the intelligence estimates of the number of Japanese troops on Kyushu continued to climb along with casualty estimates. The bloody battles for Iwo Jima and Okinawa were a real shock. Casualties on Saipan had been bad enough, and initial planning for Downfall was based on the "Saipan ratio" of about one U.S. casualty for every seven Japanese defenders. By Okinawa, it was closer to one U.S. casualty for every one or two Japanese defenders. (Do the math on 900,000 Japanese troops fighting on their home soil on Kyushu, which explains while many U.S. leaders started getting cold feet on an invasion.)

On the Navy side, Chief of Naval Operations Fleet Admiral Ernest J. King was consistently opposed to an invasion (although he acquiesced to the necessity for detailed planning for Olympic) and on that score was in rare alignment with the U.S. Army Air Force. King supported establishing a lodgment on the coast of China (Operation Longtom) for a base to strangle Japan via blockade, although King's vision of using the

Chinese Army to do the dirty work of invading Japan was never realistic for many reasons. The Air Force believed they could bomb the Japanese into submission, although they were fast running out of cities to incinerate. Fleet Admiral William D. Leahy, roughly analogous to the Chairman of the Joint Chiefs of Staff, firmly believed that an invasion of Japan was neither necessary nor desirable. Fleet Admiral Chester Nimitz, Commander-in-Chief of the Pacific Ocean Area, was initially supportive of an invasion, but the carnage of Iwo Jima, Okinawa, and the kamikaze attacks changed his mind. Admiral Raymond Spruance, who would command the initial invasion of Kyushu and had first-hand experience at Saipan, Iwo Jima, and Okinawa, was not in favor of an invasion. Spruance recommended continued blockade and aerial bombardment to Nimitz, with the belief that the Japanese should be allowed to "stew in their own juices" for a while and "wither on the vine" as had been done with other Japanese strongholds in the war.

The timetable for Operation Downfall had been set by late March 1945 by the Joint Chiefs of Staff as 1 December 1945 for Operation Olympic (Kyushu) and 1 March 1946 for Operation Coronet (Kanto Plain/Tokyo). Nimitz recommended that the date for Olympic be moved forward to 1 November to avoid disruptive winter storms (also not expecting that the typhoon season would last longer than usual). Nimitz' recommendation was accepted.

The planning for Downfall was complicated by major disagreements amongst the services as to whether MacArthur or Nimitz should be in charge. Ultimately, MacArthur was given "primary responsibility" and Nimitz "broad leeway to operate," i.e., the problem of command and control was not completely resolved by the time the war ended. Eventually a compromise was reached such that all U.S. Army forces in the Pacific would fall under MacArthur's command (even those in Nimitz's area of responsibility) and all U.S. Navy forces in the Pacific would fall under

Nimitz (even those in MacArthur's area, such as the SEVENTH Fleet). This was actually a significant step backwards for "jointness" and unity of command, but MacArthur's chief of staff summed it up as, "Never again will U.S. Army troops serve under an admiral." (Goldwater-Nichols got the last laugh on that though.)

A key meeting occurred in the White House Oval Office on 18 June 1945 with President Harry S. Truman, and Secretary of War Henry Stimson, Secretary of the Navy James Forrestal, and the four Joint Chiefs (Leahy, Marshall, King, and Army Air Force General Hap Arnold). Marshall briefed that Kyushu was expected to be defended by 350,000 Japanese troops, as well as MacArthur's estimate that the Japanese only had 2,500-3,000 aircraft (both estimates were way too low). All the service chiefs presented their views on the advisability of invading Japan, the likely cost in lives, and provided their recommendations. Leahy, King, and Arnold opposed an invasion, but concurred that planning needed to go forward. However, Truman sided with Marshall that an invasion was necessary, at least the first phase to take Kyushu. Truman then signed orders to shift the necessary additional troops from the European theater to the Pacific. Although Truman made a decision to go forward, it is likely that King believed there would be future reassessment and opportunity to forestall an invasion (technically, major decisions on operations required JCS unanimity, of which there wasn't).

Meanwhile, over the summer of 1945, Intelligence estimates derived from Ultra code-breaking regarding the number of Japanese defenders on Kyushu continued to climb and by mid July had reached 680,000. As a result, casualty estimates for Operations Olympic and Downfall continued to climb, much based on the experience on Okinawa, and Intelligence that the Japanese were mobilizing more men in Japan and somehow managing to bring in more men back from China and Manchuria despite the blockade.

The U.S. Sixth Army, which would invade and occupy Kyushu, estimated 124,935 U.S. battle casualties, including 25,000 dead, plus 269,000 non-battle casualties (disease, accident, etc.) for Kyushu alone. The JCS came up with an estimate that a 90-day campaign on Kyushu would cost 156-175,000 battle casualties, with 38,000 killed in action. By late July, the JCS was forecasting 500,000 casualties at the high end and 100,000 at the low end. In late July 1945, the War Department provided an estimate that the entire Downfall operations would cause between 1.7 to 4 million U.S. casualties, including 400-800,000 U.S. dead, and 5 to 10 million Japanese dead. (Given that the initial Downfall plan called for 1,792,700 troops to go ashore in Japan, this estimate is indeed most sobering, and suggests many more troops than planned would need to be fed into a meat grinder). Other estimates in the U.S. government indicated U.S. deaths at 500,000 to 1 million. Which of these and other estimates would be the most accurate has been hotly debated over the years (and are caught up in the debate about whether the atomic bomb should have been used), and I'm not going to solve it. But it is clear that the cost of invading Japan would have been staggering for both the U.S. and the Japanese.

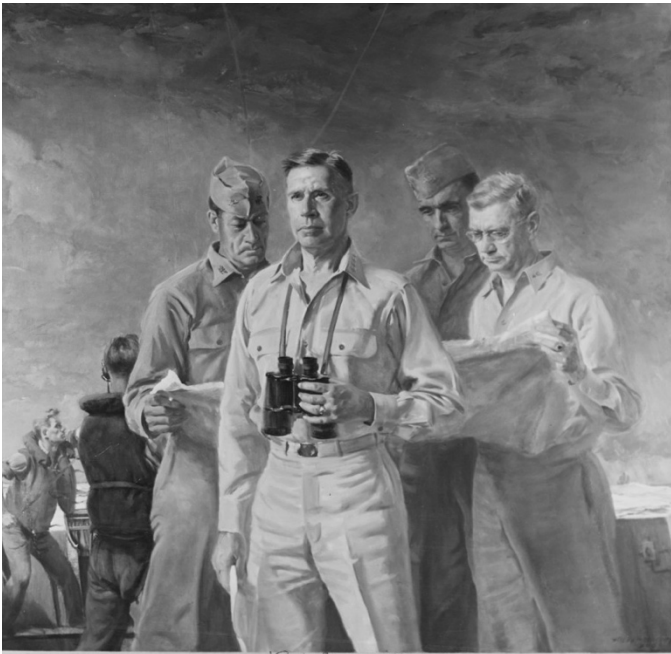
Planned U.S. Navy Organization for Operation Olympic

The U.S. Navy's role in Operation Olympic called for virtually every Navy unit in the Pacific, in addition to many brought around from the European theater. For the first time in the war, the U.S. Navy had so many ships that the FIFTH Fleet and THIRD Fleet would be activated at the same time (and SEVENTH Fleet reduce to a handful of ships in Southeast Asia/Dutch East Indies). The FIFTH Fleet, commanded by Admiral Raymond Spruance, would conduct the amphibious assault on Kyushu and provide direct support with its own Fast Carrier Task Force (TF-58) and every pre-WWII battleship still afloat. The THIRD Fleet's Fast Carrier Task Force (TF-38) and all the new fast

battleships would provide strategic support by conducting strikes throughout Honshu and Hokkaido while also isolating Kyushu from reinforcement. A British Royal Navy Carrier Task Force (TF-37) was assigned to THIRD Fleet. For tactical airstrikes against Japan, the Navy and Air Force divided the airspace, with the Navy taking everything east of 135-degrees east and the Air Force everything west of it.

The THIRD Fleet, commanded by Admiral William F. Halsey, would commence strike operations on 18 October to isolate Kyushu, and hopefully draw out Japanese aircraft so they could be destroyed. On 24 October, the Fast Carrier Task Force would split into TF-38 and TF-58. After the split, THIRD Fleet would include 21 fast aircraft carriers with 1,826 aircraft, plus 11 fast battleships, 30 cruisers, and 107 destroyers. Under THIRD Fleet, TF-38 was designated the Second Fast Carrier Task Force, and would be commanded by Vice Admiral Jack Towers, who had relieved VADM John McCain. TF-38 would have eight Essex-class fleet carriers and four Independence-class light carriers with 1,266 aircraft. TF-38 would consist of three task groups; TG-38.1 commanded by RADM Arthur Davis, TG-38.2 commanded by RADM Thomas Sprague, and TG-38.3 commanded by RADM Clifton "Ziggy" Sprague.

The British Task Force (TF-37), would be commanded by Vice Admiral Bernard Rawlings, and included one task group of four fleet carriers (TG-37.6), commanded by VADM Phillip Vian and a second task group of one fleet carrier and four light carriers (TG-37.7) with a total of 560 British aircraft. Initially TF-37 would conduct diversionary attacks near Hong Kong before joining up with THIRD Fleet for attacks on the Japanese Home Islands.



Photograph of an oil painting by Commander Albert K. Murray, USNR, Official U.S. Navy Combat Artist. Admiral Raymond Ames Spruance, USN, aboard his flagship during his brilliant command of U.S. Fifth Fleet. Admiral Spruance is shown with some of his staff (left to right), the then Capt. Emmet P. Forrestel, Capt. B.B. Biggs, Capt. C.J. Moore, examining operational plans. (NH 124465)

FIFTH Fleet under ADM Raymond Spruance was huge, consisting 2,902 ships (not including landing craft) which would put 582,560 troops of the U.S. Sixth Army (including three Marine divisions) ashore at 35 beaches on Kyushu, building to a total of 766,700 troops ashore. FIFTH Fleet would include over 800 combatant ships and 1,500 transport ships, and would include 13 prewar battleships, 24 cruisers, 139 destroyers, and 167 destroyer escorts. FIFTH Fleet also included 20 amphibious command ships (AGC), 210 attack transports (APA), 12 troopships (AP), 84 attack cargo ships (AKA), 92 destroyer-transport (APD), 515 landing ship tank (LST), 16 landing ship dock (LSD), 360 landing ship medium (LSM), three hospital ships (AH), and numerous smaller patrol and mine warfare vessels and auxiliaries.

Organic air support for FIFTH Fleet would be provided by TF-58, designated the First Fast Carrier Task Force, commanded by VADM "Ted" Sherman. TF-58 would include six Essex-class fleet

carriers, *Enterprise* (CV-6), and three light carriers. Additional organic air cover would be provided by the escort carrier task force (TF-55) commanded by RADM Calvin Durgin, with 16 escort carriers and 448 aircraft. Four of the escort carriers had Marine squadrons embarked and three were designated "night carriers." All told, FIFTH Fleet would receive direct support from 4,023 carrier and land-based (in the Ryukyus) aircraft, while 768 aircraft in the Marianas and 225 on Iwo Jima would provide indirect support attacking targets in Honshu. With the night carriers, including *Enterprise*, the force would be protected at night by a combat air patrol of at least 18 F6F-5N Hellcat night fighters and six land-based Air Force P-61 Black Widows. For the first time in the war, Airborne Early Warning coverage would be provided by radar-equipped carrier-based TBM-3W Avengers and land-based PB-1W (Navy AEW variant of the B-17 Flying Fortress). The force would also include 13 afloat and five landing force fighter direction teams. In addition to the aircraft innovations, FIFTH Fleet would be equipped with over 1,000 KGW-1 Loon cruise missiles (navalized version of reverse-engineered German V-1 "buzz bombs"), which would be fired from modified LSTs and escort carriers, and work was underway to launch them from PB4Y-2 Privateers (Navy version of B-24 bomber).

The Amphibious Force was designated TF-40 and would be under the command of Admiral Richmond "Kelly" Turner embarked on his flagship *Eldorado* (AGC-11). Also embarked on *Eldorado* would be Army General Walter Krueger, who commanded the Sixth Army. The Sixth Army was organized into four corps, with three divisions each, plus two independent divisions. These included V Amphibious Corps, with the 2nd, 3rd and 5th Marine Divisions, plus nine U.S. Army infantry divisions, plus a cavalry division and an airborne division. Also embarked on *Eldorado* was the Air Support Control Group (TG-40.10, commanded by RADM Mel Pride.

Admiral Kelly would also command the Advance Force (TF-41) which would arrive off Kyushu on 24 October 1945, with gunfire support, minesweeping, underwater demolition, hydrographic survey, and service and salvage groups. When the rest of the amphibious force arrived just before X-Day, TF-41 would dissolve and combine with TF-40. VADM Jesse Oldendorf would be in command of the gunfire and covering forces (TF 54), with the older battleships, most of which would be divided among several attack groups. The mine force (TF-56) was commanded by RADM Alexander Sharp, and the minesweepers would also be divided amongst the attack groups.

The Amphibious Force was divided into several attack groups, each with its own battleship/cruiser and escort carrier support:

The Third Attack Force (TF-43) would be commanded by VADM Theodore Wilkinson embarked on *MOUNT OLYMPUS* (AGC-8) and whose transports would embark the U.S. Army XI Corps. Supporting TF-43 would be the Third Fire Support Group (TG-41.3), commanded by RADM Richard Connolly, with six older battleships, six cruisers, 13 destroyers and 34 support ships, with four TF-55 escort carriers attached.

The Fifth Attack Force (TF-45) would be commanded by VADM Harry Hill, whose transports would embark the U.S. Marine V Amphibious Corps. Supporting TF-45 would be the Fifth Fire Support Group (TG-41.5), commanded by RADM Jerauld Wright, with four older battleships, ten cruisers, 14 destroyers, and 74 support ships, with four TF-55 escort carriers attached.

The Seventh Attack Force (TF-47) would be commanded by VADM Daniel Barbey, embarked on *ANCON* (AGC-4) and whose transports would embark the U.S. Army I Corps. Supporting TF-47 would be the Seventh Fire Support Group (TG-41.7), commanded by RADM Ingolf Kiland, with

three older battleships, eight cruisers, 11 destroyers and 35 support ships, plus four TF-55 escort carriers attached.

Two other smaller attack forces included Western Attack Force (TF-42), commanded by RADM Glen Davis, supported by the Western Fire Support Group (TG-42.2) with the mission to seize outlying Islands. The Southern Attack Force (TF-44) would be commanded by RADM Robert Brisco, supported by the Southern Fire Support Group (TG-44.2).

Other major FIFTH Fleet formations included the Reserve Force (TF-48), commanded by RADM Bertram Rogers, with the U.S. Army IX Corps embarked. The Reinforcement Force (TF-49) would be commanded by RADM Arthur Struble (who would be the Commander of SEVENTH Fleet during the Korean War and Joint Task Force SEVEN for the Inchon landings). The Screen Group (TG-40.1) would be commanded by Commodore Frederick Moosbrugger, whose forces included the radar pickets and the screens for each of the other major formations.

In addition to this massive force, additional reinforcements by new construction and repaired ships would arrive in November. These would include repaired *Essex* (CV-9), *Franklin* (CV-13), *Bunker Hill* (CV-17), and *San Jacinto* (CVL-30), along with British carrier *HMS Illustrious* and the new Canadian night carrier *HMCS Ocean*. By December 1945, 40 fast carriers, and 25 battleships would be operating in support of Olympic or bombarding the other Japanese Home Islands.

With U.S. naval forces as large as that arrayed for Operation Olympic, victory was never in doubt. What was in doubt was the price to be paid. Without factoring in submarines, midget submarines, suicide boats, suicide frogmen, mines, or the Japanese advantage of short-range and terrain masking, nor the Japanese strategy of going after comparatively weakly defended troop

ships, assuming that the Japanese could obtain the same ratio of hits per kamikaze as during the Okinawa campaign, the U.S. Navy could expect a minimum of 95 ships sunk and 995 damaged, with between 5,000 and 12,000 Sailors killed during Operation Olympic alone. This would have easily made it the most costly battle in U.S. naval history.

(Sources include: *The Naval Siege of Japan 1945: War Plan Orange Triumphant*, by Brian Herder: Osprey Publishing, 2020. *Downfall: The End of the Imperial Japanese Empire*, by Richard B. Frank: Penguin Books, 1999. *Hell to Pay: Operation Downfall and the Invasion of Japan, 1945-1947*, by D.M. Giangreco: Naval Institute Press, 2009. *Twilight of the Gods: War in the Western Pacific, 1944-1945*, by Ian Toll: W.W. Norton, Co., 2020. *The Fleet at Flood Tide: America at Total War in the Pacific 1944-1945*, by James D. Hornfischer: Bantam Books, 2016. Typhoons and Hurricanes: Pacific Typhoon at Okinawa, October 1945, NHHC document at history.navy.mil Nov 2017



Japanese Submarine I-400 with Japanese crew aboard. (NH 111806)

H-057-2: I-400 and Operation Cherry Blossoms at Night: Japanese Plan for Biological Warfare – September 1945

H-057.2

Samuel J. Cox, Director NHHC

January 2021

Operation Cherry Blossoms at Night was a Japanese plan to wage biological warfare against cities in Southern California, in retaliation for the U.S. firebombing of Japanese cities, which killed hundreds of thousands of Japanese civilians. The Japanese plan called for using aircraft launched from I-400-class submarines to drop “bombs” containing millions of plague-infested fleas. The planned date for execution was 22 September 1945, however Japan announced intent to surrender on 15 August, which was formalized on 2 September 1945, forestalling the operation.

The plan was the inspiration of Surgeon General Shiro Ishii, the Director of Unit 731, the biological warfare unit of the Imperial Japanese Army, located in Harbin, Manchukuo (Japanese

occupied Manchuria). Unit 731 conducted research on chemical and biological warfare agents, using live humans (including some Allied prisoners of war, including unconfirmed reports of U.S. POW survivors of the Bataan Death March) as test subjects. These included tests with bubonic plague, anthrax, cholera, small pox, and botulism. The Japanese dropped bombs filled with biological agents on Chinese military and civilian targets. Although accurate numbers are hard to come by, more recent studies suggest the number of Chinese killed by Japanese biological warfare may have been in excess of 500,000. Unit 731's experiments constituted some of the most horrific atrocities of the war, yet Ishii was granted immunity from prosecution for war crimes in exchange for his cooperation in sharing knowledge with U.S. biological warfare defense programs.

Early in the war, the Japanese considered using biological weapons against the stubborn U.S. and Filipino defenders of the Bataan Peninsula, using bombs filled with plague-carrying fleas, but the U.S. troops finally surrendered before the plan might have been executed. Consideration was also given to using high-altitude balloons to carry biological agents across the Pacific to the U.S. (In fact, beginning on November 1944, coincident with the first B-29 bomber raids on Japan, the Japanese began launching an eventual total of over 9,300 hydrogen-filled "Fu-Go" (Fire Balloons), which carried mostly incendiary and some anti-personnel bombs on the jet stream, with the intent to start large forest fires on the U.S. West Coast. At least 300 balloons actually reached the U.S. (and probably many more) but without the intended effects and were responsible for only six deaths in the U.S., all in one incident. Although ineffective, these fire balloons were considered to be the first "intercontinental weapons," and were the longest combat raids ever conducted until the 1982 Falklands War. Some reports claim the Japanese attempted to use biological weapons against the U.S. Marines on Iwo Jima, using gliders with biological agents, which would be towed to Iwo Jima and

released. However, the gliders never made it to Unit 731 to receive their payload.

As the situation in Japan became increasingly desperate in 1945, Ishii devised the plan code-named Operation Cherry Blossoms at Night, which was finalized in late March 1945. The plan called for five new *I-400*-class submarines, each with three Aichi M6A Seiran float-planes, to cross the Pacific and launch the aircraft with plague/flea bombs on one-way missions to crash into U.S. West Coast cities, with San Diego as the first target. When first presented, the plan was vetoed by Chief of the Army General Staff Yoshijiro Umezu, partly because the Navy didn't have five *I-400* submarines yet. Although Umezu would ultimately be the one ordered by Emperor Hirohito to sign the instrument of surrender aboard the USS *Missouri* (BB-63) on 2 September, in the last months of the war he was in the die-hard "fight-to-the-last Japanese" camp, and developed a renewed interest in the plan in August 1945 with the possibility that more *I-400*s might be completed by the proposed September attack date. Although the number of submarines available to carry out the plan was questionable, it was probably technically feasible and might have been executed had the war not ended when it did.

The Japanese *I-400*-class submarines were the largest ever built until the U.S. and Soviet nuclear ballistic missile submarines in the 1960s. The *I-400* was 400-feet long with a displacement of 6,600 tons (compared to U.S. WWII fleet-type submarines of 300-feet, 2,200 tons displacement (submerged)). With a crew of 144, the *I-400* carried eight 21-inch torpedo tubes forward (none aft), a 5.5-inch deck gun, and three triple-mount 25mm anti-aircraft guns. The *I-400* had the range to reach any location in the world and return to Japan. *I-400* had numerous technological advancements including anechoic coating, advanced air and surface search radars and radar warning receiver. It also had twin-cylinder pressure hulls (a concept later used for the Soviet *Typhoon*-class ballistic missile

submarine in the 1980s). One *I-400* (*I-401*) was equipped with a snorkel.



Gun on Deck of the *I-401* Japanese Submarine, looking aft. (NH 111803)

The *I-400* class also had a hanger to carry three Seiran float-planes, which were launched by compressed air catapult with the submarine on the surface. It took 30 minutes to launch all three aircraft, although only 15 minutes if they were launched without floats, which meant the plane could not be recovered by the submarine. The sub also had a crane and could recover the aircraft, although this was a difficult process. The Aichi M6A Seiran was specially designed for the *I-400*. The existence of the Seiran was unknown to U.S. or Allied Intelligence until after the war ended. The Seiran was fast for a float-plane (295 knots) and had a maximum range of 641 NM with one Type-91 torpedo or an equivalent weight in bombs (1,874-pounds) and a crew of two. A total of 28 Seirans were built (only one survives, at Steven F. Udvar-Hazy Center).



Japanese under guard. *I-400* Japanese submarine. (NH 111822)

The *I-400* class was conceived by Commander-in-Chief of the Combined Fleet, Admiral Isoroku Yamamoto, as a means to attack both the west and east coasts of the United States (Yamamoto even devised a plan to attack New York City and Washington D.C.). Before the *I-400*s, Japan had built about 40 submarines equipped with a hanger and a float-plane (a couple could carry two), intended to give their submarines a long range reconnaissance capability. A Yokosuka E14Y "Glen" float-plane from one such submarine, *I-25*, bombed Oregon with incendiary bombs twice in September 1942. (see H-gram 010/H-010-6). Others flew reconnaissance missions over Sydney, Australia, and other Allied locations. Nevertheless, Yamamoto wanted a submarine that could carry more aircraft, with more payload, at greater speed and range than the Glen.

Initially, the building plan called for 18 *I-400*s and construction commenced on 18 January 1943. After Yamamoto was shot down and killed the program was scaled back to nine, then five. By February 1944, four more *I-400*s were under construction, but only three of the five would be completed by the end of the war, and one of those (*I-402*) was completed as a submarine tanker. Only *I-400* and *I-401* entered service.

I-400 was commissioned on 30 December 1944 and *I-401* on 8 January 1945. *I-402* was

completed on 24 July 1945 as a tanker, not as an aircraft submarine. *I-403* was canceled in October 1943. *I-404* was about 95 percent complete when work was stopped in June 1945, and she was subsequently heavily damaged in an air raid on 28 July 1945 and scuttled. Construction was also stopped on *I-405* and she was scrapped. All other *I-400s* were canceled before construction was underway.

In 1944, the Japanese began devising a plan to attack the locks of the Panama Canal using *I-400* and *I-401* along with the older float-plane submarines, *I-13* and *I-14*, which were specially retrofitted to carry two Seirans each, to provide an attack force of ten aircraft. The Seirans were to launch without floats off Ecuador and attack the canal from the Caribbean side; they would then return to the submarines and ditch alongside for aircrew recovery. In April 1945, the plan was changed to be a kamikaze suicide attack by the Seirans, although the aircrews were not informed of this change of plan. By 5 June, all four submarines had arrived at a Japanese bay (Nanao Wan, on the Sea of Japan side) which had a full-scale wooden mock-up of the Gatun Locks for target practice. By 20 June 1945 the operation was ready to proceed.

However, when Okinawa fell in June 1945, the Japanese naval general staff decided that the Panama Canal operation would have no impact on the course of the war. Instead, the Japanese became aware of the concentration of U.S. carriers (15 of them) at Ulithi Atoll in preparation for commencing attacks against the Japanese home islands. The Japanese devised a two-phase attack plan. In the first phase (Hikari), the submarines *I-13* and *I-14* were to transport four disassembled C6N Saiun "Myrt" high-speed reconnaissance aircraft to Truk Atoll (which although bypassed, was still a Japanese stronghold). The planes were to be re-assembled and used to conduct reconnaissance of Ulithi to confirm the presence of U.S. carriers. *I-13* and *I-14* would then go to Hong Kong and load two Seiran float planes each and then head to

Singapore for further operations. However, *I-13* never reached Truk as she was damaged by radar-equipped Avenger torpedo-bombers from escort carrier *Anzio* (CVE-57) and then sunk by depth charges from destroyer-escort *Lawrence C. Taylor* (DE-415) on 16 July 1945.

In the meantime, the plan called for *I-400* and *I-401* to conduct the second phase (Arashi) attack on Ulithi where they would rendezvous on 14/15 August 1945 and on 17 August launch their six Seirans in kamikaze attacks on U.S. carriers at Ulithi. Each Seiran was to carry one 1,800-pound bomb bolted to the fuselage. Prior to leaving Japan, the Seirans were painted silver with U.S. white star markings, which actually offended the pilots, who considered it a dishonor to the Imperial Japanese Navy.

The Japanese surrender on 15 August put a stop to the Ulithi (and Cherry Blossoms at Night) operations. On 22 August, the Japanese submarines received orders to destroy their sensitive equipment. *I-400* and *I-401* fired off all their torpedoes and catapulted the float-planes without unfolding their wings, sending all to the bottom.



Sinking of a Japanese "I-boat" submarine, during mass scuttling of Japanese subs off Sasebo, 1 April 1946. Another submarine is awaiting sinking, as a PBM flies overhead. (80-G-260221)

At the end of the war, the U.S. Navy boarded and recovered over 24 surviving Japanese submarines, including the three *I-400s*, which were all taken to Sasebo. The Soviets expressed an intent to inspect the submarines under the Japanese surrender agreement. In order to keep the Soviets from gaining access to the Japanese submarine technology, the U.S. Navy sailed the *I-400*, *I-401*, *I-201*, *I-203*, and *I-14* to Pearl Harbor in October 1945. (*I-201* and *I-203* were advanced high-speed submarines, capable of 19 knots underwater, i.e., faster underwater than on the surface; only some advanced German submarines were as fast).

On 1 April 1946, all Japanese submarines still in Japan capable of sailing on their own power, including *I-402*, manned by skeleton Japanese crews, were taken to sea at a spot designated "Point Deep Six" and scuttled with demolition charges and gunfire from destroyer *Everett F. Larson (DD-830)* and submarine tender *Nereus (AS-17)* in "Operation Road's End." On 5 April, four disabled Japanese submarines were towed to sea and scuttled in "Operation Dead Duck." Elsewhere in the Pacific other surrendered Japanese submarines as well as former German U-boats and Italian submarines that had ended up in the Pacific were also scuttled. None were turned over to the Soviets.

Following a period of test and evaluation in Hawaiian waters, the *I-400*, *I-401*, *I-201*, *I-203*, and *I-14* were all scuttled at deliberately unrecorded locations. *I-203* was torpedoed by *Caiman (SS-323)* on 21 May 46, *I-201* by *Queenfish (SS-393)* on 23 May, *I-14* by *Bugara (SS-331)* on 28 May, *I-401* by *Cabezon (SS-334)* on 31 May, and *I-400* by *Trumpetfish (SS-425)* on 4 June 1946.

The wreckage of *I-401* was located by the Hawaii Undersea Research Laboratory deep-sea submarine *Pisces* at a depth of 2,300 feet southwest of Oahu in March 2005. *I-14* and *I-201* were found in February 2009 and *I-400* in August 2013. As the submarines are actually U.S. Navy

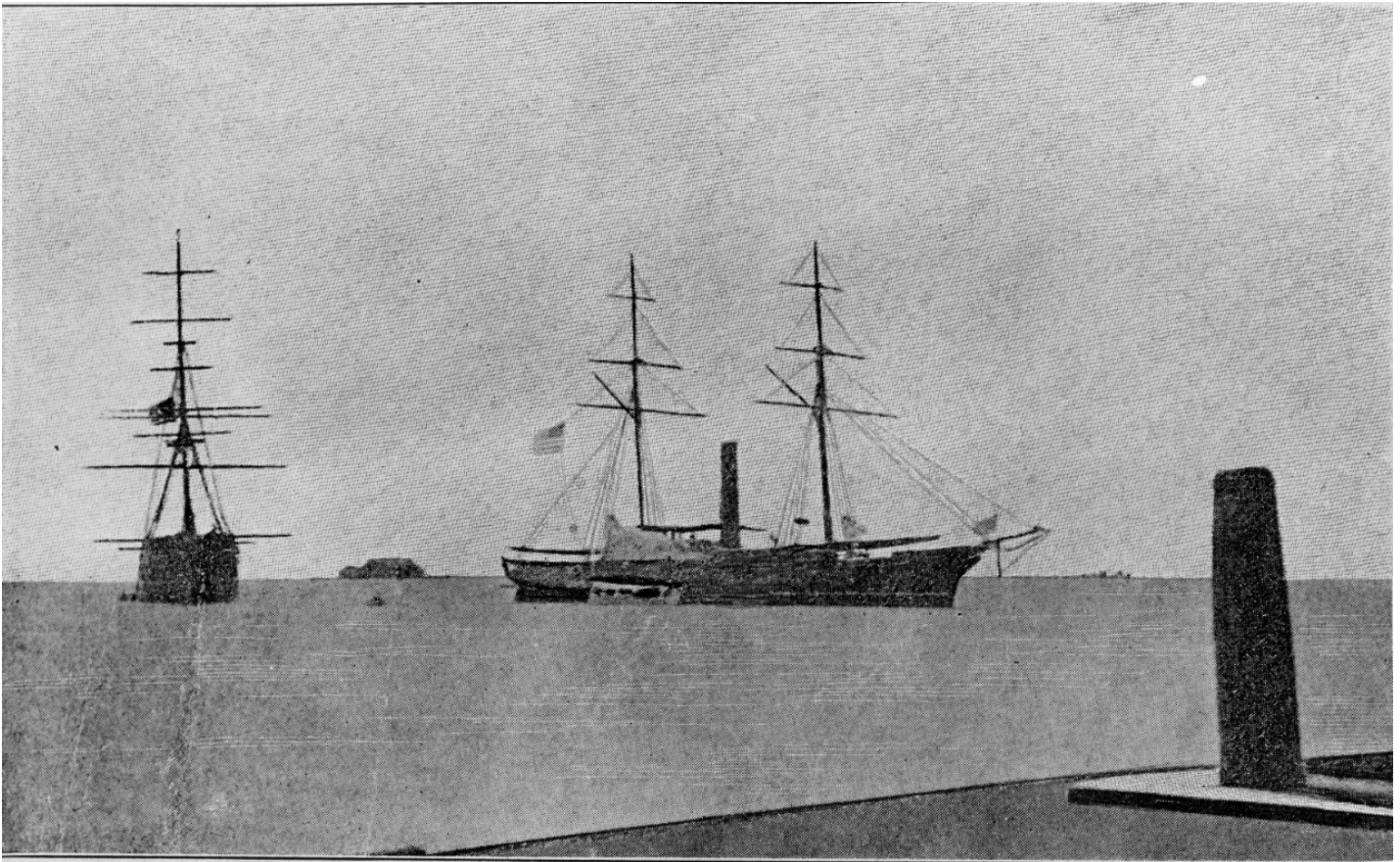
property, NHC granted a permit to the Japanese television network NHK to do a documentary that included bringing up *I-400s* bell, which will be displayed at the USS *Bowfin* submarine museum in Pearl Harbor. The 24 Japanese submarines scuttled of Japan were located in 2015 by sonar.

Whether Operation Cherry Blossoms at Night could have been executed is debatable. The technology existed to conduct the attack. Although the Japanese Army was led to believe more *I-400s* would be finished by September 1945, that is doubtful given the acute shortage of materials (caused in large part by U.S. submarines sinking so many Japanese cargo ships). It's remotely possible that *I-402's* conversion to a tanker could have been stopped, but the bomb damage to *I-404* would have prevented her being ready. In theory, the Japanese could have substituted *I-13* (before she was sunk) and *I-14* for two *I-400s*, and along with *I-400* and *I-401* could have launched a ten-plane biological warfare strike on Southern California. However, another thing working against the Japanese was the advanced proficiency of U.S. "Ultra" codebreaking and radio intelligence. By 1945, few Japanese submarines left port without U.S. Naval Intelligence knowing, along with the submarine's anticipated general operating area. Pinpointing the Japanese submarines as they crossed the vast Pacific would have been challenging, but such a movement by Japanese subs would have provoked a massive U.S. response similar to that against German U-boats approaching the U.S. East Coast in the last month of the war.

How effective the "flea bombs" would have been is also debatable. Japanese biological weapons could inflict major casualties in the environment in China, but the same would not necessarily be true in the United States, with better sanitization and medical capability and much less population density (at the time). Nevertheless, as a weapon of terror, biological weapons certainly could have had a profound psychological effect, and the Japanese could have claimed a big propaganda victory, not that it would have done them much

good given the force that was being arrayed against them for Operation Downfall, the planned invasion of Japan. Japanese use of biological weapons against the U.S. would have been considered reprehensible, but would have been yet another in a long list of war crimes committed by Imperial Japanese forces. The Japanese could also have just pointed to the ashes of their incinerated cities with massive civilian deaths and asked, "Why are fleas worse?" The U.S. use of the two atomic bombs made the whole discussion moot.

(Sources include: *Operation Storm: Japan's Top Secret Submarines and Its Plan to Change the Course of World War II*, by John Geoghegan: Crown Publishing, 2013. *Japan's Infamous Unit 731*, by Han Gold: Tuttle Publishing, 2011. "Japan's Deadliest Weapons" by Norman Polmar in *Naval History* magazine, October 2020. Combinedfleet.com for Japanese submarine data and tracking).



U. S. STEAMER SAGINAW — FOURTH-RATE
Built at the Navy Yard, Mare Island, California, in 1859

Saginaw, 1860-70. (NH 2012)

H-057-3: The Saga of the *Saginaw* Gig

H-057.3

*Samuel J. Cox, Director Naval History and Heritage Command
January 2021*

The steam sidewheel sloop-of-war *Saginaw* was the first ship built at the Mare Island Navy Yard, California, and was commissioned on 5 January 1860. She first served with the U.S. Navy East India Squadron. While searching for the crew of the missing American bark *Myrtle* on 31 July 1861, *Saginaw* was fired on by a battery at the entrance to Qui Nhon Bay, Cochin, China (now Vietnam). At the time, French and Spanish expeditionary forces were engaged in a punitive action due to Vietnamese killing of French and Spanish

missionaries (the Vietnamese actually put up a really good fight against the Europeans). Despite *Saginaw* flying a white flag of neutrality, the Vietnamese fort continued to fire on *Saginaw* with three near misses. *Saginaw* subsequently returned fire and in a 40-minute bombardment destroyed the fort. Lacking enough manpower for a landing party, *Saginaw* then withdrew.

During the Civil War, *Saginaw* served in the Pacific Squadron and patrolled the west coasts of the U.S., Mexico, and Central America to guard against Confederate and European interference, spending most of 1865 at Guyamas, Mexico, protecting U.S. citizens during the fighting between Emperor Maximilian I (installed by the French in 1864 and executed by the Mexicans in 1867) and Mexican President Benito Juarez (who was fighting to kick the French invaders out). In 1868, *Saginaw* bombarded and burned three

Alaskan Native villages near Sitka, Alaska, in what was known as the Kake War (after the Alaskan tribe involved, which had killed two white trappers in retaliation for the killing of two Kake men at Sitka). Although the villages were deserted at the time except for one old woman, the destruction of stores and shelter for the winter resulted in an undetermined number of Kake deaths due to deprivation, in addition to the elder woman. Although U.S. Navy personnel provided support to Andrew Jackson's campaign against the Seminole Indians in Florida (1835-1842), this is the only case of a U.S. Navy ship firing on Native American targets that I am aware of. The whole story of the "Kake War" is one of a long list of examples of Native Americans being treated badly and unfairly. (Someday I will write an H-Gram on "Battles You've Never Heard Of" about all the battles around the world that the U.S. Navy was involved in during the 1800s and early 1900s)

On 24 March 1870, *Saginaw* arrived at Midway Atoll at the far northwestern end of the Hawaiian Islands (then known by Americans and Europeans as the Sandwich Islands, named by British Captain James Cook in 1778 after the then-First Lord of the Admiralty, John Montague, the 4th Earl of Sandwich, who supposedly invented the sandwich so as to be able to eat while he gambled). Under the command of Commander (promoted 2 March 1870) Montgomery Sicard, *Saginaw* was assisting with efforts by civilian contractors to widen the channel into the lagoon in order to establish a U.S. Navy coaling station. By October 1870, this effort was deemed infeasible with the resources of the time, and on 27 October, *Saginaw* brought all contractors on board to return to San Francisco and departed the next day. However, CDR Sicard decided to check at Kure Atoll (then known as Ocean Island), about 50 miles northwest of Midway, for any possible stranded shipwreck survivors.

Despite proceeding with extreme caution at very slow speed, with extra lookouts posted, currents caused *Saginaw* to reach Kure several hours

before anticipated, and in predawn darkness of 29 October 1870, *Saginaw* ran hard aground on an outlying reef. Quickly determining that the ship could not be saved, CDR Sicard directed the crew in a valiant effort to get as many supplies and gear off the ship and onto boats before she began to break up in heavy surf. Somewhat miraculously all 93 aboard (about half the ship's crew and half contractors) reached shore in the boats and by wading to the main part of the island, although there were a number of significant injuries, mostly from cuts on the sharp reef coral. Although food and water were in short supply, seals and albatross supplemented the remaining rations. A boiler belonging to the contractors was saved intact from the wreck—it was used to make steam, which then condensed, providing distilled fresh water. Nevertheless, dysentery quickly affected most of the crew. Within three days, CDR Sicard determined that passively waiting for rescue was not the best option.

The captain's 22-foot gig, which had survived the grounding, was extensively modified to help it withstand a 1,400-mile trip to Oahu. An extra eight inches of freeboard was added to the open whaleboat, the bow was strengthened with iron, the boat decked over, and two masts were added to handle modified sails recovered from *Saginaw*.

The five-man volunteer crew for the voyage was led by the executive officer, Lieutenant John Talbot, and included two ship's crew, Quartermaster Peter Francis and Coxswain William Halford, and two contractors (both hardhat divers), James Muir and John Andrews. Sicard enlisted the two civilians into the Navy. There were other volunteers, but CDR Sicard selected those deemed most healthy and physically fit to withstand what was expected to be an arduous journey. With provisions intended to last 35 days and a rudimentary sextant, the boat left Kure on 18 November to the prayers of those left behind.

Due to prevailing winds and currents, LT Talbot would have to navigate the boat well north of the Hawaiian Islands, turning south only when reaching the longitude of Oahu. Things quickly went south on the boat, however. Within a few days the lamp and heater were out and all tinder waterlogged. The boat required constant bailing to remain afloat. Coffee, tea, and sugar were ruined by salt water. The bread spoiled and molasses in the rice and beans fermented. Quickly running short of food, Halford managed to grab an unlucky albatross, which got its posthumous revenge after the men ate it raw, causing Talbot and two men to become extremely sick for the rest of the trip. Despairing that they would survive, the five men etched their names near the after hatch.

Land was finally sighted after 28 days, which turned out to be the rough north shore of Kauai near Hanalei Bay. Approaching shore before sunset on 18 December, LT Talbot intended to wait until daybreak to attempt a landing. However, during the night the boat was carried into the heavy surf. As the boat tumbled in the breakers, Francis and Andrews were washed overboard and in their weakened state quickly drowned. Halford tried to pull LT Talbot (who was also debilitated by sickness) out of the water, but another wave washed Talbot away. Halford succeeded in getting Muir out from below and assisted to him to shore, but Muir had apparently suffered a severe head injury in the tumbling boat, and by the next morning Muir had died, leaving Halford as the only survivor.

Helped by local islanders, Halford found a ship captain who willingly left his load behind on Kauai to immediately take Halford to Honolulu on the schooner *Wainona*, arriving on Christmas Eve. The U.S. Consul's Office chartered a fast schooner *Kona Packet*, and King Kamehameha (ruler of the still independent Kingdom of Hawaii) sent the wooden screw steamer *SS Kilauea*. On 3 January *Kilauea* arrived at Kure and *Kona Packet* shortly afterwards. *Saginaw's* crew was in

the process of constructing a 40-ton schooner from the remains of *Saginaw*, named the *Deliverance*. (CDR Sicard was aware that in 1837 the British whaler *Geldstones* wrecked on Kure, and her crew constructed a boat out of her remains and named it *Deliverance*, which reached Honolulu, and all of *Geldstones* crew were rescued after many months on the atoll). CDR Sicard's joy turned to sorrow when he learned the fate of the volunteers on the gig. As it turned out, the four men lost in the surf of Kauai were the only deaths; all those on Kure survived the 68 days of deprivation on the small atoll.

Coxswain William Halford was awarded a Medal of Honor (which at the time could be awarded for peacetime valor):

"War Department, General Orders No. 169 (February 8, 1872). The President of the United States, in the name of Congress, takes pleasure in presenting the Medal of Honor to Coxswain William Halford, United States Navy, for gallant and heroic conduct in line of his profession as Coxswain serving on USS *Saginaw*. Coxswain Halford was sole survivor of the boat's crew sent to the Sandwich Islands for assistance after the wreck of the *Saginaw*, 1 October 1870. Promoted to Acting Gunner."

Halford continued to serve in the U.S. Navy until he reached mandatory retirement age of 62 in 1903. However, during World War I, the need for experienced men in the rapidly expanded Navy resulted in him being recalled to active duty, at age 77, on 1 July 1918, with a rank of Acting Lieutenant. He was still serving when he died on 7 February 1919 and was buried at Mare Island Navy Yard. The destroyer USS *Halford* (DD-480) was named in his honor. Commissioned in April 1943, *Halford* earned 13 battle stars in Pacific combat, and had the distinction of being one of only three *Fletcher*-class destroyers to be built with a cruiser catapult (and scout plane) in lieu of the after torpedo bank and No. 3 5-inch gun, although this was quickly determined to be

impractical and was removed. *Halford* was decommissioned in May 1946.

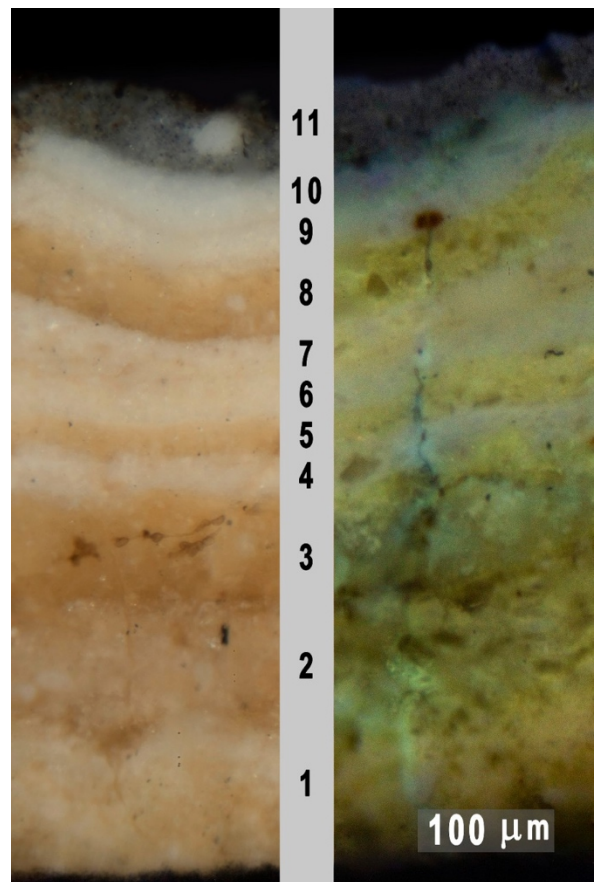
CDR Sicard (USNA 1855) continued to serve in the U.S. Navy, having seen extensive combat on the Mississippi River at New Orleans, Vicksburg, and other locations during the Civil War. He was promoted to captain in 1881 and served as the Chief of the Bureau of Ordnance from 1881 to 1890. He was promoted to commodore in 1894 and rear admiral in 1897 in command of the North Atlantic Squadron. Illness forced him ashore at the outbreak of the Spanish American War, but as the director of the Board of Strategy he played a significant part in the planning and conduct of the war. He retired in September 1898 and died in September 1900. The destroyer USS *Sicard* (DD-346) was named in his honor, serving from 1920 to 1945, with an eventful career in the Far East (Great Japanese earthquake of 1923 and the onset of the Chinese Civil War) and served as a minelayer during World War II, before being decommissioned in November 1945.

The *Saginaw's* gig survived the fatal landing on Kauai. It was transported to Honolulu where it was auctioned off to benefit the crew of *Saginaw*. The purchasers immediately donated it back to the Navy. In 1889 it arrived at the U.S. Naval Academy via service at Mare Island and the Sloop-of-War *Jamestown*. In the 1930s, the superintendent of the Naval Academy, Rear Admiral David F. Sellers (who had reverted to his permanent two-star rank after concluding his tour as the four-star Commander-in-Chief of the U.S. Fleet) sought to have the gig preserved as a permanent memorial to inspire midshipmen by its legacy of survival and heroism. Everything was in place when Sellers retired, but his successors chose not to follow up, and it wound up crammed in a stairwell of the natatorium. In 1946, the head of the Department of Physical Training wanted it out of his building and in 1947 it was given to the Curator of the Navy (which today is me). After a period in storage, in 1954 it was loaned to the City of Saginaw, Michigan, where it was displayed in

various locations over the years (including the water treatment plant) before the Saginaw County Historical Museum asked to return it to the Navy in 2015, where it is now in the custody of the Naval History and Heritage Command, where it is being conserved and will be displayed in a suitable location befitting its record of "devotion and gallantry," as CDR Sicard said.

In 2003, an underwater archaeology expedition by the National Oceanographic and Atmospheric Agency (NOAA) located the wreck sites of both *Saginaw* and *Geldtanes* in what is now Papahānaumokuākea Marine National Monument.

(Sources: "The Loss of USS *Saginaw*" by Jeffery Bowdoin, NHHHC Curator Branch Head, in *The Sextant* blog at usnhistory.navylive. dodlive.mil, posted December 2020. NHHHC Dictionary of American Fighting Ships (DANFS) entry for *Saginaw* at history.navy.mil).



Paint cross-section from the *Saginaw* gig, viewed with visible light (left) and UV fluorescence (right). The nearly dozen layers the gig received during its service are being analyzed by conservators to determine the best course of conservation treatment.



Two TBM Avenger aircraft, similar to the Flight 19 aircraft. (80-G-443876)

H-057-4: The Disappearance of “Flight 19” and “Training 49” – 5 December 1945

H-057.4

*Samuel J. Cox, Director Naval History and Heritage Command
January 2021*

(Overview from H-Gram 056) On 5 December 1945, five U.S. Navy TBM Avenger torpedo bombers from Naval Air Station Fort Lauderdale were lost on a routine overwater navigation flight over the Bahamas Islands. No confirmed trace of the planes or the 14 pilots and aircrewmen aboard has ever been found. Fragmentary radio

communications indicated compass failure and disorientation of the flight leader as the likely cause leading to the planes running out of fuel and ditching at sea as bad weather front moved in, hampering the search and any possible survival. A PBM Mariner flying boat launched from Naval Air Station Banana River (now Patrick Air Force Base) to search for the missing Avengers probably caught fire in flight with the loss of all 13 men aboard. Radar and visual sighting of a flaming aircraft falling from the sky indicated a sudden catastrophic end for the Mariner; although the exact cause of the Mariner’s loss was not determined, the planes were prone to gasoline vapor accumulating in the bilges. The exact cause of the loss of the five Avengers has also never been determined, however the “mystery” is one of the most enduring in aviation history and quickly became part of “Bermuda

Triangle" and "Alien/UFO" lore (see the movie "Close Encounters of the Third Kind," which depicts the "return" of Flight 19 by the aliens).

Added detail.

On 5 December 1945, a flight of five U.S. Navy TBM Avenger torpedo bombers took off from Naval Air Station Fort Lauderdale for a routine navigation and bombing training mission over the Bahamas; although extensive but sporadic communications were received during the flight indicating compass and navigation problems, neither the aircraft nor the 14 men (six Navy and eight Marines) aboard were ever seen again. A Martin PBM Mariner with 13 men aboard launched from Naval Air Station Banana River to search for the missing aircraft also never returned after suffering a probable in-flight fire. Despite one of the largest air and sea searches in history, no confirmed trace of the Avengers or the men aboard has ever been found. It remains one of the greatest aviation mysteries and was the most significant event leading to the myth of the "Bermuda Triangle," where supposedly an unusual number of ships and aircraft have disappeared without a trace. Numerous accounts have embellished the story over the years. I will endeavor to stick to the official record although the board of inquiry's conclusion is not especially helpful, "We are not able to even make a good guess as to what happened."

Although often referred to as the "Lost Patrol," Flight 19 was a routine training mission, "Navigation Problem No. 1" to be exact. The designated route was to depart NAS Fort Lauderdale, fly 091-degrees for 56 miles (about 20 minutes) to Hens and Chicken Shoals and conduct low-level bombing runs on a concrete target for about 30 minutes. The flight was then to continue on 091 for another 67 miles, then turn left and fly 346-degrees for 73 miles (crossing Grand Bahamas Island along the way), and then fly 241 degrees for 120 miles back to NAS Fort Lauderdale.

The instructor for the flight was Lieutenant Charles Carroll Taylor, USNR, who was a combat veteran aboard USS *Hancock* (CV-19) in the Pacific, with 2,509.3 hours of flying time, 606 in the Avenger. It was, however, the first time LT Taylor would be leading this particular navigation syllabus problem, having recently arrived from NAS Miami. The other four pilots, one Navy and three Marines, were far less experienced, averaging about 300 hours each, with about 60 hours in the Avenger. This would be their third and final time flying a basic navigation problem. Four of the aircraft carried two aircrewmembers each who were undergoing advanced combat aircrew training in the Avenger. The fifth aircraft only had one aircrewman, as Corporal Allan Kosnar, USMC, had asked to be excused from the mission.

Avenger FT-28 (TBM-3D BuNo 23307) was flown by LT Charles Taylor, USNR, with AOM3 George Devlin, USNR, and ARM3 Walter Parpart, USNR. FT-36 (TBM-1C BuNo 46094) was flown by CAPT Edward Powers, USMC, with SSgt. Howell Thompson, USMCR, and Sgt. George Paonessa, USMC. FT-3 (TBM-1C BuNo 45714) was flown by ENS Joseph Bossi, USNR, with S1C Herman Thelander, USNR, and S1C Burt Baluk, Jr., USNR. FT-117 (TBM-1C BuNo 73209) was flown by CAPT George Stivers, USMC, with Pvt. Robert Gruebel, USMCR, and Sgt. Robert Gallivan, USMC. FT-81 (TBM-1C BuNo 46325) was flown by 2ndLt. Forrest Gerber, USMCR, with PFC William Lightfoot, USMCR.

Prior to the flight, all the aircraft received a thorough pre-flight check confirming fuel tanks were full (enough for 5.5 hours of flight), all survival gear was in place, and instruments were checked. The most significant discrepancy was that all five planes were missing their 24-hour clocks, a commonly pilfered item. This was not considered a "no-go" as all pilots were supposed to have a wristwatch. The weather was briefed as "favorable" with a sea state moderate to rough.

The flight was scheduled to launch at 1345, but the instructor showed up late for the briefing. Without giving a reason, LT Taylor asked the duty officer to find another instructor because he did not want to take this flight. As there was no other instructor available, his request was denied.

The flight launched at 1410 and was led by a trainee pilot, with LT Taylor in the rear, call sign Fox Tare Two Eight (FT-28). Estimated time of return was 1723. Initially all seemed to go well. The tower at NAS Fort Lauderdale heard communications from Flight 19 indicating it was finishing up the bombing practice. At 1540 came the first sign of trouble. By this time, the flight should have made the turn from 091-degrees to 346-degrees. At that time, the senior flight instructor at Fort Lauderdale, LT Robert F. Cox (call sign FT-74), was airborne joining up on his flight (to fly the same Navigation Problem 1 route) when he heard communications between a voice (LT Taylor) and "Powers" (CAPT Edward J. Powers, USMC, one of the trainees). Although FT-74 did not know at the time who was transmitting, he assessed that an aircraft or boat was in distress. The voice kept asking Powers for a compass reading, before Powers finally said, "I don't know where we are. We must have got lost after that last turn."

At this point FT-74 informed Fort Lauderdale that either planes or boats were lost. After several unsuccessful radio attempts, FT-74 finally made contact with FT-28 (LT Taylor) and asked what the trouble was. LT Taylor responded, "Both my compasses are out and I am trying to find Fort Lauderdale, FL. I am over land but it is broken. I am sure I'm in the Keys but I don't know how far down and I don't know how to get to Fort Lauderdale." FT-74 responded with instructions for how to get from the Keys back to Fort Lauderdale, but LT Taylor sounded rattled and confused. After several more confusing exchanges, LT Taylor asked for NAS Miami to see if they had Flight 19 on radar. FT-74 asked if FT-28

had his emergency IFF gear on, which LT Taylor did not.

At 1600, LT Taylor reported visibility of 10-12 miles. At that time, FT-74 observed very rough sea covered with whitecaps and streamers. At the time surface winds were 22 knots but visibility was good in all directions except directly west.

By 1626 Air-Sea Rescue Task Unit Four (ASRTU-4) at Port Everglades was monitoring the communications and also contacted NAS Fort Lauderdale and NAS Miami to see if anyone could get a radio-direction finding fix on the flight. Merchant ships in the area were notified and several Coast Guard cutters made ready to get underway, but communications delays and interference from Cuban stations slowed the efforts. At 1628, ASRTU-4 suggested to FT-28 that another plane in the flight with a working compass take the lead. This was followed by fragmentary communications amongst the Flight 19 aircraft about where they were, but no other aircraft appeared to take the lead. By this time, FT-74 was flying south from Fort Lauderdale to attempt to close with Flight 19 (if Flight 19 was actually over the Florida Keys) but instead of communications growing stronger, they were getting weaker, and then FT-74's transmitter lost power. LT Cox, the senior flight instructor (FT-74) later testified that he then deduced that Flight 19 was actually over the Bahamas and opening range to the north.

At 1630, the NAS Fort Lauderdale duty officer notified the flight officer of Flight 19's difficulty. The flight officer quickly understood that if Flight 19 had flown the first leg of the mission correctly, it was not time-distance feasible to have been over the Florida Keys. The flight officer notified ASRTU-4 to instruct the flight to proceed on course 270-degrees or toward the sun (this was also standard procedure for any lost aircraft from NAS Fort Lauderdale - in the afternoon). By 1630, the NAS Fort Lauderdale operations officer was in telephone contact with ASRTU-4

and by this time all concurred that Flight 19 was almost certainly lost somewhere over the Bahamas and not the Florida Keys. Operations asked ASRTU to ask FT-28 if he had a standard YG (homing transmitter card) to home in on the tower's direction finder. FT-28 did not acknowledge the query. FT-28 was then requested to shift to the search and rescue frequency (3,000 KC) but LT Taylor declined citing need to keep the formation together. LT Taylor indicated he would fly 030-degrees for 45 minutes to be sure they were not over the Gulf of Mexico, but seven minutes later said he was changing course to 090. At this time two different students were heard on the radio, "Dammit, if we could just fly west we could get home; head west dammit."

LT Cox (FT-74), having landed at NAS Fort Lauderdale, believed he knew where Flight 19 was and requested permission to take the duty plane (a single seat, single engine aircraft) to go search. However, the weather at Fort Lauderdale was rapidly deteriorating, and LT Taylor radioed that he would proceed on 270-degrees until they reached land or ran out of fuel. As this course of action should have brought Flight 19 back to Florida, the operations officer decided at 1736 not to send the duty plane out. However, at 1804 LT Taylor indicated he was turning back to 090, apparently still confused as to whether he was over the Gulf of Mexico or the Bahamas. By this time the Gulf and Eastern Sea Frontier High Frequency Direction Finding (HFDF) nets had bearings from six sites on FT-28 placing Flight 19 north of the Bahamas and east of Florida (The HFDF "fix" had a radius of 100 miles, but certainly confirmed Flight 19 was not over the Gulf of Mexico). All airfields on the east coast of Florida were alerted to turn on searchlights, field lights, and beacons. However no one thought to transmit the fix information in the blind for Flight 19 to hear.

By 1820, a PBY Catalina flying boat from Coast Guard Air Station Dinner Key (near Miami) was

airborne searching for Flight 19, but was having transmitter trouble and could not make contact. The last garbled messages were coming in from FT-28, "All planes close up tight...we'll have to ditch unless landfall...when the first plane drops below ten gallons, we all go down together." At the same time, the British tanker *Viscount Empire* was passing through the fix area and reported encountering "tremendous seas and winds of high velocity."

By this time multi-engine search aircraft were taking off from fields the length of the Florida coast. Two Martin PBM-5 Mariner flying boats at NAS Banana River (now Patrick Air Force Base) were preparing for a regularly scheduled night navigation training flight but were quickly re-assigned to the search. The pre-flight check of PBM-5 BuNo 59225 indicated all in order with fuel for a 12-hour flight, as well as no indication of any gas fumes (something to which PBMs were prone - the nickname of PBMs was "the flying gas tank.") The position passed to the PBMs prior to takeoff for the lost Avengers was 130 miles east of New Smyrna, Florida. Weather conditions in the area were 800-1,200-foot overcast, air very turbulent, sea very rough. By 1927 both PBMs were airborne from Banana River. At 1930, "Training 49" (BuNo 59225), flown by Lieutenant (junior grade) Walter G. Jeffrey, USNR, made a last radio call ("out") and was never heard from again, with three pilots and ten aircrewmembers aboard.

At 2115, the tanker *SS Gaines Mills* sent a message, "At 1950, observed a burst of flames, apparently an explosion, leaping flames 100 feet high and burning for ten minutes. Position 28 degrees 59 minutes north, 80 degrees, 25 minutes west. At present passing through a big pool of oil. Stopped, circled area using searchlights, looking for survivors. None found." The master later reported observing a plane catch fire and immediately crash, exploding on impact with the sea. The escort carrier *USS Solomons* (CVE-67) reported tracking both PBM's on radar as Training 49 split off and then suddenly

disappeared from radar in the same position reported by *Gaines Mills*. Heavy seas interfered with any attempt to locate wreckage or to buoy the area. The board of inquiry transcript includes extensive discussion of gas fumes and smoking regulations (strictly enforced on PBMs). Although the board reached no firm conclusion, the line of questioning suggested an inflight fire caused by gas fumes as a likely cause.

Over the next five days, a massive search was conducted at sea and overland Florida. A number of old wrecks were found, along with various floating objects, but no confirmed trace of either the five Avengers or the PBM. Although the exact cause of the loss of the PBM is not known, it is pretty certain that some combination of fire and explosion caused the plane to go down with all aboard. The fate of the Avengers remains a mystery. However, the most likely explanation is that the aircraft ditched as a group off the east coast of Florida north of the Bahamas in the face of a rapidly moving severe weather front. The prospects of survival in an Avenger ditched at sea are marginal at best, especially for the aircrewmen in the back. Ditching an Avenger at night in heavy seas would almost certainly prove fatal, causing the plane to break up, and if anyone got out, they would not last long in the cool December water and winds.

Exactly why LT Taylor became so disoriented will never be known. He took control of the flight sometime after the first turn, apparently believing the trainee flight leader had gotten lost. Having just come from NAS Miami he was familiar with the Florida Keys area but not with the Bahamas. His late arrival for briefing and request not to fly suggested that he might not have been fit for duty. He apparently had difficulty with one or both of his compasses. He may not have had a watch (and the plane had no clock) as he appeared to have no conception of time during the flight, frequently asking the others how long they had been on certain courses. Taylor was generally a good pilot, although he had gotten lost on three

previous occasions, ditching his plane at sea twice. There were also rumors, never proven, that he had too much to drink the night before and that he was experiencing some unknown difficulty with this dating life (sounds like a lot of accident reports).

The board of inquiry concluded, "the leader of the flight became so hopelessly confused as to have suffered something akin to mental aberration." LT Taylor's mother took extreme offense at the Navy's conclusion, accusing the Navy of blaming her son when there were no bodies, no planes, and no evidence. With an attorney, she conducted her own investigation and petitioned the board for the Correction of Naval Records, which concluded "that an injustice is found in subject officer's record under applicable standards of Naval Law." LT Taylor was officially declared cleared of blame, with the conclusion, "The cause of the accident remains unknown." It most certainly wasn't due to aliens or the Bermuda Triangle.

In April 2017, the NAS Fort Lauderdale Historical Association and Museum Members installed a commemorative plaque at the former NAS Banana River seaplane ramp, "Dedicated to all U.S. Naval personnel who served at Naval Air Station Banana River (Patrick Air Force Base). October 1940 - August 1947. In particular, to the officers and crew of "Training 49," a Martin PBM-5 Mariner seaplane from NAS Banana River, lost searching for Flight 19 on 5 December 1945. Lieutenant (j.g). Walter C. Jeffrey Commanding. (LTJG) Harry G. Cone, (ENS) Roger M. Allen, (ENS) Lloyd A. Eliason, (ENS) Charles G. Arceneaux, (RM3) Robert C. Cameron, (AMM1) Donald E. Peterson, (AOM3) James F. Osterheld, (AOM3) John T. Menendez, (S1C) Alfred J. Zywicki, (S1C) Wiley D. Cargill, (S1C) Philp B. Neeman, (ARM3) James F. Jordan."

(Sources: "The Loss of Flight 19," Naval History and Heritage Command at history.navy.mil, including Official Accident Reports and "Lost

Patrol: Flight 19", by Michael McDonnell, *Naval Aviation News*, June 1972, 8-16. "Lt. Charles Carroll Taylor, USNR, Flight 19 Instructor, FT-28" at NAS Fort Lauderdale Museum site (nasflmuseum.com)