

## U-1105 in the US Navy - 1945 to 1949

By Derek Waller

### Introduction

There was considerable Allied interest in U-1105 which had surrendered from sea on 10 May 1945 in Loch Eriboll in the far north-west corner of Scotland, and then been moved to Lisahally in Northern Ireland. This was because this Type VIIC U-Boat's hull was covered with rubber sheeting known as 'Alberich'. The British and American intelligence staffs had known about this development since 1944 from Prisoner of War interrogation reports, but there was uncertainty as to its purpose, although it was thought that it was to help avoid detection by either radar or sonar. This uncertainty was caused because, as was later discovered, the 'Alberich' hull coating was designed to preclude detection by sonar (Asdic), but the similar schnorkel coating was designed to preclude detection by radar. However, whilst each of the Allies wanted U-1105 for testing, it was allocated to the US Navy by the Tripartite Naval Commission (TNC), but only after it was first tested by the Royal Navy in the latter half of 1945.

The purpose of this paper is to describe the story of U-1105 in Allied hands, its transfer to the USA, and its subsequent use, not primarily in relation to its 'Alberich' coating, but as an explosives target and a salvage testing hulk.

### U-1105's Surrender

U-1105 left Norway on its first operational tour on 12 April 1945, and it was one of the first U-Boats to surrender at sea at the end of the war in Europe. It surfaced and broadcast its position to the north-west of Ireland at 0907 hours on 9 May and was located by an RAF Coastal Command Liberator at 1234 hours. Shortly afterwards a Sunderland flying boat arrived overhead and instructed U-1105 to head on the surface for the remote Loch Eriboll which had been designated as a 'Port for Preliminary Examination', where all small arms and other explosives were to be removed and where RN armed guards would be placed on board. At 1740 hours a second Sunderland took over the escort duty, staying overhead until darkness and poor weather caused it to return to base.

On the following day, 10 May, U-1105 arrived at the entrance to Loch Eriboll at 1930 hours where it was met by HMS *Conn*, which provided a boarding party prior to the U-Boat entering the Loch at 2000 hours. After being processed at Loch Eriboll, U-1105 departed for Loch Alsh near Skye in north-west Scotland at 0700 hours on 11 May, escorted by HMS *Rupert* of the 21<sup>st</sup> Escort Group.

Loch Alsh had been designated as a 'Port for Final Examination', the principal roles of which were the removal of the U-Boats' torpedoes, as well as taking the majority of the German crews into captivity. Thus U-1105 had to go through this process before it could be moved to a 'Laying-up Port' to await decisions about its ultimate future, in this case Lisahally in Northern Ireland.

The first U-Boats arrived at Loch Alsh from Loch Eriboll on 11 May, and the final examination process began. This started with the removal of all the German officers and men from each U-Boat, except for a steaming party, which for Type VIIC U-Boats such as U-1105, consisted of the Captain, the Engineer Officer, one executive officer and 12 men. A Royal Navy Submarine Inspection Party then commenced a formal inspection of each U-Boat and, as soon as the torpedo compartments were pronounced clear, the disembarkation of the torpedoes commenced. Within the first 54 hours, eight U-Boats (including U-1105) had been cleared, 54 torpedoes had been disembarked, and 23 officers and 260 ratings had been searched and landed as Prisoners of War.

These eight U-Boats (U-293, U-802, U-826, U-1009, U-1058, U-1105, U-1109 and U-1305) then took part in 'Operation Commonwealth', which entailed sailing in convoy from Loch Alsh to Lisahally together with a representative escort from the Royal Navy's Western Approaches Command. This was in support of a public ceremony which the Commander-in-Chief, Admiral Sir Max Horton, had arranged to take place at Lisahally on 14 May, where he accepted the formal, but staged, surrender of the eight U-Boats which had been the first to surrender from sea in Loch Eriboll, and which were being transferred to Lisahally for long term storage

Each of the eight U-Boats was manned by their skeleton German crews under the supervision of RN personnel, and as they sailed into Lough Foyle on 14 May they were escorted by 11 Allied warships, including the Royal Navy's HMS *Hesperus*, the Royal Canadian Navy's HMCS *Thetford Mines* and the US Navy's USS *Robert I Paine*. Overhead there was a close escort of Liberator, Sunderland and Wellington aircraft of RAF Coastal Command, whilst a Liberator and a Lancaster took aerial photographs.

### **Royal Navy Trials**

The location in the UK of almost all the U-Boats that had surrendered in the Eastern Atlantic area, both from sea and in ports, well before the TNC was constituted in mid-August 1945, well before the TNC inspection parties had visited the UK ports, and well before the TNC had announced even their initial allocation lists in October 1945, meant that the Royal Navy had a unique opportunity to initiate early trials with a small number of the U-Boats which had surrendered, and these included the rubber-covered U-1105.

Both the Royal Navy and RAF Coastal Command were very keen to check the implications of U-1105's rubber coating and so, shortly after the transfer of the U-Boats to the UK, the Royal Navy's trial plans were put into effect. The latter started with a meeting in London on 25 June 1945, chaired by the Royal Navy's Admiral (Submarines), Rear Admiral George Creasy, to discuss "*Trials to be carried out in, and with, U-Boats*". The minutes of the meeting record the following initial statement:

*"Rear Admiral Creasy emphasised that owing to the manpower situation only a very limited number [of U-Boats] could be manned for trials.... He had been*

*able to earmark four complete British submarine crews to man U-Boats for trials, one Type XXI, one Type XXIII and two Type VIICs (one rubber covered)."*

Following his meeting on 25 June, Admiral (Submarines) wasted no time in making the preparatory arrangements for the trials with the two Type VIIC U-Boats. Whilst neither was formally commissioned into the Royal Navy, even though they had British COs and crews, they were nevertheless allocated N-series Pennant Numbers. To this end, the two Type VIICs, the rubber-covered U-1105 (Pennant Number N.16) and the standard U-1171 (Pennant Number N.19), were transferred to the 3<sup>rd</sup> Submarine Flotilla (HMS *Forth*) in Holy Loch in western Scotland, arriving there from Lisahally on 29 June 1945.

There was nothing special about U-1171. However a standard Type VIIC was required to take part in the important comparison tests with U-1105. The UK trials with the two Type VIIC U-Boats were conducted in several phases. The first phase had been agreed at the meeting on 25 June, and was conducted in the sea area to the south west and west of Scotland, with the two U-Boats operating out of Holy Loch. Captain (Submarines) HMS *Forth* reported on 4 July 1945 that:

*"The two Type VIIC U-Boats [U-1105 and U-1171] are with us for about three weeks for docking, working-up and comparative A/S trials, one being rubber covered".*

On 8 August, he reported that:

*"Both [Type VIICs] have completed diving, deep diving, full power and schnorkel running trails without any serious hitch. One of these U-Boats [U-1105] is completely rubber covered, and the purpose of the forthcoming trials is to discover the effect of this as an anti A/S measure. The immediate problem is to re-stick various areas of rubber which has begun to peel off, and the attention of several scientists for nine days in dock has failed to achieve much".*

After that, initial detection trials were carried out with RAF Coastal Command at Tobermory and Londonderry, before U-1171 and U-1105 returned to Holy Loch on 18 and 19 August respectively, prior to further trials. At the end of this series of trials, U-1105 was inspected in order to determine its serviceability prior to its review in early September by the Allied TNC Inspection Team and, though it was deemed to be in a generally good condition, the formal report even then recorded that:

*"the rubber covering is, however, in a bad state".*

On 12 October, after the Royal Navy had conducted comparative noise trials with the two U-Boats in Loch Goil, Captain (Submarines) HMS *Forth* reported that:

*"The Type VIICs have now completed their trials in these waters. They sailed for Holyhead [in N Wales] on 2 October, and have been transferred to the 5<sup>th</sup> Submarine Flotilla for the remainder of their trials".*

The 5<sup>th</sup> Submarine Flotilla was based at Fort Blockhouse (HMS *Dolphin*) at Gosport, near Portsmouth in the south of England and, whilst based there, the two U-Boats completed their final series of detection tests. After these were all completed, U-1171 was returned to Lisahally, whilst U-1105 was re-fitted at the Royal Navy Submarine Base at Gosport, prior to being handed over to the US Navy, to which it had been allocated.

### The TNC Allocations

There was however very nearly a major problem concerning U-1105 after it had been allocated to the USA by the TNC in October 1945. This was because the initial TNC allocation to the USA implied that eight of the U-Boats held in the USA and Canada would be 'unallocated', and that they would therefore need to be destroyed by sinking no later than 15 February 1946. It had however been agreed by the TNC's three Senior National Representatives that bi-lateral exchanges of individual U-Boats could be made. Thus, as soon as the initial allocations had been announced, the US Navy decided to implement the exchange agreement, and it advised the TNC's Senior American Representative, Admiral Robert Ghormley, on 11 October that:

*"[The US Navy] desire to substitute 6 U-Boats namely U-805, U-530, U-858, U-977, U-2513 and U-3008 now in United States custody for 6 now located UK which form portion of US share".*

This request indicated that the US Navy no longer required the two Type VIIC U-boats (including U-1105), the two Type XXIII U-Boats and the two Type XXI U-Boats that it had been allocated by the TNC, and which would then have had to be sailed across the Atlantic by US Navy crews. The proposal was therefore discussed at the next TNC Meeting, when the Soviet Representative specifically noted the US Navy's position regarding U-1105, and this caused a flurry of interest and an urgent exchange of messages. First, Admiral Ghormley advised the US Navy's CNO on 30 October that:

*"Former German submarine U-1105 is experimental type with rubber preparation coat over hull for [anti-Sonar purposes]. Now being used experimentally by Admiralty with British crew and is desired by both British and Soviets. Please advise soonest whether this information will modify instructions given in [your message of 11 October]".*

This was followed by a memo from Admiral Gordei Levchenko, the Soviet TNC Representative, who wrote to his colleagues on 1 November, saying:

*"In accordance with the desire of Vice Admiral Ghormley to take all ten submarines allotted to the USA from the number located at present in the USA, I am asking your consent to exchange allotted to the USSR ... the submarine of VII type No 1305 for the VII type No 1105 which USA at present wish to release".*

In response, Admiral Ghormley very quickly back-tracked, advising Admiral Levchenko on 1 November that:

*“I have your letter of 1 November in regard to your desires for allocation of submarines allocated to the United States.*

*I think you must have misunderstood my exact statement at the last meeting of the Naval Commission for I am not yet entirely certain that the United States will not require one or two of the submarines allocated to the United States which are now in England. I have asked for clarification from my Government and upon receipt of reply, will advise you definitely”.*

The UK TNC Representative, Admiral Sir Geoffrey Miles, then entered the debate when, also on 1 November, he advised Admiral Levchenko that:

*“Reference your letter of 1 November 1945 regarding a proposed exchange of submarines, I am not clear yet which of the original ten submarines the USA are now proposing to leave in England. As my Government may also be interested in exchanging some of theirs, I would prefer to withhold my consent to the Russian proposed exchange until I have this information”.*

The US Navy quickly realised its error, and the CNO advised Admiral Ghormley on 1 November that he wished to retain U-1105 instead of U-805, thus making it quite clear that he did not wish to change the TNC allocation concerning U-1105. On 3 November, Admiral Ghormley closed the matter with a formal application to his two TNC colleagues which stated:

*“The United States desires to substitute ex-German U-Boats now located in the Western Hemisphere for those now allocated to the United States now located in the United Kingdom with the one exception of U-1105”.*

### **Handover from the Royal Navy to the US Navy**

When the initial TNC allocation of U-1105 to the US Navy was proposed on 10 October 1945, the U-Boat, manned by its British crew, was still undertaking detection trials with the Royal Navy and RAF Coastal Command. Thus, on 11 October, Flag Officer (Submarines) proposed to the Admiralty that:

*“United States Naval Authorities be asked if U-1105 can be retained until completion of these trials, observing that all data obtained from these trials will be made available to them”.*

As a result, on 16 October, the Royal Navy's First Sea Lord, Admiral of the Fleet Lord Cunningham, personally wrote to Admiral H Kent Hewitt, USN, who had taken over as the London-based Commander of the US Naval Forces in Europe (ComNavEu) in August

1945, stating that the trials with U-1105 were still in progress, and asking if the U-Boat could be retained by the Royal Navy until December 1945.

The situation became then slightly complicated, when Flag Officer (Submarines) revealed on 22 October, that:

*“U-1105 is now at Fort Blockhouse [Gosport] and has developed the following serious defects ... as a result of considerable running on trials:*

- (a) Both engine clutches require stripping and refitting throughout.*
- (b) Both super chargers defective require refitting.*
- (c) All exhaust boxes, injectors and starboard air start valves require refit.*
- (d) Port and starboard mufflers and group exhaust valves require stripping and refitting.*
- (e) Rubber covering peeling badly.*

*Trials ... can probably be completed on main motors by 3 November.*

*Estimated time for engine refit at Blockhouse at least four weeks starting about 3 November.*

*After this refit consider that U-1105 should be fit for Atlantic crossing under own power, but rubber covering if renewed is certain to deteriorate considerably on passage.*

*It is suggested that representatives of US Navy should visit Fort Blockhouse to examine state of vessel with a view to ascertaining the amount of work they require done”.*

On behalf of the US Navy, Admiral Hewitt replied on 23 October that:

*“I am glad to be able to inform you that the Navy Department has approved the retention of this vessel by the Admiralty until the completion of the current tests”.*

However, in view of U-1105's defects, and the fact that it was not fit to sail across the North Atlantic, Admiral of the Fleet Lord Cunningham wrote again to Admiral Hewitt on 30 October stating that it would first need a four week refit starting on 3 November, and suggesting an on-site inspection by US Navy personnel from ComNavEu's London headquarters. Predictably the US Navy was very relaxed about the matter, and Admiral Hewitt's Chief of Staff replied to the First Sea Lord on 8 November, saying:

*“The U-1105 has been inspected by ComNavEu representatives and we have received orders from the Chief of Naval Operations to sail the craft to the United States when ready. It was agreed at a conference with Flag Officer Submarines representatives at Fort Blockhouse that necessary repairs could be effected within a month provided they are commenced promptly. It is therefore requested that the repairs listed in ... your letter be undertaken except for repairs to rubber covering which, due to voyage damage, would probably result in wasted effort.*

*Meanwhile I shall proceed with arrangements to collect a US Navy crew to return the U-Boat to the United States.*

*Thank you for your assistance and for the co-operation of the submarine personnel at Fort Blockhouse”.*

### **Transfer to the USA**

After the Royal Navy’s trials were complete, and after U-1105 had been refitted at Gosport, Flag Officer (Submarines) advised all concerned on 10 December that:

*“Anticipate repairs to U-1105 will be completed on 13 December and that she will be ready to sail from Portsmouth on 15 December.*

*US Commanding Officer, First lieutenant and Engineer Officer visited U-1105 on 6 and 7 December, and it is understood that the remainder of the US crew are at Exeter.*

*Owing to congestion no accommodation is available for the US crew in Dolphin. It is therefore proposed that U-1105 proceeds to Plymouth with her British crew and it is handed over to the US crew in that port. US Commanding Officer concurs”*

The 35-man US Navy crew from the New London Submarine Base were moved to England in mid-November 1945 in the aircraft carrier USS *Enterprise* (CV-6), which was on one of its ‘Magic Carpet’ voyages to pick up thousands of US military passengers for their return home from Europe. The submarine crew was then temporarily based near Exeter, where the US Navy had a supply depot, whilst U-1105’s refit was completed and the dates for the trans-Atlantic crossing were finalised. These were set out on 11 December in the Admiralty’s response to the suggestion regarding Plymouth - which had fallen on very ‘stony ground’ - and which said:

*“U-1105 cannot be accepted at Plymouth. ComNavEu considers it is quite satisfactory for crew to be accommodated on board submarine at Portsmouth until date of sailing.*

*Small advance party, including CO, will arrive Dolphin 13 December. Remainder of crew on 16 December”.*

The warning order to move U-1105 from the UK to the USA was issued by Commander 12<sup>th</sup> US Fleet on 12 December, which stated:

*“When ready on or about 17 December, request you sail ex U-1105 via southerly route to the United States. Routeing to provide for fuelling at Azores and Bermuda if necessary”.*

This was followed by an executive instruction on 15 December, saying:

*“Intend to sail ex-German U-1105 at 0900 Monday 17 December by unrestricted surface navigation.*

*Noon position course and speed is to be reported to C-in-C of appropriate area daily.*

*Speed of advance is 14 knots.*

*U-1105 [to] acknowledge and sail to comply after carrying out engine trials in Spithead.”*

There was then a further message on 17 December which said that:

*“Sailing [of U-1105] postponed until weather moderates”.*

U-1105, which included two Royal Navy engine room ratings amongst its crew, eventually left Gosport on 19 December on its *“unrestricted surface navigation”* because, despite the fact that it had been used for both surface and submerged trials by the Royal Navy for the previous six months, the CO of U-1105, Lt Cdr Hugh Murphy, USN, had specific orders that he was not to dive the U-Boat because of the fear of a German booby trap. However, as the Atlantic storms which had caused the final postponement on 17 December were still raging, this was not a good omen.

After two days U-1105 encountered very heavy seas, and by the fourth day was in the middle of a hurricane, which was not the best situation for an unescorted U-Boat on the surface in the middle of a large ocean. At one stage the U-Boat nearly rolled over, and at the height of the storm the aft 40mm gun mounting was torn loose and washed overboard. Additionally, the radio failed and U-1105 was out of contact for 10 days, causing the US Navy to fear the worst. Also, there was a brief engine fire, and then one of the engines failed completely. Thus, although this was temporarily repaired, once U-1105 was off Newfoundland the CO requested assistance, causing a sea-going tug to be despatched to help bring the U-Boat into Portsmouth Navy Yard (PNY), where it arrived on 2 January 1946.

By then U-1105 was not in a good state. The storm had bent the schnorkel, ripped the gun mounts off the deck, severely bent and rolled the decking and, most important of all, much of the remaining rubber coating had torn loose and been lost. It was therefore no



surprise that there was initially some indecision in the US Navy concerning its future. Two messages illustrate this:

PNY 14 Jan 46: *“Ex-German U-Boat U-1105 is at Portsmouth Naval Shipyard. Information required re disposition. If Yard to accept custody, request authority”*

CNO 16 Jan 46: *“Ex-German U-Boat U-1105. Decision on future employment pending inspection. Additional information in approx 1 week”.*

### **The ‘Alberich’ Coating**

Whilst the US Navy was passed the results of the Royal Navy’s noise and detection tests carried out with U-1105 during the second half of 1945, the US Navy was itself nevertheless still keen to learn as much as possible itself about the secrets of U-1105’s ‘Alberich’ coating and, on 1 February 1946, BuShips ordered PNY to remove two nine square-foot sections of the remaining rubber hull coating from the U-Boat.

One sample was for the Naval Research Laboratory (NRL) in Washington and the other was for the Massachusetts Institute of Technology’s (MIT) Acoustic Laboratory in Cambridge, Mass, both of which had been asked to conduct research on the U-Boat’s unique sonar-reflecting skin. The NRL’s Director at that time was Commodore Henry A Schade, USN, who in 1945 had headed the US Navy’s Technical Mission in Europe which had played a leading role in the acquisition of the latest German naval submarine technology.

### **Explosives Test Target**

Once the sections of anti-sonar rubber tiles had been removed from U-1105 at the beginning of February 1946 and been passed to the NRL and the MIT for research, the US Navy decided that it had no further operational use for U-1105, viz:

CNO to CincLant - 6 Feb 46: *At discretion sail U-1105 to Naval Base Boston. Upon arrival report to Com One for care and preservation. Place out of service and retain for explosive tests”.*

ComSubLant to CincLant - 7 Feb 46: *U-1105 will be sailed from Portsmouth to Boston on 13 February”.*

In the event, U-1105 left PNY on 11 February 1946, and formally reported to the Commandant of the Boston Naval Base on 14 February for the necessary out-of-service preservation action until the plans for the proposed explosive tests were approved.

Whilst at this stage U-1105 had not been specifically selected as a depth charge test target, BuShips had nevertheless written to PNY on 17 January 1946 concerning the special preservation arrangements that would be necessary for any U-Boats awaiting underwater explosion tests. In particular, the letter stated that:

*“It is expected that a number of ex-German submarines will be made available for depth charge testing ... prior to final disposition.*

*In view of the fact that there will undoubtedly be a lapse of several months between the last scheduled operating of the German submarines and the beginning of the depth charge tests, a certain amount of preservation of the vessels will be necessary to ensure that they are capable of static submergence at the time of the tests.*

*It is requested that the Commander PNY make recommendations ...regarding the preservative measures which should be applied to ensure readiness for the tests.*

*It is recognised that additional salvage installations will be required to statically submerge these submarines from a salvage vessel”.*

The US Navy's U-Boat disposal programme was reviewed by the CNO in May 1946. Whilst two of the other remaining U-Boats were earmarked for retention as targets in projected depth charge experiments, U-1105 was nominated as one of six U-Boats that were scheduled for disposal once the cannibalisation of equipment and spare parts for possible use on the two Type XXI U-Boats in US Navy service, U-2513 and U-3008, had taken place. This cannibalisation action had been completed by the end of July 1946, and on 1 August BuShips formally advised the CNO that:

*“[On 26 July 1946] the Boston Naval Shipyard reported that all the equipment and parts designated by the PNY on ... U-1105 have been removed.*

*The CNO is therefore advised that the BuShips has completed the exploitation and cannibalisation of ... U-1105 and that [it is] ready for disposal”.*

However the projected way-ahead for U-1105 was amended after the US Navy's Bureau of Ordnance (BuOrd) had proposed on 25 July that only one of the surplus U-Boats awaiting disposal should be used specifically for testing both live and dummy demolition equipment. This proposal was approved by the CNO on 19 August, when it was confirmed that a single U-Boat would be allocated:

*“For tests of the live demolition outfit, ending in destruction of the submarine”.*

Details of the BuOrd proposals were set out in a letter to both the CNO and BuShips on 8 October 1946, the details of which included:

*“The Bureau of Ordnance proposes to run a short series of progressive tests on the German submarine [U-1105], starting with a single demolition charge in one compartment of the vessel, and ending with destruction beyond repair.*

*It is understood that the Bureau of Ships is interested in this German submarine, after its scuttling by the Bureau of Ordnance tests for evaluating new salvage equipment and methods.*

*The demolition tests can be performed by the Underwater Demolition Team stationed at the Naval Powder Factory, Indian Head, Maryland, [and] the Naval Mine Warfare Test Station [at] Solomons [Island], Maryland, appears [to be] the most suitable station for the tests”.*

Subsequently, BuShips wrote to the CNO and BuOrd on 12 November 1946, saying that:

*“This Bureau is interested in using the German submarine after its scuttling to investigate various types of equipment and methods for salvaging submarines. In this connection, it is considered desirable, if at all practicable, to have the submarine sunk in water approximately 100 feet in depth. In addition, every possible assistance will be rendered should it be necessary to raise the submarine during the progressive tests proposed [by BuOrd].*

*If it is necessary, the personnel assigned to salvage operations can assist in conducting the test proposed by the Bureau of Ordnance”.*

The CNO formally allocated U-1105 to the project on 29 November 1946 when, in his letter headed “*Use of German Submarine for Test of Demolition Equipment and Salvage*”, he said:

*“The proposals that BuOrd conduct a series of tests on a German submarine using a new demolition outfit which would end in destruction beyond repair, and that subsequently BuShips [would] investigate various types of equipment and methods for salvaging submarines, are approved.*

*The ex-German submarine U-1105 is hereby designated for this project.*

*The Commandant First Naval District is being requested to tow U-1105 to Solomons, Maryland, and upon arrival to deliver U-1105 to the Commanding Officer, Mine Warfare Test Station, Solomons, Maryland.*

*At the conclusion of the proposed tests, U-1105 shall be finally disposed of by sinking in waters of such depth as to assure a swept depth of at least 50 feet”.*

The executive instruction to tow U-1105 from Boston to Solomons Island “*for demolition and salvage tests and final disposition by sinking*” was issued on 11 December 1946, and on 18 December the Commandant of Boston Naval Base responded, saying that:

*“This Command will tow the submarine U-1105 from Boston to Mine Warfare Test Station, Solomons, Maryland, arriving at destination by 15 January 1947”.*

However, progress on the project was exceedingly slow, and rather than being retained at Solomons Island, U-1105 was moved instead to the Naval Gun Factory in Washington Navy Yard to await the commencement of the tests. Indeed, the planned tests on U-1105 did not take place for another 18 months, with (first) a BuShips letter dated 6 August 1947 confirming that:

*“The U-1105 will be utilised for tests at Solomons, Maryland, under the cognizance of the Bureau of Ordnance and the Bureau of Ships and disposed of by sinking upon completion of these tests”.*

Nevertheless the delays continued, and a further letter from BuShips to the CNO on 7 April 1948 explained that, whilst the tests had been expected to take place in the summer of 1947, they had been delayed:

*“Because of the late completion of salvage operations of higher priority, unfavorable winter weather, and general deterioration of personnel availability”.*

BuShips therefore recommended that the tests be conducted in the summer of 1948, but that the pattern of tests should be amended from that originally envisaged. Thus the letter on 7 April 1948 also proposed that BuShips and BuOrd should:

*“Perform testing of salvage equipment first, before the submarine has been damaged. Essentially these tests will consist of sinking the submarine, initially in relatively shallow water, and raising with newly developed collapsible pontoons. The behavior of such pontoons, made of nylon coated with neoprene, under towing conditions, as well as during lifting operations, and the practicability of such pontoons in salvage work is the basic purpose of the tests.*

*Subsequent to the tests noted above, the Bureau of Ordnance tests will be conducted and will result in the ultimate destruction of the submarine.*

*The subject tests will be conducted in the Solomons area of the Chesapeake Bay.*

*The ex-German submarine U-1105 is now in that area”.*

At long last the delays were over, and on 2 August 1948 the CNO advised that the depth charge and salvage tests which had been proposed in November 1946:

*“Are hereby approved.*

*Technical control of the program will be exercised by BuShips for the salvage phase, and BuOrd for the depth charge phase.*

*CincLant will provide a suitable vessel to tow U-1105 from the Naval Gun Factory, Washington to the Ordnance Test Facility, Solomons, [on] about 2 August 1948.*

*CinClant will provide the services of two salvage lifting vessels (ARSDs) for a period of about 8 to 10 weeks, commencing [on] about 2 August.*

*At the completion of the proposed tests, the U-1105 shall be finally disposed of by sinking in water of such depth as to assure a swept depth of at least fifty feet”.*

### **BuShips Salvage and Rescue Operations and the First BuOrd Demolition Test (1948)**

It was now clear that U-1105 was to be used for a protracted series of salvage and rescue tests by BuShips before being used for demolition tests by BuOrd. The process began when the salvage lifting vessels USS *Salvager* (ARSD-3) and USS *Windlass* (ARSD-4) left the Norfolk Naval Base on 10 August 1948 en-route for the Piney Point Torpedo Testing Station. Also, on 10 August the rescue and salvage vessel USS *Hoist* (ARS-40) arrived at the Naval Gun Factory in Washington in order to move U-1105 to Piney Point.

USS *Hoist*, with U-1105 in tow, left the Diving School Pier at the Naval Gun Factory on 11 August and, after anchoring overnight in the Potomac River, delivered U-1105 to USS *Salvager* off Piney Point on 12 August. The planned salvage and rescue tests started almost immediately and, as a first step, U-1105 was scuttled in shallow water off Piney Point on 17/18 August.

Thereafter the initial salvage and lifting tests on the sunken hulk of U-1105 off Piney Point were conducted from 24 to 26 August. In particular, the Deck Log of USS *Salvager* records that on 24 August:

*“U-1105 was moored bow and stern between USS Salvager and USS Windlass with salvage hoses connected up for operations”*,

and this was followed by the statement:

*“ Discontinued Salvage Exercise Test One - BuShips Phase”*.

Similarly, the Deck Log of USS *Windlass* records that on 24 August it:

*“Began testing the buoyancy of U-1105”*

And the initial entry in USS *Windlass*’ Deck Log of 25 August records that:

*U-1105 was moored under USS Windlass’ bow”*.

However a hurricane was due to pass through the area and, for safety reasons, U-1105 was returned to the seabed on the afternoon of 30 August, with USS *Salvager*’s Deck Log succinctly recording:

*“Flooded and submerged U-1105”.*

The salvage and lifting tests were then resumed when U-1105 was raised on 2 September, during which time observers and a photographer from the BuShips’ Salvage Section were embarked on USS *Salvager*. A week later, on 9 September, USS *Salvager* was host to visitors from the Goodrich Rubber Company who had come to view the ongoing exercises with their new collapsible pontoons, and particularly to assess the practicability of using such pontoons in submarine salvage work. These tests continued until 21 September, when the emphasis changed to towing exercises with, at one stage, USS *Windlass* towing U-1105 whilst it was submerged but supported by the collapsible pontoons.

With the completion of the BuShips’ salvage and rescue tests, together with the towing exercises in the Piney Point area, the BuOrd demolition test programme then took priority. Thus, after being towed across Chesapeake Bay by USS *Salvager* on 28 September, U-1105 was sunk on 29 September off Point No Point on the east side of Chesapeake Bay in the vicinity of Buoy 16AA in an explosive test designed to determine the effective range of depth charges. The event was reported in a US Navy Press Release issued in Norfolk on 12 October, which stated:

*“A former German submarine was sunk in Chesapeake Bay on September 29 in tests to determine the lethal range of depth charges.*

*The submarine, the U-1105, was sunk off Piney Point, Md.*

*The Navy is now testing new equipment and techniques for raising a sunken submarine, using U-1105 as a guinea pig.*

*Efforts are now underway to raise the vessel in order to evaluate the damage from the explosion that sent her to the bottom,*

*If the submarine can be salvaged, it will be used as a target for additional similar tests”.*

No formal report giving the precise details of this first depth charge test is available. However, the Deck Logs of USS *Salvager* and USS *Windlass* provide an outline. First, on 27 September USS *Windlass* embarked a party of officers and scientists from the Naval Ordnance Laboratory, White Oak, Maryland. Then, on the morning of 28 September, USS *Salvager* towed U-1105 on the surface from Piney Point in the Potomac River to the eastern side of Chesapeake Bay close to Buoy 16AA in the vicinity of Point No Point. There it was anchored in about 100 feet of water.

The following morning, 29 September, USS *Salvager* returned to Piney Point to pick up a number of observers from BuOrd in Washington, arriving back near Buoy 16AA by mid-morning. The explosive test took place between 1100 hours and 1600 hours, and at 1640 hours USS *Salvager* recorded that she was “moored over U-1105 in Chesapeake Bay in

18 fathoms". Salvage operations commenced at 0815 on 30 September, and on 1 October USS *Salvager* had a wire attached to the conning tower of U-1105, and her Deck Log records that "*U-1105 was sunk directly ahead*".

Though sunk, U-1105 was not fatally damaged by this first trial depth charge explosion. Thus, after 29 September, salvage and rescue tests by USS *Salvager* and USS *Windlass* - which included diving operations - continued, having now been re-located from Piney Point to the eastern side of Chesapeake Bay off Point No Point. However, U-1105 was not raised to the surface after this first experimental explosion on 29 September, and on 13 November, with the onset of the winter weather, the sunken flooded hulk of the U-Boat was temporarily abandoned on the seabed off Point No Point, where it remained for the following nine months. The formal notification of the event sent by USS *Salvager* on 18 November recorded that:

*"The ex-German submarine U-1105 was stripped of all experimental salvage equipment and temporarily abandoned in the vicinity of Buoy 16AA in Chesapeake Bay.*

*There is a swept depth of 61 feet over her. The three salvage buoy have been replaced by three unlighted buoys painted white with yellow tops".*

On 11 July 1949 another set of salvage operations began but, after an abortive attempt to raise the waterlogged U-1105 on 1 August, it was not until 18 August that the U-Boat was once more on the surface having been raised by USS *Salvager* and USS *Windlass*. On 19 August U-1105 was towed by USS *Salvager* back to the area off Piney Point in the Potomac River, with USS *Windlass* astern and supplying air to the U-Boat's supporting pontoons. It was nearly midnight when the three vessels finally moored, with U-1105 resting on the bottom in 35 feet of water between the two salvage lifting vessels.

This episode was described by the CO of USS *Salvager* in his formal report of progress to the Norfolk Navy Base on 20 August, which said:

*"During period 13-19 August 1949 raised U-1105 and towed her into the lee of Piney Point where she was again set on the bottom in approx 35 feet of water. Preparations are now being made to surface her and conduct an inspection to determine condition. It is not possible at this time to estimate time required to raise and inspect. Towing was accomplished with submarine suspended from pontoons with draft of approx 32 feet".*

### **The Second and Final Demolition Test (1949)**

The last events marking U-1105's time in the US Navy took place in September 1949. First, it was raised from the seabed by USS *Salvager* which, early on 2 September, commenced blowing air into all U-1105's pontoons, compartments and ballast tanks. It was then moored on the surface in company with the two salvage lifting vessels whilst the Explosive Ordnance Disposal Team from the Naval Powder Factory fitted the U-Boat

with sensing devices. The Team then suspended a newly-developed 250-pound depth charge 30 feet below the port edge of the keel under the forward edge of U-1105's conning tower.

U-1105's mooring off Piney Point was in shallow water (only 31 feet) and so, after embarking observers from BuOrd and the Norfolk Naval Shipyard onboard USS *Salvager* on 19 September, and the positioning of a marker buoy by USS *Windlass*, U-1105 was towed to deeper water a mile offshore Piney Point. The U-Boat was moored by both the bow and the stern, USS *Salvager* cast off the mooring lines, and at 1229 hours on 19 September 1949 the depth charge was detonated, causing U-1105 to sink in less than a minute in about 90 feet of water, where it remains today as a registered underwater monument.

Finally, the very long saga of the disposal of U-1105, which began on 6 February 1946 when the CNO directed that it should be placed out of service and retained for explosive tests, had come to an end. To mark the event, BuOrd advised the CNO on 21 October 1949 that:

*"CNO Letter dated 29 November 1946 designated the ex-German submarine U-1105 as the target vessel for certain explosive tests.*

*The submarine was sunk on 19 September 1949 by an explosion which broke the pressure hull all the way around to the keel and caused sinking in about 20 seconds.*

*The U-1105 is now on the bottom of the Potomac River off Piney Point Lighthouse in 91 feet of water with a swept depth feet over her at mean low water. The position is marked by three yellow buoys".*

In summary, U-1105 was used for a protracted series of salvage and rescue tests by BuShips before being used for demolition tests by BuOrd. Indeed, between August 1948 and September 1949 U-1105 was sunk five times and raised four times. An article in the Baltimore Sun newspaper dated 8 May 1995, written at the time of the sunken U-Boat's dedication as an official diving site, sums up U-1105's time in the US Navy (though it was of course sunk on rather more occasions than reported):

*"The Black Panther [U-1105] ended up in Maryland in the hands of naval salvage and demolition experts at Indian Head on the Potomac River in Charles County. They sank it twice.*

*The first time was 1948, when they flooded the submarine in the Chesapeake Bay and then practiced salvage operations. The second time was Sept. 19, 1949, off Piney Point in the test of a new depth charge. The charge ripped the hull, and the U-1105 sank in 20 seconds, settling into its final resting place a mile offshore at the bottom of the Potomac River".*



## Conclusion

Between the time of its surrender at sea on 9 May 1945 and its arrival at Loch Eriboll in the north of Scotland on 10 May 1945 and its final sinking off Piney Point in the Potomac River, Maryland, on 19 September 1949, the rubber-covered U-1105 was first used for noise and detection trials by the Royal Navy before being allocated to the US Navy by the TNC. Unfortunately by the time it arrived in the USA in January 1946 most of the rubber covering had been lost overboard. Thus U-1105 was deemed to be of no operational use to the US Navy, and it was placed out-of-service in February 1946 to await a disposal decision.

On 29 November 1946, U-1105 was earmarked for use in BuShips' salvage and rescue trials, to be followed by a pair of BuOrd's depth charge demolition tests. For a variety of reasons, the start of the programme was delayed until August 1948, when U-1105 was towed from the Naval Gun Factory in Washington to the Torpedo Test Station at Piney Point in the Potomac River. Thereafter, the salvage and rescue trials took place off Piney Point, before U-1105 was towed across Chesapeake Bay to a position off Point No Point, where it was sunk on 29 September 1948 in the first of the two planned depth charge tests.

After further salvage tests, and with the onset of winter, the sunken and flooded hulk of U-1105 was temporarily abandoned on the seabed off Point No Point on 13 November 1948, where it remained for the following nine months. However, on 18 August 1949 the U-Boat was once more raised, and on 19 August it was towed back to the area off Piney Point where, once again, it was moored on the seabed.

Finally, prior to the second of BuOrd's two depth charge tests, U-1105 was raised on 2 September, and the Explosive Ordnance Disposal Team from the Naval Powder Factory fitted it with sensing devices and suspended a newly-developed 250-pound depth charge 30 feet below the keel. Then, on 19 September 1949, after being towed to a location a mile offshore from Piney Point, the depth charge was detonated, causing U-1105 to sink in less than a minute in about 90 feet of water, where it remains today as a registered under-water monument.

The very long saga of the disposal of U-1105, which had began on 6 February 1946 when the CNO directed that it should be placed out-of-service and retained for explosive tests, had come to an end and, during the course of the process between August 1948 and September 1949, U-1105 had been sunk five times and raised four times - quite a record.

*Arundel, W. Sussex, England*

*June 2012*

**Annex A:** Deck Log Extracts - USS *Hoist*, USS *Windlass* and USS *Salvager*

U-1105 - Deck Log Extracts

USS Hoist - August 1948

- 11 Aug                    Moored to Pier 3, US Naval Gun Factory, Washington  
Moored port side to starboard side U-1105  
Underway from Diving School Pier, US Naval Gun Factory,  
Washington with U-1105 in tow along port side, proceeding to  
Piney Point  
Anchored in Potomac River
- 12 Aug                    Anchored in Potomac River  
U-1105 moored along port side  
Moored port side to starboard side USS *Salvager*, with U-1105 in  
centre  
Delivered U-1105 to CO USS *Salvager*

USS Windlass - August to November 1948

- 10 Aug                    Departed Norfolk for Piney Point, MD  
Anchored off Piney Point Torpedo Testing Station  
USS *Salvager* present
- 14 Aug                    Underway to lay three anchors prior to a six point moor for  
submarine test operations
- 19 Aug                    Underway in preparation to going into moor over U-1105  
Moored alongside USS *Salvager* with U-1105 under bow in  
seventy feet of water
- 20 Aug                    Moored off Torpedo Testing Barge Piney Point
- 24 Aug                    Began testing buoyancy of submarine U-1105
- 30 Aug                    Began making preparations to set Hurricane Condition 1  
Submerged U-1105 to bottom
- 1 Sep                     Proceeding to mooring over U-1105  
Moored over submarine, USS *Salvager* to starboard side
- 2 Sep                     Moored off Piney Point with U-1105 moored under bow
- 7 Sep                     Moored to U-1105 under bow off Piney Point  
Secured from test operations on U-1105

8 Sep	Commenced submarine test operations on U-1105
21 Sep	Underway conducting towing exercises with U-1105 and USS <i>Salvager</i>
27 Sep	Anchored in Potomac River off Piney Point U-1105 moored on port side Personnel from Naval Ordnance Laboratory reported on board
28 Sep	Streamed U-1105 astern on tow line Transferred tow line of U-1105 to USS <i>Salvager</i> Underway from Piney Point to vicinity of Buoy 16AA Anchored in Chesapeake bay near Buoy 16 AA Carrying out exercises concerning tests on U-1105
29 Sep	Carrying out exercises on U-1105 Anchored in position for exercises 1000 yards west of Buoy 16AA
30 Sep	Underway from vicinity of Buoy 16AA to Piney Point Underway from Piney Point to Buoy 16AA Chesapeake Bay
1 Oct	Shifting position to carry out experimental work on U-1105 Underway for Piney Point
2 Oct	Underway from Piney Point to Indian Head, Maryland Moored to Naval Powder Factory Pier, Indian Head
8 Nov	Moored at Indian Head, Maryland Departed for Piney Point Anchored off Piney Point
9 Nov	Moored starboard side of USS <i>Salvager</i> Underway to operating area in Chesapeake Bay Mooring to facilitate operations on U-1105 Secured from diving operations
10 Nov	Moored off Point No Point for operations on U-1105 Underway for Piney Point
13 Nov	Underway for operating area in Chesapeake Bay Recovered buoy and anchor Ceased all operations on U-1105 Marked [U-1105's] position by three yellow and white buoys Underway for Piney Point

- 15 Nov Anchored at Piney Point  
Underway to Norfolk, Va
- 16 Nov Moored at Norfolk with USS *Salvager* alongside  
Departed Norfolk with USS *Salvager* for Bayonne, NJ
- 17 Nov Moored at Bayonne, NJ

**USS *Salvager* - August to November 1948**

- 12 Aug Anchored at Piney Point in company with USS *Windlass*  
USS Hoist arrives with U-1105
- 17 Aug Anchored at Piney Point  
U-1105 moored alongside to port  
Moving U-1105 into centre of 4-point mooring
- 24 Aug Moored at Piney Point in company with USS *Windlass*  
U-1105 moored bow and stern between USS *Salvager* and USS  
*Windlass* with salvage hoses connected up for operations  
Discontinued Salvage Exercise Test One - BuShips Phase
- 25 Aug Moored at Piney Point, with USS *Windlass* to port and U-1105  
moored ahead  
Commenced salvage exercise on U-1105
- 26 Aug Satisfactorily completed Salvage Tests on U-1105
- 27 Aug Moored at Piney Point in company with USS *Windlass*  
Conducting salvage tests with U-1105
- 30 Aug Moored at Piney Point conducting salvage tests on U-1105  
Flooded and submerged U-1105
- 2 Sep Moored at Piney Point in company with USS *Windlass*  
Conducting salvage tests on U-1105  
BuShips personnel on board to observe salvage tests on U-1105  
Photographer on board to photograph salvage tests on U-1105  
3 more visitors on board in connection with salvage operations on  
U-1105
- 3 Sep Moored at Piney Port with USS *Windlass*  
U-1105 anchored ahead
- 8 Sep Moored on 4-point mooring at Piney Point with USS *Windlass*  
Conducting salvage tests on U-1105

9 Sep Moored on 4-point mooring at Piney Point with USS *Windlass*  
U-1105 directly ahead  
Commenced U-1105 salvage operation  
2 representatives of Goodyear Rubber Co on board

10-20 Sep Moored at Piney Point in company with USS *Windlass*  
Conducting salvage tests on U-1105

21 Sep Moored at Piney Point, with USS *Windlass* to port  
U-1105 moored ahead  
Underway continuing testing operations  
U-1105 in a submerged condition suspended by collapsible  
pontoons  
Towing of U-1105 being performed by USS *Windlass*  
Conducting towing exercises  
Anchored at Piney Point  
U-1105 moored ahead to stern of USS *Windlass* and the bow of  
USS *Salvager*

28 Sep U-1105 alongside to port, rigged for towing to operations area  
Buoy 16 AA abeam to starboard  
Cast off from U-1105

29 Sep Anchored in company with USS *Windlass* and U-1105 in  
Chesapeake Bay  
Underway to Piney Point to pick up BuOrd officers  
Departed Piney Point to operating area near Buoy 16AA  
Mooring over U-1105 in Chesapeake Bay in 18 fathoms of water

1 Oct Moored in Chesapeake Bay  
USS *Windlass* anchored off starboard bow  
Salvage operations commenced on U-1105

2 Oct Moored over U-1105 in Chesapeake Bay

3 Oct Moored off Point No Point  
A one-inch wire to conning tower of U-1105

3 Nov Moored to pier at Norfolk  
Departed for operating area off Point No Point  
Moored over U-1105 in Chesapeake bay near Buoy 16AA

4 Nov Commenced salvage operations  
USS *Windlass* anchored 500 yards astern  
Commenced diving operations

USS *Windlass* departed for Indian Head

5 Nov                    Moored over U-1105 in Chesapeake Bay  
Secured diving operations

6 Nov                    Moored over sunken U-1105 near Buoy 16 AA  
Changed anchorage awaiting favorable weather conditions

7 Nov                    Moored in Chesapeake Bay  
Diving and salvage operations on U-1105

8 Nov                    Secured diving operations on the U-1105  
Underway to Piney Point

9 Nov                    Moored at Piney Point  
USS *Windlass* alongside  
USS *Windlass* departed for Buoy 16 AA in Chesapeake Bay

10 Nov                   Anchored at Piney Point  
USS *Windlass* arrived and anchored off port bow

13 Nov                   Anchored at Piney Point  
USS *Windlass* departed for operating area [Buoy 16 AA]  
USS *Windlass* returned to Piney Point

15 Nov                   Anchored at Piney Point  
Underway to Norfolk, Va  
Moored at Norfolk with USS *Windlass* alongside

16 Nov                   Departed Norfolk with USS *Windlass* for Bayonne, NJ

17 Nov                   Moored at Bayonne, NJ

**USS *Windlass* - July to September 1949**

8 Jul                    Departed Norfolk in company of USS *Salvager* for Piney Point

9 Jul                    Anchored in Potomac River

11 Jul                   Underway for vicinity of Buoy 16AA to carry on salvage  
operations o submarine [U-1105]  
Commenced laying mooring anchors in vicinity of wreck

12 Jul                   Moored over wreck of U-1105  
Commenced salvage operations on submarine

13 Jul	Moored off Point No Point
14-31 Jul	Daily salvage operations
1 Aug	Moored off Point No Point over the wreck of U-1105 Commenced salvage operations
1-17 Aug	Daily salvage operations
18 Aug	Anchored off Point No Point Commenced salvage operations Submarine [U-1105] brought to surface
19 Aug	Making preparations to tow submarine Underway for Piney Point, submarine being towed by USS <i>Salvager</i> This ship being towed astern of submarine while supplying air to supporting balloons Anchored off of Piney Point in 31 feet of water Submarine on bottom
22 Aug	Commenced salvage operations
24 Aug	Moored over U-1105, alongside USS <i>Salvager</i>
30 Aug	Underway for Norfolk
31 Aug	Departed Norfolk and returned to Piney Point
1 Sep	Moored over U-1105.
8 Sep	Moored in vicinity of Torpedo Testing Barge
15 Sep	Commenced shifting submarine
19 Sep	Moored in Potomac River, off Piney Point in 31 feet of water Underway to lay marker buoy for submarine Marker buoy in water Transferred one depth charge to retriever Underway to take position off submarine All preparations made for firing depth charge Set off depth charge Submarine U-1105 sunk Maneuvering into position over submarine Commenced diving operations on submarine

**USS Salvager - August and September 1949**

- 19 Aug                    Moored in company of USS *Windlass*  
Underway, preparing to pick up tow of U-1105  
Submarine in tow, en route to Piney Point  
USS *Windlass* trailing astern supplying air to U-1105  
Moored in 27ft of water  
U-1105 moored between this vessel and USS *Windlass* and is  
resting on the bottom
- 2 Sep                     Commenced blowing all pontoons, compartments and ballast tanks  
on U-1105
- 3-8 Sep                 Moored in company with USS *Windlass* and U-1105
- 19 Sep                   Moored in company of USS *Windlass*  
0845: Naval and civilian personnel from BuOrd and the Norfolk  
Naval Shipyard came aboard as observers for explosive tests on  
U-1105  
Cast off mooring lines and got underway with U-1105 on tow  
alongside to port en-route to the explosive area  
Moored U-1105 by the bow and stern in 87 ft of water  
Cast loose from U-1105 and anchored 200 yards south  
Conducted explosive tests on U-1105  
U-1105 sank from sight as result of explosion  
Naval and Civilian Observers left ship