The Unlucky K13

By Malcolm Lobban

World War I, was in many respects a testing time for submarine warfare. Although the concept of submersible warships reached further back in time, with the first real application being credited to the Confederate States Navy during the America Civil War, Britain's submarine service began in 1901. The first Royal Navy boats (submariners seldom speak of ships) were the American designed Hollands - named after John P. Holland of the American Torpedo Boat Company.

During 1915 the Admiralty placed an order among various shipyards for fourteen boats of a new design which incorporated steam turbine engines. The reasoning lay in the fact that while the battle speed of the British fleet averaged 24 knots, existing diesel powered submarines could not keep up with surface ships. At 330 feet long and 2,000 tons displacement, the new 'K' class boats were unique among existing submarines and could reach a surface cruising speed.

Two K-boats were ordered from Fairfield Shipbuilding & Engineering Co. Ltd., Glasgow. In January 1917, K13 had successfully completed preliminary tests, and on the 29th of that month all that remained was for the final acceptance trials to take place. A naval crew of fifty-three officers and ratings had been assigned to her, and everyone was satisfied with progress to date.

Lieutenant-Commander Godfrey Herbert, DSO, was selected to command K13. He was a highly experienced submariner; one of a select few officers whose faith in submarines remained steady, in spite of the accident rate accredited to that branch of the Senior Service. His Executive Officer was Lieutenant Paris G. Singer (grandson of the American sewing machine inventor) and his Engineering Officer was Lieutenant Arthur Lane.

Herbert was in boyant mood as he arrived at Fairfields early on the morning of Monday January 29th. He would no doubt have been aware that several K-boats, undergoing trials at other yards, had experienced several mishaps. So far, K13 had behaved well. Likewise, he was not a man to be influenced by superstition - even though his new charge carried the number "13"! This was the day of the acceptance trials, and he foresaw no great problem.

At 0800 hrs., precisely, K13 slipped her moorings and the tugs gently eased her from the basin into the Clyde. Apart from her crew, she carried twenty-four civilians, including directors and employees of Fairfield, sub-contractors and Admiralty officials. Also on board were Commander Francis H.H. Goodhart, DSO (whose boat, K14, was still being fitted out) and his Engineering Officer, Lieutenant L.C. Rideal. Both were there to study the boat's performance.

Once free of the tugs, K13 made her way sedately down river. She had not gone far, when someone accidentally switched off the power to the steering gear. Before the matter could be rec-

tified, the bows aimed straight for the shore on the port side, finally becoming lodged on a mud bank. Attempts to reverse off failed, the flow of the river and ebbing tide continued to propel the stern of the great submarine down stream.

Slowly she pivoted on her bows, stretching her length across a not-too-wide section of the river. To make matters worse, the steamer *Sonnava* was at this time plodding up the river. Herbert tried to warn the oncoming ship with several blasts of the siren, but to no avail! On came the steamer, aiming directly for the ever-decreasing gap between K13's stern and a dredger moored alongside a quay on the opposite side of the river. The *Sonnava* became jammed between the submarine and the dredger. The steamer thrashed astern and clear, amid a barrage of verbal abuse and nautical oaths from the bridges of both vessels!

What happened next must surely have taken the edge off the steamer captain's wrath! K13's back end continued to swing down stream until her bows became unstuck. However, due to the limited space, the boat made a somewhat undignified exit down river - with her bows pointing upstream - all astern! Thus, she continued until the mouth of the River Cart (a Clyde tributary) was reached, giving enough space to effect a three-point turn. The remainder of the trip down river was uneventful.

After successful surface manoeuvres off Greenock, K13 was brought into the deep, sheltered waters of Gareloch, where now the present-day Clyde Submarine base is sited at Faslane. The loch is about seven miles long by one mile wide, and during this period the local scene was still rural. The Admiralty had taken over the large Shandon Hydropathic Hotel complex on the eastern shore as a residential centre. Apart from this there was little evidence of naval activity, except for the appearance of occasional submarines and tenders practising on the loch.

K13 arrived around 1200 hrs. Accompanied by the tender vessel *Comet,* she quickly made ready for final diving tests. With the civilians still on board, Herbert ordered his crew to diving stations. K-Boats had something like thirty external apertures which had to be closed before diving. The oil-fired tube boilers had to be closed down and twin funnels retracted into the hull and sealed with special covers. When fully secured, the inside of the boat was like a giant sauna.

K13 moved at half speed forward and gently dipped into the calm, cold depths of the loch. She remained submerged at eighty feet for two hours while all systems were checked. Lt. Lane reported a slight leak in the boiler room, which he could not properly examine submerged. He therefore requested a further brief dive once the boiler air vents had been checked. Herbert agreed, then gave the orders to surface, otherwise happy with the boat's performance.

It was a long-standing tradition at trials for contractors to provide lunch

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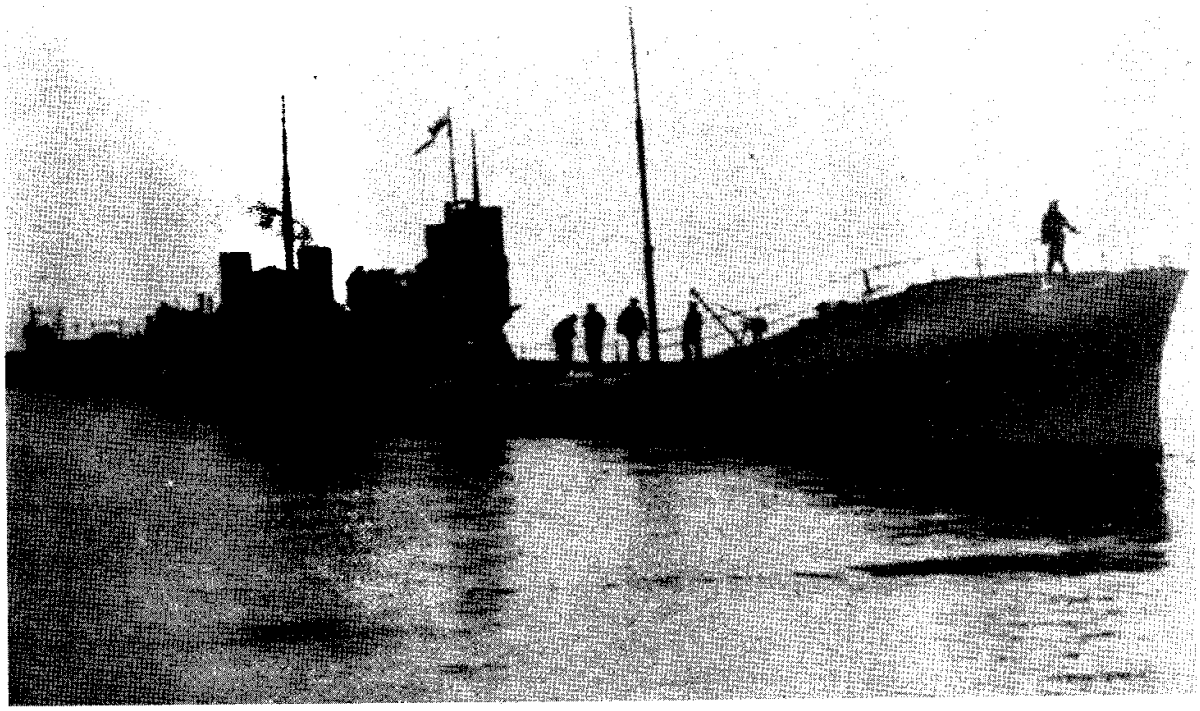

"K" Class submarine of World War I. These boats had a surface cruising speed of 24 knots. Note the twin funnels which were retracted into the casing prior to diving.

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for those involved. Herbert and the other officer took advantage of the custom and were suitably entertained on board the *Comet*. While at lunch he was informed by Lane that the boiler room vents now appeared to be working properly. Nevertheless, it was suggested that a dive of short duration would allay any doubts.

At 1430 hrs., Herbert returned to K13. Before giving orders, he made a courtesy signal to a nearby submarine, the E50, which was undergoing trials for John Brown & Co. Ltd., Clydebank. She was commanded by Lt.-Cdr. Kenneth Michell, a close friend of Herbert. Both officers and their wives had toasted the success of the trials at a dinner the night previous. The E50 was now lying a mile to the south in Gareloch.

From the conning tower, Herbert manoeuvred his boat by electric power further inshore and faced her bows north towards the head of the loch. At a point opposite Shandon Hydro Hotel, he gave the order "Diving stations." He then walked along the deck casing and repeated the order down the open hatch to the engine room, and he saw the funnels being retracted electrically into the superstructure. Back in the conning tower, he heard Lt. Singer call back "Engine room shut off!" With a final glance along the upper deck Herbert went below, closing the hatch behind him.

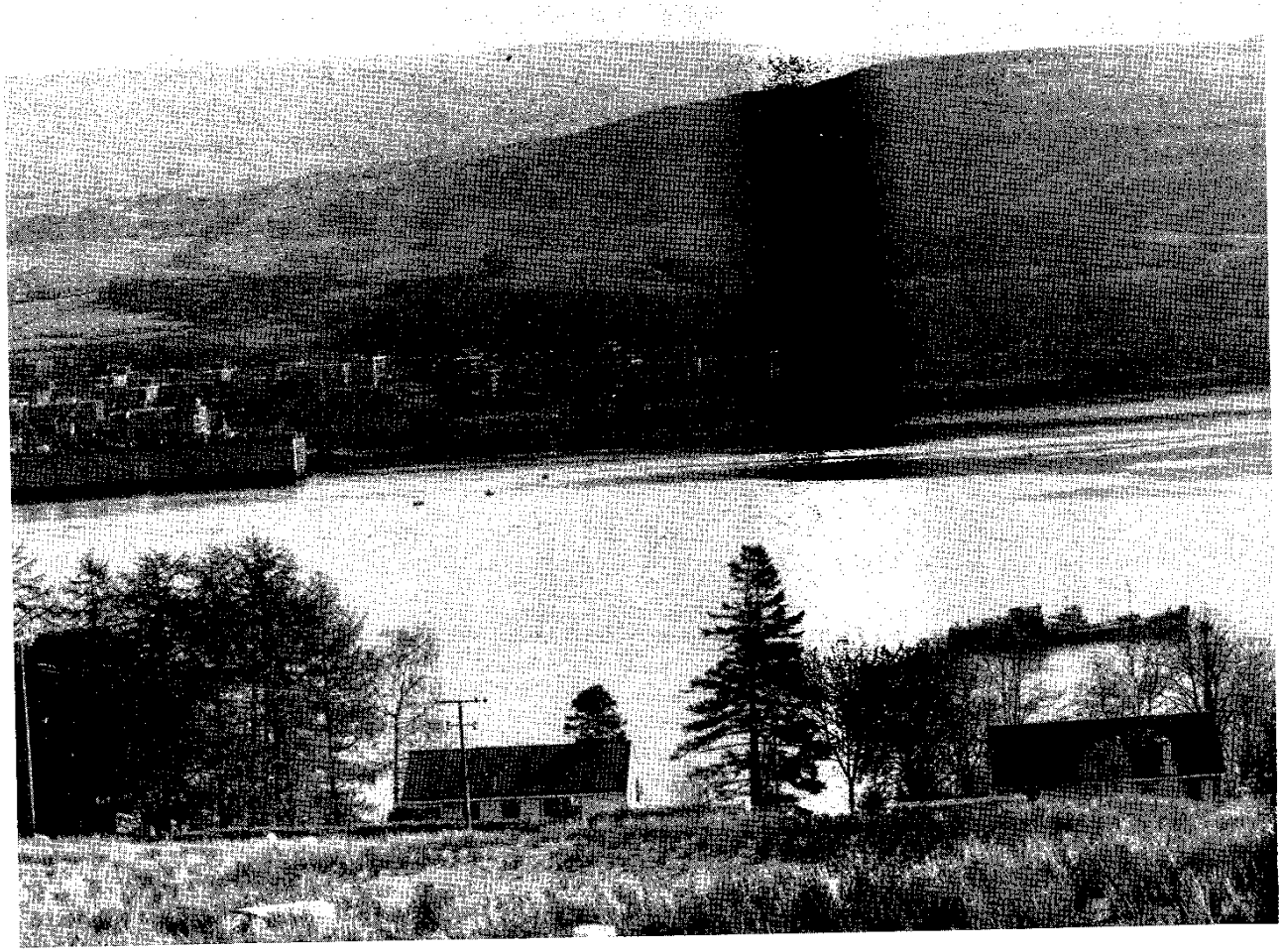
Those now on board K13 totalled eighty. On the order "Dive", the great submarine once more sank beneath the glass-like surface of the loch. However, it soon became apparent to those on board that something was wrong. The depth gauges showed that she was diving far too fast, and as the air became compressed it affected everyone's hearing.

Someone saw water pouring into the boiler room and quickly raised the alarm. Herbert gave out orders to close all watertight doors and for all tanks to be blown, yet the boat continued to dive steadily. He then gave orders for the fore and aft drop-keels (each 10 tons) to be released - an option used only in an emergency. But she was out of control, and continued down until, at fifty feet, she came to rest on the bottom of the loch.

During the dive the control room was threatened when water came gushing through three voice tubes leading aft. Before these could be sealed off, the

Gareloch looking toward Shandon. The site of the old Hydro Hotel is now a naval barracks (far shore centre). It was in this stretch of the loch where the K13 tragedy occured.

Photos by the author



sea water had fallen onto the main electrical switch panel, causing short-circuiting, blown fuses and sparks. Some cable insulation ignited, giving off much smoke and deadly fumes causing irritation to eyes and throats.

The immediate priority in the control room was to extinguish the fires at the switch panel. Some ratings attacked the flames with bare hands and wet sacking, only to receive burns and frequent shocks. Finally a wooden drawer from the chart chest was broken up to provide insulated prods with which to ram wet sacking around the burning cables. When the air had cleared, attempts were made to telephone those in the after quarters of the boat, but no reply was received.

Lt.-Cdr. Michell, on the E50, had been watching intently the actions of K13 and had temporarily suspended his own trials to observe. As K13 went down, he saw two black shapes momentarily on the surface of the loch. He assumed they were K13's twin periscope heads. As the minutes passed, he saw considerable turbulence on the surface of the water. Although he had faith in the experience and skill of his friend, Herbert, he nevertheless had a notion that things were not going well for K13.

Annie MacIntyre. a housemaid in Shandon Hydro Hotel, had been near the shore when she saw K13 going down. In her innocence, she marvelled at the sheer size of the great vessel. Then she suddenly saw two men appear on the surface. They threw up their arms and immediately vanished beneath the waves! She thought it odd! When she later told of her sighting nobody would believe her, suggesting it was all in her imagination. However, later events were to prove her correct!

By 1600 hrs. it was getting dark. Michell had ordered a skiff to be lowered, to patrol the spot where the turbulence still persisted. He conferred with the Fairfield directors on the *Comet,* and it was generally agreed that K13 was in trouble. He sent his First Lieutenant ashore to alert the Senior Naval Officer, Clyde, and to request salvage assistance. Meanwhile, he brought E50 to anchor closer to the spot where K13 lay. The evening was bitterly cold, yet the crew in the skiff kept silent vigil in the area, but only bubbles came up from the cold depths of Gareloch.

The first assistance to arrive was *HMS Gossamer,* a veteran gunboat. She immediately lowered boats, and with a sweep wire attempted to locate the stricken vessel's exact location.

Down below, the survivors in the forward part of the boat had settled down to await their destiny. One of them, Professor Percy Hillhouse, Fairfield's naval architect, had produced his slide rule and carefully assessed that, without undue resort to physical effort, they had enough air for eight hours or so. Happily, the batteries had not been affected by sea water and were fully charged. This gave valuable lighting, power to pump water and for compressing air. The compressors had been run for a short time to reduce air pressure in the hull and to relieve their ears. There was however a danger in reducing the internal pressure too much, for fear that the after bulkhead might give way against a superior water pressure in the flooded area. The bulkhead, designed to withstand pressure at 15 lbs. per square inch, was now standing up to something like 25 lbs. and was leaking. The water was rising at about two feet per hour. This required frequent use of the electric bilge pumps to clear.

In spite of all, there had been no panic on board, although several were heard to remark, "This looks like the end!" Professor Hillhouse later recalled, "Our position appeared

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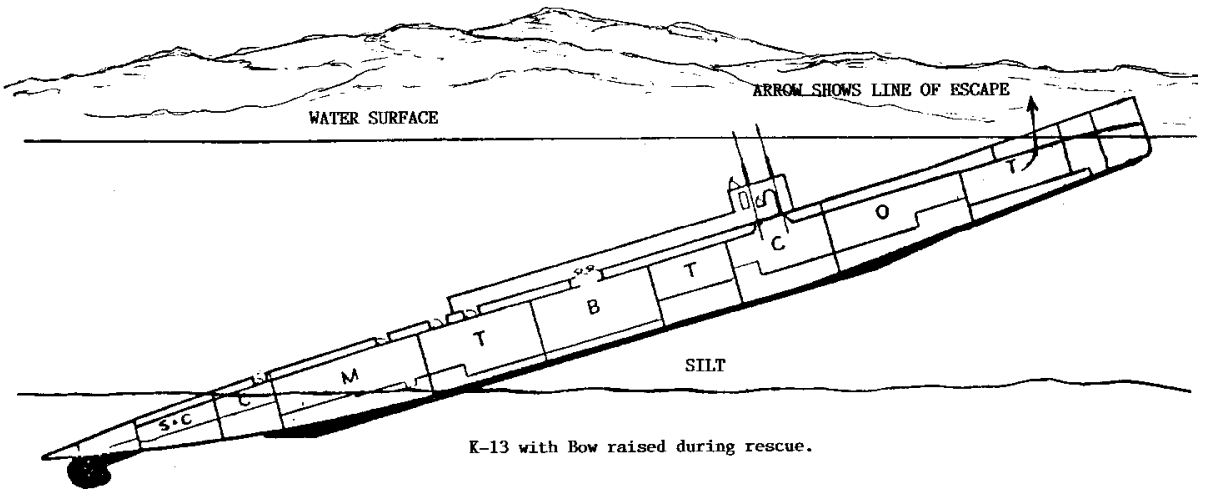
The K13 with bow raised during rescue. Bow Torpedo Room (T); Officer's Quarters with fore hatch (O); Control Room with Conning Tower and Wheelhouse over double Hatch (C); Boiler Room (B); Turbine Room with two Hatches (T); Motor Room with Hatch (C); Crew Space with Hatch (C); Steering Compartment (S&C).



K-13 with Bow raised during rescue.

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desperate, and I do not think there were any on board who had more than the faintest hope of ever seeing blue sky again." A degree of optimism prevailed in the knowledge that all the resources of the Clyde shipbuilding industry would be directed towards their rescue. Under the circumstances, no one could ask for more - beyond a plea to the Almighty!

The survivors began to cautiously open watertight doors in a effort to gain more breathing space. When the door leading to the amidships torpedo room was opened, the compartment was seen to be almost free of water, and they were able to release two men trapped therein.

There were forty-eight survivors - eighteen being civilians. Although Professor Hillhouse had calculated the available air at 250 cubic feet per person, the oxygen factor was considerably decreased. Yet, by releasing small amounts of compressed air at intervals, they were able to survive longer than his eight-hour prediction. Unfortunately the available air was becoming increasingly contaminated by carbon dioxide. Such conditions made normal breathing very painful, and physical exertion difficult. During the long wait it was advisable to lie inert as long as possible.

At 0600 hrs. (Tuesday) the Admiralty salvage vessel *Thrush* arrived, followed shortly after by a trawler (unnamed). *Thrush* was commanded by a very able salvage officer, Lt. Kay, R.N.R. By 0700 hrs., they had managed to get the first diver down, with instructions to walk the length of the submarine, tapping on the hull to see if anyone answered.

The rescuers heard response to the diver's attempts and a signalman began to tap messages in morse using a lead line. Surprisingly, a reply came back "All well before engine room bulkhead." The news gave heart to the rescuers. Strangely, that was the only clear message they were able to pick up. It seems that the survivors were having difficulty in understanding messages tapped out on the hull. Questioning became extremely difficult. The divers reported that K13's after end was lying in deep mud, but her bows were clear of the bottom. They further reported that an engine room hatch was lying open, as were the four air inlets to the boilers.

News of the survivors prompted Michell to seek permission to attempt to raise K13's bows clear of the water by means of a thick hawser. He also suggested that a compressed air pipe might be run from E50 to a connection point in K13's hull. This plan was frowned upon by the Fairfields experts, who feared that the stress of lifting would cause the hull to break. They wanted to manufacture a long escape tube to be fitted over the midship torpedo hatch, and wide enough for people to be brought to the surface. Michell knew that their plan was sound, but it would have taken too long to construct such a device. The Senior Naval Officer then gave Michell orders to try out his own method.

Thrush and the trawler, with a 6 inch thick cable between them, began to sweep in the vicinity of the stricken sub. Amazingly, the first attempt brought the cable neatly under K13's raised bows. Both vessels now secured the cable ends to capstans and prepared to lift.

When the survivors had heard the footsteps on the hull, their senses were so drugged that it was some time before they could make out the messages. It was at this time that Herbert and Goodhart decided on a plan to convert K13's conning tower into a makeshift escape hatch. If the plan worked, it would allow at least one person to reach the surface. Both officers understood sufficient technology to formulate and execute a suitable plan. Moreover, on this occasion they were not short on technical advice from the civilian experts who now shared their fate.

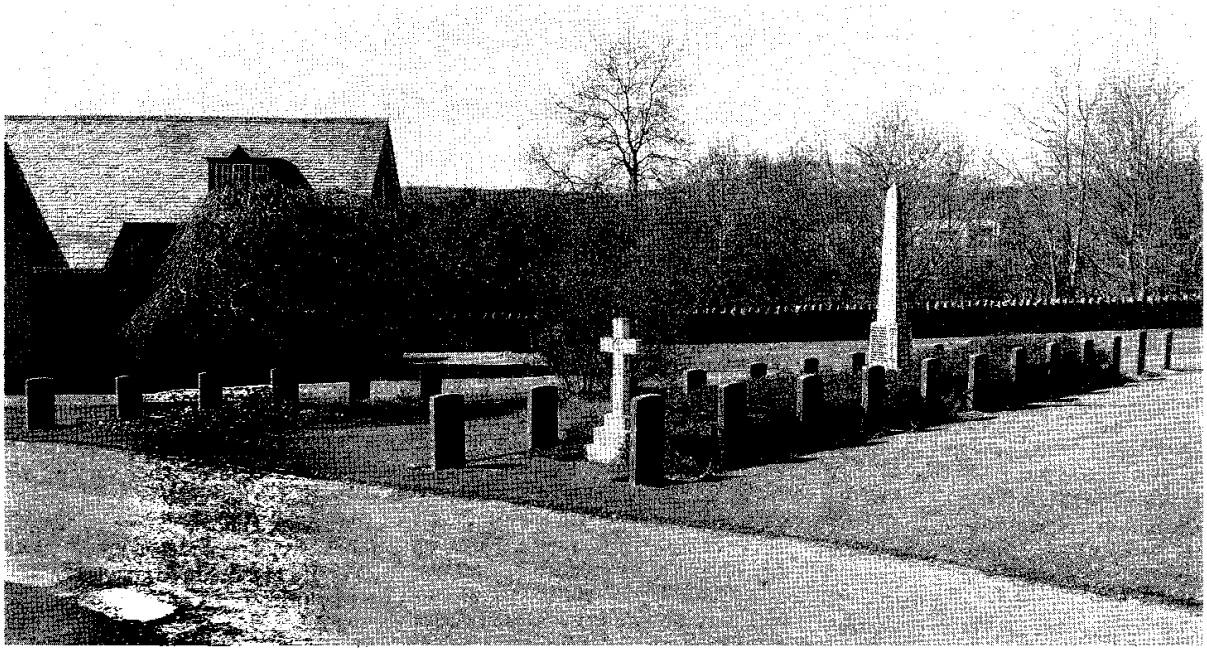
The dimension and shape of the conning tower assembly made the plan feasible. It was reached from inside the boat via a watertight hatch which opened upwards into the tower. A second hatch was located on the conning tower roof (aft). The forward part of the roof was dome shaped and designed to house a projector compass and tube which, if removed, would allow space for two people. Each hatch could only be opened from its underside. A glass bullseye window with a built-in prism was located port and starboard, which allowed reasonable external viewing fore and aft.

The plan was to remove the projector compass and tube - the lower part of the tube would act as a drain pipe, extended by a flexible pipe leading to the amidships torpedo room. Next, the whistle pipe would be broken at a joint, with an extra valve inserted to allow control of compressed air from inside the dome. Finally, by removing a section of the fuel vent pipe - normally isolated by valves - this would allow the conning tower to be flooded at will. A temporary light would be rigged up in the roof of the dome.

It was agreed that Lt.-Cdr. Goodhart would attempt the escape, assisted by Herbert, who by tradition must be last to leave the boat. Both men were to enter the tower, with the lower hatch being secured from below. next, the upper hatch would be unclipped. Then, by opening the sea valve, water would enter the chamber, compressing air in the dome where the men would be standing. When the air pressure had equalised with the sea water - the water in the tower now being about waist high - the upper hatch would be opened. Any resulting in rush of sea water would be checked by turning on the compressed air in the dome. Goodhart would then duck under and exit through the hatch to find his way out via the chart room door and up to the surface. Herbert would then close the upper hatch, knock loudly on the hull with an iron bar, left handy for that purpose. The inmates below would open the drain valve to empty the tower, thus allowing Herbert back into the control room.

During the preparations, Herbert was amused to see a prawn peering in through the bullseye, its black eyes watching intently - no doubt attracted by the light. Professor Hillhouse offered up a metal canister in which he carried a hydrometer. This was to be used to contain written messages and carried by Goodhart, in the unhappy event that he did not survive the ascent to the surface. The container was draped in coloured bunting to attract attention.

Both commanders stripped down to underwear and entered the tower, the hatch being closed from below. As Goodhart unclipped the upper hatch, Herbert opened the sea valve and they stood until the freezing water reached their waists. The increased air pressure played havoc on their ears and a thick



Faslane cemetery where the dead from the K13 are buried. The marble cross is the grave of engineer Lt. Lane. The centra obelisk was erected by HM Submarine Depot, Gosport.

mist formed in the dome, rendering the light useless. As the upper hatch was lifted and the air turned on, Goodhart said "Well, I'm off!" He dipped below the water level as Herbert wished him good luck and disappeared up through the hatch.

As Herbert made a move to close the upper hatch, he was suddenly overtaken by a rush of expanding air. Helplessly, he was carried through the opening and up, the force carrying him through the wheelhouse and out through the hatch aft of the wheelhouse roof. As he shot upwards he was aware that he was able to breathe most of the time. He surfaced with a giant air bubble near a divers' boat and was quickly grabbed and pulled to safety. His first words were, "Where's Goodhart?" Sadly, he was to learn that the brave commander had not made it to the surface!

With Herbert on the surface, he was able to fully acquaint the rescuers of the exact situation on board K13. A length of flexible airhose was procured, and with the arrival of extra divers, a connection was finally made between E50 and K13. To further assist with communication, a diver's lamp was fitted to the forward periscope to allow messages to be flashed through. Meanwhile, a 4-inch armoured, flexible hose was being prepared to fit over an ammunition tube located forward of the conning tower on K13's deck.

Until the airhose was installed, the survivors were in bad shape, and were on the point of giving up all hope of rescue. When they learned that the hose had been fitted, they carefully opened the valve inboard which brought the happy sound of sweet air entering the compartment. They were also able to read messages through the periscope, but were unable to flash back replies.

By around 0500 hrs. (Wednesday) - 37 hours trapped - they had recharged several compressed air tanks to full pressure. Lt. Singer gave the order to attempt to blow all forward ballast tanks, but they had no way of knowing when they were empty. They eagerly watched the fore-and-aft spirit levels for signs of lift. Suddenly, as they blew the last tank, the bubble moved! To their great delight it moved to 10 degrees, up at the bow, and remained there.

Michell and the surface crew were delighted to see the rise in K13's bows. *Thrush* and the trawler immediately took up the slack in the cable. The armoured tube was now ready, and after signalling to K13 to stop blowing her tanks for the safety of the intrepid divers, the second connection was made, with the upper end of the tube being kept well above water level.

Once operational, the second hose allowed for better ventilation of the forward compartment. When the air finally equalized with the atmosphere, life became more tolerable for the survivors. The tube proved most useful, and Michell noted that the air coming up from K13 was foul in the extreme. He wondered at the human body being able to survive such toxic conditions. Gradually, items of food were passed down the tube, and the whole situation became less tense. Moreover, the occupants of K13 were now able to watch surface activities via the forward periscope, which was now clear of the water.

By 1000 hrs., the Admiralty salvage vessel *Ranger* arrived from Liverpool to take charge of the salvage. The Naval Salvage Advisor, Captain Frederick Young, was in command. When he was appraised of the situation by Michell, he agreed with the steps already taken. Other vessels had arrived to assist, some having to be turned away. Spectators watched from the shores, aware that some tragedy had taken place. No official comment was made by the navy, and wartime restrictions ensured that no speculation would be put into print.

Extra cables were now slung under K13's bows, and a concerted effort finally raised her forward section sufficiently clear to enable escape holes to be cut in her double hull. By 2100 hrs. excitement was mounting inside the control room. This is best described by Professor Hillhouse; "Never had

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minutes seemed so long. Then Lieutenant Singer gave the order 'Civilians first' and amid resounding cheers from the men crowding the decks of the rescue vessels we began to appear one by one, out of the depths and onto the deck of K13!" the last to leave, as expected, was Lt. Singer. The forty-six weary survivors were quickly ferried to the Shandon Hydro Hotel, where food and hot baths were enjoyed.

Next day divers recovered Lt.-Cdr. Goodhart's body which was found jammed inside the wheelhouse. He had struck his head and drowned during the escape attempt. The canister of messages was still tucked in his belt. He later received the posthumous award of the Albert Medal for gallantry. It would appear he was buried privately.

It was another six weeks before Captain Young managed to re-float K13. Examination of the interior quickly established that human error was to blame. The lever controlling the boiler air vents was found in the 'open' position. Annie MacIntyre's story was confirmed when it was discovered that two men were missing - John Steel, a Fairfield foreman, and Engineer, Lt. Lane. Both were in the engine room when it became flooded, and as the pressure equalized, they evidently managed to open the hatch and make for the surface - only to lose consciousness due to the rapid reduction in pressure and to drown as a result. They were probably the two dark shapes seen by Michell following K13's fateful dive. Lane's body was recovered some two months later. Steel was never seen again!

Now, in this small, well kept graveyard at Faslane, on the shore of Gare Loch, thirty headstones stand in military precision around the plot where the casualties of K13 now lie. One officer, twenty-two ratings and seven civilians are at rest. Within shouting distance, their 'descendants' still service the great steel monsters of the deep!

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