

THE LOSS OF H.M.S. "EXETER"

Report from the Engineer Officer

First encounter with the enemy

H.M.S. *Exeter* sailed from Sourabaya at 1900 on 26th February, 1942 in company with R.N.S. *De Ruyter*, U.S.S. *Houston*, H.M.A.S. *Perth*, R.N.S. *Java* and eleven destroyers (3 British, 6 American and 2 Netherlands Navy). H.M.S. *Exeter* was steaming in units from the time of leaving harbour. On 27th February at about 1500, two hostile cruisers with 8 in. guns and two with 6 in. guns were sighted together with fourteen destroyers. At about 1530 *Exeter* and *Houston* opened fire. Soon after this an enemy salvo fell close to the stern and shook the ship considerably. No. 3 damage control party investigated under-water compartments for damage and found none, nor were any ill effects noticed in engine room machinery and condensers. The speed of the ship was approximately 27 knots, steaming with all boilers in units. A few minutes later *Exeter* suffered her first hit. This was an 8 in. projectile which entered the ship from a direction slightly abaft the starboard beam. It passed through the shield of the starboard after 4 in. H.A. guns, killing four of the crew, thence through the forecastle deck and passed through the fore and aft bulkhead of "B" boiler room air intake immediately below the access door on the upper deck. Smashing the armoured grating, it went through the forward impeller and casing of the starboard inner fan. It then pierced the uptake casings over "B2" boiler and entered "B" boiler room through the lower deck. At this point it struck the fore and aft "I" beam on the centre line below the lower deck and removed a large part of it. It carried away two oil fuel pipes on the cold oil fuel discharge system to both "B" port and starboard units, removing two pairs of flanges on these pipes completely. The main steam pipe leading from "A" port unit was pierced almost exactly through its centre line. At this point the projectile appears to have broken up and, after hitting gratings, handrails, etc., the pieces entered "B1" boiler casing and smashed through generator and superheater tubes. Large pieces of the projectile and the complete base plate were found later on the furnace floor.

"B" boiler room

In this compartment were 1 chief stoker, 2 S.P.Os., 2 E.R.As., 5 stokers and 1 stoker (electrical). One S.P.O., water-tending, was blown towards the air-lock door which he opened and thus escaped but with several burns. The other men appeared to have died instantly without making any movement towards the ladders. A heavy cloud of smoke and steam emerged from the funnels. The breaking of the two cold oil fuel discharge pipes caused oil to be sprayed everywhere round the boilers and boiler room, but this did not catch fire, presumably owing to the extinguishing effect of the escaping steam from "A1" and "A4" boilers. Loss of oil fuel pressure caused all fires to die out in both "B" units, steam pressure was quickly lost and all auxiliary machinery stopped. Owing to the stoppage of fan engines and the presence of superheated steam, the temperature of "B" boiler room rose tremendously making it impossible for first-aid and volunteer rescue parties to enter despite several commendable attempts.

"A" boiler room

The pierced main steam pipe in "B" boiler room, leading from "A1" and "A4" boilers, caused an immediate loss of steam in these boilers and consequently the stoppage of all "A" port unit main and auxiliary machinery. The loss of air pressure in this stokehold caused the steam pressure to drop to 190 lbs. per sq. in. in "A2" and "A3" boilers, but apart from this and extra load on some of its machinery, this unit was unaffected. The chief stoker reported by telephone to the forward engine room and requested instructions regarding cross-connecting the auxiliary steam systems in "A" boiler room. He was instructed to maintain maximum power with "A2" and "A3" boilers but not to cross-connect any steam until further orders. The damage in "B" boiler room was quite unknown at this time.

Forward engine room

The first obvious effect was the rapid *diminuendo* of noise of turbo feed pump, circulator, extraction pump and main engines, combined with a complete loss of pressure and vacuum on port outer, port inner and starboard inner unit gauge boards. Half the main lighting failed and the other half gave only a very faint red glow. Secondary lighting operated well but somewhat inadequately under the circumstances. Great anxiety was felt regarding the steering motors and emergency electric forced lubrication pumps but it was observed that the "running" lights for these and several fire and bilge pumps were still burning. It was confirmed by telephone and observation that these machines were still running. Engine room ventilation supply and exhaust fans had all stopped and temperature rose very quickly. The E.R.A. on the starboard outer main engine was ordered to maintain maximum revolutions while watching the steam pressure closely so as to prevent a further drop in generator voltage and possible loss of the one remaining generator. The general situation at this point was reported to the forebridge by telephone. It was clearly important that the port outer main engines should be put on power again as soon as possible to make the ship manoeuvrable and to avoid the carrying of helm. The main steam bulkhead valves of the three damaged units were shut and main steam cross connected to the port outer engine. Auxiliary machinery of this unit was started, vacuum raised and the port outer turbine revolutions balanced with the starboard outer, steam being supplied by "A2" and "A3" boilers only. This state was reported to the bridge by telephone. Main and auxiliary engines were adjusted so as to give maximum economy in steam and maximum speed to the ship. It was decided that to effect maximum speed under these conditions it would be best to run as little machinery as possible in the after engine room and to trail the inner shafts, steam being used in the after engine for generators only. Accordingly this was done and turbine casing doors were removed from both inner L.P. turbines as soon as engine room ventilation fans made this possible. The inner shafts trailed at approximately 96 r.p.m. while the outers were doing 170-180 r.p.m. Steam was only used in the after engine room for lubricating oil pumps and generators.

Generators and after engine room

Nos. 2, 3 and 4 generators had stopped, No. 1 taking the whole load of the ship, over 2,000 amps., until the main switchboard room was able to reduce this some minutes later. This produced a very low voltage giving no useful illumination; but telephones, steering motors and electric pumps remained in operation.

Electric ventilating fans in both engine rooms had stopped and temperatures rose rapidly until the after engine room had to be evacuated. The E.R.A. in the forward generator room was ordered to cross-connect auxiliary superheated

steam in "A" boiler room and put No. 2 generator on load as quickly as possible. This, he did with speed and efficiency. Meanwhile, the switchboard room had reduced the overload, and voltage of No. 1 generator had risen giving half lighting in machinery spaces. Engine room ventilating fans were then restarted and steam opened up as far as No. 3 and 4 generators in the after engine room. This stage was reached in approximately twenty minutes after being hit. No. 3 generator was next started and placed on load while No. 4 was held ready for any emergency.

Return to harbour for temporary repairs

In this condition the ship returned to Sourabaya at 16 knots anchoring there at 2300. "B" boiler room was still far too hot to enter although several men tried without success. "A2" and "A3" boilers were kept in use and steam was retained up to the main engines during the night. On 28th February at 0600 the ship proceeded alongside using "A2" and "A3" boilers and all shafts. The bodies were raised from "B" boiler room during the forenoon and the funeral of the fourteen dead took place during the afternoon. Ship completed with oil fuel during this time. The damage in "B" boiler room was examined and cleaning up was started. "B1" furnace contained many bent and broken tubes and pieces of projectile.

The main steam pipe from "A" port unit was clearly irreparable, but the boilers and pipe systems of "B" starboard unit appeared to be undamaged except that the cold oil fuel discharge pipes, one to each "B" unit, had been shot away. Boiler tubes appeared to have no unusual distortion and furnace brickwork appeared to be moderately good. Full water pressure tests were applied to "B2" and "B3" boilers and were satisfactory. Meanwhile it was vital to repair one of the two damaged oil fuel pipes. It was decided to bridge one damaged pipe by removing two lengths and fitting two 10 foot lengths of 2-inch steel hose. After great difficulty in removing the damaged pipes, the hoses (test pressure 500 lbs./sq. in.) were completed and tested satisfactorily at approximately 2000 hours. The other pipe was blanked off.

During the forenoon a Dutch naval officer, from the Chief Engineer's Dept., of Sourabaya, and his foremen had come on board and offered their help. This was accepted to the extent of lending twelve native labourers to clean up the oil, water and asbestos in "B" boiler room. Lagging had been completely cleared off the undamaged main steam pipe from "A" starboard unit for a distance of 15 feet alongside the damage. The Captain was informed that two boilers were serviceable and that probably two more would be available late that night. Meanwhile "B4" boiler had to be disregarded, being extremely dirty with oil and water everywhere, and unsafe to use even if undamaged.

Second encounter with the enemy

Exeter sailed from Sourabaya at 1900 using "A2" and "A3" boilers and all shafts. At 2300 "B2" and "B3" boilers were connected to the common system, and speed increased to 21 knots. The ship's company were at action stations throughout the night. H.M.S. *Encounter* and U.S.S. *Pope* were in company. On 1st March, 1942, at about 0800, two destroyers or small cruisers were sighted. At about 0930 *Exeter* opened fire. Meanwhile, cleaning up oil and water around "B4" boiler was progressed as far as possible and a water pressure test applied which proved satisfactory, so it was decided that "B4" should be utilized in this emergency. At 1025 "B4" boiler was connected and reported to the bridge. Speed was increased to 24 knots. Many enemy salvos were falling close to the *Exeter* and a smoke screen was ordered. At about 1100 a hit was received in "A" boiler room but its exact location was not known. The main feed pump to "A2" and "A3" boilers lost its discharge pressure

and had to be stopped and auxiliary feed pump used in its place. Main steam pressure was falling rapidly and main engines had to be slowed down accordingly. Steam pressure continued to fall back until a few minutes later when it became necessary to shut off steam to the forward main engines in order to keep the generators on the board. Fire and smoke-making were continuing at this time. The stopping of main engines was reported to the bridge and engine room telegraph reply gongs were rung continuously to confirm this. Steam pressure dropped to 150 lbs./sq. in. and no reply could be obtained from either boiler room by telephone. At this point loud speakers announced "Prepare to abandon ship" closely followed by "Sink ship." Forward engine room personnel were evacuated. It was learnt that all magazines flooding positions had been ordered to flood and spray. Smoke was issuing from the wardroom and many of the ship's company were proceeding forward and to the upper decks. It was found that all the after magazines were flooding, doors and most hatches were open and ship was listing to port. All forward engine room personnel were evacuated. There appeared to be no possibility of firing the charges placed by the circulating inlet valves, the engine room being full of steam and all lights out. From the boiler room fan rooms flames could be seen in the stokeholds of both "A" and "B" boiler rooms. The damage control office confirmed that the order to flood magazines had been received and repeated back by the forward flooding E.R.As. The damage control office personnel were ordered to prepare to abandon ship as there appeared to be no personnel available for further sinking operations at this stage. Ship was under heavy shell fire and appeared to be settling down well in the water. Clouds of black smoke were issuing from both funnels. Some minutes after all way had been lost, an enemy destroyer approached and fired a torpedo which hit the starboard side about abreast the forward engine room. *Exeter* heeled rapidly to starboard and about two minutes later sank with an even trim, while enemy planes carried out a bombing attack.

Personnel

Climatic conditions had imposed a severe physical strain upon the engine room personnel during the almost continual steaming periods since mid-November, 1941, when engine room temperatures at sea had rarely fallen below 118°F. The short periods of fuelling and boiler cleaning in harbour had brought little leave or respite.

Even so, the behaviour and spirit of the officers and ratings throughout this period and especially during bombing attacks and the last engagements have been excellent and entirely in accordance with expectations.

NOTE.—References to sighting, number of hostile ships engaged, types of ship, etc., are recorded as announced over the broadcasting system and are included to make the narrative more consecutive and comprehensive.
