



## M.V. "Libeth M"

High from boat deck level. Most of the gauge wire mesh was missing.

The compartment has two steel top doors (3'2" L x 2'0" wide x 3/16" thk.) & two steel lower doors, of same dimensions for access to the upper & lower rows of batteries respectively. The doors are steel hinged & made w.r. by a hemp packing joint fitted in a channel & each door is secured by 5 steel survival clamps.

Seventeen nickel iron accumulators made by D.E.A.G. (Deutsche-Edison-Akkumulatoren Co. Hagen) are arranged in series giving 110 volts & 142 amp/hour & are fitted in wooden cases (5 accumulators per case) each accumulator is marked "D.E.A.G. TYPE T.N.E." The installation was fitted by A. De Hoop, N.V. Rotterdam. A fuse box is provided near the accumulator compartment - on the inside & at the top of the C.R. casing.

The wooden cases are constructed with solid bottoms & a top & bottom wood strip at sides and inset in the lower wood strip at each side is a composition washer which locates with a small circular nipple on the end of each accumulator and apart from the terminal connecting strip this is the only means of keeping the individual accumulators apart in the wood case. A number of accumulators were found displaced in their wood cases. It was also found that a number of the accumulators were bulged outwards towards the top and some accumulators were in contact & that the light metal vent valves were blown from several.

Each accumulator was painted black externally. It was found possible to create a spark with a screw driver connected across two adjacent accumulator casings.

It was stated that the explosion took place at 1.20 p.m. on 23/11/1953 whilst the vessel was tied up at Tarmac wharf, Shoreham, and that the accumulators had then been charging for 4 1/2 hours. The charging is via a centre zero ammeter (charge & discharge) controlled by a hand operated switch on the main switchboard. It was also stated that the vessel had been in service only 5 weeks & that the batteries were last topped up with 9 pints of distilled water on 14/11/53.

Mr. Metcalf (owner) stated that a previous explosion occurred at Rotterdam prior to the vessel's trials, when all the accumulators were removed & examined by the electrical contractors (A. De Hoop). One cell only was renewed at that time.

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The auxiliary lighting installation was fitted by the Owners primarily for use at night & during week ends in port and in addition also provides power for the two small fan motors in connection with the oil fired galley and cabin heating stove respectively.

The following damage was caused by the explosion:-

Both top access doors to the compartment were severed from their hinges, the securing clamps distorted and the doors blown on to the wharf alongside the vessel.

Both lower doors were severed as above and blown along the deck. The accumulator compartment fractured in places at the welding and the fore end of the compartment (B.P. casing) distorted and deck below the compartment set down slightly & a fuse box cover broken. The port lifeboat found with five strakes damaged; keel & stanchion fractured.

It is suggested that the means of separating the accumulator in the wood cases is not sufficiently robust. The vent pipes as fitted are not considered large enough to provide effective ventilation of the compartment and larger hooded air pipes of oval or rectangular section might be fitted at each side of the upper & lower sections.

The installation is now out of use, the fuses having been removed and the Owners intend to communicate with Messrs A. De. Hoop regarding the mishap.

J. W. Roberts.