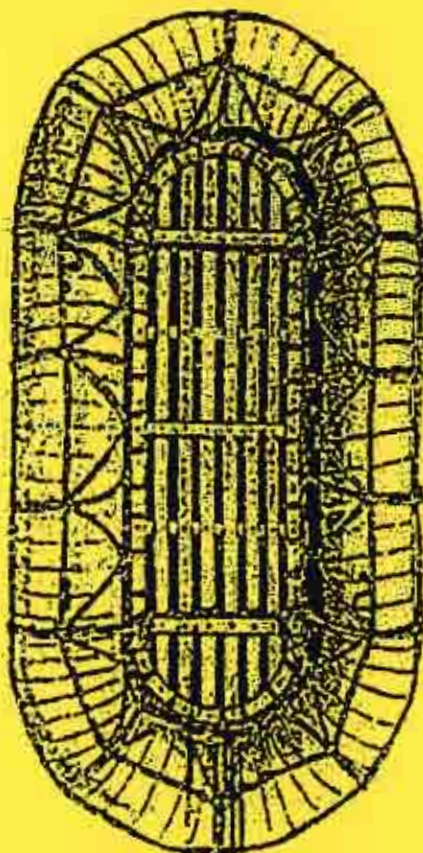


INSPECTION REPORT



CARLEY - FLOATS PATTERN 20.

MARITIME HISTORY DEPARTMENT
HB.26 AND HB.27

29 JULY 1997 - 7 AUGUST 1997

Report - Department of Maritime
Archaeology
Western Australian Maritime
Museum No. 142

1185

INSPECTION REPORT
- CARLEY FLOAT -
D.A.S. KARRAKATTA
29 JULY 1997

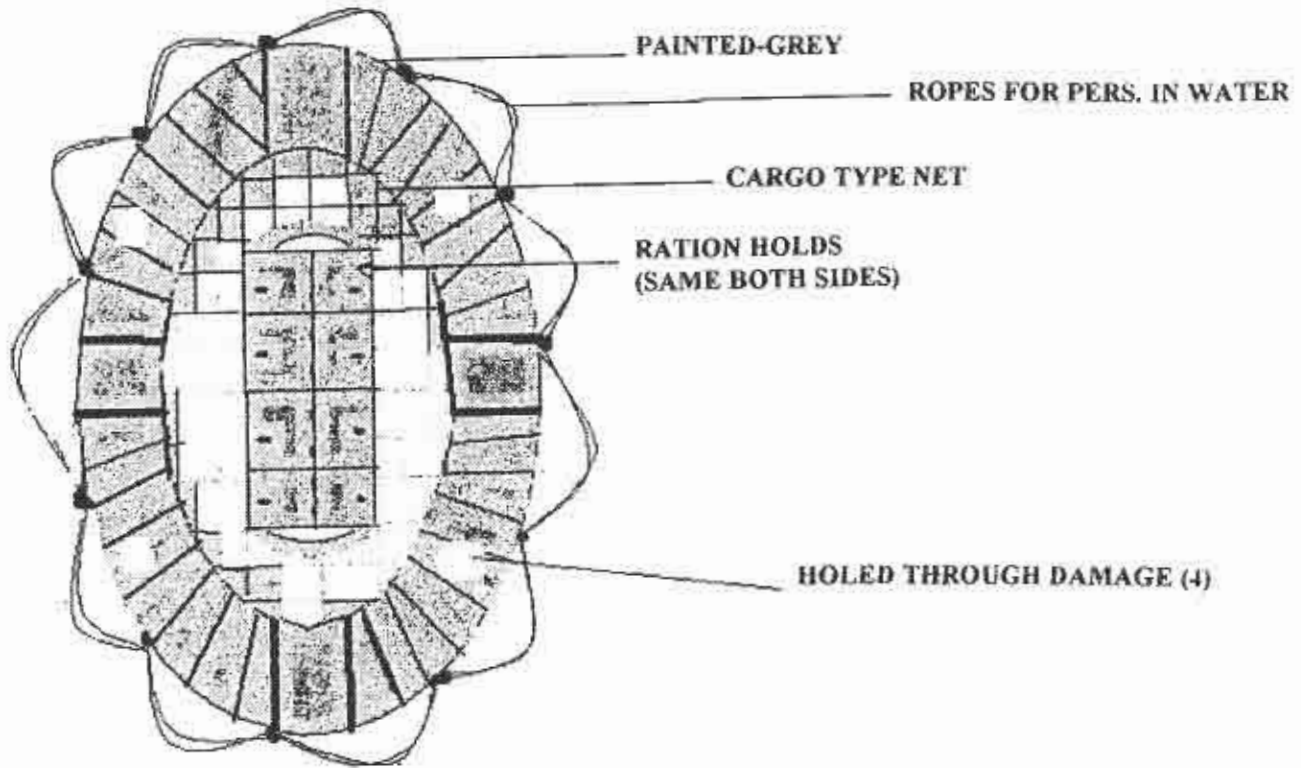
PRESENT: Mr. Mike McCarthy , Mr. W.S. Olson H.M.A.S. Sydney Assoc.
Miss. Karen Jackson and Mr. Norman O'Neill.

Findings:

- a) No identification on the outer skin of Carley - Float designating it to any particular ship either Military or Merchant Navy.
- b) On reversing the float it was found to have (4) four distinct holes punched into the float (as per attached diagram). Which indicated that at some-time the float has been dropped onto some sharp object, in fact it appears that it would have to had been made of steel considering the amount of internal damage done to the floatation raft in the centre of the raft. The water-tight compartments had been ruptured.
- c) Further investigation found that contrary to belief that the floats were wrapped firstly in a layer of KAPOK around the floatation raft then finished with a wrapping of canvas that in fact, ours was wrapped in Balsa-Wood then finished off with the canvas wrap. Also found was the fact that our central raft was manufactured out of GANVANISED STEEL of approx 2/8in. thickness.
- d) With the aid of a small torch we also discovered the distinctive trade mark of "LYSAGHT" which was the trade mark of "THE QUEENS HEAD" brand and the alphabetical letters L and H - which would indicate that this raft was manufactured in Australia.
I (Norm) later tracked down a piece of sheet metal with-in D.A.S. bearing the same distinctive "QUEENS HEAD" brand stamp. Incidentally the brand was always stamped with the same coloured dye which was LIGHT_BLUE.
- e) I (Norm) later contacted BHP Steel W.A. and was put in contact with one of their oldest remaining salesman Mr. Vince Carnevale who has a passion for collecting all steel stamps. Vince faxed a copy of his prized "QUEENS HEAD" stamp and the attached Queens Head information on this product. Vince also stated that the product had ceased to be manufactured some 40 - 50 years ago. It is also to be noted that there may be slight differences in the Queens Head as there were numerous stamps made during the time of manufacture by different stamp makers . The artist may have made slight drawing alterations but, the design was basically the same.
- f) Attached is also a scanned photo of the CARLEY-FLOAT exhibited in the Canberra War Memorial A.C.T - The differences in the middle section of the float can be clearly seen - Slats as floor boards.

**THIS FLOAT. (BELIEVED TO HAVE COME FROM H.M.A.S. SYDNEY
SUNK OFF THE WEST. AUSTRALIAN COAST).**

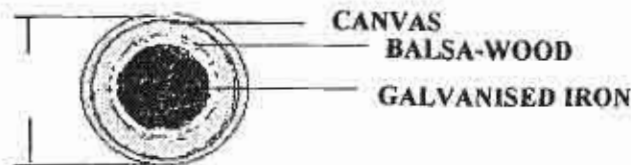
**CARLEY - FLOAT
WESTERN AUSTRALIAN
MARITIME MUSEUM
-KARRAKATTA-
28 JULY 1997**



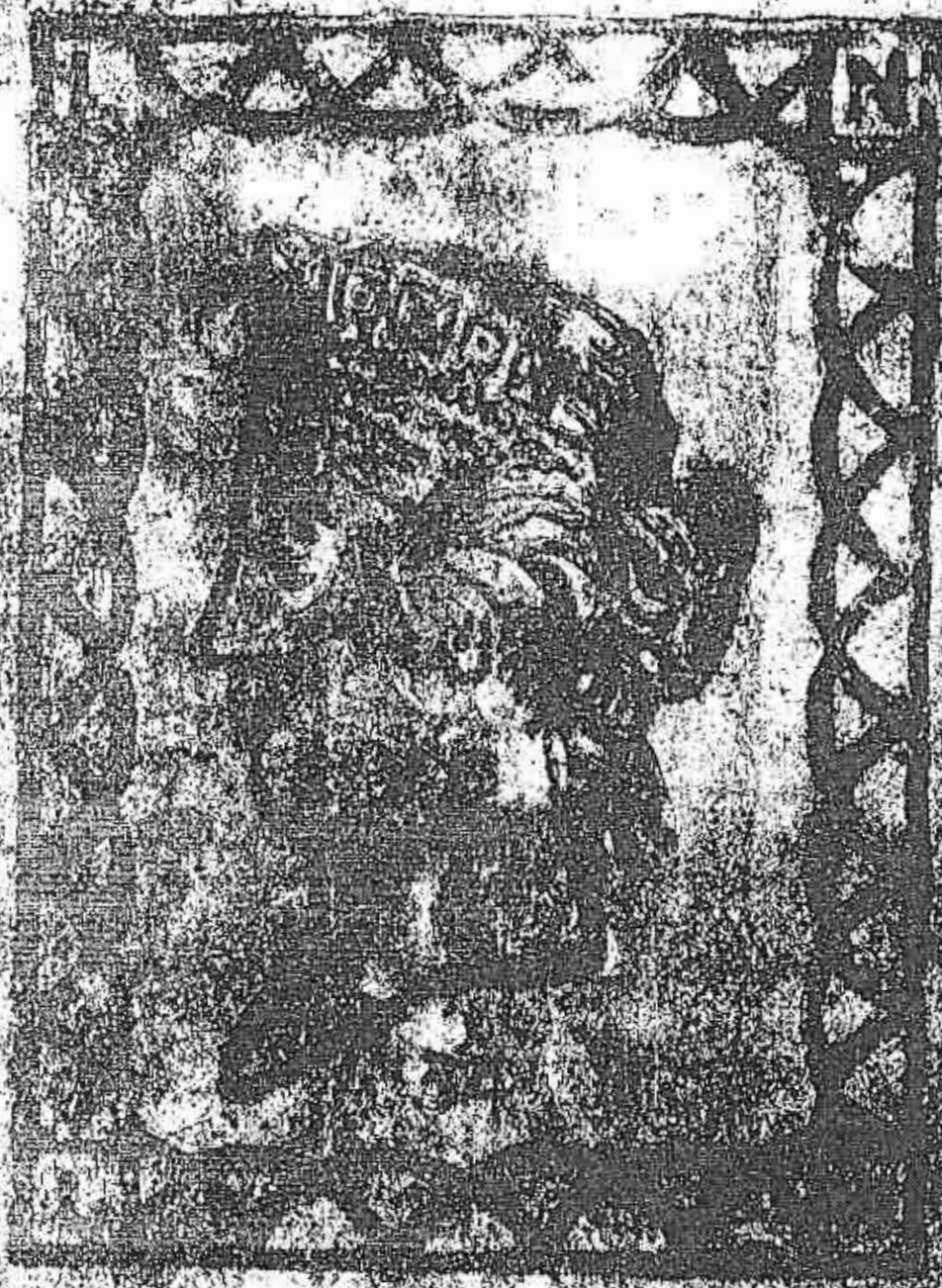
LYSAGHT



**QUEEN'S HEAD
AUSTRALIA**



WISAGHT



QUEENS HEAD

LYSAGHT



QUEEN'S HEAD

AUSTRALIA

GALVANIZED FLAT SHEETS

QUEEN'S HEAD.—Prime sheets of Lysaght galvanized flat steel sheets are branded with the well-known Queen's Head brand. These quality flat sheets are the most uniform and reliable plain galvanized sheets on the market.

EXPLANATORY NOTES ON MARKINGS OF FLAT SHEETS.—For the information of users and to facilitate means of identifying life of galvanized sheets, the year of manufacture is incorporated in the rectangular frame of the Queen's Head brand, the figures being located at the base of the Queen's neck. Figures on either side of the brand show the day and month of manufacture. Sheets are branded on one side only, and sheets manufactured at Port Kembla Works have in all brands. Between the brand and the end of the sheet is stamped the identification number of the inspector who passed the sheet. The packer's initials are stamped on the side of the case, and the packer's slip, giving the packer's name and date of packing, is enclosed in all cases. Should you find it necessary to make a complaint, please endeavour to quote packer's initials, inspector's number, year of manufacture, and any other details that might assist us to investigate and remedy your complaint. Whereas the letters in the corners of the rectangular frame at one time used to be L.N.W.L., referring to Lysaght's Newcastle Works Ltd., these now read L.W.P.L., meaning Lysaght's Works Pty. Ltd.

PACKING. Sheets are packed in cases or bundles as follows:—

Queen's Head: 18G and lighter—one-ton cases.
16G and heavier—one-ton bundles.

U.B. Flats: As for Q.H.
Waste Flats: As for Q.H.

Red Orb: All gauges—half-ton bundles.

U.B. and Waste: As for Red Orb.

Blue Orb: All gauges—half-ton cases.

U.B. and Waste: Half-ton bundles.

Z.A. Corrugated: First and Seconds—half-ton cases.

Waste: Half-ton bundles.

Panel and R.L.: All gauges—one-ton cases.

Waste: One-ton cases.

LYSAGHT



QUEEN'S HEAD

AUSTRALIA

The letter "K" shown at the end of the sheet is stamped on the side of the case, and the packer's slip, giving the packer's name and date of packing, is enclosed in all cases. Should you find it necessary to make a complaint, please endeavour to quote packer's initials, inspector's number, year of manufacture, and any other details that might assist us to investigate and remedy your complaint. Whereas the letters in the corners of the rectangular frame at one time used to be L.N.W.L., referring to Lysaght's Newcastle Works Ltd., these now read L.W.P.L., meaning Lysaght's Works Pty. Ltd.

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Z.A. Corrugated: First and Seconds—half-ton cases.

Waste: Half-ton bundles.

Panel and R.L.: All gauges—one-ton cases.

Waste: One-ton cases.

ZINCANNEAL FLAT SHEET

GENERAL.—Prime Zincanneal flat sheets are produced in two qualities—Z.A. R.L. (Zincanneal Roller Levelled) Z.A. Panel Quality.

Z.A. R.L.—This quality is especially suited to, and enjoys increasing popularity for flashings, gutters, downpipes, capping, vents, duct work, and formed work generally, where a perfectly flat is not required.

Z.A. PANEL QUALITY.

These sheets are subjected to a final surface improvement process, and finished dead flat. The surface provides an ideal base for baked enamels and similar fine fini

SECONDS.—In the production of prime sheets certain sheets are rejected for imperfections of surface or dimensions into Seconds R.L., or Seconds Panel Quality.

Zincanneal Seconds may contain small uncoated areas, corners off, or broken sides. Extensive appearance defects may be included, such as rough and lumpy coatings, bright patches, yellow stains, black stains, and tree marks.

WASTE.—Complete sheets which are too badly damaged for grading into Seconds are packed as Waste.

Any one package of Waste consists of defective of approximately the same gauge and size, with defects, including large uncoated areas, corners off, faults, broken sides, and holes. Pinched, crinkled, cobbled sheets are also included.

LYSAGHT
ZINCANNEAL
AUSTRALIA
R.L.

LYSAGHT
ZINCANNEAL
AUSTRALIA
PANEL QUALITY

Z.A.
SECONDS

R.L.

Z.A.
SECONDS

PANEL QUALITY

"ORB" IRON—Over Eighty Years in use.

Lysaght's

Galvanized Corrugated and Plain Iron, and Black Sheets, are stocked by all the leading Ironmongers, Timber Merchants and Storekeepers throughout the Commonwealth, from whom current prices can always be obtained upon application.



Further copies of this Publication and other special

Lysaght Brochures

on
"ZINCANNEAL"

and

BLACK STEEL SHEETS

may be obtained free and post free, upon application to any of the Offices of JOHN LYSAGHT (Australia) PTY. LIMITED, Sydney, Melbourne, Brisbane, Adelaide, Fremantle.

"ORB" IRON is still the Best in the World.

LYSAGHT'S REFEREE

17th Edition

BEING

A GENERAL GUIDE FOR IRON-
WORKERS, STOREKEEPERS,
COUNTRY RESIDENTS, ETC.

CONTAINING

TABLES OF WEIGHTS, MEASUREMENTS,
AVERAGE RAINFALL, POSTAL AND
OTHER USEFUL INFORMATION (1940?)

Revised June, 1938. Copyright.

Whether made in England or Australia, every detail of the manufacture of LYSAGHT'S SHEETS receives the same careful scrutiny as has served to gain world-wide recognition of their reliability for over Eighty Years.

The various tables contained herein have been carefully compiled from existing sources of information. No responsibility is accepted, and no originality is claimed in respect thereof. They are intended to give closely approximate information which may not always be readily accessible elsewhere.

The Publisher will be thankful to receive suggestions for further improvements or to have pointed out any printer's or other errors which may have inadvertently crept in. Communications may be addressed to Box 196 D, G.P.O., Sydney.

SYDNEY:

WEBSDALE, SHOOSMITH PTY. LTD.,
Printers — 117 Clarence Street.

LYSAGHT'S WORKS

The establishment of the steel works at Newcastle in 1916 gave a great stimulus to the establishment of secondary industries, and in 1921, Lysaght's Newcastle Works were opened as an initial unit of two manual rolling mills and one galvanizing pot.

Gradual additions were made to the plant during the next few years, and in 1928 there were eight manual rolling mills and four galvanizing units in operation, with a capacity of about 40,000 tons of sheets per annum.

By the beginning of 1930, further extensions were made of eight additional manual rolling mills and additional galvanizing plant, bringing the total capacity of the works to 80,000 tons of sheets per annum.

In 1934, a new type of mechanized rolling mill was installed, which was followed in 1936 by another unit of similar type (see page 31), which brought the total capacity of the Newcastle Works to about 125,000 tons of sheets per annum.

In 1936, the company purchased from Australian Iron & Steel Ltd. the Port Kembla mechanized rolling mills and galvanizing plant, with a total capacity of 25,000 tons of sheets per annum.

Extensive new works at Port Kembla, involving a capital outlay of approximately £600,000, will be completed in December, 1938 (see inset, back of book), and to these the plant purchased from the Australian Iron & Steel Ltd. is being transferred, which supplemented by some of the most modern type of mechanical plant in existence is expected, when in full operation to produce 40,000 tons of sheets per annum. The two works will then be capable of producing 140,000 tons of galvanized sheets per annum, which should be more than sufficient to supply Australia's needs for some years to come, besides having a further considerable tonnage available for sale, either as Black sheets or as Lysaght's new special heat-treated, rust-resisting, zinc-coated sheet known as "Zincanneal."

On the existing production basis the two works use, altogether, 185,000 tons of Australian steel, while directly and indirectly, 500,000 tons of Australian coal are used in their operations annually, as well as 13,500 tons of Australian zinc and 5,700 tons of Australian acid.

More than 2,000 men are at present employed directly in the various operations, and probably a further 3,500 men in producing the raw materials used. Wages directly paid amount to over £500,000 per annum, and at least a further £700,000 is paid indirectly as a result of this Company's operations. When both works are producing upon a maximum capacity basis, the present figures, both as regards number of men employed and raw materials used, will be substantially increased.

The Evolution of Galvanized Iron

It is interesting to note at the present day, when the use of Galvanized Iron has become so widely extended, that its introduction dates back only to 1837. Although a plain sheet was exhibited at the Great Exhibition in 1851, it was not until the application of steam power for the purpose of corrugating was brought about in 1854, that Galvanized Iron really came into practical use.

In 1857 the celebrated "ORB" Brand was first manufactured by Mr. JOHN LYSAGHT.

During the four score years that have since elapsed, greatly improved methods for its production, and extreme care exercised in its manufacture, have secured for LYSAGHT'S GALVANIZED IRON an unrivalled reputation throughout the world, and so universally has it been adopted to meet the needs of modern civilization that it may with truth be said that the sun is always shining on "ORB" IRON.

Important developments of the past few years, so far as Australia is concerned, have been the manufacture of "RED ORB," a specially rigid roofing sheet for awnings, roofs, etc., likely to be walked on, or where long and various means of transport might damage the ordinary sheet.

Naturally such sheets cannot be curved and are branded distinctly in RED to distinguish them from the ordinary "Orb" sheets.

Specify "RED ORB" for your next roofing job.

The increasing use of water, other than rain water, for domestic and other purposes, has had a serious effect on the life of tanks in some country districts, and to minimise this disadvantage Lysaght's are now supplying super-coated sheets of 24g. and heavier, **THE LIFE OF TANKS MADE FROM WHICH IS GUARANTEED.**

Insist on your tanks being made from this guaranteed material, for further particulars of which see pages 36 and 37.

Zincanneal rust-resisting sheets in Corrugated and Plain Iron is the latest development (see inset and pages 2, 4 and 5).

LYSAGHT'S Brands of Galvanized Iron

LYSAGHT'S

LYSAGHT



AUSTRALIA

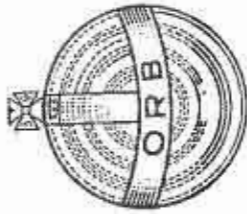
LYSAGHT'S "ORB"

Galvanized Corrugated Iron is favourably known and used throughout the world. Its perfection of Galvanizing and uniformity of corrugations is recognised by consumers everywhere. There are many imitations but to those who compare its quality with other nominally cheaper brands its superiority is at once apparent.

LYSAGHT

LYSAGHT'S RED ORB

So branded to distinguish it from the ordinary Orb sheet is a local production specially manufactured to withstand the roughest usage whether in transit or fixing. Its extreme rigidity and stiffness makes it unsuitable for curving but for roofing, fencing and similar work it is incomparable.



AUSTRALIA



LYSAGHT



QUEEN'S HEAD AUSTRALIA

LYSAGHT'S QUEEN'S HEAD

Galvanized Special Flat Sheets. Best known, most uniform and reliable plain Galvanized Sheet on the market. Commanding the universal confidence of sheet metal workers and fully guaranteed by the manufacturers.

fully guaranteed by the Manufacturers.

TRADE MARKS

LYSAGHT



AUSTRALIA

TANK MAKING

LYSAGHT'S TANKMAKING ORB
The highest grade of super-coated Galvanized Sheet manufactured, and strongly recommended to be used for all Tank-making purposes for which it is specifically guaranteed by the makers. (See pages 36 to 42).

LYSAGHT

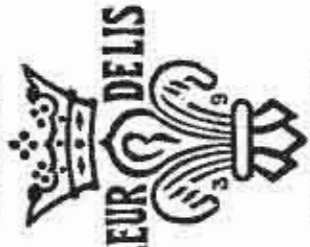


GUINEA AUSTRALIA

LYSAGHT'S GUINEA

A superior corrugated sheet available in both 24 and 26 gauges, second only to "Orb" in quality and appearance, and recommended for use when price is a consideration.

LYSAGHT



AUSTRALIA

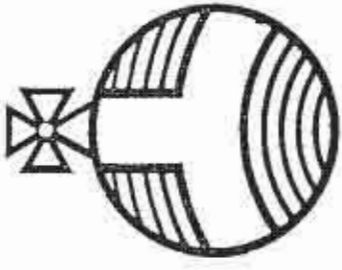
LYSAGHT'S FLEUR DE LIS

Galvanized Flat Sheets enter largely into consumption for that class of work in which a cheaper sheet is asked for. It will be found equal to all such requirements.

LYSAGHT'S ORB AND QUEEN'S HEAD BRANDS

have now been on the market for over 80 YEARS. Every sheet bearing a registered Lysaght brand carries the same UNCONDITIONAL GUARANTEE as to quality that has always been given by the makers.

LYSAGHT



ORB
TRADE MARK

REFEREE
TWENTY-SECOND EDITION

(MARCH 1963)

JOHN LYSAGHT (Australia) LIMITED

HEAD OFFICE: 50 YOUNG STREET, SYDNEY
Box No. 196, G.P.O.

Branch Offices:

NEW SOUTH WALES

107 Fig Street
Ultimo
P.O. Box 386
Broadway
N.S.W.

QUEENSLAND

Orb House
436-444 Ann Street
Brisbane
Box No. 251D, G.P.O.

WESTERN AUSTRALIA

Orb House
8 Pakenham Street
Fremantle
Box No. 83, G.P.O.

VICTORIA

Orb House
70-84 Clarendon Street
South Melbourne
Private Box, South Melbourne
Box No. 2776Y
Elizabeth Street P.O.
Melbourne

SOUTH AUSTRALIA

Orb House
Manton and Adams Streets
Hindmarsh
Box No. 125B, G.P.O.

WORKS:

Port Kembla
Newcastle

ZINCANNEAL

GENERAL.—Zincanneal quality sheets are an outstanding Lyseght development. By suitable high temperature treatment, zinc is combined with the steel base to form a zinc-iron alloy having remarkable properties as a coating. The resistance to atmospheric corrosion is particularly good, excellent service being obtained under severe conditions such as those met with in coastal locations. Zincanneal is marketed both as a flat sheet and a pressed panel known as V-crimp.

PAINTING.—Painting can be carried out immediately on erection or fabrication without priming or fear of subsequent peeling. Zincanneal is uninjured by heat up to a temperature of 600°F. It can be stove enamelled without damaging the protective surface in any way.

ZINCANNEAL SOLDERING.—Zincanneal is quite satisfactory for soldered joints, but it is generally found to require more care than ordinary galvanized sheets. The flux should be more active than that used with an ordinary galvanized sheet, and raw spirits, or 50% raw spirits and 50% killed spirits are recommended. Equally good results have been obtained with 60/40 and 50/50 solder. Experience has shown that the soldering iron should not be too hot.

WELDING.—Having a steel base, Zincanneal can be welded or brazed by any normal means. The heat generated by electric arc welding does not destroy the rust-resisting properties, and this material is quite suitable for spot welding. High pressure and high current should be employed, with a minimum time of application. Extensive weathering and corrosion tests have shown that in spite of the temperature involved in the electric welding processes, considerable protection still remains at the weld.

NOTE.—Zincanneal coatings must NOT be confused with lead Terne coatings. Containers of Zincanneal are made to hold ice, water, and food, as in refrigerator cabinets and ice moulds, and the coatings are NOT injurious or poisonous in any way.

BRANDS AND QUALITIES CORRUGATED SHEET

RED ORB.—This universally known sheet has a uniformly heavy zinc coating applied to an especially hard steel base. The extreme rigidity and stiffness specially recommend it for applications such as roofing, walling, or fixing where maximum strength is required. This quality is available in 26 and 24 gauges, and is not suitable for curving.

BLUE ORB.—Blue Orb sheets carry the same high-grade coatings as Red Orb, applied to a ductile steel base of the highest quality. It is particularly suitable for applications requiring curving.

LEOPARD.—Standard corrugated sheets for use in roofing or walling but not to be used for curving. The zinc coating ensures satisfactory life in the above applications.

MILL REJECTS:

Corrugated Mill Rejects.—Corrugated sheets for use in roofing or walling but not to be used for curving.

Flat Mill Rejects.—For general application where severe forming or bending qualities are not required.

PACKING

GALVANIZED CORRUGATED.—All Red Orb sheets are packed in one-ton bundles or skidded packs. Blue Orb sheets are packed in one-ton skidded packs, or an optional ½-ton galvanized skidded pack is available. Corrugated Leopard sheets are normally packed in one-ton unprotected bundles.

LYSAGHT



AUSTRALIA

LYSAGHT



AUSTRALIA



AUSTRALIA

ZINCANNEAL

GENERAL.—Zincanneal flat sheets are produced in two standard qualities—Zincanneal Roller Levelled (Z.A.R.L.) and Zincanneal Panel.

LYSAGHT
ZINCANNEAL
AUSTRALIA
PANEL QUALITY

Z.A.
SECONDS

PANEL QUALITY

ZINCANNEAL PANEL.—These sheets are subjected to a final surface-improvement process, and finished dead flat. The surface provides an ideal base for baked enamels and similar fine finishes. It is eminently suited to the manufacture of steel furniture, panelling, signboards, louvres, acoustic tiles, etc.

LYSAGHT
ZINCANNEAL
AUSTRALIA
R.L.

Z.A.
SECONDS

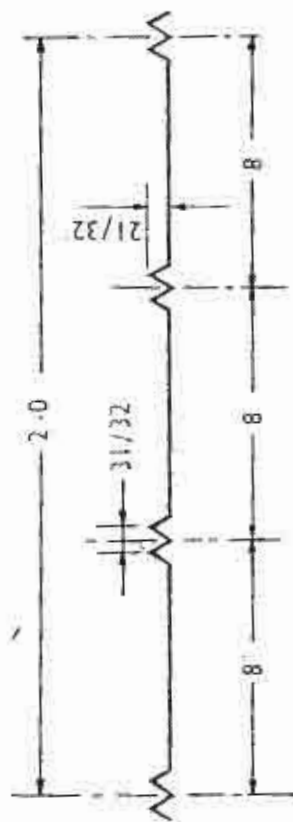
R.L.

Z.A.R.L.—This quality is roller levelled after coating to improve the flatness. It is especially suited for applications requiring a paint finish where a perfectly flat sheet is not essential. Of its many uses, air-conditioning units, louvres, signboards, rainwater goods and agricultural equipment are typical.

SECONDS.—As a result of the stringent inspection standards applied in the manufacture of Lysaght sheets, some material is produced which falls outside the acceptable limits for Prime Sheets, and are consequently classed as Seconds. These sheets may carry small uncoated areas, broken corners, or broken sides. Appearance defects such as tree marks, metal spots and stains may also be included.

PACKING.—All Zincanneal sheets are packed in galvanized skidded packs of unit weight approximately one ton. An optional pack of two tons is also available.

LYSAGHT V-CRIMP
ZINCANNEAL STEEL SHEET



V-Crimp is an attractive panel for exterior walls, garage doors, eaves, awning soffits, internal ceilings, decorative shop fronts and similar applications.

MATERIAL.—V-Crimp is formed from Panel Quality Zincanneal Steel Sheets, and can be painted immediately without priming. Thicknesses are 24 and 26 gauge and standard lengths are 6, 7, 8, 9 and 10ft.

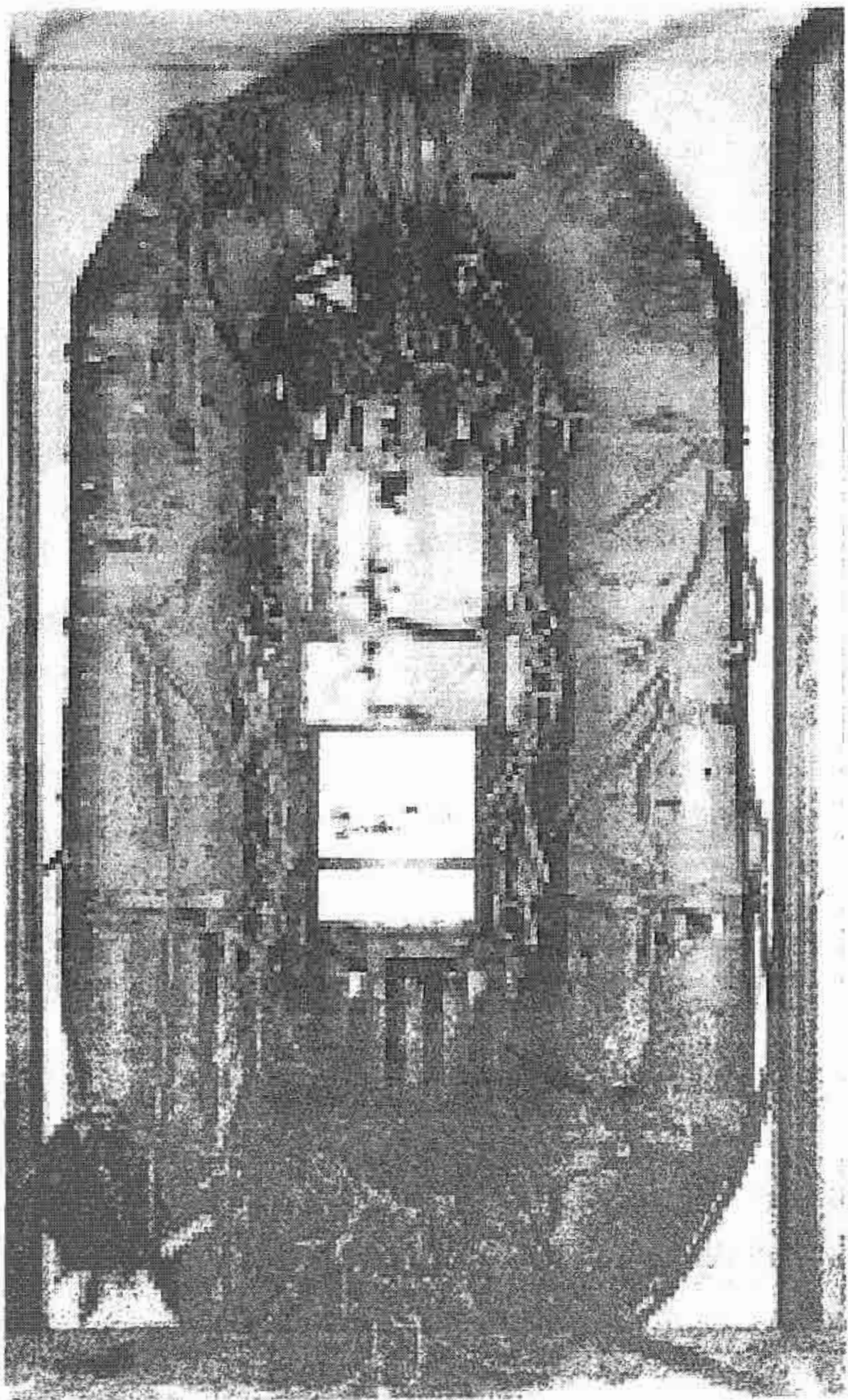
LAPS.—The recommended minimum end lap is 3"; side laps should be two full crimps.

DATA ON STANDARD ZINCANNEAL V-CRIMP SHEETS

Item	Gge.	Wgt. sq. ft.	6'	7'	8'	9'	10'	11'	12'
Sheet count per nominal 1-ton skidded pack	26	1.08 lbs.	170	146	128	114	102	93	85
Number of sheets required for 100 sq. ft. coverage with 3" end laps	24	1.35 lbs.	137	117	103	91	82	—	—
			8.7	7.4	6.4	5.7	5.1	4.6	4.3

Heavily GALVANIZED Custom V-Crimp which is produced in custom cut long lengths (6 ft. to 25 ft.) is also available. Whilst the profiles of both sheets are similar, they are not identical and cannot be mated.

**CARLEY - FLOAT
CANBERRA WAR MEMORIAL**



152

INSPECTION REPORT
- CARLEY FLOAT -
BLINCO STREET STORAGE AREA

Thursday 7 August 1997 - 10.30 A.M.

Inspection by: Mr. Norman O'Neill on behalf of Maritime History Dept.

Findings:

a) No identification on the outer skin of the Carley - Float, designating it to any particular ship either Military or Merchant Navy was found.

b) Unlike the Float examined at D.A.S. Karrakatta this Float was found to be in a much worse condition with holes punched in the top and underneath the Float. (Refer to attached diagram)

Since inspecting the Float at D.A.S Karrakatta, I have been advised by the Curator of the Maritime History Department Ms.Sally May, that Interstruct , the company who had owned the Floats before they were donated to the Fremantle Maritime Museum, had tried to have them certified by the Fremantle Port Authority as safe to use. This request apparently was refused and Interstruct were advised to have these Floats made unusable - Thus the Floats were laid into by persons unknown with pick axes which accounts for the various damage displayed on these Floats.

c) Damage top of Float:

Numerous large gapping holes were found in the top of the float indicating that it had been laid into with ferocious force which punctured the outside and floatation tanks inside.

The ration compartments on the top-side were in remarkably good condition with only one compartment being smashed. The end of the ration compartments shown on the diagram as (a) was smashed in and the 5 ply corner surround was split badly.

The complete Floats wrapping of canvas appeared to have more than one coat of "Battle-Ship Grey" paint applied to it although, this had been absorbed over time and now appears after storage to look like mere under-coat.

Inspection of the holed areas on the inner flotation raft didn't show any manufacturers markings as the one at D.A.S had revealed.

d) Underneath Damage:

This float appears to be more intact than the other in the way of the rope netting which surrounds the ration compartment which is under-slung beneath the float as per attached diagram marked (b).

All floats are intact and are in good condition. (c)

All ropes on this Float were examined and there wasn't any evidence of the "Rogue" core found. (It was a practise of the Defence Dept . Navy having a distinct coloured core placed in the centre of all ropes during manufacture to stop pilfering of such stores. This practise was stopped I believe in the 1960's because of the cost involved).

e) The ration compartments on the underside have almost all been destroyed, refer to attached diagram marked (d)

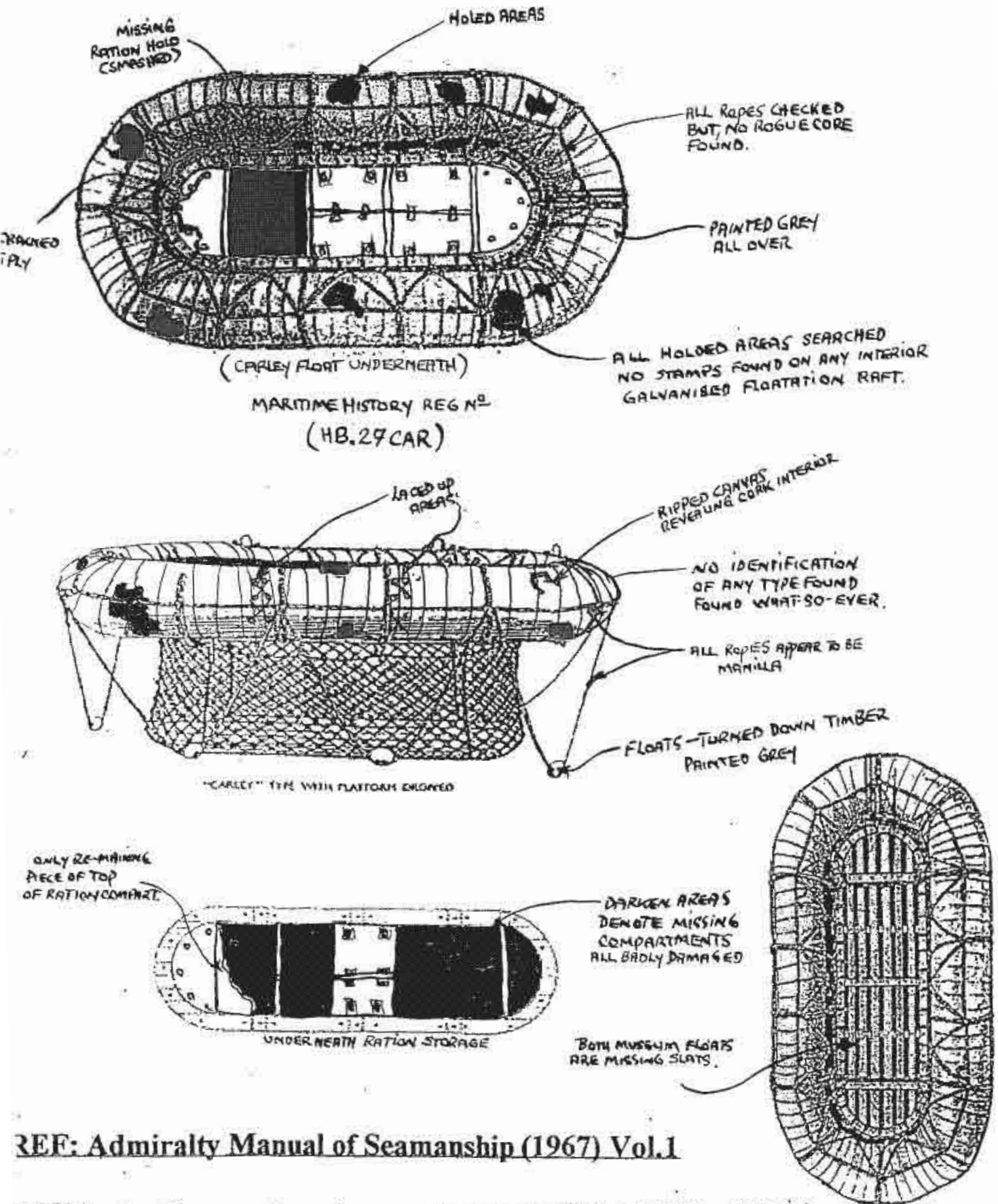
f) Construction of Float:

The centre flotation raft is constructed of corrugated iron and as stated has no identification marks visible. Every holed area was viewed with the aid of a torch and was thoroughly searched.

Unlike the Carley-Float at D.A.S this float had been covered with Cork around the interior raft then wrapped in the usual canvas wrapping . (Refer to Attached Cork and Canvas samples).

As per the other Carley-Float there weren't any traces of wooden slats which were usually on top of the ration area. As shown on the attached diagram marked (e)

PATTERN NUMBER 20 CARLEY FLOAT



REF: Admiralty Manual of Seamanship (1967) Vol.1

DATA: PROVIDED AFTER INSPECTION 10:30 AM THURSDAY 7TH AUGUST 1997 - McWELL
 ALLIANCE STREET STORAGE FACILITY.

PARTICULARS OF SERVICE FLOATS, RAFTS, ETC.

TYPE	LOTH. BDRTH.		OARS OR PADDLES		PAINTER		LIFTING WT.	REMARKS
	ft.	in.	No.	Lgth.	MANTLE	Size Lgth.		
Copper Plants (2 sizes)	13	5 2	2	8½	in.	ft. in.	lb. men	For use of Side Party
	10	4 6	2	8½	1½	2	672 4	
Carley Floats (2 sizes)	8	5 0	6	paddles	2½	6	300 18	Pattern No. 19
	10	5 0	6	paddles	2½	6	385 20	Pattern No. 20
Box Float	3	3 0	—	—	1½	3	70 8	Made of expanded rubber covered with plywood
Inflatable Life-rafts (2 sizes)	16	10 0	Size packed 4 ft. x 4 ft. x 2 ft.		—		350 20	Patt. No. 5000. Lifting wt. includes equipment.
	9 (diam.)	—		Size packed 3 ft. x 2 ft. x 1 ft. 6 in.		—		Patt. No. 5001. Lifting wt. includes equipment.

CARRYING CAPACITIES OF HARBOUR FERRY SERVICE CRAFT

Note: Attention is drawn to the note at the head of pages 350 and 351. The numbers shown below are to be reduced at the discretion of the person in charge of the boat with due regard to the weather and other circumstances.

TYPE OF BOAT	NORMAL CARRYING CAPACITY
90-ft. Motor Fishing Vessel	300
75-ft. Motor Fishing Vessel	200
61½-ft. Motor Fishing Vessel	150
45-ft. Motor Fishing Vessel	100
52½-ft. Harbour Service Launch	90
45-ft. Motor Passenger Launch	67
45-ft. Medium-speed Picket Boat	60
36-ft. Harbour Launch	52

CHAPTER VIII

Life-Saving Appliances and Rocket Life-Saving Apparatus

IN this chapter are described the various life-saving appliances and equipment provided in ships, and the "rocket life-saving apparatus" provided on shore for rescuing the crew of a stranded ship.

LIFE-SAVING APPLIANCES

In the Royal Navy the number and type of life-saving appliances supplied to each ship are determined by the Admiralty, and depend largely on the type of ship and the duties on which she is engaged.

In the Merchant Navy these appliances are supplied in accordance with the provisions of the *Merchant Shipping Act* and by the *Merchant Shipping (Life-saving Appliances) Rules, 1948*, and their number and type depend largely on whether or not the ship carries passengers and whether she is ocean-going or engaged on coastal or cross-channel trade.

CLASSIFICATION

Life-saving appliances in warships differ somewhat from those in merchant ships, but generally speaking are of four main categories as described below.—

- (i) *Life-jackets*. These are worn by individuals to support themselves in the water, a sufficient number being carried by merchant vessels to provide one for each person on board. Under this heading are also included the buoyant suits provided in H.M. ships.
- (ii) *Life-buoys*. If a man falls overboard a life-buoy is thrown to him for him to cling to until he can be rescued. The number carried depends upon the type and length of the ship and the trade in which she is engaged.
- (iii) *Buoyant apparatus*. This comprises all types of life-floats or life-rafts which are designed to support a number of persons in or on the water. In the Merchant Navy these supplement the ship's boats, and the number carried depends upon the number of boats with which the ship is equipped, and the number of persons she is certified to carry. In the Royal Navy the ship's boats are not regarded as life-boats because they are not constructed as such and because it may not be possible to launch them in emergency; sufficient buoyant apparatus is therefore provided for the full complement of each ship.
- (iv) *Life-boats*. These are specially constructed boats carried by merchant ships; they may be propelled by oars, sails or mechanical means, and each is rated to carry a specified number of persons. The number of such boats carried by a merchant ship depends upon the trade in which she is engaged and the number of persons she is certified to carry.

SPECIFICATION AND SURVEY

All life-saving appliances supplied to British merchant ships must be made

PARTICULARS OF RIG, ETC., OF
SAILING BOATS IN H.M. SERVICE.

† Dimensions of Yards given are from Hole to Hole (inner edge).

Type.	Length ft.	Beam ft. in.	Rig.	Sails Fully Stretched.	No. of Reefs.	Remarks.					
							Head.	Foot.	Leaft.	Leacht.	Diag.
				ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	sq. ft.	
Motor Launch Aux. Sails	45	11 6		Fore Stayall 9 0 Sliding Gutter 19 0 Fore Main 19 6	1	Speed about 7 knots. Obsolescent.					
Sailing Launch Motor	42	11 2		Fore Main 15 10 Fore Main 22 3 Fore Main 24 0	2	Do.					
Sailing Planes	86	9 9 1/2		Fore Main 13 2 Fore Main 25 7 Fore Main 21 3	3	Do.					
Sailing Cutter	84	8 10 1/2		Fore Main 15 0 Fore Main 22 8 Fore Main 17 3	3	Do.					
Do.	82	8 6 1/2		Fore Main 11 3 Fore Main 18 6 Fore Main 16 3	3	Do.					
Do.	82	8 6 1/2		Fore Main 12 4 Fore Main 10 11 Fore Main 10 11	3	Do.					
Do.	80	8 1 1/2		Fore Main 12 0 Fore Main 11 8 Fore Main 11 8	3	Do.					
Do.	80	8 1 1/2		Fore Main 10 0 Fore Main 18 5 Fore Main 8 4	3	Do.					
Do.	80	8 1 1/2		Fore Main 17 3 Fore Main 6 8 Fore Main 6 8	3	Do.					
Do.	80	8 1 1/2		Fore Main 17 0 Fore Main 6 8 Fore Main 6 8	3	Do.					
Do.	80	8 1 1/2		Fore Main 15 6 Fore Main 15 0 Fore Main 15 0	3	Do.					
Do.	80	8 1 1/2		Fore Main 18 0 Fore Main 13 10 Fore Main 13 10	3	Do.					
Do.	80	8 1 1/2		Fore Main 14 4 Fore Main 6 8 Fore Main 6 8	3	Do.					
Do.	80	8 1 1/2		Fore Main 12 0 Fore Main 5 10 Fore Main 5 10	3	Do.					
Do.	80	8 1 1/2		Fore Main 19 7 Fore Main 11 10 Fore Main 11 9	3	Do.					
Do.	80	8 1 1/2		Fore Main 6 0 Fore Main 10 0 Fore Main 7 6	3	Do.					
Do.	80	8 1 1/2		Fore Main 5 8 Fore Main 7 6 Fore Main 7 6	3	Do.					
Do.	80	8 1 1/2		Fore Main 14 5 Fore Main 5 10 Fore Main 5 10	3	Do.					
Do.	80	8 1 1/2		Fore Main 11 0 Fore Main 8 10 Fore Main 8 10	3	Do.					
Do.	80	8 1 1/2		Fore Main 5 2 Fore Main 12 3 Fore Main 12 3	3	Do.					
Do.	80	8 1 1/2		Fore Main 14 6 Fore Main 10 1 Fore Main 10 1	3	Do.					
Do.	80	8 1 1/2		Fore Main 12 0 Fore Main 10 1 Fore Main 10 1	3	Do.					

† Dimensions of Yards given are from Hole to Hole (inner edge).
SAILING CRACK IS NOT
FOLDED ALSO
10'-3" X 2'-10" X 1'-4"
SAILS NOT

SAILING BOATS IN H.M. SERVICE.

* IMPORTANT.—See Note at bottom of Table on pages 284 & 285.

Rig.	Masts.		Yard, Gaff, &c.		Anchor Gear.		Oars.	Arms.	Lifting Capacity for Men.	Life Saving Capacity.	Remarks.
	Length.	Dia.	Length.	Dia.	Anchor.	Cable.					
	ft. in.	in.	ft. in.	in.	lb.	Size in chain.	ft.	D'Uble Leads.	cwt.	(Tons)	
Fore	30 0	5 1/2	Gaff 21 3	4	120	4	—	—	250	200	Speed about 7 knots. Obsolescent.
Main	29 0	5 1/2	" 21 3	4	120	4	—	—	250	200	Do.
Fore	36 7	7	Gaff 19 0	4 1/2	120	F	14	Do.	198	130	Do.
Fore	32 0	6	Gaff 17 8	3 1/2	80	Ftemp	12	Do.	110	80	Obsolescent.
Fore	27 8	5 1/2	Gaff 15 0	3	40	3 1/2 chain	10	Do.	80	60	Do.
Fore	28 7	5 1/2	Gaff 13 8	3	40	Do.	8	Do.	82	58	Do.

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P.318/40

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P.318.—B.R.67—Seamanship Manual, Volume I, 1937—
Amendment

(D. of N./N.L. 1903/40.—25.7.1940.)

Page 280. Add at bottom of page —

Carley Floats,

Pattern No.

Pattern No.	Size.	Weight.	Life Saving Capacity.
	ft. ft.	cwt.	
17	8 x 12	19 1/2	45
18	9 x 14	20 1/2	67
19	5 x 8	7 1/2	18
20	6 x 10	8 1/2	20
Small Onazote Life-Float	6 x 4	—	10

(N.L. 1903/40.—A.F.O. P.318/40.)

(Last amendment, A.F.O. P.349/39.)

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A typical Stream-Line filter installation, one of many for the British Tanker Co. Ltd.

Stream-Line filters keep lubricating oil permanently in good condition.

The filter in the Engine Room.

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They conserve the nation's lubricating oil, as well as making large savings in lubricating cost and engine maintenance charges. Large numbers have been supplied to meet Admiralty requirements, and many hundreds of merchant vessels have been equipped.

STREAM-LINE FILTERS LTD., LONDON, S.W.8.

(Hole-Shaw Patents)
 makers also of
 the Stream-Line Oily Water Separator
 for bilge and ballast water.

Supplied for the Republic Service
 ROYAL NAVY
 SUPPLY OFFICE

MANUAL OF SEAMANSHIP

1937

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 OF THE ADMIRALTY

VOLUME ONE

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Nº 16



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CARLEY LIFE-FLOAT (Fig. 230)

This is being superseded (1956) by the Inflatable Life-raft in all H.M. ships, but will remain in service in some ships for some time to come. It is designed to float either side uppermost, and consists of a copper tube of large diameter, formed into an oval ring and divided by bulkheads into water-tight compartments; each compartment is fitted with an air valve to enable it to be air-tested for water-tightness. The tube is covered with a layer of cork parcelled with painted canvas; a platform of slatted wood is slung from the inner edge of the tube by rope netting, and a life-line fitted with wooden or cork floats is becketed round the outer edge of the tube. The float is fitted with a painter, a buoyant light, a wooden box containing water in tins and emergency equipment; and a set of wooden paddles is provided which should be secured at intervals to the tube by lanyards rove through holes drilled through their grips.

These floats are supplied in the Royal Navy in two sizes, and each is designated either by its pattern number or by the number of persons it is rated to support both inside and outside the tube; a 20-man float, for example, will support 12 men inside on the platform, and eight men outside clinging to the beackets of the life-line.

The floats may be stowed in a nested stowage flat on deck, on platforms such as the tops of turrets, on sloping skids, or upright against a screen near the ship's side; they may also be slung upright from the sides of the superstructure or from the shrouds of a mast, whence they can be slipped to fall clear of the ship's side into the water. When slung from the superstructure the sling comprises three legs spliced on a ring; the two lower legs are shackled to eye-bolts in the superstructure, and the upper leg is held by a rigging slip shackled to an eye-bolt in the superstructure.

These floats should not be repainted because the weight of successive coats of paint will reduce their buoyancy. Their stowages, slings, equipment and launching arrangements should be inspected at regular and frequent intervals, and each float should be tested for water-tightness at intervals of not more than six months.

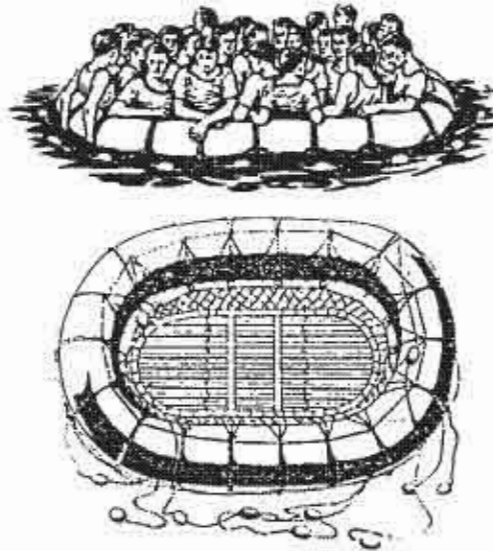


Fig. 230. Carley life-float

A water-gauge and a stirrup-type hand-worked air-pump are provided for carrying out the air-test. Air is pumped into each compartment in turn and each must maintain a water-gauge pressure of 4 inches. The test should be carried out in the manner described below:—

Select any compartment for the initial test, remove its plug, connect up with it the air-pump and water-gauge, and pump air into it until the water-gauge registers a pressure of 4 inches. If no drop in pressure is recorded remove the plugs of the adjacent compartments, and if there is then no drop in pressure the compartment under test can be considered water-tight. Then carry out the same procedure with the next compartment, but in this case it will only be necessary when testing the bulkheads for air-tightness

PARTICULARS OF SERVICE FLOATS, RAFTS, ETC.

TYPE	DIMENSIONS		LIFTING WEIGHT	CAPACITY	OARS	PADDLES	PAINTERS (Manila except as stated)	REMARKS
	Length	Breadth						
BALSA PUNT Pat. N10504	ft. in. 13 6	ft. in. 5 2	lb. 800	Men 6	No. Lgth. 2 8½	—	Size Lgth. 1½ 2	The buoyancy units are of wooden cask construction with iron hoops. For use by side party.
BALSA PUNT Pat. N10505	10 0	4 6	660	4	2 8½	—	1½ 2	do.
CARLEY FLOAT Pat. 19	8 0	5 0	390	18	1 10	8	2 6	The buoyancy unit is a copper tube covered with cork and canvas.
CARLEY FLOAT Pat. 20	10 0	5 0	475	20	1 10	8	2 6	do.
CARLEY FLOAT Pat. 23	6 0	4 0	150	10	1 10	4	1½ 4	The buoyancy unit is made of expanded rubber with plywood at top and bottom and covered with calico.
BOX or ONAZOTE FLOAT Pat. 5602	3 0	3 0	70	8	—	2	1½ 3	do., but covered with cotton duck instead of calico.
FLOTANET Pat. 5598	20 0 (Packed 9 ft. x 2 ft. dia. rolled)	9 0	224	22	—	—	2½ 10	Made of rope and cork. Used as life-saving equipment in M.F.V.s when employed as passenger ferry boats. Used as scramble nets in H.M. ships for rescue of survivors.
FLOTANET Pat. 5599	11 0 (Packed 7 ft. x 1 ft. 6 in. dia. rolled)	7 0	100	9	—	—	2½ 10	do.
INFLATABLE LIFE-RAFT Pat. 5600	15 1 (Packed 5 ft. 2 in. x 1 ft. 9 in. x 1 ft. 3 in.)	10 0	220	20	—	—	—	Made of rubberised fabric. Lifting weight includes valise, but not survival pack. Overload life-saving capacity 27 men.
INFLATABLE LIFE-RAFT Pat. 5601	9 0 (Packed 3 ft. 11 in. x 1 ft. 0½ in. x 1 ft. 9 in.)	9 0	120	8	—	—	—	do., but overload life-saving capacity 10 men.

† Rescue line (25 yd. of buoyant cord) used as painter in Mk. 2 raft.
Operating cord (50 ft. of nylon cord) used as painter in Mk. 3 raft.



LIFE RAFTS

It has been stated that the crews of wrecked men of war must depend principally on life rafts for temporary survival, especially in wartime. A certain percentage of the passengers and crews of merchant vessels may also have to depend on rafts instead of on lifeboats.

The standard life raft for men of war is known as the "Carley" type raft. They are elliptical light metal cylinders covered with canvas, and are of various sizes so that they can be nested on the weather decks as shown in Fig. 3, Plate No. 50. The cylinders may be divided into watertight compartments or may be filled with water-proofed balsa wood for flotation. A grating is lashed inside the ellipse to support wounded or exhausted men and a rope is triced around the outside for swimmers to hold on, or to which they can lash themselves with short trailing lines. The rafts are equipped with a small water breaker, a first aid kit, and sometimes emergency rations, fishing gear, flares, and other articles in a waterproof container. They carry two paddles to provide limited motion for picking up swimmers or reaching a nearby rescue vessel. All this gear is secured with lines running on both sides of the raft so that it can be reached no matter which side comes uppermost when the raft strikes the water.

Life rafts are made with a capacity to support 20, 40, or 60 men. They may be stowed horizontally in available deck spaces where they will float off in case the ship sinks or lashed vertically near the side so that they will drop in the water when the lashings are cut. More rafts than are sufficient for the entire ship's company are usually carried in case some are damaged by gunfire or fail to float clear. Woven rope nets with blocks of cork or balsa wood attached at frequent intervals may be used to supplement the life rafts. These nets can be folded and stowed conveniently and will furnish temporary flotation for men in the water. Collapsible rubber rafts of the airplane type are sometimes found. These rafts are inflated from an attached cylinder of compressed CO₂.

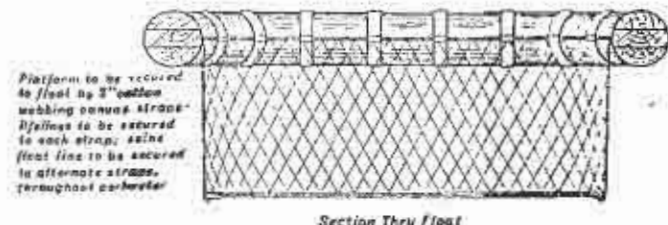
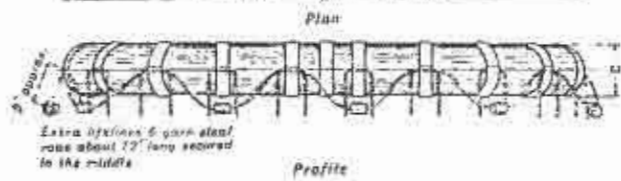
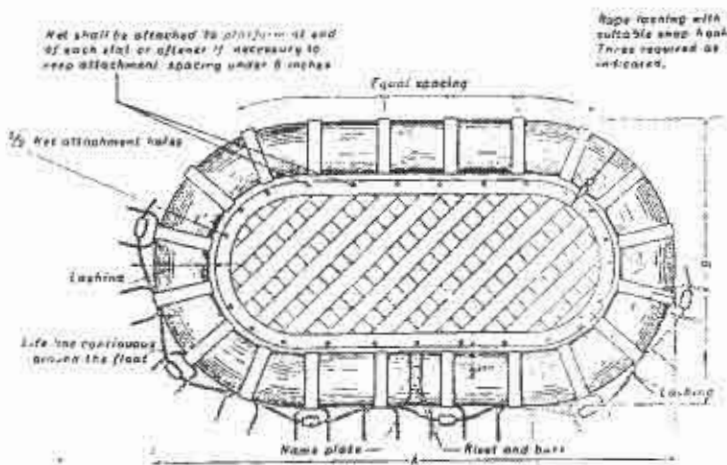
Life rafts in merchant vessels may be of the Carley type or may be built in various pontoon shapes with fixed platforms on both sides to give the passengers some protection against submergence. All life rafts must be light enough to launch by hand. They have

KNIGHT'S

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SEAMANSHIP

ELEVENTH
EDITION
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COMPANY INC.



Capacity In Persons	* Dimensions			No. of Pounds (Approx.)	
	A	B	C	Floats Weight	Buoyant
10	7'0"	5'6"	16"	8	400
15	8'6"	4'0"	11"	8	500
20	10'0"	5'6"	12"	10	1000
40	13'0"	7'0"	16"	10	1600
60	13'0"	9'6"	16"	17	2400

* Dimensions shown are approximate. Each float to provide net gravitational buoyant support of 40 pounds per person capacity.

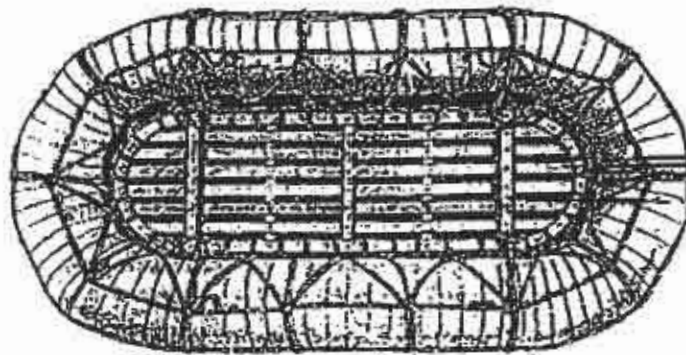
APPROVED BALSAM WOOD LIFE RAFT FOR MERCHANT VESSELS

PARTICULARS OF SERVICE FLOATS, RAFTS, ETC.

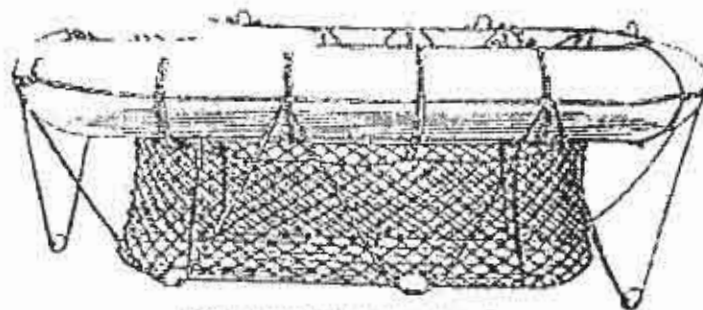
TYPE	DIMENSIONS		LIFTING WEIGHT	CAPACITY	OARS	PADDLES	PAINTERS (Manila except as stated)	REMARKS
	Length	Breadth						
BALSA PUNT Patt. N10304	ft. in. 13 6	ft. in. 5 2	lb. 800	Men 6	No. Lgth. 2 8½	—	in. ft. 1½ 2	The buoyancy units are of wooden cask construction with iron hoops. For use by side party.
BALSA PUNT Patt. N10305	10 0	4 6	660	4	2 8½	—	1½ 2	do.
CARLEY FLOAT Patt. 19	8 0	5 0	390	18	1 10	8	2 6	The buoyancy unit is a copper tube covered with cork and canvas.
CARLEY FLOAT Patt. 20	10 0	5 0	475	20	1 10	8	2 6	do.
CARLEY FLOAT Patt. 23	6 0	4 0	150	10	1 10	4	1½ 4	The buoyancy unit is made of expanded rubber with plywood at top and bottom and covered with calico.
BOX or ONAZOTE FLOAT Patt. 5602	3 0	3 0	70	8	—	2	1½ 3	do., but covered with cotton duck instead of calico.
FLOTANET Patt. 5598	20 0 (Packed 9 ft. x 2 ft. dia. rolled)	9 0	224 (2 ft. dia. rolled)	22	—	—	2½ 10	Made of rope and cork. Used as life-saving equipment in M.F.V.s when employed as passenger ferry boats. Used as scramble nets in H.M. ships for rescue of survivors.
FLOTANET Patt. 5599	11 0 (Packed 7 ft. x 1 ft. 6 in. dia. rolled)	7 0	100 (6 in. dia. rolled)	9	—	—	2½ 10	do.
INFLATABLE LIFE-RAFT Patt. 5600	16 1 (Packed 5 ft. 2 in. x 1 ft. 9 in. x 1 ft. 3 in.)	10 0	220	20	—	—	†	Made of rubberised fabric. Lifting weight includes valise, but not survival pack. Overload life-saving capacity 27 men.
INFLATABLE LIFE-RAFT Patt. 5601	9 0 (Packed 3 ft. 11 in. x 1 ft. 0 in. x 1 ft. 9 in.)	9 0	120	8	—	—	†	do., but overload life-saving capacity 10 men.

† Rescue line (25 yd. of buoyant cord) used as painter in Mk. 2 raft.
Operating cord (50 ft. of nylon cord) used as painter in Mk. 3 raft.

PATTERN NUMBER 20 CARLEY FLOAT



"CARLEY" TYPE WITH SLOPED ROSSHOW



"CARLEY" TYPE WITH FLATTOP CURVED



SEE FIGURE

REF: Admiralty Manual of Seamanship (1967) Vol.1

DATA:

Length : 10ft. , Breadth : 5ft

Lifting Weight : 475lb.

Capacity : 20 Men

Oars : 1 Length : 10ft.

Paddles : 8

Painters : Manila - except as and if stated

Size : 2 Length : 6ft.

PARTICULARS OF RIG, ETC., OF SAILING BOATS IN H. M. SERVICE.

* Dimensions of Yards given are from Hole to Hole (inner edge).

Boat.	Type.	Keel		Rudder	Mast	Rig.										No. of Reefs.	Remarks.		
		ft.	in.			Sails Fully Stretched.													
		ft. in.		ft. in.		ft. in.		ft. in.		ft. in.		ft. in.		ft. in.		ft. in.			
		Fore	Main	Fore	Main	Fore	Main	Fore	Main	Fore	Main	Fore	Main	Fore	Main	Fore	Main		
Motor Launch	Aux. Sails	45	11 6	19 0	12 0	16 0	14 13 8	14 6	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	63	Speed about 7 knots. Obsolete.
Sailing Launch	Aux. Motor	42	11 2	18 2	12 3	15 10	13 0	14 6	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	273	Do.
Sailing Pinace		30	8 9 1	16 5	10 0	13 2	11 0	14 6	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	155	Obsolescent.
Sailing Cutter		34	8 10 1	11 6	17 3	13 0	12 6	18 10	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	151	Do.
Do.		32	8 6 1	11 3	16 8	11 0	10 6	18 0	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	84	Do.
Do.		32	8 6 1	12 4	10 2	14 4	12 1	14 6	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	255	Do.
Do.		30	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	147	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	228	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	147	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	268	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	27	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	154	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	78	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	268	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	27	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	124	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	118	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	143	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	33	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	148	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	71	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	31	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	132	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	79	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	81	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	16	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	30	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	30	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	79	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	19	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	81	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	16	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	30	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	30	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	85	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	85	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	74	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	29	Do.
Do.		32	8 1 1	12 0	11 6	13 0	11 0	17 1	13 0	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	14 6	13 10 1	108	Do.

12'0" x 9'0" x 1'4" SAILING GEAR IS NOT
10'0" x 7'0" x 1'1" SAILS NOT

SAILING BOATS IN H. M. SERVICE.

* IMPORTANT.—See Note at bottom of Table on pages 284 & 285.

Rig.	Spars, &c.		Anchor Gear.		Darn.		Life Saving Capacity.	Remarks.
	Masts.	Yards, Gaff, &c.	Anchor.	Cable.	No.	Log.		
		Length.	ft. in.	ft. in.	ft.	ft.	cwt.	
Fore	28 0	Gaff 21 3	5 1/2	40	17	Do.	250	Speed about 7 knots. Obsolete.
Main	29 0	" 31 3	5 1/2	40	14	Do.	200	
Fore	36 7	Gaff 19 0	7	40	14	Do.	198	Do.
Main	32 0	Gaff 17 6	6	40	12	Do.	110	Obsolescent.
Fore	27 6	Gaff 13 6	5 1/2	27	10	Do.	86	Do.
Main	26 7	Gaff 13 6	5 1/2	27	8	Do.	52	Do.

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(D. of N./N.L. 1903/40.—25.7.1940.)

Page 280. Add at bottom of page:—

Carley Floats.

Pattern No.

Size.	Weight.	Life Saving Capacity.
ft.	cwt.	
17	8 x 12	45
18	8 x 14	67
19	5 x 8	18
20	5 x 10	20
Small Onyxote Life-Float	6 x 4	10

(N.L. 1903/40.—A.F.O. P.318/40.)

(Last amendment, A.F.O. P.249/39.)