

29 APR 1927

C. E. I. 8.

LEAGUE OF NATIONS

ECONOMIC AND FINANCIAL SECTION

INTERNATIONAL ECONOMIC CONFERENCE

Geneva, May 1927.

5

DOCUMENTATION

SHIPBUILDING

GENEVA 1927

Publications of the League of Nations

II. ECONOMIC AND FINANCIAL
1927. II. 2. ✓

C. E. I. 8
Erratum

**Documentation for the International
Economic Conference**

(Geneva, May 1927)

MEMORANDUM ON SHIPBUILDING

Page 36 — 17th line should read :

“The average weekly earnings of all male workers, calculated from returns covering”

CONTENTS

	Page
Preface	5
I. — Preliminary Survey	7
II. — Construction	8
III. — State of the Industry in Certain Countries	16
IV. — Existing Tonnage and the Demand	26
V. — Raw Materials	29
VI. — Prices and Freights	29
VII. — Customs Tariffs	31
VIII. — State Subsidies	33
IX. — Number of Workers employed ; Hours of Labour ; Wages	35

ANNEXES.

I. — Merchant Vessels of the World : Gross Tonnage and Description	40
II. — Merchant Vessels under Construction in the World	42
III. — Steamers and Motor-ships of the World : Division according to Age	43
IV. — Laid-up Steam Shipping of Principal Maritime Countries	44
V. — Number and Gross Tonnage of Steamers and Motor-ships broken up (by Countries)	45
VI. — World Tonnage of Steamers and Motor-ships totally lost and broken up	46
VII. — Index Number of Shipping Freights	47
VIII. — Freight Rates ; Grain, Rice and Cotton	48

PREFACE

The Preparatory Committee for the International Economic Conference, at its first meeting in April 1926, laid down an elaborate plan of research in order to enable it to determine "in what domains the economic difficulties which are at present experienced are international in character". It decided that amongst other documents a series of memoranda should be prepared concerning certain industries, including shipbuilding, and at the same time indicated the general lines on which these memoranda should be compiled. In the early summer of 1926 the Secretariat accordingly drew up a rough preliminary draft which was circulated to certain members of the Preparatory Committee and submitted by them to the industrial associations in their own countries for comment and criticism. A fresh draft was then prepared before the second meeting of the Preparatory Committee in which account was taken of the observations received. By the date of this second meeting, however, all comments expected had not been forwarded, and the document then circulated was accordingly provisional in character.

In the present document account is taken of information supplied by members of the Preparatory Committee from or competent authorities in Denmark, France, Germany, Italy, the Netherlands, Norway, Spain and the United Kingdom, including observations from the British Shipbuilding Employers' Federation, the French *Chambre syndicale des Constructions de Navires et Machines marines*, the *Verein Schiffwerften Hamburg*, the *Associazione fra le Società Italiane per Azione*, the Norwegian Shipowners Society and the Danish Federation of Industries. The information on Labour conditions is derived from material supplied from the national organisations and from the International Labour Office.

I. — PRELIMINARY SURVEY.

The world mercantile fleet between 1900 and 1914 showed an average rate of increase of 1.4 million tons per annum ; from 1911 to 1914, the average increase was 2 million tons per annum, a rate which would probably have resulted in a heavy falling off in subsequent demand, even if there had been no war. The average net increase to the world fleet over the period 1900 to 1914 was 4 per cent per annum ; shipbreaking and marine losses account for $2\frac{1}{2}$ per cent per annum, so that shipbuilding in successive periods averaged $6\frac{1}{2}$ per cent of the world fleet in existence. In pre-war days a considerable amount of warship construction was undertaken in merchant shipyards ; in 1911, as much as $\frac{3}{4}$ million tons of displacement was launched in the world, which provided an amount of work greater than the displacement tonnage appeared to indicate. It was calculated during the war that the labour demand for warship displacement tonnage is at least twice as much as for merchant ship gross tonnage.

The world pre-war shipbuilding capacity was about 5 million gross tons (including 1.5 million gross tons for the equivalent of warship displacement) ; in 1913, $3\frac{1}{3}$ million tons of merchant shipping was built in various countries of the world.

The world tonnage of 1925, over $64\frac{1}{2}$ million tons, included laid-up tonnage amounting to 6 million tons ; and a certain amount, estimated at some 5 per cent, was being run at a loss to avoid the greater loss of laying-up.

The real world demand to-day is probably not more than 55 million tons. There is thus a surplus of about 10 million tons, which has existed for at least four years, and, until this is absorbed or destroyed, shipbuilding will necessarily be limited to essential requirements. Even if the pre-war average demand of $6\frac{1}{2}$ per cent still obtained, this, on 55 million tons, would only be 3.6 million tons ; when the effect of the existing surplus is taken into account, the maximum production figure is not likely to exceed 2.5 million tons for some years to come ; nor is it likely, on account of the necessary replacements, to fall below 1.5 million tons.

As just stated, the pre-war capacity was adequate for prospective needs, and a falling off in output might have been anticipated. During the war, however, no less than $13\frac{1}{4}$ million tons of merchant shipping was lost by enemy action. To replace this tonnage, immense extensions of shipyard capacity necessarily took place, and in point of fact by 1919 the world fleet had increased by 15 million tons over the 1914 figure. This was entirely additional to the enormous amount of warship-building and ship-repairing that was undertaken.

The total capacity of the merchant shipbuilding yards, thus enlarged to serve war purposes, may have attained 10 million tons. Warship construction, owing to the Washington Treaty, is now almost negligible, and the yards must therefore rely on orders for the mercantile marine. ¹

¹ For the estimate made above, see evidence given by Sir Westcott Abell, Chief Ship Surveyor for *Lloyd's Register*, at Glasgow in 1925.

The estimate of the relation between capacity and actual construction may be based on the output of merchant vessels in peak years in the principal maritime countries. The following results are then obtained, the United States being omitted from the total on account of the abnormal circumstances of the case :

	Maximum year's output Tons (000's)	Output in 1925 Tons (000's)	Percentage in 1925 of Peak Year
United Kingdom (1920)	2,055.6	1,084.6	52.8
Germany (1922)	525.8	406.4	77.3
Italy (1921)	164.7	142.0	86.2
Japan (1919)	611.9	55.8	9.1
Netherlands (1921)	232.4	78.8	33.9
France (1921)	210.7	75.6	35.9
	<hr/>	<hr/>	<hr/>
	3,801.1	1,843.2	48.5
United States (excluding lake tonnage)	3,579.8	78.8	2.2

This shows, for the principal shipbuilding countries, excluding the United States, that there was in 1925 only 48 per cent of the activity in a peak year. The German industry was not depressed to the same extent, because the yards were still employed with the replacement work undertaken to make good the deliveries under the peace settlement. Italian yards were well employed, and in the first nine months of 1926 launchings were 110,660 tons of steamers and motor-ships.

In all the principal countries during the war, the yards were engaged in naval repairs, in the conversion of craft and in the building of tramp tonnage for supplies. Much liner tonnage in Great Britain was diverted to war uses. Consequently, there were at the end of the war heavy arrears in liner construction to be made good, especially in Great Britain. These arrears have now been overcome. The causes which have led to the depression in shipbuilding in 1923 and the following years are dealt with on page 27. In 1924, building throughout the world had recovered to 90.3 per cent of the pre-war average, though it represented a sharp fall from the inflated percentage of 286.9 in 1919, when American building was at its highest. In 1925, the level fell to 88.1 per cent. But the most vital comparison is between output and capacity. At the end of 1926, there were distinct signs of revival in Great Britain and Germany — in Germany, owing to the expectation of orders for new liners ; and in Great Britain, on account of orders for tankers, some liners and some Admiralty orders. The immediate future of the industry in each country is likely to depend, as is shown in greater detail in Section III, not only on the rate of scrapping old ships and on the general demand for tonnage but on the demand for new types of vessels. For this reason, prosperity is not, and is not likely to be, uniform even within any single country.

II. — CONSTRUCTION.

Tonnage Launched. — The following table gives the figures of the tonnage of merchant vessels of 100 tons gross and upwards launched in the principal shipbuilding countries in 1913 and in the years following the war.

Table I.

NUMBER AND GROSS TONNAGE OF MERCHANT VESSELS OF 100 TONS GROSS AND UPWARDS LAUNCHED
IN THE VARIOUS COUNTRIES OF THE WORLD DURING EACH YEAR FROM 1918.

(Figures taken from *Lloyd's Register of Shipping*.) (1913 and average 1909-13 are added for comparison.)
(Percentages have been added.) (Tonnage in thousands of tons.)

COUNTRY	1913			Average 1909-13			1918			1919			1920		
	Number	Tonnage	%	Number	Tonnage	%	Number	Tonnage	%	Number	Tonnage	%	Number	Tonnage	%
Germany	162	465.2	14.0	136	272.8	11.0	No returns			No returns			No returns		
Belgium	54	30.2	0.9	17	13.8	0.6	'	'		2	2.4	0.03	5	8.4	0.1
Denmark	31	40.9	1.2	20	21.1	0.8	13	26.2	0.5	46	37.8	0.5	30	60.7	1.0
France	89	176.1	5.3	71	107.1	4.3	3	13.7	0.3	34	32.6	0.5	50	93.4	1.6
Italy ¹	38	50.4	1.5	26	29.4	1.2	15	60.8	1.1	32	82.7	1.17	82	133.2	2.3
Norway	74	50.6	1.5	69	40.4	1.6	51	47.7	0.9	82	57.6	0.8	30	38.9	0.7
Netherlands	95	104.3	3.1	95	85.4	3.4	74	74.0	1.4	100	137.1	1.9	99	183.1	3.1
Great Britain and Ireland	688	1,932.2	58.0	640	1,541.8	61.9	*301	1,348.1	24.7	612	1,620.4	22.7	618	2,055.6	35.1
Sweden	25	18.5	0.6	17	11.4	0.5	36	39.6	0.7	53	51.0	0.7	46	63.8	1.1
United States ²	205	276.4	8.3	164	234.6	9.4	929	3,033.0	55.7	1,051	4,075.4	57.0	509	2,476.3	42.2
Japan	152	64.7	1.9	115	49.9	2.0	198	489.9	9.0	133	611.9	8.6	140	456.6	7.8
British Dominions ⁴	91	48.3	1.4	67	27.3	1.1	206	270.9	5.1	263	358.7	5.0	103	203.6	3.5
Other countries	46	75.1	2.3	49	54.9	2.2	40	34.5	0.6	75	76.9	1.1	47	88.1	1.5
TOTAL	1,750	3,332.9	100	1,486	2,489.9	100	1,866	5,447.4	100	2,483	7,144.5	100	1,759	5,861.7	100
Index (average 1909- 13 = 100)		133.9			100			218.8			286.9			235.4	

¹ To obtain a just comparison with Italian construction in post-war years it is desirable to give the combined figures for Austria-Hungary and Italy in pre-war years, with the reservation that some allowance should be made for the Dalmatian ports incorporated after the war in the Serb-Croat-Slovene State. The combined figures for 1913 are: 55 ships of 112.1 thousand tons forming 3.4 per cent of world building; for the average of 1909-1913 39 ships of 64.9 thousand tons forming 2.6 per cent of world building.

² Vessels built to the order of the Admiralty for other than mercantile purposes are not included.

³ Including Great Lakes.

⁴ Including Canada lake ports.

⁵ Returns not complete.

COUNTRY	1921			1922			1923			1924			1925		
	Number	Tonnage	%	Number	Tonnage	%	Number	Tonnage	%	Number	Tonnage	%	Number	Tonnage	%
Germany	242	509.1	11.7	187	525.8	21.3	109	345.1	21.0	108	175.1	7.8	121	406.4	18.5
Belgium	3	17.9	0.4	4	7.5	0.3	5	1.1	0.1	2	4.0	0.2	3	4.2	0.2
Denmark	37	77.2	1.8	23	41.0	1.7	24	49.5	3.0	33	63.9	2.8	21	73.3	3.3
France	65	210.7	4.8	62	184.5	7.5	27	96.6	5.9	26	79.7	3.6	35	75.6	3.5
Italy	85	164.7	3.8	42	101.2	4.1	21	66.5	4.0	19	82.5	3.7	31	142.0	6.5
Norway	35	51.5	1.2	23	32.4	1.3	48	42.6	2.6	34	25.1	1.1	48	28.8	1.3
Netherlands	98	232.4	5.4	60	163.1	6.6	35	65.6	4.0	41	63.6	2.8	47	78.8	3.6
Great Britain and Ireland	426	1,538.1	35.4	236	1,031.1	41.8	222	645.7	39.3	494	1,439.9	64.1	342	1,084.6	49.4
Sweden	27	65.9	1.5	14	30.0	1.2	10	20.1	1.2	12	31.2	1.4	17	53.8	2.5
United States	173	1,006.4	23.2	59	119.1	4.8	83	172.8	10.5	79	139.5	6.2	101	128.8	5.9
Japan	43	227.4	5.2	49	83.4	3.4	44	72.5	4.4	31	72.8	3.2	23	55.8	2.5
British Dominions	54	129.7	3.0	39	62.8	2.5	44	41.3	2.5	31	44.9	2.0	51	46.1	2.1
Other countries	89	110.7	2.6	54	85.2	3.5	29	23.8	1.5	14	25.6	1.1	15	15.2	0.7
TOTAL	1,377	4,341.7	100	852	2,467.1	100	701	1,643.2	100	924	2,247.8	100	855	2,193.4	100
Index (average 1909- 13 = 100)		174.4			99.1			66.0			90.3			88.1	

During the three years 1918-20, the total tonnage launched in the world amounted to 18,454,000 tons, or an average of 6,151,000 tons per annum, with which figure may be compared the 12,450,000 tons launched during the whole of the last pre-war quinquennium, a total which equates an annual average launching of 2,490,000 tons. Of the tonnage launched in the years 1918-20 inclusive, over one-half, namely 9,585,000 tons¹, was built in the United States of America and over 5,000,000 tons in the United Kingdom. But in Italy, the Netherlands, Sweden, the British Dominions and Japan, the tonnage launched during 1919 and 1920 also greatly exceeded the normal pre-war average. The present crisis in the industry must be attributed partly to the diminution in cargoes offering, partly to the vast over-production of these years, which was accentuated by the building of national fleets on Government account in or for North America and Australia. Owing to the length of time required for the construction of a large vessel, the general depression of trade which took place in 1921 was not immediately reflected in the quantity of tonnage launched, and even in 1922 the total mercantile marine of the world was increased by nearly 2 ½ million gross tons of new shipping, an amount equal to the pre-war average.

A considerable part of the over-production of the years immediately following the war was due to shipbuilding programmes begun by Governments during the war period to meet essential war needs. These programmes included replacements to make good the loss of vessels due to war operations. The total tonnage losses due to this cause (including sailing ships) of vessels of 100 tons and over as given by *Lloyd's Register* for each war year are as follows :

1914.	372,277	1917	6,350,362
1915.	1,438,173	1918	2,744,172
1916.	2,325,688		

The war programmes could not be immediately liquidated. The most important was the creation of an emergency fleet under the direction of the United States Shipping Board. At the time of the Armistice, 533 vessels had been delivered, and it was decided to continue the work of construction to provide for the carriage of American goods in American bottoms. Nevertheless, extensive cancellations were effected and the original programme was reduced by 25 per cent. Deliveries for the four fiscal years 1917-18 to 1920-21 included 2,288 ships. From the year 1920 onwards, when about 720 steel vessels lay inactive, the programme was rapidly curtailed, and the last completed vessel was delivered on May 9th, 1922.

Australia and Canada also embarked on shipbuilding schemes to meet war emergencies. For the Commonwealth Government 28 ships were built, including 5 large liners. The Canadian Government, during the later war period, placed orders for 63 steel cargo-ships. In both cases the shipping depression from 1921 onwards made some measure of liquidation necessary.

The execution of these war-time emergency programmes accounts for some part of the large over-production shown in the tables for the years 1918-20, but some portion of it is attributable to the increase in ordinary commercial shipbuilding due to the short post-war trade boom. The final result was to increase the total merchant-

¹ Including lake tonnage.

marine tonnage of the world from about 47 million tons in 1913 to 65 million tons in June 1923. Since that date, as is shown in Annex 1, the level has fallen, as scrapping and losses have exceeded production ; but it is still nearly 40 per cent higher than it was immediately before the war. The more important changes in the distribution of the total tonnage launched in the world may be summarised in the form of percentages of launchings throughout the world as follows :

Table II.

PERCENTAGE DISTRIBUTION OF TONNAGE LAUNCHED (based on Table I).

	United Kingdom	United States	France	Italy	Germany	Japan	Other Countries	Total
1913	58.0	8.3	5.3	3.4 ¹	14.0	1.9	9.9	100
1919	22.7	57.0	0.5	1.2	—	8.6	10.0	100
1924	64.1	6.2	3.6	3.7	7.8	3.2	11.4	100
1925	49.4	5.9	3.5	6.5	18.5	2.5	13.7	100

The salient points emerging from Tables I and II are :

- (1) That the total shipbuilding in the world in 1925 was below the pre-war average, in spite of the great increase in the capacity of the shipyards of the world ;
- (2) The great activity in building from 1918 to 1921 in the United States, Japan and for the British Dominions, which was the outcome of war conditions ;
- (3) The effort made by Germany in post-war years to make good the losses suffered under the Treaty of Versailles ;
- (4) The fall in the British figures for 1923-25 due in part to the heavy programmes of the preceding three years ; and
- (5) The rise of Italy in 1925 to the rank of third place among shipbuilding Powers.

It will be seen that the depression in the shipbuilding industry is by no means evenly spread. Indeed, if the figures for Great Britain and Ireland are deducted from the average for 1909-13 and the launchings of 1925, totals for all other countries are 948,000 tons for the pre-war average and 1,109,000 for 1925, showing a marked increase. Nevertheless, the capital and labour bound up with the industry throughout the world is not being used to anything like its full capacity. Shipbuilding yards were extended in many countries during the war under the pressure of war circumstances and the necessity of replacing destroyed tonnage. Precise details have not been furnished by individual countries, but an estimate made by Sir Westcott Abell summarises the increase in the capacity of the yards as follows :

Increase	Tons
United Kingdom	500,000
United States	3,750,000
Japan	500,000
Continent of Europe	250,000

¹ Austria-Hungary is included in order to make the comparison with post-war Italy more exact, since the former Austro-Hungarian Shipyards in Venezia Giulia account for a large share of Italian production.

The estimate of the total effective shipbuilding capacity of the world at 10 million tons is, as already pointed out, probably too high, especially as it is impossible to foresee what proportion of the United States shipbuilding yards will be restored to activity. If the United States is left out of account, the outside figure for the rest of the world may be put at approximately 6 million tons. Launchings in 1925, excluding the United States, only slightly exceeded 2 million tons. There are no general statistics of repair work, but even if repairs are taken into account, the disparity between capacity and construction is sufficiently serious.

The reductions in the figures of tonnage launched for the years 1923-25 do not represent to the full the depression in the shipbuilding industry as a whole, since the figures relate to merchant tonnage only. A substantial diminution has taken place in the work of the shipyards since Government contracts, normally extending over considerable periods, for naval construction in commercial yards have been curtailed owing to the restriction of the naval programme agreed on by the Powers signatory to the Washington Convention.

The displacement tonnage of the warships of 100 tons and over launched in the shipyards of the world from 1909 to 1913 was as follows :

	Tons		Tons
1909	404,075	1912	534,629
1910	310,854	1913	676,909
1911	768,869		

This represents a greater amount of work for the shipyards than the bare figures would appear to indicate ; it was calculated during the war that the labour demand is at least twice as great for a warship displacement ton as for a merchant-ship gross ton. On this basis, the warship tonnage launched in 1913 represented certainly more than 20 per cent of the total employment on new construction.

In a subsequent section, the relation of new building to existing tonnage, considered both in its entirety and in relation to the age of ships and the scrapping of old tonnage, is discussed. But an examination of the figures of new construction shows that the demand is influenced by the changing character of the world's mercantile marine, to the increasing use of motor-vessels and of larger ships in all classes. With the heavy costs of navigation, shipowners have found that great economies result from the use of larger and more powerful units with high speed. The proportion of vessels constructed for burning oil as an alternative to coal increases every year, and the proportion of large new motor-ships is even more significant. The increasing use of oil fuel for all purposes has created a demand for tankers, which have thrown out of use many old tramp steamers built for carrying coal. Further, a large part of recent shipbuilding has been for new liners, since the shipment of higher-priced goods by liner rather than by tramp ships is increasing. An examination of the kind of new tonnage and of the size of the new units is therefore of great importance.

Size of New Units. — Taking first the general increase in the size of new units, the average gross tonnage per unit will be found to have increased by 50 per cent as compared with 1909-13. This is partly due to the fact that during the war the British Government, which, with the exception of the United States, was the largest builder, concentrated on standard tramp tonnage, and that post-war building has

been largely liner tonnage to make up for war losses and the cessation of this type of building during the war. The peak years of 1920 and 1921 are, however, omitted in the following comparison :

AVERAGE GROSS TONNAGE OF VESSELS OF 100 TONS GROSS AND OVER LAUNCHED IN CERTAIN YEARS.

	Tons		Tons
1909-13	1,715	1924.	2,433
1922.	2,896	1925.	2,565
1923.	2,344		

Among the vessels classed by Lloyd's in the year ending June 30th, 1926, 12 had a tonnage of over 10,000 tons each ; of these, 3 were of over 20,000 tons gross.

Changes in Motive Power. — Parallel with the tendency towards bigger vessels, there has continued to be a rapid development of the construction of new or the conversion of old ships designed to consume oil in place of coal.

Table III.

NEW TONNAGE BUILT TO LLOYD'S CLASSIFICATION IN EACH YEAR FROM 1918-19 TO 1925-26.

(Taken from the *Annual Report* of Lloyd's Register for the year 1925-26.)

Period	Total steam and motor tonnage classed (including auxiliaries)	Types of engines			Fuel			
		Steam reciprocating	Steam turbines	Motors	Coal		Oil	
		Gross tons (000's)	Gross tons (000's)	Gross tons (000's)	Gross tons (000's)	Per cent	Gross tons (000's)	Per cent
1918-19	3,761	2,634	1,051	76	2,491	66.2	1,270	33.8
1919-20	4,187	2,821	1,286 ¹	80	2,111	50.4	2,076	49.6
1920-21	3,229	2,373	755 ¹	102	1,260	39.0	1,969	61.0
1921-22	2,518	1,421	870 ¹	227	895	35.5	1,622	64.5
1922-23	1,611	842	603 ¹	165	663	41.1	948	58.9
1923-24	875	611	99 ²	164	468	53.5	406	46.5
1924-25	1,311	895	114 ¹	302	671	51.2	640	48.8
1925-26	1,325	576	146 ¹	602	419	31.6	906	68.4

In the 1926 report of the Chamber of Shipping of the United Kingdom, the view is expressed that, "generally speaking, it may be considered that, whenever oil is economically obtainable, the first-class passenger liner trade has been lost to coal as regards motive power".

¹ All geared.

² All but one geared.

It should be understood that not all of the ships fitted with installations for burning oil actually use oil, as many of these installations can readily be replaced by coal-burning fittings when, either on account of the comparative cost of the two kinds of fuel or for other reasons, it seems desirable to make the change. In the table above, motor tonnage is shown in a separate column. It will be seen that the percentage of ships built to consume oil is greater in 1925-26 than in any preceding year, and that the tonnage of motor-ships launched is double that of 1924-25, though that year marked a great advance on previous years. At the end of June 1926, there were on *Lloyd's Register* 45 motor-ships, each of more than 8,000 tons gross, fitted with Diesel engines. At the end of June 1925, there were only 19 such vessels. Four motor-ships of over 11,000 tons, the largest being of nearly 18,000 tons, were registered during the twelve months¹. The construction of motor tonnage is of interest since it represents the newest developments in shipbuilding; in 1925-26, it was distributed as follows :

Table IV.

MOTOR-VESSELS UNDER CONSTRUCTION (excluding lake tonnage)².

	December 31st, 1925		September 30th, 1926	
	Number	Tons (000's)	Number	Tons (000's)
Great Britain and Ireland	48	299.5	46	272.6
Italy	26	232.5	27	221.7
Germany	23	157.0	11	43.4
Netherlands	16	82.4	18	113.2
France	16	59.5	10	51.0
Denmark	13	56.8	8	37.9
Sweden	12	50.6	10	39.0
Japan	5	33.4	8	20.3
United States	14	17.4	13	16.0
Spain	4	13.1	3	13.0
Norway	5	3.6	—	—
Other countries	5	1.6	17	41.4
Total	187	1,007.4	171	869.5

Tankers. — The construction of tankers for carrying oil in bulk provides a considerable amount of work for the yards. In 1925-26, 43 tankers of over 1,000 tons, totalling 291,887 tons, were classified by Lloyd's. The increase in tanker tonnage, including vessels of less than 1,000 tons, recorded in the *Register Book* for July of the years mentioned is shown in the following table :

OIL TANKERS : GROSS TONNAGE (000's).

1914	1,479	1923	5,204
1919	2,929	1924	5,243
1920	3,354	1925	5,384
1921	4,419	1926	5,665
1922	5,063		

¹ See *Annual Report* of Lloyd's Register, 1925-26.

² From Lloyd's *Quarterly Returns*.

The distribution of the tankers launched (vessels of over 1,000 tons and upwards) in 1925 is given as follows in Lloyd's *Annual Summary* (January 1926) for that year :

Country of building	Number	Gross tonnage
Great Britain and Ireland	24	134,766
Germany	10	89,731
Netherlands	8	31,710
Italy	3	15,032
Denmark	1	8,913
Sweden	1	5,500
United States	1	1,217
Total	48	286,869

Construction at End of Each Quarter. — The actual tonnage under construction in different countries at the end of each quarter for the last year is shown in the following table :

Table V.

MERCHANT VESSELS UNDER CONSTRUCTION IN THE WORLD.

Number and Gross Tonnage (000's omitted), 100 Gross Tons and Upwards.

(Figures taken from the *Quarterly Returns* of Lloyd's Register.)

COUNTRY	30th September, 1925			31st December, 1925			31st March, 1926			30th June, 1926			30th September, 1926		
	Number		Tonnage	Number		Tonnage	Number		Tonnage	Number		Tonnage	Number		Tonnage
	a	b		a	b		a	b		a	b		a	b	
Germany	73	—	306.6	52	1	234.1	47	2	216.9	39	2	148.9	28	—	127.3
Belgium	5	—	5.0	5	—	5.1	4	—	3.2	2	6	5.6	2	6	5.6
Denmark	18	—	70.8	17	—	60.7	18	—	59.5	11	—	42.7	11	—	41.9
France	34	2	150.2	37	2	167.3	35	—	156.0	34	—	154.0	28	—	135.0
Italy	35	5	269.8	38	3	309.6	36	2	298.5	37	2	287.3	36	4	278.8
Norway	22	—	19.8	20	—	13.0	16	1	6.9	14	1	4.6	10	1	4.4
Netherlands	43	1	127.8	36	—	108.9	36	—	133.6	38	—	148.2	41	2	160.6
Great Britain and Ireland	239	18	1,009.2	204	13	885.0	207	11	843.1	192	8	841.3	169	8	774.8
Sweden	20	—	71.6	17	1	55.2	18	—	53.8	14	—	40.9	17	—	45.2
U. S. A.	16	20	69.9	27	15	105.2	32	6	117.8	30	13	133.3	27	17	119.7
Japan	13	—	53.3	13	—	52.2	14	—	45.7	12	—	38.3	13	—	37.8
British Dominions	17	6	32.0	14	3	29.9	14	6	26.4	13	9	26.2	7	6	4.6
Other Countries.	16	6	20.9	19	2	43.3	17	2	48.8	28	7	99.4	36	8	115.0
TOTAL	551	58	2,206.9	499	40	2,069.5	494	30	2,010.2	464	48	1,970.7	425	52	1,850.7

a = Number of steamers and motor-ships.
b = Number of sailing ships.

III. — STATE OF THE INDUSTRY IN CERTAIN COUNTRIES.

Denmark.

The Danish Federation of Industries states that in 1913 there were seven yards for the building of iron and steel ships, employing 4,000 men, with an output valued at 20 million kroner. The following figures show the position of the industry in 1922 to 1925. They are not directly comparable with the figures given in *Lloyd's Register*, as they are in net tons and appear to include vessels of less than 100 tons.

Table VI.

	Yards	Wor- kers	Value of ships built	Value of repairs	Other work done	Ships completed			Tonnage completed (net ¹ registered tons) (000's omitted)
						Steam	Motor	Others	
			Million kroner						
1916	9	5,047	10.9	19.1	4.6	8	9	9	22
1920	15	11,552	62.2	66.5	15.7	20	18	1	43
1922	13	6,198	47.2	16.8	11.3	13	7	4	34
1923	13	6,806	36.1	20.1	12.7	15	9	4	24
1924	12	8,989	34.0	31.3	15.0	19	7	11	34
1925	13	7,677	47.0	18.1	19.1	12	16	23	45

These figures do not include Government dockyards. The annual capacity of the private yards may be put at 280,000 to 300,000 tons dead weight. It will be seen that the number of workmen employed and the value of total output have increased. The relative prosperity of the industry is ascribed to the specialisation of Danish yards in the construction of motor-ships fitted with Diesel engines.

France.

The following information with regard to the French shipbuilding industry is derived from the report of M. Gratien Candace on behalf of the Finance Commission of the Chamber on the mercantile marine estimates for 1926.

Before the war, shipbuilding was concentrated mainly in 15 large yards. There were in addition a number of small general yards and many small ones for the construction of wooden ships. In order to obtain an idea of the pre-war capacity of French yards, it is necessary to add warship construction to the figures of merchant vessels given by Lloyds. The following results are then obtained :

¹ Not directly comparable with Lloyd's figures as given in the general table.

Table VII.

	1909		1910		1911		1912		1913	
	Number	Tons (000's)	Number	Tons (000's)	Number	Tons (000's)	Number	Tons (000's)	Number	Tons (000's)
Merchant ships ¹	51	42.2	55	80.8	51	118.7	80	110.7	88	176.0
Ships of war ²	19	95.7	13	24.4	22	58.7	28	59.2	13	75.9
Total		137.9		105.2		177.4		169.9		251.9

Since tonnage launched taken over a period of years represents construction fairly accurately, the mean production for the years 1911, 1912 and 1913 may be put at 238,801 gross tons, making the necessary allowance for the difference in calculating displacement tonnage³. The capacity, stated as gross tonnage for merchant vessels, was roughly 300,000 tons, and French yards were working up to about 80 per cent of their capacity. During the war, the industry suffered in common with others, and, when mercantile construction was seriously resumed in 1919, the industry was handicapped in comparison with that of other countries by the shortage of labour. The mean average production in the years 1915–18, taking small warships into account, was equivalent to 45,000 gross tons. In 1918–19, the existing shipyards increased their equipment, and new yards were created in the expectation of new orders for the reconstruction of the mercantile marine. Existing resources include, therefore, 19 large yards, 10 smaller ones for medium and small ships, and a great number for fishing and sailing vessels, about 20 of which can build vessels of over 200 tons. The capacity of production is about 500,000 tons, or 66 per cent greater than before the war, and cannot be considered excessive in view of the magnitude of the French mercantile marine of 4 million tons. Construction of vessels of 100 tons and over for the six^½ post-war years, including sailing ships, was as follows :

Table VIII.

Year	Number	Tons (000's)	Year	Number	Tons (000's)
1919	34	32.7	1922	62	184.5
1920	50	93.4	1923	27	96.6
1921	65	210.7	1924	26	79.7

In 1924, production, including 25,000 gross tons for naval construction, amounted to about 105,000 tons, or 20 per cent of capacity.

In 1925, production was probably slightly lower than in 1924. The number of workmen employed fell from 30,000 on October 21st, 1921, to about 20,000 in 1925–26.

¹ Of 100 tons and upwards.

² Displacement tonnage.

³ One ton of displacement tonnage is here taken as equivalent to 1.6 gross tonnage.

Germany.

In the year 1925, 121 vessels of 406,374 tons were launched in German yards. As compared with the output for 1924, the figures show an increase of 231,261 tons. They included 10 vessels of between 4,000 and 6,000 tons, 23 of between 6,000 and 10,000 tons, and 7 of above 10,000 tons each. Three vessels, totalling 45,800 tons, were to be fitted with geared steam turbines ; 56, totalling 279,410 tons, with oil engines ¹. In the five years 1921 to 1925, launchings in Germany totalled 1,961,000 tons, an average of 392,000 tons, against an average of 273,000 tons in the five years before the war. But, although this represents a greater total activity, the shipyards are by no means fully occupied, for launchings in 1913 totalled 465,226 tons. Many small firms had to close down at the end of 1925, and some of the larger yards were only operating up to about 40 per cent of their capacity. The Association of German Shipbuilders has published figures compiled from returns furnished by 24 of its members showing the depressed state of the industry. They are as follows : Number of workmen employed : 1913, 49,744 ; 1924, 33,456 ; 1925, 27,812. Tonnage under construction (December 31st) : 1913, 691,910 ; 1924, 185,845 ; 1925 (November 15th) 133,167.

Towards the end of 1925 and in January 1926, there was some revival, orders for about 60,000 tons being booked within a few weeks. But dismissals of workers were again reported from the big yards in April and May.

There is no trade combination in the German shipbuilding industry. At a meeting of representatives of the industry held in Berlin in November 1925 to discuss possible forms of co-operation, it was decided that the shipbuilding industry is not one which lends itself to a concentration of interests in the form of a trust, syndicate or cartel ; it was held that any such combination would injure the industry and hinder the position in the world market ².

Nevertheless the shipbuilding industry is inevitably affected by combinations in shipping. German shipping has undergone a series of amalgamations in the last two years. In 1925, the North German Lloyd amalgamated, by exchange of shares, the Hamburg-Bremer-Afrika, the Roland and the Horn, bringing up the tonnage owned by North German Lloyd to 600,000 gross tonnage ; the Deutsch-Austral and Kosmos companies (which had bought up the greater part of the Hugo Stinnes lines), with 320,000 tons, were merged in 1926 with the Hamburg-Amerika line, the combined fleet being now 800,000 gross tons. Thus there are now two big shipping combines in Germany, the Hamburg-Amerika and the North German Lloyd. Taking into account the tonnage of the Woermann and East African lines, which they jointly control, they command 50 per cent of the whole German mercantile marine ³. An increase of capital proposed on November 1st, 1926 ⁴, by North German Lloyd, in order to extend the fleet of the company to meet requirements, indicates that large new

¹ Lloyd's *Annual Summary* for 1925 (January 1926).

² See Department of Overseas Trade : Report on Economic and Financial Conditions in Germany, 1926.

³ *Economist*, November 6th, 1926.

⁴ *Fairplay*, November 11th, 1926.

orders are likely to be placed with the big German yards. The general rise in the shares of German shipping lines during 1926 may perhaps be taken as indicating the probability of increased building activity in 1927.

Great Britain and Northern Ireland.

The contraction of building in recent years is illustrated in the following table:

Table IX.

STATEMENT SHOWING MERCHANT TONNAGE UNDER CONSTRUCTION, COMMENCED AND LAUNCHED IN THE UNITED KINGDOM, QUARTER BY QUARTER, FROM DECEMBER 1921 TO SEPTEMBER 1926 ¹.

(Gross tons, 000's omitted.)

Quarter ending	Under construction	Suspended construction	Commenced	Launched
December 1921	2,640	722	55	467
March 1922	2,236	617	51	334
June 1922	1,920	481	39	149
September 1922	1,617	419	82	307
December 1922	1,469	348	231	261
March 1923	1,492	181	355	228
June 1923	1,338	130	241	239
September 1923	1,271	242	112	66
December 1923	1,395	164	245	115
March 1924	1,474	101	228	362
June 1924	1,517	52	375	365
September 1924	1,468	37	253	360
December 1924	1,297	60	195	353
March 1925	1,165	74	202	339
June 1925	1,094	76	190	298
September 1925	1,009	81	261	225
December 1925	885	97	161	216
March 1926	843	77	193	191
June 1926	841	78	168	172
September 1926	775	107	68	208

The low launching figures of 1923 are partly due to the prolonged boilermakers' strike of that year, and the higher figures of 1924 to the completion of work held up for that cause. The tonnage commenced in Great Britain and Ireland in the first three months of 1926 was 32,135 tons better than in the autumn quarter of 1925, but the coal dispute destroyed the hope of any immediate general improvement. The depression of the last four years has been most severe on the north-east coast, which specialises in general cargo- and coal-boats.

The tonnage launched in 1925 included 4 vessels of over 20,000 tons gross, 24 large tankers and 51 motor-ships. The majority of the large fast vessels built were propelled by geared steam turbines, but the reciprocating steam-engine remained in favour for cargo-boats. The internal-combustion engine made headway against both.

¹ From Lloyd's *Quarterly Returns*.

There has been no general movement for the breaking-up of obsolete tonnage which would be required if a durable normal ratio between general trade and shipping in operation is to be restored.

In 1926, there were 1,558 British ships averaging a little over 1,000 tons each of 25 years of age and over, and 991 averaging about 2,000 tons each of between 20 and 25 years of age. The amount of shipping laid up on July 1st has not at any period since 1922 seriously exceeded the tonnage of ships of over 25 years of age.

If the total capacity of British yards is put at 2.5 million gross tons, the yards were probably not employed in 1925 and 1926 to much more than half their capacity, even if repairs and other work are taken into account. The employment figures bear out this contention, for the number of persons entered in the Census Returns as employed in the shipbuilding industry in 1921 was 407,167, nearly twice as many as those actually employed to-day. The unemployment figures are as follows : 1924, 29.4 (average) ; 1925, 33.8 (average) ; 1926 (October), 46.2 per cent.

The latest official information available for the organisation of the British industry dates from the Enquiry into Shipping and Shipbuilding Industries after the War (1917). At that time, the industry consisted of a large number of firms varying in size, mostly independent, of which a few only were public joint-stock companies. Some devoted their attention to shipbuilding only or marine engineering only ; others undertook both branches. Some firms were ship and engine repairers only, others combined repairs with new construction. Certain large undertakings combined shipbuilding and marine engineering with important armaments works. " There has ", says the report, " until recently been little community of ownership between ship-owners on the one hand and shipbuilders and marine engineers on the other ; but there is now evidence of some tendency in this direction. " The report further states that owing to the division of the industry, there is apt to be excessive and unreasonable competition during periods of industrial depression. In many cases, terms of payment extend over a number of years, and to that extent the shipbuilding industry finances the shipping industry. The central body, the Shipbuilding Employers' Federation, is concerned mainly with industrial relations.

Italy.

In the figures of launchings for the year 1925, Italy holds the third place with 142,046 gross tons, including 1 motor-ship of 25,000 tons and 14 vessels of between 5,000 and 9,000 tons each. Sixteen motor-ships totalling 101,479 tons were launched during the year and two turbine-engined vessels of 14,200 tons¹. In the first nine months of 1926, launchings were : 8 motor-ships (51,191 tons) and 7 steamships (59,469 tons)². The combined tonnage launched in Austrian and Italian ports in 1913, a peak year for both countries, was 112,113 tons. The very great advance made by Italy on the pre-war standard is, of course, mainly due to the increased capacity gained by the incorporation in her territory of previous Austrian yards, especially Trieste and Monfalcone. In footnotes to the tables of launchings on page 9

¹ Lloyd's *Annual Summary* for 1925 (January 1926).

² Lloyd's *Quarterly Returns*.

and of total tonnage existing on given dates on page 40, the combined pre-war figures for Austria-Hungary and Italy are therefore given. But by an agreement concluded between Italy and the Serb-Croat-Slovene State shipping totalling 144 vessels of 133,000 tons in all belonging to the companies Oceano-Ungaro-Croate, Austro-Croate and other shipping firms on the Dalmatian coast were assigned to the Serb-Croat-Slovene State. Of the Dalmatian shipbuilding and repairing yards the most important are situated at Split¹.

The following information is taken from Prof. Mortara's *Prospettive*. In the seven years 1915 to 1921, the balance of losses and additions to the tonnage of the Italian mercantile marine was as follows :

Table X.

Losses	Tons (000's)	Gains	Tons (000's)
War losses	677	Austrian ships	581
Ordinary losses	120	Purchases abroad	555
Scrapping.	99	New construction in Italy	529
Sales, etc.	39	Salvage, etc.	93
Total	935	Total	1,763

The rate of building slowed down in 1922, and, as in other countries, showed a serious fall in 1923.

In July 1926, the Italian mercantile marine had a tonnage of 3.2 million tons gross including 90,000 tons sailing-vessel tonnage.

During and after the war, to meet current and temporary requirements, new yards were established, some of which, as subsequent events have proved, were not ideally situated. The industry, however, tends to become concentrated in the most suitable areas, and in September 1924, of a tonnage of 134,000 under construction, 73,000 were being built in the yards of Venezia Giulia and 54,000 in Ligurian yards (Genoa, Savona, Sestri Ponente, etc.).

Japan.

From the *Lloyd's Register* figures given elsewhere in this memorandum, smaller sailing-vessels in Japan are excluded. But sailing tonnage continues to be built on a considerable scale in Japan, being used principally for coastwise trade. A great part of this sailing fleet consists of small vessels of under 100 tons, the combined tonnage of the larger craft amounting to 300,000 tons, or about 34 per cent of the sailing fleet. The number and tonnage of vessels registered in Japan and her dependencies in 1915 and in 1924 was as follows :

	STEAMSHIPS		SAILING VESSELS	
	Number	Tons (000's)	Number	Tons (000's)
1915	2,325	1,873	8,656	543
1924	3,420	3,924	13,891	891

¹ See *Le Royaume des Serbes, Croates et Slovènes économique* (1925).

In 1921, 81 ships, with a total tonnage of 227,792 gross tons, were launched ; in 1924, only 6 ships, with a total tonnage of 72,446 tons. The total number of yards in 1923 was 316, with 70 docks and 3 floating docks. Capacity was largely increased in the years following the war, with the result that many yards have been compelled to curtail their work or to turn to other kinds of engineering work. The following table shows the change which took place between 1913 and 1921 :

	1913	1918	1921
Yards.	6	57	26
Berths	17	157	87
Employees.	26,000	95,000	74,000

There is a considerable amount of specialisation in certain of the larger yards. The Mitsubishi, Kawasaki, Asano and certain others have organised themselves with a view to becoming self-supporting in steel plates and other important materials in order to avoid the difficulty of the insufficient domestic supply. Prices of new ships of over 6,000 tons were as follows : 1922, from 130 to 100 yen per ton ; 1923, 130 to 80 yen per ton ; 1924, 120 to 70 yen per ton ¹.

Netherlands.

The Netherlands suffered from the depression in the industry after 1921, and the number of workers employed fell from 37,396 in September 1921 to 27,334 in September 1924. During the years 1921-22, in consequence of the depreciated German exchange, much repair work which could normally have been executed in Dutch yards went to North German yards ; subsequently, the competition of French and Italian yards became acute. In face of this competition, the hours of work in the yards were extended from 48 per week to 55, without a corresponding increase in wages, but these hours were never worked at Amsterdam, and gradually a general diminution took place. The situation gradually improved, owing partly to the specialisation in the production of oil-tankers and partly to the fact that the many important shipping companies under the Dutch flag generally placed their orders for building and repairs in the home yards. The construction of river craft for home use and for export is an important branch of the industry, but the construction of boats for navigation on German inland waterways, formerly carried on in small yards on the great rivers, has not yet recovered its former importance, owing largely to Belgian competition assisted by the depreciation in the franc ².

The Netherlands shipbuilding industry, though not working up to capacity, showed a sensible improvement in 1925. The sea-going tonnage launched was 15,000 tons higher than the 1924 figure. The tanker tonnage launched was 31,710 tons (8 ships), the Netherlands ranking third among producers of this class of vessels ³.

There is no arrangement among Dutch shipbuilders for the regulation or distribution of production or for the fixing of prices. The principal builders of sea-going ships

¹ *Japan Year-book*, by Y. TAKENOBU, Tokio, 1926.

² Information supplied by M. Kroller.

³ *Lloyd's Annual Summary* for 1925.

and many builders of river craft belong to the Handelsvereniging van Metaal-industrieelen; the Central Bond van Scheepsbouwmeesters in Nederland at Rotterdam includes about 25 yards of medium size ¹.

Norway.

Norwegian shipyards shared in the boom of the immediate post-war years, but, since 1921, they have experienced the difficulties common to the industry elsewhere. For a brief period in 1924-25, the industry gained orders due to the low rate of the krone. The yards are mostly fitted for the construction of small ships and have a special advantage in the building of vessels for the whaling industry. The increasing preference for large vessels and for motor-ships has restricted Norwegian opportunities, and many Norwegian shipowners were compelled to place orders abroad for large ships which could not be launched from Norwegian yards. The output figures show a total output of 52,505 gross tonnage for 1913 ² and of 33,100 for 1925. But a large part of the work done is on repairs. The value of the ships launched in 1916 was 18.3 million kroner, while the value of repair works executed in the same year was 22.8 million kroner. The total value of the raw materials and semi-manufactured products used in the industry in 1916 was put at 13.9 million kroner.

The following table shows the nature of the construction in 1913 and in 1925 and in the peak year 1919 :

Table XI.

	Steamers		Motor-ships		Sailing Vessels		Total	
	Number	Gross Tons (000's)	Number	Gross Tons (000's)	Number	Gross Tons (000's)	Number	Gross Tons (000's)
1913 ² :								
Steel	67	51.4	3	.17	—	—	70	51.6
Wood	7	0.8	3	.14	—	—	10	.9
							80	52.5
1919 :								
Steel	30	40.2	5	2.4	—	—	35	42.6
Wood and composite. .	9	2.6	43	14.2	—	—	52	16.8
Concrete	—	—	6	2.5	—	—	6	2.5
							93	61.9
1925 :								
Steel	46	31.2	2	1.9	—	—	48	33.1
Wood and composite. .	—	—	—	—	—	—	—	—
							48	33.1

It will be seen that the maximum output has hitherto been about 60,000 tons, whereas the capacity of the yards is reported to be about 75,000 tons. In commenting on the situation of the industry, M. G. Jahn (Bureau Central de Statistique, Oslo) expresses the opinion that too many small yards were started, and that these have not been able to be enlarged in accordance with the kind of demand, and that technical education has been insufficient.

¹ Information supplied by M. Kroller.

² Information supplied direct. The 1913 figures include boats of under 100 tons registered in *Norsk Veritas*.

Spain.

The Spanish mercantile marine has substantially increased since 1913. The following figures of gross tonnage ¹ include all vessels of 50 tons and over : 1913, 827,352 ; 1921, 1,006,940; 1922, 1,167,181; 1925, 1,285,852. The figures of vessels under construction in successive years represent to a large extent suspended construction on two liners, which was only seriously resumed in 1925.

United States of America.

The fleet constructed and operated by the United States Shipping Board was built primarily to maintain communications between the Allied countries and to provide for the transport of men, war material and food supplies to Europe ; it has been maintained with the idea of strengthening American maritime power and promoting the transport of American goods in American bottoms. Nevertheless, liquidation on a large scale has been necessary, and the disposal of ships by the Board to foreign buyers has increased the difficulties of the market. American building (dead-weight tonnage) ² was 519,232 tons in 1913 and 5,694,567 tons in 1920, an increase without parallel in ship-construction records. The original ship-construction programme laid down by Congress was for 3,720 vessels of 18.4 million dead-weight tons, and covered all types of ships from harbour tugs to troop transports. At the Armistice, heavy cancellations were made in all types of ships not suitable for the ordinary needs of peace ³. The total fleet acquired by the United States Shipping Board and the liquidation effected are shown in the following table compiled from the Ninth Report of the Board.

Table XII.

TOTAL VESSEL PROPERTY (DEAD-WEIGHT TONNAGE) ACQUIRED BY THE UNITED STATES SHIPPING BOARD AS AT JUNE 30TH, 1925.

	Vessel property		Sold		Lost		Transferred		Scrapped		Owned on June 30th, 1925	
	Number	Tons (000's)	Number	Tons (000's)	Number	Tons (000's)	Number	Tons (000's)	Number	Tons (000's)	Number	Tons (000's)
Vessels purchased . . .	101	368	55	169	9	42	18	9	—	—	19	147
Ex-enemy vessels seized	105	675	64	370	11	90	19	87	—	—	11	122
Transferred from other departments	17	26	5	24	—	—	2	—	—	—	10	—
Constructed ⁴	2,321	13,626	981	4,589	66	316	51	362	18	65 ⁵	1,205	8,294
Total	2,544	14,695	1,105	5,152	86	448	90	458	18	65	1,245	8,563

¹ Information supplied direct.

² United States figures are given in dead-weight tonnage ; they are not comparable with those of other countries as given in the general tables.

³ For deliveries each year, see Sixth Annual Report of the Board, pp. 266-268.

⁴ By the United States of America Shipping Board Emergency Fleet Corporation.

⁵ This figure does not include vessels scrapped *after* sale.

Further liquidation has since taken place. The dislocation in the world markets due to operations indicated in the table was necessarily considerable.

Over 27 per cent of the total mercantile marine of the United States was laid up at the beginning of 1925, whereas British idle shipping formed less than 4 per cent of the national total. During the course of the fiscal year 1925, the United States Shipping Board met with a net loss of over 30 million dollars on account of its shipping operations. The details of the account were as follows :

STATEMENT ¹ OF PROFIT AND LOSS, EXCLUDING LIQUIDATION,
FOR THE FISCAL YEAR ENDING JUNE 30TH, 1925.

(Amounts in italics represent losses.)

Class of vessel	Total expense	Profit or Loss
	Dollars (000's)	
Freighters	85,994	<i>24,434</i>
Passenger and cargo (excluding United States Lines, passenger)	19,681	<i>1,799</i>
United States Lines, passenger	18,275	<i>2,316</i>
Tankers	3,966	686
Total ocean operations	127,916	<i>27,863</i>
Tugs	366	<i>17</i>
Chartered vessels	37	21
Total vessel operations	128,319	<i>27,859</i>
Expenses of inactive vessels		<i>2,708</i>
Miscellaneous income, net		503
Profit or Loss		<i>30,064</i>

The United States *Statistical Abstract* gives the following summary of the operations of the steel shipbuilding industry, taken from the returns of the biennial census of production.

Table XIII.

	1914	1919	1921	1923
Number of establishments	79	162	126	125
Number of wage-earners	33,508	344,014	93,323	51,961
Wages (million dollars)	25	538	137	76
Cost of materials (million dollars)	29	644	154	72
Value of products (million dollars)	66	1,456	356	178
Value added by manufacture (million dollars)	37	813	202	106
Primary horse-power (000's)	84	476	—	280

¹ Ninth Report of the United States Shipping Board, p. 208.

IV. — EXISTING TONNAGE AND THE DEMAND.

The demand for new ships and consequently the activity of the shipbuilding industry necessarily depends on a series of factors the most important of which may be summarised as follows :

- (1) The amount and age of existing tonnage ;
- (2) The extent of the world's carrying trade ;
- (3) The rate at which older ships are scrapped and the number of ships lost at sea ;
- (4) New demands for special types of ships ;
- (5) The amount of shipping laid up which may, in case of a boom in overseas trade, be brought again into operation ;
- (6) Naval construction for war purposes.

Of these factors (1) and (3) are capable of exact measurement. But, though figures for the age of ships in 1925 and 1926 are available, no corresponding figures exist for the pre-war period. The records of ships entered and cleared in the ports of the world affords some evidence of the extent of the world's carrying trade ; but unfortunately the figures in many cases include ships in ballast. Moreover, the amount of available space actually occupied by cargo varies greatly.

The new demand for special types of ships can be measured to some extent and has already been touched on in the earlier section. The figures of tonnage laid up are only of limited value in this connection, since no information is available of the age and character of the ships.

Detailed figures on the points on which figures are available are given in the Annexes.

Tonnage in Relation to Demand. — The following table, which is based on the detailed figures given in the Annexes, shows the tonnage existing in countries with a marine of 2 million tons and over in 1926, and, in addition, the tonnage of ships of 25 years of age and over and the tonnage laid up on July 1st, 1925, and on July 1st, 1926.

Table XIV.

	TOTAL TONNAGE, TONNAGE LAID UP, AND TONNAGE OF 25 YEARS AND OVER.				
	Tonnage (steam and sail) of over 100 tons :		Tonnage laid up :	Tonnage laid up	Tonnage 25 years old and over :
	June 1913	June 1926	July 1st, 1925	July 1st, 1926	July 1st, 1926
	Gross tons (000,000's).				
Germany	5.1	3.1	—	—	.42
France	2.2	3.5	.22	.10	.36
Italy	1.5 ¹	3.2	.26	.19	.76
Norway	2.5	2.8	.05	.06	.33
Netherlands	1.3	2.6	.18	.20	.09
Great Britain and Ireland	18.7	19.4	1.13 ²	1.38	1.68
United States	5.4	14.9	4.25	3.92	.61
Japan	1.5	4.0	.04	.03	.85
British Dominions	1.7	2.9	.17 ³	—	.44 ⁴
Total (including other countries)	47.0	64.8	6.8	—	8.81
Less sail and lake tonnage	6.3	4.7			
	40.7	60.1			

¹ If former Austrian tonnage is included, the figure becomes 2.5, and the rate of increase more normal.

² The figure for January 1st, 1926, was much less, viz., 652,300 gross tons.

³ Australia only, estimated.

⁴ See note on p. 28.

The depression in shipping is seen to be unevenly spread, and the highest percentage of shipping laid up is in the United States, where the situation, as has already been explained, is abnormal. There is, of course, no evidence to show that the ships laid up are the oldest ones; but it is noteworthy that nowhere, except in the United States and Australia, does the tonnage of shipping laid up seriously exceed, over any considerable period, the tonnage of 25 years old and over. If it could be assumed that the index of shipping laid up was an index of the degree of unemployment, the world position, excluding the United States, would not appear so serious. But in fact many ships recorded in the trade statistics of the world as entered and cleared with cargoes are, in fact, only partially loaded, and a certain number are occasionally being run at a loss as an alternative to laying up. The bulk of trade offering had decreased in 1923 as compared with 1913 by 15.6 per cent, according to the Chamber of Shipping of the United Kingdom, and is still to-day appreciably below pre-war¹.

The value of world trade at 1913 prices, however, was probably greater in 1925 than in 1913. Comparing 1913 with 1925, world tonnage has increased by nearly 40 per cent, while entrances and clearances in twenty countries show an increase of only 16 per cent², and, if the Chamber of Shipping figures of cargoes are accepted, there has been a serious decrease in cargoes.

The contraction in the demand for tonnage is explained partly by the general depression of trade, but also by certain special reasons operative since the war. Among these may be mentioned :

- (1) The substitution of oil fuel for coal fuel in an increasing proportion of new ships, thus lessening the demand for bunker coal ;
- (2) The overland delivery of reparations coal from Germany which lessens the overseas demand of the recipient countries ;
- (3) The decrease in coal cargoes due to increased economy in the utilisation of coal and the adoption of alternative means of securing power on sea and land ;
- (4) The tendency to use liner tonnage instead of tramp tonnage for merchandise ;
- (5) The development during the war of the merchant marine of countries bordering on the Pacific, which tends to decrease the demand for European tramp tonnage ; and
- (6) The general increase of the speed of vessels, increasing the number of trips made per year by individual ships.

It may be pointed out that the post-war restrictions on emigration traffic reduce the earnings of Transatlantic liners, and, therefore, to a certain extent, discourage new building. Taken altogether, the factors enumerated above decrease the general demand for tonnage and reduce very greatly the demand for certain kinds of tonnage. Tramp tonnage especially tends to become less profitable.

In view of the difficulty of assessing cargo volume from the figures of entrances and clearances of ships, it is worth while to take the evidence of the relative movement of entrances and clearances and of cargoes in two of the principal European ports, Hamburg and Marseilles³.

¹ *Annual Report*, 1925-26, p. 44.

² For the actual figures, see League of Nations *Monthly Bulletin of Statistics*, under the head " Movement of Shipping ".

³ *Economist*, February 20th, 1926.

Table XV.
CLEARANCES AT HAMBURG AND MARSEILLES.

	Combined entrances and clearances (million tons net)		Combined inward and outward cargo per net ton of shipping (in tons)	
	Hamburg	Marseilles	Hamburg	Marseilles
1913	28.6	21.1	0.88	0.42
1924	31.3	21.5	0.62	0.32
1925	33.5	23.0	0.60	0.39

At these two ports, therefore, ship space was being much less economically used in 1925 than in 1913, the reduction in load as compared with the pre-war standard being over 30 per cent at Hamburg ; at Marseilles, the difference was small, but the pre-war load standard was also low.

It will be seen from the Annexes V and VI that losses of steam and motor vessels at sea ranged before the war from 1.1 to 1.5 per cent. In the years 1920 to 1925, losses were uniformly below 1 per cent. The scrapping of ships during the war was negligible, since any ship that could be kept afloat was valuable. But from 1922 onwards the number and tonnage of steamers and motor-ships broken up was greater than at any period of which we have records. For the year 1924, the tonnage broken up was distinguished as follows: Great Britain, 254,089 tons; British Dominions, 55,732 tons; United States, 488,865 tons; Denmark, 10,884 tons; France, 111,610 tons; Germany, 27,366 tons; Greece, 3,058 tons; Netherlands, 15,892 tons; Italy, 110,633 tons; Japan, 4,616 tons; Norway, 3,456 tons; Spain, 24,283 tons; Sweden, 1,265 tons; other countries, 62,549 tons. The highest world total in any year was 1,174,000 tons in 1924; in 1925, the figure fell to 653,000 tons, and according to *Lloyd's Report* the tendency is towards a reduction of scrappings. It should be noted that the capital cost of the vessels standing in the books and other considerations tend to discount the age factor in connection with scrapping. Thus, American tonnage, although modern by the test of age, is being scrapped much more rapidly than older British vessels. The age figures are given in detail in Annex III. Figures of ships of 25 years and over, with the percentage which they form of each national fleet, are as follows:

Table XVI.
EXISTING TONNAGE OF 25 YEARS OF AGE AND OVER: JUNE 30TH, 1926.

Country	Number	Tonnage (000's omitted)	Percentage of total tonnage
Great Britain and Ireland	1,558	1,676.3	8.70
Germany	392	418.4	13.60
Belgium	35	43.5	8.65
Denmark	149	180.5	17.20
France	323	359.4	10.81
Italy	386	756.9	24.03
Norway	375	327.2	11.66
Netherlands	135	89.4	3.50
Sweden	579	408.7	31.57
United States	419	614.2	5.39
Japan	411	847.3	21.36
British Dominions ¹	497	437.3	16.26
Other countries	1,988	2,646.6	34.75
Total	7,247	8,805.7	14.05

¹ The tonnage figures (in thousands) are Australia and New Zealand 89, Canada 174 and other Dominions and the Colonies 174.

V. — RAW MATERIALS.

The shipbuilding industry is a “ finishing ” and assembling industry in the sense that a great part of its material, whether derived from iron, copper, lead, etc., and to some extent even from wood, does not come into the industry in a raw state but in the shape of semi-manufactured articles. It is therefore a large consumer of products of other industries, and a depression in shipbuilding and marine engineering affects other industries, especially the iron and steel industry. The following are usually delivered to British shipbuilding yards in a completely finished condition : auxiliary machinery, such as windlasses, winches, steering-gears, pumps, electric generating plant and refrigerating machinery ; as also small fittings, scientific instruments, and furnishings of all kinds from the woodworking and allied trades. But by far the most important element is semi-manufactured iron and steel. Information supplied to the British Committee on Shipping and Shipbuilding Industries after the War (1917) showed that the total quantity of steel materials (including plates, sections, forgings, castings, etc.) used for new ship construction in 1913 in the United Kingdom was 1,400,000 tons, and that the weight of ingots used in the manufacture of these products was about 1,850,000 tons.

These figures are independent of materials used for repairs. As the total quantity of steel ingots consumed in the United Kingdom in that year was 6,325,000 tons, the shipbuilding and marine engineering industries would account for 29 per cent of the total. These estimates take no account of iron, though iron materials are largely used in marine engineering, nor do they take account of materials used in Admiralty dockyards.

The Joint Enquiry of the Shipbuilding Employers' Federation and the Shipyards Unions into the condition of the British industry reported in 1926 that for many of the materials required for shipbuilding, particularly in cases where shipbuilding is a market on which they are largely dependent, no complaint could be made on the prices quoted. But for lead and paint materials, upholstery, ropes, electric cables, light castings and sanitary ware the increase over pre-war prices ranged from 100 to 200 per cent. “The Committee are satisfied”, runs the report, “ that prices are fixed at this unreasonable level by means of rings and price-fixing associations ; and that, as regards some of the articles, arrangements between manufacturers and merchants are such that it is practically impossible for shipbuilders to buy direct from the manufacturers. ”

In Denmark, the material used in the industry for the year 1924 was 10,000 tons iron, 13,000 tons scrap iron and 228 tons other metals.

VI. — PRICES AND FREIGHTS.

Fairplay publishes at intervals a diagram showing the fluctuations which have taken place since 1898 in the value of a new ready single-deck British-built steamer with a dead-weight carrying capacity of about 7,500 tons. The average price in 1914 would have been £52,500.

Commenting on this diagram (July 8th, 1926), *Fairplay* says : “ Unfortunately the cost of building, under present circumstances, gives no indication, as it did in pre-

war days, of the value of a ready steamer, and it is therefore often necessary to assess her value, as far as may be, from the second-hand market. Consideration of all the factors leads to the conclusion, however, that the new ready boat was worth the same price in December 1925, March 1926 and July 1926 — about £52,500. Owing to certain changes in Board of Trade regulations and in Lloyd's rules, she would carry more cargo. She is presumed to be built to very plain specifications with Continental steel. Owners to-day would not be content with the basic steamer of the diagram, but would require many extras, thus materially increasing the cost."

Of particular interest is the enormous rise in prices in 1919 and the first quarter of 1920, when the shipbuilding boom reached its culminating point. Between March 1920 and the summer of 1921, prices slumped from £259,000 to £60,000. During the next three and a half years they remained relatively stationary, to fall again during the course of 1925. They were in July 1926 about 3.96 per cent above the figure for 1913, and below that for 1912, whereas the index number of wholesale prices in the United Kingdom is some 50 per cent and that of retail prices some 75 per cent higher than in 1913.

The price of this imaginary vessel, however, showed also very considerable fluctuations in pre-war years, dropping from a maximum point for the first decade of the present century of some £60,500 to about £36,000 in 1908 and rising again to £58,000 in 1912. During 1913 prices fell steadily.

As supplementary evidence concerning the prospects of the shipbuilding industry it may be desirable to add certain data illustrating the movement of freight rates, for the demand for new ships must be determined ultimately by the profit earned on existing vessels.

Both the Chamber of Shipping of the United Kingdom and the *Economist* prepare indices of freight rates. The former appear at regular intervals in the *Statist*. Freight rates for cereals, rice and cotton for the first week in January in successive years, as quoted by the International Institute of Agriculture at Rome, are given in Annex VIII. The seven indices compiled by the *Economist* are shown below :

Table XVII.

INDICES OF TRAMP SHIPPING FREIGHTS FOR CERTAIN BULK CARGOES ON ROUTES TO AND FROM BRITISH PORTS BY DIVISIONS, FROM THE *Economist*.

(The nearest unit has been taken for purposes of simplicity.)

	Average 1898- 1913	Average 1913	Feb. 1920	Dec. 1920	Dec. 1921	Dec. 1922	Dec. 1923	Dec. 1924	Dec. 1925	Aug. 1926 ¹	Nov. 1926 ²
European waters	100	110	814	269	160	137	134	117	117	112	131
North America	100	113	530	277	164	135	133	129	122	128	224
South America	100	123	758	244	164	129	120	119	117	134	174
India	100	106	745	257	144	123	124	120	110	120	158
Far East and Pacific	100	117	587	287	141	136	125	129	110	101	162
Australia	100	128	712	347	166	159	144	161	155	151	182
General Index	100	116	691	280	157	137	130	129	122	124	172

¹ As coal freights bring down the average level, the figures in this column for a month when outward coal cargoes were nil have been obtained by interpolating for each of the coal routes normally included in the index the last available rates, those current in April.

² April quotations inserted for the missing coal routes.

It is noteworthy that the indices for every single route fell steadily and practically without interruption from February 1920 to December 1925. Inward rates to the United Kingdom rose sharply in 1926 as a result of the coal stoppage, but with the settlement of the dispute there followed an abrupt reaction in coal freights at the end of the year. Increases in ocean freight rates between Canada and Great Britain were notified as from December 1st, and corresponding increases have been made by the North Atlantic - Continent and North Atlantic - United Kingdom Conferences. The new consolidated rates on the latter routes become effective on January 1st, 1927¹.

The Chamber of Shipping Index, published by the *Statist*, is based on a number of groups, details of which are given in Annex VII. The result, as given in the diagram on the following page, shows that freights fell in 1920 and 1921 more rapidly than prices in general, and ruled below them at the end of 1925.

The general lowness of freights may be taken to be due to the competition caused by surplus tonnage. In the opinion of many observers, an extension of the policy of scrapping obsolete ships is necessary before prosperity can be restored to shipping and consequently to the shipbuilding industry. It is perfectly clear that a revival of trade would bring the laid-up ships on to the freight market and thus immediately destroy the normal ratio between shipping and volume of trade on which reasonable steadiness in the freight market depends. This steadiness is a pre-requisite to the revival of shipbuilding.

An example may be given of the way in which a revival in the freight market brings old tonnage into action. A German steamer, built in 1903, was bought by a Copenhagen firm for ship-breaking purposes, but, as demolition was delayed and the freight market improved, it was purchased by a Copenhagen firm, repaired and put into the coal trade in the autumn of 1926². Many other examples might be quoted.

VII. — CUSTOMS TARIFFS.

In Germany, Belgium, Denmark, Italy, the Netherlands, Roumania, Sweden, Argentine, Chile, the United States and Australia, ocean-going vessels imported by nationals are free of duty. In certain cases, however, as, for instance, in Australia, where British or foreign ships operating from an Australian base and not registered in Australia are liable to duty, rates are imposed rather with a view to protecting the shipping than the shipbuilding industry.

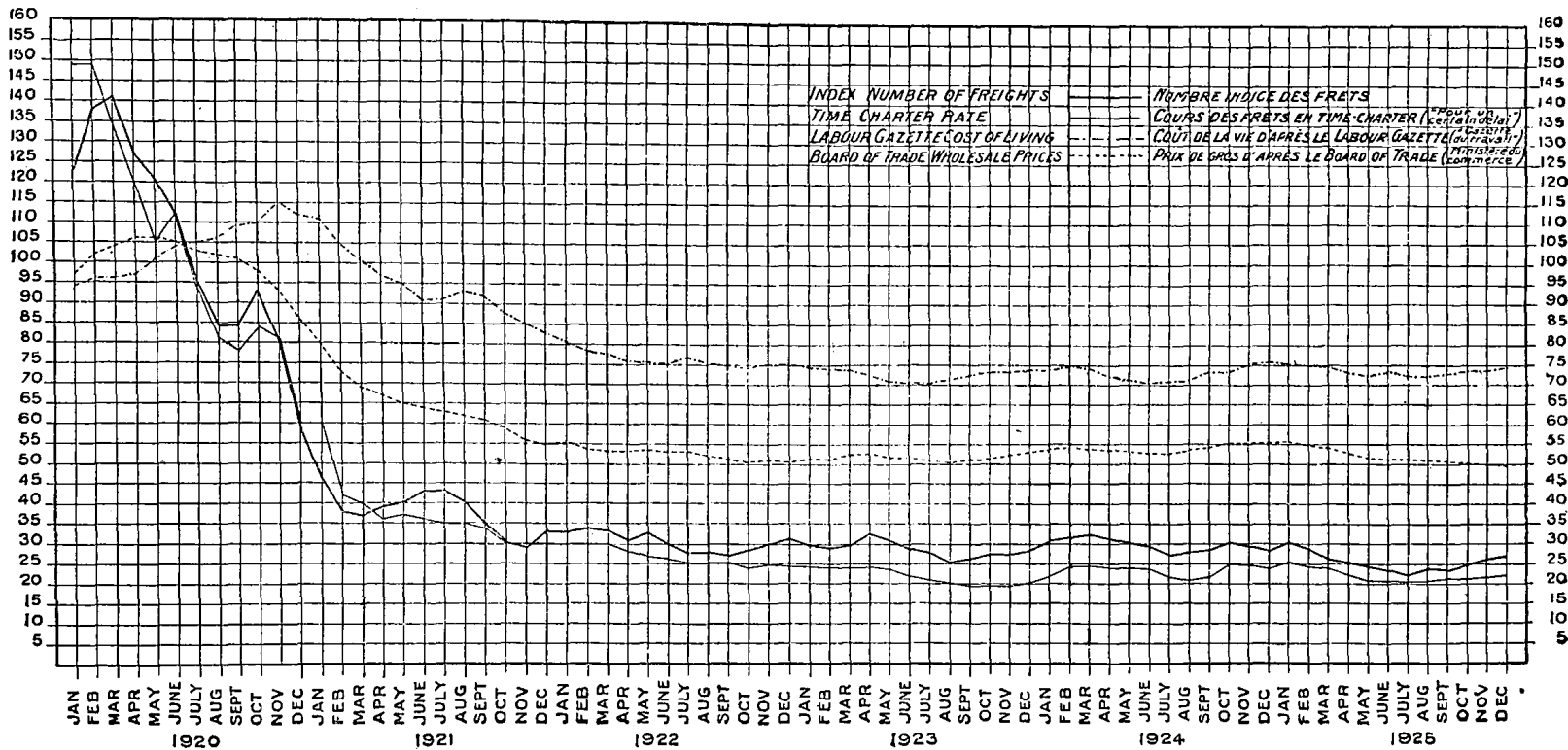
Until recently the French tariff remained at the pre-war figure, *i.e.*, 5 francs (general) and 2 francs (minimum), but was substantially lower in gold value owing to the depreciation of the franc. In 1926, it was twice increased by 30 per cent, but is still relatively low, as a packet-boat of 20,000 tons would only be subjected to a duty of 67,000 francs, representing 0.04 per cent on an estimated value of 150 million francs. On a cargo-boat it would be slightly heavier, about 0.15 per cent. A French correspondent points out that the duties necessary for any real protection would be inadmissible, since the French marine would have to pay more for its ships than its competitors, with the result that it would not be able to face competition on the world

¹ *Manchester Guardian Commercial*, Nov. 18th, 1926.

² *Fairplay*, November 25th, 1926.

INDEX NUMBER OF SHIPPING FREIGHTS

(Extracted from the Annual Report of the Chamber of Shipping of the United Kingdom 1925-26).



freight market¹. French legislation relative to the materials for the shipbuilding industry is contained in a series of laws the last of which (April 19th, 1906) expired in 1918 and has not been renewed. The shipbuilding industry has no protection except for a special rate granted for the transport of materials supplied direct to the shipyards.

In Spain, a duty is imposed on cargo-ships of 75 pesetas per ton measurement (general tariff) or of 25 pesetas (second tariff). With the exception of those purchased direct from foreign yards, ships pay a surcharge, increasing in direct ratio with the age of the ship, from 5 per cent for ships under 2 years old to 50 per cent of those from 8 to 10 years. The import of ships over 10 years of age is prohibited².

In Brazil, Japan and Canada, the rates remain as they were in 1913 ; in certain cases Canada gives a preference of 15 per cent to British ships. The maximum and minimum tariff rates for ships in the Kingdom of the Serbs, Croats and Slovenes are 40 and 30 per cent *ad valorem* respectively.

VIII. — STATE SUBSIDIES.

A brief summary of the principal instances of direct subsidy is given below³, omitting the instances of direct provision of shipping in the circumstances arising out of the war, in the United States, Australia and Canada mentioned in an earlier section of this memorandum. In most cases the subsidy is given to shipping, though in this way the shipbuilding industry may be indirectly benefited.

In Belgium, the Lloyd Royal Belge Line receives an annual credit of about 6,000,000 francs, certain shares being allotted to the State, while certain undertakings are entered into by the company. A small subsidy is also given to the Congo service, as was the case before the war.

Certain Brazilian shipping lines receive subsidies, the total annual provision for the subsidies for 1925 being fixed at 7,625,000 milreis paper.

The bounties given to shipping and shipbuilding in France before the war have been abandoned. No bounties are given to shipbuilding, though the shipyards enjoy the advantage of reduced railway rates on the State railways for their material.

No direct or indirect subsidies are now given to the German shipbuilding industry, and the State loans available for productive unemployment relief do not appear to have been taken up to their full extent. Of the Government credit of 50,000,000 marks set aside in 1924 for assistance in shipbuilding, only 30,000,000 marks appear to have been taken up at the end of 1925. Local municipal assistance has been given in certain instances. In the years immediately after the war, the German shipping lines received an indemnity from the Government in compensation for the surrender of ships under the Treaty of Versailles to an amount estimated variously at £ 30,000,000 and £ 40,000,000. Payments ceased in 1923, and the activity of the shipyards in replacing the German mercantile marine was immediately curtailed. A further source of assistance to German shipbuilding may be mentioned here, although

¹ Information received direct. See Preface.

² United States of America Commerce Report, October 19th, 1925.

³ See the British Committee on Industry and Trade Survey of Overseas Markets, 1925.

it is not of the nature of a Government subsidy. A direct relation between the principal iron and steel engineering concerns and the shipbuilding industry was established, ensuring preferential treatment in the supply of fuel, raw material, semi-manufactured material and, in certain cases, motors, auxiliary engines and electrical work. This arrangement assisted the shipbuilding industry during a difficult period.

According to the statement of October 1926 of the Italian Treasury, the sums allotted to the Ministry of Communications for the assistance of shipping and shipbuilding are as follows for the financial year 1926-27 : In aid of shipbuilding, 60,000,000 lire ; in aid of shipping services, 45,600,000 lire. The subventions granted by the Italian Government to shipbuilding are not of the nature of subsidies, but represent primarily the refunding of Customs duties imposed on raw materials purchased within the country itself by the shipyards. The subventions made to the mercantile marine are in return for services rendered to the State ¹.

The Spanish Government, by a Decree issued August 20th, 1925, provided an annual subsidy of 10,000,000 pesetas for the shipping industry and of 8,000,000 pesetas for shipbuilding, these sums to be extended over a period of 10 years. These take the place of earlier and smaller grants provided under a law of June 10th, 1909. At the same time, fiscal measures were adopted for the protection of the industry ². Coastal trade is reserved for Spanish ships of Spanish construction.

In Japan, the Oversea Navigation Subsidy Law was radically revised in 1917. The law is principally concerned with payment for mail services, which entail further obligations on the carrying companies. But a special subsidy is paid to certain shipping companies for maintaining regular services to the South Seas, China and near seaports. The subsidy covers the mail contract. The total amount allocated to subsidised lines in 1924 was 2,543,000 yen. There is no direct subsidy to shipbuilding.

In the Netherlands, State assistance is given to three lines. No subsidies are given in respect of shipbuilding. The only assistance given to shipbuilding since the war has been a small subsidy to unemployment relief at a period of severe unemployment to seven yards, only two of which were engaged on sea-going ships. The total sum amounted to about 500,000 gulden and the measure was a purely temporary one.

The Norwegian Government gives certain subsidies, but only to coastal services, and that on account of the physical difficulty of providing inland communication. In Sweden, State loans are in some cases available for overseas shipping, but direct shipping subsidies have been abolished.

Particulars have already been given of the United States Shipping Board. There are no direct subsidies to privately owned ships, but preferential rates for the conveyance of mails by American boats are paid.

In Great Britain, the Cunard Steamship Company receives an annual grant for the maintenance of a ship of approved speed, the Government retaining rights of pre-emption or hire of all the company's ships. In their conclusions on the condition of the British Industry, the Joint Enquiry Committee of the Shipbuilding Employers'

¹ Information supplied direct.

² See United States of America Commerce Report, October 10th, 1925.

Federation and the Shipyard Trade Unions reported in June 1926 that, in view of the depression in the industry, they had considered the question of inviting Government temporary assistance, whether by subsidy or direct monetary aid, but they concluded that such assistance would not in the long run be in the interest of the industry or the country. They protested, however, against the discontinuance of the Trade Facilities Act as regards shipbuilding, and urged that the facilities hitherto available under that Act should be continued and even enlarged.

IX. — NUMBER OF WORKERS EMPLOYED ; HOURS OF LABOUR ; WAGES.

Numbers employed. — In *Great Britain*, the total number of persons engaged in shipbuilding and repairing and in marine engineering enumerated in the Census returns of June 1921 was 407,167. The number of insured persons in the two industries in July 1923 and July 1926 were as follows for Great Britain and Northern Ireland :

	July 1923	July 1926
Shipbuilding and repairing	270,200	224,120
Marine engineering	66,300	58,370
Total	336,500	282,490

The percentage of unemployed in shipbuilding and ship-repairing on October 25th, 1926, in Great Britain and Northern Ireland was 46.2, an increase of 9.2 per cent as compared with October 1925, and of 14.8 per cent as compared with October 1924. For marine engineering, the figure was 31.7 per cent, an increase of 6.2 per cent as compared with 1925 and 14.2 per cent as compared with 1924¹. On January 24th 1927, unemployment in shipbuilding and ship-repairing had fallen to 36.9 per cent, and in marine engineering to 24.8 per cent.

In *France*, the census of March 1906 gave the number of workers employed on steel shipbuilding and repairing at 21,926. The numbers engaged before the war and in 1921 in all shipbuilding were about 30,000, but in 1926 was about 20,000².

In *Germany*, the number employed in shipyards on December 31st, 1925, was 36,809 ; on August 31st, 1926, 29,000.

In the *United States*, the numbers employed are given as follows³.

	1914	1919	1921	1923
Steel ships	33,508	344,014	93,323	51,961
Wooden ships	10,981	43,432	13,122	10,336
Totals	44,489	387,446	106,445	62,297

In *Japan*, the numbers employed in shipyards in 1923 was 43,125, of whom 35,512 were manual workers⁴.

For the *Netherlands*, the figures are : shipyards, 31,241 ; workshops, 1,928 ; total, 33,169 manual workers, with 1,451 directors and salaried employees in addition (December 31st, 1920).

¹ *Ministry of Labour Gazette*, November 1926.

² Report of M. Gratien Candace.

³ Statistical abstract of the United States of America.

⁴ Official statistics.

For *Denmark* (July 1st, 1926), 5,133 adults and 1,113 apprentices.

For *Norway*, in December of each year : 1916, 10,050 ; 1922, 6,029 ; 1923, 6,704 ; 1924, 7,635 ¹.

Hours of Labour.— In most European countries the normal hours of work are 48 per week, with certain exceptions. In *Great Britain*, the official working week, as agreed between the employers and the unions, is 47 hours, but the hours actually worked in October 1924 averaged 45. In *Germany*, by arrangement, the workers may be employed for six additional hours in the week, a small increment per hour being paid. There are no separate figures for shipbuilding hours in the *Netherlands*, but in the metallurgical industry generally, in the second half of 1925, 9 per cent of the workers worked less than 48 hours per week, and 35 per cent more than 48 hours. In one enterprise a section of the workers worked for more than 55 hours. In *Denmark*, certain groups, boilermen and others, have longer hours than 48. In *Norway*, short time is actually being worked in order to spread employment. *United States* shipyards have a 44-hour week.

Wages. — In *Great Britain*, wages are paid on a time or on a piece-work basis. The average weekly earnings of all made unkus, calculated from returns covering 125,833 men for four weeks in January, April, July and October 1924 was 51s. 11d.³. In certain occupations — pattern-makers, sheet-iron workers, cabinet-makers, ship plumbers, sail-makers, enginemen, cranemen, and firemen — piece-work was the rule. In some other cases, including shipwrights, ship joiners, fitters, ship painters and general labourers, the great majority were time workers. In other occupations, some were on piece and some on time rates, the proportion being as follows :

Occupation	Time work	Piece work
	%	%
Platers	21	79
Platers' helpers	38	62
Riveters	21	79
Holders-up	14	86
Drillers and hole-cutters	27	73
Machinemen	64	36

Minimum time rates are fixed by collective agreements. There are a number of local lists of piece-work prices for riveting and for some other operations recognised by the employers and the trade unions concerned.

GREAT BRITAIN : AVERAGE (UNWEIGHTED) OF RECOGNISED WEEKLY TIME RATES OF WAGES IN NINE DISTRICTS ².

Trade	August 1914		End of 1920		June 1925	
	s.	d.	s.	d.	s.	d.
Shipwrights	41	4	91	3	55	7
Joiners	40	0	101	0	57	9
Labourers	22	10	70	5	38	5

¹ Information supplied direct.

² *Survey of Industrial Relations* (1926).

³ *Ministry of Labour Gazette*, September 1926.

The Joint Committee of Enquiry into Foreign Competition published rates of wages paid on a time basis and actual earnings in its Interim Report (1925); they are as follows for the Tyne district :

GREAT BRITAIN (TYNE) RATES PER HOUR FOR A 47-HOUR WEEK : JUNE 1925.

Grades of Workers	Rates per hour	Weekly earnings	
	d.	s.	d.
Skilled workers	14.17	55	6
Semi-skilled workers	10.60	41	6
Unskilled workers	9.93	38	6

German wages are generally regulated by agreements on a piece-work basis, and may vary between the limits of 15 and 60 per cent in individual cases.

There are no general wage statistics for France. The following rates are taken from the agreed rates in two districts.

MINIMUM WAGES PER 8-HOUR DAY, OCTOBER TO NOVEMBER 1926 ¹.

	Nantes			Dunkirk		
	Basic wage	Cost-of-living allowance	Total Francs	Basic wage	Cost-of-living allowance	Total
Ordinary labourers	16.00	8.40	24.40	14.80	7.50	22.30
Specialised labourers	16.50	8.25	24.75	16.00	7.50	23.50
Skilled men, lowest class	16.95	8.05	25.00	17.20	7.50	24.70
Skilled men, highest class	23.45	6.20	29.65	20.40	7.50	27.90

In the Netherlands, average earnings ² per hour and per week in shipyards were as follows in the second half of 1925 :

	Amsterdam		Rotterdam	
	Cents per hour	Gulden per week	Cents per hour	Gulden per week
Shipwrights	70	33.75	63	32.25
Joiners	81	38.65	68	34.75

In Norway ¹, wages in the first quarter of 1926 were as follows :

	Time rates per hour	Earnings per hour (including piece work)
	øre	øre
Skilled men	178	205
Unskilled men	150	182

Wages were, however, reduced in June, time rates for skilled workers being 147 øre and earnings 171 øre.

In Denmark ¹, average earnings per hour over all yards were as follows: smiths and machinemen, 170 øre; woodworkers, 164 øre; copper- and tin-smiths, 180 øre;

¹ Information supplied direct.

² *Maandschrift*, Oct. 1926.

moulders, 203 øre ; electricians, 159 øre ; ship's painters, 245 øre ; unskilled workers, 128 øre.

In *Spain*, the week is of 48 hours. Daily wages in Catalonia are : coppersmiths 15 pesetas, mechanics 12 pesetas, founders 12 pesetas, ship's carpenters 13 pesetas, the average for all workers being 10 pesetas. At Valencia and Bilbao, the average is 9 pesetas, and at Ferrol and Cadiz less than 8.5 pesetas ¹.

In the *United States*, statistics of the rates of wages fixed by the unions are published annually. The rate per hour for ship's carpenters in May 1925 was 0.889 dollar.

The general average of weekly earnings in New York State over the whole of the shipbuilding industry (aggregate amounts), divided by the total number of workers, are published monthly ².

Place	1914	1922	1923 (Yearly average) (Dollars)	1924	1925	1926 (February)
New York City . . .	14.95	34.10	34.10	32.19	34.50	31.59
Outside New York City	15.17	25.58	30.78	32.04	29.60	33.31

It is extremely difficult to make any effective comparison between wage rates in different countries because of the differences in the classification of labour, the variations in the methods of payment and differences in the cost of living. The following statement is drawn from the Appendix to the Interim Report (1925) of the Joint Enquiry of the Shipbuilding Employers' Federation and the Shipyard Unions in Great Britain into Competitive Conditions. It is submitted with due reservations ; it applies not to conditions to-day but to conditions of 1925.

Country	Skilled men	Time rates of wages of Semi-skilled men	Unskilled men
Germany (Hamburg) :			
Weekly (54 hours)	35s. 8d. to 37s. 10d.	32s. 11d. to 35s. 1d.	28s. 1d. to 30s. 3d.
Hourly	7.92d. to 8.4d.	7.32d. to 7.8d.	6.24d. to 6.72d.
Netherlands (Rotterdam) :			
Weekly	44s. 6d.	38s. 9d.	33s.
Britain (Tyne) :			
Weekly (47 hours)	55s. 6d.	41s. 6d.	38s. 6d.
Hourly	14.17d.	10.6d.	9.83d.

The Joint Committee state that they have no means of comparing the relative productivity per £1 of wages in this country and in Germany and the Netherlands.

Overtime Rates. — The same report contains particulars of overtime rates in *Germany* and the *Netherlands*, in which a settlement between the Hamburg Shipbuilding Employers and the German trade unions is quoted, providing that "overtime is to be regulated according to the needs of the management, and the pay suggested per hour for such work is to be 20 per cent above the ordinary rate in the case of the first two hours and 40 per cent in the case of all

¹ Information supplied direct.

² New York State, *The Industrial Bulletin*.

further hours ”. As regards the Netherlands, the extra rates for overtime are shown as 15 per cent for the first two hours, 25 per cent after 2 hours to 10 p.m. and 50 per cent from 10 p.m. to 6 a. m.

Piecework Rates. — Statements are also included as to piecework rates in Germany and the Netherlands. Payment by result is the general practice in both countries. In Germany, the piece rates are so fixed as not in any circumstances to exceed 15 to 20 per cent over the time rate ; in the Netherlands, they are so fixed that *average* earnings are 20 per cent over the time rate, with a usual range of from 10 to 30 per cent over that rate.

Annexe I.

NAVIRES MARCHANDS DU MONDE

Tonnage brut et description des navires de 100 tonneaux et au-dessus,
appartenant aux divers pays. (D'après le *Lloyd's Register*.)
(En milliers de tonneaux de jauge.)

MERCHANT VESSELS OF THE WORLD.

Gross Tonnage and Description of Vessels of 100 Tons and Upwards
belonging to Each of the Several Countries. (From *Lloyd's Register*.)
(Tons gross : 000's omitted.)

PAYS	30. VI. 1913			30. VI. 1920			30. VI. 1921			30. VI. 1922		
	Volles	Vapeur et moteur	TOTAL *	Volles	Vapeur et moteur	TOTAL	Volles	Vapeur et moteur	TOTAL	Volles	Vapeur et moteur	TOTAL
	Sailing *	Steam and Motor		Sailing	Steam and Motor		Sailing	Steam and Motor		Sailing	Steam and Motor	
AMÉRIQUE.												
Argentine	34	181	215	20	130	150	21	146	167	20	162	182
Brésil	16	313	329	23	475	498	23	476	499	23	469	492
Canada	(a)	(a)		123	854	977	135	999	1,134	127	1,064	1,191
Chili	31	108	139	15	89	104	14	100	114	10	121	131
Cuba	1	61	62	8	45	53	8	50	58	7	55	62
Etats-Unis	1,126	4,303	5,429	1,475	14,574	16,049	1,280	15,746	17,026	1,254	15,808	17,062
Mexique	2	38	40									
Panama												
Pérou	20	26	46	23	66	89	30	57	87	33	68	101
Uruguay	13	62	75	12	52	64	13	73	86	11	65	76
Venezuela	1	4	5									
ASIE.												
Chine	0	87	87	0	143	143	0	163	163	0	188	188
Hong-Kong										4	228	232
Inde britannique et Ceylan				12	175	187	10	187	197	12	224	236
Japon		1,500	(1,500)		2,996	(2,996)		3,355	(3,355)		3,587	(3,587)
Turquie	45	112	157									
EUROPE.												
Allemagne	339	4,743	5,082	253	420	673	63	654	717	102	1,786	1,888
Autriche-Hongrie	1	1,010	1,011	—	—	—	—	—	—	—	—	—
Belgique	8	296	304	5	410	415	4	547	551	8	571	579
Dantzig										10	98	108
Danemark	51	711	762	84	719	803	81	883	964	75	963	1,038
Espagne	15	826	841	60	937	997	54	1,112	1,166	67	1,215	1,282
Estonie							11	30	41	13	32	45
Finlande				84	82	166	92	106	198	91	123	214
France	408	1,793	2,201	282	2,963	3,245	353	3,299	3,652	308	3,537	3,845
Grèce	17	706	723	33	497	530	13	587	600	11	658	669
Italie (b)	248	1,274	1,522	124	2,118	2,242	183	2,468	2,651	168	2,699	2,867
Lettonie							13	40	53	8	32	40
Norvège	587	1,871	2,458	240	1,980	2,220	213	2,371	2,584	183	2,418	2,601
Pays-Bas	23	1,287	1,310	20	1,773	1,793	17	2,209	2,226	15	2,617	2,632
Portugal	28	93	121	40	236	276	47	250	297	49	237	286
Roumanie	0	45	45	0	74	74	0	74	74	0	72	72
Royaume-Uni et Irlande	422	18,274	18,696	220	18,111	18,331	252	19,320	19,572	207	19,089	19,296
Russie	184	790	974	25	510	535	9	404	413			
S. H. S.										0	81	81
Suède	103	944	1,047	76	997	1,073	74	1,086	1,160	75	1,040	1,115
OCÉANIE												
Australie et Nou- velle-Zélande				21	628	649	22	672	694	19	747	766
Autres Dominions britanniques	160	1,575	1,735	64	376	440	64	410	474	60	263	323
Autres pays	8	46	54	67	1,475	1,542	29	972	1,001	58	1,025	1,083
TOTAL	3,891	43,079	46,970	3,409	53,905	57,314	3,128	58,846	61,974	3,028	61,342	64,370

* Tonnage brut, à l'exception de navires à voiles en 1913. Non compris : 1) La plupart des voiliers appartenant à la Grèce, à la Turquie et au sud de la Russie ; 2) les navires à voiles japonais ; 3) les navires naviguant sur la mer Caspienne, et les navires en bois, naviguant sur les grands lacs de l'Amérique du Nord
(a) Chiffres inclus sous « Autres Dominions britanniques ». (b) Depuis 1924, y compris Flume. Pour avoir une comparaison exacte avec l'Italie d'après-guerre il faut ajouter les chiffres relatifs à l'Autriche-Hongrie, ce qui donne, en milliers de tonnes, un total de 249 pour les voiliers, 2.284 pour les vapeurs et moteurs et de 2.533 pour l'ensemble ; sous réserves, pour l'Autriche-Hongrie du tonnage éventuellement assigné au Royaume Serbe-Croate et Slovène.

Annexe I (suite — continued).

NAVIRES MARCHANDS DU MONDE

Tonnage brut et description des navires de 100 tonneaux et au-dessus,
appartenant aux divers pays. (D'après le *Lloyd's Register*.)
(En milliers de tonneaux de jauge.)

MERCHANT VESSELS OF THE WORLD.

Gross Tonnage and Description of Vessels of 100 Tons and Upwards
belonging to Each of the Several Countries. (From *Lloyd's Register*.)
(Tons gross : 000's omitted.)

30. VI. 1923			30. VI. 1924			30. VI. 1925			30. VI. 1926			COUNTRY
Volles	Vapeur	TOTAL	Volles	Vapeur	TOTAL	Volles	Vapeur	TOTAL	Volles	Vapeur	TOTAL	
Sailing	et moteur		Sailing	et moteur		Sailing	et moteur		Sailing	et moteur		
Steam and Motor	Motor	Sailing	Steam and Motor	Steam and Motor	Sailing	Steam and Motor	Steam and Motor	Sailing	Steam and Motor	Steam and Motor		
18	161	179	20	179	199	20	203	223	19	216	235	AMERICA. Argentine. Brazil. Canada. Chile. Cuba. U.S.A. Mexico. Panama. Peru. Uruguay. Venezuela.
19	459	478	20	445	465	18	447	465	18	465	483	
118	1,082	1,200	109	1,080	1,189	106	1,097	1,203	107	1,133	1,240	
8	164	172	20	161	181	20	166	186	16	164	180	
7	43	50	8	52	60	8	53	61	8	54	62	
1,261	15,685	16,946	1,186	14,771	15,957	1,105	14,272	15,377	1,058	13,821	14,879	
			2	84	86	11	56	67	10	50	60	
23	59	82	20	51	71	17	59	76	19	60	79	
13	73	86	10	70	80	9	68	77	8	67	75	
0	223	223	1	247	248	3	267	270	3	297	300	
—	258	258	—	250	250	—	231	231	—	289	289	
14	217	231	13	205	218	13	184	197	14	169	183	
	3,604	(3,604)	1	3,843	(3,843)	0	3,920	(3,920)	0	3,968	(3,968)	
				104	105			132		136	136	
80	2,510	2,590	81	2,872	2,953	68	3,006	3,074	49	3,062	3,111	
12	605	617	5	556	561	4	538	542	4	503	507	
5	93	98	2	97	99		93	93		140	140	
59	938	997	46	990	1,036	38	1,022	1,060	32	1,049	1,081	
61	1,199	1,260	52	1,188	1,240	42	1,143	1,185	37	1,126	1,163	
17	32	49	12	34	46	12	34	46	12	37	49	
82	118	200	85	123	208	82	129	211	85	148	233	
284	3,453	3,737	208	3,290	3,498	192	3,320	3,512	166	3,324	3,490	
8	747	755	4	757	761	3	895	898	3	922	925	
153	2,881	3,034	114	2,718	2,832	98	2,931	3,029	91	3,150	3,241	
6	33	39	7	39	46	6	47	53	6	62	68	
176	2,376	2,552	113	2,392	2,505	62	2,618	2,680	35	2,807	2,842	
19	2,607	2,626	14	2,542	2,556	13	2,588	2,601	12	2,553	2,565	
40	261	301	37	264	301	33	267	300	29	251	280	
0	74	74	0	71	71	0	68	68	0	68	68	
167	19,115	19,282	152	18,954	19,106	136	19,305	19,441	136	19,264	19,400	
			8	331	339	8	314	322	8	315	323	
1	120	121	0	142	142	0	168	168	0	196	196	
72	1,136	1,208	63	1,191	1,254	47	1,254	1,301	44	1,294	1,338	
13.	757	770	10	799	809	10	827	837	10	800	810	
52	265	317	49	257	306	49	264	313	50	298	348	
43	987	1,030	37	365	402	27	297	324	22	313	335	
2,831	62,335	65,166	2,509	61,514	64,023	2,260	62,381	64,641	2,112	62,672	64,784	
												TOTAL.

* Gross tonnage, with the exception of sailing ships in 1913. Not including: (1) Most of the sailing ships belonging to Greece, Turkey and Southern Russia; (2) Japanese sailing vessels; (3) vessels trading on the Caspian Sea, and wood vessels trading on the Great Lakes of North America.

(a) Included in "Other Dominions". (b) Since 1924, including Fiume. To obtain a direct comparison with post-war Italian shipping the figures relative to Austria-Hungary should be added for 1913, making a total of sailing ships 249, steam and motor-ships 2,234, and a general total of 2,033 thousand tons — with a certain reservation for the Austro-Hungarian tonnage eventually assigned to the Serb-Croat-Slovene State.

Annexe II.
NAVIRES MARCHANDS EN CONSTRUCTION
DANS LE MONDE.

Navires de 100 tonneaux et au-dessus.
(En milliers de tonnes.)

Annex II.
MERCHANT VESSELS UNDER CONSTRUCTION
IN THE WORLD.

Vessels of 100 tons and upwards.
(Tons, 000's.)

FIN DE	1920	1921	1922	1923	1924	1925	1926	END OF
Allemagne.	No returns	No returns	416	324	355	234	211	Germany.
Danemark.	121	63	35	62	85	61	41	Denmark.
Etats-Unis	1,310	216	139	92	58	105	152	United States.
France	398	353	189	111	197	167	143	France.
Italie.	364	394	211	120	155	310	240	Italy.
Japon	249	145	94	63	39	52	43	Japan.
Norvège	84	62	41	34	33	13	4	Norway.
Pays-Bas	451	314	143	113	125	109	145	Netherlands.
Royaume-Uni	3,709	2,640	1,469	1,395	1,297	885	760	United Kingdom.
Dominions britanniques	187	66	49	33	29	30	5	British Dominions.
Suède.	123	78	43	43	58	55	39	Sweden.
Autres pays	184	126	125	54	39	48	150	Other countries.
Total			2,954	2,444	2,470	2,070	1,933	Total.
Total, non compris l'Allemagne	7,180	4,457	2,538	2,120	2,115	1,836	1,722	Total, excluding Germany.

Annexe III.

NAVIRES A VAPEUR OU A MOTEURS — STEAMERS AND MOTOR-SHIPS.

Répartition du tonnage brut par âge dans les principaux pays maritimes, suivant le *Lloyd's Register* 1926-27. — Division according to Age of Gross Tonnage — distinguishing the Principal Maritime Countries — as recorded in the 1926-27 Edition of *Lloyd's Register*.

(Les pourcentages ont été ajoutés. — Percentages have been added.)

PAYS	Au-dessous de 5 ans Under 5 years		5 ans et au-dessous de 10 5 and under 10 years		10 ans et au-dessous de 15 10 and under 15 years		15 ans et au-dessous de 20 15 and under 20 years		20 ans et au-dessous de 25 20 and under 25 years		25 ans et au-dessus 25 years and over		Total		COUNTRY
	Nombre Number	Milliers de tonnes Tons 000's	Nombre Number	Milliers de tonnes Tons 000's	Nombre Number	Milliers de tonnes Tons 000's	Nombre Number	Milliers de tonnes Tons 000's	Nombre Number	Milliers de tonnes Tons 000's	Nombre Number	Milliers de tonnes Tons 000's	Nombre Number	Milliers de tonnes Tons 000's	
Grande-Bretagne et Irlande	1,212	4,554	1,888	5,401	1,345	3,379	970	2,247	991	2,008	1,558	1,676	7,964	19,264	Great Britain and Ireland
Australie et Nouv.-Zélande	75	157	89	179	91	113	135	173	77	87	170	89	637	800	Australia and New Zealand
Canada.	66	172	182	389	62	141	115	169	77	89	162	174	664	1,133	Canada
Etats-Unis ¹	129	377	1,897	8,553	258	899	212	509	201	440	419	614	3,116	11,392	U. S. A. ¹
Allemagne	430	1,222	452	637	214	249	242	252	198	285	392	418	1,928	3,062	Germany
Pays-Bas	158	611	312	743	212	607	130	332	114	170	135	89	1,061	2,553	Netherlands
France	161	673	436	991	193	543	215	400	170	357	323	359	1,498	3,324	France
Italie	117	561	238	786	105	284	124	368	129	395	386	757	1,099	3,150	Italy
Japon	220	366	888	1,746	207	351	152	298	209	360	411	847	2,087	3,967	Japan
Norvège	255	588	515	973	241	350	232	298	184	270	375	327	1,802	2,807	Norway
Espagne	46	97	232	320	53	85	52	58	47	63	372	502	802	1,126	Spain
Suède	80	226	195	292	123	128	114	134	114	106	579	409	1,205	1,295	Sweden
Total (y compris autres pays ²)	3,332	10,396	8,127	22,306	3,658	8,110	3,400	6,677	3,328	6,377	7,247	8,806	29,092	62,671	Total (incl. other countries ²)
%		16.6		35.6		12.9		10.7		10.2		14.0		100.—	%

¹ Non compris le tonnage sur les Grands Lacs.

¹ Great Lakes tonnage excluded.

² Y compris le tonnage sur les Grands Lacs.

² Great Lakes tonnage included.

Annexe IV.

**TONNAGE DES NAVIRES A VAPEUR INUTILISÉS DANS LES PRINCIPAUX PAYS MARITIMES.
LAID-UP STEAM SHIPPING OF PRINCIPAL MARITIME COUNTRIES.**

(En milliers de tonneaux. — In thousands of tons gross.)

PAYS	1-I-1922	1-VII-1922	1-I-1923	1-VII-1923	1-I-1924	1-VII-1924	1-I-1925	1-VII-1925	COUNTRY
ETATS-UNIS :									UNITED STATES :
Dept de la Marine	4,314	3,978	4,411	3,771	3,564	3,812	3,664	3,767	Shipping Board
Dept des bateaux-citerne . .	214	214	214	266	163	141	125	107	Shipping Board tankers
Armateurs	781	523	703	468	541	312	417	366	Privately owned
Autres bateaux du gouverne- ment	—	—	*	70	3	*	17	13	Government-owned other than U. S. Shipping Board
TOTAL ETATS-UNIS :	5,309	4,715	5,328	4,575	4,271	4,265	4,223	4,253	TOTAL UNITED STATES :
Royaume-Uni	1,769	1,667	1,010	1,064	909	700	705	1,130	United Kingdom
France	1,085	1,200	730	725	450	317	311	219	France
Italie	585	585	472	559	427	252	225	262	Italy
Pays-Bas	327	330	330	250	235	129	65	180	Holland
Norvège	207	112	53	78	50	23	25	51	Norway
Suède	204	114	22	—	—	—	20	40	Sweden
Grèce	170	48	76	94	122	91	24	99	Greece
Japon	120	79	99	36	29	29	25	36	Japan
Belgique	275	275	170	161	86	35	26	68	Belgium
Danemark	161	33	17	7	13	—	—	18	Denmark
Espagne	530	530	520	241	128	98	60	73	Spain
Australie	50	100	106	216	85	87	166	175	Australia
Autres pays	192	—	195	39	83	99	103	149	Other countries
Total	10,984	9,788	9,128	8,045	6,888	6,125	5,978	6,753	Total

¹ Etabli suivant les meilleurs renseignements disponibles.

² Renseignements non disponibles.

³ Compris dans les chiffres du Département de la Navigation des Etats-Unis.

⁴ Estimation.

¹ Interpolated from best available data.

² No data available.

³ Included in U. S. Shipping Board figures

⁴ Estimated.

Source : Divers renseignements proviennent des « Commerce Reports » publiés par le Département du Commerce des Etats-Unis.

Source : — Various issues of "Commerce Reports", published by the United States Department of Commerce.

Annexe V.

**NOMBRE ET TONNAGE DES NAVIRES A VAPEUR OU MOTEURS, DE 100 TONNEAUX BRUTS
ET AU-DESSUS, DÉMOLIS¹ PENDANT LES ANNÉES 1919 A 1925**
(En milliers de tonneaux.) Non compris les navires perdus.

**NUMBER AND GROSS TONNAGE OF STEAMERS AND MOTOR-SHIPS OF 100 GROSS
TONS AND UPWARDS, BROKEN UP¹ FROM 1919 TO 1925.**
Gross tons (000's omitted.) Not including lost ships.

PAYS	1919		1920		1921		1922		1923		1924		1925		TOTAL		COUNTRIES
	No	Tonnage	No	Tonnage	No	Tonnage	No	Tonnage	No	Tonnage	No	Tonnage	No	Tonnage	No	Tonnage	
Allemagne. . .	—	—	—	—	1	1.8	4	6.9	4	5.2	14	27.4	10	37.5	33	78.8	Germany.
Danemark. . .	—	—	—	—	—	—	4	0.9	6	7.4	7	10.9	1	0.3	18	19.4	Denmark.
France . . .	2	7.3	—	—	3	4.2	22	53.7	64	167.5	57	111.6	26	84.0	174	428.3	France.
Italie . . .	—	—	—	—	—	—	6	15.7	59	157.1	43	110.6	31	100.9	139	384.3	Italy.
Norvège . .	—	—	—	—	—	—	5	3.1	6	4.6	7	3.5	4	3.6	22	14.8	Norway.
Pays-Bas . .	1	0.3	—	—	1	2.1	4	5.9	7	10.8	7	15.9	2	6.0	22	41.0	Netherlands.
Royaume-Uni et Irlande .	1	0.2	6	5.7	13	43.2	41	120.3	73	184.2	116	254.1	79	198.6	329	806.3	United Kingdom and Ireland.
Suède . . .	1	0.2	2	0.3	—	—	2	0.3	9	2.2	7	1.3	6	4.2	27	8.5	Sweden.
Etats-Unis .	—	—	—	—	4	8.9	14	37.6	125	346.8	145	488.9	22	56.5	310	938.7	U. S. A.
Japon . . .	—	—	—	—	—	—	22	15.6	4	5.5	8	4.6	24	37.8	58	63.5	Japan.
Dominions britanniques	4	1.6	5	1.8	9	13.4	20	30.2	13	30.7	29	55.7	28	48.5	108	181.9	Brit. Domi- nions
Autres pays .	1	0.3	—	—	3	3.9	16	24.9	15	40.5	45	89.8	40	75.1	120	234.6	Other countr.
Total . . .	10	9.9	13	7.8	34	77.5	160	315.1	385	962.5	485	1174.3	273	653.0	1360	3200.1	Total.

No = Nombre.

¹ Les cas de démolition provenant d'accident ne sont pas compris.

No = Number.

¹ Cases of breaking-up consequent upon casualty are not included.

Annexe VI.

NAVIRES A VAPEUR ET MOTEURS DE 100 TONNEAUX ET AU-DESSUS
STEAMERS AND MOTOR-SHIPS OF 100 TONS GROSS AND UPWARDS

Tonnage total du monde et, sur ledit, tonnage totalement perdu et démoli.
(D'après le *Lloyd's Register*.)

World Tonnage (Gross), together with Numbers and Tonnage of the Same totally lost and broken up.
(Figures from *Lloyd's Register*.)

	Tonnage total Total tonnage		Perdus Lost		Démolis Broken up ¹		Total perdu et démoli Total lost and broken up	
	Nombre Number	Milliers de tonnes Tons (000's)	Nombre Number	Milliers de tonnes Tons (000's)	Nombre Number	Milliers de tonnes Tons (000's)	Nombre Number	Milliers de tonnes Tons (000's)
1905	19,153	29,963	297	408	85	120	382	528
1906	19,877	31,745	284	367	94	143	378	510
1907	20,746	33,970	273	408	83	157	356	565
1908	21,556	35,723	304	420	78	147	382	566
1909	21,909	36,473	256	394	127	252	383	646
1910	22,008	37,991	293	422	128	246	421	668
1911	22,473	38,782	305	449	122	171	427	620
1912	23,217	40,518	292	451	87	122	379	573
1913	23,897	43,079	295	445	76	88	371	533
1914	24,444	45,404	437	774	54	97	491	871
1915	24,508	45,729	968	1,867	24	26	992	1,894
1916	24,132	45,218	1,274	2,715	14	9	1,288	2,724
1917 ²	—	—	2,596	6,602	9	5	2,605	6,607
1918 ²	—	—	1,288	3,330	6	3	1,294	3,333
1919	24,386	47,897	415	514	10	10	425	524
1920	26,513	53,905	357	511	13	8	370	519
1921	28,433	58,846	310	459	34	78	344	537
1922	29,255	61,343	351	429	160	315	511	744
1923	29,246	62,335	324	494	385	963	709	1,457
1924	29,024	61,514	292	440	485	1,174	777	1,614
1925	29,205	62,380	280	328	273	653	553	981

¹ Les cas de démolition provenant d'accident sont compris dans « perdus ».

² Par suite de la guerre, les statistiques concernant les vaisseaux appartenant aux divers pays du monde n'étaient pas enregistrés par le *Lloyd's Register* pour les années 1917 et 1918.

¹ Cases of breaking up consequent upon casualty are included under "lost".

² Owing to the war, statistics regarding the vessels owned by the various countries of the world were not compiled by *Lloyd's Register* for the years 1917 and 1918.

Annexe VII.

NOMBRE INDICE DES FRETS MARITIMES.

(Chamber of Shipping of the United Kingdom. — Frets par tonne, « quarter » de céréales, ou « standard » de bois. — Moyenne géométrique, en shillings ou en dollars.)

INDEX NUMBER OF SHIPPING FREIGHTS.

(Chamber of Shipping of the United Kingdom. — Freight per ton, quarter or standard. — Geometrical average in shillings or dollars.)

ROUTE	1913	1920	1921	1922	1923	1924	1925	1924	1925	ROUTE
1. Alexandrie - Royaume-Uni . .	26.35	35.89	13.54	10.73	10.78	11.71	11.42	32.64	31.83	1. Alexandria to U.K.
2. Bilbao - Cardiff	26.82	16.00	8.12	7.02	6.94	6.69	6.05	41.80	37.83	2. Bilbao to Cardiff.
3. Cardiff - St-Vincent	30.48	31.03	12.27	10.97	9.68	9.22	8.67	29.70	27.94	3. Cardiff to St. Vincent.
4. Cardiff - Port-Saïd	21.89	43.59	15.51	13.58	10.62	11.36	10.10	26.05	23.16	4. Cardiff to Port Saïd
5. Etançons, Baltique - Royaume-Uni	22.82 ¹	140.25 ¹	55.67 ¹	47.81 ¹	42.59 ¹	43.04 ¹	38.37 ¹	30.60 ¹	27.36 ¹	5. Pit Props, Baltic to U. K.
6. Bilbao - Middlesbrough	21.73	24.74	8.62	7.79	7.71	7.16	6.48	28.94	26.20	6. Bilbao to Middlesbrough.
7. Bilbao - Bristol	21.72	19.76	8.42	7.39	7.12	6.82	6.29	34.52	31.82	7. Bilbao to Bristol Channel
8. Hornillo Bay - Royaume-Uni	24.40	24.59	9.02	7.57	7.18	7.23	6.54	29.40	26.60	8. Hornillo Bay to U. K.
MERS EUROPÉENNES.	24.36	—	—	—	—	—	—	31.46	28.92	EUROPEAN WATERS.
9. Karachi - Royaume-Uni/Cont.	20.16	87.55	25.25	22.26	25.05	25.22	21.86	28.81	24.97	9. Karachi to U.K./Cont.
10. Rangoon, Bangkok, etc. (riz) Royaume-Uni/Cont.	26.82	119.47	44.90	29.99	30.67	32.04	26.63	26.82	22.29	10. Rice Ports to U. K./Cont.
11. Bombay - Royaume-Uni	23.34	89.43	27.03	21.48	26.31	25.61	22.13	28.64	24.75	11. Bombay to U.K.
MER ROUGE, ARABIE ET INDES	23.29	—	—	—	—	—	—	28.13	23.98	RED SEA, ARABIA AND INDIA
12. JAVA-ROYAUME-UNI/CONT.	26.68	128.08	45.96	31.84	34.69	31.22	27.90	25.16	21.78	12. JAVA TO U. K. / CONT.
13. AUSTRALIE - ROYAUME-UNI	23.66	140.19	60.70	43.96	36.91	39.88	39.70	28.45	28.32	13. AUSTRALIA TO U. K.
14. Rio Plata (Port inf.) - Royaume-Uni / Cont.	16.86	99.94	100.17	25.24	19.77	25.03	15.28	25.05	15.29	14. R. Plate (L. Ports) to U.K./Cont.
15. San Lorenzo - Royaume-Uni/Cont.	19.97	92.32	92.48	26.89	22.95	26.22	17.62	28.40	19.09	15. San Lorenzo to U. K./Cont.
16. Bahia-Blanca-Royaume-Uni	22.37	88.27	31.74	25.67	21.92	25.82	16.56	9.25	18.76	16. Bahia Blanca to U.K.
ARGENTINE, URUGUAY, etc.	19.60	—	—	—	—	—	—	27.50	17.63	ARGENTINE, URUGUAY, ETC.
17. ETATS-UNIS (Est) - France (Atlantique).	—	\$14.16	\$4.83	\$2.83	\$3.58	—	—	—	—	17. Northern Range to French Atlantic
18. ETATS-UNIS (Est) - Italie (Ouest)	21.05	\$16.72	\$5.04	\$4.14	\$3.95	\$3.93	\$3.38	23.50	20.23	18. Northern Range to West Italy
19. Golfe de Mexique (céréales) Royaume-Uni/Cont.	9.08	12.53 ²	7.16 ²	3.98 ²	3.55 ²	4.11 ²	3.81 ²	32.05	30.43	19. Gulf Ports (grain) to U.K./Cont.
20. Golfe de Mexique (bois) Royaume-Uni/Cont.	27.86	403.2 ¹	162.8 ¹	136.0 ¹	123.4 ¹	142.17 ¹	121.89 ¹	35.26	30.23	20. Gulf Ports (timber) to U.K./Cont.
ETATS-UNIS	23.56	—	—	—	—	—	—	29.40	24.54	UNITED STATES
21. CANADA - ROYAUME-UNI (CÉRÉALES).	24.82	11.08 ²	5.64 ²	3.85 ²	3.59 ²	3.70 ²	2.99 ²	33.36	26.98	21. CANADA TO U.K. (GRAIN)
MOYENNE GÉOMÉTRIQUE DE TOUTES LES ROUTES	23.40	—	—	—	—	—	—	20.63	25.20	GEOMETRICAL AVERAGE OF ALL ROUTES
COURS DES FRETS EN « TIME CHARTER »	—	16.73	6.08	4.45	3.62	3.88	3.69	23.22	22.04	TIME CHARTER RATE

¹ Par « standard » de bois.
² Par « quarter » de céréales.

NOTE. — Dans chaque série la moyenne géométrique pour 1920 = 100.

¹ Per standard.
² Per quarter.

NOTE. — In each series the geometrical average for 1920 is taken as 100.

Annexe VIII.

COURS DES FRETS. CÉRÉALES, RIZ ET COTON ¹.
FREIGHT RATES. GRAIN, RICE AND COTTON ¹.

*Les cours sont ceux de la première semaine de chaque mois. —
 The rates are for the first week in each month.*

	Janvier 1913 January 1913	Janvier 1922 January 1922	Janvier 1923 January 1923	Janvier 1924 January 1924	Janvier 1925 January 1925	Janvier 1926 January 1926	Juin 1926 June 1926	
CÉRÉALES								GRAIN
Le froment et le maïs du Northern Range au Royaume - Uni (par 480 livres)	s. d. 3 1	s. d. 3 9	s. d. 3 3	s. d. 3 1	s. d. 3 3	s. d. 3 3	s. d. 2 6	Wheat and maize from Northern Range to U. K. (per 480 lbs).
Le froment et le maïs de La Plata (up-river) au Royaume-Uni (par tonne)	23 6	37 6	27 9	26 6	26 3	22 0	18 0	Wheat and maize from La Plata (up-river) to U. K. (per ton).
Le froment de l'Australie au Royaume-Uni (par tonne) ²	37 3	48 9	43 6	42 6	45 0	43 0	25 0 ³	Wheat, Australia to U. K. (per ton) ² .
Riz								RICE
De Rangoon au Royaume-Uni (par tonne)	32 6	27 6	32 6	31 3	32 6	29 0	—	Rangoon to U. K. (per ton).
COTON ¹								COTTON ¹
De la Nouvelle-Orléans à Liverpool (en cents par 100 livres)	53	45	50	52	63 ½	50	50	New Orleans to U. K., in cents per 100 lbs.

¹ Inst. Int. d'Agriculture, Rome.

² Pour 1913 transports par voilier ; à partir de 1922, transportés par vapeur.

³ Nominal.

¹ Int. Inst. of Agriculture, Rome.

² Sailing-vessel freights 1913 ; steamer freights from 1922.

³ Nominal.