[Front-back cover spread:
"FREIGHTER LIFE," with dramatic photo/painting of freighter steaming at sea]

FREIGHTER LIFE

A Guide to Happy Vacations at Sea

by

ROY L. PEPPERBURG
Formerly, Managing Editor of *Sea Power*
Co-Author: *Warships of the World*

[ship silhouette]

Table of Contents (not in original)

Cover illustration: The American Shipper of the U.S. Lines

[Replicator's note: The text from the original 5-3/8x8-1/2 pamphlet were scanned, proofed, and left intact except for formatting changes and a few spelling/italic corrections.
I believe any residual spelling or grammatical idiosyncracies are as they were in the original.
This non-illustrated copy indicates photos as outlines, containing caption text where provided.
Available online (also with photos) at http:/dickatlee.com/misc/freighter_life/.]

FOREWORD

Freighter Life has been conceived in an effort to give you a picture of what it is like to travel on a freighter. For many years the publishers of this booklet have brought you *Travel Routes Around the World*. *Travel Routes* tells you about specific freighter cruises from U.S. and foreign ports, gives you the names of the steamship lines and the length of each voyage together with the cost and other pertinent information. A few pages in *Travel Routes* also give you a brief description of passenger accommodations on freighters, how to dress, and the like.

However, the publishers have always felt that such a condensed description was grossly inadequate. It failed to give a. complete picture of what these vessels offer the traveler. To meet this long felt need, *Freighter Life* has been published. In words and pictures it is our hope that we have told you not only what you would like to know before crossing a freighter's gangplank, but a little about the vessels of burden themselves -- about the different kinds of freighters, their size, and how they operate. To round out the picture we have included a small compendium of miscellaneous information of interest to ocean travelers everywhere.

I
What Is a Freighter?

A freighter may be just a freighter to a landlubber -- one of the large fat ladies of the sea that carry the burdens of commerce from one seaport to another. But "freighters is freighters" only to a landsman. To the seaman they are cargo ships, tramps, tankers, dry cargo ships, tankers, bulk carriers, self-unloaders, seatrains, ore boats, reefers, colliers, passenger-cargo ships, and many others, all with distinguishing characteristics and minds of their own. They may be as small as 2,000 tons or less and as large as the 35,000-ton tankers now being built. Speeds range from a sluggish eight or nine knots to a walloping twenty knots and better -- faster than all but a bare handful of express liners of yesteryear. True, they all carry freight of a sort, but there the resemblance ends.

When we say resemblance ends we don't mean that all these ship types look as different as rabbits and turtles, although some are as different in appearance as night and day. Others may not only look exactly alike -- they may be the same ship on different occasions. Still others may look alike because the differences are hidden, self-contained within the sleek steel hulls. General or "dry cargo ships," "tramps," and "reefers" outwardly look alike. Cargo ships and tramps differ only in the manner of their operation; the former run on a timetable schedule between specific ports; the latter trudge from port to port "as inducements offer." Usually, however, cargo ships on scheduled runs are more modern vessels designed for their particular trade, while tramps, as the name implies, are the older buckets that have seen their best years. The point is that differences of purpose greatly affect a vessel's operation and alter her character as much as the number of masts or funnels.

Both general cargo ships and tramps carry an endless variety of the world's goods. Other ships may carry a single commodity for which they were specially designed. In some the cargo is

neatly stacked -- "stowed" is the word -- in the vessel's holds in sacks and crates. In others, coal, grain, ore, gypsum and other products may be "bulk loaded" -- simply spewed from shoots and conveyors or dropped by hoppers into the vessel's cargo spaces. Such a vessel is called a "bulk carrier." Under this heading come the ore carriers, grain carriers, and coal carriers or colliers. Some bulk carriers have a long trestle-like affair that extends almost the length of the ship when she is under way. That trestle contains a chain of scoops or buckets on a conveyor belt and is used for unloading the ship without the aid of shore equipment. Such a ship is called a "self-unloader."

When the bulk cargo is liquid cargo -- crude oil, gasoline, kerosene, and the like -- and is pumped aboard through heavy hoses into tanks that fill the greater part of the vessel she is called a "tanker" or an "oiler." Other liquid cargoes are sometimes carried in bulk. In some parts of the world "water carriers" are important. Occasionally the island of Bermuda has imported water via tankers.

The S.S. *City of Alma* typifies the Waterman Lines' fleet of 55 modern freighters.

Anyone can tell a tanker at a glance. Usually the bridges and deck house containing the pilot house, navigating, radio equipment and officers' quarters are located amidships, and her funnel, engines, and crew's quarters are at the stern. The bridge amidships and crew's quarters aft -- called "superstructures" or "islands" because they are raised above the main body of the ship -- are connected on a tanker by the long, low, flat, unbroken profile of the hull. When loaded a tanker appears half submerged. Any kind of a sea at all washes over the main deck continually, and in a heavy sea the deck is impassable. Comparatively dry footing from the crew's quarters and engine rooms to the bridge is provided by a "catwalk," a narrow footbridge with hand rails that runs the length of the ship and is the distinguishing mark of a tanker. Seen close up, the deck of a tanker is a clutter of manholes, valves, and hose connections.

Frequently tankers, and other cargo ships as well, also have a third "island" or raised part of the ship at the bows. This island is the "'forecastle," or "fo'c's'le," and because the crew's quarters were formerly always located here, their quarters came to be called the fo'c's'le. The name still holds although the quarters are likely to be aft or amidships on modern vessels, creating an anomalous situation in which a name which means the forward part of a ship is applied to the raised part at the stern which is correctly called the "poop."

Other large bulk carriers -- notably the Great Lakes ore carriers -- seem at first to resemble tankers closely. Actually it is easy to tell them apart. On the ore boats the bridge or pilot house is located practically at the bow over the fo'c's'le and the characteristic catwalk is missing. They are "two-island" boats.

The "reefers" are more properly "refrigerator ships," although the term, reefer, is by no means limited to the sea. Refrigerated motor trucks and railway freight cars are also called reefers, and are cooled for the same reason: to preserve perishable fruit, vegetables, and dressed or frozen meat. Among the most famed of refrigerated ships are the United Fruit Line's Great White Fleet of banana boats. Other reefers carrying frozen beef have all but driven the highly aromatic cattle boats of an earlier era from the seas.

Refrigerator ships are more than merely cooled. Their cargo spaces are air- conditioned -- cooled or heated as required, dehumidified, and otherwise controlled to keep perishable commodities in prime condition. Many modern general cargo ships, of course, have some refrigerated space both for fresh stores for the passengers and crew and a limited quantity of perishable cargo.

Among the most specialized of all ships plying the sea lanes are the seatrains. They date from about 1928 and so are a comparatively new type. Only about five have been built so far, so your chances of seeing one are not great. These 8,000-ton vessels, which include the *Seatrain New York*, *Seatrain Texas*, *Seatrain New Orleans*, *Seatrain Havana*, and *Seatrain New Jersey*, were designed especially to carry about 100 loaded freight cars between New York and Cuba. Each of three decks within these ships has four standard sets of rails extending almost the length of the 452-foot vessel, and a deck cargo of more freight cars rides the rails on the "sun deck." Distinguishing features are a "well deck" amidships through which cars are loaded by special elevators at the terminals, the location of the bridge forward, the funnel aft, and the absence of other deckhouses. Regular cargo ships, which sometimes carry locomotives and railway cars as deck cargo, should not be mistaken for seatrains.

But we've been looking at freighters from the outside. You're interested in stepping aboard, traveling, watching them throb, and going places. So you may as well forget about tankers, colliers, ore carriers, seatrains, and such -- they don't carry passengers. Freighters that will take any place in the world include many varieties of general cargo reefers, tramps, and that hybrid of the lines -- the cargo-passenger ship.

Vessels in these services range from a couple of thousand to about 20,000 tons, with the average somewhere near 10,000. We will use gross tons here, since this is the most popular figure for merchant ships, and explain the different kinds of ship tonnages elsewhere. In any case the size of the ship actually matters little as far as the comfort, service, and convenience of the passenger are concerned. What you are interested in is "smooth sailing," comfortable quarters, plenty of good food to eat, the amenities of life, companionship, recreation, and an interesting voyage. These things, you will soon discover, do not depend on the size of the ship.

The Koninklijke Rotterdamsche Lloyd's S.S. *Utrecht* has outstanding accommodations.

II
Where Can I Go?

Practically anyplace on the globe.

The cargo services of all nations also carry passengers. Freighters roamed the sea lanes long before the day of the deluxe liner. Often the cargo ship is the only transportation available. Freighters have always had a few spare cabins or staterooms which were used for supercargoes and emergency passengers of various kinds. The lines did not advertise these rooms as passenger space. Often no specific passenger rates were available. Travel agents knew nothing about these services. Would-be passengers had to book passage directly with the lines. Sometimes unofficial

arrangements made personally with the master of the vessel were necessary.

Suddenly, about two decades ago, all this was changed. one or two enterprising travel agents discovered that here was a gold mine for the economy-minded traveler, for the person who wished to get away from the crowd, for vagabonds of the sea, for the leisurely traveler, the kind of person who, on shore travel, stopped at tourist cabins rather than deluxe hostelries. More than any other one organization, Harian Publications were responsible for throwing open this new mode of ocean travel. Twelve successive editions of *Foreign Lands at Stay-at-home Prices*, now called *Travel Routes*, and many extra printings of each introduced sea travel at two to three dollars a day to thousands who thought freighters were something that carried only dried beef, lumber, copra and the like.

The ship lines needed a little coaxing at first, but gradually they became convinced that those vacant rooms on the upper decks could be made to pay their own freight The ships (and the rooms) were going places anyhow; for little more than the cost of food, passengers could be taken along. In a modest way the lines let it be known that passengers were welcome.

These passengers ate with the officers and had quarters similar to theirs. The food was good -- better on some lines than others, to be sure -- and accommodations ran the gamut from simple white-painted, steel-walled cabins with comfortable built-in bunks to mahogany-panel staterooms with real beds and connecting showers. In either case the quarters were always amidships and outside, open to the sea breeze. Deck space for lounging and games was ample; the run of the ship was theirs. Cruise directors, hostesses, planned entertainment, formal dinners, high pressure social life, and "keeping up with the Joneses" were pleasantly absent.

A ship line officer can see a dollar as quickly as the next man. One thing led to another until today practically every freighter in the business is designed to carry a minimum of twelve passengers in a degree of comfort and style that would surprise a world-weary transatlantic commuter.

The S.S. *Alcoa Patriot*, a Maritime Commission C1 design, carries twelve passengers.

III
American Flag Vessels

The merchant marine act of 1936 created the U.S. Maritime Commission. The Commission, working closely with the steamship lines, was to design a series of basic merchant ship types planned to meet the requirements of as many different services as possible, to embody the latest developments in marine engineering, and to benefit from the economies of the comparatively mass production brought about by building or adapting a number of ships of the same basic hull design to the needs of different services previously more than two or three sister ships had rarely been built; each vessel usually had been custom designed from the keel up.

Before sitting down to design a fleet of vessels adapted to the needs of America's ocean commerce, the Maritime Commission, together with foreign trade experts and the steamship

companies, made a survey of our trade to determine the routes essential to our commerce and the kinds of cargo carried -- how much general or dry cargo, how much bulk cargo like coal and wheat, what percentage was perishable and needed refrigeration, how much was liquid; and from whence each came or where it was going.

This study of the basic patterns of American foreign trade indicated that some thirty-odd steamship routes could cover the major requirements of our overseas commerce. This is the list of trade routes which follows as a guide to the services now provided by American flag vessels.

In the following list of these routes, only American flag *cargo* lines *which carry passengers* are mentioned. On some routes deluxe passenger services are also available. Freighters plying a few of the routes do not solicit passengers; these lines are not mentioned here, although it may be possible to arrange for passage on these vessels. In some instances no American flag service is now available on ocean trade routes which the Maritime Commission considers essential to the country's wellbeing. Foreign flag lines are discussed separately on later pages.

1. Atlantic coast to east coast of South America -- Moore-McCormack Line.
2. Atlantic coast to west coast of South America -- Grace Line.
3. Atlantic coast to east coast of Mexico -- New York & Cuba Mail.
4. Atlantic coast to the Caribbean -- Alcoa, Grace, Standard Fruit, and United Fruit Lines.
5. North Atlantic coast to United Kingdom and Eire -- U. S. Lines.
6. North Atlantic coast to Baltic and Scandinavia -- Moore-McCormack Line.
7. North Atlantic coast to North Sea Germany -- Isbrandtsen and Waterman Lines.
8. North Atlantic coast to Belgium and Netherlands -- Black Diamond, Isbrandtsen and Waterman Lines.
9. North Atlantic coast to Atlantic France and northern Spain -- U.S. and Black Diamond Lines to French ports; no American service to northern Spain.
10. North Atlantic coast to Mediterranean and Black Sea -- American Export and Waterman Lines.
11. South Atlantic coast to United Kingdom, Eire, and Northern Europe -- South Atlantic Steamship Co. and Waterman Lines.
12. Atlantic coast to the Far East -- U. S. , Waterman, and Isthmian Lines.
13. South Atlantic and Gulf coast to Mediterranean and Black Sea -- Lykes' Mediterranean Line.
14. Atlantic and Gulf coasts to West Africa -- Delta Line.

15a. Atlantic coast to South and East Africa -- Farrell, States Marine-South African and Robin Lines.

15b. Gulf coast to South and East Africa -- Lykes' African Line.

16. Atlantic and Gulf coasts to Australasia -- U. S. Lines.
17. Atlantic and Gulf coasts to Straits Settlements and Netherlands East Indies -- Isthmian Line.
18. Atlantic and Gulf coasts to Red Sea, Persian Gulf, and India -- Isthmian Line.
19. Gulf coast to Caribbean -- Lykes Brothers, Alcoa, Standard Fruit, United Fruit and Waterman Lines.
20. Gulf coast to east coast of South America -- Delta Line.
21. Gulf coast to United Kingdom, Eire, and Northern Europe -- Lykes' United Kingdom and

Continent Lines, and Waterman Line.
22. Gulf coast to the Far East -- Lykes' orient Line and Waterman Line.
23. Pacific coast to Caribbean -- Pope & Talbot's Pacific West Indies Line.
24. Pacific coast to east coast of South America -- Pope & Talbot's Pacific-Argentine Brazil Line, and the Pacific Republics Lines.
25. Pacific coast to west coasts of South America, Central America, and Mexico -- Grace Line.
26a. Pacific coast to United Kingdom and Eire -- no American service.
26b. Pacific coast to Havre-Hamburg range -- no American service.
27. Pacific coast to Australasia -- Matson Line.
28. Pacific coast to Straits Settlements, Netherlands East Indies, India, Persian Gulf, and Red Sea -- American Mail and American President Lines.
29. California to the Far East -- Pacific Far East Line.
30. Washington and Oregon to the Far East -- America Mail Line.
31. Gulf coast to west coast of South America -- Gulf & South American Steamship Co. Around the world -- American President Lines.

Intercoastal Services:

American President Lines -- New York to Los Angeles
Pope & Talbot's Pacific Atlantic Intercoastal Line -- Baltimore and Philadelphia to Los Angeles and San Francisco.

To meet the needs of the kind and volume of traffic moving over these routes, the standard ship types of the Maritime Commission were designed. Before the war the basic pattern for these vessels was well established. The C1's, C2's, and C3's -- the basic cargo types differing from each other in size and speed -- had been evolved, as well as the PC passenger-cargo combinations, tankers, and other types and modifications for particular cargoes and services. The war brought large and small passenger types, then called transports, the Liberties and Victories, and many other types and modifications. Even today the Maritime Commission continues to design vessels adapted to conditions encountered on specific trade routes, but more often than not the new plans follow the pattern of the basic types established before the war.

For the statistically minded, the accompanying table gives the dimensions and other data for typical Maritime Commission cargo and passenger-cargo types.

Data for Typical maritime Commission Cargo and Cargo-Passenger Vessels

Explanation of ship type designations used in the following table: Initial letters indicate the type of vessel, i.e., "C" for Cargo, "P" for Passenger, "R" for Refrigerator, "T" for Tanker, "N" for Coastal Cargo, "EC" for Emergency Cargo (Liberty type). "VC" for Victory Cargo (Victory type), and "V" for Tug. Not all types are included in the following table, inasmuch as this book concerns cargo ships. The number following the initial letter shows the basic design within the type; the letters "S," "SE," or "M" the kind of machinery -- Steam, Turbo-Electric, or Motor (diesel) respectively; and the end symbols "A2," "B1," "AJ4," etc , indicate special modifications of the type, frequently to adapt the vessel for an individual line. Under machinery and horse power, "D," "T," and "R" mean respectively, Diesel, Turbine, and Reciprocating.

Type	First Built	Displ. (f.l.)	Gross Tons	Length (o.a.) ft.	Length (o.a.) in.	Beam (Molded) ft.	Beam (Molded) in.	Draft (Max.) ft.	Draft (Max.) in.	Mach.	H.P.	Speed (knots)	Pass.
C1-A	1941	11,653		412	3	60	0	23	6	D	4,000	14.5	12
C1-D	1940	9,104		417	9	60	0	27	6	T	4,000	14.0	12
C2-Cargo	1939	10,850		459	1	63	0	25	9	D	6,000	15.5	12
C2-P	1940	13,898		459	2	63	0	25	10	T	6,000	15.5	12
C2-S	1941	11,154		479	8	66	0	20	9	T	6,300	16.0	12
C2-S-AJ1	1943	14,960		459	2	63	0	27	9	T	6,000	15.5	12
C2-S-AJ3	1944	13,050		459	2	63	0	24	6	T	6,000	15.5	12
C2-S-AJ4	1947	14,945	8,327	459	1	63	0	27	7	T	6,000	16.0	52[a]
C2-S-B1	1943	13,860		460	0	63	2	25	10	T	6,600	15.5	140[b]
C2-S-A1	1942	11,000		450	2	62	0	25	9	T	8,500	16.5	12
C2-T	1940	10,432		459	0	63	0	25	10	D	6,000	15.5	12
C3-Cargo	1940	14,907		492	0	69	6	28	6	T	8,500	16.5	12
C3-A P&C	1940	16,175	9,256	491	10	69	6	26	6	T	8,500	19.5	97[c]
C3-E	1940	14,480		473	2	66	0	27	2	T	8,000	16.5	12
C3-IN	1943	17,615		492	0	69	6	27	3	T	8,500	16.5	12
C3-P	1942	16,715	9,337	494	7	69	6	27	3	T	8,500	16.5	121[d]
C3-S-A2	1943	16,100		492	0	69	6	29	4	T	8,500	16.5	12[e]
C3-S-A5	1946	17,615		492	0	69	6	28	7	T	8,500	16.5	12[f]
C3-S-BH2	1946	17,980	7,855	492	0	69	6	29	6	T	8,500	17.0	12[g]
C4-S-A1	1943	13,552		522	10	71	8	30	0	T	9,000	17.0	12
C4-S-A4	1946	19,850	10,700	523	0	71	6	32	0	T	9,000	17.0	6[h]
EC2-S-C1	1942	14,245	7,176	441	6	57	0	27	9	R	2,500	10.0	12[j]
VC2-S-AP7	1947	14,870	8,481	455	3	62	0	28	6	T	8,500	17.0	98[k]

Abbreviations: f.l. -- full load; o.a. -- over all; max. -- maximum; mach. -- machinery; H.P. -- horsepower; Pass. -- passengers. Also: ft. -- feet; in. -- inches.
Footnote letters in last column refer to the paragraphs below.

a. As specially modified for the Grace Line's South American west coast service. Grace Line operates six sisters of this type: *Santa Barbara*, *Santa Cecilia*, *Santa Luisa*, *Santa Margarita*, *Santa Maria*, and *Santa Isabel*, and three of a slightly different design in the Caribbean service: *Santa Monica*, *Santa Clara*, and *Santa Sofia*, designated C2-S-DG2. These vessels are among the most luxurious (and most expensive) of "freighters." All have air-conditioning throughout passenger space., and a built-in swimming pool. (see *Santa Barbara* below.)

b. As modified for the following lines -- Cuba Mail Line and Porto Rico Line: *Crest of the Wave*,

Golden Light, *Twilight*, and *Wild Ranger*; States Marine Corp.: *Carrier Dove*, *Messenger*, *Mountain Wave*, *National Eagle*, and *Ocean Rover*.

c. A special modification for American President Lines, round-the-world service, typical ships: *President Polk* and *President Monroe*. They served during the war as Navy transports AP 103 and 104, under their own names. (*President Monroe* above.)

d. A special modification for Mississippi Shipping Company's Delta Line service from New Orleans to South America's east coast; three vessels: *Del Norte*, *Del Sud*, and *Del Mar*. They are passenger-cargo ships of considerable luxury and are also probably the second most completely disguised steamships -- funnel-wise -- so far built. What appears to be a broad. low. motorship-style funnel is no funnel at all. but is a housing for radio offices and quarters, and ventilation machinery. Actual boiler uptakes are vented through hollow masts -- two tall. narrow pipes abreast of each other some distance aft of the make-believe stack.

e. A special modification for Luckenbach Lines' *Lena Luckenbach*, *George Luckenbach*, *J. L. Luckenbach* (below), *William Luckenbach*, *Harry Luckenbach*, *F. J. Luckenbach*, *Mathew Luckenbach*. *Jacob Luckenbach*, and *Edward Luckenbach*.

f. Seven vessels laid down for Moore-McCormack Lines as C3-S-A2's and modified during construction; the vessels: *Mormacdawn*, *Mormacgulf*, *Mormacisle*, *Mormacland*, *Mormacmail*, *Mormacpenn*, *Mormacsaga*.

g. A special C3 modification of six ships for the Farrell Lines' American-South African services: *African Crescent*, *African Planet*, *African Rainbow*, *African Star*, etc. (*African Star* above.)

h. A special modification for American President Lines' *Marine Leopard* type; similar C4's are operated by Luckenbach Lines, American-Hawaiian Steamship Company and others. Distinguishing features of all C4's are the location of the bridge well forward and deck houses and engines aft, separated by a broad expanse of deck and cargo hatches in the well deck amidships. Many C4's served as transports and a number are now operated as interim dormitory-style cargo-passenger ships. The *Marine Leopard*, however, has only two cabins, described as "guest cabins," suitable for passengers. (*Marine Leopard* above.)

j. The Liberty ship. Although some 2,500 of these mass-produced emergency cargo vessels

were built during the war, they were expected to be largely scrapped, laid up or sold abroad at the end of hostilities, and such has proved their lot. Many have been sold to foreign operators chiefly for tramp services. A few American flag Liberties are operated by Matson Navigation Co., the States Marine Corp., Atlantic Maritime Co., and others.

k. A special modification for the Aluminum Line, the three vessels, *Alcoa Cavalier*, *Alcoa Clipper*, and *Alcoa Corsair*, are by far the most luxurious of many modifications of the war-born Victory ship, being comparable in the elegance of passenger accommodation to Grace Lines' junior Santas (CS2-S-AJ4) and Delta Line's Del Norte class C3-P's.

(Drawing of *Cavalier* type above.)

Dear Mom,

I wrote you this morning and gave the letter with money enough for postage to a customs officer at the locks at Antwerp. I hope the customs official is honest and doesn't keep the few francs for himself. You should get the letter just about the time we reach Bordeaux.

(I know we were scheduled to sail home directly from Antwerp, but this ship is spending an extra week sailing down the French coast and loading wine at Bordeaux. We were offered passage on another ship of the same line going straight home, but who'd want that when a week's extra sailing is thrown in for nothing?)

I just finished lunch, and I don't believe you have any idea what a freighter offers its passengers. We started off with appetizers; they consisted of lobster, crab meat, five kinds of cold meat, sardines, smoked fish, creamed fish, two types of cheese, three types of bread. Then we had chops, peas, carrots, and potato chips. After that came fruit -- bananas, grapes, oranges, and apples -- all we wanted. At the end there was jam and marmalade. The steward stood ready to pour out more coffee as soon as a cup was finished.

You know I boarded the ship last night, before it sailed. For dinner we had soup, fish, meats and cheese, canned peaches and apricots. and for coffee at 8, we had two kinds of crackers (and we had bought crackers in Antwerp for fear we couldn't get any on the ship!).

For breakfast this morning we. bad two kinds of cheese, omelet, jam, marmalade, toast, Swedish rye bread, white bread, plus grapefruit, and of course all the coffee we could drink.

Fortunately, I'm the type who can eat and eat without adding weight. Otherwise I'd start worrying now what would happen to my figure after three weeks of such meals. (Maybe I should worry anyway.) And to top it all I paid only $175 -- for 20 days of such meals, a week's cruise down the French coast, an ocean crossing, and three days stop at Quebec (when I may use the ship as a hotel) before we touch Montreal.

-- from a letter by a freighter passenger

IV
Foreign Flag Freighters

So far we have told you where you can go on American flag vessels. Despite the volume of goods brought to and from our shores by sea, as well as the necessity for having a large number of merchant vessels available for conversion in time of emergency, in proportion to its size the United States is not a maritime nation comparable to, say, Denmark, the Netherlands, Norway, Sweden, or Great Britain. The very existence of these countries depends on their ships. They take their merchant marines seriously. Their cargo routes criss-cross the globe. The cargo lines of these and many other countries enormously increase the variety of services and routes available to the traveler.

There are many reasons for choosing a foreign ship. Some persons feel that they are in a foreign land as soon as they step aboard a foreign ship. Others choose foreign flag vessels for their exotic cuisine. A foreign ship will offer an opportunity to practice a foreign language if desired, although knowledge of another tongue is seldom necessary. At times accommodations offered, dollar for dollar, are better aboard a foreign vessel. With lower wages to pay, higher government subsidies and possibly a currency differential in your favor, foreign lines sometimes charge lower rates than American lines. On highly competitive routes, however, identical fares for similar services are frequently set by mutual agreement among lines which are members of a steamship conference.

Most foreign freighters are comparable to, and many excel in luxury the passenger accommodations found on American freighters No more modern or beautifully appointed vessels of their size ply the seas than the graceful white-clad sisters of Norway's Fruit Express Line to the American west coast. Scandinavian and Dutch vessels enjoy worldwide renown for their fine tables.

The M.S. *Pacific Express* of Norway's Fruit Express-Line plies between the West Coast and European ports; she is one of the most beautiful vessels of her size.

V
Your Home Afloat

When civilians -- correspondents, technicians, and others -- traveled with the armed services during the war, it was necessary to establish the civilian's position in the caste system of the military -- necessary for purposes of accommodations, etiquette, and, in the forward areas in case of capture by the enemy. The civilian's position was established by according him a "simulated rank" in keeping with his importance. It might have been anything from lieutenant to general. In combat zones a uniform was worn; elsewhere a green arm brazard [brassard, armband] or simple badge served the purpose.

Although you will not receive a green brazard when you cross the gangplank, it might be said that freighter passengers have the "simulated rank" of officers. Passengers enjoy the privileges without the responsibilities. They live in comparable quarters and eat at the same table.

Passengers' cabins are in the same part of the ship as the officers' -- the amidships superstructure -- and public rooms are frequently shared with the officers.

As we mentioned earlier, practically all freighters have always toted along a few spare cabins that could be used by passengers, but sometimes it took a bit of doing to ferret out these accommodations. But usually such quarters consisted of white-painted, steel-walled cubicles equipped with iron double decker bunks, a steel locker, and other essentials. To the inveterate freighter *voyageur*, these cabins are the *sine qua non* of freighter travel. Although life aboard hardly could be called "roughing it," the aesthetic appeal was lacking. Drapes, carpets, soft lighting, Beauty-rest mattresses, and other decorator-conceived appointments had not yet arrived.

However, a few freighters, notably the small Dutch and Danish motorships, risked their reputations for strict utility by decking out their passenger quarters with plywood veneer paneling, carpets, drapes, shaded lights, and many other niceties of comfortable living. Long before the war the value of these amenities aboard freighters was apparent to many persons, including the operators.

When the C-type ships were designed by the Maritime Commission, the plans almost to a ship provided for at least twelve passengers to be carried in considerable comfort. When marine architects, interior designers, and equipment manufacturers put their heads together, these "limited passenger accommodations blossomed with something approaching sumptuousness. The cabins became downright glamorous. Glamor went by the board somewhat during the war, but in the years since the trend has been resumed with increased vigor. The Luckenbach Lines, for one, recently invested $50,000 a vessel to install passenger accommodations on a number of their freighters.

These vessels are the S.S. *Mathew Luckenbach*, ex-*Sea Perch*, and the *Sea Star*, *Sea Flier*, *Sea Cat*, *Sea Bass*, *Sea Devil*, *Sea Runner*, and *Sea Barb* (all will receive "Luckenbach" names before entering service). The ships are Maritime Commission type C3-S-A2's that served as transports during the war and were laid up afterwards. Here's what the *Pacific Marine Review*, a "cut and dried" trade magazine had to say about the passenger quarters:

Passenger accommodations on a Waterman freighter similar to the *City of Alma*, shown on page 3. The passengers, lounge (left) and commodious stateroom for two.

> "All of the vessels will have accommodations for twelve passengers. In the case of the Sea Cat, accommodations will be arranged for two passengers in each of six rooms; on the Sea Star there will be accommodations for two passengers in each of three rooms and for three passengers in each of two rooms; all other vessels will have the standard arrangement of three passengers in each of four rooms. Additional passenger facilities will consist of a passengers' lounge, which will be installed on the Cabin Deck, starboard side, forward. As planned, this lounge will be of sufficient size to accommodate all passengers, and is to have varying architectural and decorative features and color schemes on the different vessels, with Kearfott windows, carpet flooring, large panel mirrors, and custom built furniture.

"All passenger staterooms will be treated in varying color schemes, with modern furniture installations and carpet floor coverings.

"The officers' and passengers' dining room will be fitted out to accommodate 28 persons. Decorative features will be large mirrored walls and decorative murals, the design varying on the different ships. Special fabrics will be used in covering the chairs and in draping the window openings."

On similar C3's of the Moore-McCormack Lines -- the *Mormacgulf*, *Mormacisle*, *Mormacdawn*, *Mormacland*, *Mormacmail*, *Mormacpenn*, and *Mormacsaga* -- there are six staterooms each for two passengers, all on the Boat Deck. All of the cabins might easily be called oversized by earlier standards and one has its own sitting room. Normal cabin fittings include a sofa (not to be confused with a "sofa berth"), an easy chair, two fullsized beds with drawers beneath, two full length wardrobe closets, a vanity, an assortment of at least three table lamps, a card table in a special rack below one of the beds, and a private bath with shower.

Of these staterooms *Marine Engineering and Shipping Review* reported: "Furniture and transom seats (nautical for sofas) are upholstered with foamed sponge rubber... The color scheme of the staterooms is carefully planned. Airports and doors are draped and the deck laid with fitted carpets. Suitable lighting is provided for night reading and deck as well as ceiling lighting." Again, we have purposely quoted the matter-of-fact description of an engineer or designer; those are not the glossy words of the advertising copywriter or travel agent that one is accustomed to reading.

The accommodations on the Luckenbach and Mormac freighters are close to par for passenger quarters on today's vessels. Similar ships with similar cabins will be found under a score of American house flags. Lykes Brothers, Alcoa, American Mail the Farrell Lines, Delta Lines, Matson Lines, the Pope and Talbot services, and many others operate C-type cargo ships with similar quarters for about twelve passengers. Many freighters wearing the flags of the foreign lines are comparable in the facilities and the degree of comfort provided; some are downright luxurious.

Additional views of the comfortable Waterman Lines' cabins -- picture at left illustrates the new pullman type berth which lowers from a flush position in ceiling.

Passenger Cargo Ships

The next of kin of the true freighter is the combination cargo passenger ship, the vessel that carries from 50 to 100 passengers. The type is not new; it has long been used where there was substantial demand for a passenger service, yet the demand was not great enough to support express passenger liners. The line of demarcation between a freighter and a combination ship, as far as the number of passengers alone goes, is quite sharp. It is fairly safe to call any vessel carrying more than twelve or fourteen passengers a cargo-passenger ship. The dividing line between the combination ship and a passenger liner is by no means so finely drawn. Small passenger vessels may easily be mistaken for combination ships. Classification depends on the relative importance of passengers to cargo: passenger vessel is designed to haul humans, and the

little cargo it carries is virtually incidental; to a freighter the cargo is the thing that counts; and on a combination vessel the importance of passengers and cargo is about equal.

Right here is a good place to point out that the term, "liner," means much more to many persons than it does in the dictionary where a liner is any vessel that follows a calendar schedule on a particular route ("line") between specific ports. This definition will fit almost any ship except a tramp lumbering from port to port "as inducements offer." Indeed, modern freighters are quite often called "cargo liners."

As far as the ship itself is concerned, the differences between a freighter and a combination job are all topsides. The dimensions, speed, and many other particulars may be, and quite often are identical, as one can see from a glance at the table of Data for Typical U.S. Maritime Commission Cargo and Cargo-passenger Vessels, elsewhere in this book. There are 12-passenger C2's and 140-passenger C2's; likewise, 12-passenger C3's and 121-passenger C3's. The differences, obviously, are in the superstructure, in the amount of space devoted to passengers. One type can easily be converted to the other, and frequently has.

Although the type has long been with us, the modern version of the combination vessel bears little resemblance to its forebears. The revolution in ship design that brought a new look to many ships outside and in has seen its greatest expression in the combination type. Here the designers have outdone themselves. With more latitude than the 12-passenger freighter allowed, but something more finite than a transatlantic liner to work with, the passenger spaces on combination ships have been given an intimate compactness in a setting of great comfort, convenience, and beauty.

The East Asiatic Lines' S.S. *Falstria*, a foreign-flag, cargo-passenger vessel. Note absence of funnel; motorships do not require the traditional smokestack.

The newer engineered fabrics like spun glass, folding partitions that do double duty, mirrored walls giving a feeling of spaciousness, varicolored vinyl tiled floors, and a host of technological wonders from the world of plastics, structural glass, and the new decorative metals have been enlisted to give new beauty and utility to passenger spaces. You will find balconied lounges and main halls, palm courts, veranda cafes, tiled swimming pools, club bars, sun lobbies, beach decks, and conservatories. But you will not find bowling alleys, rifle ranges, stockbrokers' offices, billiard rooms, night clubs complete with floor shows, and "peacock alleys" of modish shops. These are things you came to forget! Remember? They also number among the reasons why deluxe express liners are rarely able to pay their own freight, are uneconomic.

The stateroom, the passenger's home afloat, has not been overlooked. Great strides have been made toward a true double-purpose cabin, a private living room by day that becomes a bedroom by night at the touch of buttons. Sofa beds and flush wall or ceiling pullmans give a feeling of unobstructed space for lounging and living that belies the dual purpose. At night with the push of a button the back of a sofa folds down to become a bed of foam rubber, another button brings a pullman-type berth hidden in the wall above into sleeping position. Sometimes the rooms are divided by partial partitions into two sections, one for living, another for sleeping.

Such vessels have been called "superliners in miniature," an apt description. The cargo passenger type has reached perhaps its ultimate in the Agwi and Grace lines' C2's, the Delta and American President Lines' C3's, and Alcoa's converted Victories of the Cavalier class. Abroad the cargo-passenger type is similarly exemplified by the East Asiatic Line's Danish motorships *Falstria* and *Jutlandia*, and the handsome *Pacific Empress* of Norway's Fruit Express Line.

A comfortable double cabin with private bath on the Danish *Falstria* shown at left.

VI
Smooth Sailing

Dat ole debil, *mal de mer*, is the source of more myths and legends than you can shake a marlinespike at. The simple and happy truth is that most folks are immune to the gentle roll and dip of any ship in fair weather. Conversely, let the winds howl and the seas lash with sufficient fury, and the most hard-bitten, salt-encrusted old sea dog will develop a queasy breadbasket -- and that just about regardless of the size of the ship. Small craft such as motorboats and yachts, and extremely narrow vessels like naval destroyers, are of course exceptions.

The factors in a ship that affect its gyrations are its length, beam (width), draft, hull shape, direction, and speed. The qualities of the sea that cause a ship to dance, bow, bob, and wave its antenna are the waves or chop in the immediate area, the groundswell coming from afar, and the direction of each. Exactly how a ship will behave depends on a combination of the above factors. When a ship is traveling at right angles to the motion of the sea causing the waves or groundswell to smack squarely against the sides, that ship -- any ship -- is going to roll, but if the vessel is a heavily laden cargo ship riding low in the water with plenty of weight below the surface, out of reach of the action of the waves, she will ride more steadily than a lightly laden luxury liner. Score one for the freighter.

Besides tonnage below water, plenty of beam helps to reduce roll. Freighters are called "fat ladies" because in proportion to their length they are apt to be beamier than the nimble-footed express liners. Score two for the freighter.

When a vessel is traveling with or against the motion of the sea, so that the waves strike her fore and aft, she is going to develop a pitch. She will alternately rise and fall at bow and stern. Any ship will do this. The exact amount of pitch depends on the length of the vessel compared with the distance between waves or groundswells. Modern American cargo ships designed by the Maritime Commission range from 339 feet for the shortest (C1-M-AV1) to 492 feet for the largest vessels officially classified as cargo and cargo-passenger ships, the C3's. Virtually all freighters fall within this range making them long enough to ride the crests of several waves in all but the heaviest seas. The additional length of the superliners is largely unnecessary as far as pitch is concerned. Score a tie for the freighter.

Now it happens that a vessel's course seldom lies either exactly parallel with or opposite to the motion of the sea. And the perversity of nature is such that the local, small time waves frequently run in one direction -- usually with the wind -- while the long-range groundswell comes from

another angle. Under either of these conditions the ship naturally develops a movement that is a combination of both pitch and roll, also lovingly called a corkscrew effect. But don't grab the nearest stanchion; again, it won't be serious unless there's a real blow abrewin'.

The speed of the ship, if the vessel is bucking the waves, in effect adds to their force. In different words, a faster ship smacks the waves harder and therefore rolls or pitches more. The modest twelve or fifteen knots of the freighter is not enough to add appreciably to these motions. But the twenty to thirty knot liner would probably have to swallow her dignity and slow down to the speed of the cargo ship. Score three for the freighter.

Many efforts have been made to control or reduce the natural roll and pitch of ships, with some degree of success. Such preventive measures include bilge keels, anti-rolling tanks, the Maierform hull, and gyrostabilizers. Bilge keels are fins extending almost the entire length of the ship at the "sides of the bottom" of the ship. Bilge keels, now all but universal, operate on the simple mechanical principle of adding resistance to the tendency of a ship to roll.

Anti-Rolling Tanks

Anti-rolling tanks are compartments along the sides of a ship near the bottom. The tanks on opposite sides of the ship are connected by pipes and the tanks half-filled with heavy fuel oil. When the ship rolls the oil starts to flow from the tanks on one side of the ship to those on the other, but the oil is sluggish and flows slower than the ship rolls, so that presently the oil is out of balance with the position of the ship. The ship wants to go one way and the oil wants to go the other, with the result that one more or less counter-balances the other, and rolling is retarded somewhat. Such is the principle of the Frahm Anti-Rolling Tanks developed by the Germans and installed on the *Bremen* and *Europa* (now the French *Liberte*), among others.

Gyrostabllizers

Sperry Gyrostabilizers were tested on the old U.S. destroyer *Worden* (DD 16), a 420-ton coal burner built shortly after the Spanish-American War, and on the Great Lakes steamer *Ashtabula*, vintage of 1906. Although the operations were pronounced successful, the treatment has seldom been repeated. Because of its tendency to maintain its axis of rotation despite opposing forces, a gyroscope can be used to greatly reduce the roll of a ship, but the stress and strain thrown on the hull is so great that the cure is apt to be worse than the disease, and gyrostabilizers are rarely found in ships. A few yachts and the 48,000-ton Italian liner *Conte di Savoia* have been exceptions, but even then the stabilizer has not been used to its fullest extent for fear of damage to the ship.

The Danish motorship *Jutlandia* pitches less thanks to her advanced Maierform hull. She is a modern cargo-passenger ship and a near-sister to the S.S. *Falstria*.

The Maierform Hull

The fore and aft movement of a vessel, or pitching, as distinct from the roll, is disturbing to the operation of the ship as well as to the internal comfort of the passengers. pitching causes the screws to rise out of the water at intervals and the engines to race (although engine governors control this to some extent) and the bows to pound the water with a consequent reduction in speed and efficiency. The Maieerform hull and others embodying the same principles of design tend to reduce pitching as well as to smooth the flow of water past a ship in motion, thereby increasing efficiency and speed especially when a sea is running.

A Maierform hull can be recognized by its extreme raking stem, instead of the usual vertical one, and a greatly cut off "forefoot" -- the bottom of the hull slopes up toward the bow. The result is greatly increased buoyancy when the bow dips deeper than normal into the water causing the dip to be reduced to a minimum. Maierform hulls are most frequently found on cargo vessels: score four.

Vibration

While speaking of motion a word about vibration is in order. So long as ships have engines -- and propellers -- vibration will probably be with us. Because vibration comes chiefly from the propellers rather than the engines, the shakes and rattles quite often may be limited to the after quarter, the stern of the ship. In cabin class public rooms and quarters amidships vibration is usually non-existent or negligible. But third class accommodations near the stern tell a different story. In the third class dining saloon of the 28-knot *Europa* a knife would not stay put on a plate. On cargo ships all passenger quarters are normally amidships, and vibration is imperceptible.

VII
Life on the High Seas

Who Goes on a Freighter?

These days practically everyone travels on a freighter. Convenience, the amazing degree of luxury, and, with all, a measure of economy are responsible for the choice. In words and pictures we have tried to give some idea of the pleasures and comforts experienced aboard modern freighters. Actually, the old bromide, "They must be seen to be appreciated," is exceedingly appropriate here. Even better than seeing is traveling on one. After a single trip at sea most travelers become irrepressible enthusiasts.

A catalogue of the persons you might meet would be a Who's Who of travelers everywhere. Students, artists, young couples, business men, engineers, school teachers, college professors, retired gentlemen, vacationists, and all other members of the traveling fraternity will be found among freighter *habitues*.

Special groups who plan ahead may easily book the accommodations of an entire ship. A party of twelve, for instance, traveling together on a 12-passenger vessel would virtually "own the ship." They could move in just as they might into a completely furnished city apartment, and the

ship would be their home for the duration of the voyage or cruise. Don't think this hasn't been done by college groups and others.

Never a Dull Moment

"But what do you do all day on a freighter, besides eat, sleep, and sit in deck chairs'?" someone has asked.

While the above mentioned pastimes have much to be said in their favor, surely the person who asked that question has never traveled on a modern cargo ship.

First, of course, are the games inseparably associated with the sea -- shuffleboard, deck tennis, quoits, deck bowls, medicine ball, and so forth. These games scarcely require explanation except to point out that deck bowls are played with quoits instead of balls, the behavior of which might be erratic on a ship's deck. The equipment for several of these games is almost sure to be on board, as is someone who knows the game if you do not.

A kind of horse racing seldom seen ashore is played on the deck. Six numbered wooden horses are "raced" along a track of fifteen or twenty spaces marked on the deck. If the horses are not available they can easily be cut out of cardboard. In playing, dice are thrown by a crewman or by the players in rotation, and the horses are moved according to the fall of the ivories. The horses are numbered from one to six, so if three and five show on the cubes, horses number three and five move ahead one space. It is customary to sell tickets on the different horses and to bet in this way. Often a steward or sailor stands beside the track and moves the horses as indicated by the dice.

Indoors and evenings cards, chess, checkers, cribbage, and acey-ducey are perennial favorites. Acey-ducey is the famous game played in navy wardrooms. A backgammon board is used, and the play is similar, with acey-ducey added. When you throw an ace and a duce you really hit the jack-pot.

For the serious minded there are reading, sketching, and photography. Subjects for the latter are varied and never-ending aboard ship. Rare indeed is the vessel that does not carry a substantial ship's library. On U.S. freighters you may thank the American Merchant Marine Library Association, of 45 Broadway, New York, and return the favor by sending them some of the books you have read.

Among the more social forms of group entertainment are music, dancing, and, on the cargo-passenger vessels, sometimes motion pictures. The latter may be limited to the more deluxe vessels catering to the cruise trades, but there is almost sure to be a radio and phonograph with well-stocked record albums. That great American institution, the bar, needs no explanation.

Tiled swimming pools are usually limited to the more elaborate cargo-passenger ships, but a demountable canvas pool that does very well can be put up on any vessel and usually is unless the ship's course lies in the colder latitudes.

Swimming pools bring to mind another form of ship's pool -- a numbers game resembling base ball pools and the kind played in Wall Street. The ship's pool is based on the last figure in the mileage of the ship for a day's run of twenty-four hours. The numbers from zero to nine are placed in a hat. There can be as many tickets for each number as you like. The numbers are drawn and paid for by the players. The person holding the winning number when the mileage for the day's run is posted at noon collects the kitty. The ship's pool is frequently run by a steward, and a portion of the pool may be set aside for a seamen's welfare group. There are several varieties of pools, but the principles are the same.

Chow Call

Pigeon in cream sauce with apples and jelly, oysters naturel, grilled sirloin steak to order, pineapple shortcake, cream de soubise, broiled kippers, mousseline pie, roast Maryland turkey with sage dressing and candied yams! Dishes like these are a far cry from hard-tack, bully beef, and dried beans -- the traditional fare of the seafaring man. But that was before the dawn of refrigeration, frozen foods, and seamen's unions. The above appetizers, entrees, and desserts were chosen at random from the menus of the S.S. *Fleurus*, 1,100 tons; the M.S. *Jutlandia*, 13,000 tons; and the S.S. *Morning Star*, circa 10,000 tons.

On freighters and combination ships you may expect and will receive meals fully as varied as those served on expensive passenger liners. The menu may not be as long as your arm, but it is likely to reach to your elbow. The meals will be well chosen, well cooked, and nicely served. You eat with the officers and receive the same substantial dishes as they. The menu will include many an exotic creation that you never dreamed a freighter could offer. Do not look for the impossible, but do expect an inviting menu and seconds if you dare.

Even the diminutive S.S. *Fleurus*, Canadian cruise and cargo ship of 1,120 tons, serves a 6-course dinner worthy of a transatlantic liner many times her girth.

Here is the menu for September 28, 1948, aboard a 12-passenger freighter of the Waterman Line:

Breakfast: chilled orange juice, assorted dry cereals, grilled ham, eggs to order, fried potatoes, hominy grits, hot cakes with syrup, coffee, milk, and tea; *lunch:* pickles, celery, radishes, chicken noodle soup, roast Maryland turkey, sage dressing, baked Virginia ham, cranberry sauce, mashed potatoes, peas and carrots, fried cauliflower, candied yams, apple pie a la mode, coffee, milk, and hot tea; *dinner:* combination salad, grilled sirloin steak to order, veal fricassee, French fried potatoes, string beans, cream corn, asparagus, pineapple shortcake, coffee, and lemonade.

Three squares a day on a cargo passenger ship of the *Aktieselskabet Det Ostasiatiske Compagni*, better known in America as the East Asiatic Line, add up to the following:

Breakfast: grapefruit, stewed apricots, stewed prunes, orange juice, grapefruit juice, tomato juice, fresh fruit, corn flakes, puffed rice, all bran, oatmeal, broiled kippers, broiled haddock, grilled ham, grilled bacon, steaks and chops, scrambled eggs, poached eggs, bacon and eggs, ham and eggs, boiled eggs, omelets, assorted bread, rolls, toast, and marmalade, coffee, tea, cocoa, and milk; *lunch* is less exhausting: cream de soubise, Vienna sausages with potato salad,

Hungarian goulash with mashed potatoes, kidney with bacon, crepinet of veal, sardines a la maison, stuffed green pepper, macaroni, baked beans, and meat, vegetable and fish pie, cold buffet, which, because this is a Danish ship, we will call *Smorgasbord*, as follows -- assorted herrings, sardines, lobster in mayonnaise, toast, crabmeat smoked eel, smoked pork, roast pigeon in cream, boiled ham, roast beef, corned beef, ox tongue, salmon in mayonnaise, assorted sausages, roast pork, roast veal, boiled breast of beef, liver paste, smoked fillet of beef, beef Tartar, herring salad, Waldorf salad, cole slaw, potato salad, Italian salad, and for dessert, cheese and biscuit, cherry and peach pie, and princess and sago pudding, coffee; *dinner:* spinach soup, fillet of flounder a la Orley, roast veal Milanaise, assorted vegetables, pomme de terre assorted, cheese, crackers, olives, apple puree with cream, and coffee. You're not obliged to eat it all, but it's all there if you want it.

Fashion Note

Informality is the rule on freighter voyages, making it no problem at all to decide what clothes to take along. Sports clothes are the answer.

Northern and southern climates both require plenty of warm things; the tropics also demand light, cool attire.

Men need a sweater, slacks, polo-shirts (preferably dark), a trench coat or topcoat, play shorts, and bathing suit. These will do on the ship. For shore visits, white flannels are good in summer when hitting the night spots; linens suggest themselves for the tropics. Evening dress will come in handy if your ship is a cargo-passenger liner and for possible excursions ashore.

On shipboard women need slack suits, sport pajamas, and playsuits for lounging on deck. The convertible shirt-over-shorts with jacket-over-halter top is good. Sports clothes consisting of sweaters and skirts for cool weather and cotton dresses for warm, bandannas or ribbons to keep hair in place, a topcoat, and bathing suit. An evening dress and accessories are good for shore trips and the finer cargo-passenger ships. Even if you prefer nightgowns, take pajamas. you'll find them convenient for strolling on deck at night, for watching your ship pull into harbor in the early morning hours, or for getting up and peering through the night when something worthwhile is going on.

Both men and women will find sun-glasses a great asset, particularly in southern ports. A camera is almost a necessity, and binoculars are often a great delight. if you're handy with a harmonica, ukelele, or guitar it could be a welcome accessory on moonlit nights.

Don't forget rubbers -- nothing's better when you stand on the captain's bridge defying the rain and watching the spray blowing over the ship, or while wandering around the decks after a refreshing downpour. For other times rubber-soled sports shoes may be recommended for men and women, alike.

There is no need to carry along a movie star's wardrobe, yet there will be no reason to skimp. Once aboard your ship you'll not be living out of a suitcase. With drawers and wardrobe space aplenty, you'll be able to unpack, stow your gear, and live as if you were in an apartment or a

hotel suite.

One of the most important rooms on any ship is the dining room. This combination dining room and lounge serves passengers of the S.S. *Mormacgulf*, a C2 cargo ship.

VIII
Ship's Business

One of the greatest delights of travel by cargo ship is the informality, even intimacy, that exists between passengers and the ship's complement. The officers are approachable. You need not wait for an invitation to speak to them. They appreciate it when a passenger shows an interest in what they are doing and will be happy to explain it and to show you different parts of the ship.

The complement of a typical cargo ship carrying twelve passengers will probably include the following:

Deck Department	**Engine Department**	**Stewards Department**
Captain	Chief Engineer	Chief Steward
1st Mate	1st Asst. Engineer	Chief Cook
2nd Mate	2nd Asst. Engineer	2nd Cook & Baker
3rd Mate	3rd Asst. Engineer	Asst. Cook
Jr. 3rd Mate	Jr. 3rd Asst. Engineer	Messmen (9)
Cadet	Jr. Engineers (3)	
Radio operator	Cadet	
Purser-Pharmacist	Electricians (2)	
Boatswain	Oilers (3)	
Carpenter	Firemen (3)	
Maintenance Men	Wipers (3)	
Seamen, A.B. (6)	(Note: Cadets are student officers attending a maritime academy;	
Seamen, O.S. (3)	A.B. means Able Bodied Seamen, hence the term, "A.B.'s";	
	O.S. means ordinary Seamen.)	

The captain, of course, although nominally a member of the deck is complete master of the ship at all times. At sea his word is law to both crew members and passengers. All other members of the complement are organized as shown in the table above, and are responsible to their First Mate (often called First officer or Chief officer or Chief), who in turn, is responsible solely to the Captain. The deck department has charge of navigation and cargo stowage, and all related equipment; the engine department takes care of the engine and fire rooms; while the stewards department is responsible for the galley (ship's kitchen), dining rooms, and living spaces of officers, passengers, and crew.

Tradition, custom, and the necessity for a good organization have assigned specific duties and working hours to the officers. Thus, third mates and third assistant engineers usually stand the eight to twelve watch, morning and night; second mates and second assistant engineers take the lonesome hours of twelve to four in the morning and again in the heat of the afternoon; first

mates and first assistant engineers have the four to eight watch twice daily. The Captain and Chief Engineer are not assigned regular watches, but it is not unusual for them to be on the bridge or in the engine room for hours or days on end should an emergency of any kind arise.

The radar console of Isbrandtsen Lines' S.S. *Flying Clipper*. Many freighters are already equipped with this great aid to navigation that can "see" through fog.

The ship is steered by the helmsman who follows a course given him by the officer on watch. The course is stated in degrees. It might be simply "Course zero-six-zero." The romantic designations of the old fashioned magnetic compass are no longer used. "Northeast by east, one-quarter east" might sound saltier to a landlubber, but it's too cumbersome and not accurate enough for modern navigation. Due north is 360 or "0," east is "090, " south is "180, " and west is "270," and so forth. Generally the helmsman keeps the ship on course by watching the compass. He may or may not have a clear view of the sea. It is the duty of lookouts and the officers to warn of obstacles or other vessels and to tell the helmsman when to change course.

Each day during the morning, if the sun is shining and the ship is under way, you may see one of the deck officers, or several of them, on the wing of the bridge "shooting the sun." By means of a sextant he is determining the altitude of the sun in degrees above the horizon. From this figure, mathematic tables, and a series of calculations the latitude and longitude of the ship and the distance she has covered are learned. But what if the sun doesn't shine? Well, there may be star sights at night, and failing those, the officers of a modern vessel may fix her position by dead reckoning, by radio direction finder (RDF) or by loran. Dead reckoning is an estimate of the vessel's position based on her speed, the time she has traveled, ocean currents, the wind, and other forces. A "fix" by radio direction finder is a determination of the vessel's position in relation to certain radio stations ashore whose positions are known. Loran is a still more modern way to accomplish the same result. Both RDF and loran are limited to certain areas of radio coverage.

Today nearly all freighters are equipped with a radio direction finder, and many have loran and radar -- the radio beam that sees through fog.

IX
Facts about Ships and the Sea

How Big Is a Ship?

You may hear someone say that the S.S. *African Star* is 465 feet long, another person declare that she is 492 feet long, and later read, yourself, that she is 469 feet long. This disagreement would not be a matter of inaccuracy on somebody's part; all three figures might be correct. They would simply be figures for the different "kinds of length" used for ships. The longest figure would be "length over all," or maximum length, and the other two figures would be the "length between perpendiculars" (length from the forward perpendicular to the aft perpendicular) and the measurement of the ship at its waterline when loaded, respectively.

The size of a vessel is also expressed in tons, but there are about nine different kinds of tonnage. Displacement tonnage is the actual weight of the vessel, the amount of water displaced, but there is "standard light displacement," used chiefly for naval vessels, "builder's light displacement" referring to a more or less empty vessel, and "full load displacement" which includes cargo, passengers, stores, fuel, water and so forth. The tonnage figure perhaps most often quoted for passenger ships is "gross tons." It means not tons at all but is a measurement of the entire enclosed space within a ship expressed in "tons" of 100 cubic feet each, after subtracting certain spaces. "Net tonnage" is figured the same as gross tonnage but with certain additional spaces such as crews quarters deducted. "Registered tonnage" may be either "gross registered tonnage" or "net registered tonnage." "Deadweight tonnage" is the carrying capacity of a ship in long tons -- 2,240 pounds. "Cargo deadweight tonnage" is the number of tons remaining after deducting fuel, water, stores, and certain other items.

Wind Velocities

Light wind	7 miles per hour
Light breeze	11 miles per hour
Gentle breeze	16 miles per hour
Moderate breeze	20 miles per hour
Fresh breeze	25 miles per hour
Half gale	30 miles per hour
Moderate gale	35 miles per hour
Fresh gale	45 miles per hour
Strong gale	50 miles per hour
Whole gale	60 miles per hour
Storm	70 miles per hour
Hurricane	80 miles per hour

Front bridge wing, crow's nest, or the bow, the look-out casts a sharp eye.

Scale of Sea Turbulence

Scale	Description	Height of Sea (trough to crest)
0	Calm	0
1	Calm	0
2	Smooth sea	1 to 2 feet
3	Slight sea	2 to 3 feet
4	Moderate sea	3 to 5 feet
5	Rather rough sea	5 to 8 feet
6	Rough sea	8 to 12 feet
7	High sea	12 to 20 feet
8	Very high sea	20 to 40 feet
9	Precipitous sea	40 feet and over

Scale of Fog and Visibility

Scale	Description	Condition
0	Dense fog	no visibility at 50 yards
1	Thick fog	no visibility at 300 yards
2	Fog	no visibility at 600 yards
3	Moderate fog	no visibility at 1/2 mile
4	Thin fog or mist	visibility 1 mile
5	Visibility poor	visibility 2 miles
6	Visibility moderate	up to 5 miles
7	Visibility good	up to 10 miles
8	Visibility very good	up to 30 miles
9	Visibility exceptional	over 30 miles

Marlinspike seamanship is part of the work of every deck man. He can teach you a lot about knots and rope-work if you're interested.

Swimming pools like that of the American president Lines' *President Monroe*, above, are found on many passenger-cargo vessels; below is the library of the same ship.

INSIDE BACK COVER:
The radio room of the Isbrandtsen Lines' S.S. *Flying Clipper* is an elaborate installation; below, the forest of pipes and valves in engine room of same vessel.

Replicated by Dick Atlee, April 2013