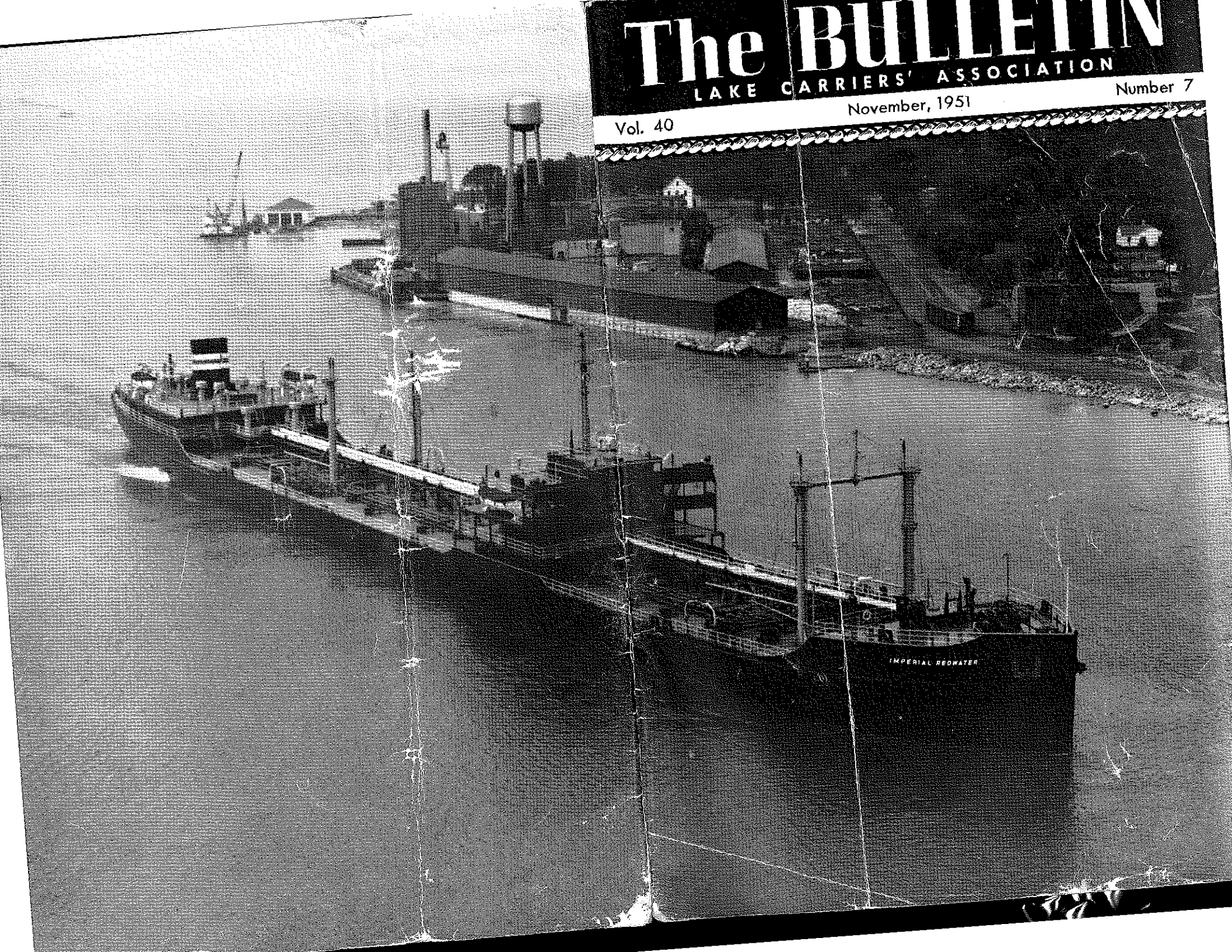
The BULLETIN
LAKE CARRIERS' ASSOCIATION

Vol. 40 November, 1951 Number 7



1. The material things we want, have to be produced by somebody,—*at a cost.*

2. Government doesn't produce anything. So, when government "gives" something away it must first take that something away *from* its people.

3. Our jobs come from customers. The only real job security is customer security. That's because in our system, where the customer is *free* to choose one or another or none out of the many products offered, sales and jobs depend on getting and keeping the customer.

4. This customer security, or *job security* for the worker is attained only when management succeeds in guiding workers and investors toward accomplishing the things which the customers *want* done.

5. The *amount* of money in the bank or in the pay envelope doesn't measure the true material welfare of any one of us. The only real measure is how much that money will *buy*.

6. Wages are the *biggest* cost in any product. Wage increases across an industry or the whole country—which are general for everybody and not in proportion to the added productivity—simply raise costs and prices and do not add to the welfare of the worker.

7. The "greatest good for the greatest number" simply means, the *most goods* for the greatest number. And that means the greatest productivity per worker.

8. All productivity comes from muscular and mental *human* energy being applied to natural resources, such as coal, iron, copper, tin, oil, lumber and farm land.

9. We can *not* increase the *natural resources* and *human energy* available at any one time. We *can* increase the *tools* available, if we offer an attractive reward.

10. There are the *most tools* per worker—and each of those tools is most *productive*—where there is a worthwhile urge for individuals and groups to compete for the favor of millions of citizens who are individually free to buy and sell and work and vote as they please.

Adapted from "Ten Pillars of Wisdom," American Economic Foundation

Volume 40 NOVEMBER 1951 *Number 7*

Huge Mining Expansion on Superior Range Promises Extended Ore Supply

(*Editor's note*: This article has been specially prepared for the Bulletin by M. D. Harbaugh, Sec. and V. P. of Lake Superior Iron Ore Ass'n. an acknowledged authority on the subject. Widespread interest in the extent of our ore reserves prompted us to ask him to furnish this material.)

Of the natural resources out of which the wealth and power of the United States have been created, iron ore has been one of the indispensables. In the early history of this country steel was rare, and iron was made in many small furnaces scattered widely throughout the land, each making a few tons per day from local ores, using charcoal for fuel and falling water to create the blast. Interesting remains of these early furnaces and forges may be observed in many places from New England to Alabama, and in Ohio, Michigan and elsewhere.

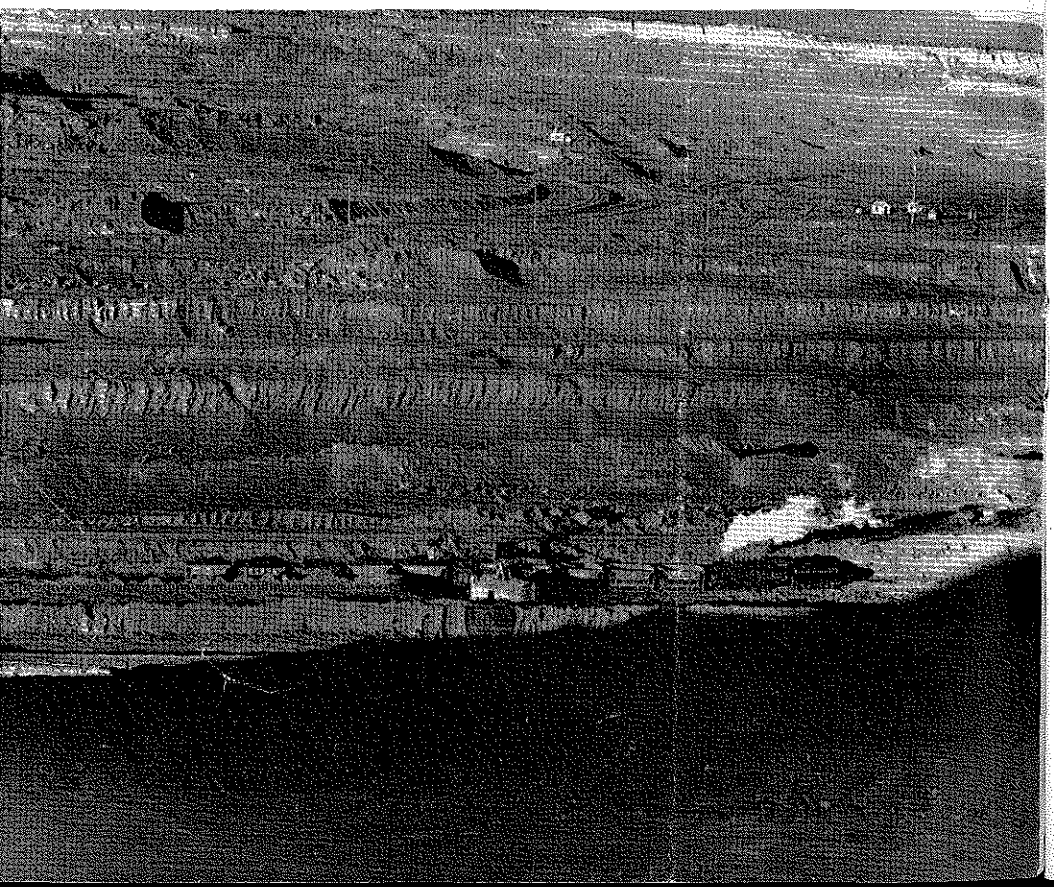
With the discovery of iron ore in the upper peninsula of Michigan over a hundred years ago, and the development a few years later of the Bessemer process for making steel, the industrial era in America got under way. When the Mesaba (which means giant) Range began pouring out its long hidden ores near the end of the last century, the steel industry came into its stride. In half a century, steel ingot production in the United States increased nearly ten fold—from 10 million gross tons in 1900 to 97 million in 1950. This year it will be about 105 million, and capacity will reach nearly 120 million tons in 1953.

The U. S. ranges of the Lake Superior district had shipped about 2,640 million gross tons up to the beginning of this year, and the Canadian ranges about 16 million tons. To this total will be added 95 to 96 million tons or more this year —an all-time record—and the ensuing years are expected to require even greater tonnages. The anticipated lake movement of 90 million tons this season is second only to that of the peak war year, 1942. Inadequate vessel capacity prevents

the lake movement from being a larger part of the total, for the extraordinary all-rail movement of the last two years is wholly from necessity. However, many large and fast ore carriers being added to the lake fleet are rapidly bringing its capacity into line with requirements —a fact which speaks for itself as to the confidence of the lake shipping industry in its own future.

It is obvious that steel plays a tremendous and vital role in our national economy and security and there is no evidence that this role in anywise is likely to diminish. If we must have more and more steel for our normal requirements and for national defense, we must have more and more iron ore—a matter that has given some people considerable concern in the last decade.

Billions of tons of rich iron ore have come down the lakes from open pit mines like the Mahoning-Rust Mine shown here. This article describes our ore resources in terms of today and tomorrow, predicting a continuation of the ore movement from northern ranges for many generations to come.



There have been dire predictions by some observers that reserves in the Lake Superior district—which normally has supplied over 80% of the nation's ore requirements—are rapidly approaching exhaustion, that steel plants would have to be moved to the seaboard—east and south, and that our national self-sufficiency in this essential raw material is near its end. Such a state of affairs would indeed be serious, particularly to the millions of our population whose lives center about the industrial "Heartland of America", in the production and transportation of the raw materials for steel and in the production of steel and the hosts of products made from it.

Fortunately, the situation, while properly a matter of concern—especially from the standpoint of national security—is not alarming, principally because the producers and consumers of iron ore, who are a pretty vigorous lot, are not disposed to passively allow the "course of events" to put them out of business.

It is true that some of the greatest Lake Superior mines are about exhausted, that the drain on reserves of the 800 million tons shipped in the last decade has been enormous, that the ability of industry to sustain this high rate of output and to expand production on short notice has been severely impaired. In order rapidly to recoup and enhance the productive capacity of the Lake Superior district, an expansion program of great magnitude is now under way, new sources of ore-supply being created from three main sources:

1. Development of new, and often deep, open pit and underground mines, to produce ore from deposits, heretofore only slightly explored or even unknown, some of which are at depths previously deemed prohibitive for mining by methods now to be employed.
2. New discoveries — both in the U. S. and Canadian Lake Superior ranges—resulting from intensive exploration which the great need and demand for ore has stimulated.
3. Concentration of "taconite" and other types of "iron formation"— the low grade "mother rock" in which the "natural" ores occur.

And supplementing their programs in the Lake Superior district, the same interests are developing great reserves of recent discovery in the Labrador Peninsula, in Venezuela and in Liberia, supplies from which will relieve the excessive burden on the Lake Superior district and will conserve its ores, in part at least, for possible emergency demands.

While a substantial part of the expansion in steel capacity is at plants now dependent on Lake Superior ores, some of the largest new units are being built expressly for utilizing imported ores from the new foreign sources.

Of domestic ore supplies outside the Lake Superior district, production from the eastern states of New York, New Jersey and Pennsylvania, now amounting to somewhat less than 5 million tons annually, moves principally to eastern furnaces which use also imported ores, and in part to furnaces which mainly are supplied from the Lake Superior district. New mines are now being developed in this Eastern district, and reserves there, while not yet well defined, appear adequate to maintain and to expand output within moderate limits.

In the south, the steel industry which is principally in Alabama but includes also plants in eastern Texas, is supplied from ores mined in Alabama, Georgia and Texas supplemented by small imports, heretofore principally from Mexico but to be augmented from new foreign sources above noted. This southern steel industry is essentially self-contained as to raw materials including coal, and has ore reserves adequate to sustain it for an indefinitely long period. High-grade imported ores are usually for open hearth use or to increase blast furnace capacity when needed. Output of southern ores has exceeded 9 million tons in only one year to date. However, it should be noted that the principal southern ores are relatively low grade—about 35% in iron—and are not suitable for use in furnaces dependent on Lake Superior ores.

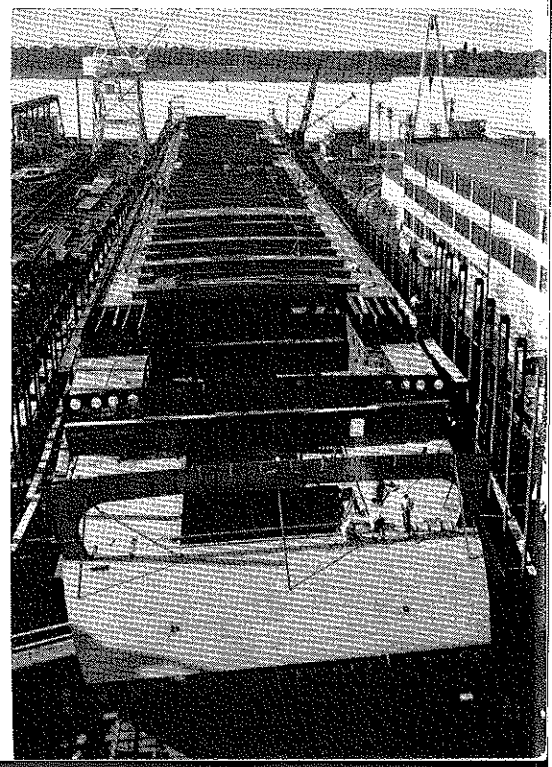
Miss Barbara Davis, receptionist at Oglebay, Norton & Co., admires a plaque and souvenir beanpot adorning the wall in that company's office in Cleveland. The plaque reads: "This casting was made from the first pig iron produced from taconite pellets and was presented by the University of Minnesota on May 20, 1948, in recognition of the contribution of Oglebay, Norton and Company toward the foundation of the new taconite industry which, it is expected, will perpetuate indefinitely the production of iron ore in the Lake Superior District. This casting is a replica of the famous Lynn Pot which was the first iron casting made in America in 1642 by the Saugus Iron Works at Lynn, Massachusetts. The taconite rock was quarried by Oglebay, Norton and Company, Manager, from properties of Reserve Mining Company and then crushed, concentrated, pelletized and smelted at the Mines Experiment Station and from the first metal produced, the casting was made."

The steel industry in the West has been expanded greatly since the beginning of World War II. Its blast furnaces, located in Colorado, Utah and California, are supplied with ores almost wholly from those states, in amounts which (to date) have not exceeded 4.5 million tons annually. Reserves in these deposits are substantial, and wholly adequate to meet western demands (which will doubtless increase) for many years. Coking coal is a problem for some plants, however.

Of the domestic iron ore shipments of 98 million gross tons in 1950, the Lake Superior district (U.S. ranges only) supplied nearly 82%, the southern district slightly less than 9%, and the balance was nearly equally divided between the eastern and western districts.

Imports last year reached a new high of 8.3 million tons, mainly from the Canadian Lake Superior ranges and from Chile, Sweden, Brazil, and North Africa. Imports, particularly from the Labrador area and from Venezuela, are destined to play a great future role in supplying American furnaces. Also the potential reserves in the Canadian Lake Superior ranges—Steep Rock and Michipicoten—which as yet are not fully explored, may be far greater than heretofore estimated. Intensive exploration and increased development there by both American and Canadian interests are important to consumers in the lakes region, for this tonnage is part of the common supply which feeds both U. S. and Canadian furnaces in this area. Exports of U. S. Lake Superior ores to supply Canadian furnaces were about 2.5 million tons last year, compared to imports from the Canadian ranges of somewhat less than 2 million tons. However, this situation will change radically within the next few years as Canadian output—including that from Labrador—expands greatly.

"Hull 189" which will sail the lakes in 1952 as the EDWARD B. GREENE, newest of the Cleveland Cliffs fleet, rapidly materializes in the Toledo yard of American Ship Building Company.



Labrador is being prepared to produce at least 10 million tons annually, with provisions to double that when necessary. Reserves there are very large—present estimates of near half a billion tons being considered conservative. This ore, which is comparable in nature and origin to high grade Lake Superior ores, will move both to lower lakes and to eastern furnaces, and some doubtless will go to Europe.

That the Lake Superior district will long continue to produce large tonnages of ore of normal commercial grades is at least indicated by the record of shipments in relation to depletion of known reserves over the past 36 years. While reserves have declined about 540 million tons from the 1,700 million tons known in 1915, shipments during that time have exceeded 1,900 million tons. In other words, over 1,360 million tons have been added to what was known in 1915, through discoveries by drilling and in the course of mining, through improved technology in mining, beneficiation and furnace practices, and by changing economic conditions. No one expects this proportion of additions to continue indefinitely, but the present exploration and development programs indicate that shipments of natural commercial ores may be expected to continue at relatively high rates for many years.

Most significant for the long range outlook, is the program for making very high grade furnace feed from the abundant low grade iron bearing rock of the Lake Superior ranges—the "taconite" and other types of "iron formation". Therein lie iron reserves sufficient to sustain American demands for its furnaces for an almost indefinitely long period. Both Minnesota and Michigan have enacted special tax incentive legislation to stimulate these developments, and large scale operations are expected to be in production within a few years. Reserves are measurable in billions of tons.

So, it is clear that iron ore in abundance, both at home and in foreign lands, is being made ready to supply American furnaces—in whatever quantities may be required. The Great Lakes will long continue to be the great arteries for transporting ore, in even larger volumes than in the past. And those millions of people whose lives and economic well-being depend on lake shipping and the vast industrial activities related to steel production in the lower lakes region—"the Heartland of America"—can look forward with assurance to a productive future that should persist with great vigor for as long as now seems feasible to contemplate.

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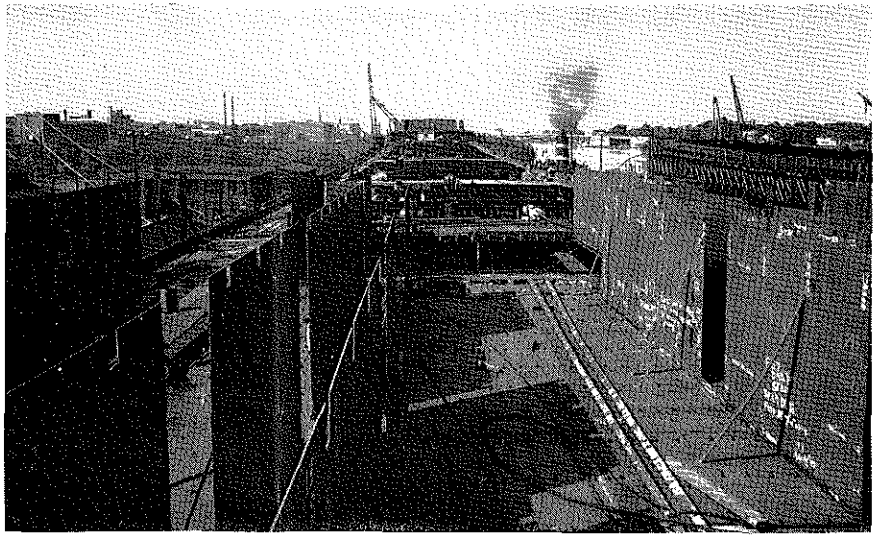

First of the three new Pittsburgh ships to be completed will be "Hull 867", shown here after 42 weeks of work at the Lorain yard of American Ship Building Co. There is lively conjecture in shipping circles as to whether this ship or Cleveland Cliffs' E. B. GREENE, going up at Toledo, will be first to join the Great Lakes fleet.

Scoreboard for the 1951 Season

Earlier distribution of the November BULLETIN makes it impossible to include the customary "Scoreboard." However, at press-time, the ore movement had already passed the mark for all of 1950 and seemed certain to exceed ninety million tons, for a new peace-time record, a real triumph for Great Lakes ships and men.

Winter Employment Program Ready

A program designed to assist Great Lakes seamen in obtaining employment during the winter has just been announced. Emphasis of this program is with men who now hold occupational deferments granted by selective service boards.

A bulletin outlining the procedure to be followed in making application for winter employment, together with postcards to be used in keeping selective boards advised concerning winter employment and mailing address, are being placed aboard vessels. Remember, it is essential that men holding occupational deferments advise their selective service boards promptly concerning change in address and status.

Biographies of Great Lakes Fleets . . . The Shenango Furnace Co.

THE HISTORY of the Shenango fleet goes back forty-five years, to the time when The Shenango Furnace Company of Pittsburgh, owning blast furnaces in Pennsylvania, and iron ore mines in Minnesota, formed the Shenango Steamship Company in 1906 to transport its ore.

The WILLIAM P. SNYDER was built in 1906, and the WILPEN in 1907, the name Wilpen having been derived from the name of William Penn Snyder, founder and president of both companies. Much interest was aroused when Mr. Snyder had an orchestrian installed in the forward end of the WILPEN, a unique feature for any ship. It was a mechanically operated, full-sized band.

The late Harvey H. Brown was associated with Mr. Snyder in the Shenango Steamship Company, and his office managed these ships until The Shenango Furnace Company opened its Cleveland office in 1912. The above named vessels were sold in 1926, and the Shenango Steamship Company was liquidated, but these two fine ships are still operating under other names today.

In 1909, the late Mr. Snyder commenced the building of ships for The Shenango Furnace Company. He negotiated a most unusual trade of iron ore for ship steel with a very large steel company, and then traded this steel to the late A. C. Pessano, President of Great Lakes Engineering Works, for his first large ship, the SHENANGO. This unique deal was so successful that in 1911 he traded a sizable tonnage of iron ore for sufficient steel to build the two largest lake vessels ever built up to that time, the JAMES M. SCHOONMAKER, and WILLIAM P. SNYDER, JR. The SHENANGO, 607 ft. overall, was (when built) one of only a half dozen ships exceeding 600 ft. in overall length.

The sister ships, SCHOONMAKER and SNYDER, JR., 617 ft. overall, 64 ft. beam and 33 ft. molded depth, were the largest bulk freighters on the lakes, in fact, in the world for many years, and carried record cargoes of ore, coal and grain, making excellent time with their 2500 H.P. quad engines and three Scotch boilers. These ships were constructed under the direction of Wm. F. Riley, Marine Superintendent, now retired.

No effort was spared in the design, construction and equipment. The extras put in these vessels in

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Three sturdy freighters comprise the Shenango Fleet today — WILLIAM P. SNYDER, JR. built in 1912, is 617 ft. long and has 15,400 gross tons capacity. Center: COL. JAMES M. SCHOONMAKER, built in 1911, is also 617 ft. long and matches the SNYDER'S capacity. The SHENANGO, built in 1909, is 607 feet long, and can load 12,750 gross tons.

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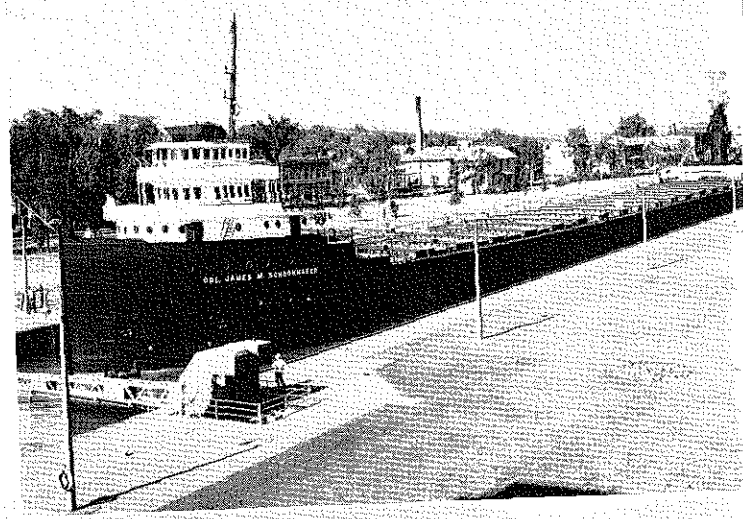
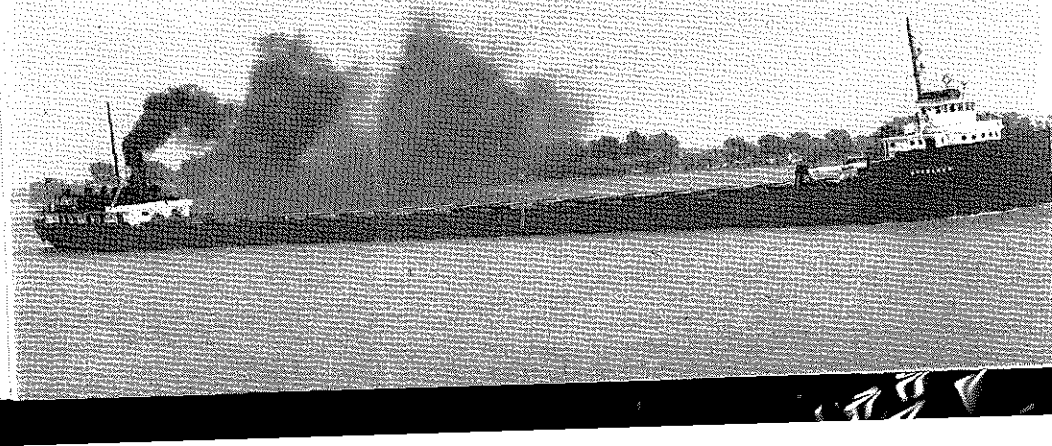
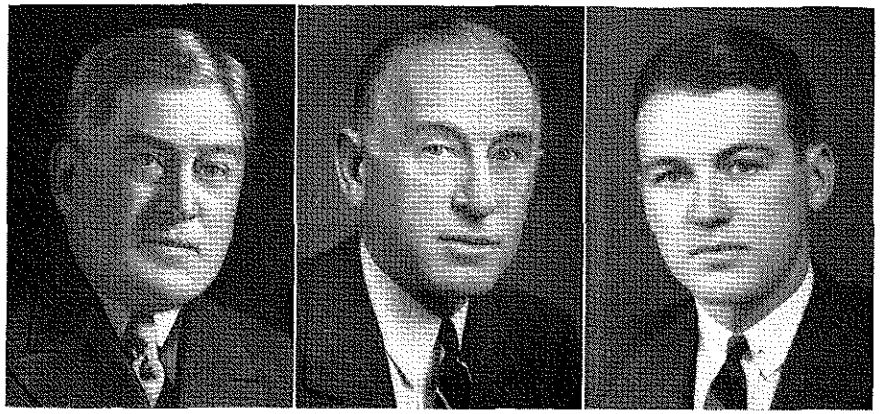






The history of the Shenango fleet is wrapped around three generations of men bearing the same name: left to right, Wm. Penn Snyder, founder and president of the original Shenango Furnace Co. and Shenango Steamship Co. who died in 1921; his son, Wm. P. Snyder, Jr., President now, and W. P. Snyder III, grandson and a director of LCA.

the matter of size, material and quality have proven their worth. The guest quarters were exceptional when built, and remain so today.

They were the first bulk freighters equipped with wireless telegraph, providing the only ship communication during the unprecedented storm of November 1913. An unforgettable wireless message received November 10, 1913: "Passed large freighter sunk in big gale. No marks or anything to identify her. Hull is black. She has turned completely turtle. Forward end about 20 ft. above water. Balance steamer completely submerged. Lies direct in downbound course. 11 miles N.N.E. Fort Gratiot Light and 7 miles from west shore. Capt. J. F. Jones, Stmr. SHENANGO."

The sunken vessel was the Stmr. CHAS. S. PRICE. Information was promptly given to all possible vessels.

The late C. D. Dyer of Pittsburgh, was Vice-President during the early years and long represented the company on the Boards of the Lake Carriers' and Great Lakes Protective Associations.

W. P. Snyder, founder and chairman, died in 1921; his son, Wm. P. Snyder, Jr. having been elected president in 1918, then became head of the company. Under his direction a program was started to improve the safety, carrying capacity, economy and speed of the company's ships.

Radiotelephones, direction finders, gyrocompasses, and radar were

installed as well as solid "Wood" type hatches; all tank tops and side tanks were renewed.

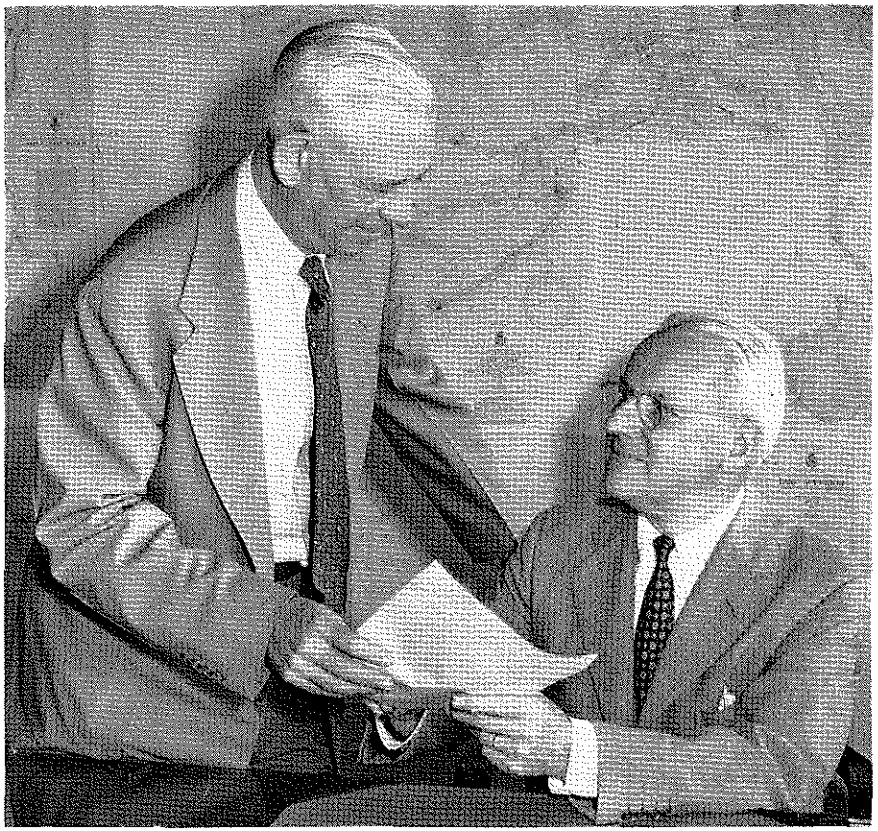
The ships now average, on the deepest allowable draft, about as follows in carrying capacity: SNYDER, JR., 15,400 gross tons, SCHOONMAKER, 15,350 gross tons and SHENANGO, 12,750 gross tons. Both of the larger ships have carried approximately 15,000 net tons of coal and cargoes comprising well over 500,000 bushels of wheat.

THE WILLIAM P. SNYDER, JR. has been repowered and reboilered with water tube boilers, stokers and a 4500 H.P. Uniflow engine, increasing speed about 20%.

Next new installations will see turbines, water tube boilers and oil burners placed in the SHENANGO and SCHOONMAKER for added speed and increased season carrying capacity. This extensive work is being done under the direction of P. J. Riley, Marine Superintendent, Cleveland, who followed his father in this position.

C. J. Peck, Vice-President in Cleveland, is in charge of Lake Transportation. A. W. Reno handles

P. J. "Pete" Riley, marine superintendent of the fleet, swaps yarns with his father, now retired, who preceded him in that position.



Seated at his desk in the Shenango offices, Union Commerce bldg., Cleveland, is Claude J. Peck, Vice President, discussing a dispatching problem with A. W. Reno who handles traffic.

the traffic.

Fine records are being made by the ships under command of:

SNYDER, JR.

Captain	Linwood I. Shaw
Chief Engineer	Albert Fritz

SCHOONMAKER

Captain	Ralph L. Doyle
Chief Engineer	John Mansika

SHENANGO

Captain	Peter A. Fischette
Chief Engineer	Charles J. Volk

At the executive offices in Pittsburgh, are W. P. Snyder, Jr. President, H. M. Wilson, Vice President, and W. P. Snyder, III, Vice President, who follows his grandfather and father in the business, and is a Director of LCA.

VHF Studied by LCA as Supplement to Present Radiotelephone System

THERE exists today on the Great Lakes the largest universal integrated maritime mobile radiotelephone system in the world. This system includes over 1200 vessels of Canadian and United States registry, a large number of United States Coast Guard stations and 14 United States and Canadian public correspondence shore stations. In addition to meeting the requirements for safety and navigational communication, there are provided through the public correspondence shore stations, facilities for the handling of business and other types of communication between ships and all who can be reached by the nationwide land telephone facilities.

In the band between 2000 and 3000 kilocycles, commonly referred to as the MF (medium frequency) band, there are assigned for use on the Great Lakes, a total of 5 channels, each being designated for a special purpose. (See Table 1, below):

Table 1: Great Lakes MF Radio Telephone Channel Allocations

Channel	Purpose
51 (2182 kc)	Safety-calling monitored continuously by a loud speaker on every large Great Lakes vessel. Used for distress, safety announcements, for establishing contact with other ships and shore stations and for safety communications with the Coast Guard.
40 (2003 kc)	Used for all ship to ship communication and for contacting and communicating with the Coast Guard at the Soo.
30 (2158-2550 kc)	Used for ship-shore public correspondence by all large United States vessels.
38 (2206-2582 kc)	Used by all Canadian large vessels for communicating with public correspondence shore stations.
39 (2118-2514 kc)	Used by the smaller vessels of both nations and some large ones for communicating with public correspondence shore stations.

The fact that Channel 51 (2182 kc) is continuously monitored with a loud speaker at all ship and shore stations, enables any two stations to make contact with each other, following which both switch to the appropriate working channel, that is, to Channel 40 (2003 kc) if ship

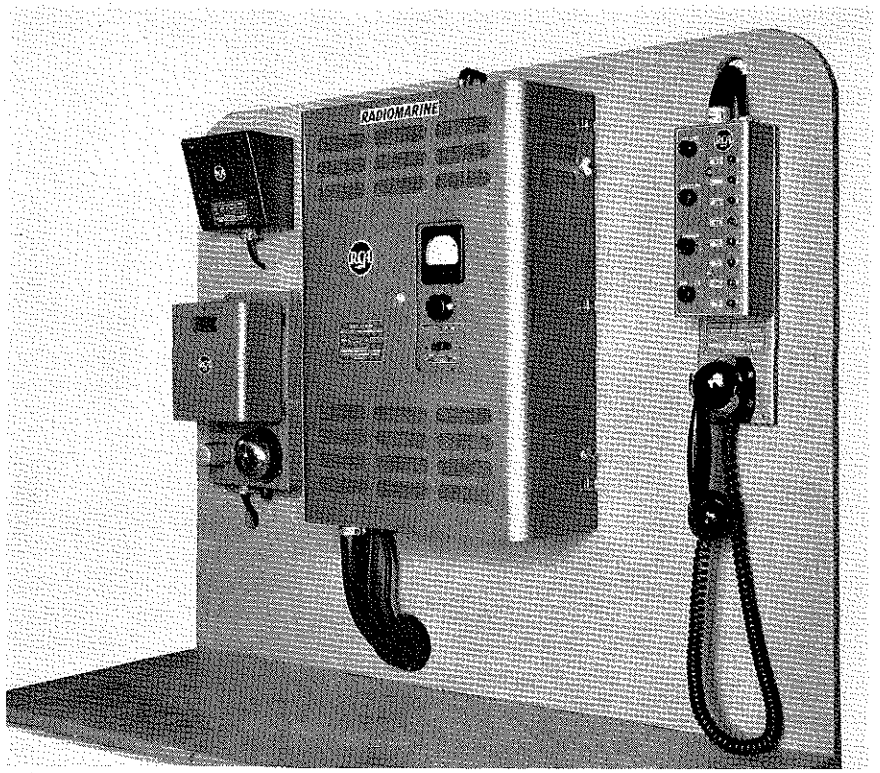
to ship communication is involved or Channel 30, 38, or 39 if communication is to be between a ship and a public correspondence shore station. This is called the "calling working channel method of operation."

In addition to the five-channel medium frequency system just described, most United States public correspondence shore stations and many large and small vessels are equipped with high frequency channels in the 3000, 6000, and 8000 kilocycle bands, these being designated as Channels 60, 20 and 10 respectively. The propagation characteristics of frequencies are such that they make possible communication between a shore station and vessels throughout the entire Great Lakes area. On the three high frequency channels contact between ship and shore stations is made directly on the channel used for inter-communication. Ships are contacted by the aid of selection ringers. Shore stations monitor these channels with loud speakers, therefore they may be contacted by voice.

During recent years, the number of Great Lakes vessels equipped for radiotelephony has increased very substantially. Also, the usefulness of radiotelephony and, therefore the time each station is on the air has increased. In addition, in 1947 at the Atlantic City Radio Conference, it was decided to allocate 2182 kc., Great Lakes, Channel 51, on a world-wide basis, and today there are a number of vessels operating along the seacoasts and on the St. Lawrence River equipped for this channel. It may be expected that this number will increase. Therefore, in time there will be considerable use of 2182 kc in areas other than the Great Lakes.

All of these factors combine to produce greatly increased interference and congestion. This has led Lake Carriers' Ass'n. to study the possibility of developing a supplemental system capable of relieving the present MF system of a substantial portion of the traffic now handled and of serving functions not now served because of the limited number of MF channels available. An allocating structure for such a system now exists as a result of recent actions taken by the Federal Communications Commission. There is now available to the Great Lakes a new supplemental system using frequencies in the vicinity of 150 megacycles (150,000 kilocycles). These frequencies are in what is commonly known as the VHF (very high frequency) band.

Lake Carriers' Ass'n., with the assistance of equipment furnished by the U. S. Coast Guard began the study of the potentialities of VHF radiotelephony in 1946. This study along with participation in proceedings before the Federal Communications Commission has continued to date. It has been found that VHF can yield highly reliable communication between ships up to



RCA's 8-channel VHF Radio Telephone ship set with push button channel selection control box, hand set, and loud speaker. This article describes advance planning for VHF on the lakes.

distances of at least 40 miles and over considerably greater distances between ships and shore where the shore station can install a higher antenna than is possible on a ship.

The proceedings before the Federal Communications Commission have resulted in the allocation of an 11-channel VHF calling-working system which, if properly utilized, will handle a large percentage of the short range navigational communication between ships and with Coast Guard stations now handled on the present 5 MF channels. In addition, there will be provided additional channels for public correspondence communication. Also, there exists the opportunity to so develop the system as to provide for direct dispatching of tugs by radiotelephony and for direct com-

munication between large vessels and the tugs themselves. There is also provision for other uses. Table 2 shows the designation of functions provided for in the new VHF system.

Tentative Channel Designation	Frequency Megacycles	Functional Designation	
1	156.8	safety-calling	For distress, safety announcements and for making contact with other stations.
2	157.2 or 157.3	Coast Guard working	One or both of these channels will be selected for communications with Coast Guard stations.
3	156.3	General intership	All vessels will be equipped for intercommunication on this channel.
4	157.0	Second intership	Available for assignment only on commercial and government vessels already equipped with 156.3 mc.
5	156.7	Third intership	This intership channel is available for any vessels already equipped with 156.3 mc.
6	156.6	Port operations	For direct intercommunication between ships and tugs and similar purposes, but not for tug dispatching by tug offices.
A	156.4	Special Function A	For government and non-government ferries.
B	156.5	Special Function B	For commercial fishing fleets and marine construction craft.
C	156.9	Special Function C	For tug dispatching by tug offices.
70	157.1 and 162.0		Duplex public correspondence.
80	157.4 and 161.9		Duplex public correspondence.

It will be seen that whereas there are only five channels in the present MF system, there are eleven channels in the new VHF system. This does not mean, however, that all vessels and all shore stations will be equipped for all eleven channels.

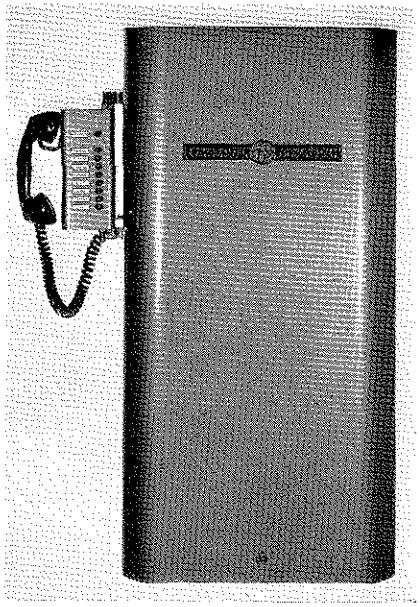
The VHF channels fall into four categories, namely (1) the safety calling channel, (2) five channels for use in various types of navigational and safety communication, (3) three channels for special types of communication handling functions not now provided for, and (4) two channels for handling public correspondence with shore stations. Note that whereas there is only one MF intership channel, there are three in the VHF system. Also,

whereas now all communication with the Coast Guard must take place on the safety-calling channel, or on the only available MF intership channel, there is provided in the VHF system a special working channel for communication with the Coast Guard after contact has been first established on 2182 kc.

More than 70 per cent of the current safety and navigational traffic on the Great Lakes is over distances of less than 40 miles. The use of frequency modulation instead of amplitude modulation provides circuits which are remarkably free of noise and interference. All factors combine to make the new VHF system one of superior characteristics for short range communication, ideally adapted to relieving the present system of considerable congestion, and to serving new functions not now provided for.

Since the opportunity exists at shore stations to erect high antennas the ship-shore range on VHF will be considerably greater than 40 miles. Tests already made show that ranges in excess of 50 miles will be obtained. Already there are public correspondence shore stations either equipped with VHF or planned for at Lorain, Geneva and Buffalo on Lake Erie; Detroit, Sault Ste. Marie, Rogers City on Lake Huron; Chicago and Port Washington on Lake Michigan; and Duluth on Lake Superior.

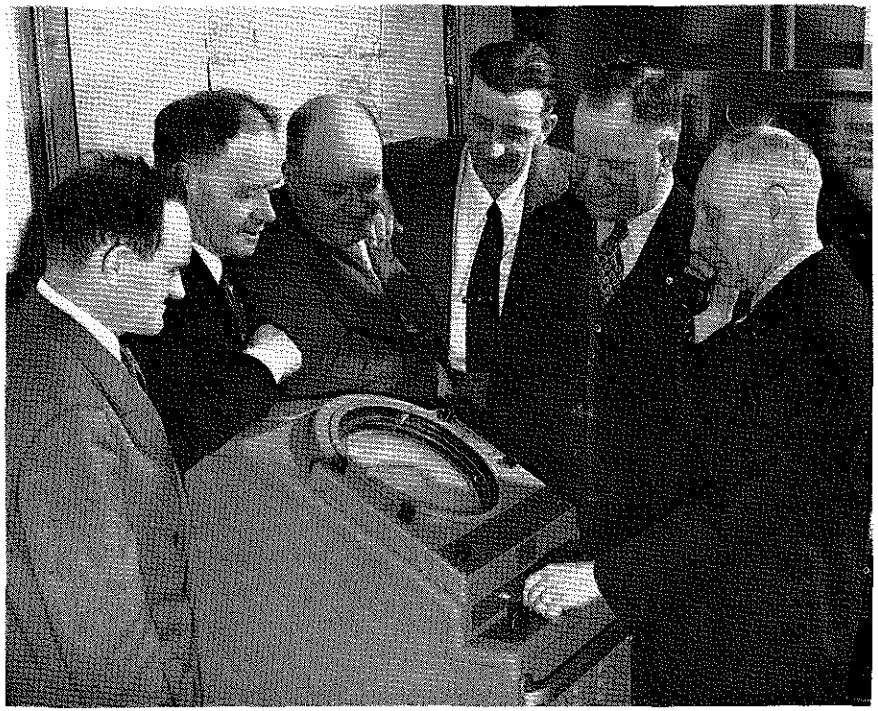
The VHF system will require new multi-channel equipment. However,



View of 8-channel VHF Radio Telephone ship set with push button channel selection control box and hand set, product of GE Lorain County Radio Corporation.

the power requirements for a VHF set are low and can be met easily with present ship generators. The size of the units will be smaller than is the case with the 6-channel ship-borne sets now in use.

Certain manufacturers have cooperated in the Great Lakes VHF program by designing and building a number of 8-channel VHF sets. There are shown pictures of two models, one produced by the Radiomarine Corporation of America, and the other through the joint efforts of



VHF equipment was demonstrated at the 1950 Radar School in Cleveland for masters and mates

the General Electric Co. and the Lorain County Radio Corp. Both models provide for rapid switching from channel to channel by the use of push buttons. While large vessels will probably require an 8-channel unit, smaller vessels such as tugs, fishing craft, marine construction craft, yachts, etc., will require only 3 or 4-channel sets. No vessel should be equipped with a set having less than three channels.

The present Great Lakes system has contributed very substantially to safety and navigation and to expediting the movement of bulk cargo on the Great Lakes, as well as providing very essential ship-shore public correspondence communication. If advantage is taken of the channel assignments which have been provided, the new VHF system will greatly relieve the limitations resulting from increased congestion and interference. Once this supplemental system is fully developed, and all vessels are equipped for it, the usefulness of radiotelephony on the Great Lakes will surpass anything dreamed of a few years ago.

History of Lake Carriers' Ass'n Explains Lake Shipping Progress

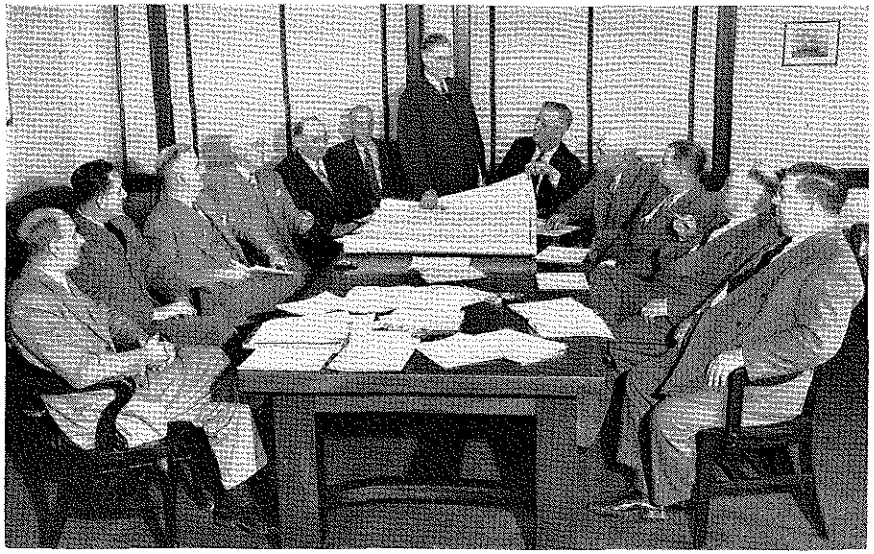
THE orderly growth of the lake transportation industry during the past several decades can be traced in large measure to an organization which has enabled fleets to work together in promotion of safety and advancement of common interests.

Lake Carriers' Association originally had two roots, one the Cleveland Vessel Owners' Association, begun in 1880, and the other an organization of shipowners in Buffalo which carried the group's present name. They merged in 1885 and the purpose of Lake Carriers' Association was declared to be "to consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes and the waters tributary thereto, with the intent to improve the character of the service rendered to the public, to protect the common interests of the lake carriers, and to promote their general welfare."

Among early activities was pressure to establish load lines and this began as early as 1888. In 1891 the Association, in conjunction with the Shipmasters' Association, compiled the present rules of the road; at various times the Association established and maintained at its own expense lightships at important points, and extensive buoyage systems and ranges; in 1911 separate courses were marked out by Lake Carriers' Association on Lakes Superior and Huron, in 1926 on Lake Michigan, for both upbound and downbound traffic; and between 1945 and 1951 on Lake Erie.

Of tremendous importance to lake shipping are close contacts maintained by the Association with the Dominion Marine Association of Canada, the U. S. Coast Guard, the U. S. Corps of Engineers, the U. S. Weather Bureau, the Navy Hydrographic Office, and the U. S. Lake Survey Office, as well as the U. S. Maritime Administration and committees in the Senate and the House, charged with responsibility for Merchant Marine matters.

There are many important committees whose membership is representative of the fleets. The President, John T. Hutchinson, now serving his fifth term, is advised in policy by a group known as the Advisory Committee. The standing committees are Shore Captains', Navigation, Fleet Engineers', Legislative, Public Relations, Welfare and Electronics. The hours spent by men sitting in these groups make an



Much of the progressive work of LCA stems from committee meetings like this. Here the Shore Captains' Committee, Carl O. Rydholm, Chairman, consider needed improvements in channels and harbors. Col. L. C. Sabin, fourth from left, attended these meetings regularly after his retirement until his death last winter.

impressive total each year, and bring together the best brains of the industry from an operating standpoint.

Shore Captains concentrate on safe navigation and investigation of accidents, making many recommendations to the Coast Guard and to the Corps of Engineers. The Navigation Committee is primarily made up of masters in active service and most of the improvements in aids to navigation can be traced to recommendations made by them. The Legislative Committee, as its name implies, follows pending laws which would affect the Great Lakes. The Public Relations Committee encourages activities which promote wider public understanding of the industry. The Fleet Engineers' Committee deals with the problems which come out of the engine room. A Committee whose activities closely affect lake seamen is the Welfare Committee which concerns itself with the Sault library, mail service, the LCA welfare plan, supervision of the winter schools, publication of the *Bulletin*, and safety. Newest committee is the Electronics group, constantly studying radiotelephonic

and radar activities. One excellent demonstration of the Association's value has been in the field of radar. Under their auspices, an experimental project was conducted in 1946 with various makes of radar which led to specifying radar standards for the lakes. Radar sets now installed on more than 300 lake vessels, conform to these specifications.

In eleven port cities on the Great Lakes, LCA maintains assembly rooms, which serve as reference points between ships in need of men to fill specific jobs, and the qualified men available for those jobs. Supervisors explain to men with no experience how to get their necessary Coast Guard credentials. Actual selection of men is made by the ship's officers; the assembly rooms have no duty or authority to hire. Mr. A. E. Poole is in charge of this entire activity.

Among the Association's primary services over the years have been the winter schools, begun over 35 years ago, when Capt. John C. Murray organized the first class in Navigation. To this class, and a similar class in Engineering, come scores of men each January, who have sufficient sailing time to take the Coast Guard examination leading to an original license in Navigation or Engineering. Capt. Murray for the forward end, and Howard Anderson for the after end, with their teaching staffs, prepare these men for the exams, during a four to six weeks intensive course, and more than 90% of the students are successful. Many deck and engineering officers also attend to prepare for examinations leading to a raise of grade. Last winter, in the fourth largest school on record, 185 won licenses or raises of grade. Other schools, such as in Radar, attended these past three winters by 722 masters and mates, and Advanced Engineering, attended by nearly 600 engineering officers over a five-year period, swell the annual school roster to around 500 each winter. Preparation of Safety Posters, and summer engineering courses, are other typical activities.

Currently the program of smoke abatement finds the Lake Carriers' Association a prominent participant. Together with Bituminous Coal Research, Inc., the lakes groups has appropriated $10,000 for development of the program.

The Annual Report, a book of nearly 200 pages filled with the record of each season and statistical tables of cargo movements, is the acknowledged "bible" of the industry.

Offices of LCA are in the Rockefeller Building in downtown Cleveland which is the shipping industry's "center of gravity." In addition to Mr. Hutchinson, other officers of LCA are: Vice Admiral Lyndon Spencer, U.S.C.G. (ret.), Exec. Vice President; Gerald S. Wellman, Vice President; Oliver T. Burnham, Secretary; Fred J. Hollman, Treasurer, and Gilbert R. Johnson, Counsel.

The Association has 46 employees. The membership today numbers 27 managements, representing 48 fleets, comprising 316 vessels, and constituting about 95% of the dry bulk tonnage on the lakes.

Over the years, LCA has worked as a democratic organization with a single eye to progress in safety and efficiency. Without Lake Carriers' Association, it is hard to conceive that our present day transportation miracles could have been possible.

Three LCA Schools

Every mail brings more registrations from Great Lakes seamen and officers for LCA schools.

In Cleveland, the regular winter school opens Wednesday morning, January 2, 1952, at 2994 W. 25th St. Classes preparing men for original license or raise of grade in both Navigation and Engineering will be well filled. Qualified men, who have not already done so, should file school applications at once to be sure of a place. A list of reasonably priced rooms will be available when the school opens.

Also in Cleveland, on Monday January 14, 1952, a three-week course in Modern Marine Engineering, taught by Frank V. Smith, will find between 80 and 100 chiefs and assistants in attendance. These registrations come to LCA *through* the fleet offices. The classes are held at 1240 Ontario St., home of the Cleveland-Marshall School of Law.

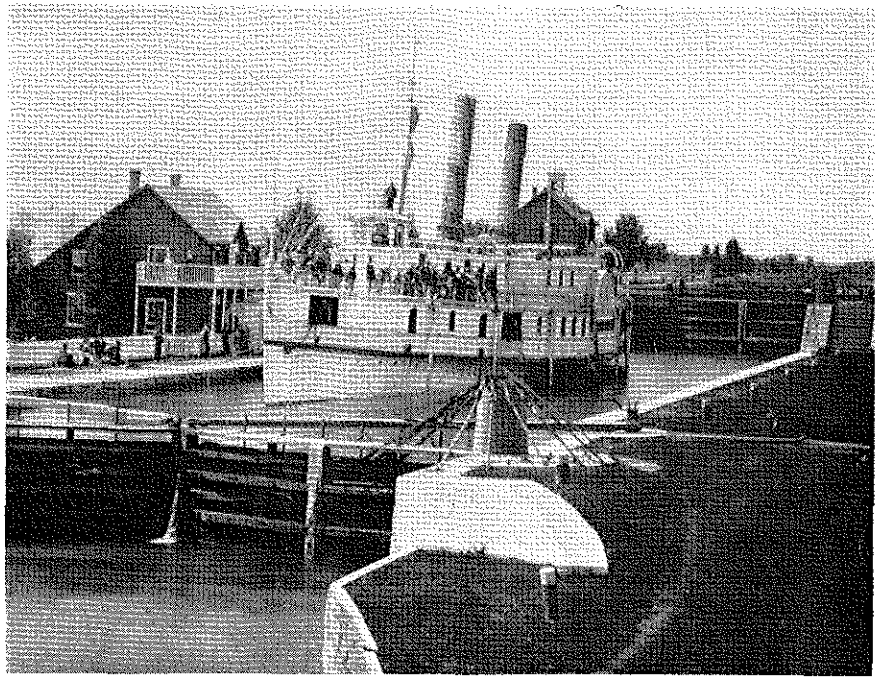
Then at Marine City, on January 2nd, at Odd Fellows Hall, Main and Broadway, classes open for men preparing for original license or raise of grade in Engineering.

710 Foot Carrier Coming

More front page news on shipbuilding came with the announcement on October 18 that a mammoth 710 ft. ore carrier will join the Great Lakes fleet in 1952. Formerly a troop carrier, the 520 foot MARINE ROBIN, a C-4, was purchased from the Federal Maritime Administration by Hansand Steamship Corp., owned by Wheeling Steel Corp., Sand Products Corp. of Detroit and Hanna Coal & Ore Corp. The ship will be lengthened at the Maryland Dry Dock Co.

With a capacity of 18,500 gross tons and a speed of 17 miles an hour, the new ship is expected to move about 800,000 tons of ore a season. After having been cut into two sections, a new hull will be added to the after section where original 9,000 h.p. steam turbines and oil-fired burners will be housed. The two sections will come up the Mississippi separately, and be joined at a shipyard on the lakes.

This new ship will be the longest on the lakes, in 1952, with the 690 foot vessel on order for National Steel, second, and the 678 foot WILFRED SYKES, third.



On the dining room wall of Hotel Ojibway, at Sault Ste. Marie, is this picture of the historic CHICORA locking down in the old Michigan State Lock, opened in 1855. Built in England in 1864, the CHICORA was a Confederate blockade runner in the Civil War, then sailed as first a cargo ship, then barge, until 1938. The Centennial Celebration of the Soo Locks occurs in 1955. (Eckroad photo)

Answer to Oct. Puzzle

L	E	P	E	R	S	■	Y	E	A	R	N	S
A	V	E	N	U	E	■	A	P	P	E	A	L
M	A	D	D	E	N	■	N	O	T	A	R	Y
O	D	D	■	S	O	C	K	S	■	P	I	E
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Answer to Nov. Puzzle

E	N	O	C	■	M	L	A	D	■	E	E	G
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A	D	E	L	■	E	E	N	U	A	G	E	N
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U	O	H	T	■	E	S	R	O	M	■	■	■
■	■	E	R	A	D	■	E	L	A	R	O	M
A	I	N	A	V	L	Y	S	■	N	E	M	A
D	L	O	■	L	A	V	O	■	Y	S	O	R
A	A	B	■	E	C	I	L	■	D	U	H	T