

1982

1982

LORAIN ELECTRONICS CORPORATION

2307 Leavitt Road • Lorain, Ohio 44052

(216) 282-6116 • Telex 98-0575

CLEVELAND • 835-8610



GREAT LAKES MARINE TELEPHONE DIRECTORY

**VESSEL CALL SIGNS
RADIOTELEPHONE SYSTEM
FCC REMINDERS**



**SERVING THE MARINE INDUSTRY FOR 54 YEARS
1928 - 1982**

PRICE \$3.00

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2307 Leavitt Road • Lorain, Ohio 44052-4194
(216) 282-6116 • Telex 98-0575
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COMMUNICATIONS SPECIALISTS OPERATING MARINE RADIOTELEPHONE STATIONS

<u>STATION</u>	<u>CALL SIGN</u>	<u>RADIO CHANNEL</u>
DULUTH, MN	KVY601	84
ONTONAGON, MI	KIL922	86
COPPER HARBOR, MI	KVY602	87
GRAND MARAIS, MI	KVY603	84
PICKFORD, MI	KIL923	86
STURGEON BAY, WI	KVY604	87
PORT WASHINGTON, WI	KVY605	85
BENTON HARBOR, MI	KIL924	86
ALPENA, MI	KIL925	84
HARBOR BEACH, MI	KIL926	87
ALGONAC, MI	KIL927	86
OREGON, OH	KIL928	84
LORAIN, OH	WMI	26
CLEVELAND, OH	KQU440	87
RIPLEY, NY	KIL929	86

SERVICE*****SALES

VHF-FM Radiotelephone (crystal & synthesized), SSB, Portables, Radar, Direction Finders, Loran C, Public Address Systems, Hailers, Monitoring Systems, Depth Sounders, Satellite Navigators, Satellite Communicators and other Marine Electronic Equipment.

CALL NUMBER BELOW FOR SERVICE THROUGHOUT THE
GREAT LAKES AREA

(216) 282-6116

NOTICE

This booklet has been prepared by Lorain Electronics Corp. to assist the operators on commercial U.S. vessels in the use of the Great Lakes Automated VHF system and to list the radio call signs of the U.S. vessels. No attempt is made to list Canadian, foreign, or pleasure vessels as it is almost impossible to keep this information up-to-date.

REMINDER

The use of official radio call signs is required under FCC rule 83.364, which states in part:

- (a) "Ships using radiotelephony shall identify all transmissions by announcement in the English language of the stations call sign. This identification shall be made:
 - (1) at the beginning and upon completion of each communication with any other station:
 - (2) at the beginning and end of each transmission made for any other purpose, and:
 - (3) at intervals of 15 minutes if transmission is sustained for a period exceeding 15 minutes, unless on a public correspondence call."

Users of automated dial type equipment are cautioned to use call signs as this equipment does not sign automatically.

IF YOU ARE IN DISTRESS

1. SEND radiotelephone alarm signal, if possible, to attract attention of other ships.
2. SAY slowly and distinctly on the distress frequency 156.8 MHz (Channel 16):
 - a. MAYDAY, MAYDAY, MAYDAY
THIS IS:

- b. GIVE the name of your ship (Repeated 3 times) and radio call sign.
 - c. GIVE your geographical position from nearest land mark.
 - d. TELL the nature of the distress.
 - e. EXPLAIN what kind of assistance you need.
 - f. GIVE any information that will help you to be rescued. (For example, color of ship, type of ship, length of ship, etc.)
3. REPEAT distress call and distress message at interval until you get an answer.
 4. Try any other available frequency to get help if you receive no answer to your distress call sent on 156.8 MHz (Channel 16).
 5. GIVE priority to DISTRESS, URGENCY, AND SAFETY messages in that order.

F.C.C. RULE REMINDERS

1. Post Station License, Section 83.102.
2. Have Operator License Available. Section 83.165.
3. Listen on 156.8 MHz. Section 83.224.
4. Use 156.8 MHz (Channel 16) Only for Calling, Distress Urgency or Safety. Section 83.233, 83.353 and 83.366
5. Listen Before Transmitting. Avoid Interference With Distress or Other Communications in Progress. Section 83.181.
6. When You Hear MAYDAY - Listen. Don't Talk Unless You Can Help. Sections 83.176, 83.235, 83.236, 83.238, 83.239, 83.240, 83.241 and 83.242.
7. No Ragchewing. Section 83.178.
8. Channel 6 (156.3 MHz) for Intership Safety and Search and Rescue Only. Section 83.359.
9. Keep communications as brief as possible. Section 83.366 (h) (i).
10. Give Your Call Sign. Section 83.364. (Including automatic phones).
11. Keep a Log. Section 83.368.
12. Answer Violation Notices. Section 83.601.
13. Use of Indecent Language or Profanity on the Air Is a Criminal Offense.
14. FALSE OR FRAUDULENT DISTRESS SIGNALS ARE PROHIBITED.

EXCERPTS FROM F.C.C. RULES

All radio stations aboard ships must be licensed by the F.C.C. Ship stations are licenses primarily for safety of life and property, therefore distress and safety communications must have absolute priority; secondarily the stations are used for exchange of communications between ships and between ships and shore stations.

SHIP STATION LICENSE. Application for a ship radiotelephone and/or radionavigation station (radar) license is made on FCC Form 506.

STATION LICENSE MUST BE POSTED at the principal operating location.

OPERATOR LICENSE. The radiotelephone transmitter in a ship station may be operated only by a licensed radio operator. The licensed operator may permit others to speak over the microphone if he starts, supervises, and ends the operation, makes the necessary log entries, and gives the necessary identification. Any ship on the Great Lakes that is subject to Great Lakes Agreement is required to have at least one responsible operator with a Third Class Radiotelephone Permit or Marine Radio Operator Permit. (Section 83.157). The license usually held by radio operators aboard small vessels not required to carry a radio installation for safety purposes is the Restricted Radiotelephone Operator Permit. Neither permit authorizes transmitter adjustments that may affect the proper operation of the station. Any needed adjustments must be made only by the holder of a first or second class radiotelegraph or radiotelephone license. It is not necessary to post the Restricted Radiotelephone Operator Permit if it is kept on the operator's person; however, other classes of licenses must be conspicuously posted at the principal location at which the station is operated.

APPLICATION FOR OPERATOR PERMIT. Field offices will accept applications filed on FCC Form 753 for Restricted Radiotelephone Operator Permit if the applicant makes a satisfactory showing of immediate need for a permit for safety and if the application is presented in person by the applicant or his agent. However, this lifetime permit is usually obtained by mailing an FCC Form 753 to the Commission at Gettysburg, Pennsylvania 17325. No oral or

written examination is required. An application for a Restricted Radiotelephone Operator Permit does not require a filing fee until further notice.

LOGS. A radio log is required; each page must be numbered, must have the name of the vessel, the call sign, and must be signed by the operator. Entries shall be made showing the time of beginning and ending each watch on 156.8 MHz. All distress and alarm signals and related communications transmitted or intercepted, and all urgency and safety signals and related communications transmitted, shall be recorded in the log as completely as possible. A record of all installations, service, or maintenance work performed, which may affect the proper operation of the station, must also be entered by the licensed operator doing the work, including his signature, address, and the class, serial number, and expiration date of his license. The 24-hour system is used in a radio log, that is 8:45 a.m. is written as 0845 and 1:00 p.m. becomes 1300. Vessels subject to the Great Lakes Agreement shall use Eastern Standard Time, others may use local or GMT time. (Rule 83.368.)

Radio logs must be retained for at least a year; for three years if they contain entries concerning distress or disaster; and longer periods if they concern communications being investigated by the FCC, or against which claims or complaints have been filed. (Rule 83.115.)

Any FCC Field Engineering Office will be glad to help you and give you any further information.

SAFETY AND DISTRESS. Ch 16 (156.8 MHz) is the distress, safety and calling channel, to be used for these purposes only. Keep all calls as brief as possible.

INTERSHIP FREQUENCIES. VHF provides a number of intership frequencies. 156.3 MHz (Channel 6) is the safety intership channel for safety information only. 156.4 MHz (Channel 8) is for normal intership traffic. See Section 83.359 for additional channels. Use of these intership frequencies is limited to safety and operational communications. (Rules 83.358, 83.359.)

GOVERNMENT AND FOREIGN FREQUENCIES. A ship may transmit on frequencies not included on the ship station license when directed to do so by U.S. Government stations, or foreign coast stations. (Rules 83.357 and 83.363.)

PREVENTION OF INTERFERENCE. Always listen on the channel to be used before transmitting so that you will not interfere with others using the channel. (Rule 83.181(b).)

OPERATING PROCEDURES. You must GIVE YOUR CALL SIGN WHENEVER YOU CALL another vessel or coast station AND WHEN YOU FINISH THE CONVERSATION. When talking on the above-listed intership frequencies the maximum time limit for a conversation is 3 minutes. (Rules 83.364 and 83.366. Make your calls short (not more than 30 seconds) and do not call that station again for 2 minutes. (Rule 83.366(f).) If a call sign has not been assigned, identify station by announcement of the vessel name and name of licensee.

SAFETY AND DISTRESS. Never forget that SAFETY is the primary reason for having shipboard radio. DISTRESS AND SAFETY must have ABSOLUTE PRIORITY. That is why you must listen, and be able to transmit, on 156.8 MHz. The distress call is "MAYDAY." Read Subpart J of Part 83 for complete information about distress calls and messages.

RADIO CONVERSATIONS ARE PRIVATE. If you hear a radio conversation not intended for you, you cannot lawfully use the information in any way. (Rule 83.174.)

SINGLE SIDE BAND (SSB) FREQUENCIES AND CHANNEL DESIGNATORS

(Licensed to Lorain Electronics)

International Channel	Ship Trans. Freq.	Shore Trans. Freq.
409	4087.8 KHz	4382.2 KHz
418	4115.7 KHz	4410.1 KHz
826	8272.5 KHz	8796.4 KHz

NOTE: Use of SSB is allowed only after installation of VHF equipment.

GREAT LAKES VHF

REQUIRED FREQUENCIES AND EQUIPMENT CHANNELIZATION

All ship radiotelephone stations in the 156 to 162 MHz band MUST be equipped to operate on:

1. Ch. 16 (156.8 MHz)...International Distress,
Safety and Calling
2. Ch. 6 (156.3 MHz)...frequency for VHF.
Intership Safety Channel.
3. At least one working frequency.

The number of channels installed in your set will depend largely on how the set will be used, where the vessel will be operated, and what coast stations are operating in your area. While fewer than twelve channels may be satisfactory for some vessels, installation of a radiotelephone with less than twelve-channel capability is not recommended.

The marine VHF band in the United States consists of 48 channels including three weather channels. The following tables include a listing of the frequencies available, an explanation of the use of the various channels and some suggestions on the selection of channels for recreational (non-commercial) vessels.

The more channels you have in your set, the better your communication capability will be. Caution must be exercised, however, in selecting and using channels in accordance with their authorized purposes.

VHF SHIP FREQUENCIES AND CHANNEL DESIGNATORS

Frequencies (MHz)			CHANNEL USAGE
Channel Number	Ship Transmit	Ship Receive	Intended Use
6	156.300	156.300	INTERSHIP SAFETY. Required for all VHF-FM equipped vessels. For intership safety purposes and search and rescue (SAR) communications with ships and aircraft of the U.S. Coast Guard. Must not be used for non-safety communications.
7A	156.350	156.350	COMMERCIAL (INTERSHIP AND SHIP-TO-COAST). A working channel for commercial vessels to fulfill a wide scope of business and operational needs.
8	156.400	156.400	COMMERCIAL (INTERSHIP). Same as channel 7A except limited to intership communications.
9	156.450	156.450	COMMERCIAL AND NON-COMMERCIAL (INTERSHIP AND SHIP-TO-COAST). Some examples of use are communications with commercial marinas and public docks to obtain supplies or schedule repairs and contacting commercial vessels about matters of common concern.
10	156.500	156.500	COMMERCIAL (INTERSHIP AND SHIP-TO-COAST). Same as channel 7A.
11	156.550	156.550	COMMERCIAL (INTERSHIP AND SHIP-TO-COAST). Same as channel 7A. It should be noted, however, in certain

Frequencies (MHz)

CHANNEL USAGE

Channel Number	Ship Transmit	Ship Receive	Intended Use
11			Ports channels 11, 12 and 14 are to be used selectively for the Vessel Traffic Service now being developed by the United States Coast Guard.
12	156.600	156.600	PORT OPERATIONS (INTERSHIP AND SHIP-TO-COAST). Available to all vessels. This is a traffic advisory channel for use by agencies directing the movement of vessels in or near ports, locks, or waterways. Messages are restricted to the operational handling, movement and safety of ships and, in emergency, to the safety of persons. It should be noted, however, in certain ports 11, 12 and 14 are to be used selectively for the Vessel Traffic Service being developed by the United States Coast Guard.
13	156.650	156.650	NAVIGATIONAL--(SHIP'S) BRIDGE TO (SHIP'S) BRIDGE. This channel is available to all vessels and is required on large passenger and commercial vessels (including many tugs). Use is limited to navigational communications such as in meeting and passing situations Abbreviated operating procedures (call signs omitted) and 1 watt maximum power (except in certain special instances) are used on this channel for both calling and working. For

Frequencies (MHz)			CHANNEL USAGE
Channel Number	Ship Transmit	Ship Receive	Intended Use
13			recreational vessels, this channel should be used for listening to determine the intentions of large vessels. This is also used at locks and bridges.
14	156.700	156.700	PORT OPERATIONS (INTERSHIP AND SHIP-TO-COAST). Same as channel 12.
15	---	156.750	ENVIRONMENTAL (RECEIVE ONLY). A receive only channel used to broadcast environmental information to ships such as weather, sea conditions, time signals for navigation, notices to mariners, etc. Most of this information is also broadcast on the weather (WX) channels.
16	156.800	156.800	DISTRESS, SAFETY AND CALLING (INTERSHIP AND SHIP-TO-COAST). Required channel for all VHF-FM equipped vessels. Must be monitored at all times station is in operation (except when actually communicating on another channel). This channel is monitored, also, by the Coast Guard, public coast stations and many limited coast stations. Calls to other vessels are normally initiated on this channel. Then, except in an emergency, you must switch to a working channel.

Frequencies (MHz)

CHANNEL USAGE

Channel Number	Ship Transmit	Ship Receive	Intended Use
17	156.850	156.850	STATE CONTROL. Available to all vessels to communicate with ships and coast stations operated by state or local governments. Messages are restricted to regulation and control, or rendering assistance. Use of low power (1 watt) setting is required by international treaty.
			WEATHER CHANNEL ON GREAT LAKES RECEIVE ONLY.
18A	156.900	156.900	COMMERCIAL (INTERSHIP AND SHIP TO-COAST). Same as channel 7A
19A	156.950	156.950	COMMERCIAL (INTERSHIP AND SHIP TO-COAST). Same as channel 7A.
20	157.000	161.600	PORT OPERATIONS (SHIP-TO-COAST). Available to all vessels. This is a traffic advisory channel for use by agencies directing the movement of vessels in or near ports, locks, or waterways. Messages are restricted to the operational handling, movement and safety of ships and, in emergency, to the safety of persons.
21A	157.050	157.050	U.S. GOVERNMENT ONLY.
22A	157.100	157.100	COAST GUARD LIAISON. This channel is used for communications with U.S. Coast Guard ship, coast and aircraft stations after first establishing communication on channel 16. Navigational warnings and, where not available on WX

Frequencies (MHz)

CHANNEL USAGE

Channel Number	Ship Transmit	Ship Receive	Intended Use
22A			channels, Marine Weather forecasts are made on this frequency. It is strongly recommended that every VHF radio-telephone include this channel.
23A	157.150	157.150	U.S. GOVERNMENT ONLY.
24	157.200	161.800	PUBLIC CORRESPONDENCE (SHIP-TO-COAST). Available to all vessels to communicate with Canadian Coast stations, or with U.S. stations on Southern Lake Michigan.
25	157.250	161.850	PUBLIC CORRESPONDENCE (SHIP-TO-COAST). U.S.
26	157.300	161.900	PUBLIC CORRESPONDENCE (SHIP-TO-COAST). Canadian/U.S.
27	157.350	161.950	PUBLIC CORRESPONDENCE (SHIP-TO-COAST). Canadian/U.S. Lower L. Mich.
28	157.400	162.000	PUBLIC CORRESPONDENCE (SHIP-TO-COAST). U.S.
65A	156.275	156.275	PORT OPERATIONS (INTERSHIP AND SHIP-TO-COAST). Same as channel 12.
66A	156.325	156.325	PORT OPERATIONS (INTERSHIP AND SHIP-TO-COAST). Same as channel 12.
67	156.375	156.375	COMMERCIAL (INTERSHIP). Same as channel 7A except limited to intership communications.

Frequencies (MHz)

CHANNEL USAGE

Channel Number	Ship Transmit	Ship Receive	Intended Use
68	156.425	156.425	NON-COMMERCIAL (INTERSHIP AND SHIP-TO-COAST). A working channel for non-commercial vessels. May be used for obtaining supplies, scheduling repairs, berthing and accommodations, etc., from yacht clubs or marinas, and intership operational communications such as piloting or arranging for rendezvous with other vessels. It should be noted that channel 68 (and channel 70 for intership only) is the most popular non-commercial channel and therefore is the first choice for vessels having limited channel capacity.
69	156.475	156.475	NON-COMMERCIAL (INTERSHIP AND SHIP-TO-COAST). Same as channel 68.
70	156.525	156.525	NON-COMMERCIAL (INTERSHIP). Same as channel 68, except limited to intership communications.
71	156.575	156.575	NON-COMMERCIAL (INTERSHIP AND SHIP-TO-COAST). Same as channel 68.
72	156.625	156.625	NON-COMMERCIAL (INTERSHIP). Same as channel 68, except limited to intership communications.
73	156.675	156.675	PORT OPERATIONS (INTERSHIP AND SHIP-TO-COAST). Same as channel 12.
74	156.725	156.725	PORT OPERATIONS (INTERSHIP AND SHIP-TO-COAST). Same as channel 12.

Frequencies (MHz)

CHANNEL USAGE

Channel Number	Ship Transmit	Ship Receive	Intended Use
77	156.875	156.875	COMMERCIAL (INTERSHIP). Same as channel 7A except limited to intership communications.
78A	156.925	156.925	NON-COMMERCIAL (INTERSHIP AND SHIP-TO-COAST). Same as channel 68.
79A	156.975	156.975	COMMERCIAL (INTERSHIP AND SHIP-TO-COAST). Same as channel 7A.
80A	157.025	157.025	COMMERCIAL (INTERSHIP and SHIP-TO-COAST). Same as channel 7A.
81A	157.075	157.075	U.S. GOVERNMENT ONLY.
82A	157.125	157.125	U.S. GOVERNMENT ONLY.
83A	157.175	157.175	U.S. GOVERNMENT ONLY.
84	157.225	161.825	PUBLIC CORRESPONDENCE (SHIP-TO-COAST). U.S.
85	157.275	161.875	PUBLIC CORRESPONDENCE (SHIP-TO-COAST). Canadian. (Except on lower Lake Michigan).
86	157.325	161.925	PUBLIC CORRESPONDENCE (SHIP-TO-COAST). U.S.
87	157.375	161.975	PUBLIC CORRESPONDENCE (SHIP-TO-COAST). U.S.
88	157.425	162.025	PUBLIC CORRESPONDENCE (SHIP-TO-COAST). Canadian
WX1	---	162.550	WEATHER (RECEIVE ONLY). To receive weather broadcasts of the Department of Commerce, National Oceanic and Atmospheric Administration (NOAA).
WX2	---	162.400	WEATHER (RECEIVE ONLY). Same as WX1.

Frequencies (MHz)			CHANNEL USAGE
Channel Number	Ship Transmit	Ship Receive	Intended Use
WX3	---	162.475	WEATHER (RECEIVE ONLY). Same as WX1.
21	---	161.650	CANADIAN CONTINUOUS WX.

NOTE: The addition of the letter "A" to the channel number indicates that the ship receive channel used in the United States is different from the one used by vessels and coast stations of other countries. Vessels equipped for U.S. operations only will experience difficulty communicating with foreign ships and coast stations on these channels.

THE VHF SYSTEM

The Great Lakes Automated VHF System is presently composed of fourteen remotely controlled VHF stations strategically located to provide coverage for large commercial vessels on all but Lake Ontario. While primarily designed to operate with automatic full duplex radio-telephones capable of direct dialing land telephones and ships it also must operate with non-automatic push-to-talk equipment. Instructions for both types of calls will follow.

As VHF transmission range is directly affected by the height above water or land of the antennas being used, it follows that vessels with antennas close to water, such as pleasure craft, etc., will not normally have as great a range as the higher commercial vessels. Normal ranges over open water for large vessels to a shore station are from 40 to 75 miles, for smaller vessels, from 20 to 35 miles. Shadowing due to high land masses, buildings, docks, etc., can materially shorten the normal ranges. A radio phenomenon known as "ducting" may at times greatly increase the normal range, but it can also cause severe interference problems with other stations on the same channels.

The fourteen VHF stations are each connected to the national land telephone network via a regular subscriber business line to the nearest telephone central office. This is the circuit over which all telephone calls are made whether directly dialed by the vessel or by the control center operator. In addition, each station is connected to the control center at Lorain, Ohio, by another special leased circuit over which control signals, data information and operator voice communications are made. These leased circuits are very expensive and to make the system economically viable it is necessary to connect three or four of the stations to each of the four leased lines.

At each station a mini computer, or electronic brain, controls the station functions and temporarily stores call information until released to the master computer at the control center.

The master computer at Lorain polls each station on each of the four control circuits once every two seconds. The information is in the form of data and only takes a fraction of a second to send. The computer sorts the information received into various forms such as incoming manual ship or land calls that signal the operator, billing information that is to be stored, or various checks on the condition of the station equipment. Portions of the information are displayed on a screen for visual inspection by the operator.

When the control center operator uses a control line to talk to a ship through one of the stations, the other stations on that line cannot be polled and thus no call alarms, etc., can be sent to the control center until the operator releases the line to the computer. For this reason you may have a delay in reaching the control center when making a manual call to one of the other stations on the same control line. Direct dial calls are not affected and we urge you to use this method whenever possible.

Weather broadcasts, storm warnings, hydrographic reports, etc., require the use of the control lines and polling cannot be done until the broadcast is completed. Weather broadcasts are normally made at scheduled times and customers are cautioned to avoid making calls that overlap into the broadcast times as they may be cut off when the broadcast begins.

Please observe the instructions for direct dial and manual calls. Listen for the dial tone before direct dialing and consult this directory for the local exchange numbers and the prefixes that can be dialed as local numbers through each station.

STATION INFORMATION

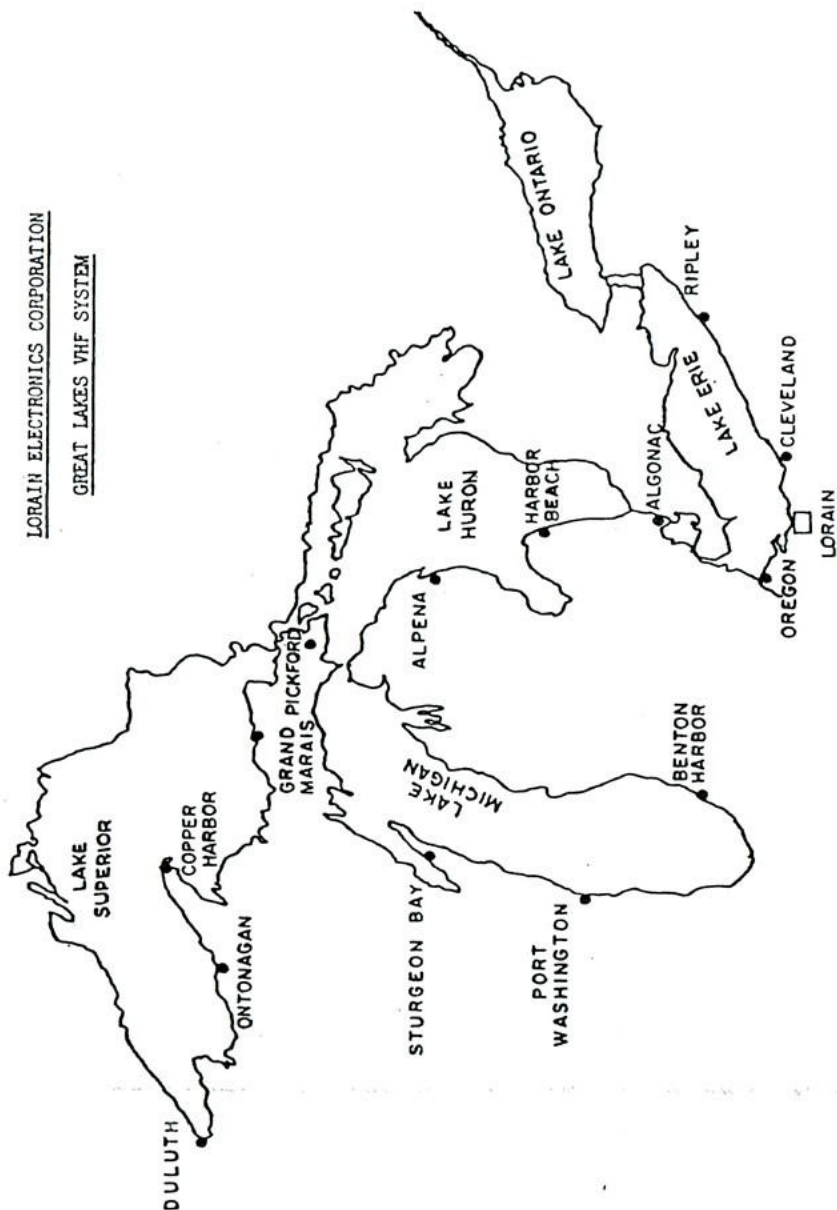
<u>Station</u>	<u>Call Sign</u>	<u>Radio Channel</u>	<u>Telephone Exchange</u>	<u>Area Code-Tel. No.</u>
Duluth, MI	KVY601	84	Duluth	(218) 525-5396
Ontonagon, MI	KIL922	86	Ontonagon	(906) 884-4776
Copper Harbor MI	KVY602	87	Copper Harbor	(906) 289-4501*
Grand Marais MI	KVY603	84	Grand Marais	(906) 494-2651*
Pickford, MI	KIL923	86	Pickford	(906) 647-7405*
Sturgeon Bay WI	KVY604	87	Sturgeon Bay	(414) 743-6097
Port Washington, WI	KVY605	85	Port Washington	(414) 284-5597
Benton Harbor MI	KIL924	86	Bridgman	(616) 465-3015
Alpena, MI	KIL925	84	Ossineke	(517) 471-2907*
Harbor Beach MI	KIL926	87	Harbor Beach	(517) 479-9077*
Algonac, MI	KIL927	86	St. Clair	(313) 329-7488
Oregon, OH	KIL928	84	Toledo	(419) 726-3937
Lorain, OH	WMI	26	Lorain	
Cleveland, OH	KQU440	87	Cleveland	(216) 752-2497
Ripley, NY	KIL929	86	Ripley	(716) 736-4031

NOTE: The above telephone numbers are for use by vessels when placing direct dial calls through stations (*) where the local exchange operator will ask for the telephone number. Also used by properly informed land phone subscribers to direct dial ships with automated phones.

DO NOT call these numbers for information. These are unmanned stations. Call your Long Distance operator and ask for "Lorain Gateway Operator" for any assistance or information. This Gateway number is for the use of the operator only. It is located in the operator's Rate & Route Guide.

LORAIN ELECTRONICS CORPORATION

GREAT LAKES VHF SYSTEM



VHF STATION LOCATIONS

INSTRUCTIONS FOR AUTOMATIC DIAL-TYPE RADIOTELEPHONE

I. To Direct Dial a Shore Telephone

1. Set the thumbwheel switch on the control unit to position "9."
2. Remove handset and press the small button at the upper left of the dial, hold it until the channel number for the nearest station you are calling appears, then release. On some sets push in the marked channel button.
3. Listen on handset. If station is not busy, indicated by noise in the receiver, press the button on handset for several seconds. This will actuate transmitter and lock it on until handset is replaced. No further operation of button is necessary.
4. You should now hear a dial tone from the called station. If dial tone is not heard after several seconds, hang up and repeat step #3. If unable to get dial tone after several attempts you may be out of range of the called station and you should then try calling the next nearest station.
5. When you hear the dial tone, proceed to dial the desired land telephone number as in any direct distance dialing (DDD) procedure, using the proper area codes where required. If an operator asks for your number, give the telephone number of the station through which you are calling (see page 18), do not give your radio call sign or ship name to the operator.

NOTE: After completing dialing you are now connected to the regular land line telephone network and subject to all the conditions of busy, wrong number, recordings or nothing. When this happens, hang up and repeat above procedures.

II. For Non-Direct Dial Service

1. Set thumbwheel switch to the "0" position, remove handset and follow steps #2 and #3 as for a direct dial call under "I."

2. You should now hear an intermittent ringing which is signalling the control center. When the operator answers, give the operator the necessary information to complete the call.

NOTE: Several stations are connected to each control line. The operator may be busy with another station when you call. If you do not get an answer within about a minute, wait for several minutes and try again.

USE DIRECT DIAL WHENEVER POSSIBLE.

INSTRUCTIONS FOR NON-AUTOMATIC PUSH-TO-TALK-RADIOTELEPHONE EQUIPMENT

I. To Call a Telephone on Land

1. Select the Working Channel of the nearest shore station. DO NOT CALL ON CHANNEL 16.
2. If the station is busy, wait until it becomes free AND GOES OFF THE AIR. Then, WAIT A FULL 10 SECONDS, and proceed with step "3" below.
3. If the station is not busy, press your mike button and hold it down for 15 seconds, at this time you will hear a ringing; which, is the system signalling the operator of an incoming call. The signalling will stop 10 seconds after you release your mike button, so after the initial 15 seconds press the mike button momentarily with each ring to keep it ringing. If you do not get an answer within about one minute, the operator is busy with another station so wait several minutes before trying again.
4. Give the call particulars to the Operator, who will complete the call for you.

LAND LINE DIALING INFORMATION FROM SHIPS

Direct dialing into the land telephone network after reaching the shore station is the same as on a land phone. Each station has a line to the nearest telephone company

central office and certain areas in the vicinity of that office are local calls and need no area code, only the 7 digits of the number called. Numbers with the various 3-digit local prefixes that can be called from each station are listed in the following table. To call numbers with 3-digit prefixes not listed, but still in the same area code, you must dial "1" then the 7-digit number. Example: (1 + 123-4567). To call numbers in area codes outside the area of the station you must dial "1" plus the area code plus the 7-digit number. Example: (1 + 123 + 456-7890).

In direct dialing you encounter the same problems as other land line telephone users such as busy lines, wrong numbers and the recordings that ask you to consult your directory. When this happens, hang up, wait for the station to sign off (a coded tone signal) and then replace your call.

Do not dial "0" for the telephone operator, the station "brain" will direct this call to the control center operator.

In some areas the telephone companies do not have automatic number identification (ANI). If, after completing your direct dialing, the telephone operator asks for your number, give the phone number (7-digits) of the station you called. Those not having ANI are noted in the list of stations (page 18).

Collect, credit card and bill-to-another-number calls must be operator handled and be completed through the control center operator.

LOCAL CALL 3-DIGIT PREFIXES

DULUTH, MN	(218) 384, 389, 525, 624, 626, 628, 721, 722, 723, 724, 727, 728, 729, 848, 879 (715) 392, 394, 398, 399
ONTONAGON, MI	(906) 883, 884, 885, 886
COPPER HARBOR, MI	(906) 289, 337

GRAND MARAIS, MI	(906) 494
PICKFORD, MI	(906) 484, 647
STURGEON BAY, WI	(414) 743, 823, 824, 825, 839, 856, 868
PORT WASHINGTON, WI	(414) 284, 285, 675, 692
BENTON HARBOR, MI (Bridgman)	(616) 422, 426, 465
ALPENA, MI (Ossineke)	(517) 354, 356, 471, 727
HARBOR BEACH, MI	(517) 479
ALGONAC, MI (St. Clair)	(313) 329, 385, 765, 982, 984, 985, 987
OREGON, OH	(419) 240, 241, 242, 243, 244, 245, 246, 247, 248, 255, 259, 381, 382, 385, 470, 472, 473, 474, 475, 476, 478, 531, 535, 536, 537, 661, 666, 691, 693, 698, 723, 726, 729, 825, 826, 829, 836, 837, 838, 841, 855, 865, 866, 874, 875, 877, 878, 882, 885, 888, 893, 936 (313) 847, 848, 856
CLEVELAND, OH	(216) 221, 225, 226, 228, 229, 231, 232, 234, 235, 236, 237, 238, 241, 243, 247, 248, 249, 251, 252, 261, 265, 266, 267, 268, 271, 273, 278, 281, 283, 289, 291, 292, 295, 299, 321, 331, 333, 338, 341, 344, 349, 351, 356, 361, 362, 368, 371, 381, 382, 383, 391, 398, 421, 423, 425, 429, 431, 432, 433, 439, 441, 442, 444, 447, 449, 451, 459, 461, 464, 467, 468, 471, 473, 475, 476, 481, 486, 491, 521, 522, 523, 524, 526, 529, 531, 541, 543, 561, 562, 566, 572, 574, 575, 578, 579, 581, 582, 585, 587, 621, 622, 623, 631, 641, 651, 656, 659, 661

CLEVELAND, OH	(216)	662, 663, 664, 671, 676, 681, 687, 692, 694, 696, 721, 729, 731, 732, 734, 741, 749, 751, 752, 761, 771, 777, 779, 781, 791, 795, 822, 826, 831, 835, 838, 842, 843, 845, 851, 861, 871, 881, 883, 884, 885, 886, 888, 921, 931, 932, 941, 942, 943, 944, 946, 951, 953, 961, 976, 991
RIPLEY, NY	(716)	326, 736

TO CALL A SHIP FROM A SHORE TELEPHONE

1. TO DIAL DIRECTLY FROM A LAND TELEPHONE TO A SHIP

You must know--

- The approximate location of the ship.
- The ship's address code. This is the 3-digit "telephone number" of the ship. See pages 28-30.

You must have a pushbutton (tone) dial.

NOTE: If you do not know the ship's location or its address code, or if you do not have a push-button dial available, you can still call a ship readily by using procedure "2,"

a. From a Pushbutton-Dial Telephone:

- (1) Determine the shore station through which to call the ship. Refer to the Lake chart on p.19.
- (2) Note the shore station's telephone number. It is shown on page 18.
- (3) Dial the shore station telephone number as you would dial any other telephone number in the land telephone system.

If the dialed shore station is "busy" (already in use, handling a call) you will hear the familiar busy-tone. In such case, "hang up" and after a few minutes redial the shore station as you would for any other call which encounters a "busy."

1. To DIAL DIRECTLY FROM A LAND TELEPHONE TO A SHIP
(Continued)

a. From a Pushbutton-Dial Telephone: (Con't)

If the dialed shore station is free (not already handling a call) you will hear a brief "ringback" signal indicating that the shore station is being "rung" (signalled), and then a tone signal similar to the "dial tone" in the land telephone system but of brief duration; the latter signal is the shore station's "dial tone" which it returns to you as advice that it is ready for you to dial the ship's address code.

- (4) Use the touch tone and enter the ship's address code (3 digits).

You will, after dialing, hear "ringback" tone (a periodically-recurring tone, as in the land telephone system) indicating that the station is "ringing" the particular ship. It does not indicate that the ship equipment is ringing.

- (5) When the ship answers, you will hear the answering voice. Conduct the ensuing conversation as you would any other telephone conversation.

On conclusion of the call, "hang up" as for any telephone call.

- (6) Should the dialed ship not answer after a reasonable "ringing" period (we suggest 8 "rings"), you may either--

(a) "Hang up" as for any other unanswered telephone call, and possibly, assuming that the ship is not in range of the dialed shore station, try dialing it through one (or both if necessary) of the adjacent shore stations.

- OR (b) Let the ringing of the ship continue; after about 1 minute the shore station will automatically refer the call to the System Operator who will then try

1. To DIAL DIRECTLY FROM A LAND TELEPHONE TO A SHIP
(Continued)

a. From a Pushbutton-Dial Telephone: (Con't)

- (b) to complete the call for you. As an Operator-handled call it will take a premium rate; whether or not it will save time or land line charges depends upon the difficulty of locating the ship.

2. To PLACE AN OPERATOR-HANDLED CALL FROM ANY LAND TELEPHONE

Operator-handled service is more costly and slower than direct dialing, it is likely that you will use it only when you are calling a ship from a telephone where no pushbutton dial is available or if you lack information necessary to dial directly. However, it is available to you at any time you may want to use it.

To place an operator-handled call from any land telephone to a Great Lakes ship--

a. Dial the "Long Distance Operator" number.

This is commonly "0"; however, reference should be made to the local telephone directory and its instructions followed.

b. Advise the long distance operator that you want to place a call to a ship through the Lorain Gateway Operator at Lorain, Ohio.

The long distance operator will switch you through to LORAIN's System Operator who will handle the call, asking you for the needed information and instructions. It may be placed as a person-to-person, telephone credit card or collect call, at your request.

c. The LORAIN Operator will ask you to "hang up," and will call back when ship is reached.

When you answer the callback, you will be connected to the ship you are calling.

d. On conclusion of the call, "hang up" as for any telephone call.

TO ANSWER A CALL

I. Automatic Dial-Type Radiotelephone

1. When ship is called from a shore station the ship receiver scanning stops on the called channel, the call light (CL) to the right of the thumbwheel will start flashing and an interrupted beep tone will be heard from the handset, or the external alarm if so provided. This beep tone will continue for about 15 seconds and the call light (CL) will continue to flash until handset is picked up to answer call.
2. Answer call immediately if possible. If call is direct dialed from a land phone the calling party will probably wait about a minute for an answer. When you answer, pick up the handset, push the handset button for at least one second to activate the transmitter and identify by voice to the calling party. Identify by radio call sign before replacing handset at completion of call.
3. Always check call light (CL). If flashing, remove handset and answer as above. If you receive no reply it is possible the calling party has disconnected. If call was direct dialed from a land phone there is no way to identify the calling party.
4. Warning: If call light (CL) is flashing, the receiver scanning has stopped on a called channel. It will remain there until handset is lifted to answer a call. Until scanning is resumed it will not be possible to automatically call the ship from any station.

II. Non-Automatic Radiotelephone

1. Generally these vessels stand a watch on Ch. 16 only and when called the shore station operator will advise what channel to use and the call details. Be sure to identify at start and end of call.

LORAIN ELECTRONICS CORPORATION
SHIP ADDRESS CODES
FOR AUTOMATIC RADIOTELEPHONES

American Steamship Co.	I.D.
American Mariner	003
American Republic	014
Belle River	021
Boland, John J.	002
Buffalo	023
Cornelius, Adam E.	004
Detroit Edison	005
Hutchinson, John T.	007
Indiana Harbor	009
Kyes, Roger M.	008
Laud, Sam	001
McKee Sons	010
Nicolet	016
Reiss, Richard J.	018
Saginaw Bay	006
St. Clair	020
Sharon	011
White, H. Lee	012
Wilson, Charles E.	013
Amoco Oil Co.	
Amoco Illinois	318
Amoco Indiana	319
Amoco Wisconsin	320
Bethlehem Steel Corporation	
Burns Harbor	065
Cort, Stewart J.	060
Foy, Lewis Wilson	066
Homer, Arthur B.	061
Johnstown	062
Lehigh	063
Sparrows Point	064
Cleveland Cliffs Iron Co.	
Boyer, Willis B.	068
Cadillac	069
Champlain	070

Cleveland Cliffs Iron Co.	I.D.
Cliffs Victory	071
Greene, Edward B.	074
Mather, William G.	075
Pontiac	077
Sterling, Walter M.	079
Erie Sand Steamship Co.	
Lakewood	085
Niagara Consumers Power	087
Ford Motor Co.	
Breech, Ernest R.	342
Dykstra, John	341
Ford, Benson	344
Ford, Henry II	343
Ford, William Clay	340
Hanna Mining Co.	
Carnahan, Paul H.	090
Falk, Leon Jr.	091
Humphrey, George M.	092
Stinson, George A.	096
Thompson, Joseph H.	094
Hannah Marine Corp.	
Hannah, Mary E.	300
National Gypsum	
Crapo, S.T.	305
Ford, E.M.	306
Ford, J.B.	307
Harriman, Lewis G.	308
Iglehart, J.A.W.	309
Townsend, Paul H.	310
Inland Steel Corp.	
Block, E.J.	100
Block, Joseph L.	106
Block, L.E.	101
Block, Philip D.	102
Ryerson, Edward L.	104
Sykes, Wilfred	105

Interlake Steamship Co.	I.D.
Barker, James R.	118
Beeghly, Charles M.	111
Coulby, Harry	112
William J. DeLancey	120
Grace, E.G.	113
Hoyt, Elton II	114
Jackson, Herbert C.	115
Mauthe, J.L.	116
Mesabi Miner	119
Sherwin, John	117
Oglebay Norton Co.	
Armco	140
Ashland	141
Ayers, J. Burton	150
Columbia Star	139
Courtney Burton	142
Frantz, Joseph H.	155
Holloway, W.W.	147
Middletown	143
Norton, Robert C.	149
Oglebay, Crispin	148
Reiss, William A.	146
Reserve	144
Roesch, William R.	158
Sensibar, J.R.	151
Thayer, Paul	159
White, Fred R. Jr.	156
Wilson, Thomas	157
Wolverine	154
U.S. Corps of Engineers	
Tug Duluth	030
Tug Lake Superior	032
Tug Marquette	031
U.S. Steel Corporation	
Roger Blough	163

SHIP ADDRESS CODES--ALPHABETICAL LIST

American Mariner	003	Falk, Jr., Leon	091
American Republic	014	Ford, Benson	344
Amoco Illinois	318	Ford, E.M.	306
Amoco Indiana	319	Ford, Henry II	343
Amoco Wisconsin	320	Ford, J.B.	307
Armco	140	Ford, William Clay	340
Ashland	141	Foy, Lewis Wilson	066
Ayers, J. Burton	150	Frantz, Joseph H.	155
Barker, James R.	118	Grace, E.G.	113
Beeghly, Charles M.	111	Greene, Edward B.	074
Belle River	021	Hannah, Mary E.	300
Block, E.J.	100	Harriman, Lewis G.	308
Block, L.E.	101	Holloway, W.W.	147
Block, Joseph L.	106	Homer, Arthur B.	061
Block, Philip D.	102	Hoyt, Elton II	114
Blough, Roger	163	Humphrey, George M.	092
Boland, John J.	002	Hutchinson, John T.	007
Boyer, Willis B.	068	Iglehart, J.A.W.	309
Breech, Ernest R.	019	Indiana Harbor	009
Buffalo	006	Jackson, Herbert C.	115
Burns Harbor	065	Johnstown	063
Burton, Courtney	142	Kyes, Roger M.	008
Cadillac	069	Lakewood	085
Carnahan, Paul H.	090	Laud, Sam	001
Champlain	070	Lehigh	063
Cliffs Victory	071	McKee Sons	010
Columbia Star	139	Marquette (tug)	031
Consumers Power	087	Mather, Samuel	110
Cornelius, Adam E.	004	Mather, William G.	075
Cort, Stewart J.	060	Mauthe, J.L.	116
Coulby, Harry	112	Mesabi Miner	119
Crapo, S.T.	305	Middletown	143
DeLancey, W.J.	120		
Detroit Edison	005		
Duluth (tug)	030		
Dykstra, John	341		

SHIP ADDRESS CODES--ALPHABETICAL LIST

Niagara	086	Thayer, Paul	159
Nicolet	016	Thompson, Joseph H.	094
Norton, Robert C.	149	Townsend, Paul H.	310
Oglebay, Crispin	148	White, Jr., Fred R.	156
Pontiac	077	White, H. Lee	012
Reiss, Richard J.	018	Wilson, Charles E.	013
Reiss, William A.	146	Wilson, Thomas	135
Reserve	144	Wolverine	154
Roesch, William R.	158		
Ryerson, Edward L.	104		
Saginaw Bay	006		
St. Clair	020		
Sensibar, J.R.	151		
Sharon	011		
Sherwin, John	117		
Sparrows Point	064		
Sterling, Walter A.	079		
Stinson, George A.	096*		
Superior (tug)	032		
Sykes, Wilfred	105		
Sylvania	152		

*Denotes not yet installed.

The remainder of the book is an alphabetical list of FCC ship call signs. These are found elsewhere on: <https://www.imradioha.org>.