

U.S. GREAT LAKES MARINE FORECAST (MAFOR) BULLETINS

Great Lakes weather forecasts are issued every six hours by the United States Weather Bureau Forecast Center, Chicago, Illinois, for broadcast to Great Lakes shipping. These weather forecast bulletins will be issued in the international MAFOR (Marine Forecast) code. The MAFOR code replaces the LAFOT (Lake Forecast) code formerly used for broadcasting Lake weather forecasts to ships.

The MAFOR broadcasts will be made by the stations listed at the end of this section, at the time and frequencies indicated. The U.S. MAFOR broadcasts begin a few minutes after 12 midnight, 6 a.m., 12 noon, and 6 p.m. EST. The forecast period for these broadcasts begins at 1 a.m., 7 a.m., 1 p.m. and 7 p.m. EST respectively. The 24-hour forecast period for Canadian MAFORS issued by the Dominion Public Weather Office at Toronto begins at the time of broadcast.

EXPLANATION OF THE MAFOR CODE

MAFOR (Name of lake or seaway) 1GDF_mW_i

Great Lakes forecasts broadcast in the International MAFOR Code are coded in 5-figure groups in the form 1GDF_mW_i, preceded by the name of the lake or seaway covered in the forecast as shown above. Since the weather conditions forecast by the first group are valid only for a limited period, additional groups in the same form are used to describe each change in weather conditions expected during the 24-hour period covered by the forecast.

The first group for each lake mentioned in the broadcast gives the weather conditions forecast for the period beginning on the next hour after the broadcast and is valid for the number of hours indicated by decoding the code figure for the symbol letter "G". The forecast period begins at 1 a.m., 7 a.m. and or 7 p.m.

The next group or groups 1GDF_mW_i, when included, give the wind and weather forecast for the remainder of the 24-hour forecast period. The forecast conditions in each successive group begin at the end of the period indicated by the code figure for "G" in the preceding group.

The code symbol letters and tables for decoding each symbol code figure are as follows:

MAFOR = Key Word indicating coded marine forecasts in form 1GDF_mW_i.

I = Identifying figure and is always 1.

G = Period of time covered by forecast Table I

D = Direction of forecast surface wind Table II

F_m = Force of forecast surface windTable III

W_i = Forecast weatherTable IV

Examples of MAFOR Bulletins broadcast shortly after midnight EST (Forecast period beginning 1 a.m. EST.)

CODED BULLETIN BROADCAST

MAFOR SUPERIOR 14848 14730 West Half 14128 14848 East Half.

MAFOR ERIE 16900 (1GDF_mW_i)

TRANSLATION

Lake Superior: First 12 hours of forecast period, wind, N. 28 to 33 knots, weather, squally; next 12 hours, wind NW, 22 to 27 knots, weather, moderate or good visibility
WEST HALF. First 12 hours of forecast period, wind NE, 17 to 21 knots, weather, squally; next 12 hours, wind N. 28 to 33 knots, weather, squally
EAST HALF.

(1) **Lake Erie:** (6) 24 hour forecast period, (9) winds—variable, (0) 0 to 10 knots, (0) weather—moderate to good visibility.

TABLE I:
Symbol G—Period of time covered by broadcast

Code Figure	Description
0	Conditions at the time of forecast
1	Forecast valid for 3 hours
2	Forecast valid for 6 hours
3	Forecast valid for 9 hours
4	Forecast valid for 12 hours
5	Forecast valid for 18 hours
6	Forecast valid for 24 hours
7	Forecast valid for 48 hours
8	Forecast valid for 72 hours
9	Occasionally

TABLE II:
Symbol D—Direction of Surface Wind

Code Figure	Direction
0	Calm
1	Northeast
2	East
3	Southeast
4	South
5	Southwest
6	West
7	Northwest
8	North
9	Variable

TABLE III: Symbol F_m—Force of Wind

Code Figure	Force (knots)	Miles Per Hour	Equivalent beaufort Scale	Plain Language Terms
0	0 to 10	0-12	3	Light, gentle
1	11 to 16	13-18	4	Moderate
2	17 to 21	19-24	5	Fresh
3	22 to 27	25-31	6	Strong
4	28 to 33	32-38	7	Strong
5	34 to 40	39-46	8	Gale
6	41 to 47	47-54	9	Gale
7	48 to 55	55-63	10	Whole Gale
8	56 to 63	64-75	11	Whole Gale
9	64 and above	Over 75	12	Hurricane

TABLE IV: Symbol W₁—Forecast Weather

CODE FIGURE	WEATHER
0	Moderate or good visibility (greater than 3 nautical miles)
1	Risk of accumulation of ice on superstructures (Temp. 23-32°)
2	Strong risk of accumulation of ice on superstructures (Temp. below 23°)
3	Mist (visibility 5/8 to 3 nautical miles)
4	Fog (visibility less than 5/8 nautical miles)
5	Drizzle
6	Rain
7	Snow or rain with snow
8	Squally weather with or without showers
9	Thunderstorms

NOTES:

1. Each MAFOR Bulletin also contains a brief weather summary giving positions of Lows, Highs, Fronts and other features on the weather map that may affect the Lake Region within the 24-hour forecast period. The synopsis is based on observations taken about 6 hours prior to broadcast.
2. When Small Craft, Gale or Whole Gale warnings have been issued for any lake, the appropriate U.S. MAFORS will also contains a statement indicating the type of display and the area along the Lakes where warning displays are in effect.

U.S. MAFOR Radiotelephone Broadcast Schedules

City	Station	KC	Forecasts	Broadcast Times -- EST
Lorain, Ohio	WMI	2514 (4422.2)	SMHEOL	12:02&6:02 am &pm
Chicago, Ill.	WAY	2514	SMHEOL	12:09&6:09 am&pm
Rogers City, Mich.	WLC	2514 (4422.2)	SMHEOL	12:16&6:16 am&pm
Buffalo, N.Y. (Martinsville)	WBL	2514*	HEOL	12:23&6:23 am&pm, * not used at 12:23& 6:23 am
Duluth, Minn.	WAS	2514 † 4422.2 ‡	SMH	12:27 am & 6:27 am &pm, † at 12:23 pm, ‡ at 12:27 pm
Port Washington, Wis.	WAD	2514	SMH	12:23&6:23 am, 12:27 pm

WINTER SCHEDULE

Chicago, Ill. (Lake Bluff)	WAY	2514 (4422.2)	SM	12:02&6:02 am&pm
Port Washington, Wis.	WAD	2514 (4422.2)	SM	12:06&6:06 am&pm
Lorain, Ohio	WMI	2514 (4422.2)	SMHE	12:10&6:10 am&pm

NOTE: S Lake Superior; M— Lake Michigan; H—Lake Huron; E Lake Erie;
O Lake Ontario; L St. Lawrence River

U.S. GREAT LAKES WEATHER BULLETIN (LAWEB) BROADCASTS

Great Lakes Weather Bulletins (LAWEB) are issued by the U.S. Weather Bureau for radio-telephone broadcast every six hours during the navigation season. Schedule of LAWEB broadcasts are as follows:

City	Station	KC	Broadcast Times—EST
Lorain, Ohio	WMI	2514 (4422.2)	2:30 & 8:30 am & pm

EXPLANATION OF GREAT LAKES WEATHER BULLETIN (LAWEB)

Great Lakes Weather Bulletins (LAWEB) are issued by the U.S. Weather Bureau for broadcast every six hours during the navigation season.

The LAWEB contains plain-language reports of wind direction and speed (in knots) and/or barometer reading; also ice data in season, from shore stations in the Lake Region and ships on the Lakes.

Ship reports are from vessels underway on the Lakes when they are more than 3 miles off shore. Ships' positions are given in distance in miles and direction from well-known landmarks; visibility and weather are included in both land and ship reports when visibility is less than 5/8 of a mile. Observations are taken one hour and 30 minutes prior to the time of broadcast. Reports in the Bulletin are sent in the following order:

Lake Michigan

Point Betsie, Mich. (wind only)
Muskegon Harbor, Mich.
St. Joseph, Mich. (wind only)
Chicago, Ill. (barom. only)
Dunne Croc, Ill. (wind only)
Milwaukee Breakwater, Wis. (wind only)
Green Bay, Wis.
Lansing Shoal, Mich. (wind only)
Mackinaw City, Mich. (wind only)
Ship Reports

Lake Superior

Sault Ste. Marie, Mich.
Whitefish Point, Mich. (wind only)
Manitow Island, Mich. (wind only)
Marquette Harbor, Mich. (wind only)
Eagle Harbor, Mich. (wind only)
Hancock, Mich. (wind only)
Houghton, Mich.
Superior Harbor, Wis. (Temp. when below 32°)
Rock of Ages Island, Mich. (wind only)
Lakehead, Ont. (wind only)
State Island, Ont. (wind only)
Caribou Island, Ont. (wind only)
Ship Reports

Lake Ontario

Oswego, N.Y.
Rochester (Charlotte), N.Y. (wind only)
Fort Niagara, N.Y. (wind only)
Toronto, Ont. (wind only)
Trenton, Ont.
Main Duck, Ont. (wind only)
Ship Reports

Lake Huron

Port Huron, Mich. (wind only)
Bay City, Mich. (wind only)
Tawas Point, Mich. (wind only)
Alpena, Mich.
Thunder Bay Island, Mich. (wind only)
Gore Bay, Ont. (wind only)
Cove Island, Ont. (wind only)
Warton, Ont.
Ship Reports

Lake Erie

Buffalo Light, N.Y.
Erie Light, Pa. (wind only)
Ashtabula Light, Ohio (wind only)
Cleveland Light, Ohio
Point Marblehead, Ohio (wind only)
Toledo Light, Ohio
Southeast Shoal, Ont. (wind only)
London, Ont.
Long Point, Ont. (wind only)
Ship Reports

CANADIAN GREAT LAKES MAFOR AND ST. LAWRENCE LAWEB BULLETINS

MAFOR for Lakes Superior, Huron, Erie and Ontario and Georgian Bay are issued by the Weather Office, Toronto, Canada.

City	Station	Broadcast Time -- EST
Cardinal, Ont.	VDO	4:50 & 10:50 am & pm
Kingston, Ont.	VBH	4:40 & 10:40 am & pm*
Warton, Ont.	VBC	4:00 & 10:00 am & pm
Lakehead, Ont.	VBA	4:30 & 10:30 am & pm
Port Burwell, Ont.	VBFB†	3:50 & 9:50 am & pm
Sarnia, Ont.	VBE‡	4:10 & 10:10 am & pm
Sault Ste. Marie, Ont.	VBB	4:20 & 10:20 am & pm
Toronto, Ont.	VBG	3:40 & 9:40 am & pm

All broadcasts are made on 2514 KC/S except as noted.

* Also at 7:10 am, June to August inclusive.

† On 2514 KC/S only. ‡ Also on 4415.8 KC/S.

Urgent reports of dangers to navigation and revision to current weather forecasts are transmitted immediately on receipt by each station shown in the table above. These reports also immediately follow the MAFORS broadcasts.

CANADIAN FORECAST AND LAWEB BULLETINS

For the St. Lawrence River area are broadcast by Radiotelephone Station VCF, Mont Joli, Que. on 2582 KCs, during the navigation season, Forecast Bulletins are transmitted at 7:20 a.m., 12:30 and 7:20 p.m. EST and LAWFBs at 3 and 9 a.m. and p.m. EST. LAWEBs include weather reports from Montreal, Quebec, Mont Joli, Seven Islands, Fox River, Campbelltown, Chatham, Summerside, Grindstone, St. Andrews, Stephenville, Daniels Harbor, Bell Isle, Harrington Harbour, Natashquan, Ellis Bay and ships. Reports include visibility when less than 5 mile. Ships' positions are given in latitude and longitude.

These stations also broadcast local area weather reports. The broadcasts also include reports for nearby areas.

Station	Report Includes	Broadcast Times -- EST
VBH	Main Duck Island	1:10 & 7:10 am & pm
VBA	Caribou, Slate Islands & Lakehead	1:40 & 7:40 am & pm
VBB	Caribou & Slate Islands	1:20 & 7:20 am & pm
VBC	Cove Island	1:00 & 7:00 am & pm
VBE	Cove Island	1:30 & 7:30 am & pm
VBFB	Southeast Shoal, Long Point & Port Colborne	12:50 & 6:50 am & pm
VBG	Southeast Shoal, Long Point & Port Colborne	1:40 & 7:40 am & pm

U.S. GREAT LAKES GALE AND WHOLE GALE WARNING BROADCASTS

Gale and Whole Gale warnings for the Great Lakes are broadcast by U.S. radio-telephone (voice) stations during the navigation season (about April 1 to December 15). These warnings are broadcast on receipt of the message from the U.S. Weather Bureau. The warning is repeated at 2-hour intervals thereafter for a period of 5 hours from the "Hoist" time given in the message, unless superseded or cancelled. Cancellation of a warning is given once only on the next scheduled warning broadcast following receipt of the cancellation message. Schedules in the table are in minutes past EVEN or ODD hours, EST.

Location	Station Call Letters	Lake [†]	Broadcast Times—EST
Buffalo, N.Y.	WBL	EOL	On receipt and 55 min. after odd hours
Erie, Pa.	NMD-11	E	On receipt and 55 min. after even hours
Lorain, Ohio	WM1	SMHEOL	On receipt and 35 min. after odd hours
Port Huron, Mich.	NMD-22	H	On receipt and 35 min. after even hours
E. Tawas, Mich.	NMD-24	H	On receipt and 55 min. after odd hours
Rogers City, Mich.	WLC	SMH	On receipt and 45 min. after even hours
Sault Ste. Marie, Mich.	NOG	SMH	On receipt and 45 min. after odd hours
Portage, Mich.	NOG-17	S	On receipt and 35 min. after even hours
Marquette, Mich.	NOG-5	S	On receipt and 55 min. after even hours
Chicago, Ill.	WAY*	SM	On receipt and 45 min. after odd hours
Port Washington, Wis.	WAD*	M	On receipt and 55 min. after odd hours
Plum Island, Wis.	NAP-15	M	On receipt and 35 min. after even hours
Duluth, Minn.	WAS	S	On receipt and 55 Min. after odd hours

ALL BROADCASTS ARE ON 2182 KC

* Also during winter months.

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‡ Lake covered in warnings: S—Superior; M—Michigan; H—Huron; E—Erie;
O—Ontario; L—St. Lawrence River above St. Regis.