

DSC WATCH - Coast stations participating in MF, HF and VHF watch-keeping using digital selective calling techniques

- DC1** Open only during the season of navigation, as advertised in the Canadian Coast Guard publication "Radio Aids to Marine Navigation", Part 2.
- DC2** Remote receiver site located at Resolute, NU.

MED- ADVICE - Stations transmitting medical advice

- MD1** Masters of ships may obtain medical advice by addressing a radiotelegram to "Radiomedical" and routing it via the nearest Canadian Coast Guard Marine Communications and Traffic Service (MCTS) Centre, which will refer the message to the nearest medical authority and transmit the reply to the ship.

There is no charge for this service.

- MD2** Radio equipment situated in Churchill, Manitoba and remotely controlled from Iqaluit Coast Guard Radio (VFF) (Nunavut).
- MD3** Radio equipment situated in Resolute, Northwest Territories, and remotely controlled from Iqaluit Coast Guard Radio (VFF) (Nunavut).
- MD4** SUP
- MD5** SUP
- MD6** SUP
- MD7** Open only during the season of navigation, as advertised in the Canadian Coast Guard publication "Radio Aids to Marine Navigation", Part 2.
- MD8** Simplex operation.

METEO - Stations transmitting regular meteorological bulletins

BM1 **General note:**

MAFORs are no longer broadcast but are available upon requests.

Code for weather forecasts on the Great Lakes and St. Lawrence River:

- Weather forecasts are transmitted by Canadian Coast Guard Marine Communications and Traffic Services (MCTS) Centres on the Great Lakes and St. Lawrence River in code groups of five figures. This international code is referred to as the MAFOR code and presents the weather advice to be transmitted by radio and recorded in an extremely concise form. Forecasts cover 24 hours and are issued for Lakes Superior, Huron, Erie, Ontario, the Georgian Bay and St. Lawrence River.
- The initial group of the MAFOR code is in the form YYG1G1/ and indicates the date and time of the beginning of the forecast period. The time, G1G1, is in UTC and it should be remembered that this is five hours in advance of Eastern Standard Time.

- The subsequent groups in the code are of the form 1GDFmW1. The first figure is an identifying figure required by international practice. For the Great Lakes and St. Lawrence River forecasts the number will always be 1.
- The second figure, G, indicates the period of time during which the forecast conditions described in the 5-figure group are expected to persist, according to Table I. In the first 5-figure group of a forecast the period indicated by G commences at the time G1G1 given in the initial date/time group. In the second and succeeding 5 figure forecast groups the period indicated by G commences at the end of the period covered by the preceding group.
- The third figure, D, represents the wind direction according to Table II.
- The fourth figure, Fm, represents the wind speed according to Table III. Variations from the forecast speed may be expected. For average speeds up to 15 knots, variations will usually be up to 40% though occasionally as high as 70%. Above 15 knots, the variations will seldom be over 20% although occasionally as high as 30%.
- The last figure, W1, gives the weather according to Table IV.

Table I	
G	– Period of time covered by forecast
0	– Conditions at beginning of forecast period
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	
D	– Forecast direction of wind
0	– Calm
1	– Northeast
2	– East
3	– Southeast
4	– South
5	– Southwest
6	– West
7	– Northwest
8	– North
9	– Variable

Table III			
F_m – Forecast strength of surface wind			
0	–	Beaufort number 0 – 3	(0 – 10 knots)
1	–	Beaufort number 4	(11 – 16 knots)
2	–	Beaufort number 5	(17 – 21 knots)
3	–	Beaufort number 6	(22 – 27 knots)
4	–	Beaufort number 7	(28 – 33 knots)
5	–	Beaufort number 8	(34 – 40 knots)
6	–	Beaufort number 9	(41 – 47 knots)
7	–	Beaufort number 10	(48 – 55 knots)
8	–	Beaufort number 11	(56 – 63 knots)
9	–	Beaufort number 12	(64 knots and above)

Table IV	
W_1 – Forecast weather	
0	– Moderate or good visibility (greater than 3 nautical miles)
1	– Risk of accumulation of ice on superstructures
2	– Strong risk of accumulation of ice on superstructures
3	– Mist (visibility 5/8 to 3 nautical miles)
4	– Fog (visibility less than 5/8 nautical mile)
5	– Drizzle
6	– Rain
7	– Snow or rain and snow
8	– Squally weather with or without showers
9	– Thunderstorms

Example of forecast broadcast at 2200 h E.S.T. (local time), July 3

As broadcast:

MAFOR 0403/SUPERIOR 12646 14755 12720

ONTARIO 15820 12804

As translated:

Marine forecasts valid from 0300 h UTC of the 4th (2200 h E.S.T. – local time – of the 3rd).

Lake Superior: First six hours of the forecast period – wind west 28-33 knots, with rain; next 12 hours of forecast period – wind northwest 34-40 knots with drizzle; final six hours of forecast period – wind northwest 17-21 knots, visibility greater than 3 nautical miles.

Lake Ontario: First 18 hours of forecast period – wind north 17-21 knots, visibility greater than 3 nautical miles; final 6 hours of forecast period – wind north 10 knots or below, fog reducing visibility to less than 5/8 nautical mile.

The Officer at a Canadian Coast Guard Radio MCTS Centre will interpret the forecasts entirely in plain language if requested, but he should only be asked for the forecasts of special interest to the questioner.

Synopsis:

Each MAFOR broadcast will be followed by a brief synopsis of the current weather chart. The synopsis will give the location, the sea level pressure in inches at that location, and the direction and rate of motion of high and low pressure centres in the immediate vicinity. Reference will occasionally be made to marked windshift lines giving the anticipated time at which the wind will shift at key points.

The following is an example of the type of synopsis that will be issued:

Low 29.20 Chicago moving ENE 35.

Wind shift. SW to NW Detroit early morning, Kingston late evening.

BM2 On request, the station will transmit, free of charge, any current meteorological information that it may have on hand.

BM3 **SUP**

BM4 **SUP**

BM5 The station is open during the season of navigation only, as advertised in the Canadian Coast Guard publication "Radio Aids to Marine Navigation", Part 2.

BM6 Gale and storm warnings issued by the Meteorological Service will be transmitted in radiotelephony on the working frequency after a preliminary call on 2182 kHz (J3E) (where available) and/or after the initial VHF DSC Alert and call on 156.80 MHz (F3E) immediately upon receipt by the station and every two hours on MF until the next scheduled MF broadcast.

BM7 Station operated by the Canadian Broadcasting Corporation.

- BM8** Broadcasting station of the Newfoundland Network operated by the Canadian Broadcasting Corporation, which broadcasts as follows:
- Monday-Friday: 0030, 0246, 1000, 1155, 1715, 2130 h;
 - Saturdays: 0220, 1002, 1105, 1157 h;
 - Sundays: 1002, 1103, 1157 h.
- BM9** **SUP**
- BM10** Weather summary and forecasts.
- BM11** Gale/storm/hurricane warnings.
- BM12** Mid-May to mid-November.
- BM13** Saturdays only.
- BM14** Monday to Friday inclusive.
- BM15** Sundays only.
- BM16** Map analysis.
- BM17** 122.5 kHz shut down for maintenance between 1300 – 1600 h on the second Wednesday of each month.
- BM18** Continuous Marine Broadcast (CMB) on VHF and/or at scheduled broadcast times as indicated.
- BM19** Continuous Marine Broadcast stopped during "live" scheduled broadcasts.
- BM20** **SUP**
- BM21** Notice to Fish Harvester (information on Fish Area Openings or Closures, Fish quotas, etc.).
- BM22** **SUP**
- BM23** English language followed by entire broadcast repeated in French.
- BM24** RADIOFACSIMILE - Weather charts.
- BM25** RADIOFACSIMILE - Ice Charts.
- BM26** **SUP**
- BM27** Continuous Marine Broadcast in French.
- BM28** **SUP**
- BM29** Ice reports during the ice season, from 1st March to 1st July, approximately.
- BM30** Canadian ice forecasts and ice advisory information.

NOTICE NAV - Stations transmitting notices to navigators

- NA1** 122.5 kHz shut down for maintenance between 1300 – 1600 h on the second Wednesday of each month.
- NA2** The station is open only during the season of navigation, as advertised in the Canadian Coast Guard publication "Radio Aids to Marine Navigation", Part 2.
- NA3** Local iceberg reports.
- NA4** Urgent reports respecting dangers to navigation will be transmitted in radiotelephony on the working frequency after a preliminary call on 2182 kHz (J3E) (where available) and/or after the initial VHF DSC Alert and call on 156.80 MHz (F3E) immediately upon receipt by the station and every two hours on MF until the next scheduled MF broadcast.
- NA5** Ice reports during the ice season, from 1st March to 1st July, approximately.
- NA6** **SUP**
- NA7** **SUP**
- NA8** Radio equipment situated in Resolute, Northwest Territories, and remotely controlled from Iqaluit COAST GUARD RADIO (VFF) (Nunavut).
- NA9** Radio equipment situated in Coral Harbour, Northwest Territories, and remotely controlled from Iqaluit Coast Guard Radio (VFF) (Northwest Territories).
- NA10** **SUP**
- NA11** Canadian ice forecasts and ice advisory information.
- NA12** This station transmits St. Lawrence Seaway radio messages. Seaway Radio messages provide seaway users with information that may facilitate the planning of vessel transits throughout the remainder of the navigation season.
- While in the section of the St. Lawrence River between Quebec and Kingston, all vessels must stand by for these broadcasts at least once every four hours, and must make an entry in their radio log that this has been done.
- NA13** International Ice Patrol ice information. Transmissions are made from February to June inclusive (International Ice Patrol Season).
- NA14** **SUP**
- NA15** Notice to Fish Harvesters (information on Fish Area Openings or Closures, Fish quotas, etc.).
- NA16** Continuous Marine Broadcast (CMB) on VHF and/or at scheduled broadcast times as indicated.
- NA17** Continuous Marine Broadcast stopped during "live" scheduled broadcasts.
- NA18** **SUP**
- NA19** Gale/storm/hurricane warnings.
- NA20** **SUP**
- NA21** **SUP**

NA22 Automated Weather Reports, Ocean Buoys Reports and Lighthouse Weather Reports.

NA23 **SUP**

NA24 Continuous Marine Broadcast in French.

NA25 English broadcast followed by repeat of broadcast in French.

UTC - Stations transmitting radio time signals

HR1 Geographical coordinates:

75° 45' 22" W 45° 17' 47" N.

HR2 English language broadcasting stations operated by the Canadian Broadcasting Corporation transmit a time signal daily commencing at 17 h 59m 20s UTC and terminating with a one-second dash at 18 h 00m 00s UTC preceded by ten seconds of silence. During the period when daylight saving time is in force, the time signal is transmitted between 16 h 59m 20s UTC and 17 h 00m 00s UTC. French language stations transmit the same signal exactly one hour earlier.

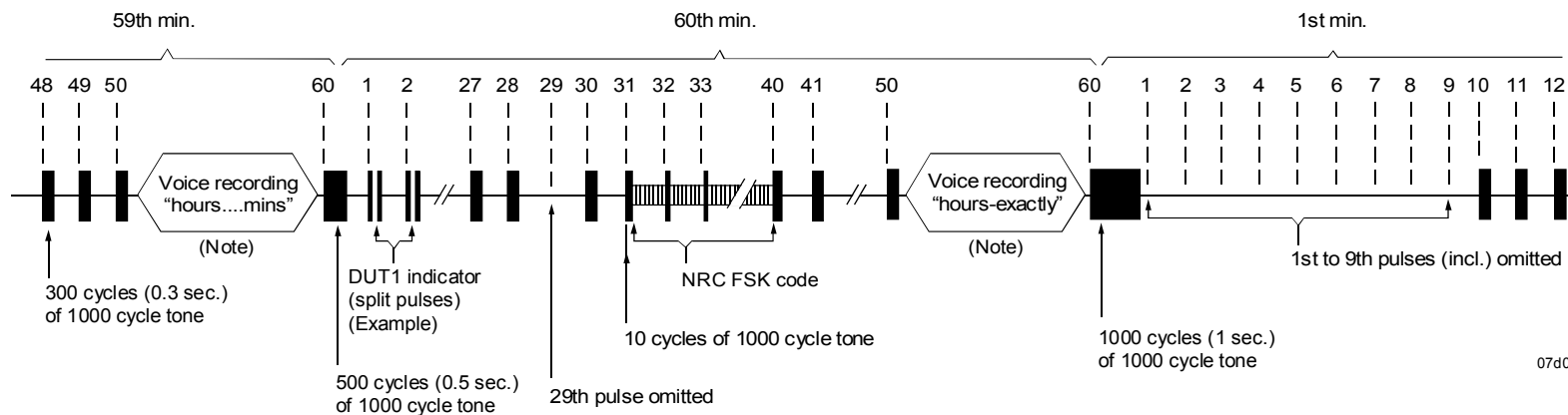
HR3 Time signals originate from the National Research Council's station CHU at Ottawa, Ontario, and are transmitted continuously at frequencies of 3330, 7335 and 14 670 kHz in the upper single side-band, carrier reinserted mode, H2B H3E. The three transmitter frequencies and time signals are derived from a cesium frequency standard which is monitored continuously with respect to the NRC primary clock. The transmitted frequencies and time signals are maintained within 5 parts in 10⁻¹² and 0.1 millisecond respectively compared with the UTC time scale maintained by the "Bureau International de l'Heure".

The seconds pulses consist of 300 cycles of a 1000 Hz tone. The beginning of each pulse marks the exact second. The zero pulse of each minute is 0.5 second long, and the zero pulse of each hour is one second long. The sequence and form of the pulses are also modified as follows:

1. The 29th pulse of each minute is omitted.
2. The 51st to 59th pulses of each minute are omitted. During this interval station identification and time are announced in both English and French.
3. The 1st to 9th pulses are omitted from the first minute of each hour.
4. The 1st to 15th pulses of each minute may be split so as to indicate the difference DUT1 between UT1 and UTC in magnitude to the nearest 0/10th of a second, and in sign.
5. The 31st to 39th pulses of each minute are shortened to 10 cycles of 1000 Hz and each is followed by a frequency shift code which can be employed to synchronize remote clocks to the time scale UTC (NRC).

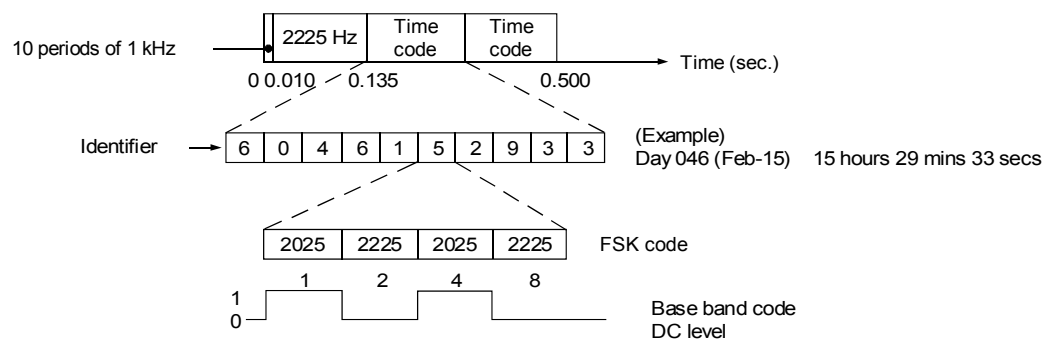
A voice recording of the time occurs each minute in the ten-second gap between the 50th and 60th second. It refers to the beginning of the minute or hour pulse that follows. The announcement is on the 24-hour system, alternating in French and English.

The data transmission sequence is graphically illustrated in the following diagram:



07d05

NRC (ASC II) FSK TIME CODE



NOTE VOICE ANNOUNCEMENTS ALTERNATE IN FRENCH AND ENGLISH:

"CHU CANADA, COORDINATED UNIVERSAL TIME HOURS MINUTES HEURES MINUTES" (EVEN MINUTES)
 "CHU CANADA, TEMPS UNIVERSEL COORDONNÉ HEURES MINUTES HOURS MINUTES" (ODD MINUTES)

CP - Coast stations providing a public correspondence service

General Information.

In the interest of safe and expeditious navigation, Vessel Traffic Service (VTS) and Information Systems have been established in most areas of the Canadian territorial seas, internal waters and fishing zones to regulate vessel traffic and provide mariners with timely navigation safety and ice information. Ships entering Canadian coverage should be aware of the requirements of the VTS systems. Information concerning such systems may be obtained on request from the nearest Canadian Marine Communications and Traffic Services (MCTS) Centre, free of charge.

MCTS Centres are part of the Search and Rescue Coordination System and maintain a continuous watch on the international distress, safety and calling frequencies 2182 kHz and 156.80 MHz as indicated in column 5 of station particulars. All information received relating to distress, urgency or safety matters will be forwarded to the proper authorities unless such information is contained in a message specifically addressed elsewhere.

NOTES.

CP1 Owned by: Government of Canada, Department of Fisheries and Oceans, Ottawa, Ontario.

CP2 Accepts AMVER traffic. No land station charge is assessed if messages are addressed to AMVER Halifax or AMVER Vancouver.

CP3 **SUP**

CP4 Used (at this station) for the transmission of meteorological bulletins and notices to mariners.

CP5 **SUP**

CP6 Simplex operation.

CP7 **SUP**

CP8 Open only during the season of navigation, as advertised in the Canadian Coast Guard publication "Radio Aids to Marine Navigation", Part 2.

CP9 **SUP**

CP10 **SUP**

CP11 **SUP**

CP12 **SUP**

CP13 **SUP**

CP14 **SUP**

CP15 **SUP**

CP16 **SUP**

CP17 Remote receiver site located at Resolute, NU.

CP18 **SUP**

CP19 **SUP**

CP20 **SUP**

CP21 **SUP**

CP22 No commercial Ship's business messages or Private messages accepted. Messages handled without charge include:

- Messages pertaining to weather or ice information and ice routing;
- Messages concerning aids to navigation;
- AMVER Messages that are addressed AMVER HALIFAX;
- Radio-medical messages;
- Messages reporting pollution;
- Messages addressed to a port or a member of the Canadian Coast Guard that involve a report of a ship movement, position or condition;
- Messages addressed to a Joint Rescue Coordination Centre (JRCC) or Maritime Rescue Sub-Centre (MRSC);
- Pilotage messages;
- Official Naval messages;
- Quarantine messages addressed to "Quarantine"; and,
- Messages requesting a doctor to meet a ship on arrival.

CP23 Ship's telephone service (duplex calls) only provided in specific areas of Atlantic Canada.

CP24 Ship's telephone service (duplex calls) available.

AAIC - Charges and accounting authorities

A Accounting authority: Fisheries and Oceans Canada, 200 Kent Street, Ottawa, Ontario K1A 0N6 (Canada).
 E-mail: infopol@dfo-mpo-gc.ca