

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

DC1 Commercial coast station operated by: U.S. Coast Guard.

MED- ADVICE - Stations transmitting medical advice

General Information

INMARSAT system is available for communications concerning medical advice or assistance through the coast earth stations at Southbury, Connecticut for the Atlantic Ocean area and at Santa Paula, California for the Pacific Ocean area. The U.S. Coast Guard urges that mariners contact CIRM Rome or other medical advisory services directly if possible for routine medical services. The U.S. Coast Guard will, of course, utilize its facilities to effect medical evacuations when warranted and will utilize every available means of communications to facilitate the provision of medical advice. Messages may be addressed to the U.S. Coast Guard Rescue Coordination Center, New York (which covers the Atlantic Ocean area), telephone No. 212-668-7055, telex No. 127775 or to the U.S. Coast Guard Rescue Coordination Center, Alameda, California (which covers the Pacific Ocean area), telephone No. 510 437 3700, telex No. 172343.

Messages should be prefixed "MEDICO" and signed by the master. Such messages should state briefly and clearly the symptoms (sickness or injury) of the affected person.

The U.S. Coast Guard Rescue Coordination Center will promptly forward the message received via INMARSAT to their associated medical facilities for action. Treatment will be decided upon and suitable instructions transmitted to the vessel as soon as possible.

Standard tariffed message charges will apply.

If a ship should address its message to a specific medical facility it will be handled and charged for as any other normal message.

MD1 Telephone calls from ships to doctors or hospitals are handled as regular telephone calls in accordance with legally applicable tariffs. If a ship states that it is placing an emergency call for medical aid or medical advice and does not give a telephone number or specify a particular doctor or hospital, the connection is completed to the United States Coast Guard for handling. No charge is made for such a call to the United States Coast Guard when the ship states it is an emergency involving the safety of life or property at sea. The station will make direct connection with whomsoever requested.

MD2 Medical message service furnished to ships at sea by stations of the United States Coast Guard.

Messages received from masters of vessels should state briefly and clearly the symptoms (sickness or injuries) of the afflicted person. No charges are involved. U.S. Coast Guard radio stations guarding 2182 kHz will answer on the frequency being guarded and then shift to a working frequency. Those radio stations listening on the 8, 12, 16 and 22 MHz maritime mobile calling bands will answer on their assigned coast station working frequencies listed in List IV. The use of "CQ" for medical messages is discouraged.

MD3 Remotely controlled from Chesapeake, Virginia Radio (NMN).

NAV INFO - Coast stations transmitting to ships navigational and meteorological warnings and urgent information (MSI) by means of narrow-band direct-printing techniques

- IF1** Commercial coast station operated by: U.S. Coast Guard.
- IF2** Remotely controlled from Guam, Mariana Islands (NRV).
- IF3** Remotely controlled from Point Reyes, California (NMC).

METEO - Stations transmitting regular meteorological bulletins

BM1 U.S. Coast Guard station. The regularly scheduled transmissions, made at the times indicated, consist of weather forecasts (except as otherwise noted), notices to mariners, and hydrographic information. Emergency transmissions of urgent marine information, storm and hurricane warnings, and advisories are transmitted as indicated in column 5 of the particulars of the station.

Radiotelephone emissions are made on the frequency 2670 kHz and/or 157.10 MHz (see column 3 of the particulars for each station) after initial call on the frequency 2182 kHz and/or 156.80 MHz respectively.

- BM2** On receipt of the message at the radio station and at the next scheduled transmission.
- BM3** Fax at 0243 and 1405 h.
- BM4** Fax at 2025 h.
- BM5** Fax at 1104 and 2324 h.
- BM6** Keyed by Point Reyes, California Radio (NMC).
- BM7** Marine forecasts and warnings, coastal waters.
- BM8** Marine forecasts and warnings, coastal and inland waterways.
- BM9** Marine forecasts for Lakes Superior, Huron and Michigan.
- BM10** Marine forecasts and warnings, coastal waters Puget Sound.
- BM11** Marine forecasts and warnings, Lake Michigan.

NOTICE NAV - Stations transmitting notices to navigators

- NA1** Hydrographic information relating to Western Atlantic waters is transmitted by Washington, D.C. (NSS) in the "HYDROLANTS" series, numbered consecutively on an annual basis. In Pacific waters, a similar series, known as "HYDROPACS", is transmitted from S. Francisco, California (NPG), Balboa, Canal Zone Radio (NBA), Honolulu, Hawaii Radio/NPM, Guam, Mariana Islands (NPN), and Manila Sangley Point (NPO) for their areas. "HYDROLANTS" and "HYDROPACS" are retransmitted by all stations transmitting Hydro information in their respective oceans.

Files of effective “HYDROLANTS” and “HYDROPACS” are available at “Branch Hydrographic Offices”, and are printed in the several issues of the “Daily Memorandum” and the weekly “Notice to Mariners”.

Hydrographic Office radio emissions, “HYDROLANTS”, and “HYDROPACS” are supplemented by “Special Warnings” as the necessity arises.

These warnings are numbered consecutively and given further publicity by the “Daily Memorandum”, and “Notice to Mariners”. They are used primarily for the dissemination of official government proclamations affecting shipping.

The “NAVEAMS” contain information relating to Eastern Atlantic and Mediterranean waters. Selected “NAVEAMS” are retransmitted by certain U.S. Navy and Coast Guard stations.

NA2 Transmits two daily ice bulletins for the benefit of shipping from March to July.

NA3 U.S. Coast Guard station. The regularly scheduled transmissions, made at the times indicated, consist of weather forecasts (except as otherwise noted), notices to mariners, and hydrographic information. Emergency transmissions or urgent marine information, storm and hurricane warnings, and advisories are transmitted as indicated in column 5 of the particulars of the station.

Radiotelephone emissions are made on the frequency 2670 kHz and/or 157.10 MHz (see column 3 of the particulars for each station) after initial call on the frequency 2182 kHz and/or 156.80 MHz respectively.

NA4 Transmissions of maritime safety information (MSI).

NA5 Emergency transmissions, including storm and hurricane warnings, whenever issued by the U.S. Weather Bureau, are made immediately following receipt of the message at the radio station. If a station makes daily transmissions of marine information, the message will also be included in its next scheduled transmission.

NA6 Keyed by Point Reyes, California Radio (NMC).

NA7 Transmissions of NAVAREA XII warnings (see Annex: NAVAREA warnings).

NA8 Transmission of NAVAREA IV warnings (see Annex: NAVAREA warnings).

NA9 Transmits notices for Lakes Superior, Huron and Michigan.

NA10 Ice reports.

NA11 Fax: February/September at 0243 and 1405 h.

UTC - Stations transmitting radio time signals

HR1 On Tuesday at 1700 h, the frequency 185 kHz replaces the frequency 88 kHz.

HR2 First-order time signals. These are precision time signals for chronometer rating and scientific use, normally correct as broadcast to less than 0.1 second. The average error of the Washington, D.C. (NSS) time signals has been reduced to less than 0.01 second.

HR3 Second-order time signals. These are time signals for chronometer rating and ordinary use, normally correct as broadcast to less than 0.5 second, having a generally constant lag.

HR4 For further information, write to: Institute of Standards and Technology, Time and Frequency Division, Boulder, Colorado 80303.

Technical services

The National Institute of Standards and Technology (NIST) broadcasts time signals continuously, day and night, from its radio stations WWV, near Fort Collins, Colorado, and WWVH, Kekaha-Kauai, Hawaii, on radio frequencies of 2.5, 5, 10 and 15 MHz, and also 20 MHz from Fort Collins, Colorado only. Services include standard time signals and time intervals, time corrections, standard radio frequencies, standard audio frequencies, standard musical pitch, a slow time code, geophysical alerts, Omega system status reports, and marine storm warnings. The illustration (Fig. 1) gives the hourly broadcast schedules of WWV and WWVH along with station location, radiated power and details of antennas and modulation. The NIST also broadcasts time and frequency signals from its low frequency station, WWVB, located at Fort Collins, Colorado.

Time announcements

Once per minute voice announcements are made from WWV and WWVH. The two stations are distinguished by a female voice from WWVH and a male voice from WWV. The WWVH announcement occurs first, at 15 seconds before the minute, while the WWV announcement occurs at 7 ½ seconds before the minute. Coordinated Universal Time (UTC) is used in these announcements.

Time corrections

The UTC time scale operates on atomic frequency, but by means of resets is made to approximate the astronomical UT1 scale. It may disagree from UT1 by as much as 0.9 second before resets in steps of exactly one second are made. Resets are required about once per year and will usually be made on 31 December or 30 June. For those who need astronomical time more accurately than 0.9 second, a correction to UTC is encoded by the use of double ticks after the start of each minute. The 1st to the 8th seconds ticks will indicate a “plus” correction, and from the 9th to the 16th a “minus” correction. The correction is determined by counting the number of doubled ticks. For example, if the 1st, 2nd, and 3rd ticks are doubled, the correction is “plus” 0.3 second. If the 9th, 10th, 11th, and 12th ticks are doubled, the correction is “minus” 0.4 second.

Standard time intervals

An audio pulse (5 cycles of 1000 Hz on WWV and 6 cycles of 1200 Hz on WWVH), resembling the ticking of a clock, occurs each second of the minute except on the 29th and 59th second. Each of these 5-millisecond second pulses occurs within a 40 millisecond period wherein all other modulation (voice or tone) is removed from the carrier. These pulses begin 10 milliseconds after the modulation interruption. A long pulse (0.8 second) marks the beginning of each minute.

Standard frequencies

All carrier and audio frequencies occur at their nominal values according to the International System of Units (SI). For period of 45-second duration, either 500 or 600 Hz audio tones are broadcast in alternate minutes during most of each hour. A 440 Hz tone (the musical pitch A above middle C) is broadcast once per hour near the beginning of the hour. See diagram for detailed tone broadcast schedules.

Accuracy and stability

The time and frequency broadcasts are controlled by the NIST atomic frequency standards, which realize the internationally defined cesium resonance frequency with an accuracy of 8 parts in 10–14. The frequencies as emitted by WWV and WWVH are accurate to within ±1 part in 10–11. Deviations at WWV and WWVH are normally less than 1 part in 10–12 from day to day. Changes in the propagation medium (causing Doppler effect, diurnal shifts, etc.) result in fluctuations in the carrier frequencies as received which may be very much greater than the uncertainties described above.

Slow time code

A modified IRIG-H time code occurs continuously on a 100 Hz subcarrier. The format is one pulse per second with one minute time frame. It gives day of the year hours, and minutes in binary coded decimal form. The code format is given in detail in Fig. 2.

Geophysical alerts

These occur in voice during the 18th minute of each hour from WWV. They point out outstanding events which are in process, followed by a summary of selected solar and geophysical events in the past 24 hours. They are provided by the Space Environment Laboratory, National Oceanic and Atmospheric Administration, Boulder, Colorado 80303.

Marine storm warnings

Weather information about major storms in the Atlantic and eastern North Pacific are broadcast in voice from WWV at 8, 9, and 10 minutes after each hour. Similar information covering the eastern and central North Pacific are given from WWVH at 48, 49, and 50 minutes after each hour. Additional information may be broadcast at 11 minutes after each hour on WWV and at 51 minutes on WWVH when unusually wide-spread storm conditions exist. Times of issue are 0500, 1100, 1700, and 2300 h UTC for WWV and 0000, 0600, 1200, and 1800 h UTC for WWVH. Announcements are prepared by the National Weather Service, Silver Spring, Maryland 20910.

Omega navigation system status reports

These are broadcast in voice from WWV at 16 minutes after the hour and from WWVH at 47 minutes after the hour. They are designed to provide users with immediate notification of degradation of the Omega navigation signals caused by ionospheric disturbances at high latitudes. The announcements are provided by the U.S. Coast Guard, Washington, D.C 20590.

“Silence” periods

These are periods with no tone modulation during which the carrier, seconds ticks, minute time announcements and 100 Hz modified IRIG-H time code continue. They occur from the 8th to the 11th and from the 15th to the 20th minute after the hour on WWVH and from the 45th to the 51st minute after the hour on WWV.

WWVB

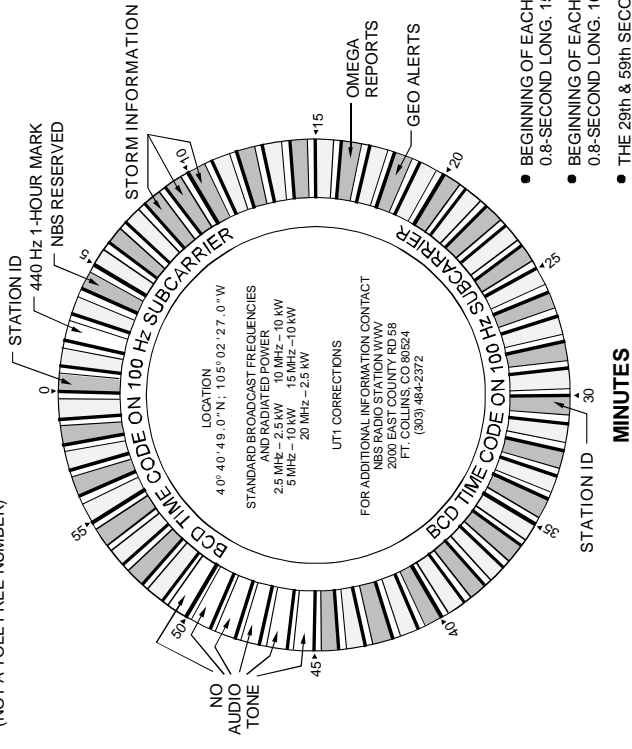
This station (antenna coordinates: 40° 40' 28.3" N 105° 02' 39.5" W; radiated power: 12 kW) broadcasts on 60 kHz. Its time scale is the same as for WWV and WWVH, and its frequency accuracy and stability are the same. Its entire format consists of a 1 pulse per second special binary time code giving minutes, hours, days, and the correction between its UTC time scale and UT1 astronomical time. It also indicates leap years and when daylight saving time is in effect in the United States. The detailed format of this code is given in Fig. 3. Identification of WWVB is made by its unique time code and a 45° carrier phase shift which occurs for the period between 10 minutes and 15 minutes after each hour. The useful coverage area of WWVB is within the continental United States. Propagation fluctuations are much less with WWVB than with high-frequency reception, permitting frequency comparisons to be made to a few parts in 10-11 per day.

Special Publication No. 432 describes in detail the standard frequency and time services of the National Institute of Standards and Technology. Single copies may be obtained upon request from: National Bureau of Standards, Boulder, Colorado 80303. Quantities may be obtained from: The Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Station	Geographical co-ordinates	Carrier frequencies MHz	Radiated power kW	Antennae, modulation
Fort Collins, Colorado (WWV)	105° 02' 27" W 40° 40' 49" N	2.5	12.5	Radiation from all antennae is omnidirectional, from vertical half-wave dipoles. Modulation is double sideband with 50% modulation on the steady tones, 25% for the IRIG-H code, 100% for seconds pulse and 75% for voice.
		5	10	
		10	10	
		15	10	
		20	2.5	
Kekaha-Kauai, Hawaii (WWVH)	159° 46' 00" W 21° 59' 26" N	2.5	5	Radiation from all antennae is in a cardioid pattern with maximum gain in a westerly direction from phased half-wave vertical dipoles except 2.5 MHz which is omnidirectional. The modulation is the same as for WWV above.
		5	10	
		10	10	
		15	10	

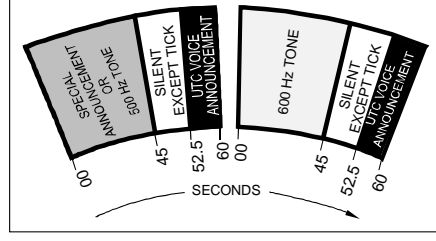
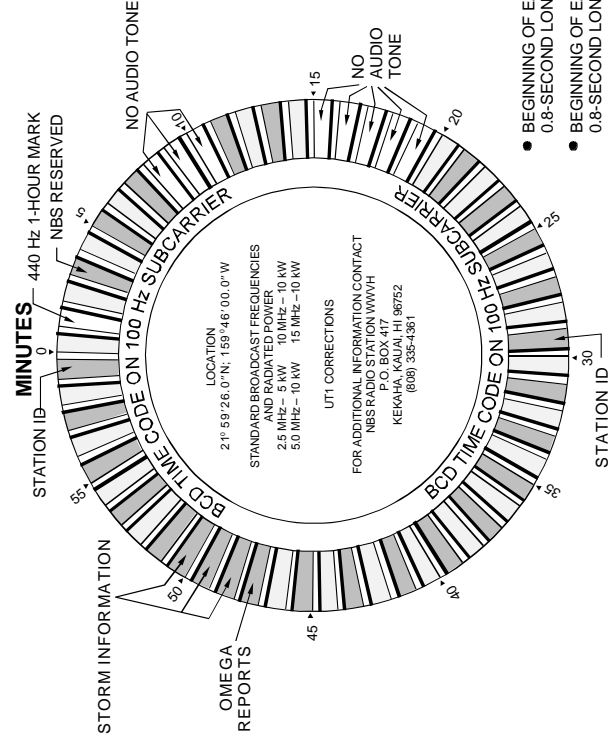
WWV BROADCAST FORMAT

VIA TELEPHONE: (303) 499-7111
(NOT A TOLL-FREE NUMBER)

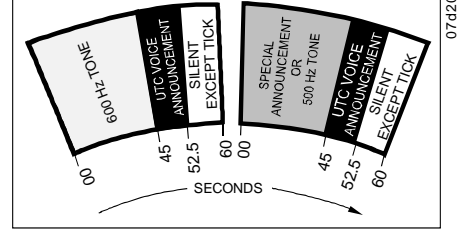


WWVH BROADCAST FORMAT

VIA TELEPHONE: (808) 335-4363
(NOT A TOLL-FREE NUMBER)



- BEGINNING OF EACH HOUR IS IDENTIFIED BY 0.8-SECOND LONG, 1500-Hz TONE.
- BEGINNING OF EACH MINUTE IS IDENTIFIED BY 0.8-SECOND LONG, 1000-Hz TONE.
- THE 29th & 59th SECOND PULSE OF EACH MINUTE IS OMITTED.

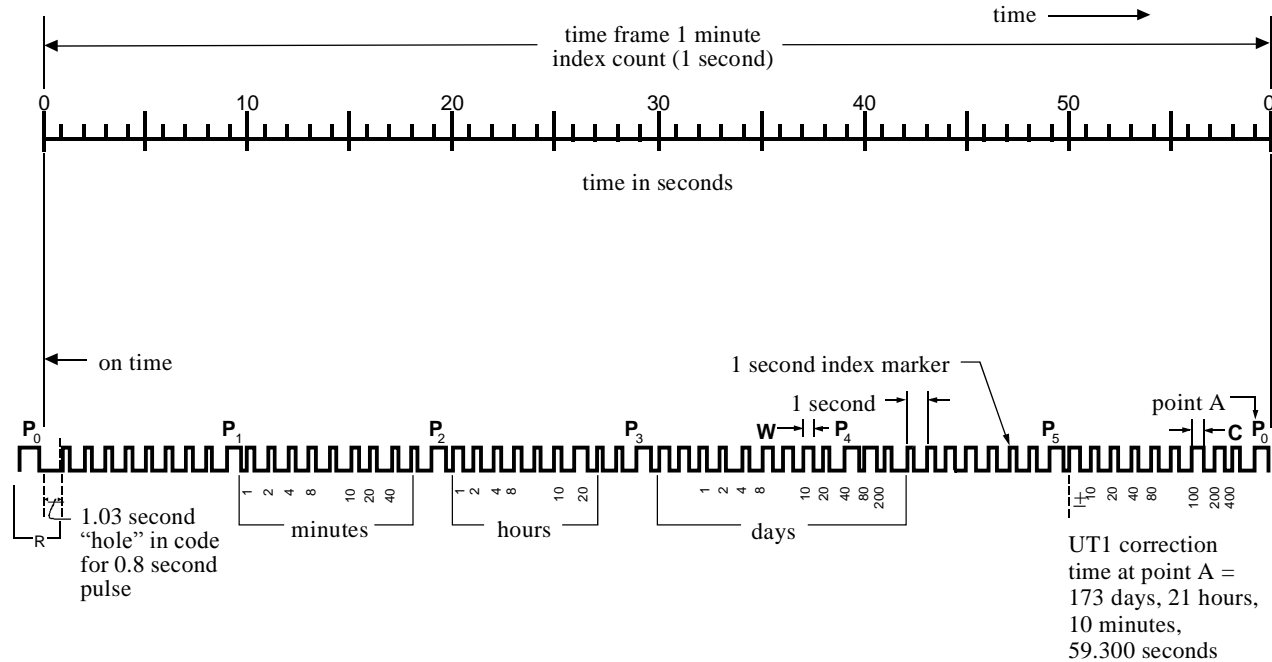


- BEGINNING OF EACH HOUR IS IDENTIFIED BY 0.8-SECOND LONG, 1500-Hz TONE.
- BEGINNING OF EACH MINUTE IS IDENTIFIED BY 0.8-SECOND LONG, 1200-Hz TONE.
- THE 29th & 59th SECOND PULSE OF EACH MINUTE IS OMITTED.

Fig. 1: Hourly broadcast schedule of WWV and WWVH

Format H, signal H001, is composed of the following :

1. 1 ppm frame reference markers R = (P_0 and 1.03 second "hole")
2. Binary coded decimal time-of-year code word (23 digits)
3. Control functions (9 digits) used for UT1 corrections
4. 6 ppm position identifiers (P_0 through P_5)
5. 1 pps index markers



$P_0 - P_5$ position identifiers (0.8 second duration)

W weighted code digit (0.5 second duration)

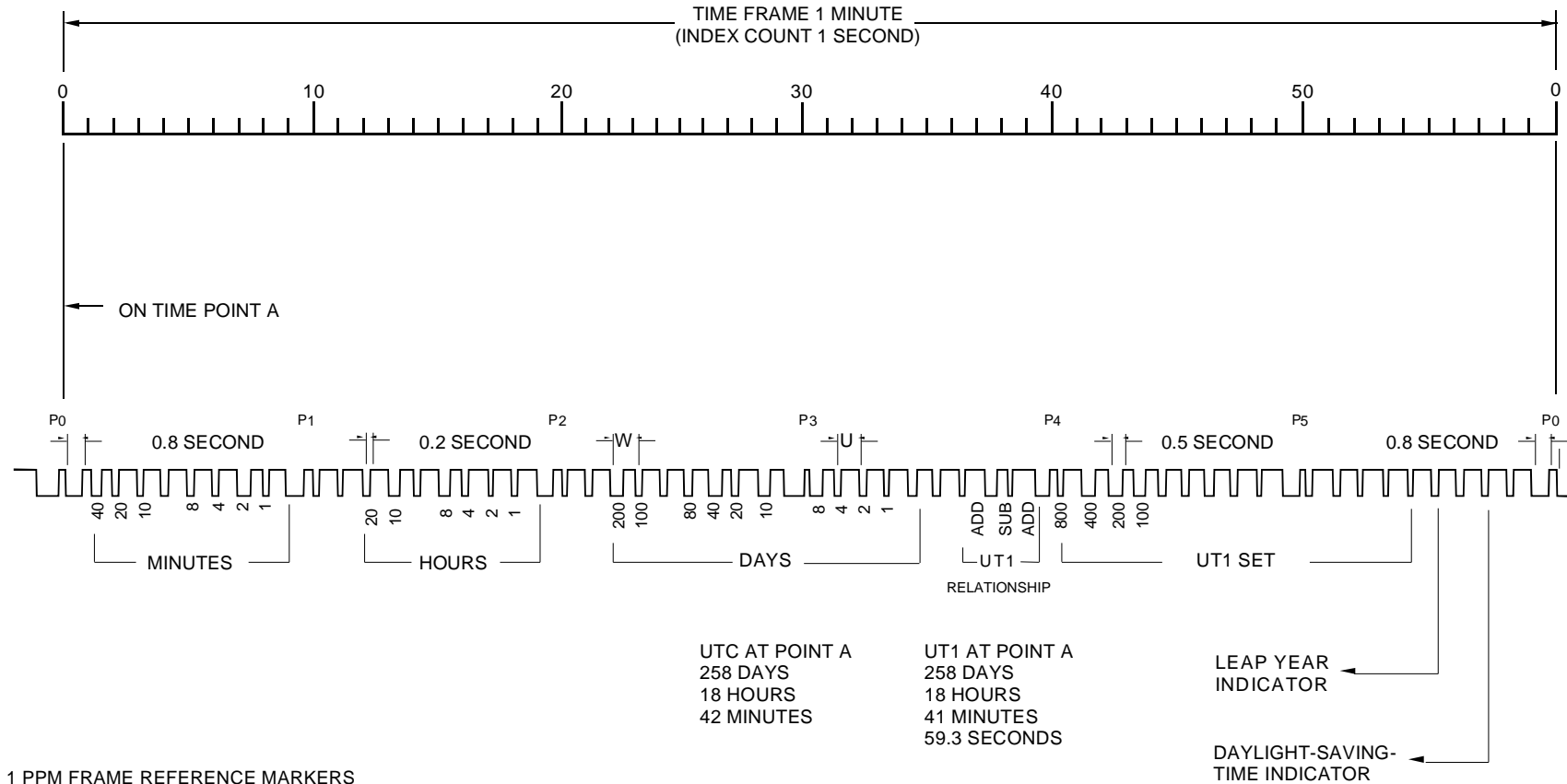
C weighted control element (0.5 second duration)

Duration of index markers, unweighted code and control elements = 0.2 seconds

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Fig. 2: Chart of Time Code transmissions from WWV and WWVH

WWVB Time Code Format



- 1 PPM FRAME REFERENCE MARKERS
- BINARY CODED DECIMAL TIME-OF-YEAR CODE WORD (23 DIGITS)
- CONTROL FUNCTIONS (15 DIGITS) USED FOR UT1 CORRECTIONS
- 6 PPM POSITION IDENTIFIER MARKERS AND PULSES (P₀ THRU P₅)
(REDUCED CARRIER 0.8 SECOND DURATION PLUS 0.2 SECOND DURATION PULSE)
- W – WEIGHTED CODE DIGIT (CARRIER RESTORED IN 0.5 SECOND - BINARY ONE)
- U – UNWEIGHTED CODE DIGIT (CARRIER RESTORED IN 0.2 SECOND - BINARY ZERO)

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Fig. 3: Chart of Time Code Transmissions from WWVB

HR6 The time signal is transmitted for a duration of 5 minutes. It consists of the transmission of a dot for every second, omitting the dot at the following seconds:
29, 51, 56, 57, 58 and 59 during the first minute;
29, 52, 56, 57, 58 and 59 during the second minute;
29, 53, 56, 57, 58 and 59 during the third minute;
29, 54, 56, 57, 58 and 59 during the fourth minute;
29, 51, 52, 53, 54, 55, 56, 57, 58 and 59 during the fifth minute.

At the end of the 60th second of the fifth minute, a one-second dash will be sent, the beginning of which is the time signal.

HR7 UTC, hour and minute, given in voice every minute. Seconds pulse, 5 Hz to 1000 Hz. The 29th and 59th seconds pulses omitted. Minutes commence with 0.8 second long 1000 Hz tone. Hours commence with 0.8 second long 1500 Hz tone. Modified IRIG-H BCD time code on a 100 Hz subcarrier. UT1 corrections.

[CP - Coast stations providing a public correspondence service](#)

General Information.

Facilities provided by the U.S. Coast Guard for rendering aid to vessels in distress.

The United States Coast Guard is a military branch of the Government maintained for the purpose of enforcing the navigation and other maritime laws under the jurisdiction of the United States, rendering assistance to vessels and aircraft in distress, saving life and property at sea, destroying derelicts, maintaining aids to navigation, and removing obstructions and menaces to navigation.

These duties include the International Ice Patrol, flood relief work, patrol of regattas and marine parades, facilitating medical relief to mariners, operating numerous Loran stations, radiobeacons, racons, Differential Global Positioning System stations and diverse merchant marine inspection and regulatory functions.

The Coast Guard makes no charge for its services to vessels in distress and will respond promptly to all proper requests for assistance so far as the distribution and condition of its facilities will permit. However, it is not the purpose of the Coast Guard to compete or interfere with commercial enterprises in ordinary towing and salvage operations, but to confine its assistance activities to cases of actual or potential distress.

Coast Guard shore radio stations listen on the international distress and calling frequencies 2182 kHz and 156.80 MHz. Radio equipped vessels requiring assistance may obtain the services of the United States Coast Guard by transmitting a request to any Coast Guard unit.

Commercial coast radio stations will forward to the Coast Guard all information regarding vessels requiring assistance unless such information is contained in a message specifically addressed elsewhere.

Certain Coast Guard shore radio stations maintain a listening watch on the 8, 12, 16 and 22 MHz calling bands. Coast Guard stations called on frequencies in these bands will reply on their answering frequency as described in their particulars.

If the following information is included in the original request for assistance, it will place the responsible Coast Guard officer in a position to determine immediately the facilities required to render adequate aid, thus greatly facilitating the work of the Coast Guard and avoiding any unnecessary delay in the dispatching of assistance:

- 1. Name, type and nationality of vessel.**
- 2. Position, course and speed (including drift).**

NOTES.

CP1 Part of the consolidated operation of the Marine Radio Network of public coast stations MOBILE, ALABAMA RADIO (WLO), SEATTLE, WASHINGTON RADIO (KLB) and TUCKERTON, NEW JERSEY RADIO (WSC). Headquartered at Mobile Marine Radio, Inc. in Mobile, Alabama (USA).

CP2 Automatic radiotelex service.

All radiotelex channels at all Globe Wireless stations are controlled from the Globe Wireless Traffic Delivery Center in Half Moon Bay, California, USA.

Messages held for ships are available on any active channel from any Globe Wireless coast station, world-wide.

i. *Procedures.*

- To establish contact on any channel, use selcall 1094.
- For the lowest cost and confirmation of delivery, use "AUTOTLXccxx+".
- To end message and obtain charges, use "KKKK".

ii. *Commands.*

- AMV+ – for sending AMVER messages to U.S. Coast Guard
- AUTOTLXccxx+ – for immediate delivery (cc = country code, xx = telex number) includes free confirmation of delivery notice
- BRK+ – for clearing connection
- CVTS+ – for sending Canadian Vessel Traffic System messages to Canadian Coast Guard (replaces ECAREG+ and WESTREG+)
- DIRTLXccxx+ – to establish a direct connection to a telex subscriber
- ECAREG+ – for sending Canadian Coast Guard clearance message (Atlantic)
- EMAILn+ – to send an electronic mail message (ask operator for details)
- FAXccxx+ – to send a facsimile message
- FLO+ – to send a flower or gift order (ask operator for details)
- FREQ+ – to send ship's watching information
- HELP+ – for a list of commands available
- INF+ – to access Globe Wireless information
- MSG+ – to receive your ship's pending traffic
- OBS+ – for sending ship's meteorological observations
- OPR+ – for operator assistance (H24)
- RTL+ – to send a radiotelex letter
- STA+ – to check the status of all AUTOTLX messages
- SVC+ – to send a service message to the Globe Wireless Traffic Delivery Center
- TGMccxx+ – to send a radiotelegram to a cable address

CP3 This station is also open for public correspondence with aircraft flying over the ocean areas.

CP4 Accepts OBS radiotelegrams from ships and addressed to METEO WASHINGTON D.C. No charge is made.

- CP5** The Marine Radio Network, headquartered at Mobile Marine Radio, Inc. in Mobile, Alabama (USA), Traffic Delivery Center may be contacted by telephone at +1 334-666-5110, by telefax at +1 334-666-8339, by telex at (23) 782027, by Direct Distance Dialing electronic mail at +1 334-666-5198, or by electronic mail via the internet at WloEmail@aol.com.
- CP6** This channel is currently being used to transmit High Frequency Digital Communications. Transmissions, at this time, are traffic lists and marine textual weather.
- CP7** This channel is equipped for direct-printing communication with ships fitted with MARITEX, exclusively.
- CP8** The Globe Wireless Traffic Delivery Center may be contacted by telephone at +1-415-726-6588, by telefax at +1-415-726-8604 or by telex at (23) 470198.
- CP9** Frequency outside the maritime bands.
- CP10** Operated by: Pacific Bell.
- CP11** Transmits traffic lists at 1230 and 1500 h (local time).
- CP12** Radiotelex Automatic System Computer Commands and Guidelines.

All radiotelex channels at all Marine Radio Network stations are controlled from Mobile Marine Radio, Inc. Traffic Delivery Center in Mobile, Alabama (USA).

Messages held for ships are available on any channel from any Marine Radio Network coast station, worldwide.

i. *Procedures.*

- To establish contact on any channel, use selcall 1090.
- For the lowest cost use RTL+ addressed to an e-mail address.
- To end message and obtain duration information, use “KKKK”.

SHIP	Initiate ARQ call
COAST	RTTY channel “Who are you” (Requests ship’s answerback)
SHIP	Ship’s answerback identity
COAST	GA+?
SHIP	(See below ii. Other commands)
COAST	MOM MSG+?
SHIP	Send message (End of message indicator, WAIT for system response DO NOT DISCONNECT)
COAST	KKKK RTTY channel
SHIP	Ship’s answerback
COAST	System reference information, time, duration minutes GA+?
SHIP	(See below ii. Other commands) or BRK+? (Clear radio circuit)
COAST	x (Substitute country code)
SHIP	y (Substitute telex number)

ii. *Other commands.*

DIRTLXxy+	(Direct telex connection)
TLXxy+	(Store and forward telex)
RTL+	(Radio Telex Letter / E-Mail)
TGM+	(Telegram)
OBS+	(Weather observations)
SVC+	(Service message)
OPR+	(Operator assistance)
HELP+	(Procedure information)
MSG+	(Send traffic)
FREQ+	(Ship watch information)
STA+	(Check message delivery status)
AMV+	(AMVER messages)
FLO+	(Flower orders)
INF+	(Telex bulletin board, code select INF01+ to INF99+ for service particulars)

CP13 Transmits traffic lists at 0700, 0930 and 1800 h (local time).

CP14 This channel is equipped for high-speed data communication with ships that subscribe to the Globe Wireless GlobeEmail message service, exclusively.

CP15 The station broadcasts subscriber press bulletins.

CP16 Open during Great Lakes navigation season.

CP17 Keeps a loudspeaker watch when the station is engaged in communications on the working frequencies.

CP18 Transmits traffic lists at H+00 of each even hour, local time, during service hours. Traffic for foreign vessels is also announced in RTG traffic lists.

CP19 Ships are encouraged to call on this channel in order to reduce congestion on channel 16.

CP20 **SUP**

CP21 Transmits traffic lists at 0200 h (local time).

CP22 General Purpose Digital Selective Calling (GP-DSC).

a) WLO Radio is the only public coast station in the United States with an operational DSC system for VHF and MF/HF GP-DSC communications for automatic connection to the Public Switched Telephone Network.

b) This is a WLO Radio GP-DSC working channel. Calling is accomplished on the GP-DSC worldwide calling frequencies.

CP23 Operated as part of the Globe Wireless CW Super-Station and radiotelex networks.

NAVAREA - Navarea coordinators

NAVAREA IV

NV1 Warning broadcasts

Warnings are broadcast on two consecutive schedules. All in force warnings are available 24 hours daily worldwide via NAVINFONET (system updated on all working days).

See "National Geospatial – Intelligence Agency (NGA)" Pub. 117 or contact NGA for details.

See column 7.

List of warnings still in force of last 42 days is sent on all broadcasts each Wednesday.

NAVAREA XII

NV1 Warning broadcasts

Warnings are broadcast on two consecutive schedules. All in-force warnings are available 24 hours daily worldwide via NAVINFONET (system updated on all working days).

See "National Geospatial – Intelligence Agency (NGA)" Pub. 117 or contact NGA for details.

See column 7.

List of warnings still in force of last 42 days is sent on all broadcasts each Wednesday.

AAIC - Charges and accounting authorities

- A1 Whidbey Telephone Co., 2747 E State Hwy 525, Langley, Wash. 98260 (USA).
- A2 Randall D. Martens, 385 West Michigan Avenue, Rogers City, Mich. 49779 (USA).
- A3 Globe Wireless, 550 Pilgrim Drive, Foster City, Calif. 94404 (USA).
- A4 Maritime Communications/Land Mobile, LLC, 206 North 8th Street, Columbus, MS 39701 (USA).
- A5 Nymar Communications Corp., P.O. Box 757, Mamaroneck, N.Y. 10543 (USA).
- A6 Shipcom, LLC, 4671 Oak Ridge Rd., Mobile, AL 36609 (USA).
- A7 AT&T California, P.O. Box 15038, 2700 Watt Avenue, Room 3082, Sacramento, Calif. 95851 (USA).
- A8 Delcambre Telephone Company, 104 N Corner St., Delcambre, La. 70528 (USA).
- A9 MMR Radio LLC, 7E. Frederick Place, Suite 200, Cedar Knolls, New Jersey 07927 (USA).
- B1 The land station charge for radiotelegrams is 1.05 fr. per word.
- B2 The land station charge for radiotelegrams is 1.27 fr. per word.
- B3 The land station charge for radiotelegrams is 1.17 fr. per word.

B4 Total land station and landline charges for radiotelegrams transmitted via the following coast stations:

Coast Stations	Gold Francs				
	Intended for:				
	Continental United States (except Alaska)	Alaska	Canada	Mexico	Miquelon Island
GALVESTON, TEXAS RADIO (KLC).....	1.15	1.37	1.45	1.95	1.575
MOBILE, ALABAMA RADIO (WLO)	1.41	2.15	3.50	3.24	3.50
PALO ALTO, CALIFORNIA RADIO (KFS).....	1.29	1.51	1.59	2.09	1.705
ROGERS CITY, MICHIGAN RADIO (WLC)	0.90	1.12	1.20	1.70	1.315
SEATTLE, WASHINGTON RADIO/KLB	1.41	2.15	3.50	3.24	3.50
SLIDELL, LOUISIANA RADIO/WNU	1.58	2.23	4.69	4.43	2.09
SOUTH CHATHAM, MASSACHUSETTS RADIO (WCC).....	1.66	2.66	4.01	3.75	4.01
S.FRANCISCO, CALIFORNIA RADIO/KPH	1.66	2.66	4.01	3.75	4.01
TUCKERTON, NEW JERSEY RADIO (WSC).....	1.41	2.15	3.50	3.24	3.50

G1 Radiotelex calls (minimum 3 min.)

1. Land station charge: 7.61 fr./min.
2. Landline charge

United States: the landline charge is included in the land station charge.

G2 Radiotelex calls (minimum 1 min.)

1. Land station charge: 6.22 fr./min.
2. Landline charge

United States: the landline charge is included in the land station charge.

H1 Radiotelephone calls (minimum 3 min.)

Land station charge

- MF: 6.22 fr./min.
- HF: 12.63 fr./min.
- VHF: 2.17 fr./min.

H2 Radiotelephone calls (minimum 3 min.)

Land station charge

- MF : 0.64 fr./min.
- HF:
- VHF: 0.64 fr./min.