CHANGE NO. 11 TO H.O. PUB. 118B

19 August 1967
(Including N. M. 33/67)

RADIO WEATHER AIDS

H.O. PUB. 118B
FIRST EDITION

PACIFIC AND INDIAN OCEANS AREA

PUBLISHED BY THE UNITED STATES NAVAL OCEANOGRAPHIC OFFICE
UNDER THE AUTHORITY OF THE SECRETARY OF THE NAVY

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON: 1967

For Sale by authorized Sales Agents of the U. S. Naval Oceanographic Office

Price 50 cents

SUGGESTED PROCEDURE FOR USING THIS CHANGE

1. Remove wire fastener.
2. Separate "List of Effective Pages" from remaining Change Pages.
3. Check completeness of Change by comparing Change Pages with List of Effective Pages.
4. Using List of Effective Pages as a guide, insert each Change Page in its proper place in the book, first removing the obsolete page being replaced. Set obsolete pages temporarily aside.
5. From the obsolete pages previously set aside, transfer the Notice to Mariners dated later than the date of this Change to the corresponding replacement pages.
6. Record application of this Change on the Record Page in the front part of the book.

PREFACE

Radio Weather Aids, H.O. Pub. No. 118B is designed to contain, insofar as is possible, the information necessary for weather communications by Radio.

Information of a general nature that does not logically fall in a specific category is contained in Section 1, "General Information."

Schedules of weather broadcasts are divided into three main categories: Marine, Synoptic, and Facsimile, which are presented in Sections 2, 3, and 4 respectively. Within these Sections broadcast areas are listed alphabetically by country or area under the appropriate large-continent or geographic-area heading. Generally, the broadcast schedules in this publication are continuous wave (CW) transmissions. Radioteletype (RATT) broadcasts are included in Section 3 in the same alphabetical order with the radiotelegraph broadcasts for the pertinent country under the appropriate large-continent or geographic area.

In Section 5, weather codes are listed according to type, such as surface codes, upper air codes, etc. In each instance the list is followed by the symbols in the codes, together with definitions and tables. Samples of printed weather code forms are presented in Section 6.

Various conversion tables, the Morse Code, communication abbreviations with respect to weather, and other miscellaneous information are included in Section 7.

The following papers and publications with subsequent supplements and notices were consulted in the preparation of this book:

World Meteorological Organization Pub. No. 9, T.P. 4
Radio Weather Message, W.7, British Admiralty
Weather Service for Merchant Shipping, U.S. Weather Bureau
Admiralty List of Radio Signals, Volume III
Nautischer Funkdienst, Band III
Radiosignaux Meteorologiques No. 196
Radio Aids to Marine Navigation, Dept. of Transport, Canada.

The assistance rendered by the following contributing agencies in the preparation of this publication is especially appreciated:

United States Air Force
United States Weather Bureau
United States Coast Guard
United States Federal Aviation Agency
United States Merchant Marine
and
The many agencies and individuals in the
World Meteorological Organization

NOTICE

PROCEDURES FOR CORRECTING THIS PUBLICATION

In order to keep H.O. Pub. 118B, Radio Weather Aids corrected, consecutively numbered sets of loose-leaf pages called "Changes" are published at appropriate intervals by the U.S. Naval Oceanographic Office. The publication of each Change will be announced in the weekly Notice to Mariners.

Change pages must be inserted in accordance with the "List of Effective Pages" included in each Change. New change pages supersede the obsolete pages they replace, including interim corrections from the Notice to Mariners dated before the date of the Change. Corrections from the Notice to Mariners dated later than the Change must be transferred to the corresponding new change page.

Changes are not cumulative, i.e. Change 2 will not automatically supersede Change No. 1 etc., and each Change must be applied in numerical order as it is published. Individual change pages from any Change remain in effect until actually replaced by a corresponding change page from a later Change, regardless of the consecutive numbers of the Changes involved. The "List of Effective Pages" included with each Change, however, is cumulative and the "List" in the latest Change supersedes all previous "Lists". This simplifies the application of change pages from several Changes at once, as is the case when persons acquire this volume after more than one Change has been published. Only the "List" from the latest Change shows the pages that are still effective in each of the Changes on hand. Only these still effective pages need be applied; the obsolete change pages can be immediately discarded. A Change becomes cancelled if all change pages are eventually replaced by later Changes.

Upon receipt of this publication, it is requested that the user check to ensure that the material in his area of operation is correct and complete. Please send corrections, omissions, or suggestions for improvement of the publication to:

Commander
Naval Weather Service Command
Naval Weather Service Headquarters
Washington Navy Yard
Washington, D.C. 20390.

The information should be as detailed as possible.

Including N.M. 33/67
19 August 1967

LIST OF EFFECTIVE PAGES

RADIO WEATHER AIDS

H. O. PUB. NO. 118B

This volume with Changes Nos. 1, 5, 6, 7, 8, 9, and 10 is corrected through Notice to Mariners No. 15 dated 15 April, 1967.

This list supersedes any previous list. It lists each page that belongs in the publication and guides in the application of change pages. Only "odd" page numbers are listed. Their reverse sides, or "even" pages, are taken for granted unless otherwise noted.

Changes Required to Correct This Publication

Changes	Latest N.M. Used No.	Latest N.M. Used Date	Remarks
1	3	1/18/64	
~~2~~	~~40~~	~~10/3/64~~	Canceled by Chg. 7
~~3~~	~~52~~	~~12/26/64~~	Canceled by Chg. 8
~~4~~	~~12~~	~~3/20/65~~	Canceled by Chg. 8
5	49	12/4/65	
6	9	2/26/66	
7	20	5/14/66	
8	43	10/22/66	
9	3	1/21/67	
10	15	4/15/67	
11	33	8/19/67	

Examples and Explanations of Listed Page Numbers

1–15	Original book page.
5–15 (Chg. 1)	Change page from Change No. 1. It replaces original page 5–15. Only "odd" pages are so designated, even when actual correction occurs on the reverse side.
3–30a (Chg. 6)	Additional page from Change No. 6. It is to be inserted after page 3–30. Page 3–30b, etc., if applicable, follow in alphabetical order.
1–9 (Rev. Blank)	Page on which the reverse is blank.

To be correct through Change No. 10, this publication must contain the following pages:

1–1 (Chg. 8)
1–3 (Chg. 8)
1–5 (Chg. 8)
1–7 (Chg. 8)
1–9 (Chg. 8)
1–11
1–13
1–15
1–17 (Chg. 6)
1–19 (Chg. 6)
1–21 (Chg. 6)
1–23 (Chg. 6)
1–25 (Chg. 6)
Index 2–1 (Chg. 9)
2–1 (Chg. 7)
2–3 (Chg. 7)
2–5 (Chg. 7)
2–7 (Chg. 9)
2–9 (Chg. 7)
2–11 (Chg. 11)
2–13 (Chg. 9) (Rev. Blank)
2–15 (Chg. 7)
2–17 (Chg. 10)
2–19 (Chg. 7)
2–21 (Chg. 11)
2–23 (Chg. 11)
2–25 (Chg. 11)
2–27 (Chg. 11)
2–29 (Chg. 11)
2–31 (Chg. 7)
2–33 (Chg. 11)
2–35 (Chg. 11)
2–37 (Chg. 11)
2–39 (Chg. 7)
2–41 (Chg. 7) (Rev. Blank)
2–43 (Chg. 8)
2–45 (Chg. 11)
2–47 (Chg. 11)
2–49 (Chg. 11)
2–51 (Chg. 11)
2–52a (Chg. 11) (Rev.Blank)
2–53 (Chg. 11)
2–55 (Discarded)
2–57 (Chg. 11)
2–59 (Chg. 11)
2–61 (Chg. 11)
2–63 (Chg. 11)
2–65 (Chg. 8) (Rev. Blank)
2–71 (Chg. 11)
2–73 (Chg. 7)
2–75 (Chg. 11)
2–77 (Chg. 11)
2–79 (Chg. 9)
2–81 (Chg. 9)
2–83 (Chg. 11)
2–85 (Discarded)
Index 3–1 (Chg. 9)
3–1 (Chg. 10)
3–3 (Chg. 10)
3–5 (Chg. 7)
3–7 (Chg. 11)
3–8a (Chg. 11) (Rev. Blank)
3–9 (Chg. 7)
3–11 (Chg. 11)
3–13 (Chg. 8) (Rev. Blank)
3–15 (Chg. 7)
3–17 (Chg. 7)
3–19 (Chg. 9)
3–21 (Chg. 7)
3–23 (Chg. 9)
3–25 (Chg. 8)
3–27 (Chg. 8)
3–29 (Chg. 8)
3–30a (Chg. 9)
3–31 (Chg. 7)
3–33 (Chg. 9)
3–34a (Chg. 9) (Rev. Blank)
3–35 (Chg. 7)
3–37 (Chg. 9)
3–38a (Chg. 9) (Rev. Blank)
3–39 (Chg. 7)
3–41 (Chg. 10)
3–43 (Chg. 10)
3–45 (Chg. 7) (Rev. Blank)
3–47 (Chg. 10)
3–49 (Chg. 10)
3–51 (Chg. 11)
3–53 (Chg. 11)
3–54a (Chg. 10)
3–54c (Discard)
3–55 (Chg. 10)
3–57 (Chg. 10)
3–59 (Chg. 10)
3–61 (Chg. 10)
3–63 (Chg. 10) (Rev. Blank)
Index 4–1 (Chg. 6)
4–1 (Chg. 8)
4–3 (Chg. 10)
4–5 (Chg. 10)
4–6a (Chg. 10)
4–7 (Chg. 5)
4–9 (Chg. 11)
4–10a (Chg. 11)
4–10c (Chg. 11)
4–11 (Chg. 8)
4–13 (Chg. 5)
4–15 (Chg. 11)
4–17 (Chg. 11)
5–1 (Chg. 5)
5–3 (Chg. 1)
5–5 (Chg. 5)
5–7 (Chg. 5)
5–9 (Chg. 5)
5–11 (Chg. 1)
5–13 (Chg. 1)
5–15 (Chg. 1)
5–17 (Chg. 1)
5–19 (Chg. 1)
5–21 (Chg. 1)
5–23 (Chg. 1)
5–25 (Chg. 1)
5–27 (Chg. 1)
5–29 (Chg. 1)
5–31 (Chg. 1) (Rev. Blank)
5–33 (Chg. 5)
5–35 (Chg. 1)
5–37 (Chg. 1)
5–39 (Chg. 1)
5–41 (Chg. 1)
5–43 (Chg. 1)
5–45 (Chg. 1)
5–47 (Chg. 1)
5–49 (Chg. 1)
5–51 (Chg. 1)
5–53 (Chg. 1)
5–55 (Chg. 5)
5–57 (Chg. 5) (Rev. Blank)
5–59 (Chg. 5)
5–61 (Chg. 1)
5–63 (Chg. 5)
5–65 (Chg. 5)
5–67 (Chg. 5)
5–69 (Chg. 5)
5–71 (Chg. 1)
5–73 (Chg. 1)
5–75 (Chg. 1)
5–77 (Chg. 5)
5–79 (Chg. 1)
5–81 (Chg. 5)
5–83 (Chg. 5)
5–85 (Chg. 5)
5–87 (Chg. 1)
5–89 (Chg. 1)
5–91 (Chg. 1)
5–93 (Chg. 1)
5–95 (Chg. 1)
5–97 (Chg. 5)
5–99 (Chg. 1) (Rev. Blank)
5–101 (Chg. 1)
5–103 (Chg. 1)
5–105 (Chg. 1)
5–107 (Chg. 1) (Rev. Blank)
6–3
6–5 (Chg. 5)
6–7
6–9
6–11
6–13 (Rev. Blank)
6–15
6–17
6–19 (Rev. Blank)
7–1
7–3
7–5
7–7
7–9 (Rev. Blank)

Including N.M. 33/67
19 August 1967

TABLE OF CONTENTS

Section 4 – Facsimile Broadcasts

Section 5 – Codes

Section 6 – Code Forms

Section 7 – Miscellaneous

RECORD OF CHANGES TO H.O. PUB. NO. 118B

Change No.	Effective date	Inserted by:	Remarks
#1	1/18/64		
#2	10-3-64		
#3	12-26-64		
#4	3-20-65		
#5	12-1-65		
#7	8-17/66		
#8	1-5-66		
#9	4-3-67		
#10	4-1-67		
#11	19-AUG-67		

RECORD OF NOTICE TO MARINERS CORRECTIONS

Corrective material affecting this publication will be published, as received, in Section III "CORRECTIONS TO H.O. PUB. NO. 118B, RADIO WEATHER AIDS" of Part II of the weekly Notice to Mariners.

In order that there may be no doubt concerning the date to which the book is corrected it is recommented that the navigator, or the assistant to whom this duty is delegated, use the following columns as a record, placing his initials against the number of each Notice as it is used.

Notice to Mariners

19 64

1	14	27	40
2	15	28	41
3	16	29	42
4	17	30	43
5	18	31	44
6	19	32	45
7	20	33	46
8	21	34	47
9	22	35	48
10	23	36	49
11	24	37	50
12	25	38	51
13	26	39	52

19 65

1	14	27	40
2	15	28	41
3	16	29	42
4	17	30	43
5	18	31	44
6	19	32	45
7	20	33	46
8	21	34	47
9	22	35	48
10	23	36	49
11	24	37	50
12	25	38	51
13	26	39	52

19 66

1	14	27	40
2	15	28	41
3	16	29	42
4	17	30	43
5	18	31	44
6	19	32	45
7	20	33	46
8	21	34	47
9	22	35	48
10	23	36	49
11	24	37	50
12	25	38	51
13	26	39	52

19 67

1	14	27	40
2	15	28	41
3	16	29	42
4	17	30	43
5	18	31	44
6	19	32	45
7	20	33	46
8	21	34	47
9	22	35	48
10	23	36	49
11	24	37	50
12	25	38	51
13	26	39	52

19__

1	14	27	40
2	15	28	41
3	16	29	42
4	17	30	43
5	18	31	44
6	19	32	45
7	20	33	46
8	21	34	47
9	22	35	48
10	23	36	49
11	24	37	50
12	25	38	51
13	26	39	52

SECTION 1

GENERAL INFORMATION

WEATHER SERVICE FOR SHIPS

CLIMATOLOGICAL INFORMATION

Ships preparing to go to areas of the world with which they are not familiar may obtain climatological information regarding those areas from weather centrals. Information is usually available regarding means and extremes of the temperature, frequently of storms, fogs, rain, snow, prevailing wind directions and other weather data.

BAROMETER COMPARISONS

The correct sea level barometric pressure for Pearl Harbor is broadcast twice daily on the harbor circuit and by flag hoist. Ships present are invited to use this service in determining the error of the ship's barometers. Arrangements may also be made with Weather Offices in most Pacific and Atlantic ports for barometer comparisons when desired.

INSTRUCTION OF PERSONNEL

Commanding Officers are invited to send ships personnel to weather centrals for instruction regarding the use of codes, latest information regarding broadcast schedules, and other weather matters.

ABBREVIATIONS

This is a list of abbreviations used on occasion in this publication.

AM	Amplitude Modulation
A1	Continuous Wave telegraphy
A2	Telegraphy modulated by an audio frequency
A3	Telephony
A4	Facsimile
A9B	Combination of telephony and telegraphy (two independent sidebands)
C	Centigrade
CW	Continuous Wave
F	Fahrenheit
FAX	Facsimile
Freq	Frequency
FM	Frequency Modulation
F1	Frequency Shift Keying
F3	Telephony
F4	Facsimile
GCT	Greenwich Civil Time
GMT	Greenwich Mean Time
HH	The symbol for hours in a 24 hour day
hr	Hour(s)
i.e.	That is
kcs	Kilocycles
KW	Kilowatt
Lat.	Latitude
Long.	Longtitude
mph	Miles per hour
obs	Observation(s)
RATT	Radioteletype
r.p.m.	Revolutions per minute
R/T	Radio Telephone
SSB	Single sideband
VT	Verifying Time
W	Watts
W/T	Wireless Telegraphy
Z	Refers to the zone in which zero meridian is located

OCEAN WEATHER STATIONS

PACIFIC OCEAN

STATION "N"	N30-00 W 140-00
STATION "P"	N50-00 W 145-00
STATION "V"	N34-00 E 164-00

ABBREVIATED HEADINGS

Regional association may use the following system of abbreviated headings for ground-to-ground transmissions. Each message is preceded by the three groups:

MTTAA CCCC YYGGgg

M	International indicator for meteorological messages.
TT	Data designator
AA	Geographical designator
CCCC	International 4-letter call sign of the station editing or compiling message
YYGGgg	International date and time group (GMT

1. When required, a number may be inserted after the group MTTAA, in order to differentiate between two or more bulletins of similiar content from the same general area.
2. Successive bulletin numbers, where required, may be entered after the group CCCC in messages compiled by a particular station.
3. The identifier letter M may be omitted on meteorological telecommunications circuits when there is no possibility of confusion by so doing.

DATA DESIGNATORS

Surface data:	
SYNOP main hours	SM
SYNOP intermediate hours	SI
SYNOP non standard hours	SN
AERO hourly and half-hourly	SA
MMMMM/BBBBB/SPESH	SP
SFAZI/SFLOC/SFAZU	SF
Radar reports	SD
Seismograph earthquake reports	SE
Microseismograph reports	SG
River and special service reports	SR
Miscellaneous	SX
Supplementary airwaus weather reports	SW
Upper-air data:	
ABTOP	UB
PILOT (Part A)	UP
PILOT (Part B)	UG
PILOT (Part C)	UH
PILOT (Parts A and B)	UI
TEMP (Part A)	US
TEMP (Part B)	UK
TEMP (Part C)	UL
TEMP (Part A and B)	UM
RECCO	UR
AIREP	UA
Rocket-sonde	UN
Combined pilot-ballon and rawin reports	UC
Maximum wind	UD
Tropopause	UO
Vector wind differences	UV
Rawin	UW
Miscellaneous	UX
Climatic data:	
CLIMAT	CS
CLIMAT SHIP	CH
NACLI - CLINP - SPCLI - CLISA - INCLI	CO
CLIMAT TEMP	CU
CLIMAT TEMP SHIP	CE
Analyses:	
IAC - IAC FLEET surface	AS
IAC - upper-air	AU
Convective analyses	AC
Thickness analyses	AH
Zonal wind analyses	AL
Weather summaries	AP
Three-hourly analyses	AT
Vertical motion analyses	AV
Wind analyses	AW
Miscellaneous	AX
Zonal analyses (hemispheric)	AZ
Nephanalyses	AN
Forecasts:	
IAC - IAC FLEET surface	FS
IAC - upper-air	FU
TAFOR	FT
TAF	FC
ARFOR	FA
ROFOR	FR
FIFOR	FI
PROAR - PRORO - PROFI	FH
MAFOR	FZ
Aviation forecasts	FB
Extended forecasts	FE
Radio warning service (radio propagation forecasts)	FG
Temperature extreme forecasts	FM
Operational forecasts	FO
Public forecasts	FP
Miscellaneous	FX
Winter sports forecasts with data	FW
Warnings:	
Hurricane warnings	WH
SIGMET	WS
Tropical cyclone (typhoon) warnings	WT
Warnings (other)	WO

GEOGRAPHICAL DESIGNATORS FOR USE IN HEADINGS

AA	Antarctica	AZ	Azores
AB	Albania	BA	Bahamas
AC	Arctic Region	BB	Bay of Bengal
AD	Aden	BC	Bechuanaland
AF	Africa	BD	Basutoland
AG	Argentina	BE	Bermuda
AH	Afghanistan	BG	British Guiana
AI	Ascension Island	BH	British Honduras
AJ	Austral Islands	BK	Banks Island
AK	Alaska	BM	Burma
AL	Algeria	BN	Bonaire
AN	Angola	BO	Bolivia
AO	West Africa	BQ	Baltic Sea Area
AR	Arabian Sea	BR	Barbados
AS	Asia	BS	Bering Sea
AT	Antigua	BU	Bulgaria
AU	Australia	BX	Belgium, Luxembourg

BY Byelorussian S.S.R.
CA Caribbean
CB Congo (Leopoldville)
CC Curacao
CD Cambodia
CE Central African Republic
CF Congo (Brazzaville)
CH Chile
CI China
CL Ceylon
CM Cayman Islands
CN Canada
CO Colombia
CR Canary Islands
CS Costa Rica
CT Canton Island
CU Cuba
CV Cape Verde Islands
CY Cyprus
CZ Czechoslovakia
DG Surinam
DH Dahomey
DL Germany
DN Denmark
DO Dominica
DR Dominican Republic
EA British East Africa
EC East China Sea
EE Eastern Europe
EJ Fiji Islands
EL Ellice Islands
EM Middle Europe
EN Northern Europe
EO Estonian S.S.R.
EQ Ecuador
ER Eritrea (Ethiopia)
ES St. Eustatius
ET Ethiopia
EU Europe
EW Western Europe
FA Faeroes
FG French Guiana
FI Finland
FJ Franz Joseph Land
FK Falkland Islands
FM Morocco
FN Niger
FR France
FS Mali
GA Gulf of Alaska
GB Gambia
GC Ghana
GH Afghanistan
GI Gibraltar
GL Greenland
GM Guam
GP Guadeloupe
GR Greece
GT Gilbert Islands
GU Guatemala
GX Gulf of Mexico
HA Haiti
HE St. Helena
HK Hong Kong
HO Honduras
HU Hungary
HV Upper Volta
HW Hawaiian Islands
ID Indonesia
IE Ireland
IL Iceland
IN India
IO Indian Ocean
IQ Iraq
IR Iran
IS Israel
IV Ivory
IY Italy
JM Jamaica
JN Jan Mayen
JP Japan
KA Caroline Islands
KG Kerguelen
KI Christmas Island
KK Cocos Island
KM Cameroon
KN Kenya
KO Korea
KS Kashmir
KT St. Kitts
KU Cook Islands
LA Laos
LB Lebanon
LC St. Lucia
LI Liberia
LK Laccadive Islands
LN Southern Line Islands
LT Lithuanian S.S.R.
LU Aleutian Islands
LV Latvian S.S.R.
LY Libya
MA Mauritius
MC Central Mediterranean
MD Madeira
ME Mediterranean Area
MF St. Martin (French)
MG Madagascar
MI Marshall Island
ML Malta
MM Mediterranean
MN St. Martin (Netherlands)
MO Mongolia
MQ Marquesas
MR Martinique
MS Malaysia
MT Mauritania
MU Macao
MV Maldive Islands
MW Western Mediterranean
MX Mexico
MZ Mozambique
NA North America
NB British North Borneo
NC New Caledonia and Loyalty Islands
NE Near East
NG New Guinea
NH New Hebrides
NI Nigeria
NK Nicaragua
NL Netherlands
NO Norway
NR Northern Rhodesia
NS Nassau
NT North Atlantic
NV Navassa
NY Nyasaland
NZ New Zealand
OF French Polynesia
OM Oman
OR South Orkney Islands
OS Austria
PA Pacific
PE Persian Gulf
PG Portuguese Guinea
PH Philippines
PI Phoenix Islands
PK Pakistan
PL Poland
PM Panama
PN North Pacific
PO Portugal
PP Portuguese Timor
PR Peru
PS South Pacific
PT Pitcairn Island
PU Puerto Rico
PY Paraguay
RA U.S.S.R. (Asia)
RB Aruba
RE Reunion
RH South Rhodesia
RI Rio de Oro
RM Rio Muni
RN Rhodesia and Nyasaland
RO Rumania
RS U.S.S.R. (Europe)
SA South America
SC Seychelles Islands
SD Saudi Arabia
SE Society Islands
SF French Somaliland
SG Senegal
SI Somalia
SJ Sea of Japan
SK Sarawak
SL Sierra Leone
SN Sweden
SO Solomon Islands
SP Spain
SS South China Sea
ST South Atlantic
SU Sudan
SV El Salvador
SW Switzerland
SX Santa Cruz Islands
SY Syria
SZ Spitzbergen
TA Tuamotu Islands
TB Tibet
TC Tristan da Cunha
TD Trinidad
TG Togo
TH Thailand
TI Turks Islands
TJ Jordan
TK Tokelau Islands
TM Timor
TN Tanganyika
TO Tonga

GEOGRAPHICAL DESIGNATORS—continued

TP	Sao Tome, Principe Island
TS	Tunisia
TU	Turkey
UA	South Africa
UB	United Arab Republic
UG	Uganda
UK	United Kingdom
UR	Ukrainian S.S.R.
US	United States
UY	Uruguay
VI	Virgin Islands
VM	Vietnam
VN	Venezuela
WK	Wake Island
WZ	Swaziland
XE	Eastern Hemisphere
XN	Northern Hemisphere
XS	Sorthern Hemisphere
XW	Western Hemisphere
YE	Yemen
YG	Yugoslavia
ZB	Saba
ZM	Samoa

LOCATION INDICATORS

BGAM	Angmagssalik	Greenland
BIKF	Keflavik	Iceland
BIRK	Reykjavik Airport	"
CYEG	Edmonton Intl.Airport Alta.	Canada
CYHX	Halifax (Dominion Public Weather Office), N.S.	"
CYQX	Gander, Nfld.	"
CYRB	Resolute, N.W.T.	"
CYTO	Toronto (City) Head Office Met.Division, Ont.	"
CYUL	Montreal/Montreal Intl., Que.	"
CYWG	Winnipeg Intl., Man.	"
CYYZ	Toronto/Malton, Ont.	"
DAAG	Alger/Maison Blanche	Algeria
DBYD	Bathurst/Yundum	Gambia
DCLP	Las Palmas de Gran Canaria	Canary Islands
DCXO	Tenerife	"
DDDD	Cotonou (Airport)	Dahomey
DEBB	Bamako (Airport)	Mali
DEMS	New Delhi	India
DEOS		"
DFLL	Freetown/Lungi	Sierra Leone
DGAA	Accra	Ghana
DHHH	Ougadougou(Airport)	Upper Volta
DIII	Abidjan-Port Bouet (COM Center)	Ivory Coast
DIPD	Potsdam	Germany
DISF	Berlin/Schonefeld	"
DIWM	Warnemunde	"
DLRB	Monrovia/Roberts Field	Liberia
DNKK	Kano	Nigeria
DOOY	Dakar/Yoff(Airport)	Senegal
DPBS	Bissau	Portuguese Guinea
DQNN	Nouakchott (Airport	Mauritania
DQPA	Atar	"
DQPG	Fort Gouraud	"
DQPP	Port Etienne	"
DQPT	Fort Trinquet	"
DRRR	Niamey Airport	Niger
DSVO	Villacisneros	Sahara(Spain)
DTTA	Tunis/Carthage	Tunisia
DUCY	Conakry	Guinea
DVAL	Sal, Ilha de Sal	Cape Verde Islands
DXXX	Lome	Togo
EBBR	Brussels/National	Belgium
EDDM	Munchen	Germany Fed. Rep.)
EDUK	Rheindahlen	"
EDZQ	Quickborn (MET COM Center)	"
EDZW	Offenbach (MET COM Center)	"
EFHK	Helsinki	Finland
EFKL	Helsinki (MET Central Office)	"
EFTU	Turku	"

EGLL	London/Heathrow	United Kingdom
EGNN	Preston (ATCC-Civil)	"
EGPK	Prestwick Airport	"
EGRR	Bracknell (MET COM Center)	"
EGSS	Stansted	"
EGUU	Uxbridge (ATCC-RAF)	"
EHDB	De Bilt	Netherlands
EIDW	Dublin	Ireland
EINN	Shannon(Airport)	"
EKCH	Kobenhavn/Kastrup	Denmark
EKMK	Karup Mil. MET Center	"
EKYT	Aalborg	"
ENBO	Bode	Norway
ENBR	Flesland	"
ENCN	Kristiansand/Kjevik	"
ENFB	Oslo/Fornebu	"
ENGM	Oslo/Gardermoen	"
ENMI	Oslo(Norwegian Meteorological Institute)	"
ENVV	Betgen (MET Forecasting Center Western Norway)	
ENZV	Stavanger/Sola	"
ESCC	Stockholm(RSAF and Mil COM Center)	Sweden
ESDD	Stockholm Mil. COM Center	"
ESGB	Goteborg/Torslanda	"
ESII	Stockholm Mil COM Center	"
ESMM	Malmo/Bulltofta	"
ESSA	Stockholm/Arlanda	"
ESSS	Stockholm/Bromma	"
ESVB	Visby	"
ESWI	Stockholm/SMHI	"
FAGE		South Africa
FAME		"
FAPR	Pretoria(MET)	"
FCAA	Leopoldville	Congo
FFFF	Bangui	Central African Republic
FGSL	Santa Isabel	Rio Muni
FHAW	Wideawake	Ascension Island
FIMP	Mahebourg/Plaisance	Mauritius
FKKK	Douala	Cameroon
FMCN	Moroni	Comoro Islands
FMEE	Saint-Denis/Gillot	Reunion
FMMA	Tananarive/Arivonimamo	Madagascar
FMMD	Tananarive/(town/ville)	"
FMMI	Tananarive/Ivato	"
FNLU	Luanda	Portuguese West Africa
FOOO	Libreville(Airport)	Gabon
FPST	Sao Tome	S.Tome
FQLM	Lourenco Marques	Portuguese East Africa
FRSB	Salisbury(Airport)	Southern Rhodesia
FTTT	Fort-Lamy(Airport	Chad
FZZZ	Brazzaville/Maya-Maya	Congo(Brazzaville)
GMMC	Casablanca/Anfa	Morocco
GOOO	Dakar/Yoff	Senegal
HABP	Budapest	Hungary
HADS	Addis Ababa	Ethiopia
HASM	Asmara	"
HCMM	Mogadiscio	Somalia
HECA	Cairo	United Arab Republic
HHPP	Port-au-Prince	Haiti
HKNC	Nairobi(City)	Kenya
HLLI	Tripoli/Idris	Libya
HSSS	Khartoum	Sudan
KATL	Atlanta, Ga.	United States of America
KAUS	Austin/Mueller,Tex.	"
KBOS	Boston/Logan,Mass.	"
KBRO	Brownsville/Intl.,Tex.	"
KCHS	Charleston Municipal Airport, S.C.	"
KCOF	Cocoa/Patrick, Fla.	
KDCA	Washington/National D.C.	"
KEYW	Key West/Intl., Fla.	"
KHOU	Houston/William P. Hobby,Tex.	"
KJAN	Jackson/Hawkins Field, Miss.	"
KJAX	Jacksonville/Imeson,Fla.	"
KJFK	New York/John F. Kennedy Intl., N.Y.	"
KLRD	Laredo, Tex.	"
KMCC	Sacramento/McClellan, Calif.	"
KMIA	Miami/Intl.,Fla.	"
KMSY	New Orleans/Moisant Intl., La.	"
KNEW	New Orleans, La.	"
KNMH	Coast Guard Station, Washington, D.C.	"
KPBI	West Palm Beach,Fla.	"
KSAT	San Antonio/Intl.,Tex.	"
KSFO	San Francisco/Intl., Calif.	
KSWA	Swan Island(Reporting Point), Caribbean	Swan Island
KTPA	Tampa/Intl., Fla.	United States of America
KWBC	Washington(National Met.COM Center)D.C.	"
KWWA		"
LBBG	Burgas	Bulgaria
LBSF	Sofia	"
LBWN	Varna	"
LCNC	Nicosia/Civil Airport	Cyprus
LEMM	Madrid(Centro de Comunicaciones de Meteorologia)	Spain
LETO	Madrid/Torrejon	"
LFML	Marseille/Marignane	France
LFPW	Paris(Centre Meteorologique)	"
LGWA	Athinai	Greece
LIBR	Brindisi/Casale	Italy
LICC	Catania	"
LICJ	Palermo/Punta Raisi	"
LIEA	Alghero	"
LIEE	Cagliari	"
LIIB	Roma/Macia	"
LIMC	Milano/Malpensa	"
LIMF	Torino/Caselle	"
LIMJ	Genova	"
LIMM	Milano/Linate	"
LIPZ	Venezia/Tessera	"
LIRA	Roma/Ciampino	"
LIRF	Roma/Fiumicino	"

LOCATION INDICATORS—continued

LIRN	Napoli/Capodichino	Italy
LIRP	Pisa	"
LMML	Malta/Luqa	Malta
LOWM	Wien(MOTNE Main Centre)	Austria
LOWW	Wien/Schwechat	"
LPAZ	Santa Maria	Azores
LPLA	Lajes,Terceira	"
LPPT	Lisboa	Portugal
LSSS	Zurich(COM Centre)	Switzerland
LSZZ	Zurich	"
LTAA	Ankara(Sehir-City)	Turkey
LTBA	Istambul/Yesilkoy	"
LYBM	Beograd	Yugoslavia
LZSO	Sofia	Bulgaria
MACA	Princess Beatrix, Aruba Is.	Netherlands Antilles
MACC	Dr.Plesman,Curacao Is.	"
MACE	St.Eustatius, St. Eustatius Is.	"
MACM	Juliana,St.Maarten Is.	"
MBHO	Balboa/Howard Field	Panama Canal Zone
MCBO	Bogota	Colombia
MCBQ	Barranquilla	"
MCCL	Cali	"
MCMD	Medellin	"
MCSP	San Andres Is.	"
MDSD	Santo Domingo/Punta Caucedo	Dominican Republic
MEZY	Zanderij	Surinam
MFFD	Fort-de-France(Ville), Martinique	French Antilles
MFFR	Pointe-a-Pitre/Le Raizet Guadeloupe	"
MGGT	Guatemala/La. Aurora	Guatemala
MHSP	San Pedro Sula	Honduras
MHTG	Tegucigalpa	"
MIST	Harry S. Truman Airport,St.Thomas	Virgin Islands
MISX	Alexander Hamilton Field,St.Croix	"
MJBQ	Aguadilla/Ramey	Puerto Rico
MJMZ	Mayaguez(Reporting Point	"
MJNR	Roosevelt Roads(NAS)	"
MJPS	Ponce(Reporting Point	"
MJSJ	San Juan Intl.	"
MKCG	Grand Cayman,Cayman Is.	Jamaica
MKJM	Montego Bay	"
MKJP	Kingston/Palisadoes	"
MKPA	St. Johns,Antigua	Caribbean Territories
MKPB	Seawall,Barbados	"
MKPE	Pearls,Grenada	"
MKPV	Kingston,St. Vincent	"
MKPP	Piarco,Trinidad	Trinidad and Tobago
MLAK	Atkinson Airport	British Guiana
MNMG	Managua/Las Mercedes	Nicaragua
MOOO	Cayenne/Rochambeau	French Guiana
MPTO	Tocumen	Panama
MROC	El Coco	Coasta Rica
MSSS	San Salvador/Ilopango	El Salvador
MTPP	Port-au-Prince	Haiti
MUCM	Camaguey	Cuba
MUGM	Guantanamo(US-Naval Air Base)	"
MUHA	Havana/Jose Marti	"
MVMI	Maiquetia	Venezuela
MXKF	Kindley Field	Bermuda
MXPB		"
MYNN	Nassau Intl.,New Providence Is.	Bahamas
MZBZ	Belize/Intl.	British Honduras
ODAK	Khormaksar	South Arabia
OEJD	Jeddah	Saudi Arabia
OJAM	Amman(Civil Airport)	Jordan
OKPR	Praha/Ruzyne	Czechoslovakia
OLBA	Beyrouth Intl.	Lebanon
ORBH	Habbaniya(IRAF)	Iraq
OSDS	Damas/Mezze	Syria
PANC	Anchorage Intl., Alaska	United States of America
PGTW	Guam(Joint Typhoon Warning Centre)	Mariana Islands
PGUA	Andersen(AFB),Guam	"
PHNL	Honolulu Intl., Oahu	Hawaiian Islands
RJNH	Hamamatsu,Honshu Is.	Japan
RJSM	Misawa,Honshu Is.	"
RJTB	Tokyo(JSDF), Honshu Is.	"
RJTD	Tokyo,Honshu Is.	"
RJTY	Yokota,Honshu Is.	"
RJTZ	Fuchu	"
RODN	Okinawa/Kadena(AB)	Ryukyu Islands
RUMS	Moskva	U.S.S.R.
SCER	Quintero	Chile
SCFA	Antofagasta	"
SCMO	Puerto Montt/La Chamiza	"
SEGU	Guayaquil/Simon Bolivar	Ecuador
SEQU	Quito	"
SOWR	Warszawa	Poland
SPLI	Lima	Peru
VHHH	Hong Kong	Hong Kong
VVVS	Saigon/Tan-Son/Nhut	Viet-Nam
XANF		Mexico
YRBK	Bucarest	Romania
YRBM		"

METEOROLOGICAL TERMS

This is a list of symbolic code words, letter groups, and meteorological terms frequently used around the world. Additional Meteorological Terms may be found in this Publication in Section 5 (Codes) page 5-33.

ACREP Aircraft reports. (POMAR,RECCO etc.)

AIROB Aircraft weather report (not regular reconnaissance flight) made by experienced aerological observer.

AIRCRAFT Aircraft reports.

AIREP Weather reports from aircraft.

ALTEM Code from indicating heights of the isotherm surfaces of 0° C and -10° C above the point of observation.

ARCH Reports of observations of cloud heights as measured by designated search light cluster.

ANALYSIS Pressure systems, frontal systems, and isobaric structures (FM 45.C, FM 46.C)

APOB Airplane observations, usually restricted to mean observations taken by an aerography or reports of vertical ascent.

ATMOS Reports containing bearing, intensity, and times of beginning and end of each detected source of atmospherics.

BARATIC Surface analysis pressure systems, frontal systems, key isobars, etc.

BARANAL Complete verbal analysis of the meteorological situations as explained in the BARATIC preceding. Also contains reference to the movement of the pressure system fronts, and to the type of stability of the air mass.

CANAL Current surface analysis.

CARIB Caribbean reporting stations.

CONTO Upper air analysis.

CONTOUR Upper air analysis.

CORAC Radiosonde and/or rawinsonde reports in CORAC code form.

FORCA Forecasts.

FOBAR Further Outlook Baratic or forecast pressure distribution.

FOUWT Forecasts for upper winds and temperatures.

HOEKA Prefix to upper air reports (Standard levels) from Europe, the Atlantic, and N. Africa.

HURAD Hurricane advisories.

HUREP Identifies a message of tropical storm information.

INFER Inference (forecast).

ICAO International Civil Aviation Organization.

ISOFRONT Analysis; isobars and fronts at means sea level.

ISOPLETH Line connecting points of equal value.

ITC Inter-tropical convergence zone.

MISDA Missing Data.

MAGNE Magnetic storm warning.

MARID Ship's reports of sea surface temperature.

MINTRA The reports that give the minimum height at which condensation trail formation is liable to begin. This level is generally a substantial distance below the tropopause and is termed the MINTRALEVEL.

MOBIL Surface report from mobile land station.

NEBUL Code for description of cloud systems.

NOREP No report filed or not available.

NUREP Aircraft reports of height of cloud top and/or bases.

PIBAL Pilot ballon reports, land stations.

PIBES Reports of wind aloft obtained by visual means using a single theodolite.

PIBIM Reports of wind aloft obtained by visual means using multiple theodolites.

PIBOD Reports of wind aloft obtained by visual means using double theodolites.

PIBUT	Reports of wind aloft obtained by visual means using the tail method.
PILAR	Report relating to observations made by electronic means.
PREBA	Surface Prognostic Analysis (PREBARACTIC)
PRECO	Upper air prognostic analysis.
PRAWT	Upper air reports of pressure, wind, temperature and humidity by radiosonde.
PRAT	Radiosonde reports of upper air temperature, humidity and pressure.
PRATA	Report of high altitude aircraft ascent giving observations of pressure and temperature at intervals of about 5,000 feet up to near 40,000 feet.
PRAW	Upper air pressure and wind report obtained by radio equipment.
PRAWCON	Radio determined wind report made with a ballon which drifts at a constant height of about 25,000 feet.
PREISO	Prognosis of frontal systems and the isobaric field.
PREVI	Indicates information requested or given, refers to forecast and not present conditions. Also PREVU and PROG refer to forecasts.
PROGANAL	Surface prognostic analysis.
PRONTOUR	Upper air prognostic analysis.
RAMET	Ground radar weather observations from land stations or ships.
RAREP	Identified radar report on hurricanes.
RAWIN	Reports of winds aloft obtained by electronic means. (Abbreviations of radio winds).
RECCO	Meteorological reconnaissance aircraft reports.
RETOP	Upper level thickness and shearwind reports.
ROFOT	Identifies a message of Route and Flight forecast, when heights are given in feet (FM 52.C).
RASAR	Radiosonde reports including upper winds obtained from same flight using radar.
RASEF	Radiosonde reports including upper winds obtained from same flight using radio direction finding.
RASIT	Radiosonde reports including upper winds obtained from same flight using theodolite.
RASON	Radiosonde report; land.
RASOW	Radiosonde reports including upper winds obtained from same flight, method not specified.
RAWEF	Reports of winds aloft obtained by electronic means using radio direction finding.
ROMET	Symbolic prefix of a message of Route and Flight forecast when heights are given in meters. (FM 52.C).
RABAL	Observations of winds aloft made by tracking radiosonde balloon by visual means.
RAOBS	Radiosonde reports, land stations.
RETARDS	Late report.
SEA	Identifies a message of sea and swell reports.
SFERIC	Atmospheric electrical discharges located by direction finding equipment for meteorological purpose.
SEISMO	Report of information concerning SEISMIC phenomena (earthquake).
STRATO	Message is an analysis of the height of the tropospause.
SURF	Identifies a message giving surf conditions.
STADY	Hurricane or storm advisories.
UCONAL	Upper air analysis for a selected standard pressure level.
UPWIN	Upper wind reports.
VENTAL	Analysis of upper air streamlines.
WESTI	Reports in West Indian (Caribbean) Code.

SYMBOLIC FIGURE GROUPS

00200 indicates that wind speed given by preceding group is to be increased by 200 knots. (FM 32.C, FM 33.C, FM 35.C, FM 35.C)

00300 indicates that wind speed given by preceding group is to be increased by 300 knots. (FM 32.C, FM 33.C, FM 35.C, FM 36.C)

01010 Data on clouds observed at the station at the moment of the release follow in the form given in Section 9. (FM 35.C, FM 36.C)

10001 Analysis message follows. (FM 45.C, FM 46.C)

11111 Data on the position of the jet core and the wind to be encountered in the jet core. (FM 53.B, FM 54.B, FM 55.B, FM 56.C, FM 57.C, FM 58.C)

11133 Correction message to an analysis or prognosis message follows. (FM 45.C, FM 46.C)

17171 Sounding data obtained during a vertical ascent or descent of the aircraft follow in the FM 35.C code form (TEMP)

19191 ends an analysis or prognosis message or a correction to an analysis or prognosis message. (FM 45.C, FM 46.C)

22222 Data for additional levels follow in the form given in Section 6. (FM 35.C, FM 36.C)

22233 Cloud information follows. (FM 35.C, FM 36.C)

22244 Precipitation information follows. (FM 35.C, FM 36.C)

22255 Turbulence data follow. (FM 35.C, FM 36.C)

22266 Icing data follow. (FM 35.C, FM 36.C)

22277 Fog or haze data follow. (FM 35.C, FM 36.C)

33300 indicate that position groups are given in for form $L_aL_aL_oL_o$,

33311 instead of the form $0L_aL_aL_oL_o$

33322 indicated in the code form (any one of these symbolic groups being inserted instead of the group 33388). (FM 46.C)

33333 Data for additional levels follow in the form given in Section 7. (FM 35.C, FM 36.C)

33388 indicates that position groups in the message are given in the form $0L_aL_aL_oL_o$. (FM 36.C)

44444 - PILOT selected (PISEL) data follow. (FM 32.C, FM 33.C)
- Wind data at the standard pressure levels follow in the form given in Section 8. (FM 35.C, FM 36.C)

44777 ends the vocabulary section. (FM 45.C, FM 46.C)

55555 - Data for significant points in wind (hodograph) follow: altitudes are in decameters. (FM 32.C, FM 33.C)
- Data for additional levels follow in the form given in Section 2. (FM 35.C, FM 36.C)

65556 Prognosis message follows. (FM 45.C, FM 46.C)

66600 indicates that atmospherics are located by means of cathode-ray direction-finder (CRDF). (FM 82.A)

66655 indicates that atmospherics are located by means of narrow-sector direction-finder. (FM 82.A)

66666 - Data for additional levels follow in the form given in Section 3. (FM 35.C, FM 36.C)

71717 Sounding data obtained by a dropsonde released from the aircraft follow in the FM 36.C code form (TEMP SHIP).

FIGURE GROUPS —continued

77744 Vocabulary section follows: (FM 45.C, FM 46.C)

77777 Data for additional levels follow in the form given in Section 4. (FM 35.C, FM 36.C)

88800 Wave or sea temperature follows, (FM 45.C, FM 46.C)

88822 Vertical wind shear follows. (FM 45.C)

88888 - Computed wind vector differences between selected standard levels follow (i.e., higher level minus lower level). (FM 32.C, FM 33.C)
- Data for additional levels follow in the form given in Section 5. (FM 35.C, FM 36.C)

99900 Analysis or prognosis* of pressure systems or topography systems follows. (FM 45.C)

99911 Analysis or prognosis* of frontal systems follows. (FM 45.C)

99922 Analysis or prognosis* of isopleths follows. (FM 45.C)

99933 Analysis or prognosis* of air mass follows. (FM 45.C)

99944 Analysis or prognosis* of weather area follows. (FM 45.C)

99955 Analysis or prognosis* of the tropical section of the message follows. (FM 45.C)

99966 Analysis or prognosis* of the cloud follows. (FM 45.C)

99977 Analysis or prognosis* of the upper wind follows. (FM 45.C)

99988 Analysis or prognosis* of the jet stream follows. (FM 45.C)

99999 Analysis or prognosis* of the tropopause follows. (FM 45.C)

*Preceding group 10001 or 65556 specifies whether an analysis or a prognosis follows.

WEATHER MAP ANALYSIS

The object of weather map analysis is to portray, by means of a two dimensional picture, the weather situation as it exists in three dimensions. With a minimum of technical knowledge an amateur can read such a map and get a general idea of the weather existing in any particular area at the time and in the immediate future. Following are a few brief explanations that will be helpful in map reading.

Man lives at the bottom of a sea of air known as the atmosphere. The condition of the atmosphere in terms of heat, pressure, wind, and moisture is known as weather. It is these elements which are reported in symbolic form on a weather map; these symbols and weather map analysis will be discussed in more detail in following paragraphs.

If the earth's atmosphere remained stagnant, there would be no changes in the weather over a region. However, the heat from the sun and the rotation of the earth cause the air to be heated and to move about. Weather over the world is caused by the different air streams as they flow out from various source regions and interact with each other. Over large areas of the earth, especially in the polar and the tropical regions, the meteorological conditions are so nearly uniform and the circulation so relatively weak or restricted for periods of time, that the atmosphere to great heights takes on properties of temperature and moisture that are characteristic of the region. For example, air that stagnates in polar regions becomes cold and dry while air that stagnates in tropical maritime regions becomes warm and moist. Frequently, an air current originates in one of these areas and transports a large mass of air to a distant part of the earth. While the moving air mass is gradually modified by the new conditions it encounters (e.g., a dry air mass passing over a relatively large body of water picks up moisture and becomes less dry), it tends to retain its initial characteristics. Thus, polar air reaching Washington, D.C. is cold but not quite as cold as it was when passing Winnipeg, Manitoba. When air masses from widely separated places of origin and with distinctly different characteristics come in contact with each other, they do not mix freely but tend to retain their own identities. They remain separated by surfaces of discontinuity, or zones of transition, until eventually sufficient mixing and modification have taken place that they lose their identities as separate air masses. It is at these surfaces of discontinuity between two air masses that the processes involved in weather phenomena are most active (some important phenomena may occur within an air mass, however; e.g. air mass thunderstorms).

Weather map analysis is the identification of these air masses and the proper identification of the surfaces of discontinuity which are known as "fronts". The analysis does not begin, however, until weather reports have been entered on the meteorological plotting chart.

WEATHER REPORTS -- Simultaneous (i.e. "Synoptic") observations of the state of the atmosphere are taken on land at many reporting stations and on the sea by naval and selected commercial ships. These observations, taken at stated times, are forwarded in the form of coded messages by various rapid communication methods to analysis centers. The various codes are given in Section 5. The letters in the codes merely indicate the position in the message for the various weather elements, while figures representing the values of the elements are used in the coded messages. Tables following the code lists in Section 5 give the figures to use for the variations in the elements.

PLOTTING THE REPORT -- At the analysis centers the coded messages are translated back to the observed elements and are entered on a meteorological plotting chart. For convenience of locating an observation properly, each observation station is identified by a number which is included in the coded message. The first two digits designate an area and are used once to indicated that the reports following may be located within that area. The last three digits are included in each individual report to enable the plotter to spot it on the meteorological plotting chart. Ship reports are located by latitude and longitude. The weather elements are plotted around the station circle in a definite order, some as numerals and others as symbols, on the principle that instrumental observations, such as temperature and pressure, are better presented as numerals whereas observations such as cloud types and weather are better visualized when represented symbolically. Wind direction is represented by an arrow flying with the wind and its force is indicated by "half barbs", "barbs", and "pennants" or the combination of any or all of the above; each "half barb" represents five (5) knots, each "barb" represents ten (10) knots, each "pennant" represents fifty (50) knots.
Examples are shown below:

Figure 1 shows the abbreviated U.S. Station Model. Temperature and dewpoint are in degrees Fahrenheit, visibility in the coded figure, height of low clouds in the coded figure, amount of precipitation in inches, amound of low clouds in tenths of celestial dome covered, and barometric tendency and pressure in millibars.

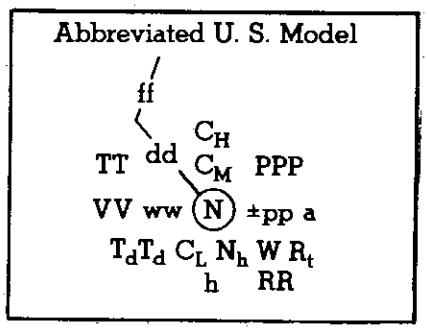


Figure 1: Abbreviated U.S. Plotting Model for land stations.

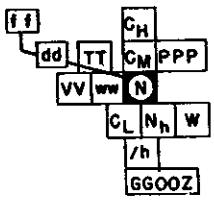


Figure 2: Abbreviated U.S. Plotting Model for ships.

ISOBARS -- There is a definite relationship between atmospheric pressure and weather phenomena; therefore, isobars (lines of equal pressure) form the basis of analysis. Isobars are usually drawn for intervals of 4 millibars; in the tropical regions the interval may be 2 millibars, or even 1 millibar. After minor irregularities in the isobars are smoothed out, the remaining isobaric pattern indicates area of "high" or "low" pressure and the lines of discontinuity between pressure systems.

HIGHS -- Areas of high pressure, commonly called "highs" or "anticyclones", are delineated by fairly smooth continuous closed isobars. Winds blow around a high in a clockwise direction in the Northern Hemisphere and counter-clockwise in the Southern Hemisphere. The wind is light in the center of a high but increases in intensity toward the outer edge of the high pressure system. A high may be thought of as a dome of cold air that is pressing downward. To make room for the descending air, the air at the surface tends to move outward from the center. In general, a high is a region of fair weather. However, fronts may penetrate a high and cause weather phenomena, or instability or convection may cause showers.

WEDGE, WEDGE LINE -- A wedge is an elongated area of high pressure. It is usually "U" shaped with higher pressure inside the "U". Circulation around a wedge corresponds with that around a high. As the wind blows slightly outward across the isobars, with no tendency to be forced aloft, it is a region of fair weather.

FRONT -- A front is a line of discontinuity between two air masses having different characteristics such as temperature and moisture content. On a weather map the position of the front at the earths surface is presented symbolically. The frontal surface slopes gently upward in the direction of the colder air. For purposes of illustration, the slope is exaggerated in the cross sections, Figs., 5 and 7.

COLD FRONT -- When a mass of cold air comes in contact with a mass of warm air, the cold air wedges under the warm air and usually pushes the warm air back. The line of discontinuity between the two air masses is known as a cold front. As the warm air is pushed upwards, it is cooled and condensation results, giving a showery type precipitation and frequently thunderstorms. The actual cold frontal passage at a station is often accompanied by gustiness and an abrupt shift in wind. Barometric pressure rises after a cold frontal passage.

WARM FRONT -- If two air masses, one cold and one warm, come in contact with each other and the cold air retreats, the discontinuity is known as a warm front. The warm air gradually moves up over the cold air; thus, warm front weather extends over an area hundreds of miles in advance of the frontal zone at the surface. The high cloud types of clouds, cirrus and cirrostratus usually signal the approach of a warm front while steady type precipitation usually accompanies the surface frontal passage. However, thunderstorm activity may be present also if the warm air is sufficiently moist and unstable.

OCCLUDED FRONT -- When a cold front overtakes a warm front, the two cold air masses come in contact forming a new front called an occluded front. The warm air is forced aloft over the two cold air masses. There are two types of occlusions, their classification depending upon which is the colder - the air in front of the warm front or the air behind the cold front. Figs., 6 and 7.

STATIONARY FRONT -- Here no air is replacing other air; the two air masses are relatively stationary. Little "weather" is associated with a stationary front but the warm air tends to rise. Clouds forming in this rising warm air are of the types associated with the warm front.

TROUGH, TROUGH LINE -- A trough is an elongated area of low pressure. It may be recognized by the "U" or "V" shaped isobars with pressures lower within the "U" or "V". Wind circulation across a trough is similar to that across the fronts associated with a low. As the air blows slightly in across the isobars and is being forced aloft, it is a region of poor weather. Troughs without fronts are frequently found around the southern periphery of the oceanic highs.

WAVE CYCLONE -- Interplay between two air masses may start a disturbance called a "wave cyclone" or, more commonly, a "wave". Fig. 3 shows the stages of development of an occlusion from its inception until its dissipation. The area affected by a wave cyclone may be quite extensive. Fig. 8 shows a weather map situation in which the whole eastern part of the United States is under the influence of an occluded wave cyclone or, more commonly, an "occlusion".

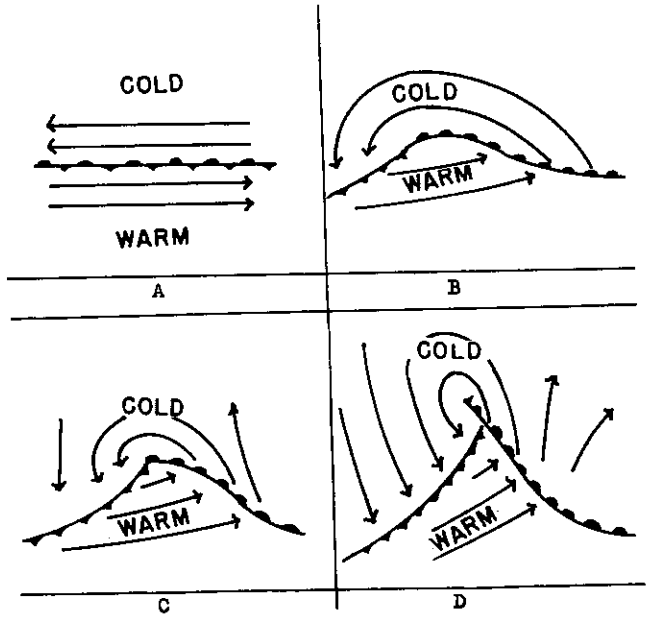


Fig. 3 -- Life cycle of a typical wave cyclone.

continued...

continued...

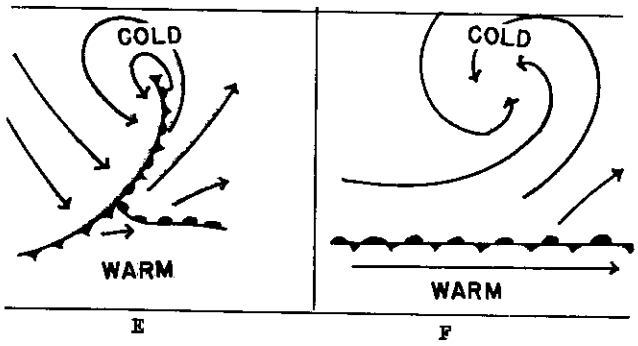


Fig. 3 -- Life cycle of a typical wave cyclone.

Fig. 4 presents a typical wave cyclone as it would be drawn on a weather map. Arrows indicate the cyclonic wind flow. In the cold air the flow is slightly across the isobars toward the center of the low pressure and, in the warm air, parallel to the isobars. The shaded area indicates precipitation associated with the warm front as warm air overflows the cold air. The shower type precipitation associated with the cold front is indicated by the shower symbol . To give some concept of the frontal slopes, clouds, precipitation and air flow, a vertical cross section of the wave cyclone is depicted in Fig. 5. Here the warm front is indicated by a dashed line, the cold front by a dotted line.

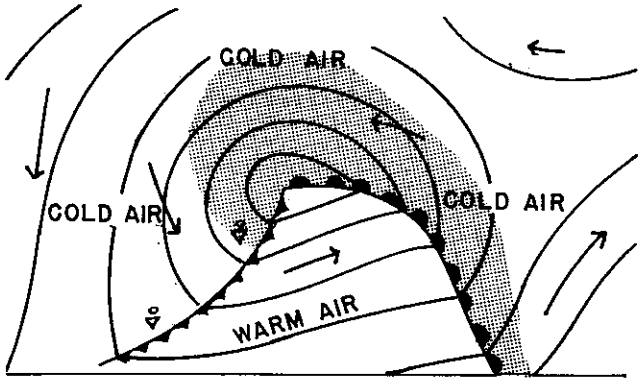


Fig. 4 -- A young wave cyclone showing isobars and fronts at earth's surface.

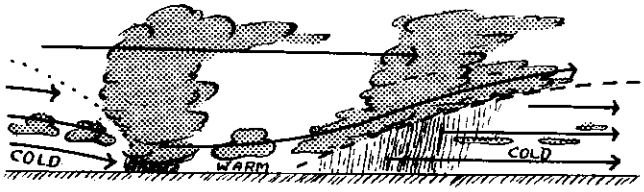


Fig. 5 -- A vertical cross-section of Fig. 4.

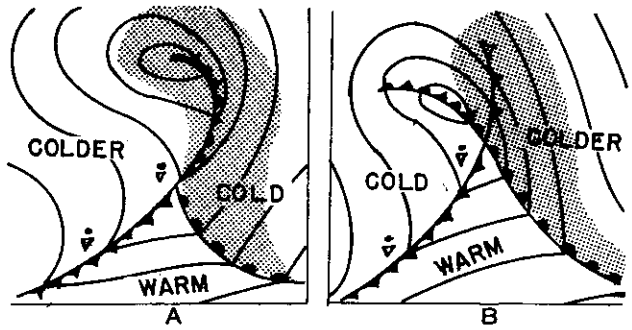


Fig. 6 -- Occluded cyclones showing cold and warm types. A, Cold-front type occlusion. B, Warm-front type occlusion.

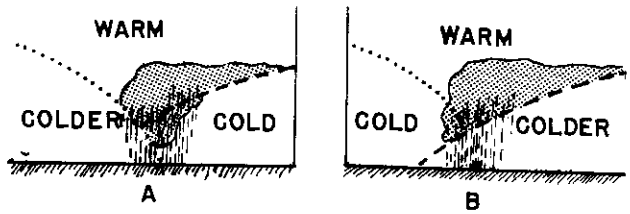


Fig. 7 -- Vertical cross sections of occluded cyclones in Fig. 6.

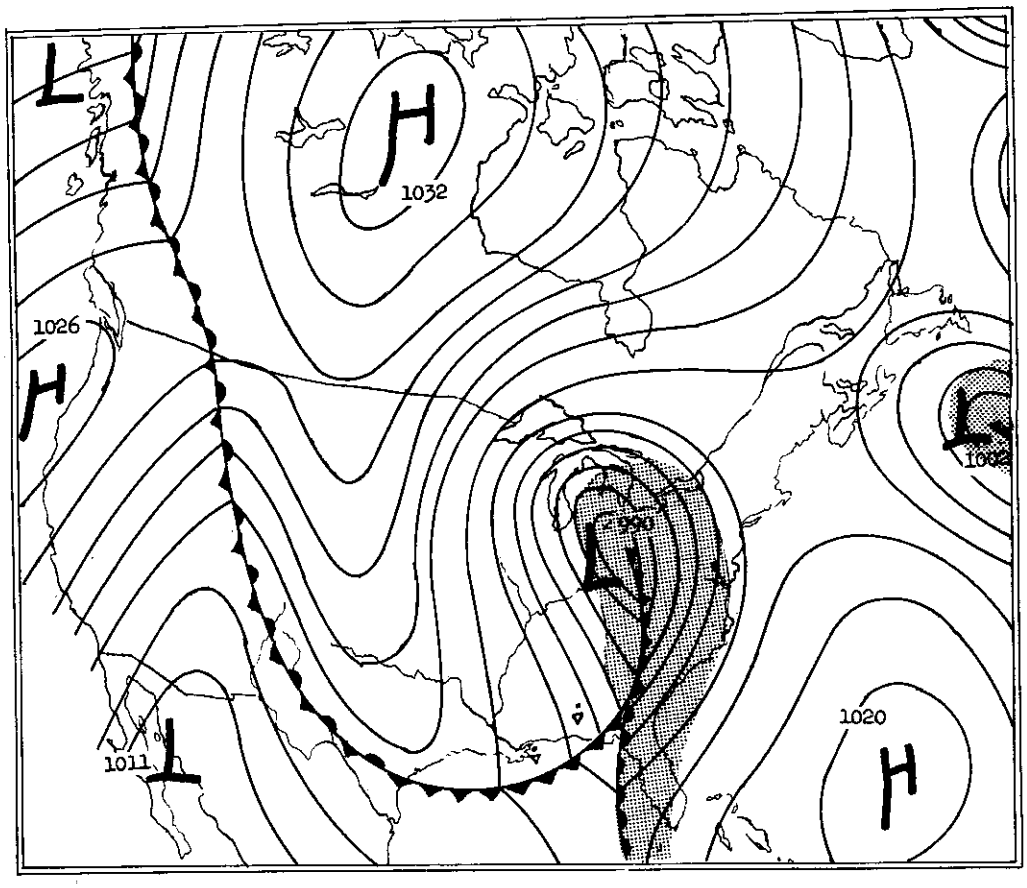


Fig. 8 -- Sample Weather Map.

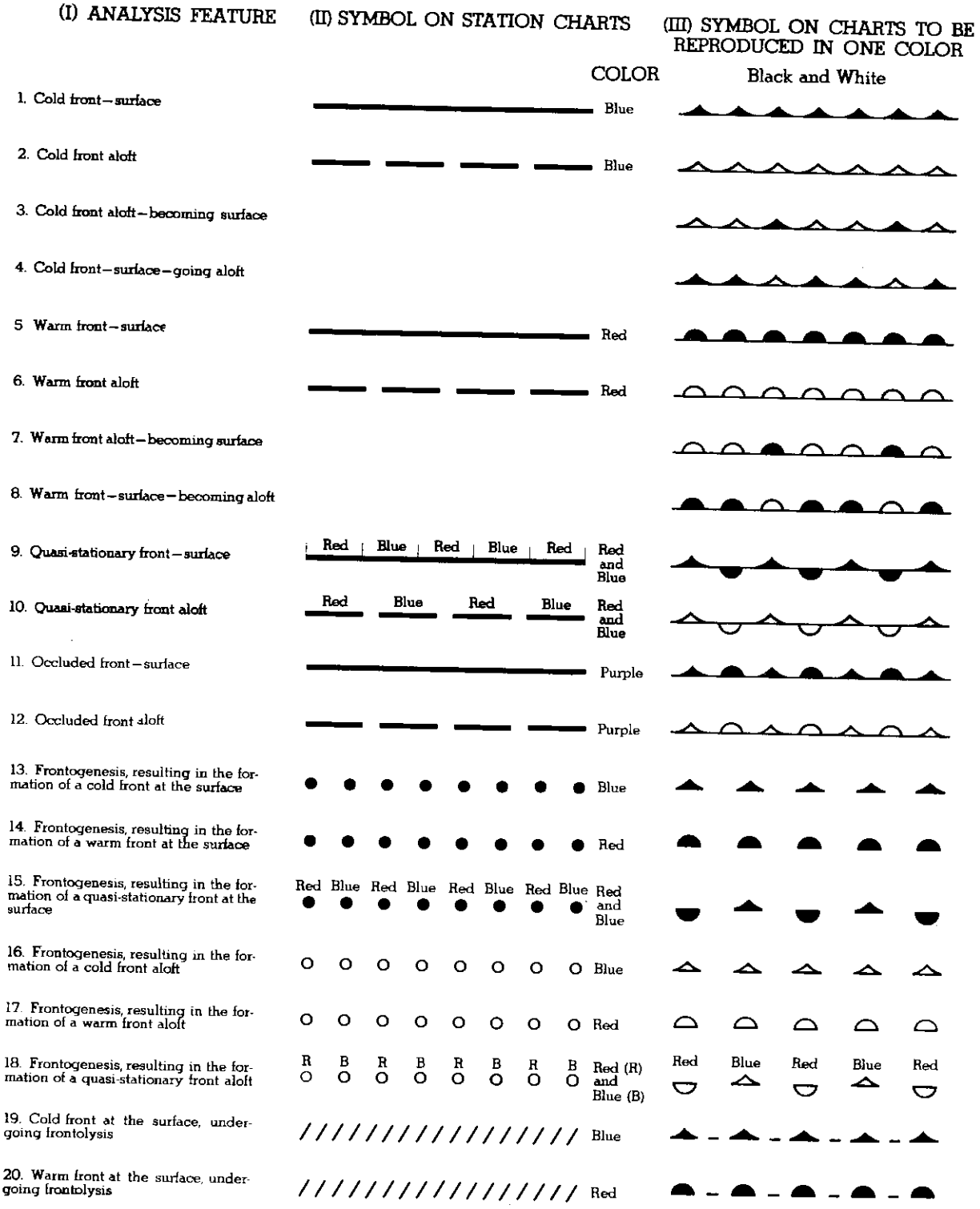
DISCUSSION OF SAMPLE WEATHER MAP

NOTE: Station reports are omitted because of scale of map.

A deep low pressure area is centered near Columbus, Ohio with an occluded front extending southward. Over the Northwest Territory a cold high is moving south-southeast and southeast in the direction of the wedges of high pressure. A stationary front lies along the Rocky Mountains.

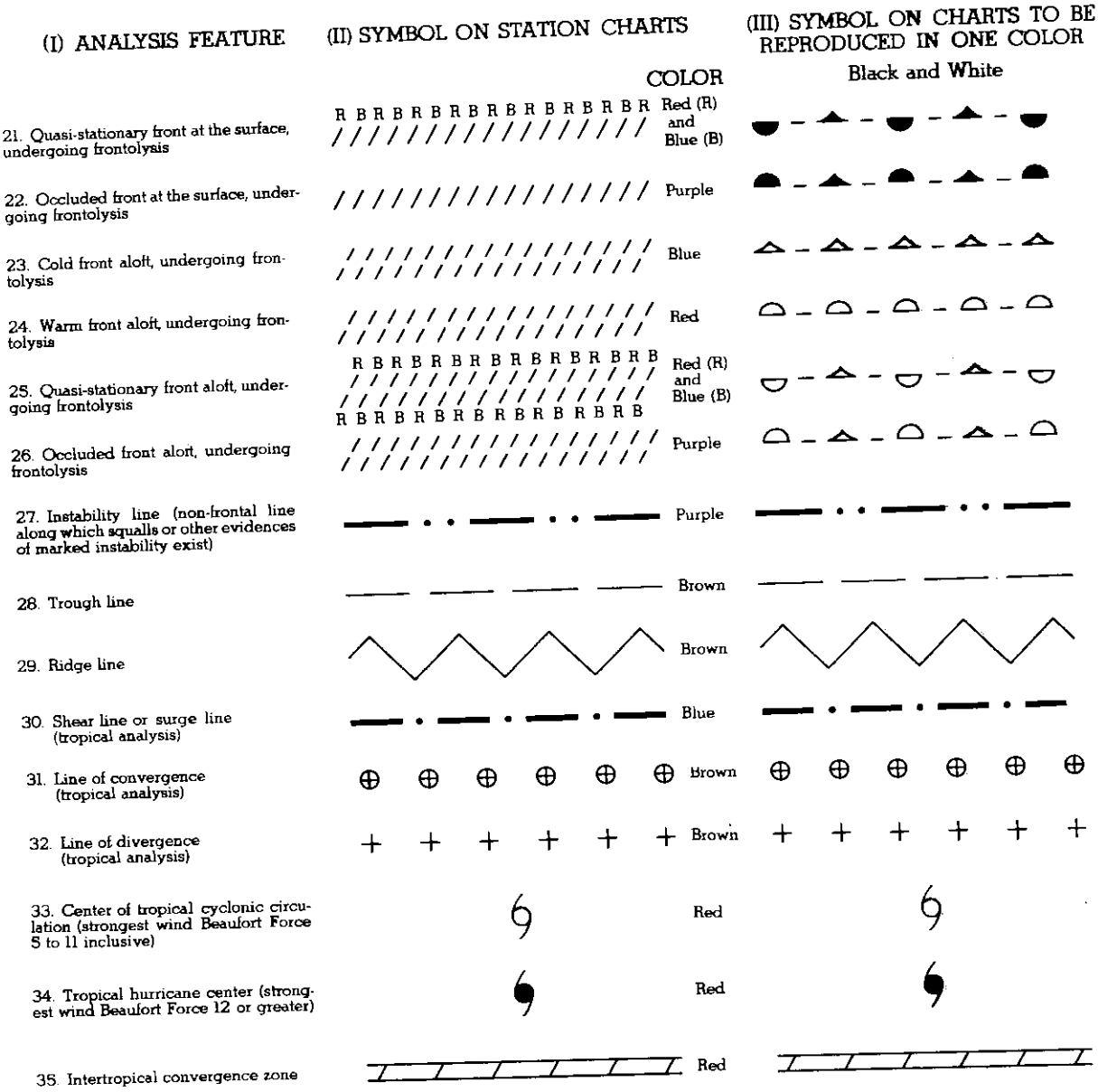
Weather in the eastern portion is rainy with snow flurries in the area of the Great Lakes. Fair weather prevails from the Mississippi River to the Rocky Mountains as well as on the West Coast. Along the Rocky Mountains cloudy skies are associated with the stationary front.

WBAN WEATHER ANALYSIS SYMBOLS



WBAN WEATHER ANALYSIS SYMBOLS

(Continued)



NOTES

1. In symbols 1-12 inclusive, Column III, barbs may be separated more than shown, but a continuous line will always be drawn through the bases of the barbs.
2. In symbols 13-18 inclusive, Column III, the barbs will always be separated and will always be drawn without a connecting line.
3. In symbols 19-26 inclusive, Column III, the barbs may be spaced a greater distance than shown here, but the length of the dash between barbs should equal the space between the dash and each adjacent barb.
4. In symbol 35, Columns II and III, the spacing between the continuous lines will normally be about ⅛ inch, but may be greater when the intertropical convergence zone is broad.

RADIO STATIONS ACCEPTING SHIPS OBSERVATION MESSAGES

The following radio coast stations are authorized to accept weather messages originated by United States radio reporting vessels. Messages will be handled free of charge to ships by these stations; radio tolls on reports when applicable will be paid by the Meteorological Service to which the messages are addressed. The appropriate address of the weather message to be sent to any coast station is shown centered in the middle of each column. For the convenience of ships' officers a map showing all weather reporting areas with the appropriate radio address is given on page 1-26.

SOUTH ATLANTIC, S of lat. 15°S & E of long. 20°W.
INDIAN OCEAN, S of lat. 30°S & W of long. 70°E.

Station	Frequencies (kcs)	Location
	"MET PRETORIA"	
ZSC Simonstown (Capetown)	418 435 441 484 500 8686 17165.6	34-09 S 18-19 E
ZSD Durban	429 432 438 500	29-48 S 30-49 E
ZSQ Port Elizabeth	472 500 524	33-57 S 25-36 E
ZSV Walvis Bay	458 476 500	22-58 S 14-30 E
	NORTH PACIFIC	
	North Pacific, north of Equator & east of the 180° meridian	
	"METEO SAN FRANCISCO"	
NBA Balboa, C.Z.	470 500 4352* 8614 12883 17136.8# *guards 1100-2300; transmits 2300-1100 GCT. #guards 2300-1100; transmits 1100-2300 GCT.	08-22 N 79-21 W
KPH San Francisco, Calif.	426 2045 126.15 4247 6477.5 6488 8618 8642 12808.5 13002 17016.8 17088.8 22557	37-54 N 122-44 W
KLC Galveston, Tex.	484 4256 6369 8666 13038 17208.8 22467 22539	29-19 N 94-46 W
NMO Honolulu, Hawaii	440 8650 12745.5	21-16 N 157-47 W
KLB Seattle, Wash	488 4349 6411 8582 12907.5 17007.2 22539	48-02 N 122-11 W
NMJ Ketchikan, Alaska	466 500 8730	55-28 N 131-49 W
NOJ Kodiak, Alaska	470 500 8730 12745.5	57-48 N 152-22 W
NMQ Long Beach, Calif.	472 500 8734	33-45 N 118-25 W
WLO Mobile, Ala.	438 6446 8714 13123.5 17172.4	30-42 N 88-02 W

Station	Frequencies (kcs)	Location
KTK San Francisco,Calif.	436 4358 6516 8714 13114.5 17184.8 22515	37-39 N 122-30 W
4YN (Ocean Weather Station)	466 500	30-00 N 140-00 W
KFS Palo Alto, Calif.	476 4274 6365.5 8558 12844.5 17026.4 22425	37-27 N 122-07 W
KOK Los Angeles, Calif.	464 4283 6463.5 8590 12993 17064.8 22413	33-54 N 118-09 W
WPA Port Arthur, Tex.	416 4322 6435.5 8550 12840 17256.8 22569	29-50 N 93-58 W
NMC San Francisco,Calif.	486 8650 12745.5 (night) 17151.2 (day)	37-38 N 122-27 W
NMW Westport, Wash.	440 500 8734	46-53 N 124-07 W
4YV (Ocean Weather Station)	466 500	34-00 N 164-00 E
North Pacific, lat. 5°N to 25°N & long. 180° to 135°E		
"METEO GUAM"		
NRV Guam	440 8734 12745.5 (night) 17151.2 (day)	13-29 N 144-47 E
North Pacific, between lat. 5°N & 25°N, long. 120°E to 135°E; 5°N to 10°N; 115°E to 120°E.		
"WEATHER MANILA"		
DZC Manila (Clavecilla)	6512.5 8702	14-35 N 120-59 E
DZE DZF Manila (Alberto Radio Communication System)	6397 8610 13051 6411 8630	14-39 N 120-57 E
DZG Manila	483 6418 8646 12930 17242.4	14-36 N 121-02 E
DZH Manila (Republic Radio Communication System)	6477.5 8713	14-39 N 120-58 E
DZR Manila	474 500 6446 8480 13074 17136.8	14-37 N 121-03 E
DZS Manila	2598	14-35 N 120-58 E
North Pacific, lat. 25°N to 50°N W of 180th meridian		
"OBSERVER TOKYO"		
JCS Chosi	131.75 143 418.5 500 512 4349 (2300-1300); 6467 (2300-1900); 8654 (2200-1900); 12826.5 (1900-1300); 17112.8 (2300-1300); 22419 (2200-0900 GCT)	35-45 N 140-45 E
JCT Chosi	6439 (0300-1300); 8686 (0000-1300); 13105.5 (2300-1900); 17166.45 (2100-0700); 22637 (0300-0900 GCT)	

Station	Frequencies (kcs)	Location
JCU Chosi	8479; 17043.2 (2000-0700); 22409 (2100-0300 GCT)	
JCK Kobe	134.9 143 416.5 487.5 500 512 4250	34-31 N 135-31 E
JOS Nagasaki	139.1 143 483 500 6491.5; 4328 (0900-1500); 8706; 13069.5 (0300-0100); 17271.2 (2300-1000); 22647 (2300-1300 GCT)	32-48 N 130-09 E
JOR Nagasaki	8523 (2300-1200); 13008 (2300-1900); 17043.2 (0700-1500); 22409 (0300-1300 GCT)	
JOC Otchishi	483 500	43-20 N 145-36 E
	"METEOR-OFFICE SEOUL"	
HLM Mokpo	470 12921 22641	34-48 N 126-33 E
HLP Pusan	434 8742 17079.2	35-04 N 129-04 E
	North Pacific north of 50°N, west of 180°	
	"HOLMSK POGODA"	
UFO Holmsk	416	47-03 N 142-03 E
	"PETROPAVLOVSK POGODA"	
UBE 4 Petropavlosk Na Kamchatke	450	52-59 N 158-39 E
	"VLADIVOSTOK POGODA"	
UIK Vladivostok	435	43-07 N 131-54 E
	North Pacific north of 25°N, west of 140°E.	
	"METOBS TAPEI"	
XSW Kaohsiung Radio	460 8582	22-36 N 120-18 E
XSX Keelung Radio	420 8714	25-12 N 121-42 E
XSY Hwalien Radio	523 8546	23-58 N 121-37 E
	South China Seas, north of 10°N, west of 120°E	
	"OBS HONG KONG"	
VPS Cape d'Aguilar	527.5 8566 (0800-0200 GCT); 120201 (0200-0800 GCT)	22-13 N 114-15 E
GZO 5 Stonecutters	12831	22-19 N 114-09 E

Station	Frequencies (kcs)	Location
ZEL Hung Hom	12325	22-18 N 114-11 E
	"DIRMET SAIGON"	
XVS XVS 8	500 8590	10-47 N 106-40 E
	Indonesian Waters, 0° to 10°N, 90°E to 115°E	
	"WEATHER SINGAPORE"	
9MG 9MG 2 9MG 3 Penang	500 522.5 8698 13096.5 (0100-1430 GCT)	05-23 N 100-18 W
VPW VPW 7 VPW 8 VPW 9 Singapore	419.5 516 17213.6 (0100-1330 GCT) 8718 13128 (0000-1600)	01-20 N 103-42 W
VQA Jesselton	458 (0300-0310, 0500-0510, 0700-0710, 0900-0910 GCT)	05-59 N 116-05 E
VQB Sandakan	458	05-50 N 118-07 E
	"WEATHER BANGKOK"	
HSA 1 HSA 2 Bangkok	500 8290 (0200-0300, 0500-0530, 0800-0830; 1100-1130; 1400-1430 GCT)	13-44 N 100-30 E
	Indonesian Waters, 5°N to 10°S, 115°E to 160°E; 0° to 10°S, 95°E to 115°E	
	"METEO DJAKARTA"	
PKI Djakarta	470 500 (0000-2400); 8542 12970.5 (0000-0130, 0600-0700, 1130-2400); 17199.2 (0130-1730 GCT)	06-06 N 106-52 E
	"OBS METEO BIAK"	
JZS 3 JZS 4 JZS 5 Hollandia	8694* 13101* 17074.4* *(2300-0300, 0830-1030 daily)	02-35 S 140-41 E
	SOUTHWEST PACIFIC	
Southwest Pacific Waters, south of lat. 10°S between long. 95°E & 160°E; & south of lat. 15°S between long. 70°E & 95°E		
	"WEATHER ESSENDEN"	
VIA Adelaide	472	35-14 S 138-32 E
VIB Brisbane	435 500	27-26 S 153-07 E
VIO Broome	440 500 6463.5	17-58 S 122-14 E

Station	Frequencies (kcs)	Location
VIK Cairns	476 500	16-53 S 145-45 E
VID Darwin	445 500 6463.5	12-26 S 130-50 E
VIE Esperance	435 500	33-53 S 121-54 E
VIN Geraldton	420.5 500	28-46 S 114-36 E
VIH Hobart	440 500	42-52 S 147-20 E
VIV Madang	445 500	05-13 S 145-50 E
VIM Melbourne	430 500	37-47 S 144-52 E
VIP Perth	484 6407.2 8598 12993 17285.6	32-02 S 115-49 E
VIG Port Moresby	484 500 6519.5	09-27 S 147-12 E
VJZ Rabaul	430 500 6463.5	04-13 S 152-12 E
VIR Rockhampton	472 500	23-24 S 150-30 E
VIJ Samarai	472 500	10-37 S 150-40 E
VIS Sydney	476 500 6463.5 8598 12993 17285.6	33-46 S 151-03 E
VII Thursday I.	464 500	10-35 S 142-12 E
VIT Townsville	420.5 500 6463.5	19-16 S 146-50 E
VIQ Willis Island	445 500	16-18 S 149-59 E
VIW Wyndham	464 500	15-31 S 128-09 E
VHM VHK Coonawarra	8356 (1000-2000 GCT) 12534 16712 (2000-1000 GCT)	12-27 S 130-57 E
VJY Kavieng	476	02-33 S 150-47 E
VIL Lae	6519	06-44 S 146-59 E
VJW Wewak	440	03-32 S 143-37 E

SOUTH PACIFIC

South Pacific, east of 120°W

Station	Frequencies (kcs)	Location
	"METEO SAN FRANCISCO"	
NBA Balboa, C.Z.	470 500 4352* 8614 12883 17136.8# *guards 1100-2300; transmits 2300-1100 GCT. #guards 2300-1100; transmits 1100-2300 GCT.	08-22 N 79-21 W

South Pacific, south of 25°S; 160°E-120°W

	"OBS WEATHER WELLINGTON"	
ZLD Auckland	500 524	36-53 S 174-55 E
ZLB Awarua	500 515 8554 12831	46-30 S 168-22 E
ZLO Irirangi	4277 6393.5 17108	39-29 S 175-39 E
ZLW Wellington	417.5 500	41-16 S 174-46 E

South Pacific, south of 0°-25°S, 120°W-180°; 5°N-25°S, 180°-160°E

	"OBS METEO PAPEETE"	
FJA Mahina, Tahiti	432	17-30 S 149-29 W
	"OBS METEO NANDI"	
ZKR* Rarotonga	483 500	21-12 S 159-49 W
VRP* Suva	500 518	18-09 S 178-27 E

*If unable to contact ZKR and VRP, address messages "Weather Wellington" and send to ZLB or ZLO.

	"OBS METEO NOUMEA"	
FJP FJP 8 Noumea	416.5 500 8698	22-18 S 166-26 E

North of 10°N; east of 92°E

	"OBS WEATHER"	
XYR Rangoon	500 8400	16-51 N 96-15 E

INDIAN OCEAN

North of lat. 10°S between long. 60°E and 70°E and north of 15°S between long. 70°E and 95°E except Bay of Bengal north of lat. 10°N and east of long. 92°E

	"OBS WEATHER"	
VTF Bombay	8566 12849 17132	18-57 N 72-50 E

Station	Frequencies (kcs)	Location
VWB Bombay	476 500 512 VTF-5 VTF-6	19-05 N 72-50 E
VWC Calcutta	434 500 512	22-39 N 88-23 E
VWM Madras	446 500 512	13-05 N 80-17 E
VWP Port Blair	442 500 512	11-40 N 92-46 E
VVK* Kandla	440 500	23-04 N 70-09 E
VWZ* Ratnagiri	420.5 500 512	16-59 N 73-18 E
VWY* Karwar	452 500 512	14-48 N 74-07 E
VVR* Mangalor	438 500 512	12-51 N 74-51 E
VVT* Tuticorin	487 500	08-47 N 78-10 E
VVC* Visakhapatnam	415.5 500	17-42 N 83-17 E
VWN* Cochin	474 500	09-58 N 76-16 E
GZP Columbo	8270 8290 12405 12435 16540 16580	07-07 N 79-54 E
VWG* Goa	417.5 500	15-28 N 73-51 E

*These low power stations will accept messages from ships up to a range of about 100 miles from the coast.

ASC Chittagong	466 500	22-22 N 91-48 E
ASK Karachi	484 500 8694 13024	24-51 N 67-03 E
VPB Colombo	500 8200 8550	06-55 N 79-53 E

Lat. 10°S-30°S; long. 50°E-70°E

"MET ST DENIS"

FFD Saint Denis	487 500	20-52 S 55-27 E

"OBS MAURITIUS"

VRS Vacoas	480	20-18 S 57-30 E
GXO Mauritius	6393.5 (1500-0300) 8554 (1200-0600) 12831 17108 (0300-2300) 22533 (0300-1500 GCT)	20-21 S 57 31 E

Lat. 10°N-30°S west of long. 50°E

Station	Frequencies (kcs)	Location
	"MET DIEGO"	
5RL Diego-Suarez	447 500 (0100-0500; 0900-1300; 1700-2100 GCT)	12-17 S 49-18 E
	"MET DZAOUDZI"	
FQM Dzaoudzi	472 500 (0430-0500; 0830-0900; 1230-1300; 1630-1700; 24 hr. watch in event of tropical storm)	12-47 S 45-16 E
	"MET MAJUNGA"	
5RO Majunga	441 461 500 (0500-0900; 1300-1700; 2100-0100 GCT)	15-44 S 46-19 E

Lat. 10°S to 30°S; west of long. 50°E

	"MET TAMATAVE"	
5RS	476 500 519; 8734 8767 (0300-0315, 0600-0615, 0915-0930, 1800-1830, 2100-2115 GCT); 17285.6 (0900-0915, 1200-1215 GCT)	18-09 S 49-24 E
	"MET TULEAR"	
5RT	416 500 (0430-0500, 0830-0900, 1230-1300, 1630-1700 GCT)	23 21 S 43-41 E
	"OBSERTOR PLUS NAME OF STATION"	
CRS Beira	500	19-50 S 34-51 E
CRL Lourenco Marques	420 500	25-57 S 32-28 E
	"METEO LUMBO"	
CRQ Lumbo	500	15-02 S 40-38 E

South of lat. 10°N-10°S, 40°S long. west of 60°E

	"OBS MET DAR ES SALAAM"	
5HA Dar es Salaam	500	06-50 S 39-18 E
	"OBS MET NAIROBI"	
VQP Mombasa	524 8710	04-03 S 39-40 E

South of lat. 40°S long. 35°-90°E

	"MET PRETORIA"	
FQF 2 New Amsterdam Island	500 8690 (0545-0615, 1145-1215 GCT)	37-50 S 77-34 E

GULF OF ADEN, ARABIAN SEA

North of 10°N; west of 60°E

	"MET ADEN"	
ZNR Aden	476 500 8710 13060.5 17175.2	12-49 N 45-02 E

Station	Frequencies (kcs)	Location
	"MET DJIBOUTI"	
TXZ Djibouti	500 12728*	11-35 N 43-09 E
	*0030-0045; 0400; 0600-0615; 0800; 0930-0945; 1230-1245; 1300; 1600; 1830-1845; 2000 GCT.	
	PERSIAN GULF	
	"MET BASRA"	
YIR 2 Basra	440	30-33 N 47-47 E
	RED SEA	
	South of 22°N	
	"METEOR KHARTOUM"	
STP Port Sudan	484	19-38 N 37-14 E
	North of 22°N	
	"MET CAIRO"	
SUK Kosseir	429 (0400-2200 GCT)	26-06 N 34-17 E
SUH* Alexandria	444 8575 8578 12970.5 (0600-1800 GCT)	31-12 N 29-52 E

*also Mediterranean Sea, south of lat. 34°N & east of long. 25°E

NOTES

1. Ships' officers may take 0000, 0600, 1200 and 1800 GCT observations as much as one hour earlier, that is, at 2300, 0500, 1100 and 1700 GCT, respectively, if this arrangement will allow transmission of the message to a shore station before ships' radio officers complete their regular watches.

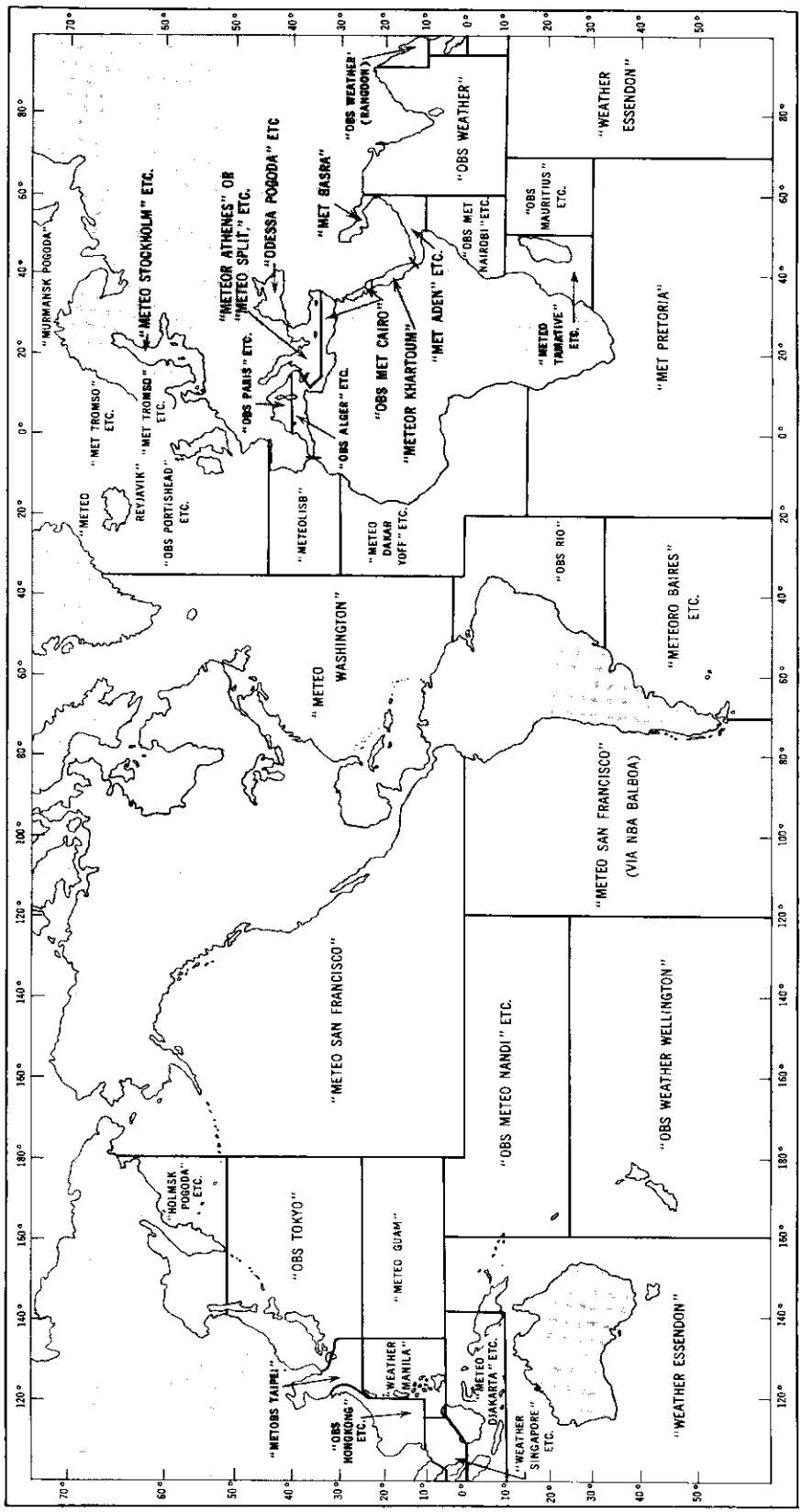
2. In the Gulf of Mexico, ships' officers may take 0000 GCT observations as much as two hours earlier, that is, at 2200 GCT, if this procedure will permit transmission of the weather message to a U.S. shore station before radio officers complete their regular watches.

3. Weather observation messages addressed to the Weather Bureau, "OBSERVER WASHINGTON" etc., taken at 0000, 0600, 1200 and 1800 GCT, should not be sent if the messages cannot be transmitted by 0100, 0700, 1300 and 1900 GCT, respectively.

4. Ships are not required to send the same weather observation message to more than one address from an ocean weather reporting area.

5. Ships underway in weather reporting areas of Africa, may address their 0000, 0600, 1200 and 1800 GCT weather messages to any one of the radio stations of their choice in Africa.

6. Ships underway in weather reporting areas assigned to Australia, New Zealand, Philippine Republic, and islands of the East Indies and Southwest Pacific, may address their weather messages to any one of the radio stations of their choice in these countries.


U. S. SELECTED SHIP RADIO WEATHER REPORTING AREA
"MURMANSK POGODA"
"METEO STOCKHOLM" ETC.
"MET TROMSO" ETC.
"MET TROMSO" ETC.
"METEO REYJAVIK"
"OBS PORTISHEAD" ETC.
"METEOLISB"
"METEO DAKAR YOFF" ETC.
"METEOR ATHENES" OR "METEO SPLIT," ETC.
"OBS PARIS" ETC.
"OBS ALGER" ETC.
"ODESSA POGODA" ETC
"MET BASRA"
"OBS MET CAIRO"
"METEOR KHARTOUM"
"MET ADEN" ETC.
"OBS WEATHER" (RANGOON)
"OBS WEATHER"
"OBS MET NAIROBI" ETC.
"METEO TAMATAVE" ETC.
"OBS MAURITIUS" ETC.
"WEATHER ESSENDON"
"MET PRETORIA"
"OBS RIO"
"METEORO BAIRES" ETC.
"METEO WASHINGTON"
"METEO SAN FRANCISCO" (VIA NBA BALBOA)
"METEO SAN FRANCISCO"
"OBS METEO NANDI" ETC.
"OBS WEATHER WELLINGTON"
"HOLMSK POGODA" ETC.
"OBS TOKYO"
"METEO GUAM"
"METOBS TAIPEI"
"OBS HONGKONG" ETC.
"WEATHER MANILA"
"METEO DJAKARTA" ETC.
"WEATHER SINGAPORE" ETC.
"WEATHER ESSENDON"

SECTION 2

MARINE BROADCASTS

MARINE BROADCAST STATIONS

CALL SIGN	STATION	STATION NO.	CALL SIGN	STATION	STATION NO.
AKL	Ketchikan, Alaska	210101.	KUP65	Majuro	281401.
AKM	Juneau, Alaska	210101.	KUP66	Ponape	281401.
AKM44	Sitka, Alaska	210101.	KUP67	Truk	281401.
AKN22	Nome, Alaska	210101.	KUP68	Koror	281401.
AKO	Anchorage, Alaska	210101.	NBA	Balboa, Canal Zone	210401.
AKO44	Cordova, Alaska	210101.	NHB	Kodiak, Alaska	210105.
AKO66	Cold Bay, Alaska	210101.	NKA	Asmara, Ethiopia	250551.
AKO77	King Salmon, Alaska	210101.	NMC	San Francisco, Calif.	210719.
AKO99	Kodiak, Alaska	210101.	NMJ	Ketchikan, Alaska	210101.
AKP33	Unalaska, Alaska	210101.	NMO	Honolulu, H.I.	280801.
ASC	Chittagong (Pahartali), Pakistan	260901.	NMQ	Long Beach, Calif.	210720.
ASK	Karachi, Pakistan	260901.	NMW43	Seattle, Wash.	210714.
CBU	Canadian Best. Corp.	210203.	NMW	Westport, Wash.	210714.
CCS	Santiago De Chile	220301.	NOJ	Kodiak, Alaska	210101.
CCV	Valparaiso	220301.	NOW	Port Angeles, Wash.	210714.
CKN	Vancouver (Aldergrove), B.C.	210205.	NPG	San Francisco, Calif.	210716.
CRQ	Lumbo, Mozambique	251201.	NPM	Pearl Harbor, H.I.	280807.
CRS	Beira, Mozambique	251201.	NPN	Guam, M.I.	280601.
CR7	Radio Clube De Mozambique	251201.	NPO	Sangley Point, P.I.	281803.
DUM	Manila, P.I.	281801.	OBE	La Punta, Escuela Naval, Peru	220501.
DZC	Manila, P. I.	281801.	STP	Port Sudan, Sudan	251401.
DZE	Manila, P. I.	281801.	SUK	Al Qusayr, Egypt	250502.
DZF	Manila, P. I.	281801.	TXZ	Djibouti, Fr. Somaliland	250601.
DZG	Manila, P. I.	281801.	TWZ	Djibouti, Fr. Somaliland	250601.
DZH	Manila, P. I.	281801.	UBE	Petropavlovsk/Kamchatskiy	233719.
DZR	Manila, P. I.	281801.	UFL	Vladivostok, U.S.S.R.	233721.
DZS	Manila, P. I.	281801.	UFO	Holmsk, U.S.S.R.	233717.
	Radio Reunion	251301.	UIB	Nagaevo, U.S.S.R.	233718.
FFD	Saint-Denis, Reunion	251302.	UIK	Vladivostok, U.S.S.R.	233721.
FJA	Mahina Radio, French Polynesia	280401.	ULY	Aleksandrovsk/Sakhalinskiy	233716.
FJP	Naumea, New Caledonia	281501.	UQB	Holmsk, U.S.S.R.	233717.
GYK	Cape Wireless, R.S. Africa	251601.	UQC	Korsakov, U.S.S.R.	233716.
GYS	Singapore	281301.	VAC	Comox, B.C.	210201.
GZC	Mauritius	251001.	VAE	Tofino, B.C.	210201.
HSA	Bangkok, Thailand	260951.	VAF	Alert Bay, B.C.	210201.
HSJ	Bangkok, Thailand	260951.	VAG	Bull Harbor, B.C.	210201.
HXV	Papeete, Tahiti	280402.	VAH	Sandspit, B.C.	210201.
JGC	Yokohama, Japan	260701.	VAI	Vancouver, B.C.	210201.
JGD	Kobe, Japan	260701.	VAJ	Prince Rupert, B.C.	210201.
JMC	Tokyo, Japan	260703.	VAK	Victoria, B.C.	210201.
JNC	Maizuru, Japan	260701.	VIA	Adelaide, Australia	280101.
JNI	Hakodate	260701.	VIB	Brisbane, Australia	280101.
JNJ	Kagoshima, Japan	260701.	VID	Darwin, Australia	280101.
JNK	Sasebo, Japan	260701.	VIE	Esperance, Australia	280101.
JNL	Otaru, Japan	260701.	VIG	Port Moresby, Australia	280115.
JNN	Shiogama, Japan	260701.	VIH	Hobart, Australia	280101.
JNP	Sakai, Japan	260701.	VII	Thursday Is., Australia	280101.
JNR	Moji, Japan	260701.	VIK	Cairns, Australia	280101.
JNT	Nagoya, Japan	260701.	VIM	Melbourne, Australia	280101.
JNV	Niigata, Japan	260701.	VIN	Geraldton, Australia	280101.
JNX	Kushiro, Japan	260701.	VIO	Broome, Australia	280101.
KBP	Honolulu, H.I.	280801.	VIP	Perth, Australia	280101.
KFS	San Francisco, Calif.	210719.	VIR	Rockhampton, Australia	280101.
KFX	Astoria, Oregon	210714.	VIS	Sydney Radio, Australia	280101.
KHK	Kahuka, H.I.	280804.	VIT	Townsville, Australia	280101.
KLH	San Francisco, Calif.	210719.	VIW	Wyndham, Australia	280101.
KMI	Dixon, Calif.	210725.	VIX	Sydney, Australia	280101.
KOE	Eureka, Calif.	210719.	VJZ	Rabaul, Australia	280116.
KOK	Los Angeles, Calif.	210720.	VPS	Hong Kong	260401.
KOU	San Pedro, Calif.	210720.	VRP	Suva Radio, Fiji Is.	280301.
KOW	Seattle, Wash.	210714.	VRS	Vacoas, Mauritius	251001.
KPH	San Francisco, Calif.	210715.	VWB	Bombay, India	260501.
KQX	Portland, Oreg.	210714.	VWC	Calcutta, India	260502.
KRU55	Yakutat, Alaska	210101.	VWM	Madras, India	260503.
KTJ	Coos Bay, Wash.	210714.	XBA	Tacubaya, D.F., Mexico	210601.
KTK	San Francisco, Calif.	210715.	XDD	Chapultepec, D.F., Mexico	210601.

MARINE BROADCAST STATIONS

CALL SIGN	STATION	STATION NO.
XDP	Chapultepec, D.F. Mexico	210601.
XSW	Kaohsiung	260921.
XSX	Keelung Radio	260921.
XVS	Saigon, Vietnam	261001.
	Saigon, Broadcasting Station	261001.
XVT	Danang, Vietnam	261001.
XYR	Rangoon, Burma	260201.
YIR	Basra, Iraq	260601.
ZEL	Hong Kong	260401.
ZLB	Awarua, New Zealand	281605.
ZLD	Auckland, New Zealand	281601.
ZLW	Wellington/Himatangi, N. Z.	281601.
ZLX	Wellington/Himatangi, N. Z.	281601.
ZLZ	Wellington/Himatangi, N. Z.	281601.
ZNR	Aden, Aden	260101.
ZSC	Capetown, R.S. Africa	251601.
	South African Broadcasting Corporation	251601.
ZSD5	Durban, R.S. Africa	251601.
ZSL	Capetown, R.S. Africa	251601.
ZSQ	Port Elizabeth Radio, R.S. Africa	251601.
ZSV5	Walvis Bay, R.S. Africa	251601.
ZSW	Durban, R.S. Africa	251601.
5RL	Diego-Suarez	250801.
5RO	Majunga	250801.
5RS	Tamatave	250801.
5RT	Tulear	250801.
5ST	Tananarive/Antanitibe	250801.
5YE	Nairobi, Kenya	250202.
5ZF	Mombasa, Kenya	250201.
8BB	Djakarta/Kemajoran, Indonesia	281001.
9V6	Singapore	281301.

210100 ALASKA

210101 ANCHORAGE (AKO)
COLD BAY (AKO 66)
CORDOVA (AKO44)
JUNEAU (AKM)
KETCHIKAN (AKL)
KETCHIKAN (NMJ)
KING SALMON (AKO 77)
KODIAK (AKO99)
KODIAK (NOJ)
NOME (AKN22)
SITKA (AKM 44)
UNALASKA (AKP33)
YAKUTAT (KRU55)

AREA AFFECTED: Coastal waters of Alaska. Forecasts, including Small Craft, Gale and Whole Gale Warnings are issued for the following areas:

A - Point Barrow to Demarcation Point (on request only.)

B - Point Hope to Point Barrow (on request only.)

C - Bering Strait to Point Hope, including Kotzebue Sound (July to October; on request other months).

D - Norton Sound to Bering Strait, including St. Lawrence Island waters and off-shore waters from Norton Sound to Cape Newenham (June to November; on request other months).

E - Eastern Bering Sea between 164°W and 175°W, and northward to 63°N.

F - Dutch Harbor to Adak, including Pribilof Island waters.

G - Yakutat to Dutch Harbor, including Prince William Sound, Cook Inlet, Kechemak Bay, Shelikof Strait and Bristol Bay.

H - Inside waters - Dixon Entrance to Skagway.

I - Outside waters - Dixon Entrance to Yakutat.

SCHEDULE OF TRANSMISSIONS

Time of Trans	Call Sign	Frequencies (A3)	Contents of Trans
0500 1800	AKO	2312 kcs	WARNING, FORECAST; Area G.
0015[1] 0315[2] 2115[1]	AKO66	2312 kcs	WARNING, FORECAST; Area G. Coastal station reports; list 3.
Odd hour when open[3]	AKO44	2312 kcs	WARNING, FORECAST; Area G. Coastal station reports; list 5.
0230 0430 1430 1630 2100	AKM	2400 kcs	WARNING, FORECAST; Areas H, I. Coastal station reports; list 6.
0015 0615 1815	AKL	2312 kcs	WARNING, FORECAST; Areas H, I. Coastal station reports; list 7.

—continued

210101 —continued

0530 1730	NMJ	466 kcs (A1)	WARNING, FORECAST; Areas G, I.
0600 1430 1800	NMJ	2670 kcs	
On receipt HH:18 or HH:48			WARNING; Area G, I.
0030 0500 } May-Sept. 1830	AK077	2312 kcs	WARNING, FORECAST; Area G. Coastal station reports; list 2.
1930 Oct-April[4]			
Odd HH:30 while open[5]	AK099	2400 kcs	WARNING, FORECAST; Area G. Coastal station reports; list 4.
0700 1900	NOJ	2670 kcs	WARNING, FORECAST; Areas G, I. Coastal station reports; list 4.
On receipt			WARNING, FORECAST: Areas G, I.
0200[6] 1930[6]	AKN22[4]	2400 kcs	WARNING, FORECAST: Areas A-F.
0100[7] 1900 2200	AKM44	2400 kcs	WARNING, FORECAST: Areas H,I. Coastal station reports; list 6.
2000	AKP33	2312 kcs	WARNING, FORECAST: Areas F,G. Coastal station reports; list 1.
0500 0800 1700 2000	KRU55	2382 kcs[8]	WARNING, FORECAST: Areas G-I. Coastal station reports; list 8.
On receipt and 1 hour later			WARNING, AMENDED FORECAST.

NOTES:
1. No broadcast on Saturday, Sunday or Holidays Sept 30 - May 1, inclusive.
2. May 1 - Sept 30, inclusive.
3. Open 1900 - 0300, inclusive, Monday thru Friday; On Saturday, Sunday and Holidays 1900 only.
4. During period Bering Sea is open for navigation.
5. Open 1900 - 0300, inclusive, Monday thru Friday; 1900 and 2100 on Saturday; On Sunday and Holidays 1900 only.
6. No broadcast on Saturday, Sunday or Holidays.
7. No broadcast on Saturday, Station closed Sunday and Holidays.
8. After announcement on 2182 kcs.

—continued

210101 —continued.....

COASTAL STATION REPORTS:

List 1. Adak, Cold Bay, St. Paul Island, Dutch Harbor.
List 2. King Salmon, Cold Bay, St. Paul Island.
List 3. Sitkinak, Kodiak, Cold Bay, Dutch Harbor, King Salmon.
List 4. Middleton Island, Cape St. Elias, Homer, Cold Bay (AKO only), Sitkinak, Kodiak, Yakutat (NOJ only).
List 5. Cordova, Kodiak, Homer, Middleton Island, Seward, Cape St. Elias, Yakataga, Yakutat, Cape Spencer.
List 6. Cape Spencer, Eldred Rock, Point Retreat, Five Finger, Cape Decision, Lincoln Rock, Guard Island, Yakutat.
List 7. Annette, Sitka, Cape Decision, Cape Spencer, Tree Point, Yakutat.
List 8. Cape Spencer, Yakutat, Cape St. Elias, Cape Hinchinbrook, Middleton Island.

INFORMATION DATED: November 1965.

210105 KODIAK (NHB)

This is the RADIOTELEGRAPH weather portion of the Kodiak (NHB) General Broadcast.

AREA AFFECTED: North Pacific and Arctic Ocean waters within the boundaries of:

40°N-160°E 40°N-150°W

54.7°N-140°W 54.7°N-105°W

TIMES AND FREQUENCIES

1100, 1700	2356	kcs	A1	5 KW
All schedules	4825	kcs	A1	5 KW
All schedules	8622	kcs	A1	10 KW
0500, 2300	12817.5	kcs	A1	15 KW

SCHEDULE OF TRANSMISSIONS

Time of Trans	Contents of Trans
0500	Parts 1, 3
1100	Parts 1, 2
1700	Parts 1, 3
2300	Parts 1, 2, 4

DESCRIPTION OF PARTS

Part 1. GALE/STORM WARNINGS-for the area affected in plain language English.

Part 2. ANALYSIS-0600 and 1800 surface map analysis for the area affected. (FM 46.C).

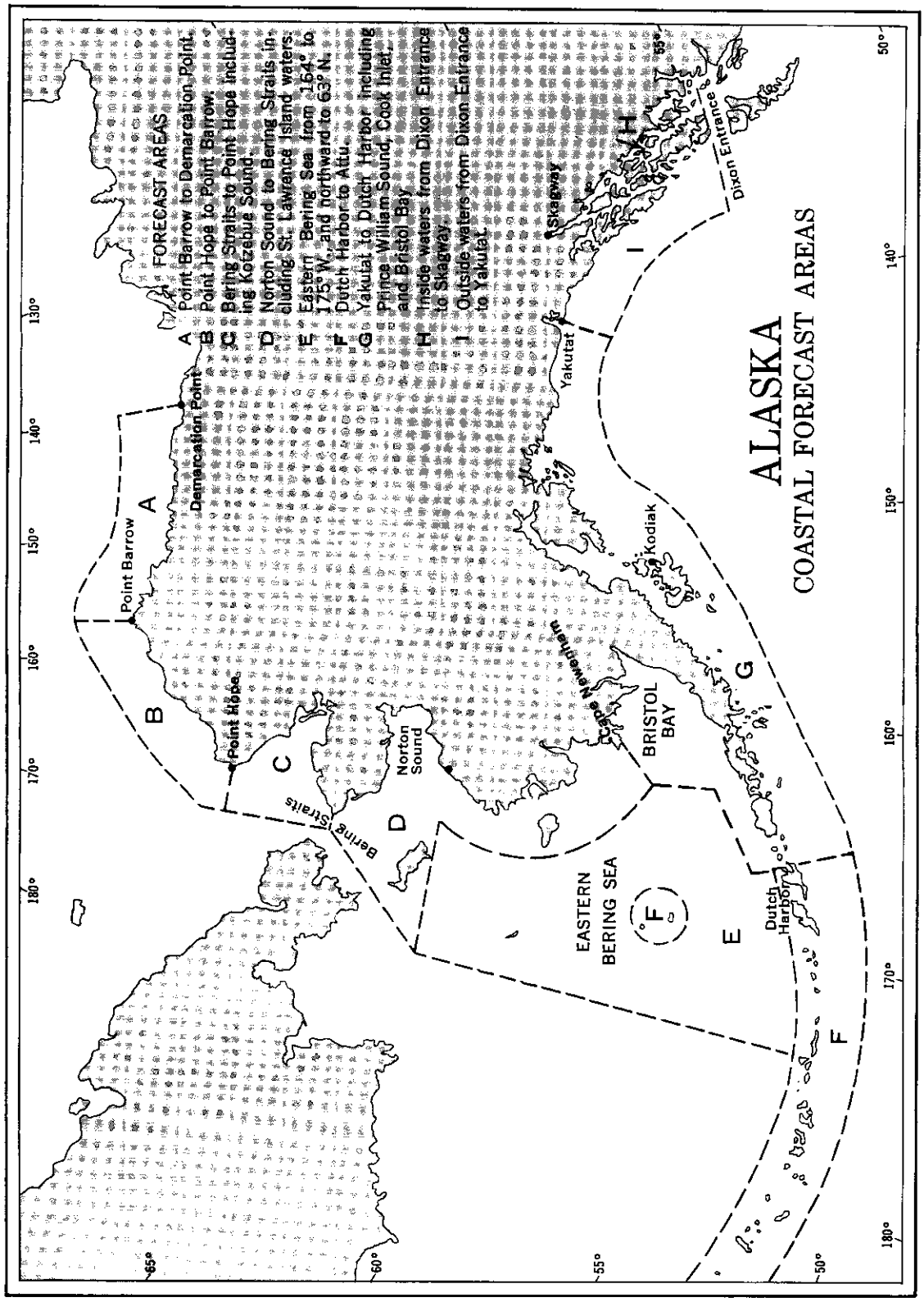
Part 3. FORECAST AND WEATHER SUMMARY-24 hour weather forecast for the area affected which includes a plain language description of frontal systems in the area and their expected rates of movement.

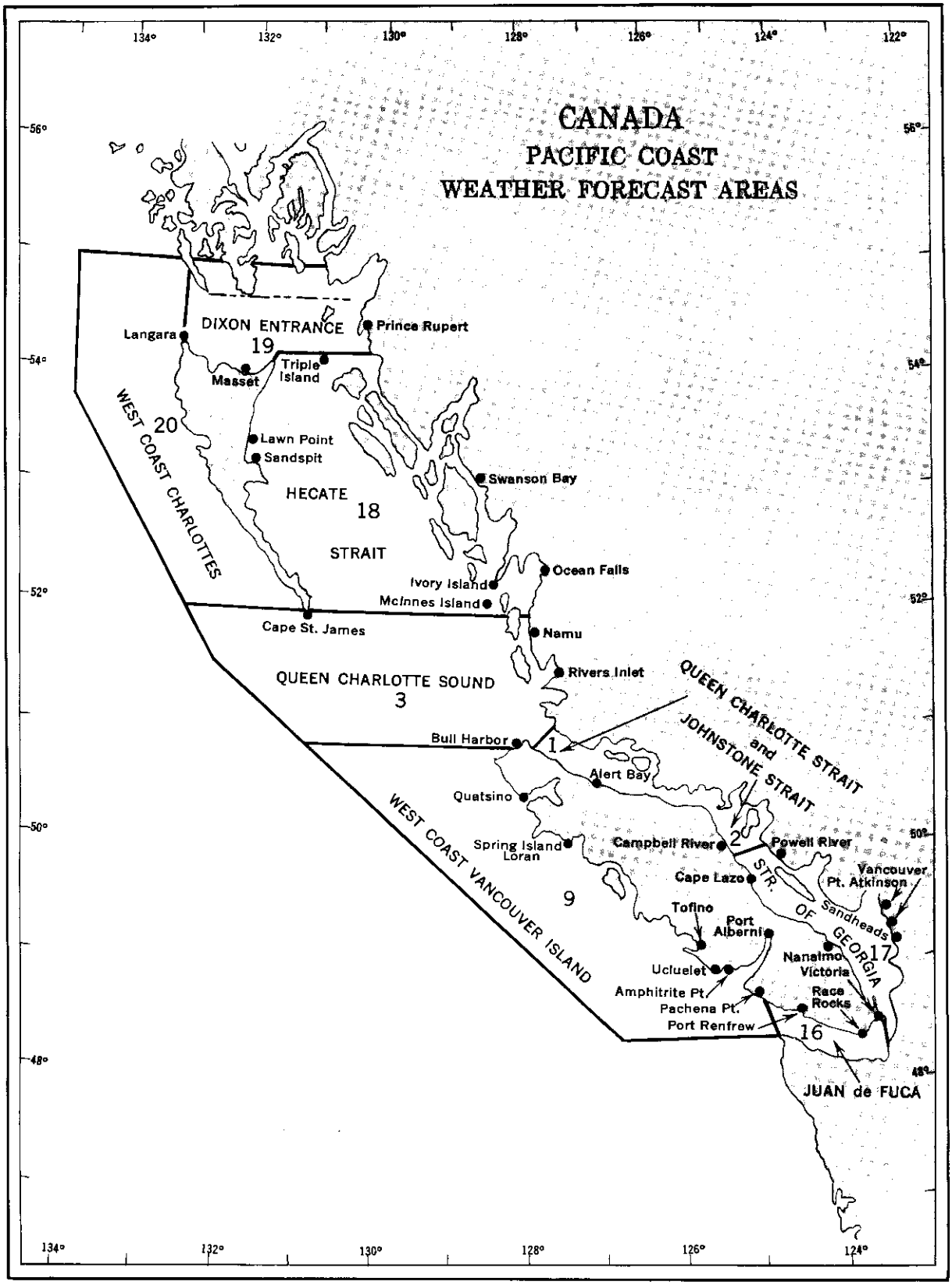
Part 4. SEALANE FORECAST-24 hour sealane forecast for the Aleutian-Alaskan routes as follows:
(a) Attu to Unimak Pass.
(b) Unimak Pass to Cross Sound.

NOTES: 1. Warnings are headed GALE when winds of 34-47 knots are expected and STORM for winds of 48 knots and above.

2. Within the area affected, the forecast for the sub area north of 40 N and east of 40 N 150 W to 54.7N 140 W to 54.7N 127.7 W is broadcast by San Francisco (NPG).

INFORMATION DATED: January ~~1966~~ 1967


ALASKA
COASTAL FORECAST AREAS
FORECAST AREAS
A Point Barrow to Demarcation Point.
B Point Hope to Point Barrow.
C Bering Straits to Point Hope including Kotzebue Sound.
D Norton Sound to Bering Straits including St. Lawrence Island waters.
E Eastern Bering Sea from 164° to 175° W. and northward to 63° N.
F Dutch Harbor to Attu.
G Yakutat to Dutch Harbor including Prince William Sound, Cook Inlet and Bristol Bay.
H Inside waters from Dixon Entrance to Skagway.
I Outside waters from Dixon Entrance to Yakutat.
Point Barrow
Demarcation Point
Point Hope
Bering Straits
Norton Sound
BRISTOL BAY
Alaska Peninsula
Kodiak
Yakutat
Skagway
Dixon Entrance
EASTERN BERING SEA
Dutch Harbor
A
B
C
D
E
F
G
H
I
180°
170°
160°
150°
140°
130°
65°
60°
55°
50°


CANADA
PACIFIC COAST
WEATHER FORECAST AREAS
134°
132°
130°
128°
126°
124°
122°
56°
54°
52°
50°
48°
DIXON ENTRANCE
19
Langara
Prince Rupert
Masset
Triple Island
WEST COAST CHARLOTTES
20
Lawn Point
Sandspit
HECATE
18
STRAIT
Swanson Bay
Ocean Falls
Ivory Island
McInnes Island
Cape St. James
Namu
Rivers Inlet
QUEEN CHARLOTTE SOUND
3
QUEEN CHARLOTTE STRAIT and JOHNSTONE STRAIT
Bull Harbor
1
Alert Bay
Quatsino
WEST COAST VANCOUVER ISLAND
Spring Island Loran
Campbell River
2
Powell River
Cape Lazo
STR. OF GEORGIA
Vancouver
Pt. Atkinson
Sandheads
9
Tofino
Port Alberni
Nanaimo
17
Victoria
Ucluelet
Amphitrite Pt
Race Rocks
Pachena Pt.
Port Renfrew
16
JUAN de FUCA

210200 CANADA

210201 ALERT BAY (VAF)
BULL HARBOUR (VAG)
COMOX (VAC)
PRINCE RUPERT (VAJ)
SANDSPIT (VAH)
TOFINO (VAE)
VANCOUVER (VAI)
VICTORIA (VAK)

AREA AFFECTED: Coastal Waters of British Columbia. Forecasts and Warnings are issued for following areas:

1 - Queen Charlotte Straits
2 - Johnstone Straits
3 - Queen Charlotte Sound
9 - West Coast Vancouver Island
16 - Juan de Fuca
17 - Strait of Georgia
18 - Hecate Strait
19 - Dixon Entrance
20 - West Coast Queen Charlotte Islands

(See area chartlet page 2-6).

SCHEDULE OF TRANSMISSIONS

Time of Trans	Frequencies (A_3)	Contents of Trans
	Alert Bay (VAF)	
0420,1320 1520*,1900	1630 kcs	WARNING, FORECAST: Areas 1, 2, 3, 17. Local weather; list 1.
	Bull Harbour (VAG)	
1620. 0445,1340, 1540,1940.	484 kcs (A_1) 1630 kcs	WARNING, FORECAST: Areas 1, 2, 3, 9, 18. Local weather; lists 1, 2.
	Comox (VAC)	
0030*,0430, 0630*,1430, 1530*,1730*, 2030.	1630 kcs	WARNING, FORECAST: Areas 1, 2, 16, 17. Local weather; list 3.
	Prince Rupert (VAJ)	
0430,1630 2030.	420 kcs (A_1)	WARNING, FORECAST: Areas 3, 18, 19, 20. Local weather; list 4.
0340,1300, 1550*,1620*, 1840.	1630 kcs	WARNING, FORECAST: Areas 18, 19. Local weather; list 4.
	Sandspit (VAH) #	
0500,1250, 1650*,1850.	1630 kcs	WARNING, FORECAST: Areas 3, 18, 19, 20. Local weather; list 4.

—continued

210201 —continued

		Tofino (VAE) #	
0420,1620, 2020.	478	kcs (A_1)	WARNING, FORECAST: Areas 1, 3, 9, 16. Local weather; list 5.
0350,1330, 1440*,1930.	1630	kcs	WARNING, FORECAST: Areas 1, 3, 9, 16. Local weather; list 5.
		Vancouver (VAI) #	
0010*,0210, 0410*,0610, 0810*,1210*, 1310,1510*, 1710*,1910.	1630	kcs	WARNING, FORECAST: Areas 16, 17. Local weather; list 3.
		Victoria (VAK)	
0400,1300 1500*,1900.	1630	kcs	WARNING, FORECAST: Areas 9, 16, 17. Local weather; list 16.

NOTES: 1. *Local weather only at times marked with asterisk.

2. #Sandspit, Tofino and Vancouver transmit on 161.9 mcs F3 simultaneously with A3 transmissions.

LOCAL WEATHER LISTS:

List 1. Alert Bay, Bull Harbor, Pulteney Point, Pine Island, Egg Island, Scarlett Point.

List 2. Ivory Island, Cape St. James, McInnes Island, Quatsino, Cape Scott, Addenbroke Island, Pointer Island, Boat Bluff, Diyard Point.

List 3. Cape Lazo, Merry Island, Ballenas Island, Entrance Island, Sands Head, Cape Mudge.

List 4. Cape St. James, Green Island, Langara Island, Triple Island, Lawyer Island, Bonilla Island, Lucy Island.

List 5. Quatsino, Estevan Point, Pachena, Spring Island, Lennard Island, Carmanah Point, Cape Beale, Amphetrite Point, Tofino, Cape Scott, Nootka.

List 6. Trial Island, Race Rocks.

INFORMATION DATED: July 1966.

210203 CANADIAN BROADCASTING CORPORATION, VANCOUVER (CBU)

AREA AFFECTED: All coastal areas of Western Canada.

TIME AND FREQUENCY

0757,0800 1500, 2055	690 kcs	A3	5KW

SCHEDULE OF TRANSMISSIONS

Time of Trans.	Contents of Trans.
0757	FORECAST
0800	Bulletin, local weather; list 1.
1500	FORECAST, bulletin, local weather; list 1, 2.
2055	FORECAST, bulletin, local weather; list 1.

NOTES: 1. FORECAST broadcast Monday thru Friday.

2. Bulletins, weather list 1 on Saturday and Sundays at 0800 only.

3. Bulletins, weather list 2 on Saturday at 1500, Sunday 1555.

LOCAL WEATHER LISTS:

List 1. Vancouver, Victoria, Comox, Port Hardy, Estevan Point, Cape St. James, Bull Harbor, McInnes Island, Weather ship.

List 2. Pachena, Spring Island, Alert Bay, Sandspit, Prince Rupert.

INFORMATION DATED: February 1966.

210205 VANCOUVER (ALDERGROVE), B.C. (CKN)

AREA AFFECTED: Coastal waters of Western Canada and Northeast Pacific.

TIMES AND FREQUENCIES.

continuous	110.75	A1	5KW
	3287	A1	5KW
	4307	A1	5KW
	6445.25	A1	5KW
0400 - 1400	8614	A1	10KW
1400 - 0400	12921	A1	15KW
	17228	A1	15KW

SCHEDULE OF TRANSMISSIONS

Time of Trans.	Contents of Trans.
0530	FORECAST, IAC FLEET.
1730	
2130	

NOTES: 1. IAC FLEET not broadcast at 2130 transmission.

2. Gale and storm warnings will be issued immediately upon receipt.

INFORMATION DATED: February 1966.