Department of Commerce • National Oceanic & Atmospheric Administration • National Weather Service

NATIONAL WEATHER SERVICE INSTRUCTION 10-811
August 27, 2013

Operations and Services

Aviation Weather Services, NWSPD 10-8

EN-ROUTE FORECASTS AND ADVISORIES

NOTICE: This publication is available at: http://www.nws.noaa.gov/directives/.

OPR: W/OS23 (M. Lorentson) **Certified by:** W/OS23 (C. Abelman)

Type of Issuance: Routine

SUMMARY OF REVISIONS: Supersedes NWSI 10-811, En-route Forecasts and Advisories, dated June 20, 2011. This revision makes the following changes to bring the directive in line with current practices:

1. Added sections 2.1.d and e and 9.
2. Removed TCA/VAA descriptions, eliminated sections 8. and 9. TCA/VAA issuance and format (readers directed to NWSI 10-601 and 10-1501 respectively in section 1), and removed examples of TCA and VAA in Appendix A.
3. Corrected grammatical and spelling errors, amended unclear wording.
4. Edited incorrect and/or inconsistent format and revised terminology.
5. VOR definition added to Appendix D.

International, Alaska, and Hawaii SIGMETs retain the standard abbreviations of WDSPR TS and ISOL SEV TS until NWS receives FAA guidance on changing to the ICAO compliant FRQ TS (Section 6.3.1).

Signed _____ August 13th 2013

Christopher Strager Date

Acting Director, Office of Climate, Water, and Weather Services

Table of Contents Page

1 Purpose

This instruction describes the content and preparation of aviation en route forecasts and advisories prepared and issued by National Weather Service (NWS) offices. En route forecasts and advisories include the Area Forecast (FA), Significant Meteorological Information (SIGMET), Airmen's Meteorological Information (AIRMET), Tropical Cyclone Advisory (TCA), Volcanic Ash Advisory (VAA), Route Forecast (ROFOR), and Collaborative Convective Forecast Product (CCFP). TCAs and VAAs provide coverage for their respective areas of responsibility per international agreements; please refer to NWSI 10-601 Tropical Cyclone Products and 10-1501 Volcanic Ash Advisory Centers respectively for information about these products. En route forecasts and advisories issued by Center Weather Service Units (CWSUs) may be found in NWSI 10-803 Support to Air Traffic Control Facilities. Information about the Aviation Watch Notification Message issued by the Storm Prediction Center may be found in NWSI 10-512.

2 General

The FA, SIGMET, AIRMET, ROFOR, and CCFP products provide forecast and advisory coverage for aviation forecast users operating within the U.S. domestic Flight Information Regions (FIRs). Some of these products also provide forecast and advisory service for Atlantic and Pacific oceanic FIRs and the Gulf of Mexico. General definitions of each product follow.

a. FA: An area forecast in abbreviated plain language concerning the occurrence or expected occurrence of specified en-route weather phenomena.

b. AIRMET: An advisory in abbreviated plain language concerning the occurrence or expected occurrence of specified en-route weather phenomena that may affect the safety of aircraft operations, but at intensities that do not meet SIGMET criteria.

c. SIGMET: A warning in abbreviated plain language concerning the occurrence or expected occurrence of hazardous en-route weather phenomena that may affect the safety of aircraft operations. SIGMETs are of highest priority among all meteorological products provided to aviation users.

d. ROFOR: A route forecast in abbreviated plain language concerning the occurrence or expected occurrence of weather phenomena specific to a particular en-route segment.

e. CCFP: A collaboratively generated forecast graphic that outlines areas of high-topped convection for use in air traffic flow planning.

3 Responsibility for Issuance

The NWS operates three MWOs, the Aviation Weather Center (AWC), the Alaska Aviation Weather Unit (AAWU), and the Weather Forecast Office (WFO) in Honolulu. All area forecasts, SIGMETs, and AIRMETs included in this instruction are produced and issued by these MWOs; their areas of responsibility are shown in Appendix C and described below.

a. AWC:

(1) Twenty (20) domestic Air Route Traffic Control Center (ARTCC) Flight Information Regions (FIRs) covering the conterminous U.S. and adjacent coastal waters.

(2) New York, Houston, Miami, and San Juan Oceanic FIRs.

(3) The portion of Oakland Oceanic FIR north of 30N latitude and east of 140W longitude.

b. AAWU:

(1) Anchorage Continental FIR.

(2) Anchorage Oceanic FIR.

(3) Arctic Oceanic FIR.

c. WFO Honolulu:

(1) The portion of Oakland Oceanic FIR south of 30N latitude and west of 140W longitude.

4 Standardization

All forecasts and in-flight advisories use the following standards.

a. All referenced heights or altitudes will be referenced above mean sea level (MSL), unless otherwise noted, and annotated using the height in hundreds of feet, consisting of three digits (e.g., 040). For heights at or above 18,000 feet, the level will be preceded by FL (e.g., FL180).

b. References to latitude and longitude will be in degrees and minutes as follows: Nnn[nn] or Snn[nn], Wnnn[nn] or Ennn[nn]. Note: a space is placed between latitude and longitude values and a space-hyphen-space between successive points (i.e., N6030 W15030 – N5800 W15200 – N5930 W15100).

c. Messages will be prepared in abbreviated plain language using contractions from the current Federal Aviation Administration (FAA) Order 7340.1 for domestic products and International Civil Aviation Organization (ICAO) document 8400 for international products issued for Oceanic FIRs. A limited number of non-abbreviated words, geographical names and numerical values of a self-explanatory nature may also be used.

d. Weather and obstructions to visibility will be described using the weather abbreviations for surface airways observations (METAR or SPECI). See the Federal Meteorological Handbook (FMH) No. 1 - Surface Observations.

e. Heights will be identified as follows: (1) for heights below 3,000 feet, increments will be in 100s of feet; 2) for heights from 3,000 to 5,000 feet, increments will be in 500s of feet; and for heights greater than 5,000 feet, increments will be in 1,000s of feet.

5 Area Forecast (FA).

The FA describes specific forecast conditions expected to affect at least a portion of the designated area of responsibility. The five designated areas include CONUS, Hawaii, Gulf of Mexico, Caribbean, and Alaska, as outlined below. See Appendix C for area of responsibility maps.

a. CONUS: The AWC will issue six (6) FAs covering separate geographical areas of the CONUS, excluding the Gulf of Mexico coastal waters west of 85W longitude. Coastal waters west of 85W longitude will be included in the Gulf of Mexico FA.

b. Hawaii: WFO Honolulu will issue an FA for the main Hawaiian Islands and adjacent coastal waters extending out 40 nautical miles from the coastlines.

c. Gulf of Mexico: The AWC will issue an FA for the northern Gulf of Mexico, to cover the Houston Oceanic FIR, the Gulf of Mexico portion of the Miami Oceanic FIR, and the coastal waters west of 85W longitude.

d. Caribbean FA: The AWC will issue an FA for portions of the Gulf of Mexico (south of the Houston Oceanic FIR to approximately 22N latitude), the Caribbean Sea and adjacent portions of the North Atlantic.

e. Alaska: The AAWU will issue seven (7) FAs covering separate geographical areas of Alaska and the adjacent coastal waters, including the Pribilof Islands and Southeast Bering Sea.

5.1 FA Descriptions

5.1.1 CONUS FA

a. Vertical coverage: Each FA will cover the airspace between the surface and 45,000 feet MSL.

b. Horizontal coverage: Each FA will cover one of six geographical regions shown in Appendix C. Each region is identified below by the region of the CONUS, the WMO heading, and the list of states contained in that region.

(1) BOS, Northeast (FAUS41 KKCI): Maine - ME, New Hampshire - NH, Vermont - VT, Massachusetts - MA, Rhode Island - RI, Connecticut - CT, New York - NY, New Jersey - NJ, Pennsylvania - PA, Ohio - OH, Lake Erie - LE, Lake Ontario - LO, West Virginia - WV, Maryland - MD,

District of Columbia - DC, Delaware - DE, Virginia - VA, and adjacent Coastal Waters.

(2) MIA, Southeast (FAUS42 KKCI): North Carolina - NC, South Carolina - SC, Georgia - GA, Florida - FL, and adjacent Coastal Waters east of 85W longitude.

(3) CHI, North-Central (FAUS43 KKCI): North Dakota - ND, South Dakota - SD, Nebraska - NE, Kansas - KS, Minnesota - MN, Iowa - IA, Missouri - MO, Lake Superior - LS, Wisconsin - WI, Lake Michigan - LM, Illinois - IL, Michigan - MI, Lake Huron - LH, Indiana - IN, and Kentucky - KY.

(4) DFW, South Central (FAUS44 KKCI): Oklahoma - OK, Texas - TX, Arkansas - AR, Tennessee - TN, Louisiana - LA, Mississippi - MS, Alabama - AL.

(5) SLC, Rocky Mountain (FAUS45 KKCI): Idaho - ID, Montana - MT, Wyoming - WY, Nevada - NV, Utah - UT, Colorado - CO, Arizona - AZ, and New Mexico - NM.

(6) SFO, Pacific Coast (FAUS46 KKCI): Washington - WA, Oregon - OR, California - CA, and adjacent Coastal Waters.

c. Dissemination: Each FA will be issued three (3) times daily as follows. (All times are Coordinated Universal Time (UTC). Subtract one hour from all issuance times for daylight saving time):

(1) FAUS41/42 KKCI: 0145, 0945 and 1845 UTC
(2) FAUS43/44 KKCI: 0245, 1045 and 1945 UTC
(3) FAUS45/46 KKCI: 0345, 1145 and 2045 UTC

d. Content: Each FA will include the following elements.

(1) Synopsis: brief discussion of the synoptic weather affecting the FA area during the 18-hour valid period.

(2) Clouds and Weather: description of the clouds and weather for the first 12-hour period for each state or group of states including the following elements.

(a) cloud amount (SCT, BKN or OVC) for clouds with bases higher than or equal to 1,000 feet and below FL180

(b) cloud bases and tops associated with (a)

(c) precipitation

(d) visibilities between 3-5 statute miles (SM) and obstruction(s) to visibility

(e) sustained surface winds 20 knots or greater

(3) 6-hour categorical outlook: IFR, marginal VFR (MVFR), or VFR, including expected precipitation and/or obstruction(s) to visibility

5.1.2 Hawaii FA

a. Vertical coverage: FA will cover the airspace between the surface and 45,000 feet MSL.

b. Horizontal coverage: The Hawaii FA (FAHW31 PHFO) will cover the main Hawaiian Islands and adjacent coastal waters extending out 40 nautical miles from the coastlines.

c. Dissemination: The Hawaii FA will be issued four (4) times daily at 0340, 0940, 1540, and 2140 UTC.

d. Content: Each FA will include the following elements.

(1) Synopsis: brief discussion of the significant synoptic weather affecting the FA area during the 18-hour valid period.

(2) Clouds and Weather: description of the clouds and weather for the first 12-hour period including the following elements.

(a) cloud amount (SCT, BKN or OVC) with bases and tops

(b) visibilities of 6 SM or less with obstruction(s) to visibility

(c) precipitation and thunderstorms

(d) sustained surface winds 20 knots or greater

(3) 6-hour categorical outlook: IFR, marginal MVFR, or VFR, including expected precipitation and/or obstructions to visibility

5.1.3 Gulf of Mexico FA (FAGX)

a. Vertical coverage: The FAGX will cover the airspace between the surface and 45,000 feet MSL.

b. Horizontal coverage: The FAGX coverage is shown in Appendix C.

c. Dissemination: The FAGX will be issued three times daily at 0130, 1030 and 1830 UTC.

d. Content: The FAGX will include the following elements. Each geographical section will contain an entry.

(1) Synopsis: This is a brief discussion of the significant synoptic weather affecting the FAGX area during the entire 24-hour valid period.

(2) Significant Clouds and Weather: This is a description of the significant clouds and weather for the first 12-hours including the following elements.

(a) cloud amount (SCT, BKN or OVC) for clouds with bases below FL180, or SKC

(b) cloud bases and tops associated with (a)

(c) precipitation and thunderstorms

(d) visibility below 7 SM and obstruction(s) to visibility

(e) sustained surface winds greater than or equal to 20 knots

(f) 6-hour categorical outlook (LIFR, IFR, MVFR or VFR)

(3) Icing and Freezing Level: Moderate or severe icing and freezing level. For the coastal waters portion of the FAGX, users will be referred to the appropriate CONUS AIRMET.

(4) Turbulence: Moderate or greater turbulence. For the coastal waters portion of the FAGX, users will be referred to the appropriate CONUS AIRMET.

5.1.4 Caribbean FA (FACA)

a. Vertical coverage: The FACA will cover the airspace between the surface and 24,000 MSL (approximately 400 millibars).

b. Horizontal coverage: The FACA coverage is shown in Appendix C.

c. Dissemination: The FACA will be issued four (4) times daily at 0330, 0930, 1530, and 2130 UTC.

d. Content: The FACA will include the following elements. Each geographical section will contain an entry.

(1) Synopsis: brief discussion of the synoptic weather affecting the FACA area during the 24-hour valid period.

(2) Significant Clouds and Weather: description of the significant clouds and weather for the first 12 hours including the following elements.

(a) cloud amount (SCT, BKN or OVC) for cloud bases below FL180, or SKC

(b) cloud bases and tops associated with (a)

(c) precipitation and thunderstorms

(d) visibility below 7 SM and obstruction(s) to visibility

(e) sustained surface winds greater than or equal to 20 knots

(f) 6-hour categorical outlook (IFR, MVFR or VFR)

(3) Icing and Freezing Level: moderate or greater icing and freezing level

(4) Turbulence: moderate or greater turbulence

5.1.5 Alaska FA.

a. Vertical coverage: Each FA will cover the airspace between the surface and 45,000 feet MSL.

b. Horizontal coverage: Seven (7) FAs will be issued covering 25 geographical zones of Alaska and the adjacent coastal waters, including the Pribilof Islands and Southeast Bering Sea. See Appendix C.

c. Dissemination: Each FA will be issued four (4) times daily at 0245, 0845, 1445, and 2045 UTC during standard time, and 0145, 0745, 1345, and 1945 UTC during daylight saving time.

d. Content: Each FA will include the following elements. Clouds and weather, turbulence and icing information is included in each geographical zone.

(1) Synopsis: a brief description of the significant synoptic weather affecting the FA area during the first 18 hours of the forecast period.

(2) Clouds and Weather: a description of the clouds and weather for each geographical zone during the first 12 hours of the forecast period including the following elements:

(a) AIRMET information for IFR ceiling and visibility, mountain obscuration, and strong surface winds

(b) cloud amount (FEW,SCT, BKN or OVC) with bases and tops for BKN and OVC layers.

(c) visibilities of 6 SM or less with obstruction(s) to visibility

(d) precipitation and thunderstorms

(e) surface wind greater than 20 knots

(f) mountain pass conditions using categorical terms (for selected zones only)

(g) 6-hour categorical outlook (VFR, MVFR, and IFR)

(3) Turbulence: a description of expected turbulence conditions including the following elements.

(a) AIRMET information for turbulence or low level wind shear

(b) Turbulence not meeting AIRMET criteria.

(c) If no significant turbulence is forecast, NIL SIG will be entered.

(4) Icing and freezing level: a description of expected icing conditions including the following elements.

(a) AIRMET information for icing and freezing precipitation

(b) Icing not meeting AIRMET criteria.

(c) Freezing level

(d) If no significant icing is forecast, NIL SIG will be entered followed by the freezing level.

5.2 FA Amendments

FAs will be under continuous review and amended at the discretion of the forecaster. An amended FA will contain "AAA" after the date/time group on the WMO heading line for the first amendment, "AAB" for the second, and continuing for all subsequent amendments. "AMD" will

be included after the date/time group on the FAA product line. The date/time group on the WMO and FAA lines will be updated to indicate the time of the correction. The ending valid time will remain unchanged.

5.3 FA Corrections

FAs containing errors will be corrected. A corrected FA will contain "CCA" after the date/time group on the WMO heading line for the first correction, "CCB" for the second, and continuing for all subsequent corrections. "COR" will be included after the date/time group on the FAA product line. The date/time group on the WMO and FAA lines will be updated to indicate the time of the correction. The ending valid time will remain unchanged.

NOTE: The FAA uses a time matching system to determine the most recent products. Therefore, amendments and corrections will carry the current time of the FA correction or amendment to ensure that the FA is updated in the FAA system. This is accomplished by manually changing the date/time group on the amended or corrected FA being issued

6 Significant Meteorological Information (SIGMET)

A SIGMET is a concise description of the occurrence or expected occurrence of specified en route weather phenomena which is expected to affect the safety of aircraft operations. SIGMETs are intended for dissemination to all pilots in flight to enhance safety. SIGMETs will be issued by the responsible MWO as soon as is practical to alert operators and aircrews of hazardous en-route conditions.

6.1 Non-Convective SIGMET Description

6.1.1 Issuance Criteria

The AWC will issue a Non-Convective SIGMET when any of the following conditions are affecting or, in the judgment of the forecaster, are expected to affect an area of at least 3,000 square miles or an area judged to have a significant impact on the safety of aircraft operations.

a. severe (or greater) turbulence (SEV TURB)

b. severe icing (SEV ICE)

c. widespread duststorm (WDSPR DS)

d. widespread sandstorm (WDSPR SS)

e. volcanic ash cloud (VA)

6.1.2 Issuance Time and Valid Period

a. A SIGMET is an unscheduled product issued any time conditions reaching SIGMET criteria are occurring or expected to occur within a 4-hour period.

b. A SIGMET will have a valid period up to, but not exceeding, four (4) hours. SIGMETs for continuing phenomena will be reissued at least every 4 hours as long as SIGMET conditions continue to occur in the area for responsibility.

6.1.3 SIGMET Format.

The content and order of elements in the SIGMET will be as follows. SIGMETs will be concise and not contain unnecessary descriptive information. See examples in Appendix A.

a. series name and number

b. valid beginning and ending time (UTC)

c. list of states affected by the phenomena

d. location of phenomena delineated by high-altitude VHF (Very High Frequency) Omnidirectional Radio Range (VOR) coordinates covering the affected area during the SIGMET valid time

e. phenomena description (i.e., SEV ICE)

f. vertical extent (base, top), if appropriate

g. movement, if appropriate

h. intensity change (INTSF, WKN or NC)

i. indication of whether the condition will continue during the 4 hours beyond the valid time of the SIGMET

6.1.4 SIGMET Cancellations

A Non-Convective SIGMET will be canceled when the phenomena is no longer occurring or no longer expected to occur or has moved out of the area of responsibility.

6.1.5 SIGMET Amendments

Amendments to Non-Convective SIGMETs will not be issued. Instead, a new SIGMET is issued using the next series number.

6.1.6 SIGMET Corrections

Corrections to Non-Convective SIGMETs will be issued as necessary.

NOTE: The FAA uses a time matching system to determine the most recent products. Therefore, corrections will carry the CURRENT time of the SIGMET to ensure the SIGMET is updated in the FAA system.

6.2 Convective SIGMET Description

6.2.1 Routine Issuance Criteria

AWC will issue a Convective SIGMET when the following conditions are occurring or, in the judgment of the forecaster, are expected to occur.

a. A line of thunderstorms at least 60 miles long with thunderstorms affecting at least 40 percent of its length.

b. An area of active thunderstorms affecting at least 3,000 square miles covering at least 40 percent of the area concerned and exhibiting a very strong radar reflectivity intensity or a significant satellite or lightning signature.

c. Embedded or severe thunderstorm(s) expected to occur for more than 30 minutes during the valid period regardless of the size of the area.

6.2.2 Special Issuance Criteria

A special Convective SIGMET may be issued when any of the following criteria are occurring or, in the judgment of the forecaster, are expected to occur for more than 30 minutes of the valid period.

a. Tornado, hail greater than or equal to 3/4 inch, or wind gusts greater than or equal to 50 knots are reported.

b. Indications of rapidly changing conditions, if in the forecaster's judgment, they are not sufficiently described in existing Convective SIGMETs.

c. Special issuance is not required for a valid Convective SIGMET.

6.2.3 Issuance Time and Valid Period

a. Three (3) Convective SIGMET bulletins for the eastern, central and western regions of the CONUS will be issued hourly on a scheduled basis.

b. Convective SIGMETS are valid for 2 hours or until superseded by the next hourly issuance.

c. A SIGMET bulletin will be transmitted each hour for each region. When conditions do not meet or are not expected to meet Convective SIGMET criteria within a region at the scheduled time of issuance a "CONVECTIVE SIGMET...NONE" message is transmitted.

6.2.4 Convective SIGMET Format

Each Convective SIGMET bulletin will include one or more individually numbered Convective SIGMETs for the region. The content and order of each bulletin will be as follows. See examples in Appendix A.

a. CONVECTIVE SIGMET, series number, and region letter (E, W or C)

b. valid ending time (UTC)

c. list of states affected by the phenomena

d. location of phenomena delineated by high-altitude VOR coordinates covering the affected area during the SIGMET valid time

e. phenomena description (i.e., AREA SEV EMBD TS)

f. movement (i.e., MOV FROM 26030KT)

g. cloud top (i.e., TOPS ABV FL450)

h. remarks (i.e., TORNADOES...HAIL TO 2.5 IN...WIND GUSTS TO 70KT POSS)

(1) Tropical Cyclone information will be added to remarks section of the Convective SIGMETs when appropriate.

6.2.5 Convective SIGMET Outlook

Each region will include a 2- to 6-hour convective SIGMET outlook at the end of the bulletin. The content and order of each bulletin will be as follows. See examples in Appendix A.

a. beginning and ending valid times

b. location of expected Convective SIGMET issuances delineated by high-altitude VOR coordinates for the outlook valid time.

6.2.6 Convective SIGMET Cancellations

Convective SIGMETs are not cancelled but are superseded by the next SIGMET in the series.

6.2.7 Convective SIGMET Amendments

Amended Convective SIGMETs will NOT be issued. Instead, a new Convective SIGMET will be issued for that region.

6.2.8 Convective SIGMET Corrections

Corrections to Convective SIGMETs will be issued as necessary.

NOTE: The FAA uses a time matching system to determine the most recent products. Therefore, corrections will carry the CURRENT time of the SIGMET to ensure the SIGMET is updated in the FAA system.

6.3 International, Alaska, and Hawaii SIGMET Description

6.3.1 Issuance Criteri

International SIGMETs and SIGMETs issued by Alaska and Hawaii (referred to in total as International SIGMETs hence-forward in this directive) are not separated into convective and non-convective products, as with AWC SIGMETs issued for CONUS areas. Tropical Cyclone information is contained within the body of the product, not within remarks. NWS offices will issue International SIGMETs when any of the following phenomena occur or are expected to occur in an area greater than 3,000 square miles or, in the judgment of the forecaster, an area having the potential to have a significant effect on the safety of aircraft operations.

a.	Thunderstorm - of type below*		
	(1)	Obscured	OBSC TS
	(2)	Embedded	EMBD TS
	(3)	Widespread	WDSPR TS
	(4)	Squall line	SQL TS
	(5)	Isolated severe	ISOL SEV TS
b.	Severe Turbulence		SEV TURB
c.	Severe Icing		SEV ICE
	(1)	With freezing rain	SEV ICE (FZRA)
d.	Widespread Duststorm		WDSPR DS
e.	Widespread Sandstorm		WDSPR SS
f.	Volcanic Ash		VA
g.	Tropical Cyclone		TC

NOTE: Obscured, embedded, or squall line thunderstorms do not have to reach 3,000-square-miles criteria.

*Tornado (TDO), Funnel Cloud (FC), Waterspout (WTSPT), and Heavy Hail (HVY GR) may be used as a further description of the thunderstorm as necessary.

6.3.1.1 International SIGMET for Volcanic Ash Cloud

A SIGMET for volcanic ash cloud will be issued for volcanic eruptions. A volcanic eruption is any volcanic activity that produces volcanic ash emissions, regardless of eruption magnitude.

Offices preparing SIGMETs for volcanic ash should use the forecast position information available from advisories provided by the pertinent Volcanic Ash Advisory Center (VAAC). Initial Volcanic Ash Eruption SIGMETs may be issued based on credible pilot reports in the absence of a Volcanic Ash Advisory (VAA), but should be updated once a VAA is issued. Volcanic ash SIGMETs will continue to be issued until the ash cloud is no longer occurring or expected to occur over the area of responsibility.

SIGMETs for volcanic ash cloud will be valid up to six (6) hours and provide an observed or forecast location of the ash cloud at the beginning of the SIGMET. A forecast position for the ash cloud, valid at the end of the validity period of the SIGMET message, will also be included. SIGMETs will be reissued at least every six (6) hours while the volcanic ash cloud hazard exists or is expected to exist.

6.3.1.2 International SIGMET for Tropical Cyclone

A SIGMET for a tropical cyclone will be issued for non-frontal synoptic-scale cyclones meeting the following criteria.

a. Originates over tropical or sub-tropical waters with organized convection and definite cyclonic surface wind circulation.

b. Wind speeds reach 35 knots independent of the wind averaging time used by the Tropical Cyclone Advisory Center (TCAC).

MWOs preparing SIGMETs for tropical cyclones will use the Tropical Cyclone Advisory (FK bulletins) issued by the appropriate TCAC (Miami, Honolulu, or Tokyo) for forecast information.

SIGMETs for tropical cyclones will be valid up to six (6) hours. SIGMETs for tropical cyclones will include two positions. The first position included will be the TCAC advisory position. The second position will be the forecast position valid at the end of the SIGMET period.

In addition to the two storm positions, SIGMETs will include associated convection when applicable. SIGMETs will be reissued at least every six (6) hours while the tropical cyclone wind remains or are expected to remain above 34 knots.

6.3.2 Format

International SIGMETs will contain the following information, related to the specific phenomena and in the order indicated. See examples in Appendix A.

a. Phenomenon and its description from Section 6; e.g., SEV TURB.

b. An indication whether the information is observed, using OBS and/or FCST. The time of observation will be given in UTC.

c. Location of the phenomenon described by using latitude and longitude, or VORs, and flight levels (altitude) covering the affected area during the SIGMET valid time. SIGMETs for volcanic ash cloud and tropical cyclones will contain the

positions of the ash cloud, tropical cyclone center and radius of convection at the start of the validity time of the SIGMET.

d. Movement towards or expected movement using sixteen points of the compass, with speed in knots, or stationary, if appropriate.

e. Thunderstorm maximum height as FL.

f. Changes in intensity; using as appropriate, the abbreviations INTSF (Intensifying), WKN (Weakening), or NC (No Change).

g. Forecast position of volcanic ash cloud or the center of the tropical cyclone at the end of the valid period of the SIGMET message.

6.3.3 International SIGMET Cancellations

A SIGMET will be cancelled when the phenomena is no longer occurring or expected to occur in the area or responsibility.

6.3.4 International SIGMET Amendments

SIGMET amendments will NOT be issued. Instead, the next SIGMET in the series is issued to accomplish the update. The valid time of the new SIGMET is reset to reflect the new four-hour valid period (six-hour for VA and TC SIGMETs).

6.3.5 International SIGMET Corrections

Corrections to SIGMETs will be issued as necessary. This is done by issuing a new SIGMET in the series which advances the SIGMET number and supercedes the previous SIGMET.

NOTE: The FAA uses a time matching system to determine the most recent products. Therefore, corrections will carry the CURRENT time to ensure that the SIGMET is updated in the FAA system.

6.3.6 Interchange of SIGMETs Between Adjacent U.S. Offices

The originating office will cancel an existing SIGMET when hazardous weather covered by the SIGMET moves from one office's area of responsibility to the adjacent office's area of responsibility. The adjacent MWO will issue a new SIGMET under a new SIGMET series identifier.

6.3.7 Continuous SIGMET Criteria Across Adjacent Boundaries

When an area of continuous hazardous weather meeting SIGMET criteria extends from one area of responsibility into another, the two offices will determine whether to issue two separate SIGMETs or have one office issue a single SIGMET for the hazardous weather in both areas.

6.3.8 SIGMET Naming Convention Across the Pacific Basin and the Anchorage FIR

To avoid duplication of valid SIGMET series names in the Pacific Basin, the MWOs have adopted a series naming convention where each uses a different portion of the ICAO Phonetic Alphabet.

AWC: ALPHA, BRAVO, CHARLIE, DELTA, ECHO, FOXTROT, GOLF and HOTEL

AAWU: INDIA, JULIET, KILO, LIMA and MIKE

WFO Honolulu: NOVEMBER, OSCAR, PAPA, QUEBEC, ROMEO, SIERRA, TANGO, UNIFORM, VICTOR, WHISKEY, XRAY, YANKEE and ZULU

If the number of active SIGMETs exceeds the names assigned, the MWO will use the following SIGMET naming procedures:

AWC: The AWC will cycle through the alpha names listed above. If all eight SIGMET alpha names are in use by the AWC, they will coordinate with the AAWU to temporarily use INDIA, JULIET, KILO, LIMA or MIKE. When the temporary need for the letter has ended, AWC will coordinate with AAWU to release the letter.

AAWU: The AAWU will cycle through the alpha names listed above. If all five SIGMET alpha names are in use by the AAWU, they will coordinate with WFO Honolulu to temporarily use NOVEMBER, OSCAR, PAPA, or QUEBEC. If the AWC is using an alpha name and the AAWU needs to issue another SIGMET, they will skip the alpha name the AWC is using and issue the next available name in the series. When the temporary need for the letter has ended, AAWU will coordinate with WFO Honolulu to release the letter.

WFO Honolulu: WFO Honolulu will cycle through the alpha names listed above. If the AAWU is using an alpha name and WFO Honolulu needs to issue another SIGMET, they will skip the alpha name the AAWU is using and issue the next available name in the series.

7 Airmen's Meteorological Information (AIRMET) and Graphical AIRMET

An AIRMET is a concise description of the occurrence or expected occurrence of specified en route weather phenomena which may affect the safety of aircraft operations, but at intensities lower than those which require the issuance of a SIGMET. AIRMETs are intended to inform all pilots, but especially Visual Flight Rules pilots and operators of sensitive aircraft, of potentially hazardous weather phenomena. Freezing level information is included.

The Graphical-AIRMET (G-AIRMET), is a graphical forecast of en-route weather hazards valid at discrete times no more than 3 hours apart for a period of up to 12 hours into the future (00, 03, 06, 09 and 12 hours). G-AIRMET is issued based on the same criteria as AIRMET.

7.1 AIRMET Criteria

An AIRMET will be issued when any of the following weather phenomena is affecting or, in the judgment of the forecaster, is expected to affect an area of at least 3,000 square miles.

a. Ceiling less than 1,000 feet and/or visibility less than 3 statute miles (IFR)

(1) Weather phenomena restricting the visibility including, but not limited to, precipitation (PCPN), smoke (FU), haze (HZ), mist (BR), fog (FG), and blowing snow (BLSN).

b. Widespread mountain obscuration (MT OBSC)

(1) Weather phenomena causing the obscuration can include, and are limited to, clouds (CLDS), precipitation (PCPN), smoke (FU), haze (HZ), mist (BR), and fog (FG).

c. Moderate turbulence (MOD TURB)

(1) Top and bottom of MOD TURB layer are included.

d. Sustained surface wind greater than 30 knots (STG SFC WND)

e. Moderate icing (MOD ICE)

(1) Top and bottom of MOD ICE are included.

(2) Multiple freezing level (FRZLVL) altitudes may be given; the lowest level is the declared FRZLVL.

(3) Areas with multiple freezing levels are included.

(4) Range of freezing levels over the area is included.

(5) Lowest freezing levels above ground level (AGL) at intervals of 500 feet AMSL (or SFC as appropriate) are included.

f. Non-convective low-level wind shear potential below 2,000 feet AGL (LLWS POTENTIAL).

7.2 AIRMET Bulletins, Issuance Times, and Valid Period

a. AIRMETs will be issued as bulletins containing one or more AIRMET messages on the following schedule. Unscheduled AIRMETs are issued when conditions are occurring or expected to occur, but were not forecast.

(1) CONUS: AIRMET bulletins will be issued on a scheduled basis every 6 hours around 0245, 0845, 1445 and 2045 UTC.

(2) Hawaii: AIRMET bulletins will be issued on a scheduled basis every 6 hours at 0400, 1000, 1600 and 2200 UTC.

(3) Alaska: AIRMET bulletins will be issued on a scheduled basis every 6 hours at 0245, 0845, 1445 and 2045 UTC during standard time, and 0145, 0745, 1345, and 1945 UTC during daylight saving time.

b. AIRMETs will be valid for no more than 6 hours. The valid period of an AIRMET message will not exceed the valid time of the AIRMET bulletin.

7.3 AIRMET Format

An AIRMET message will include the following information as appropriate and in the order indicated. See examples in Appendix A.

a. Reference to appropriate active SIGMETs affecting the area of concern at the time of AIRMET issuance (i.e., SEE SIGMET BRAVO SERIES).

b. Beginning time of the AIRMET phenomenon if different from the AIRMET beginning valid time.

c. AIRMET name (SIERRA, TANGO or ZULU), update number, weather phenomenon, and ending valid time. (Note: the AIRMET number is reset to zero (0) after 0000 UTC each day. The update numbering begins with any update, either regularly scheduled or amendment, after the issuance of the first regularly scheduled AIRMET of the UTC day. Corrections carry the same update number as the previous issuance being corrected.)

d. List of affected states (CONUS only).

e. Location of phenomenon using VORs or other well-known geographic features. The AAWU may also use VORs or geographic location.

f. Description of phenomenon for the AIRMET issuance.

g. Vertical extent (bases and tops), as appropriate.

h. Ending time of phenomenon if different from the AIRMET ending time.

i. Intensity change remarks (INTSF, WKN or NC) concerning the continuance of the phenomenon following the 6 hour valid period.

j. CONUS and Hawaii AIRMETs: A separate AIRMET outlook will be included in the AIRMET bulletin when conditions meeting criteria are expected to occur during the 6-hour period after the valid time of the AIRMET bulletin.

k. Alaska AIRMETs: Outlook information will be included in the appropriate FA zone during the 6-hour period after the valid time of the AIRMET bulletin.

7.4 AIRMET Updates and Amendments

If an AIRMET is amended and issued out of the normal schedule, it will contain AAA at the end of WMO heading line for the first amendment, AAB for the second, and continuing for all subsequent amendments. AMD will be added after the date/time group on the FAA product line. The update number will be incremented (see 7.3 c). UPDT will be added to end of the line with the list of affected states (CONUS only). The issuance time of the AIRMET bulletin is updated to reflect the time of the amendment. The ending valid time remains unchanged.

7.5 AIRMET Corrections

AIRMETs containing errors will be corrected. CCA will be added after the date/time group on the WMO heading line for the first correction, CCB for the second, and continuing for all subsequent corrections. COR will be added after the date/time group on the FAA product line. The issuance time of the AIRMET bulletin is updated to reflect the time of the correction. The ending valid time remains unchanged.

NOTE: The FAA uses a time matching system to determine the most recent products. Therefore, amendments and corrections will carry the CURRENT time to ensure that the AIRMET is updated in the FAA system.

8 Route Forecast (ROFOR)

ROFORs predict conditions for specific flight routes several hours in advance to accommodate planning. The only NWS office that issues ROFORs is WFO Honolulu.

8.1 ROFOR Criteria

WFO Honolulu prepares and issues ROFORs for flight paths that begin, end, or have most of their path within the Pacific Region area of responsibility, which extends from the equator to 30N, between 140W and 130E.

8.2 ROFOR Issuance Time

ROFORs are issued for prescribed times, several hours in advance, for regularly scheduled flights. ROFOR requests for unscheduled flights will be prepared as soon as time allows.

8.3 ROFOR Amendments

ROFORs are not required to be amended.

8.4 ROFOR Corrections

ROFOR corrections will be issued as soon as possible when erroneous data has been transmitted.

8.5 ROFOR Content

ROFORs contain some or all of the following forecast parameters:

a. Winds and temperatures aloft

b. Significant en route weather

c. Zone weather

d. Weather Synopsis

At a minimum, ROFORs include a. and b. above. They may contain data for multiple altitudes and include TAFs for destination points and/or alternates.

9 Collaborative Convective Forecast Product (CCFP)

The CCFP is a collaborated forecast of convection meeting specific criteria of coverage, radar composite reflectivity, radar echo top, and forecaster confidence. The CCFP is designed for use in the coordinated planning and strategic management of en route air traffic flow. CCFP is not intended for use in the terminal environment or for tactical air traffic control decision-making. The CCFP forecast is used by airline industry and FAA participants of the Collaborative Decision Making (CDM) NAS planning process led by the Federal Aviation Administration's Air Traffic Control System Command Center. Each CCFP is issued by the Aviation Weather Center after collaboration with Meteorological Service of Canada, Center Weather Service Units and meteorological offices of airlines and service providers.

9.1 CCFP Criteria

All of the following conditions will be met for an area of convection to be identified and included in the CCFP.

a. An area of convection that covers at least 3000 square miles

b. The area will contain at least 25% coverage of:

(1) 40 dBZ or higher composite radar reflectivity echoes and,

(2) Echo tops of at least FL250

c. Forecaster confidence (of the above conditions occurring) above 25%

9.2 CCFP Forecast Format

a. Coverage

(1) Sparse 25-39% (sparse fill)

(2) Medium 40-74% (medium fill)

(3) Solid 75 – 100% (solid fill)

(4) Lines of coverage:

(a) High coverage: Solid purple lines, either alone or within a polygon. The length of a line will be at least 100nm, the width at least 20nm on either side of the line and coverage of 75 - 100%.

(b) Medium coverage: Dashed purple line, alone or within an area of coverage. The length of a line will be at least 100nm, the width at least 20nm on either side of the line and coverage of 40 - 74%.

b. Maximum echo tops range:

(1) 25,000 – 29,000 feet MSL (290)

(2) 30,000 – 34,000 feet MSL (340)

(3) 35,000 – 39,000 feet MSL (390)

(4) At or above 40,000 feet MSL (400)

c. Forecaster confidence:

(1) Low: 25-49% (gray border and fill)

(2) High: 50-100% (blue border and fill)

d. Speed and direction of movement for each area of convection.

e. Growth rate for each area of convection:

(1) Negative (-)

(2) No change (NC)

(3) Positive growth (+)

9.3 CCFP Issuance Times and Valid Period

a. CCFP is issued daily from March 1 to October 31, 0200 to 2000 Central Local Time.

b. Canadian airspace is included April 1 to September 30 each year.

c. The CCFP ASCII coded text product is issued under these WMO headers:

(1) 4-Hour: FAUS28 KKCI

(2) 6-Hour: FAUS29 KKCI

(3) 8-Hour: FAUS30 KKCI

9.4 CCFP Updates, Amendements, and Corrections

The CCFP is not updated or amended.

APPENDIX A -- Examples

1. SIGMETs

a. Non-Convective SIGMET

WSUS01 KKCI 050600
WS1R
BOSR WS 050600
SIGMET ROMEO 2 VALID UNTIL 051000
ME NH VT
FROM CAR TO YSJ TO CON TO MPV TO CAR
SEV TURB BLW 080. RPRTD BY ACFT. CONDS CONTG BYD 1000Z.

b. Convective SIGMET

WSUS33 KKCI 091855
SIGW
CONVECTIVE SIGMET...NONE
.
OUTLOOK VALID 092055-100055
TS ARE NOT EXPD.

WSUS32 KKCI 091855
SIGC
MKCC WST 091855
CONVECTIVE SIGMET 21C
VALID UNTIL 2055Z
AR OK
FROM 20S RZC-40SSW FSM
DMSHG LINE TS 25 NM WIDE MOV FM 27025KT. TOPS TO FL320.
.
OUTLOOK VALID 092055-100055
FROM 40NE BUM-60SE SGF-50WSW LIT-40W GGG-60ENE ABI-ADM-50WNW
BUM-40NE BUM
WST ISSUANCES EXPD. REFER TO MOST RECENT ACUS01 KWNS FROM STORM
PREDICTION CENTER FOR SYNOPSIS AND METEOROLOGICAL DETAILS.

(1) Convective SIGMET with tropical cyclone remarks

WSUS31 KKCI 211355
SIGE
MKCE WST 211355
CONVECTIVE SIGMET 1E
VALID UNTIL 1555Z

NC SC FL GA AND CSTL WTRS
FROM 30SSE CLT-160SE ILM-140ENE OMN-60E TLH-ABY-30SSE CLT
AREA SEV EMBD TS MOV FROM 21015KT. TOPS ABV FL450.
TORNADOES...WIND GUSTS TO 60KT POSS.
TS ASSOCD WITH TROPICAL STORM ALBERTO.
.
OUTLOOK VALID 211555-211955
FROM 30E RDU-180SE ECG-140SSE ILM-180E PBI-40SE PBI-40S
EYW-90SW EYW-70W SRQ-50N CTY-40N MCN-30NW SPA-30E RDU
REF WW 475.
WST ISSUANCES EXPD. REFER TO MOST RECENT ACUS01 KWNS FROM STORM PREDICTION CENTER FOR SYNOPSIS AND METEOROLOGICAL DETAILS. REFER TO MOST RECENT WTNT21 KNHC FROM NATIONAL HURRICANE CENTER FOR DETAILS ON TROPICAL STORM ALBERTO.

c. International SIGMET

WSPA07 PHFO 010358
SIGPAT
KKZAK SIGMET TANGO 1 VALID 010400/010800 PHFO-
OAKLAND OCEANIC FIR EMBD TS OBS WI N2055 W15000 - N1950 W14945 - N1922 W15130 - N2027 W15048 – N2055 W15000. CB TOP FL400. MOV W 10KT. WKN.

d. International Tropical Cyclone SIGMET

WSNT03 KKCI 081451
SIGA0C
KZNY SIGMET CHARLIE 11 VALID 081500/082100 KKCI-
NEW YORK OCEANIC FIR TC KYLE OBS N3106 W07118 AT 1500Z CB TOP FL500 WI 120NM OF CENTER MOV WSW 5 KT NC FCST 2100Z TC CENTER N3142 W07012

e. International Volcanic Ash Cloud SIGMET

WVAK01 PAWU 300600
PAZA SIGMET INDIA 1 VALID 300600/301200 PAWU-
ANCHORAGE FIR VA ERUPTION PAVLOF VOLCANO PSN N5542 W16153
VA CLDS OBS AT 0600Z WI N5734 W16036 - N5609 W16027 - N5612 W15838 - N5530 W15838 - N5516 W16256 - N5719 W16406 - N5734 W16036 SFC/FL300. MOV E 5KT. NC.
FCST 1200Z VA CLD WI N5616 W15836 - N5624 W15322 - N5519 W15332 - N5528 W15835 - N5616 W15836.

2. AIRMETs

a. CONUS AIRMET

WAUS43 KKCI 091445
CHIZ WA 091445
AIRMET ZULU UPDT 4 FOR ICE AND FRZLVL VALID UNTIL 092100
AIRMET ICE...KS IA MO IL
FROM 30WSW FOD TO DBQ TO 50NW DEC TO 50SW FAM TO OSW TO MKC TO 30WSW FOD
MOD ICE BTN FRZLVL AND FL200. FRZLVL 060-100. CONDS ENDG BY 21Z.
.
OTLK VALID 2100-0300Z...ICE IA MO WI IL IN KY
BOUNDED BY BAE-BVT-PXV-50SW FAM-50NW DEC-DBQ-BAE
MOD ICE BTN FRZLVL AND FL200. FRZLVL 080-100. CONDS CONTG THRU 03Z.
.
FRZLVL...RANGING FROM SFC-120 ACRS AREA
MULT FRZLVL 015-085 BOUNDED BY 40W INL-YQT-SSM-70NNE ASP-YVV-DXO-40NE FWA-40SSE BJI-40W INL
SFC ALG 50NNW ISN-70W FAR-GFK-40NE ODI-40SW DXO
040 ALG ISN-70S BIS-30W ABR-30E ABR-60S FAR-30SW BRD-30NE FWA
080 ALG GLD-SLN-30W BDF-50S JOT-40SE IND-30SW CVG-40SW LOZ

b. Hawaii AIRMET

WAHW31 PHFO 090945
WA0HI
HNLT WA 091000
AIRMET TANGO UPDATE 1 FOR TURB VALID UNTIL 091600
AIRMET TURB...KAUAI OAHU MOLOKAI LANAI MAUI
OVR AND IMTS THRU W OF MT.
MOD TURB BLW 100. COND CONT BYD 1600Z.

c. Alaska AIRMET

WAAK47 PAWU 011740
WA7O
JNUS WA 011745
AIRMET SIERRA FOR IFR AND MT OBSC VALID UNTIL 012100
.
LYNN CANAL AND GLACIER BAY JB
PAGS W SPRDG E MTS OCNL OBSC IN CLDS/PCPN. DTRT.
.
CNTRL SE AK JC
N PAGN OCNL CIGS BLW 010/VIS BLW 3SM –RA BR. IMPR.
.
CNTRL SE AK JC
MTS OCNL OBSC IN CLDS/PCPN. NC.
.

ERN GLF CST JE
MTS OCNL OBSC IN CLDS/PCPN. IMPR.
.
SE AK CSTL WTRS JF AAA
OCNL CIG BLW 010 VIS BLW 3SM BR. ST/FOG TOPS 015. NC.

3. FAs

a. CONUS FA

(1) BOS example

FAUS41 KKCI 081745
FA1W
BOSC FA 081745
SYNOPSIS AND VFR CLDS/WX
SYNOPSIS VALID UNTIL 091200
CLDS/WX VALID UNTIL 090600...OTLK VALID 090600-091200
ME NH VT MA RI CT NY LO NJ PA OH LE WV MD DC DE VA AND CSTL WTRS
.
SEE AIRMET SIERRA FOR IFR CONDS AND MTN OBSCN.
TS IMPLY SEV OR GTR TURB SEV ICE LLWS AND IFR CONDS.
NON MSL HGTS DENOTED BY AGL OR CIG.
.
SYNOPSIS...18Z CDFNT 30N PQI-40E MPV-ALB-20N JHW LN. STNR FNT 20N JHW-ECK LN. STNR FNT EWC-ROD-IND LN. TROF 210SE SIE-170SE ECG LN CONTG SWD. HIGH WRN NC. 12Z STNR FNT FM LOW NR FWA ALG 20N CLE-JHW-ALB-30NNE BOS LN. CDFNT 30NNE BOS-120SE BGR LN. CDFNT FM LOW NR FWA ALG PXV-50SE FAM LN CONTG SWWD. HIGH NR ODF.
.
ME NH VT
NRN ME...SCT040 BKN060 TOP FL250. OCNL BKN040. SCT -SHRA/ISOL -TSRA. CB TOP FL350. 21Z BKN040. ISOL -SHRA. WND W G25KT. 03Z SKC. OTLK...VFR.
VT/NRN NH/RMNDR ME MTNS...SCT-BKN040 BKN060 TOP FL250. SCT SHRA/ISOL TSRA. CB TOP FL350. 03Z BKN040. OCNL VIS 3-5SM BR. OTLK...MVFR CIG BR.
SRN NH/RMNDR ME...SCT040 BKN100 TOP FL250. OCNL BKN040 IN WDLY SCT -SHRA/ISOL -TSRA BECMG AFT 19Z SCT TSRA. TS POSS SEV. CB TOP FL400. 04Z BKN020. WDLY SCT -SHRA. OTLK...MVFR CIG SHRA BR.
.
MA RI CT
CT CSTL PLAIN/RI/SERN MA...SKC. 21Z SCT040. ISOL TSRA. CB TOP FL400. 03Z SKC. OCNL VIS 3-5SM BR. OTLK...IFR CIG BR.
RMNDR...SCT100. 19Z SCT040 BKN100 TOP 160. SCT TSRA POSS SEV. CB

TOP FL450. 02Z BKN040. WDLY SCT SHRA. OTLK...MVFR CIG BR.
.
NY LO
LO/N CNTRL-NERN NY...SCT-BKN040 BKN060 TOP 160. SCT SHRA/ISOL TSRA. CB TOP FL350. 03Z BKN040. WDLY SCT -SHRA. OTLK...MVFR CIG SHRA.
WRN-S CNTRL NY...BKN040 OVC060 TOP 160. SCT -TSRA. CB TOP FL450. 03Z BKN030. SCT SHRA. OTLK...MVFR CIG SHRA.
EXTRM SERN NY-LONG ISLAND...SKC. 21Z SCT040. ISOL TSRA. 03Z SKC. OCNL VIS 3-5SM BR. OTLK...IFR CIG BR.
RMNDR NY...BKN050 TOP 160. SCT TSRA POSS SEV. CB TOP FL450. 03Z BKN040. SCT SHRA. OTLK...MVFR CIG SHRA.
.
PA NJ
WRN-N CNTRL PA...BKN040 OVC060 TOP FL220. SCT TSRA. CB TOP FL400. 03Z BKN060. SCT SHRA NWRN/N CNTRL PA. OTLK...VFR SWRN PA...MVFR CIG SHRA NWRN/N CNTRL PA.
S CNTRL-NERN PA...BKN060 TOP FL220. ISOL TSRA BECMG AFT 20Z SCT TSRA. CB TOP FL400. 03Z OVC060. SCT SHRA NERN PA. OTLK...MVFR CIG SHRA NERN PA. MVFR CIG BR S CNTRL PA.
SERN PA-NRN NJ...SCT060. AFT 21Z ISOL TSRA. CB TOP FL400. 03Z SKC OR SCT CI. OTLK...VFR.
SRN NJ...SKC OR SCT CI. OTLK...VFR.
.
OH LE
LE/NRN 1/2 OH...BKN030 OVC060 TOP FL220. SCT TSRA POSS SEV. CB TOP FL450. OTLK...MVFR CIG TSRA.
SWRN 1/4 OH...SCT040 BKN100 TOP FL220. SCT TSRA POSS SEV. CB TOP FL450. 03Z BKN060. WDLY SCT TSRA. OTLK...MVFR CIG TSRA.
SERN 1/4 OH...SCT050 BKN100 TOP FL220. OCNL BKN050 IN WDLY SCT TSRA. TS POSS SEV. CB TOP FL400. 03Z BKN060. OTLK...VFR.
.

WV
W WV PNHDL-NWRN...SCT100.. 19Z BKN060 TOP FL220. TIL 03Z SCT SHRA/WDLY SCT TSRA. CB TOP FL450. OTLK...VFR.
SW...SCT080. AFT 20Z ISOL TSRA. CB TOP FL400. 01Z SCT100 SCT CI. OTLK...VFR.
SERN WV...SCT070. 01Z SKC. OTLK...VFR BECMG 09Z IFR BR.
RMNDR...SCT080. 20Z SCT080 BKN100 TOP FL220. ISOL TSRA. CB TOP FL400. 03Z SCT-BKN CI. OTLK...VFR BECMG 09Z IFR BR.
.
MD DC DE VA
NRN 1/2 APLCNS...SCT080. 20Z SCT080 BKN100 TOP FL220. ISOL TSRA. CB TOP FL400. 03Z SCT-BKN CI. OTLK...VFR BECMG 09Z IFR BR.
SRN 1/2 APLCNS...SCT070. 01Z SKC. OTLK...VFR BECMG 09Z IFR HZ BR.

SERN VA CSTL SXNS...SCT040. 04Z SCT-BKN100 TOP FL250. OTLK...VFR.
DC/DE/RMNDR MD/RMNDR VA...SCT040. 00Z SKC OR SCT CI. OTLK...VFR.
.
CSTL WTRS
ME/NH...SCT040 BKN100 TOP FL250. WDLY SCT SHRA/TSRA DVLPG 20-22Z.
CB TOP FL400. OTLK...VFR SHRA.
RMNDR N OF ACK...SKC. BECMG 2123 SCT040 BKN100 TOP FL250. WDLY
SCT SHRA/TSRA. CB TOP FL400. OTLK...VFR SHRA.
S OF 30NE ORF-150SE SIE LN...SCT040 SCT CI. 03Z SCT-BKN100 TOP
FL250. OTLK...VFR.
RMNDR...SCT060. 00Z SKC OR SCT CI. OTLK...VFR.
....
NNNN

(2) DFW example

FAUS44 KKCI 210945
FA4W
DFWC FA 210945
SYNOPSIS AND VFR CLDS/WX
SYNOPSIS VALID UNTIL 220400
CLDS/WX VALID UNTIL 212200...OTLK VALID 212200-220400
OK TX AR TN LA MS AL
.
SEE AIRMET SIERRA FOR IFR CONDS AND MTN OBSCN.
TS IMPLY SEV OR GTR TURB SEV ICE LLWS AND IFR CONDS.
NON MSL HGTS DENOTED BY AGL OR CIG.
.
SYNOPSIS...10Z HI PRES OK MOVG SLOLY EWD THRUT PD. WK STNRY FNT
ACRS CNTRL AL-CNTRL MS-NRN LA-CNTRL TX. IFR CIGS S OF STNRY FNT
EARLY IN FCST PD IN MOIST SLY RETURN FLOW. STNRY FNT BECMG WRMFNT
ACRS TX-LA AND MOV NWD TO OK SRN AR BY END OF OTLK PD. STG S-SELY
WNDS DVLPG AFTN HOURS AND INCRG LO-MIDLVL CLDS/PCPN WRN OK/TX
PNHDL N OF WRMFNT DURG OTLK PD. WDLY SCT CNVTV ACT ALG ERN PTNS
STNRY FNT DURG AFTN.
.
OK
PNHDL-NWRN...SCT100 SCT-BKN CI. 19Z WND SE G25-30KT.
OTLK...VFR BECMG 00Z MVFR TSRA.
SWRN...BKN-OVC090 TOP 170. WDLY SCT TSRA. CB TOPS FL450. 15Z SCT060. 18Z
WND SE G25KT. OTLK...VFR BECMG 00Z MVFR TSRA.
ERN...SCT100. 12Z SCT-BKN080 TOP 170 BKN CI. TIL 15Z WDLY SCT -SHRA.
OTLK...VFR.
.
NWRN TX

PNHDL...BKN-OVC090 TOP 150. WDLY SCT -SHRA. 14Z SCT080. 18Z WND SE G25KT.
OTLK...VFR BECMG 00Z MVFR TSRA.
N PLAINS...OVC CI. 17Z SCT080. WND S G25-30KT. OTLK...VFR WND.
.
SWRN TX
SCT130-150 SCT CI. WND SW G25-30KT. OTLK...VFR SHRA WND.
.
N CNTRL TX
NRN HLF...SCT080 SCT-BKN CI. ISOL -SHRA. 18Z WND SE G25-30KT.
OTLK...VFR WND.
SRN HLF...SCT CI. 11Z BKN015-025 TOP 035. VIS 3SM BR. 14Z
SCT060 SCT CI. 18Z WND S G25KT. OTLK...VFR WND.
.
NERN TX
NRN HLF...SCT120. 18Z SCT-BKN060 TOP 100. OTLK...VFR.
SRN HLF...BKN020 TOP 035. OCNL VIS 3-5SM BR. 14Z SKC. 17Z
SCT060. OTLK...VFR.
.
SERN TX
BKN010 TOP 025. OCNL VIS 3SM BR. 14Z SCT040. OTLK...VFR.
.
S CNTRL TX
HILL COUNTRY...BKN025-035 TOP 060. OCNL VIS 3-5SM BR. 14Z SCT060. OTLK...VFR.
RMNDR...BKN010-020 TOP 025. OCNL VIS 3SM BR. 14Z SCT040-050. 17Z WND S
G25KT. OTLK...VFR WND.
.
AR
SCT100-120. OTLK...VFR.
.
LA
NRN 1/3...SKC OR SCT100. OTLK...VFR.
SRN 2/3...BKN010 TOP 025. OCNL VIS 3SM BR. 14Z SCT040. 17Z
BKN040 TOP 100. WDLY SCT TSRA. CB TOPS FL450. OTLK...VFR
TSRA.
.
TN
WRN-MIDDLE...SKC. 18Z SCT040. OTLK...VFR.
ERN...SCT040-050 SCT-BKN080 TOP 100. OCNL VIS 5SM BR. ISOL -SHRA.
13Z SKC. 18Z SCT070-080. OTLK...VFR.
.
MS
NRN 2/3...SCT070. OTLK...VFR.
SRN 1/3...BKN-OVC010 TOP 025. OCNL VIS 3SM BR. 13Z SCT040. 17Z BKN040 TOP
120. WDLY SCT TSRA. CB TOPS FL450. OTLK...MVFR
TSRA BECMG 01Z VFR.
.

AL
NRN 2/3...SCT070. TIL 13Z OCNL VIS 3SM BR FAR NERN PTNS.
OTLK...VFR.
SRN 1/3...BKN010-015 TOP 025. OCNL VIS 3-5SM BR. 13Z SCT040.
17Z BKN040 TOP 120. WDLY SCT TSRA. CB TOPS FL450. OTLK...MVFR
TSRA BECMG 01Z VFR.

b. Gulf of Mexico FA

FAGX20 KKCI 091812
OFAGX
SYNOPSIS VALID TIL 101900Z
FCST...091900Z-100700Z
OTLK...100700Z-101900Z

INTERNATIONAL OPERATIONS BRANCH
AVIATION WEATHER CENTER KANSAS CITY MISSOURI
.
CSTL WATERS FROM COASTLINE OUT TO HOUSTON OCEANIC FIR AND GLFMEX MIAMI OCEANIC FIR AND W OF 85W. HOUSTON OCEANIC FIR AND GLFMEX MIAMI OCEANIC FIR.
.
TS IMPLY SEV OR GTR TURB SEV ICE LLWS AND IFR CONDS.
.
01 SYNOPSIS...HIGH PRES OVR NRN GLFMEX.
.
02 SIGNIFICANT CLD/WX...
.
CSTL WATERS...
SCT020. OTLK...VFR.
.
HOUSTON OCEANIC FIR…
SCT020. OTLK...VFR.
.
GLFMEX MIAMI OCEANIC FIR...
SCT020. OTLK...VFR.
.
03 ICE AND FRZLVL...
CSTL WATERS…SEE AIRMETS ZULU WAUS44 KKCI AND WAUS42 KKCI.
HOUSTON OCEANIC FIR… NO SGFNT ICE EXP OUTSIDE CNVTV ACT.
GLFMEX MIAMI OCEANIC FIR…NO SGFNT ICE EXP OUTSIDE CNVTV ACT.
FRZLVL…140 THRUT.

04 TURB...
CSTL WATERS…SEE AIRMETS TANGO WAUS44 KKCI AND WAUS42 KKCI.
HOUSTON OCEANIC FIR… NO SGFNT TURB EXP OUTSIDE CNVTV ACT.

GLFMEX MIAMI OCEANIC FIR…NO SGFNT TURB EXP OUTSIDE CNVTV ACT.

c. Caribbean FA

FACA20 KKCI 121530
OFAMKC
INTERNATIONAL OPERATIONS BRANCH
AVIATION WEATHER CENTER KANSAS CITY MISSOURI
VALID 121600-130400
OUTLOOK...130400-131600
.
ATLANTIC S OF 32N W OF 57W...CARIBBEAN...GULF OF MEXICO BTN 22N AND 24N.
.
TS IMPLY SEV OR GTR TURB SEV ICE LLWS AND IFR CONDS. SFC TO 400 MB.
..
SYNOPSIS...WK CDFNT EXTDS FM NR 28N60W TO 23N63W TO THE MONA PASSAGE. CDFNT WL MOV EWD AND WKN TODAY. EXP NARROW BAND OF CLDS WITH ISOL SHRA INVOF CDFNT.
.
SIGNIFICANT CLD/WX...
ERN MONTERREY FIR...NRN MERIDA FIR
SCT025 SCT060. OTLK...VFR.
.
ATLC SWRN NEW YORK FIR...SAN JUAN FIR
NW OF CDFNT...SCT025 SCT060. LYR OCNL BKN. TOP 120. ISOL SHRA.
OTLK...VFR.
VCNTY CDFNT...SCT025 BKN060. OCNL BKN025. TOP 120. WDLY SCT SHRA. ISOL TSRA TIL 20Z. OTLK...VFR SHRA.
SE OF CDFNT...SCT025 SCT060. ISOL SHRA. OTLK...VFR.
.
ATLC MIAMI FIR
SCT025 SCT060. LYR OCNL BKN. TOP 120. ISOL SHRA. OTLK...VFR.
.
WRN PIARCO FIR...NRN MAIQUETIA FIR...CURACAO FIR
BTN 61W-63W...SCT025 BKN060. OCNL BKN025. TOP 120. WDLY SCT SHRA. OTLK...VFR SHRA.
RMNDR...SCT025 SCT060. ISOL SHRA. OTLK...VFR.
.
SANTO DOMINGO FIR...PORT-AU-PRINCE FIR
SCT025 SCT060. LYR OCNL BKN. TOP 120. ISOL SHRA. OTLK...VFR.
.
NRN BARRANQUILLA FIR...NRN PANAMA FIR
SCT025 SCT060. ISOL SHRA. SFC WND NE 20-25KT. OTLK...VFR.
.
KINGSTON FIR...NERN CNTRL AMERICAN FIR...HABANA FIR

SCT025 SCT060. ISOL SHRA. OTLK...VFR.
.
ICE AND FRZLVL...
NO SGFNT ICE EXP OUTSIDE CNVTV ACT.
FRZLVL... 145-170.
.
TURB...
NO SGFNT TURB EXP OUTSIDE CNVTV ACT.

d. Hawaii FA

FAHW31 PHFO 080940
FA0HI
.
HNLC FA 080940
SYNOPSIS AND VFR CLD/WX
SYNOPSIS VALID UNTIL 090400
CLD/WX VALID UNTIL 082200...OUTLOOK VALID 082200-090400
.
SEE AIRMET SIERRA FOR IFR CLD AND MT OBSC.
TS IMPLY SEV OR GREATER TURB SEV ICE LOW LEVEL WS AND IFR COND.
NON MSL HGT DENOTED BY AGL OR CIG.
.
SYNOPSIS...SFC HIGH FAR N PHNL NEARLY STNR.
.
BIG ISLAND ABOVE 060.
SKC. 20Z SCT090. OUTLOOK...VFR.
.
BIG ISLAND LOWER SLOPES...COAST AND ADJ WATERS FROM UPOLU POINT TO CAPE KUMUKAHI TO APUA POINT.
SCT030 BKN050 TOPS 080 TEMPO BKN030 VIS 3-5SM -SHRA BR. 21Z SCT030 SCT-BKN050 TOPS 080 ISOL BKN030 5SM -SHRA. OUTLOOK...VFR.
.
BIG ISLAND LOWER SLOPES…COAST AND ADJ WATERS FROM APUA POINT TO SOUTH CAPE TO UPOLU POINT. SKC. 21Z BKN-OVC060 TOPS 080 ISOL BKN030 -SHRA.N AND E FACING SLOPES...COAST AND ADJ WATERS OF THE REMAINING ISLANDS.
SCT020 BKN045 TOPS 070 TEMPO BKN020 VIS 3-5SM -SHRA. 22Z SCT025 SCT-BKN050 TOPS 070 ISOL BKN025 3-5SM -SHRA. OUTLOOK...VFR.
.
REST OF AREA.
FEW-SCT050 ISOL BKN040 TOPS 070 -SHRA. OUTLOOK...VFR.

e. Alaska FA

FAAK48 PAWU 251345

FA8H
ANCH FA 251345
AK SRN HLF EXC SE AK...
.
AIRMETS VALID UNTIL 252000
TS IMPLY POSSIBLE SEV OR GREATER TURB SEV ICE LLWS AND IFR CONDS.
NON MSL HEIGHTS NOTED BY AGL OR CIG.
.
SYNOPSIS VALID UNTIL 260800
972 MB BRISTOL BAY LOW WL MOV N TO 50 S PAOM AT 987 MB BY END OF PD.
ASSOCD OCFNT ALONG A PALJ-KENNEDY ENTRANCE AND SEWD LN WL EXTEND FM LOW ALG A PAMH-PACV AND SEWD LN BY 08Z. HI PRES WL PRST OVER THE WRN BERING SEA AND FAR WRN ALUTNS.
.
COOK INLET AND SUSITNA VALLEY AB...VALID UNTIL 260200
...CLOUDS/WX...
AIRMET IFRW PASW-PAHO LN OCNL CIGS BLW 010 VIS BLW 3SM RA BR. NC...
AIRMET MT OBSCMTS OCNL OBSC IN CLDS/PCPN. NC...
SCT020 BKN045 OVC080 TOP 120 LYRS ABV TO FL250. OCNL BKN025 OVC045 VIS 5SM -RA BR.
W PASW-PAHO LN SCT005 OVC020 VIS 3-5SM -RA BR.
COOK INLET SFC WND NE 20G30 KTS. THRU TURNAGAIN ARM AND E-W MT PASSES SFC WND E 30G60 KTS.
OTLK VALID 260200-260800...MVFR CIG RA WND.
PASSES...LAKE CLARK...MERRILL...RAINY...PORTAGE...IFR CIG RA WND. TURB.
WINDY...MVFR CIG RA.
...TURB...
AIRMET TURBOCNL MOD TURB BLW 120. PAAQ-PANC LLWS. NC...
...ICE AND FZLVL...
AIRMET ICEOCNL MOD RIME/MX ICEIC BTN 100-160. FZLVL 080. NC...
.
COPPER RIVER BASIN AC...VALID UNTIL 260200
...CLOUDS/WX...
FEW045 SCT090 BKN-OVC180 LYRS ABV TO FL250.
SFC WND THRU AK RANGE PASSES AND CHNLD TRRN SE 20G30 KTS.
WRN MTS AFT 00Z...ISOL CIG BKN025 OVC045CB TOP FL280 VIS 4SM TSRAGS. SFC WNDS VCY TS G30 KTS.
OTLK VALID 260200- 260800...VFR.
PASS...TAHNETA...MVFR CIG.
...TURB...
LEE TRRN ISOL MOD TURB BLW 060.
...ICE AND FZLVL...
NIL SIG. FZLVL 050.
.
CNTRL GLF CST AD...VALID UNTIL 260200

...CLOUDS/WX...
AIRMET MT OBSCMTS OBSC IN CLDS/PCPN. NC...
SCT020 OVC040 TOPS 100 LYRS ABV TO FL250 -RA.
OCNL SCT005 OVC020 VIS 3-5SM RA BR.
SFC WND E 20G35 KTS. THRU SEWARD PEN TRRN GAPS...WND E-NE 30G50 KTS.
OUTER KENAI CST AND OFSHR...ISOL CIGS BLW 010 VIS BLW 3SM RA BR.
OTLK VALID 260200- 260800..MVFR CIG RA WND.
...TURB...
AIRMET TURBOCNL MOD TURB BLW 120. LLWS VCY TRRN. NC...
...ICE AND FZLVL...
AIRMET ICEOCNL MOD RIME ICEIC BTN 100-160. FZLVL 080. NC...
.
KODIAK ISLAND AE...VALID UNTIL 260200
...CLOUDS/WX...
AIRMET MT OBSCMTS OCNL OBSC IN CLDS/PCPN. NC...
SCT020 OVC040 TOPS 080 SEPD LYRS ABV TO FL250 -RA.
OCNL SCT005 OVC020 VIS 3-5SM RA BR. E SIDE...ISOL CIGS BLW 010 VIS BLW 3SM +RA BR.
SFC WND SE 20G35 KT DMSHG AFT 00Z.
OTLK VALID 260200- 260800...MVFR CIG SHRA. AFT 06Z VFR WND.
...TURB...
AIRMET TURBTIL 00Z OCNL MOD TURB BLW 050. WKN...
...ICE AND FZ LVL...
ISOL MOD RIME ICEIC 040-080. FZLVL 030.

4. ROFOR

Santa Barbara and San Francisco to Honolulu Route

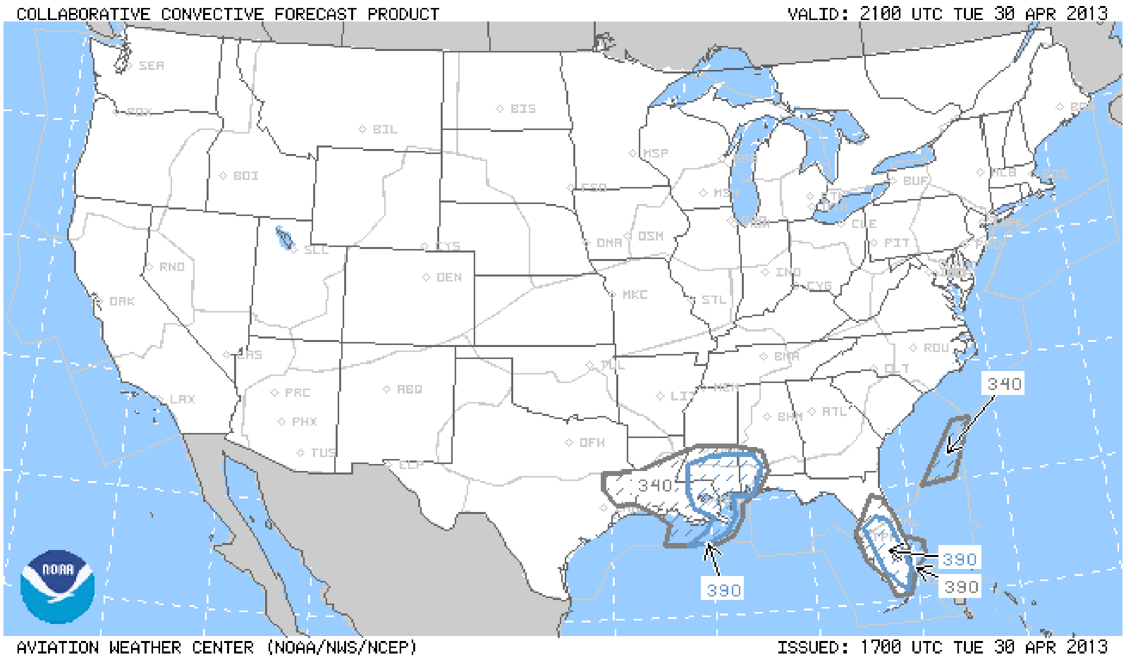
FRPN31 PHFO 301857
RFRKSF
WINDS/TEMPERATURES AND WEATHER BY ZONE FOR
ROUTE SFO/HNL VIA 31.3N/140W VALID AT 311200Z

	FLIGHT LEVELS				
ZONE	FL050	FL100	FL180	FL240	ZONE WEATHER
25	3315 P16	3208 P11	3109 M07	3216 M19	6-8 STSC 010/030
26	3316 P13	3211 P09	3117 M06	3023 M18	4-6 STSC 015/045
27	3013 P12	3212 P09	3020 M06	3024 M18	6-8 MERGING LYR TO 200 ISOL VIS 3-5SM RA ISOL TCU TOPS FL220
28	3008 P14	3008 P08	2815 M06	2918 M18	DO
29	9905 P14	9905 P08	2609 M06	2612 M18	4-6 CUSC 020/050
30	0506 P14	9905 P08	9905 M06	2406 M18	DO
31	0818 P15	0613 P09	0307 M06	9905 M18	4-6 CUSC 020/080

```
                                                    ISOL -SHRA
32      0822 P15  0719 P09  0711 M05  9905 M17  DO
 OVERALL WIND FACTOR COMPONENTS
            P4         P2          M4         M10

ROUTE SBA/HNL VIA 29.5N/140W VALID AT 311200Z
          FLIGHT LEVELS
ZONE   FL050     FL100     FL180     FL240     ZONE WEATHER

25      3509 P17  3108 P11  3011 M07  3015 M19  6-8 STSC 010/030
26      3416 P14  3312 P09  3218 M05  3123 M18  4-6 STSC 015/045
27      0111 P13  3510 P10  3017 M05  3021 M18  2-4 CUSC 020/045
28      0307 P14  3606 P09  2713 M05  2717 M18  DO
29      0406 P14  9905 P08  2507 M05  2610 M18  4-6 CUSC 020/050
30      0815 P15  0610 P09  9905 M05  9905 M17  DO
31      0821 P15  0616 P09  0408 M05  9905 M18  4-6 CUSC 020/080
                                                    ISOL -SHRA
32      0822 P15  0719 P09  0812 M06  9905 M18  DO
 OVERALL WIND FACTOR COMPONENTS
            P10        P5          M4         M7

SYNOPSIS...1024MB HIGH CENTERED NEAR N3000 W15600.
```

5. CCFP

```
FAUS28 KKCI 301700
CFP02
CCFP 20130430_1700 20130430_2100
AREA 3 3 3 3 0 0 5 326 773 299 792 301 775 326 764 326 773 312 777
AREA 3 3 3 3 0 0 19 282 897 285 889 293 884 298 883 303 875 312 869 321 872 324 886 325
904 319 924 315 935 315 953 307 954 300 947 301 938 297 929 291 920 282 923 282 897 292
916
AREA 3 1 3 2 0 0 16 282 912 287 902 294 898 297 908 306 911 317 910 320 898 320 886 320
876 314 872 302 878 302 888 293 887 287 892 282 902 282 912 265 897
AREA 3 1 3 2 0 0 7 288 817 283 824 264 816 254 805 264 802 286 811 288 817 272 812
AREA 3 3 3 2 0 0 13 297 819 281 828 269 824 259 814 252 811 252 804 263 800 268 795 275
795 278 805 286 807 296 814 297 819 290 818
CANADA ON
```


COLLABORATIVE CONVECTIVE FORECAST PRODUCT
VALID: 2100 UTC TUE 30 APR 2013
340
340
390
390
390
AVIATION WEATHER CENTER (NOAA/NWS/NCEP)
ISSUED: 1700 UTC TUE 30 APR 2013

APPENDIX B -- WMO Headers

1. AWC

a. Non-Convective SIGMET

CONUS and Coastal Waters

WMO	AWIPS
WCUS01 KKCI	MKCWC1 (N-Y)*
WSUS01 KKCI	MKCWS1 (N-Y)*
WVUS01 KKCI	MKCWV1 (N-Y)*
WCUS02 KKCI	MKCWC2 (N-Y)*
WSUS02 KKCI	MKCWS2 (N-Y)*
WVUS02 KKCI	MKCWV2 (N-Y)*
WCUS03 KKCI	MKCWC3 (N-Y)*
WSUS03 KKCI	MKCWS3 (N-Y)*
WVUS03 KKCI	MKCWV3 (N-Y)*
WCUS04 KKCI	MKCWC4 (N-Y)*
WSUS04 KKCI	MKCWS4 (N-Y)*
WVUS04 KKCI	MKCWV4 (N-Y)*
WCUS05 KKCI	MKCWC5 (N-Y)*
WSUS05 KKCI	MKCWS5 (N-Y)*
WVUS05 KKCI	MKCWV5 (N-Y)*
WCUS06 KKCI	MKCWC6 (N-Y)*
WSUS06 KKCI	MKCWS6 (N-Y)*
WVUS06 KKCI	MKCWV6 (N-Y)*

*Omit Sierra, Tango, and Zulu

Convective SIGMET

WSUS31 KKCI	MKCSIGE
WSUS32 KKCI	MKCSIGC
WSUS33 KKCI	MKCSIGW

New York, Miami, Houston, and San Juan Oceanic FIRs

WSNT01 KKCI	SIGA0A
WSNT02 KKCI	SIGA0B

WSNT03 KKCI	SIGA0C
WSNT04 KKCI	SIGA0D
WSNT05 KKCI	SIGA0E
WSNT06 KKCI	SIGA0F
WSNT07 KKCI	SIGA0G
WSNT08 KKCI	SIGA0H
WSNT09 KKCI	SIGA0I
WSNT10 KKCI	SIGA0J
WSNT11 KKCI	SIGA0K
WSNT12 KKCI	SIGA0L
WSNT13 KKCI	SIGA0M

WCNT01 KKCI	MKCWSTA0A
WCNT02 KKCI	MKCWSTA0B
WCNT03 KKCI	MKCWSTA0C
WCNT04 KKCI	MKCWSTA0D
WCNT05 KKCI	MKCWSTA0E
WCNT06 KKCI	MKCWSTA0F
WCNT07 KKCI	MKCWSTA0G
WCNT08 KKCI	MKCWSTA0H
WCNT09 KKCI	MKCWSTA0I
WCNT10 KKCI	MKCWSTA0J
WCNT11 KKCI	MKCWSTA0K
WCNT12 KKCI	MKCWSTA0L
WCNT13 KKCI	MKCWSTA0M

WVNT01 KKCI	MKCWSVA0A
WVNT02 KKCI	MKCWSVA0B
WVNT03 KKCI	MKCWSVA0C
WVNT04 KKCI	MKCWSVA0D
WVNT05 KKCI	MKCWSVA0E
WVNT06 KKCI	MKCWSVA0F
WVNT07 KKCI	MKCWSVA0G
WVNT08 KKCI	MKCWSVA0H
WVNT09 KKCI	MKCWSVA0I
WVNT10 KKCI	MKCWSVA0J
WVNT11 KKCI	MKCWSVA0K
WVNT12 KKCI	MKCWSVA0L
WVNT13 KKCI	MKCWSVA0M

Oakland Oceanic FIR

WSPN01 KKCI	MKCSIGP0A
WSPN02 KKCI	MKCSIGP0B
WSPN03 KKCI	MKCSIGP0C
WSPN04 KKCI	MKCSIGP0D

WSPN05 KKCI	MKCSIGP0E
WSPN06 KKCI	MKCSIGP0F
WSPN07 KKCI	MKCSIGP0G
WSPN08 KKCI	MKCSIGP0H
WSPN09 KKCI	MKCSIGP0I
WSPN10 KKCI	MKCSIGP0J
WSPN11 KKCI	MKCSIGP0K
WSPN12 KKCI	MKCSIGP0L
WSPN13 KKCI	MKCSIGP0M

WCPN01 KKCI	MKCWSTP0A
WCPN02 KKCI	MKCWSTP0B
WCPN03 KKCI	MKCWSTP0C
WCPN04 KKCI	MKCWSTP0D
WCPN05 KKCI	MKCWSTP0E
WCPN06 KKCI	MKCWSTP0F
WCPN07 KKCI	MKCWSTP0G
WCPN08 KKCI	MKCWSTP0H
WCPN09 KKCI	MKCWSTP0I
WCPN10 KKCI	MKCWSTP0J
WCPN11 KKCI	MKCWSTP0K
WCPN12 KKCI	MKCWSTP0L
WCPN13 KKCI	MKCWSTP0M

WVPN01 KKCI	MKCWSVP0A
WVPN02 KKCI	MKCWSVP0B
WVPN03 KKCI	MKCWSVP0C
WVPN04 KKCI	MKCWSVP0D
WVPN05 KKCI	MKCWSVP0E
WVPN06 KKCI	MKCWSVP0F
WVPN07 KKCI	MKCWSVP0G
WVPN08 KKCI	MKCWSVP0H
WVPN09 KKCI	MKCWSVP0I
WVPN10 KKCI	MKCWSVP0J
WVPN11 KKCI	MKCWSVP0K
WVPN12 KKCI	MKCWSVP0L
WVPN13 KKCI	MKCWSVP0M

b. AIRMET

The AWC issues six sets of three AIRMETs (e.g., SIERRA, TANGO AND ZULU).

WMO HEADER	AWIPS ID
WAUS41 KKCI	MKCWA1 (S, T, Z)

WAUS42 KKCI	MKCWA2 (S, T, Z)
WAUS43 KKCI	MKCWA3 (S, T, Z)
WAUS44 KKCI	MKCWA4 (S, T, Z)
WAUS45 KKCI	MKCWA5 (S, T, Z)
WAUS46 KKCI	MKCWA6 (S, T, Z)

c. Area Forecast

WMO HEADER	AWIPS ID
FAUS41 KKCI	MKCFA1W
FAUS42 KKCI	MKCFA2W
FAUS43 KKCI	MKCFA3W
FAUS44 KKCI	MKCFA4W
FAUS45 KKCI	MKCFA5W
FAUS46 KKCI	MKCFA6W
FACA20 KKCI	OFAMKC
FAGX20 KKCI	OFAGX

c. CCFP

WMO HEADER	AWIPS ID
FAUS28 KKCI	CFP02
FAUS29 KKCI	CFP03
FAUS30 KKCI	CFP04

2. AAWU

a. SIGMET

WMO HEADER	AWIPS ID
WSAK01 PAWU	ANCSIGAK1
WSAK02 PAWU	ANCSIGAK2
WSAK03 PAWU	ANCSIGAK3
WSAK04 PAWU	ANCSIGAK4
WSAK05 PAWU	ANCSIGAK5
WSAK06 PAWU	ANCSIGAK6
WSAK07 PAWU	ANCSIGAK7
WSAK08 PAWU	ANCSIGAK8
WSAK09 PAWU	ANCSIGAK9
WVAK01 PAWU	ANCWSVAK1
WVAK02 PAWU	ANCWSVAK2

WVAK03 PAWU	ANCWSVAK3
WVAK04 PAWU	ANCWSVAK4
WVAK05 PAWU	ANCWSVAK5
WVAK06 PAWU	ANCWSVAK6
WVAK07 PAWU	ANCWSVAK7
WVAK08 PAWU	ANCWSVAK8
WVAK09 PAWU	ANCWSVAK9

b. AIRMET

The AAWU issues three sets of three AIRMETs (e.g., SIERRA, TANGO AND ZULU).

WAAK47 PAWU	ANCWA7O
WAAK48 PAWU	ANCWA8O
WAAK49 PAWU	ANCWA9O

c. FA

WMO HEADER	AWIPS ID
FAAK47 PAWU	ANCFA7H
FAAK57 PAWU	ANCFA7W
FAAK48 PAWU	ANCFA8H
FAAK58 PAWU	ANCFA8W
FAAK68 PAWU	ANCFA8T
FAAK49 PAWU	ANCFA9H
FAAK59 PAWU	ANCFA9W

d. VAA

WMO HEADER	AWIPS ID
FVAK21 PAWU	ANCVAAAK1
FVAK22 PAWU	ANCVAAAK2
FVAK23 PAWU	ANCVAAAK3
FVAK24 PAWU	ANCVAAAK4
FVAK25 PAWU	ANCVAAAK5

e. VAG (VAA graphic)

WMO Header	AWIPS ID
PFXD21 PAWU	not required
PFXD22 PAWU	not required
PFXD23 PAWU	not required

PFXD24 PAWU	not required
PFXD25 PAWU	not required

3. WFO Honolulu

a. SIGMET

WMO Header	AWIPS ID
WSPA01 PHFO	HFOSIGPAN
WSPA02 PHFO	HFOSIGPAO
WSPA03 PHFO	HFOSIGPAP
WSPA04 PHFO	HFOSIGPAQ
WSPA05 PHFO	HFOSIGPAR
WSPA06 PHFO	HFOSIGPAS
WSPA07 PHFO	HFOSIGPAT
WSPA08 PHFO	HFOSIGPAU
WSPA09 PHFO	HFOSIGPAV
WSPA10 PHFO	HFOSIGPAW
WSPA11 PHFO	HFOSIGPAX
WSPA12 PHFO	HFOSIGPAY
WSPA13 PHFO	HFOSIGPAZ
WCPA01 PHFO	HFOWSTPAN
WCPA02 PHFO	HFOWSTPAO
WCPA03 PHFO	HFOWSTPAP
WCPA04 PHFO	HFOWSTPAQ
WCPA05 PHFO	HFOWSTPAR
WCPA06 PHFO	HFOWSTPAS
WCPA07 PHFO	HFOWSTPAT
WCPA08 PHFO	HFOWSTPAU
WCPA09 PHFO	HFOWSTPAV
WCPA10 PHFO	HFOWSTPAW
WCPA11 PHFO	HFOWSTPAX
WCPA12 PHFO	HFOWSTPAY
WCPA13 PHFO	HFOWSTPAZ
WVPA01 PHFO	HFOWSVPAN
WVPA02 PHFO	HFOWSVPAO
WVPA03 PHFO	HFOWSVPAP
WVPA04 PHFO	HFOWSVPAQ
WVPA05 PHFO	HFOWSVPAR
WVPA06 PHFO	HFOWSVPAS
WVPA07 PHFO	HFOWSVPAT
WVPA08 PHFO	HFOWSVPAU
WVPA09 PHFO	HFOWSVPAV

WVPA10 PHFO HFOWSVPAW
WVPA11 PHFO HFOWSVPAX
WVPA12 PHFO HFOWSVPAY
WVPA13 PHFO HFOWSVPAZ

b. AIRMET

WAHW31 PHFO WA0HI

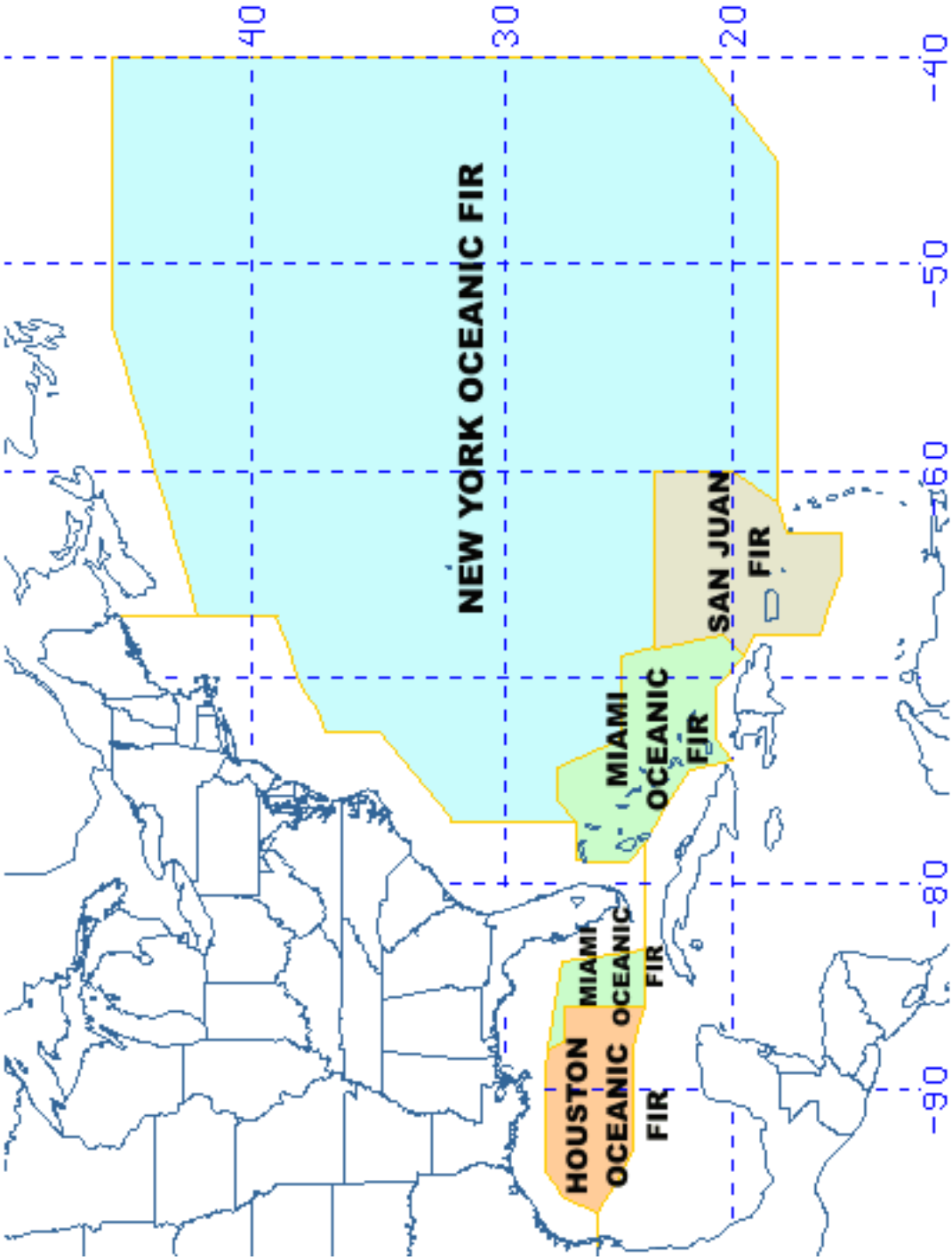
Note: Parsing is for geographical areas.

c. FA

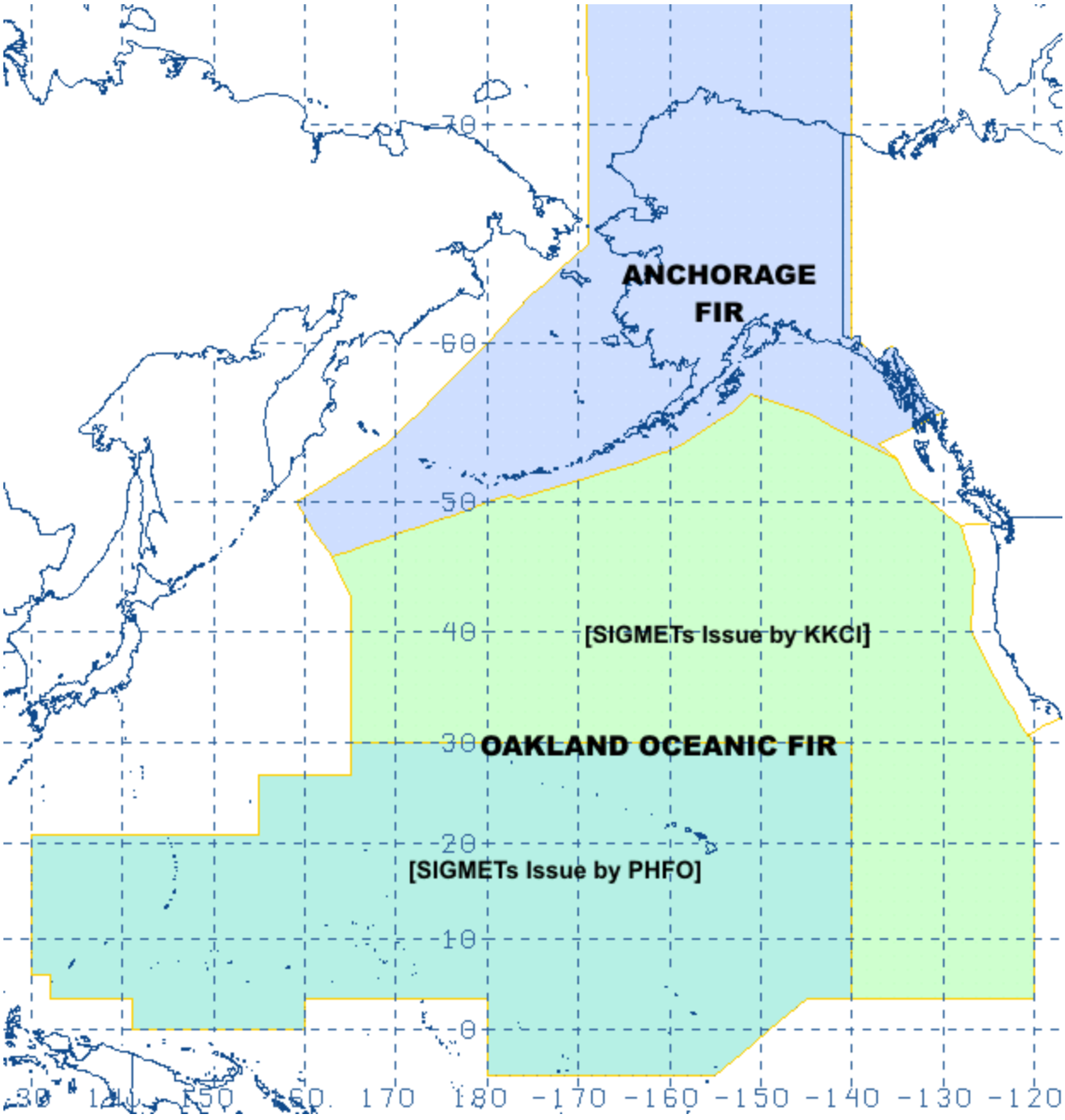
FAHW31 PHFO FA0HI

APPENDIX C -- Areas of Responsibility

1. AWC SIGMET area of responsibility in the Atlantic Basin.



2. SIGMET Areas of Responsibility in the Pacific Basin.

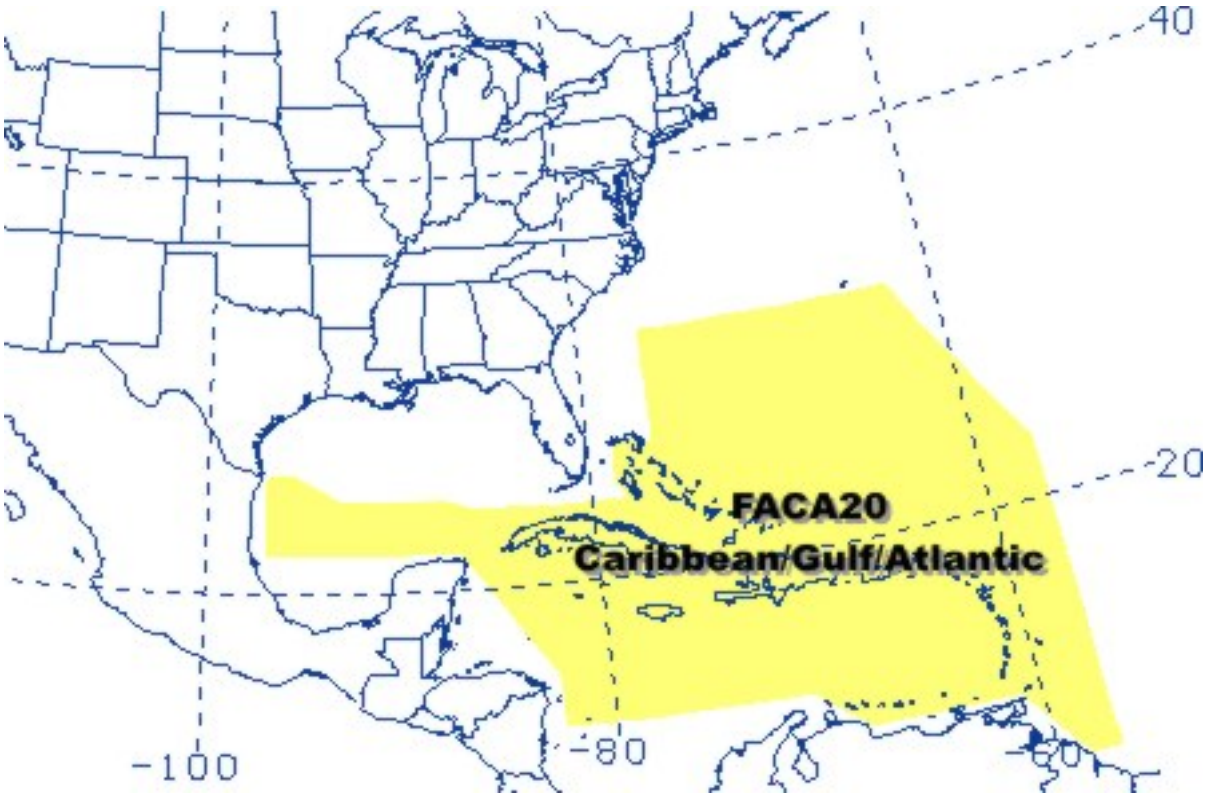


3. Convective SIGMETs Areas of responsibility for the CONUS.

4. FA Areas of Responsibility for the CONUS.

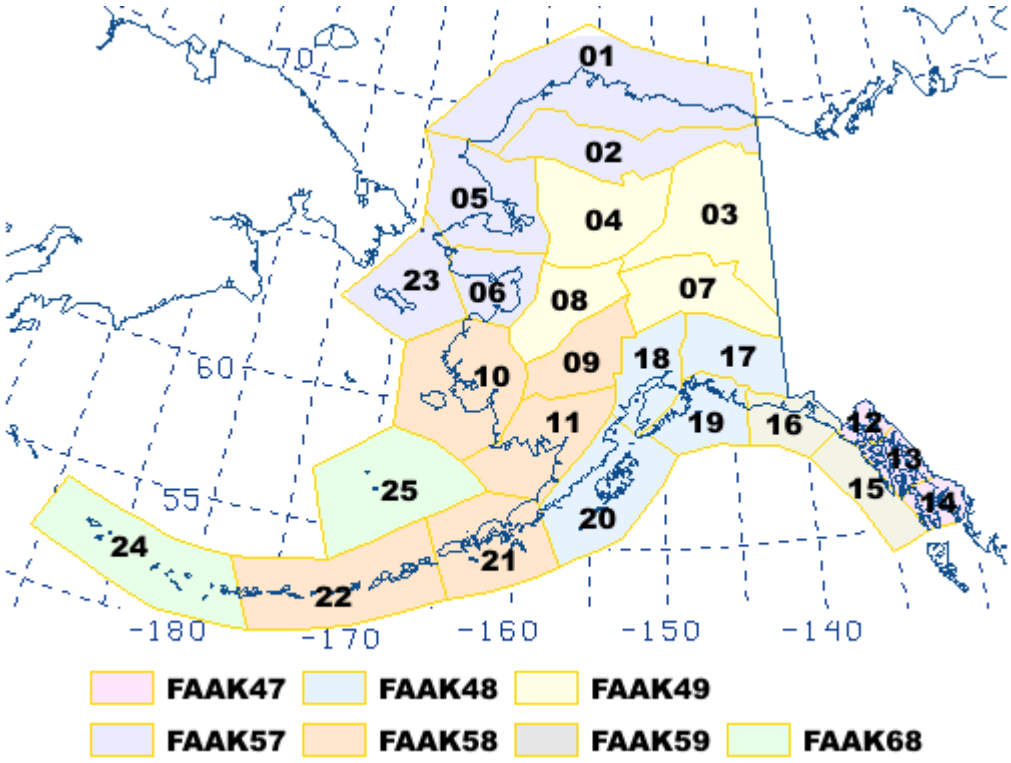
Gulf of Mexico FA.

b. Caribbean FA.



c. CONUS FAs.

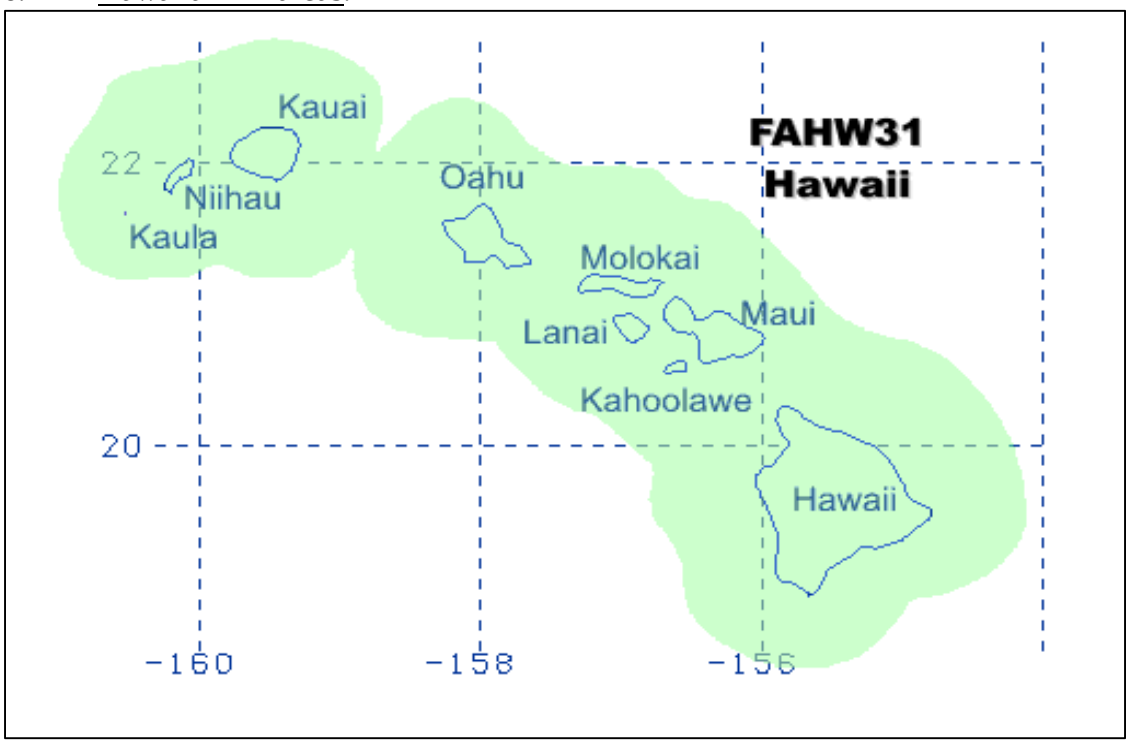
5. AAWU Flight Advisory and FA Reference Points.



Zones

1. Arctic Coast Coastal
2. North Slopes of the Brooks Range
3. Upper Yukon Valley
4. Koyukuk and Upper Kobuk Valley
5. Northern Seward Peninsula-Lower Kobuk Valley
6. Southern Seward Peninsula-Eastern Norton Sound
7. Tanana Valley
8. Lower Yukon Valley
9. Kuskowim Valley
10. Yukon-Kuskowim Delta
11. Bristol Bay
12. Lynn Canal and Glacier Bay
13. Central Southeast Alaska
14. Southern Southeast Alaska
15. Coastal Southeast Alaska
16. Eastern Gulf Coast
17. Copper River basin
18. Cook Inlet-Susitna Valley
19. Central Gulf Coast
20. Kodiak Island
21. Alaska Peninsula-Port Heiden to Unimak Pass
22. Unimak Pass to Adak
23. St. Lawrence Island-Bering Sea Coast
24. Adak to Attu
25. Pribilof Islands and Southeast Bering Sea

6. Hawaiian FA areas.



APPENDIX D -- Definition of Terms

Embedded (EMBD) thunderstorms or CB: Thunderstorms or CB clouds that are embedded in cloud layers or concealed by haze.

Extreme Turbulence (EXTREME TURB): Turbulence in which aircraft is violently tossed about and is practically impossible to control. It may cause structural damage.

Flight Information Region (FIR): An airspace of defined dimensions within which flight information service and alerting service are provided.

Flight Levels: A surface of constant atmospheric pressure which is related to a specific pressure datum, 1013.2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals.

Frequent (FRQ) thunderstorms or CB: Consisting of elements with little or no separation between adjacent thunderstorms with a maximum spatial coverage greater than 75 percent of the area affected by the phenomena at a fixed time or during the period of validity.

Instrument Meteorological Conditions (IMC): Ceiling GTE 500 feet to LT 1,000 feet and/or visibility GTE 1 to LT 3 miles. LIMC is a sub-category of IMC, thus, IMC conditions are ceiling LT 1,000 feet and /or visibility LT 3 miles.

Isolated (ISOL) thunderstorms or CB: Consisting of individual features affecting an area with a maximum spatial coverage less than 50 percent of the area affected by the phenomena at a fixed time or during the period of validity.

Line (of thunderstorms) (LINE TS): For SIGMET is defined as being at least 60 miles long with thunderstorms affecting at least 40 percent of its length.

Low Instrument Meteorological Conditions (LIMC): Ceiling LT 500 feet and/or visibility LT 1 SM. LIMC is a sub-category of Instrument Meteorological Conditions.

Marginal Visual Meteorological Conditions (MVMC): Ceiling GTE 1,000 feet to LTE 3,000 feet and/or visibility GTE 3 to LTE 5 miles.

Moderate Icing (MOD ICE): The rate of accumulation is such that even short encounters become potentially hazardous and use of deicing/anti-icing equipment or diversion is necessary.

Moderate Turbulence (MOD TURB): Turbulence that causes changes in attitude (pitch, roll, yaw) and/or altitude, but the aircraft remains in positive control at all times. It usually causes variations in indicated airspeed. A Turbulence Index ranging from 6 to 14, i.e., the peak value of the Eddy Dissipation Rate is between 0.1 and 0.3, reported from an aircraft during the en-route phase of flight based on Eddy Dissipation Rate.

Mountain Obscuration (MT OBSC): Conditions over significant portions of mountainous geographical areas are such that pilots in flight should not expect to maintain visual meteorological conditions or visual contact with mountains or mountain ridges near their route of flight.

Obscured (OBSC) thunderstorms or CB: Obscured by haze, smoke or cloud or cannot be readily seen due to darkness.

Occasional (OCNL) thunderstorms or CB: An area with a maximum spatial coverage between 50 and 75 percent of the area affected by the phenomena at a fixed time of during the period of validity.

Scattered (SCT): GTE 25 percent to LTE 50 percent of area affected.

Severe Icing (SEV ICE): The rate of accumulation is such that normal deicing/anti-icing equipment fails to reduce or control the hazard. Immediate diversion is necessary.

Severe Turbulence (SEV TURB): Turbulence that causes large, abrupt changes in altitude and/or attitude. It usually causes large variations in indicated airspeed. Aircraft may be momentarily out of control. A Turbulence Index ranging from 15 to 27, i.e., the peak value of the Eddy Dissipation Rate is exceeding 0.5, reported from an aircraft during the en-route phase of flight based on Eddy Dissipation Rate.

Visual Meteorological Conditions (VMC): Ceiling GT 3,000 feet and visibility GT 5 miles.

Volcanic Eruption: For this directive, a volcano eruption has occurred when an eruption report is received from a volcano observatory. A volcanic eruption is also considered to have occurred regardless of volcano observatory notification if reported by PIREP, or ground observer, or if remote sensing data indicates that an eruption has occurred based on satellite imagery or WSR-88D radar data or any other reliable sources are identified.

Volcanic Ash: For the purpose of this chapter volcanic ash is any ash that can be seen by any one or more of the following: satellite imagery (visible, IR, or multi channel), PIREPs, ground observations, radar and and ship reports.

Very High Frequency Omnidirectional Range (VOR): a type of short-range navigation system; an antenna location in this system is often referred to colloquially as a VOR.
Widely scattered (WDLY SCT): LT 25 percent of area affected.

Widespread (WDSPR): 50 percent or greater of the area affected.