

**NATIONAL WEATHER SERVICE INSTRUCTION 10-811**

**October 23, 2007**

**Operations and Services**

**Aviation Weather Services, NWSPD 10-8**

**ENROUTE FORECASTS AND ADVISORIES**

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

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**OPR:** W/OS23 (B. McNulty)

**Certified by:** W/OS23 (K. Johnston)

**Type of Issuance:** Routine

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**SUMMARY OF REVISIONS:** Supersedes NWSI 10-811, Enroute Forecasts and Advisories, dated May 17, 2005. Changes include:

Extensive revision, including renumbering of paragraphs as needed to reflect changes. This revision incorporates the CONUS products from NWSI 10-810 as well as the Outside CONUS products, since all have the same purpose and differ only in geographic coverage.

Product examples have been moved from paragraph 10 to Appendix A. Examples of text products conform to the new ICAO Annex 3. However, until November 7, 2007, AWC depicts latitude and longitude differently than noted in the Annex 3 in some products, due to FAA communications equipment constraints. Such differences are noted in the affected product examples. Paragraphs 2, 3, 4, 5, 6, 7, 8, and 9 were rewritten. Tropical Cyclone Advisories are discussed in a new paragraph 8, with Route Forecasts moved to paragraph 9. The previous Appendices A, B, and C have been renamed B, C, and D. The new text reads much more clearly, and updates the products and procedures for making the products to fit the most recent changes in enroute forecast requirements.

A major change is the removal of overlapping forecast areas along the Gulf Coast and over the Gulf of Mexico. This change to the Area Forecast product coverage eliminates the potential for conflicting forecasts over the same geographical area. Appendix C shows this change.

//SIGNED//

October 9, 2007

Dr. James E. Hoke

Date

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

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1. Purpose. This instruction describes the content and preparation of aviation en route forecasts and advisories 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) and Volcanic Ash Advisory (VAA).

2. General. Used together, the FA, SIGMET, and AIRMET provide forecast and advisory coverage for aviation forecast users operating within the U.S. domestic Flight Information Regions (FIRs). SIGMET information is also provided for Atlantic and Pacific oceanic FIRs and the Gulf of Mexico controlled by the U.S. TCAs and VAAs are provided for their respective areas of responsibility per international agreements.

2.1 Definitions.

- 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: An advisory in abbreviated plain language concerning the occurrence or expected occurrence of potentially hazardous en route weather phenomena that may affect the safety of aircraft operations.
- d. TCA: An advisory in abbreviated plain language that provides information to Meteorological Watch Offices (MWO), World Area Forecast Centers (WAFC) and international data banks regarding the position, forecast direction and speed of movement, central pressure and maximum surface winds of tropical cyclones.
- e. VAA: An advisory in abbreviated plain language that provides information to MWOs, area control centers, flight information centers, WAFCs, and international data banks regarding the horizontal and vertical extent and movement of volcanic ash in the atmosphere following a volcanic eruption.

3. Responsibility for Issuance. The NWS operates three MWOs designated to provide meteorological service for domestic and international air navigation. All area forecasts, SIGMETs and AIRMETs included in this instruction are produced and issued by these MWOs: the Aviation Weather Center (AWC), the Alaska Aviation Weather Unit (AAWU), and the Weather Forecast Office (WFO) in Honolulu. 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 (CONUS).
  - (2) New York, Houston, Miami, and San Juan Oceanic FIRs.
  - (3) Oakland Oceanic FIR north of 30 north latitude and east of 165 east longitude and north of 3 north latitude and east of 140 west longitude.
- b. AAWU:
  - (1) Anchorage Continental FIR.
  - (2) Anchorage Oceanic FIR.

- c. WFO Honolulu:
  - (1) Oakland Oceanic FIR south of 30 north latitude and between of 140 west longitude and 130 east 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 (AMSL), 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).

Due to limitations with some FAA data systems, AWC will use the following format for references to latitude and longitude until November 7, 2007:  
6030N15030W 5800N15200W 5930N15100W.

- c. Messages will be prepared in abbreviated plain language using contractions from the Federal Aviation Administration (FAA) Order 7340.1Y 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). An FA is an area forecast in an abbreviated plain language of specified weather phenomena covering a flight information region or other area designated by the meteorological authority.

5.1 Areas of Responsibility.

- 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.

Note: Maps of respective areas of responsibility are included in Appendix C.

## 5.2 CONUS FA Description.

- a. Vertical coverage: Each FA will cover the airspace between the surface and 45,000 feet AMSL.
- 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) 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) Southeast (FAUS42 KKCI): North Carolina - NC, South Carolina - SC, Georgia - GA, Florida - FL, and adjacent Coastal Waters east of 85W longitude.
  - (3) 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) South Central (FAUS44 KKCI): Oklahoma - OK, Texas - TX, Arkansas - AR, Tennessee - TN, Louisiana - LA, Mississippi - MS, Alabama - AL.
  - (5) Rocky Mountain (FAUS45 KKCI): Idaho - ID, Montana - MT, Wyoming - WY, Nevada - NV, Utah - UT, Colorado - CO, Arizona - AZ, and New Mexico - NM.
  - (6) 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 Universal Time Coordinated (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 AGL and below FL180
    - (b) cloud bases and tops associated with (a)
    - (c) precipitation
    - (d) visibilities between 3 and 6 statute miles (SM) and obstruction(s) to visibility
    - (e) sustained surface winds 20 knots or greater
  - (3) 12 to 18-hour categorical outlook: IFR, marginal VFR (MVFR), or VFR, including expected precipitation and/or obstruction(s) to visibility

### 5.3 Hawaii FA Description.

- a. Vertical coverage: FA will cover the airspace between the surface and 45,000 feet AMSL.
- 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) 12- to 18-hour categorical outlook: IFR, marginal MVFR, or VFR, including expected precipitation and/or obstructions to visibility

5.4 Gulf of Mexico FA (FAGX) Description.

- a. Vertical coverage: The FAGX will cover the airspace between the surface and 45,000 feet AMSL.
- 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 with each geographical section having an entry even if it is negative.
  - (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
    - (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) 12- to 24-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.

5.5 Caribbean FA (FACA) Description.

- a. Vertical coverage: The FACA will cover the airspace between the surface and 24,000 AMSL (approximately 400 millibars).
- b. Horizontal coverage: The FACA coverage is 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 have an entry even if it is negative.
  - (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
    - (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) 12- to 24-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

5.6 Alaska FA Description.

- a. Vertical coverage: Each FA will cover the airspace between the surface and 45,000 feet AMSL.
- 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) SIGMET information for thunderstorms and volcanic ash
    - (b) AIRMET information for IFR ceiling and visibility, mountain obscuration, and strong surface winds
    - (c) cloud amount (SCT, BKN or OVC) with bases and tops
    - (d) visibilities of 6 SM or less with obstruction(s) to visibility
    - (e) precipitation and thunderstorms
    - (f) surface wind greater than 20 knots
    - (g) mountain pass conditions using categorical terms (for selected zones only)
    - (h) 12- to 30-hour categorical outlook (VFR, MVFR, and IFR)

- (3) Turbulence: a description of expected turbulence conditions including the following elements.
  - (a) SIGMET information for turbulence
  - (b) AIRMET information for turbulence or low level wind shear
  - (c) Turbulence not meeting SIGMET or AIRMET criteria during the 6- to 12-hour period
  - (d) 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) SIGMET information for icing
  - (b) AIRMET information for icing and freezing precipitation
  - (c) Icing not meeting SIGMET or AIRMET criteria during the 6- to 12-hour period
  - (d) Freezing level
  - (e) If no significant icing is forecast, NIL SIG will be entered followed by the freezing level.

5.7 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.

5.8 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 FAA product line to the date/time of 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 may 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 practical to give notice to operators and aircrews of potentially hazardous en-route conditions.

6.1 CONUS – Non-convective SIGMET Description.

6.1.1 Issuance Criteria. A SIGMET will be issued 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 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 the whether the condition will continue during the 4 hours beyond the valid time of the SIGMET

6.1.4 SIGMET Cancellations. A CONUS 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 CONUS 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 CONUS 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 CONUS - Convective SIGMET Description.

6.2.1 Routine Issuance Criteria. A convective SIGMET will be issued 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 must 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 (TORNADOES...HAIL TO 2.5 IN...WIND GUSTS TO 70KT POSS)

**NOTE:** Tropical Cyclone information will be added to remarks section of the CONUS 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



- 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.

6.3.2 SIGMETs for Volcanic Ash Cloud. A SIGMET for volcanic ash cloud will be issued for volcanic eruptions. A volcanic eruption is any volcanic activity including the emission of volcanic ash, regardless of the eruption's magnitude. MWOs preparing SIGMETs for volcanic ash should use the forecast position information available from advisories provided by the Volcanic Ash Advisory Center (VAAC). Initial Volcanic Ash 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 six-hour 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.

6.3.3 SIGMETs 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.

6.3.4 Format. O-CONUS 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 referring, where possible to latitude and longitude, 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 Intensifying (INTSF), Weakening (WKN), or No Change (NC).
- g. Forecast position of volcanic ash cloud or the center of the tropical cyclone at the end of the validity period of the SIGMET message.

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

6.3.6 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 4-hour valid period (6-hour for VA and TC SIGMETs).

6.3.7 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 cancels 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.

6.3.8 Interchange of SIGMETs Between Adjacent U.S. MWOs. When hazardous weather covered by a SIGMET moves from one MWO area of responsibility to the adjacent MWO area of responsibility, the originating MWO will cancel the existing SIGMET. The adjacent MWO will issue a new SIGMET under a new SIGMET series identifier.

6.3.9 Continuous SIGMET Criteria Across Two MWO's Adjacent Boundaries. When an area of continuous hazardous weather meeting SIGMET criteria extends from one MWO's area of responsibility into the adjacent MWO's area, the two MWOs will determine whether to issue two separate SIGMETs or have one MWO issue a single SIGMET for the hazardous weather in both areas.

6.3.10 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 adapted 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). 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 for dissemination to all pilots in flight to enhance safety and are of particular concern to operators and pilots of aircraft sensitive to the phenomena described and to pilots without instrument ratings. Freezing level information is also included. AIRMETs are issued by the responsible MWO to give notice to operators and aircrews of potentially hazardous en route conditions.

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 (BS).
- b. Widespread mountain obscuration (MTN OBSCN)
  - (1) Weather phenomena causing the obscurement are included, but 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) The range of freezing level altitudes of MOD ICE is given when the bottom altitude is freezing level (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 4,000 feet AMSL (or SFC as appropriate) are included.
- f. Non-convective low-level windshear 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 at 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 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 one (1) after 0000 UTC each day).
- d. List of affected states (CONUS only).
- e. Location of phenomenon using VORs or other well known geographic features.
- 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. Remarks concerning the continuance of the phenomenon during the six (6) hours following the AIRMET ending time.
- j. CONUS and Hawaii AIRMETs: A separate AIRMET outlook will be included in the AIRMET bulletin when conditions meeting AIRMET 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 when conditions are expected to occur 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 7.4 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. Tropical Cyclone Advisory (TCA). Tropical Cyclone Advisory Centers (TCACs) issue TCAs in abbreviated plain language concerning the position, direction and speed of movement, central pressure and maximum surface wind near the center of tropical cyclones within their area of responsibility.

8.1 Tropical Cyclone Advisory Center (TCAC). A TCAC is a meteorological center designated by ICAO regional air navigation agreement to provide advisory information to MWOs, WAFCS and international operational meteorological data (OPMET) data banks concerning tropical cyclones. The U.S. operates two Tropical Advisory Centers covering the North Atlantic Ocean and central and eastern portion of the North Pacific Ocean. The responsibilities of the TCACs are defined in the International Standards and Recommended Practices for Meteorological Service for International Air Navigation (ICAO Annex 3). TCACs continuously monitor the development of tropical cyclones in their area of responsibility using geostationary and polar-orbiting satellite data, radar data and other meteorological information.

8.2 TCA Issuance, Valid Time and Updates. A TCA is issued for each tropical cyclone, as necessary, but at least every six hours.

8.3 TCA Format. The TCA format will conform to the “Template for advisory message for tropical cyclones” included in ICAO Annex 3.

9. Volcanic Ash Advisory (VAA). The VAA is advisory information on volcanic ash cloud issued in abbreviated plain language, using approved ICAO abbreviations and numerical values of self explanatory nature.

9.1 Volcanic Ash Advisory Center (VAAC). A VAAC is a meteorological office designated by ICAO regional air navigation agreement to provide advisory volcanic ash information to MWOs, WAFCS, area control centers, flight information centers and international OPMET data banks regarding the lateral and vertical extent and forecast movement of volcanic ash in the atmosphere following a volcanic eruption. The U.S. operates two VAACs. The duties of a VAAC include:

- a. monitoring relevant geostationary and polar-orbiting satellite data to detect the existence and extent of volcanic ash in the atmosphere in the area concerned;
- b. activating the volcanic ash numerical trajectory/dispersion model in order to forecast the movement of any ash cloud which has been detected or reported; and
- c. issuing advisory information regarding the extent and forecast movement of the volcanic ash cloud.

9.2 VAA Issuance. VAAs are issued as necessary, but at least every six hours until such time as the volcanic ash cloud is no longer identifiable from satellite data, no further reports of volcanic ash are received from the area, and no further eruptions of the volcano are reported.

9.3 VAA Format. The VAA format will conform to the “Template for advisory message for volcanic ash” included in ICAO Annex 3.

10. International Aviation Route Forecasts (ROFOR). International ROFORs are prepared for and issued several hours in advance of regularly scheduled flights. The only NWS office which routinely issues ROFORs is Weather Forecast Office (WFO) Honolulu due to its designation as an ICAO MWO.

10.1 ROFOR Criteria. WFO Honolulu will honor all ROFOR requests for flights within the Pacific Region beginning or ending in, or having most of the flight path within its area of responsibility, which is the Oakland Oceanic FIR south of 30N, between 140W and 130E.

10.2 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.

10.3 ROFOR Amendments. ROFORs are not required to be amended.

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

10.5 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.

**APPENDIX A - Examples**

1. SIGMETs

a. CONUS – Non Convective SIGMET

WSUS01 KPCI 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 OBS AND FCST BLW 080. CONDS CONTG BYD 1000Z.

b. CONUS – Convective SIGMET

WSUS33 KPCI 091855  
SIGW  
CONVECTIVE SIGMET...NONE

.  
OUTLOOK VALID 092055-100055  
TS ARE NOT EXPD.

.  
WSUS32 KPCI 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 FROM 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) Tropical Cyclone example:

WSUS31 KPCI 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 TROPICAL PREDICTION CENTER FOR  
DETAILS ON TROPICAL STORM ALBERTO.

c. O-CONUS SIGMET

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

Until November 7, 2007, AWC utilizes the following format for describing the latitude and longitude coordinates of O-CONUS SIGMETS:

WSNT10 KKCI 270030  
SIGA0J  
KZNY SIGMET JULIETT 5 VALID 270030/270430 KKCI-  
NEW YORK OCEANIC FIR FRQ TS OBS AND FCST WI 3130N06400W 3000N06200W  
2630N06430W 2800N06600W 3130N06400W. CB TOP FL350. MOV SE 30KT. NC

(1) Tropical Cyclone example:

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

Until November 7, 2007, AWC uses a format that places the N, S, E, and W designation after the degrees.

(2) Volcanic Ash Cloud example:

WVNT06 KKCI 082030  
TJZS SIGMET FOXTROT 2 VALID 082030/090230 KKCI-  
SAN JUAN FIR VA FROM SOUFRIERE HILLS LOC 1642N06210W  
VA CLD OBS AT 2030Z SFC/060 WI N1730 W06400 - N1700 W06300 - N1650 W06300 -  
N1710 W06400 - N1730 W06400. MOV W 15KT. FCST 0230Z VA CLD APRX N1730  
W06500 - N1700 W06300 - N1650 W06300 - N1710 W06500 - N1730 W06500.

Until November 7, 2007, AWC uses a format that places the N, S, E, and W designation after the degrees.

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 IMDT N THRU E OF MTS.  
MOD TURB BLW 100. CONDS CONTG BYD 1600Z.

c. Alaska AIRMETS

WAAK47 PAWU 011740  
WA70  
JNUS WA 011745  
AIRMET SIERRA FOR IFR AND MT OBSC VALID UNTIL 012100

.  
LYNN CANAL AND GLACIER BAY JB  
W OF LYNN CANAL..MTS OCNL OBSC IN CLDS/PCPN.  
SPRDG E. INTSF.

.  
CNTRL SE AK JC  
PAOH-PAFE LN W..MTS OCNL OBSC IN CLDS/PCPN. SPRDG  
E. INTSF.

.  
ERN GLF CST JE  
MTS OCNL OBSC IN CLDS/PCPN. IMPRG.

.  
SE AK CSTL WTRS JF AAA  
OCNL CIG BLW 010 VIS BLW 3SM SN BLSN. NC.

3. FAs.

a. CONUS FA

(1) BOS example:

FAUS41 KKCI 150845  
FA1W  
BOSC FA 150845  
SYNOPSIS AND VFR CLDS/WX  
SYNOPSIS VALID UNTIL 160300  
CLDS/WX VALID UNTIL 152100...OTLK VALID 152100-160300  
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...CDFNT EXTDD FROM CSTL SXNS OF ME SWWD THRU LOW OVR  
WRN MA...THEN CONTD SWWD ACRS SERN PA AND NERN WV INTO A LOW OVR  
SWRN KY. FNT WILL SAG SLOLY SWD DURG PD. BY 03Z...CDFNT WILL EXTD  
FROM SRN NEW ENG CSTL WTRS ACRS THE DELMARVA PENINSULA AND ALG  
THE NC/TN BDR INTO A LOW PRES SYS OVR NWRN AL.

.  
ME NH VT  
CIG BKN-OVC020 LYR FL240. OCNL -RA BR. BECMG 1518 OCNL -SN BR OVR NRN

PTNS AREA. OTLK...MVFR CIG.

.  
MA RI CT

SCT050 BKN080-100 Lyr FL240. OCNL VIS 3SM BR. BECMG 1215 WRN MA/CT ISOL -TSRA CB TOP FL310. BECMG 1518 CIG OVC 010-020. OCNL -RA BR. OTLK...MVFR CIG RA BR.

.  
NY LO

SERN NY...SCT050 BKN080-100 Lyr FL240. OCNL VIS 3SM BR. BECMG 0912 WDLY SCT -TSRA CB TOPS FL310. BECMG 1518 CIG OVC 010-020. OCNL -RA BR. OTLK...MVFR CIGS RA BR.

NRN AND WRN NY/LO...SCT-BKN015-025 BKN-OVC030-050 Lyr FL240. OCNL -RA BR.

BECMG 1215 OCNL -SN BR. BECMG 1821 SCT 030-050 BKN100 TOP 150. OTLK...VFR.

.  
PA NJ

NRN AND WRN PA...CIG OVC010-020 Lyr FL240. OCNL -RA BR. BECMG 1821 BKN-SCT015-025 OVC-BKN050 TOP 150. OTLK...MVFR CIG BR.

SERN PA/NJ...BKN050 BKN-OVC080-100 Lyr FL240. WDLY SCT -TSRA CB TOP FL330. BECMG 1518 CIG OVC010-020. OCNL -RA BR. OTLK...MVFR CIG RA BR.

.  
OH LE

CIG OVC020 Lyr FL240. OCNL -RA BR. BECMG 1518 NRN OH/LE PTNS...OCNL -RASN BR. BECMG 1821 CIGS BKN-SCT015-025 OVC-BKN050 TOP 150. OTLK...MVFR CIG BR.

.  
WV

SCT-BKN060 BKN-OVC100-120 Lyr FL240. OCNL VIS 3SM BR. BECMG 1518 WDLY SCT -SHRA/ISOL -TSRA CB TOPS FL330. BECMG 1821 CIG OVC010-020. OCNL -RA BR. OTLK...MVFR CIG RA BR.

.  
VA MD DC DE

SCT-BKN060 BKN-OVC100-120 Lyr FL240. OCNL VIS 3SM BR. BECMG 1518 WDLY SCT -SHRA/ISOL -TSRA CB TOP FL330. BECMG 1821 CIG OVC010-020. OCNL -RA BR. OTLK...MVFR CIG RA BR.

.  
CSTL WTRS

NEW ENG CSTL WTRS...SCT050 BKN080-100 Lyr TO FL240. OCNL VIS 3SM BR.

SCT AREAS OF ST AND BR/FG. BECMG 1518 ISOL -TSRA CB TOP FL310. BECMG 1821 CIG OVC 010-020. OCNL -RA BR. OTLK...MVFR CIGS RA BR.

RMNDR CSTL WTRS...SCT050 SCT-BKN080-100 Lyr TO FL240. BECMG 1821 WDLY SCT -SHRA/ISOL -TSRA CB TOP FL310. OTLK...MVFR CIG SHRA BR.

(2) DFW example:

FAUS44 KPCI 121115

FA4W

DFWC FA 121115 AMD

SYNOPSIS AND VFR CLDS/WX

SYNOPSIS VALID UNTIL 130400

CLDS/WX VALID UNTIL 122200...OTLK VALID 122200-130400

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 LOW S PLAINS OF TX WITH CDFNT TO NR BIG BEND..STNR  
FNT FM LOW-NRN LA. BY 04Z LOW NR JCTN WITH STNR FNT TO NRN LA-SRN  
AL..CDFNT EXTDG SWD FM LOW. HIGH OVR NERN GULF MEX.

.

OK

PNHDL...CIG OVC010 TOP 100. TIL 16Z VIS 3-4SM BR. BECMG 1618 CIG OVC020.

OTLK...VFR.

RMNDR WRN HLF...CIG OVC010 TOP TO 080. TIL 16Z VIS 3-5SM BR. 18Z CIG BKN025.

WDLY SCT -SHRA. OTLK...MVFR CIG SHRA.

ERN HLF...CIG BKN-OVC015 TOP 060. TIL 15Z VIS 3-5SM BR. BECMG 1518 CIG

BKN050 BKN100 TOP 150. OTLK...VFR.

.

NWRN TX

PNHDL...CIG OVC010 TOP 100. VIS 3-5SM BR. BECMG 1618 CIG OVC015.

OTLK...MVFR CIG.

S PLAINS...CIG OVC010-020 LYR FL250. N PTN SCT VIS 3-5SM -SHRA. S PTN OCNL 3-  
5SM BR. BECMG THRUT 1618 CIG BKN-OVC025 TOP 100. OTLK...MVFR CIG.

.

SWRN TX

EXTRM W TX/BIG BEND...SCT-BKN100 LYR FL250. 20Z SCT080 BKN140. WDLY SCT  
-TSRA. CB TOP FL400. OTLK...VFR TSRA.

RMNDR...SCT100. 18Z AGL SCT050 SCT100. WDLY SCT -TSRA. CB TOP FL400.

OTLK...VFR TSRA.

.

N CNTRL TX

WRN HLF...CIG OVC010 TOP 100 LYR FL250. TIL 16Z VIS OCNL 3-5SM BR. BECMG  
1820 CIG BKN-OVC030. WDLY SCT -SHRA/-TSRA. CB TOP FL400. OTLK...MVFR CIG  
SHRA TSRA.

ERN HLF...CIG OVC010 TOP 080 BKN150 LYR FL250. VIS 4-5SM SHRA BR. BECMG  
1518 CIG OVC020 TOP 080. OTLK...VFR.

NERN TX

CIG OVC010-020 BKN100 LYR FL250. VIS 4-5SM -RA BR. OTLK...MVFR CIG.

.

SERN TX

CSTL PLAINS...CIG OVC010 TOP 040. VIS 3-4SM BR. SCT TSRA POSS SEV. CB TOP

FL400. OTLK...MVFR CIG TSRA.  
INLAND...CIG OVC010 LZR FL250. VIS 3-5SM SHRA BR. SCT TSRA POSS SEV. CB TOP  
FL400. OTLK...MVFR CIG SHRA TSRA.

S CNTRL TX

LWR RIO GRANDE VLY...CIG OVC-BKN010 TOP 025. 16Z AGL SCT030 BKN050 TOP  
100. AFT 18Z WDLY SCT -TSRA CB TOP FL400. OTLK...VFR TSRA.  
CSTL PLAINS...CIG OVC010 TOP 100 LZR FL250. SCT TSRA POSS SEV. CB TOP FL400.  
18Z CIG BKN-OVC025 TOP 100. SCT -TSRA CB TOP FL350. OTLK...MVFR CIG TSRA.  
HILL COUNTRY/RMNR...CIG OVC010 LZR FL250. BECMG 1618 CIG OVC020.  
OTLK...MVFR CIG TSRA.

AR

NRN HLF...AGL SCT050 SCT-BKN100 BKN LZR FL250. OTLK...VFR.  
SRN HLF...SCT-BKN120 LZR FL250. BECMG 1618 CIG BKN-OVC030 TOP 100. WDLY  
SCT -SHRA. OTLK...VFR SHRA TSRA.

LA

NRN/CNTRL/SWRN...AGL SCT020. BECMG 1215 CIG BKN-OVC025 TOP100. VIS OCNL  
5SM -SHRA. AFT 14Z WDLY SCT TSRA. CB TOP FL400. OTLK...MVFR CIG SHRA  
TSRA.  
SERN...AGL SCT010. TIL 15Z VIS 3-5SM BR. 18Z AGL SCT030 BKN080 LZR FL250.  
OTLK...VFR.

TN

WRN...SKC. BECMG 1820 SCT050. OTLK...VFR.  
MID...SKC. OTLK...VFR.  
ERN...SKC. OTLK...VFR.

MS

SKC BLW FL180. 14Z EXTRM S VIS 3-5SM BR. 18Z AGL SCT040. OTLK...VFR SHRA.

AL

NRN HLF...SKC BLW FL180. OTLK...VFR.  
SRN HLF...SCT-BKN090 TOP150. CSTL PLAINS VIS 3-5SM BR. 15Z AGL SCT030.  
OTLK...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. HGTS MSL.

.  
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 ISOL 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 SCT-BKN060 TOPS 080. 23Z SCT030 SCT-  
BKN060 TOPS 080 ISOL BKN030 -SHRA. OUTLOOK...VFR.

.  
BIG ISLAND LOWER SLOPES...COAST AND ADJ WATERS FROM SOUTH CAPE TO  
PHKO TO UPOLU POINT.  
SCT050 ISOL BKN050 TOPS 080. 18Z FEW050. 23Z SCT-BKN050 TOPS 080.  
OUTLOOK...VFR.

.  
N AND E FACING SLOPES...COAST AND ADJ WATERS OF THE REMAINING  
ISLANDS.  
SCT020 BKN045 TOPS 070 TEMPO BKN020 VIS 3-5SM -SHRA...FM OAHU EASTWARD  
ISOL CIG BLW 010 AND VIS BLW 3SM SHRA BR WITH TOPS 120. 22Z SCT025  
SCT-BKN050 TOPS 070 ISOL BKN025 3-5SM -SHRA. OUTLOOK...VFR.

REST OF AREA.

SCT035 SCT-BKN050 TOPS 070 ISOL BKN030 -SHRA. 20Z SCT050 ISOL SCT030  
BKN045 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.  
ASSOCIATED OCCLUDED FRONT FM PALJ..KENNEDY ENTRANCE..SE WL MOV NE  
TO PAMH..PACV..SE BY 08Z.

.  
COOK INLET AND SUSITNA VALLEY AB...VALID UNTIL 260200  
...CLOUDS/WX...  
\*\*\*AIRMET IFR/MT OBSC\*\*\*AK RANGE/W SIDE COOK INLET..OCNL CIGS BLW 10  
VIS BLW 3SM -RA BR. NC...  
OTHERWISE..AK RANGE/W SIDE INLET..SCT005 OVC020 VIS 3-5SM -RA BR.  
ELSEWHERE..SCT025 BKN045 OVC080 LYR ABV TO FL250. OCNL BKN025 OVC045  
-RA.  
COOK INLET..SFC WND NE 20G30 KTS. THRU TERRAIN GAPS..ERN MTS/AK  
RANGE..SFC WND E 30G60 KTS.  
OTLK VALID 260200-262000...MVFR CIG RA WND.  
PASSES...LAKE CLARK..MERRILL..RAINY..IFR CIG RA WND. WINDY..MVFR CIG RA.  
PORTAGE..IFR CIG RA WND.  
...TURB...

\*\*\*SIGMET\*\*\*KILO 1 VALID 251607/252000 PANC-  
OCNL SEV TURB FCST BLW 080 WI AN AREA FM TKA-JOH-MDO-AKN-SQA-TKA.  
THIS IS THE AREA S OF A PAHZ-PATK LN.  
\*\*\*AIRMET TURB/LLWS\*\*\*OCNL MOD TURB BLW 120. LLWS. NC...  
...ICE AND FZLVL...  
\*\*\*AIRMET ICE\*\*\*OCNL MOD RIME/MX ICEIC 050-160. FZLVL 050. NC...

.  
COPPER RIVER BASIN AC...VALID UNTIL 260200  
...CLOUDS/WX...  
FEW045 SCT090 BKN-OVC180 TOP FL250.  
SFC WND SE G 25 KTS.  
WRN MTS..ISOL BKN025 OVC045 4SM -SHRA.  
OTLK VALID 260200-262000...VFR.

PASS...TAHNETA..MVFR CIG.  
...TURB...  
NIL SIG.  
...ICE AND FZLVL...  
NIL SIG. FZLVL 050.

.  
CNTRL GLF CST AD...VALID UNTIL 260200  
...CLOUDS/WX...  
\*\*\*AIRMET MT OBSC\*\*\*MTS OBSCD IN CLDS/PRECIPITATION. NC...  
SCT020 OVC040 LYRD ABV TO FL250 -RA.  
OCNL SCT005 OVC020 VIS 3-5SM -RA BR.  
SFC WND E 20G35 KTS. THRU TRRN GAPS WND E-NE 25G50 KTS.  
ALONG KENAI PENINSULA..ISOL CIGS BLW 10 VIS BLW 3SM RA BR.  
OTLK VALID 260200-260200..MVFR CIG RA WND.  
...TURB...  
\*\*\*SIGMET\*\*\*KILO 1 VALID 251607/252000 PANC-  
OCNL SEV TURB FCST BLW 080 WI AN AREA FM TKA-JOH-MDO-AKN-SQA-TKA.  
THIS IS THE AREA E OF A JOH-PAMD LN.  
\*\*\*AIRMET TURB/LLWS\*\*\*OCNL MOD TURB BLW 120. LLWS NR TRRN. NC...  
...ICE AND FZLVL...  
\*\*\*AIRMET ICE\*\*\*OCNL MOD RIME ICEIC 050-160. FZLVL 050. NC...

.  
KODIAK ISLAND AE...VALID UNTIL 260200  
...CLOUDS/WX...  
\*\*\*AIRMET MT OBSC\*\*\*MTS OBSCD IN CLDS/PRECIPITATION. NC...  
SCT020 OVC040 LYRD ABV TO FL250 -RA.  
OCNL SCT005 OVC020 VIS 3-5SM -RA BR.  
E SIDE..ISOL CIGS BLW 10 VIS BLW 3SM RA BR.  
SFC WND SE G 25 KT.  
OTLK VALID 260200-262000...MVFR CIG SHRA WND. AFT 06Z..VFR.  
...TURB...  
NIL SIG.  
...ICE AND FZ LVL...  
ISOL MOD RIME ICEIC 030-120. FZLVL 030.

4. Tropical Cyclone Advisory.

FKNT24 KNHC 152044  
TCANT4  
TROPICAL CYCLONE MARCO ICAO ADVISORY NUMBER 6  
NATIONAL WEATHER SERVICE MIAMI FL  
2100Z TUE OCT 15 2002

TC ADVISORY  
DTG 20021015/2100Z  
TCAC: KNHC

TC: MARCO  
 NR: 06  
 PSN: N1906 W08212  
 MOV: NNE 09KT  
 C: 996HPA  
 MAX WIND: 050KT  
 FCST PSN + 06 HR: 160000 N1918 W08036  
 FCST MAX WIND + 06 HR: 055KT  
 FCST PSN + 12 HR: 160600 N2024 W08054  
 FCST MAX WIND + 12 HR: 060KT  
 FCST PSN + 18 HR: 161200 N2124 W07948  
 FCST MAX WIND + 18 HR: 075KT  
 FCST PSN + 24HR: 161800 N2230 W07842  
 FCST MAX WIND + 24 HR: 080KT  
 NEXT ADVISORY: 20021016/0300Z

5. Volcanic Ash Advisory.

FVAK21 PAWU 190615  
 VOLCANIC ASH ADVISORY

ISSUED: 20030419/0615Z  
 VAAC: ANCHORAGE  
 VOLCANO: CHIKURACHKI, 900-36  
 LOCATION: N5019 E15527  
 AREA: KAMCHATKA NORTHERN KURIL ISLANDS  
 SUMMIT ELEVATION: 7674 FT (2339 M)  
 ADVISORY NUMBER: 2003-02  
 INFORMATION SOURCE: SATELLITE  
 AVIATION COLOR CODE: NOT GIVEN  
 ERUPTION DETAILS: NEW ERUPTION OCCURRED APPROX 190500 UTC.  
 HEIGHT IS ESTIMATED AT FL300. ESTIMATE IS BASED  
 ON OBSERVED AND MODEL WINDS. MOVEMENT  
 APPEARS TO BE E AT 75 KTS.

OBS ASH DATA/TIME: 19/0500Z  
 OBS ASH CLOUD: VA EXTENDS FM NEAR VOLCANO EWD TO N50 E160.  
 FCST ASH CLOUD +6HR: 30NM EITHER SIDE OF LN FM NIPPI N49 E159 - N50 E175.  
 FCST ASH CLOUD +12HR: 30NM EITHER SIDE OF LN FM N50 E168 - N50 E180.  
 FCST ASH CLOUD +18HR: 30NM EITHER SIDE OF LN FM N51 E175 - N50 E185.  
 NEXT ADVISORY: 20030419/1500Z  
 REMARKS: UPDATES AS SOON AS INFO BECOMES AVAILABLE.

6. ROFORs.

Majuro to Kwajalein Route

FROC32 PHFO 301857  
 RFRKWA  
 FOR WSO MAJURO  
 ROFOR VALID 2102 FOR ROUTE PKMJ TO PKWA AND RETURN  
 01208 4100P09 09010 4180M05 08015  
 SIGWX...NIL.

Tarawa to Majuro Route

FROC33 PHFO 291510  
 RFRFFN  
 FOR PKMJYMYX  
 ROFOR VALID 2008 FOR ROUTE NGTA TO PKMJ  
 01205 4100P08 06010 4140P00 06015 4180M03 07020  
 01201 4100P08 09015 4140P00 09020 4180M04 10025  
 SIGWX...ISOL TCU/VIS 5SM SHRA  
 PKMJ 221120Z 221212 NIL=

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 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 COMPONENTS

P10 P5 M4 M7  
SYNOPSIS...1024MB HIGH CENTERED NEAR N3000 W15600.

**APPENDIX B - WMO Headers**

1. AWC.

a. SIGMET

CONUS and Coastal Waters

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

\*Omit Sierra, Tango, and Zulu

Convective SIGMETS

WSUS31 K KCI	MKCSIGE
WSUS32 K KCI	MKCSIGC
WSUS33 K KCI	MKCSIGW

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

WSNT01 K KCI	SIGA0A
WSNT02 K KCI	SIGA0B

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

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

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

Oakland Oceanic FIR

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

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

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

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

b. AIRMET

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

WMO HEADER	AWIPS ID
WAUS41 KPCI	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

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
WCAK01 PAWU	ANCWSTAK1
WCAK02 PAWU	ANCWSTAK2
WCAK03 PAWU	ANCWSTAK3
WCAK04 PAWU	ANCWSTAK4
WCAK05 PAWU	ANCWSTAK5
WCAK06 PAWU	ANCWSTAK6
WCAK07 PAWU	ANCWSTAK7
WCAK08 PAWU	ANCWSTAK8
WCAK09 PAWU	ANCWSTAK9
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

3. WFO Honolulu

a. SIGMET

WMO Header	AWIPS ID
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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	HFLOWSTPAN
WCPA02 PHFO	HFLOWSTPAO
WCPA03 PHFO	HFLOWSTPAP
WCPA04 PHFO	HFLOWSTPAQ
WCPA05 PHFO	HFLOWSTPAR
WCPA06 PHFO	HFLOWSTPAS
WCPA07 PHFO	HFLOWSTPAT
WCPA08 PHFO	HFLOWSTPAU
WCPA09 PHFO	HFLOWSTPAV
WCPA10 PHFO	HFLOWSTPAW
WCPA11 PHFO	HFLOWSTPAX
WCPA12 PHFO	HFLOWSTPAY
WCPA13 PHFO	HFLOWSTPAZ

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
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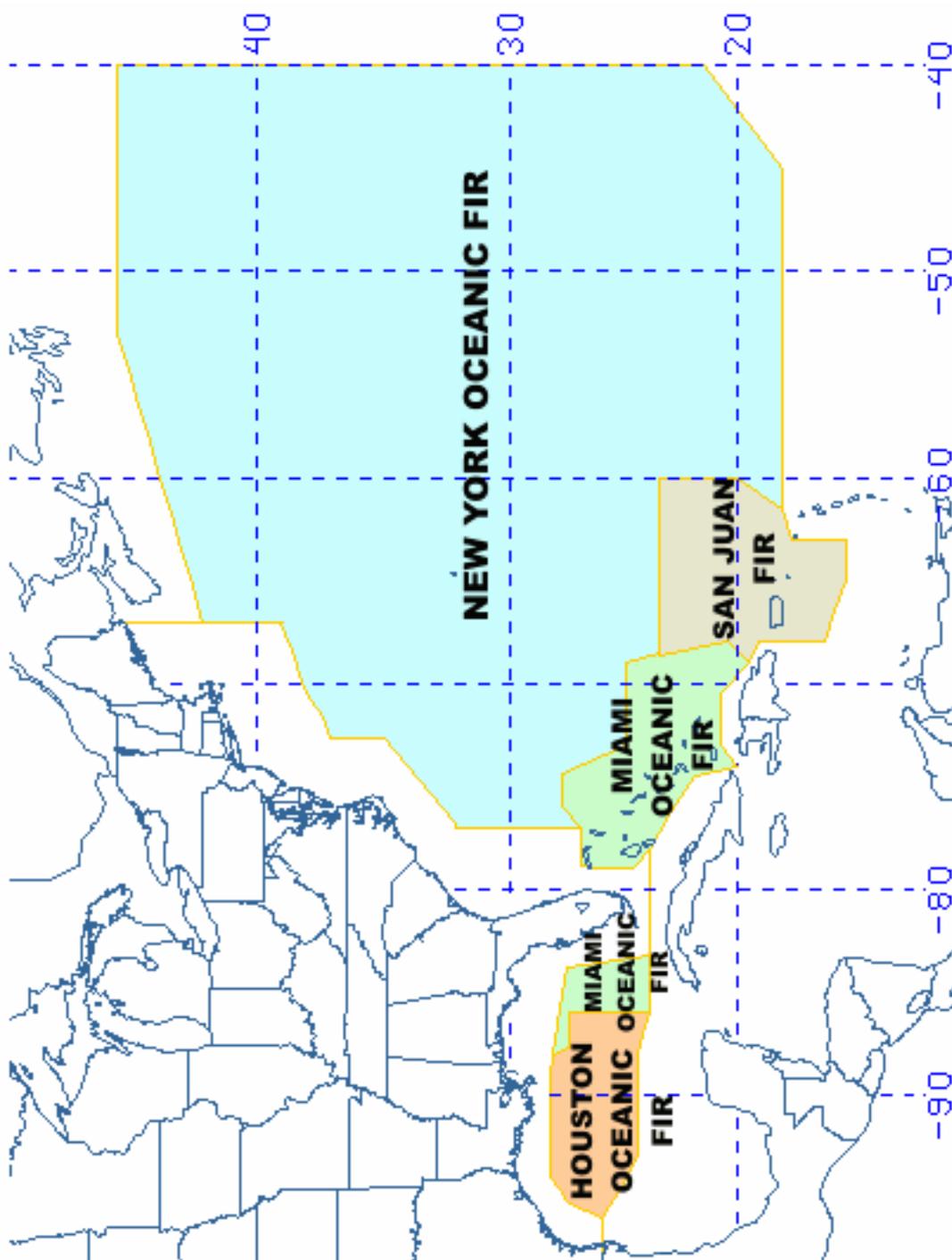
Note: Parsing is for geographical areas.

c. FA

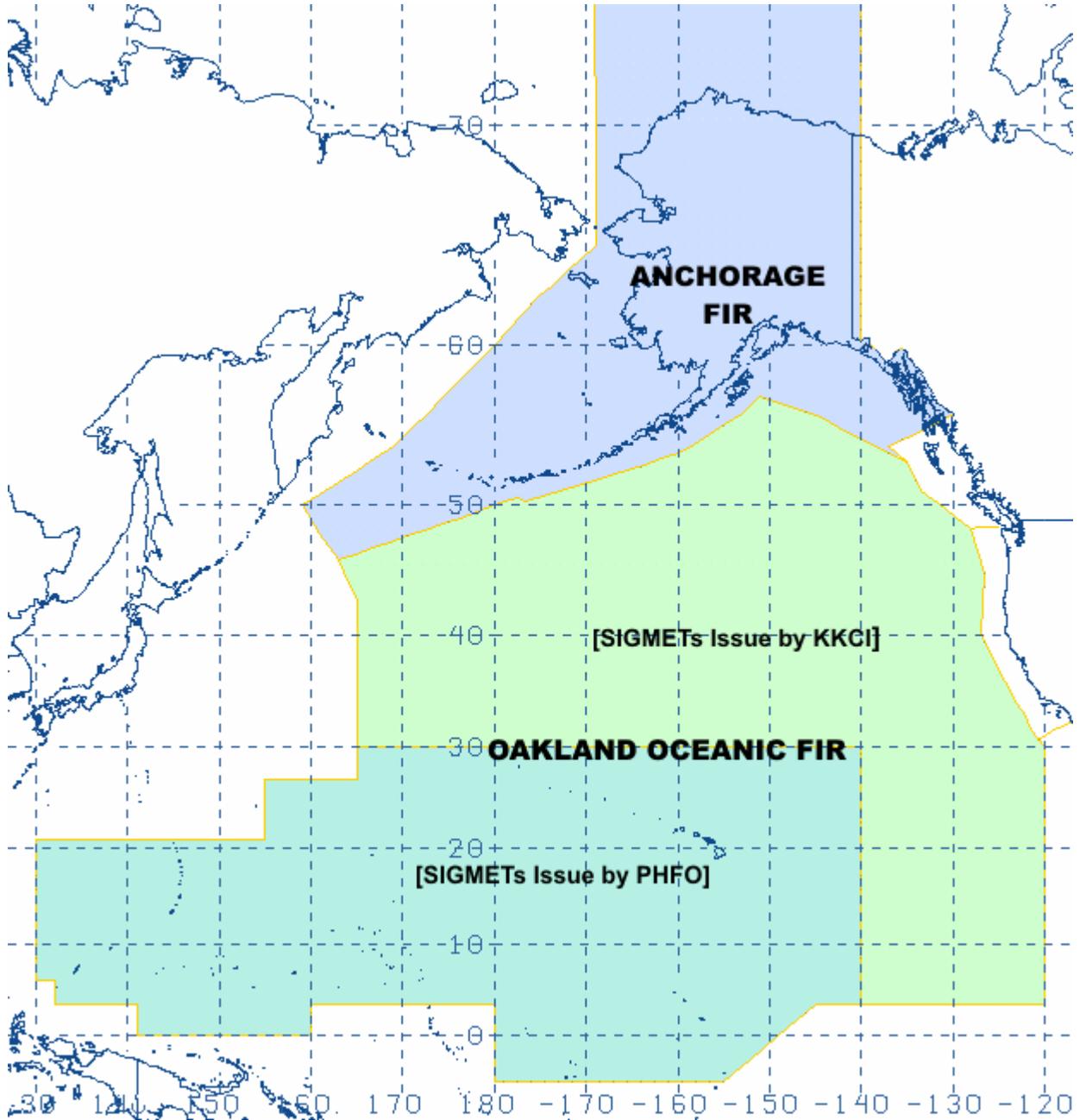
FAHW31 PHFO      FA0HI

**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.

a. Gulf of Mexico FA.



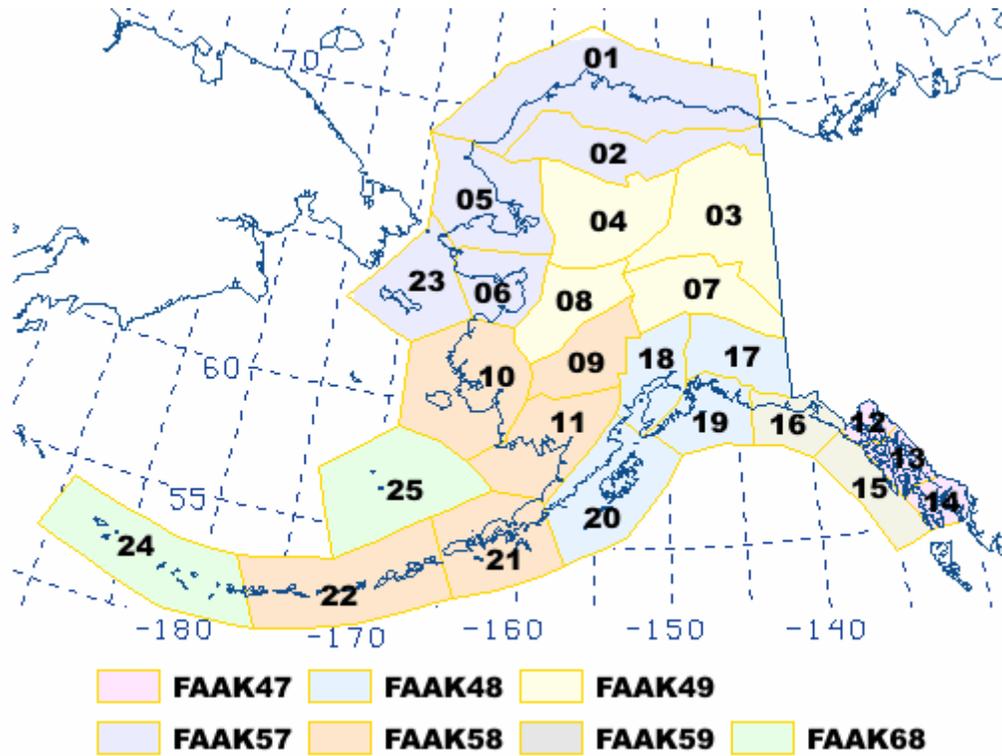
b. Caribbean FA.



c. CONUS FAs.



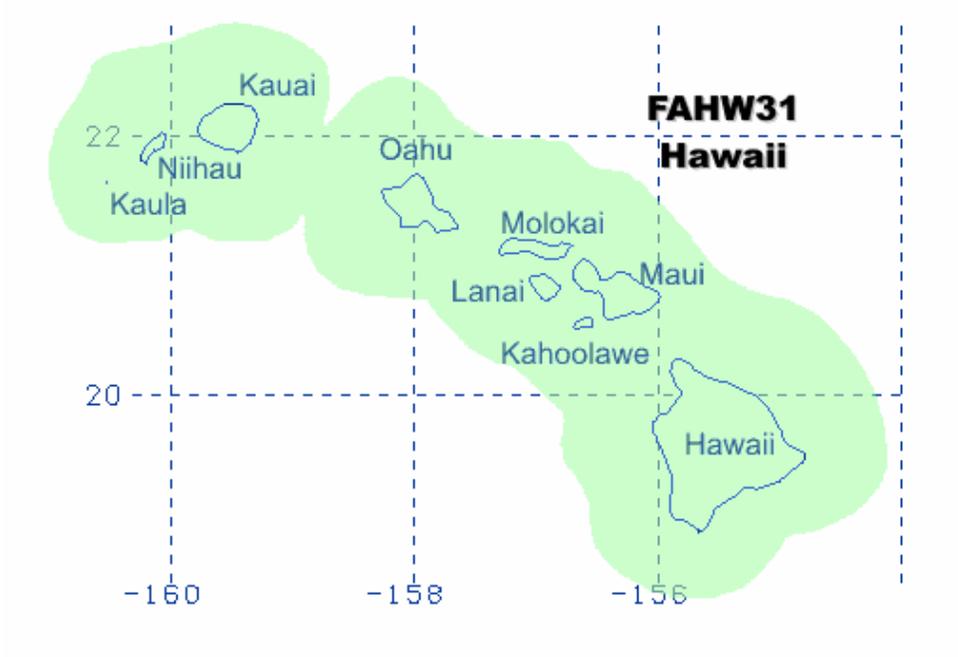
5. AAWU Flight Advisory and FA Reference Points.



Zones

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

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, multi channel or TOMS), PIREPs, ground observations, radar and VAFTAD (In the event volcanic ash is entrained in clouds, the volcanic ash will be treated as visible using the VAFTAD as guidance).

**Widely scattered (WDLY SCT):** LT 25 percent of area affected.

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