

## The Standard Weather Briefing

You should request a standard briefing any time you are planning a flight and you have not received a previous briefing. The briefer will automatically provide the following information in the sequence listed, except as noted, when it is applicable to your proposed flight.

1. Adverse Conditions—Significant meteorological and aeronautical information that might influence the pilot to alter the proposed flight; e.g., hazardous weather conditions, runway closures, NAVAID outages, etc.
2. VFR Flight Not Recommended—When VFR flight is proposed and sky conditions or visibilities are present or forecast, surface or aloft, that in the briefer's judgment would make flight under visual flight rules doubtful, the briefer will describe the conditions, affected locations, and use the phrase "VFR flight is not recommended." This recommendation is advisory in nature. The final decision as to whether the flight can be conducted safely rests solely with the pilot.
3. Synopsis—A brief statement describing the type, location and movement of weather systems and/or air masses which might affect the proposed flight.

NOTE—These first 3 elements of a briefing may be combined in any order when the briefer believes it will help to more clearly describe conditions.

4. Current Conditions—Reported weather conditions applicable to the flight will be summarized from all available sources; e.g., METARs, PIREPs, RAREPs. This element will be omitted if the proposed time of departure is beyond 2 hours, unless the pilot specifically requests the information.
5. En Route Forecast—Forecast en route conditions for the proposed route are summarized in logical order; i.e., departure/climbout, en route, and descent.
6. Destination Forecast—The destination forecast for the planned ETA. Any significant changes within 1 hour before and after the planned arrival are included.
7. Winds Aloft—Forecast winds aloft will be summarized for the proposed route. The briefer will interpolate wind directions and speeds between levels and stations as necessary to provide expected conditions at planned altitudes.
8. Notices to Airmen (NOTAMS)--
  - (a) Available NOTAM (D) information pertinent to the proposed flight.
  - (b) NOTAM (L) information pertinent to the departure and/or local area, if available, and pertinent FDC NOTAMS within approximately 400 miles of the FSS providing the briefing.
9. ATC Delays—Any known ATC delays and flow control advisories which might affect the proposed flight.

## Computer Weather Briefing (from DUAT)

### 1. Area forecast

- Issued – three times a day for large areas
- Includes a synopsis and general forecast
- Includes a 12-hour specific clouds and weather forecast and a 6-hour categorical outlook
- Synopsis is a brief summary of location and movements of fronts, pressure systems, and circulation patterns

```
***** FA Synopsis and VFR Clouds/Weather *****
DFWC FA 070145
SYNOPSIS AND VFR CLDS/WX
SYNOPSIS VALID UNTIL 072000
CLDS/WX VALID UNTIL 071400...OTLK VALID 071400-072000
OK TX AR TN LA MS AL 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...STG LOW PRES SYS BOTH AT SFC AND ALF OVR SWRN ONT.  
CDFNT CURVED FROM THE LOW NR A YQT-MQT-GRB-DEN-MEM-LCH-BRO LN...  
MOVG SLOLY EWD. WRMFNT EXTDD SEWD ALG A MQT-APN-ERI LN...MOVG  
NWD. TSRA ALG AND AHD OF CDFNT..SHRA BHD IT. BY 20Z...CDFNT  
WILL BE NR A SSM-IND-MEI-MSY LN SWD INTO GLFMEX.

.  
S CNTRL TX...

CSTL SXNS...CIGS OVC-BKN015-025 OVC080-100. CLDS LYRD TO  
FL240. WDLY SCT -SHRA LWRG CIGS/VIS OVC010/3SM. BECMG  
0814 AGL SCT015-025 SCT100-120 SCT CI. OCNL VIS 3-5SM BR.  
OTLK...VFR.

REST OF S CNTRL TX...CIGS BKN-SCT020-030. TOPS TO 060. BECMG  
0208 SKC. OTLK...VFR.

## 2. Convective SIGMETs

- Issued – any time required, and updated as required at H+55
- Issued for any of the following:
  - Severe thunderstorm due to:
    - Surface winds greater than or equal to 50 knots
    - Hail at the surface greater than or equal to ¾ inches in diameter
    - Tornadoes
  - Embedded thunderstorms
  - A line of thunderstorms
  - Thunderstorms greater than or equal to VIP level 4 affecting 40% or more of an area at least 3000 square miles

```
***** Convective SIGMET *****  
MKCC WST 070455  
CONVECTIVE SIGMET 6C  
VALID UNTIL 0655Z  
LA MS AND CSTL WTRS  
FROM 40WSW MEI-40E MSY-40SSE MSY-110S MSY  
LINE TS 20 NM WIDE MOV FROM 25025KT. TOPS TO FL450.  
OUTLOOK VALID 070655-071055  
FROM BNA-CHA-230SE MSY-130SSW MSY-MEM-BNA  
CDFNT EXTDS FM WRN TN THRU FAR NWRN MS ACRS SCNTRL LA INTO THE  
GLFMEX. AMS IS MOIST AND UNSTBL OVR AREA WITH SFC DPNTS INTO THE  
70S ACRS CNTRL/SRN MS INTO SERN LA. EXP TS TO CONT MOVG EWD WITH  
WSTS RQRD THRU PD.  
HGC
```

## 3. Center Weather Advisory

- Issued – as required. Valid for up to two hours.
- Issued to update area forecasts with current conditions that affect ARTCC traffic operations.

4. AIRMETs and SIGMETs

AIRMETs

- Issued – on a scheduled basis every 6 hours. Also updated and corrected as necessary. Valid for a 6-hour period.

AIRMETs are significant for light aircraft and include

- AIRMET ZULU for moderate icing
- AIRMET TANGO for moderate turbulence or sustained surface winds of 30 knots or greater
- AIRMET SIERRA for IFR conditions affecting over 50% of the area or extensive mountain obscurement

SIGMETs

- Issued as necessary, and valid for a maximum of 4 hours.
- First issuance is UWS, further issuances are WS.

SIGMETs are significant for all aircraft, and include

- Severe icing not associated with thunderstorms
- Severe or extreme turbulence or clear air turbulence (CAT) not associated with thunderstorms
- Dust storms, sand storms, or volcanic ash lowering surface or in-flight visibilities to below 3 miles
- Volcanic eruption

```
***** AIRMETs *****
DFWS WA 070145
AIRMET SIERRA FOR IFR VALID UNTIL 070800
.
AIRMET IFR...TX AR LA TN MS AL AND CSTL WTRS
FROM BWG TO 90SE MSY TO PSX TO DYR TO BWG
OCNL CIGS/VIS BLW OVC010/3SM IN CLDS..PCPN AND BR. CONDS CONTG
BYD 08Z THRU 14Z.
.
....

DFWT WA 070145
AIRMET TANGO FOR TURB VALID UNTIL 070800
.
AIRMET TURB...OK TX AR LA ND SD NE KS MN IA MO WI IL MI LS
FROM YWG TO YQT TO MQT TO LCH TO SJT TO YWG
OCNL MOD TURB BTN 150 AND FL370 DUE TO WINDSHEAR INVOF UPR LVL
JTST AND TROF. CONDS MOV SLOLY EWD AND CONTG BYD 08Z THRU 14Z.
.
ELSW...NO SGFNT TURB EXPCD OUTSIDE OF CNVTV ACT.
```

5. Current surface observation – METAR

METAR reports are generally issued every hour by reporting stations. SPECI reports are unscheduled reports that may be issued due to significant changes in weather or on demand.

METAR reports contain the following elements

- Type of report
  - METAR – routine report
  - SPECI – unscheduled report
  - AMD – amended report
  - COR – corrected report
- Station designator – ICAO designator
- Time of report, UTC – two digit date, four digit time
- Wind – three digits of direction, two or three-digit speed. Gusty conditions are identified by the letter G followed by the peak gust value

- Visibility – statute miles, or P6SM for greater than 6 miles
- Weather and obstructions to visibility
  - Precipitation intensity descriptors
    - + Heavy
    - Light
    - (none) Moderate
  - Proximity modifier
    - VC In the vicinity - between 5 and 10 miles of center of runway complex
  - Descriptors
    - TS – thunderstorm
    - SH – shower(s)
    - FZ – freezing
    - BL – blowing
    - DR – drifting
    - MI – shallow
    - BC – patches
  - Precipitation
    - RA – rain
    - DZ – drizzle
    - SN – snow
    - SG – snow grains
    - GR – hail (greater than ¼ inch)
    - GS – small hail or snow pellets
    - PE – ice pellets
    - IC – ice crystals
  - Obstructions to visibility
    - FG – fog (visibility less than 5/8 mile)
    - BR – mist (visibility 5/8 mile or greater)
    - FU – smoke
    - HZ – haze
    - PY – spray
    - SA – sand
    - DU – dust
    - VA – volcanic ash
  - Other
    - SQ – squall
    - DS – dust storm
    - FC – funnel cloud, tornado or waterspout
    - SS – sand storm
    - PO – dust or sand swirls
- Sky condition
  - Reported in amount/height/type format:
    - Amount
      - SKC – sky clear
      - FEW – less than 1/8 coverage
      - SCT – scattered (1/8 to 4/8 coverage)
      - BKN – broken (5/8 to 7/8 coverage)
      - OVC – overcast (8/8 coverage)
    - Height – three digits giving cloud base height in hundreds of feet
    - Type is optional, and only reported for cumulonimbus (CB) or towering cumulus (TCU)
- Temperature and dewpoint
  - Temperature/dewpoint format – each is a two-digit Celsius number, preceded by M for negative values
- Altimeter setting – four-digit number preceded by A

- Remarks

```

METAR KAUS 070553Z 36008KT 10SM CLR 17/08 A3015 RMK AO2 SLP206
T01670083 10211 20167 402330139 51017 $
SPECI KPQL 070621Z AUTO 15006KT 4SM BR SCT014 BKN021 BKN025 26/24
A3004 RMK AO2 TSNO
METAR KPNS 070553Z 15009KT 5SM BR CLR 26/24 A3005 RMK AO2 SLP177
T02610244 10267 20261 402940228 58008

```

#### 6. Pilot reports (PIREPs)

Pilot reports are preceded by the abbreviation UA, followed by any of the following:

/OV – location, usually specified by radial and distance from a VOR or airport

/TM – time, 4 digits UTC

/FL – altitude or flight level. DURC is during climb, DURD is during descent

/TP – type of aircraft

/SK – cloud layers: (may not have all info)

Height of cloud base in hundreds of feet MSL

Cloud cover symbol – SCT, BKN, OVC, etc.

Height of cloud tops in hundreds of feet MSL

/WX – weather: visibility or other weather phenomena

/TA – temperature, degrees Celsius (negative with preceding minus sign)

/WV – wind direction and speed in six digits

/TB – turbulence: NEG, LGT, MDT, SEV, EXTREME, with comments

/IC – icing conditions: NEG, LGT, MDT, SEV with type (RIME, CLR, etc)

/RM – remarks

```

***** Pilot Reports *****
SEA UA /OV SEA-BLI/TM 1429/FL080/TP C208/WX PE -SN/TA M02/IC NEG

JFK UA /OV 29.52N 68.44W TO 85N OF 23.4N 67.7W/TM 1400/FL330-FL410/
TP A300 AND B757/RM SCT TS WITH TOPS TO FL430/RM DEVIATIONS 20-50 MILES
WEST OF TS/RM PULLS INTXN TO 85N OF KRAFT INTXN/RM

FRG UA /OV DPK 030008/TM 1453/FL070/TP C177/SK TOPS035/WX FV99/TA 08

FRG UA /OV KFRG/TM 1426/FL015/TP PA28/SK BKN022/TA 60F

```

#### 7. Radar summaries

Location and time of report

Radar code

- PPINE – equipment normal, no echoes
- PPIOM – equipment inoperative or out of service for maintenance
- PPINA – not available for some other reason
- ROBEPS – radar operating below performance standards
- ARNO – azimuth/range indicator inoperative
- RHINO – range-height indicator mode inoperative – height information not available

Or echo pattern

- LN – a line of precipitation echoes at least 30 miles long, at least five times as long as wide, and at least 30% coverage within the line
- FINE LN – a clear air echo representing a strong temperature/moisture boundary such as an advancing dry cold front
- AREA – a group of echoes of similar type and not classified as a line

- SPRL BAND AREA – an area of precipitation associated with a hurricane that takes on a spiral band configuration around the center
- CELL – a single isolated convective echo such as a rain shower
- LYR – an elevated layer of stratiform precipitation not reaching the ground

Coverage in tenths

Type, intensity and intensity trend of weather

- T – thunderstorms
- RW – rain showers
- - - light
- (none) – moderate
- + - Heavy
- ++ - very heavy
- X – intense
- XX – extreme
- U – unknown
- /+ - increasing
- /- - decreasing
- /NC – no change
- /NEW – new echo

Azimuth and range from station of points that define the pattern

Dimension of echo pattern

Pattern movement

Maximum top and location

Remarks – plain language explanations, optional

Digital section – used to prepare the report, contains no useful information for pilots

```
LCH 0635 PPINE AUTO
```

```
JAN 0635 LN 7TRWXX 142/80 152/116 10W MTS 340 AT 144/91
```

```
AREA 1TRW++3R- 1/121 181/118 135W MT 340 AT 128/66
```

```
AREA 3RW++3R 95/118 102/100 10W
```

```
AREA 1RW+7R- 343/125 298/67 35W MTS 326 AT 324/86
```

```
AUTO
```

```
^HJ2011 II230011 JI2300011002 KI230012204 LI22001240045 MJ200024003
```

```
NI22000144 OJ1001145 PK11111165 QK11111145 RM12244 SN22
```

```
LIX 0635 LN 7TRWXX 33/67 68/45 5W MTS 310 AT 42/61
```

```
AREA 1TRW++5R- 357/129 195/121 130W C2627 MT 310 AT 162/40
```

```
AUTO
```

```
^GL24 HL144 IK1145 JI1111116503 KI11111145022 LK12244 MK12224 NK13342
```

```
OK2124 PK22232 QK11244 RM12
```

#### 8. Terminal forecasts – TAF format

TAFs are issued four times a day (at 0000Z, 0600Z, 1200Z and 1800Z) and are valid for a 24-hour period. They contain the following elements:

Type – routine forecast (TAF) or amended forecast (TAF AMD)

Location – ICAO designator

Issuance date and time – 6 digits, two date digits and four time digits, UTC

Valid period – 6 digits: two date digits, two two-digit hour fields for start and end hours of period

Forecast

The forecast field is in similar format as the METAR format – wind, visibility, weather, and sky conditions.

There are usually multiple forecast fields during the forecast period for changes during the period:

- FM*HHmm* - changes in weather beginning at time *HHmm*
- BECMG*HHhh* – gradual changes in weather during the period HH00Z to hh00Z

There can be temporary conditions and probability forecasts within the forecast blocks:

- PROBxx *HHhh* – xx percent probability (30% to 50% range) between the hours of HH00Z to hh00Z of weather phenomena
- TEMPO *HHhh* – temporary occurrence between HH00Z and hh00Z of weather phenomena

```
TAF KGPT 070530Z 070606 16007KT P6SM SCT015 BKN035 TEMPO 0610 6SM
  -RA BR SCT005 BKN015 OVC030
  FM1000 18011KT 5SM -RA BR SCT015 BKN040 TEMPO 1014
  VRB11G21KT 1SM TSRA BKN008CB BKN030
  FM1400 18011KT P6SM -RA SCT025 BKN050 TEMPO 1418 VRB24KT
  2SM TSRA OVC010CB
  FM1800 18011KT 6SM -RA SCT030 BKN060 PROB40 1824 VRB18KT
  3SM -TSRA BKN015CB BKN040
  FM0200 18008KT P6SM FEW035 BKN050
KNPA 070303 14010G15KT 9999 SCT015 BKN070 BKN250 QNH2997INS
  TEMPO 0304 6000 -RA BKN015 OVC080
  BECMG 0305 14006KT FEW030 SCT250 QNH2995INS
  BECMG 0608 VRB03KT 8000 BR SCT010 SCT080 BKN250 QNH3002INS
  TEMPO 0813 4800 BR OVC010
  BECMG 1315 15012G18KT 9999 BKN025 BKN080 OVC200 QNH2996INS
  TEMPO 1503 VRB15KT 6000 SHRA SCT015CB BKN020 OVC040 VCTS
  T25/10Z
```

#### 9. Winds Aloft Forecast

Winds aloft forecasts are issued twice daily, and are valid for specific time intervals specified in the report. Winds and temperatures are forecast for 3000, 6000, 9000, and 12,000 feet, and for flight levels 180, 240, 300, 340, and 390. Winds are not available within 1500 feet of the station.

Temperature is not available at the 3000-foot level or within 2500 feet of the station. A wind/temperature group is a 6-digit encoding:

- Two digits for true wind direction (add a zero to get degrees)
- Two digits for wind speed in knots. For winds in excess of 100 knots, 50 is added to the direction code. For winds in excess of 199 knots, 199 knots is used.
- Two digits for temperature in degrees Celsius. For altitudes at and below FL 240, temperatures are prefaced with a positive (+) or negative (-) indication. Temperatures above FL240 are negative.

```
***** FD Winds Aloft Forecast *****
DATA BASED ON 070000Z
VALID 070600Z FOR USE 0500-0900Z. TEMPS NEG ABV 24000
FT 3000 6000 9000 12000 18000 24000 30000 34000 39000
SAT 0321 3408+12 2611+10 2615+03 2722-10 2728-22 245835 246843 257152
CLL 0121 3410+10 2616+09 2522+03 2428-09 2335-21 226735 227443 237153
LCH 2807 2219+14 2324+09 2221+04 2425-06 2331-18 235533 226542 226752
MOB 1720 1819+16 2020+10 2219+05 2125-08 2225-17 242231 262841 263054
```

#### 10. Notices to Airmen (NOTAMs)

NOTAMs are items of time-critical information that are either temporary or not known with sufficient advance notice to publish in the normal charts or publications. The AIM contains a thorough abbreviation decoding table. There are three NOTAM categories:

- Local NOTAMs, or NOTAM (L) items include data related to airports such as airport closures, airport lighting outages and closed taxiways.
- Distant NOTAMs, or NOTAM (D) items are issued for navigational facilities that are part of the national airspace system and public use airports listed in airport and facility directories.
- FDC NOTAMs are issued by the National Flight Data Center and contain data on amendments to instrument approach procedures and other aeronautical chart data. FDC NOTAMs are also issued for temporary flight restrictions based on natural disasters, presidential functions, etc.

```
***** NOTAMs *****
!SJT 10/019 3R9 TOWER 1217 (300 AGL) 2.2 SW LGTS OTS
!CXO 08/060 62H GYB NDB OTS
!CLL 09/007 CLL GC 128.7 VICE 121.7
!LFT 10/004 LFT AP CLSD/AIRSHOW ACFT 15000/BLW 5 NMR LFT AVOIDANCE
ADZD WEF 9810091600-9810092000

***** FDC NOTAMs *****
!FDC 8/7003 ZHU TX.. FI/T AIRWAY ZHU.
    V556 MARCS INT TX TO SEEDS INT TX MEA 7500

!FDC 8/6245 ZJX SC.. MYRTLE BEACH, SC. LASER LIGHT ACTIVITY WILL BE
    CONDUCTED AT BROADWAY AT THE BEACH, MYRTLE BEACH, SC,
    LAT 33.42.31N/LONG 78.52.19W, AND THE GRAND STRAND /CRE/ VORTAC
    226 DEGREE RADIAL AT 09.8 NAUTICAL MILES.
    0230-0330 UTC DAILY FROM SEPTEMBER 5, 1998 0230 UTC UNTIL
    FURTHER NOTICE. LASER LIGHT BEAM MAY BE INJURIOUS TO PILOTS'/
    PASSENGERS' EYES WITHIN ZERO FEET VERTICALLY AND 11,000 FEET
    Laterally OF THE LIGHT SOURCE. FLASH BLINDNESS OR COCKPIT
    ILLUMINATION MAY OCCUR BEYOND THESE DISTANCES. MRYTLE BEACH ATCT
    /MYR/ 803-238-3008, IS THE FAA COORDINATION FACILITY.

!FDC 8/6760 PNS FI/P PENSALCOLA REGIONAL, PENSACOLA, FL
    NDB OR GPS RWY 17, ORIG-A...
    MINIMUM ALTITUDE OMNIK INT 880.
    S-17 MDA 680/HAT 559 ALL CATS. VIS CAT C RVR 5000, CAT D 1 1/2.
    CIRCLING MDA 680/HAA 559 ALL CATS.
    THIS IS NDB OR GPS RWY 17, ORIG-B.
```

## Weather Charts

# Surface Analysis Chart

Issued – every three hours.

### Features

- Valid time
- Isobars
- Pressure systems
- Fronts
- Troughs and ridges

- Station information

Usage – good for getting detailed information on pressure systems, fronts, and overview of winds, temperatures and dew points.

## Weather Depiction Chart

Issued – every three hours beginning at 01Z. Valid at the time of the plotted data.

### Features

- Station surface observations – sky cover, cloud height and ceiling, weather, obstructions to vision, and visibility
- Analysis – regions of IFR, MVFR, and VFR

Usage – good for a first-pass view of areas of favorable and adverse weather.

## Radar Summary Chart

Issued – every hour at H+35 from available data. Available 16 or 24 hours a day.

### Features

- Echo type
- Intensity and intensity trend
- Echo configuration and coverage
- Echo heights
- Echo movement
- Severe weather watch areas

Usage – good for identifying areas and movement of precipitation and thunderstorms. It does not necessarily identify areas of adverse weather and reduced visibilities. Pay careful attention to radar sites that are not available (marked as NA)

## Significant Weather Prognostic Charts (progs)

Issued – four times daily with 12- and 24-hour forecasts based on 00Z, 06Z, 12Z and 18Z synoptic data.

### Features

- Four-panel chart with 12- and 24-hour forecasts for significant weather from the surface to 400 MB (about 24,000 feet) and for the surface.

Usage – used for outlook purposes. Use to get a general picture of the weather conditions that are in the relatively distant future.

# Winds and Temperatures Aloft Charts

Issued – daily for 12-hour progs valid at 12Z and 00Z.

## Features

- For altitudes 6000, 9000, 12,000, 18,000, 24,000, 30,000, 34,000 and 39,000 feet MSL
- Shows wind direction and speed
- Shows temperature aloft

# Composite Moisture Stability Chart

Issued – twice daily with valid times of 12Z and 00Z.

## Features

- Four-panel chart – Stability Panel, Freezing Level panel, Precipitable Water panel, Average Relative Humidity panel

Usage – most useful panel is lifted index panel. The top number is the lifted index, and the bottom number is the K-index. The more negative the lifted index or the higher the K-index, the higher the chance for thunderstorms. The freezing level panel is also interesting for avoiding icing in IFR flight.

## Web Weather Resources

## Official sources (DUAT)

<https://preflight.skycentral.gte.com/cgi-bin/Preflight> GTE Preflight (sm) – web-based form tool for getting an official DUAT weather briefing

<telnet://duat.gtefsd.com> – Telnet access to DUAT system

<telnet://duats.gtefsd.com> – Same as above, use when the other is busy

## Unofficial Sources

Some are specific to the Austin area – in many cases, substituting another major airport identifier gets you the weather there.

<http://www.intellicast.com/weather/aus/radar> – Austin Radar Image

<gopher://metlab1.met.fsu.edu:70/11/data/weather> – Aviation Gopher.

Contains many different types of aviation reports, including PIREPs.

<http://wxp.atms.purdue.edu/main.html> - Purdue Weather Processor. Very comprehensive site for many different weather models, charts, and forecasts, some experimental.

<http://wxp.atms.purdue.edu/aviation/index.html> - Aviation Model Forecasts. Aviation-specific section of the PWP.

<http://weather.noaa.gov/weather/taf.shtml> - TAF Access. NOAA site with search form for specific TAF forecasts.

<http://weather.noaa.gov/weather/metar.shtml> - METAR Access. Same as above, but for current conditions (METAR).

<http://weather.noaa.gov/fax/nwsfax.shtml> - NWS Fax Charts. Complete list of NOAA charts for aviation forecasting.

## **“Go/no-go” Decision Factors**

All below pertain to departure point, enroute, and destination and time when in each segment (clock and length)

- Current weather
- Forecast weather
- Adverse conditions
- Visibility
- Ceilings
- Cloud and cloud types
- Winds aloft
- Surface winds
- Temperatures
- Dewpoints
- Time of Day