

Decoding Observations and Terminal Aerodrome Forecasts



Weather Observer/Forecaster
O-LD 18th Weather Squadron
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Part I. Decoding Observations



•What types of data goes into a weather observation?

1. Report Type
2. Station ID
3. Date Time
4. Modifier
5. Wind
6. Visibility
7. RVR
8. Weather
9. Sky Condition
10. Temp/Dewpoint
11. ALSTG

Table 5.1. Content of Manual Surface Observations.

Body of Report - Consists of 11 Groups				
Group	Coding Reference	Brief Description	METAR	SPECI/LOCAL
Type of Report	14.5.1	Indicates type of report.	X	X
Station Identifier	14.5.2	A four-character group used to identify the observing location.	X	X
Date and Time of Report	14.5.3	Date and time of the report or when a criterion for a SPECI is met.	X	X
Report Modifier	14.5.4	A report modifier (COR) identifying report as a correction.	X	X
Wind	14.5.5	Indicates wind direction and speed. Gusts are appended if required.	X	X
Visibility	14.5.6	Provides prevailing visibility from the designated point of observation.	X	X
Runway Visual Range	14.5.7	Represents the horizontal visibility a pilot will see down the runway.	X	X
Present Weather	14.5.8	Any weather occurring at the unit or obscurations to vision.	X	X
Sky Condition	14.5.9	State of the sky in terms of sky cover, layers and heights, ceilings and obscurations.	X	X
Temperature and Dew Point	14.5.10	Measure of hotness/coldness of ambient air. Dew point measures saturation point temperature. (See Note 1).	X	X
Altimeter	14.5.11	Indicates altitude above mean sea level (MSL) of an aircraft on the ground.	X	X

Part I. Decoding Observations



- Automated Observations report **same basic data** as Manual Observations

1. Report Type
2. Station ID
3. Date Time
4. Modifier
5. Wind
6. Visibility
7. RVR
8. Weather
9. Sky Cond.
10. Temp/Dewpoint
11. ALSTG

Table 27.3. Body of AN/FMQ-19 Observations.

Body of Report - Consists of 11 Groups		
Group	Reference	Brief Description
Type of Report	27.4.1	Indicates type of report.
Station Identifier	27.4.2	A four-character group used to identify the observing location.
Date and Time of Report	27.4.3	Date and time of the report.
Report Modifier	27.4.4	A report modifier (COR) identifying report as a correction, or AUTO indicating the unit has no augmentation or backup.
Wind	27.4.5	Indicates wind direction and speed. Gusts are appended if available.
Visibility	27.4.6	Provides prevailing visibility from the designated point of observation.
Runway Visual Range	27.4.7.	10-minute RVR or varying RVR in hundreds of feet.
Present Weather	27.4.8	Any weather occurring at the unit (station) or obscurations (obscurations) to vision.
Sky Condition	27.4.9	State of the sky in terms of sky cover, layers and heights, ceilings and obscurations.
Temperature and Dew Point	27.4.10	Measure of hotness/coldness of ambient air. Dew point measures saturation point temperature.
Altimeter	27.4.11	Indicates altitude above MSL of an aircraft on the ground.

Part I. Decoding Observations



- Basic NON-Weather data:

- | | |
|----------------------|------------------------|
| 1. Report Type: | METAR, SPECI, LOCAL |
| 2. Station ID: | KPOE, etc. |
| 3. Date Time (Zulu): | 24/1155z |
| 4. Modifier: | AMD, COR, AMD COR, RTD |

- Basic Weather data:

- | | |
|--------------------------------|-------------------------|
| 5. Wind: | 36009KT, VRB06KT |
| 6. Visibility: | 7sm, 9999 m |
| 7. RVR: | Runway Visual Range (m) |
| 8. Weather: | -RA, FG, +FC, etc. |
| 9. Sky Cond: | SKC, FEW, SCT, BKN, OVC |
| 10. Temp/Dewpoint: | 25/20 (degrees Celsius) |
| 11. Altimeter Setting (ALSTG): | 29.69 (inches of Hg) |



Part I. Decoding Observations

- NON-Basic Weather data:

These are examples of some less common codes for weather phenomena and observation criteria that will not be discussed in the length of this brief, due to uncommon usage.*

AFMAN15-124PACAFSup1 3 MARCH 1998

QUALIFIER		WEATHER PHENOMENA		
INTENSITY OR PROXIMITY	DESCRIPTOR	PRECIPITATION	OBSCURATION	OTHER
(well-developed in the case of dust/sand whirls, dust devils and tornadoes/waterspouts)	DR Low Drifting	SG Snow Grains	VA Volcanic Ash	SS Sandstorm
VC In the Vicinity	BL Blowing	IC Ice Crystals (Diamond Dust)	DU Widespread Dust	DS Duststorm
	SH Shower(s)	PE Ice Pellets	SA Sand	
	TS Thunderstorm	GR Hail	HZ Haze	
	FZ Freezing (Supercooled)	GS Small Hail and/or Snow Pellets	PY Spray	

* Links to applicable websites for uncommon observation/forecast decoding data will be provided at the end of the slideshow.



Part I. Decoding Observations

- Example Observations:

1. METAR (regular ob)

2. SPECI* (special ob)

3. LOCAL* (locally-sent ob)

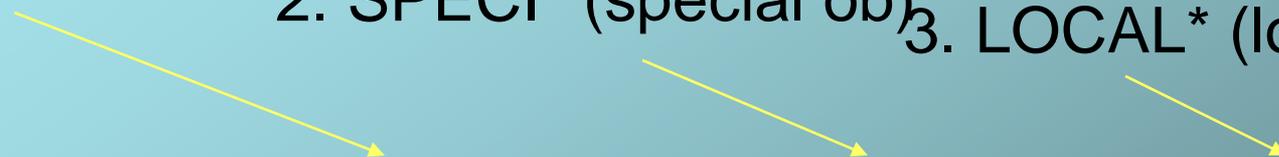


Figure 14.1. Examples of Non-N-TFS Local Dissemination Formats.

METAR	SPECI	LOCAL
ETAR METAR 0756	RJTY SPECI 1614	EGUN LOCAL 1930
07007KT 040V100 1300	03005KT 3/8	23003KT 8000 HZ
R09/1220 -RA BR	R36/2400 -RA FG	SCT037 BKN280
SCT000 SCT008 OVC012	FEW000 SCT006	ALSTG 29.89
01/M01	BKN016 10/09	31/BP
ALSTG E29.38	ALSTG 29.81	
CIG 010V015 VIS N 3200	VIS 1/4V3/4 TWR VIS 5/8	
TWR VIS 1600	FG SCT000	
BR SCT000	CIG LWR W	
PA +210	WR// PA+560	16/DY
57/DR		

* SPECI and LOCAL observations will often contain less data than regular or METAR observations.



Part I. Decoding Observations

- Example Observations (cont'd.):

* All info below from METAR observation on second line (RJTY)

Figure 14.3. Examples of Longline Dissemination.

METAR Observations	
METAR ETAR 010756Z VRB06KT 040V100 1400 R09/1220 -RA BR SCT000 SCT008 OVC012 01/M01 A2938 RMK CIG 010V015 VIS N 3200 TWR VIS 1600 BR SCT000 SLPNO ESTMD ALSTG 8/5// WR//;	
METAR RJTY 011058Z COR 02010G17KT 1400 R36/4000 HZ SCT007 BKN020 OVC070 20/17 A3019 RMK VIS N 3200 TWR VIS 1600 SLP015 ALSTG/SLP ESTMD 8/55/ COR 1104;	
METAR KBLV 011158Z 27004KT 3/4SM R32/P6000FT-RA BR FEW000 SCT005 OVC020 00/M01 A2992 RMK TWR VIS 2 BR FEW000 SLP982 ALSTG/SLP ESTMD 60100 70010 4/002 8/5// 10010 21002 52010 WR//;	
METAR ETIU 011157Z 30003KT 9999 SKC M04/M10 A3003 RMK SLP985 70010 4/002;	
METAR RKSJ 010358Z 00000KT 0800 RVRNO FG VV011 24/24 A2998 RMK TWR VIS 1000 SLP982;	
METAR ETAB 010655Z 24010G18KT 9999 TS SCT020CB BKN035 30/27 A2993 RMK TS 5SW MOV NE OCNL LTGCACC SLPNO 8/900;	
METAR KLTS 011157Z 24012KT 10SM -TSRA FEW008 FEW025TCU SCT030CB 25/ A2992 RMK TS 5NE MOV SE OCNL LTGCG SCT030 V BKN PK WND 28045/10 FU FEW008 TCU SE-S SLPNO 60010 70010 8/300 52010;	

1. Report Type METAR
2. Station ID KPOE
3. Date Time 011058Z
4. Modifier COR
5. Wind 02010G17KT
6. Visibility 4000
7. RVR N/A
8. Weather HZ
9. Sky Cond. SCT007, etc
10. Temp/Dp 20/17
11. ALSTG A3019



Part II. Decoding Terminal Aerodrome Forecasts (TAFs)

- What types of data goes into a weather observation?

Though it may look confusing, the data types entered for forecasts (TAFs) are virtually identical to those used in official weather observations.

1. Report Type	TAF
2. Station ID	CCCC
3. Date Time	YYGGGG
4. Modifier	COR, etc.
5. Wind	dddff (KTs)
6. Visibility	VVVV
7. RVR	Not Used*
8. Weather	w'w'
9. Sky Condition	SKC, etc.
10. Max/Min Temp	TT/GG (z)
11. ALSTG	PPPP

1.3. TAF Encoding.

1.3.1. TAF Code Format. Use the following format for encoding TAFs:

MESSAGE HEADING

CCCC TAF (AMD, COR, RTD, or AMD COR) YYG₁G₁G₂G₂ dddffG_fm_fmKT
VVVV w'w' N₁N₂N₃h₁h₂h₃CC or VVh₁h₂h₃ or SKC (WSH_xh_xh_x/dddfffKT or
WSCONDS) (6I_ch₁h₁h₁t_L) (5Bh_Bh_Bh_Bt_L) QNHP₁P₁P₁P₁INS (Remarks)
TTTTT GGG_eG_e or TTGGgg dddffG_fm_fmKT...same as above...(Remarks)
T(M)T_FT_F/G_FG_FZ T(M)T_FT_F/G_FG_FZ AMD, COR, or AMD COR GGgg
(Limited-Duty Location Remarks).

Part II. Decoding Terminal Aerodrome Forecasts (TAFs)



- Basic NON-Weather data:

- | | |
|----------------------|------------------------|
| 1. Report Type: | METAR, SPECI, LOCAL |
| 2. Station ID: | KPOE, etc. |
| 3. Date Time (Zulu): | 24/1155z |
| 4. Modifier: | AMD, COR, AMD COR, RTD |

- Basic Weather data:

- | | |
|--------------------------------|-------------------------|
| 5. Wind: | 36009KT, VRB06KT |
| 6. Visibility: | 7sm, 9999 m |
| 7. RVR: | **NOT USED** |
| 8. Weather: | -RA, FG, +FC, etc. |
| 9. Sky Cond: | SKC, FEW, SCT, BKN, OVC |
| 10. Temp/Dewpoint: | 25/20 (degrees Celsius) |
| 11. Altimeter Setting (ALSTG): | 29.69 (inches of Hg) |



Part II. Decoding Terminal Aerodrome Forecasts (TAFs)

- NON-Basic Weather data:

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VC In the Vicinity	BL Blowing	IC Ice Crystals (Diamond Dust)	DU Widespread Dust	DS Duststorm
	SH Shower(s)	PE Ice Pellets	SA Sand	
	TS Thunderstorm	GR Hail	HZ Haze	
	FZ Freezing (Supercooled)	GS Small Hail and/or Snow Pellets	PY Spray	

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Part II. Decoding Terminal Aerodrome Forecasts (TAFs)

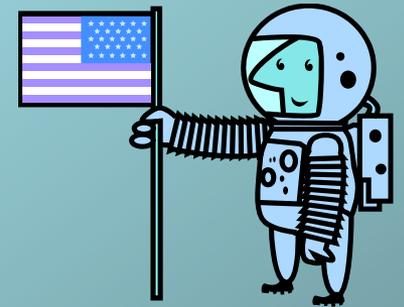
- Example Forecast:

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EXAMPLES: RODN TAF 1515 06008KT 9999 BKN050 OVC130 QNH3008INS  
BECMG 1112 17010G15KT 6000 -SHRA FEW007 SCT010 BKN025 BKN040 OVC070  
510004 QNH2994INS T22/05Z T14/21Z;  
PAEI TAF 1313 34005KT 9999 SCT007 BKN070 QNH2972INS  
BECMG 1011 00000KT 0400 FG VV002 QNH3010INS TM09/21Z TM31/12Z;
```

- Decoded Data:

1. Station ID: RODN, PAEI (2 separate ID's)
2. Date Time Group: (date missing) 15z – 15z
(24 hour period)
3. Wind: 06008KT (knots)
4. Visibility: 6000 (meters)
5. Sky Cond: BKN050 (hundreds of feet AGL)
6. ALSTG: QNH3008INS (inches of Hg)
7. BECMG: 1112 (Weather aft 12z)

Part III. De Ridder Air Field



- De Ridder Air Field (KDRI):

Automated Weather Info and briefings available by phone:

Toll-free #: (866) 401- 5659

**FAA INFORMATION EFFECTIVE
05 AUGUST 2004**

Location

FAA Identifier:

DRI Lat/Long: 30-49-54.200N / 093-20-23.700W

30-49.90333N / 093-20.39500W

30.8317222 / -93.3399167

(estimated)

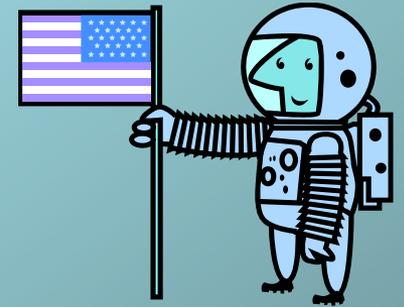
Elevation: 202 ft. / 61.6 m

(surveyed)

Variation: 04E (1990) From city: 3 miles SW of DE RIDDER, LA



Part IV. Conclusion / Q & A



Congratulations!!

You are now qualified to decode
USAF weather observations and
forecasts!

• Helpful Sites:

- National Weather Service: <http://www.nws.noaa.gov>
- Air Force Publications: <http://www.e-publishing.af.mil>
- Site Forecasts (CONUS): <http://www.airnav.com>
- De Ridder Air Field info: <http://www.faa.gov/ats/afss/bdrafss/HTML/cellphone.htm>

• Applicable Publications:

- AFMAN 15-111 Surface Weather Observations
- AFMAN 15-124 Meteorological Codes
- AFMAN 15-129 Air and Space Weather Observations
- AFWA TN-98/002 Meteorological Tools