

**The Telephone Briefing**

**1. [12-4/1/9]**

When telephoning a weather briefing facility for pre-flight weather information, pilots should

- A. identify themselves as pilots.
- B. tell the number of hours they have flown within the preceding 90 days.
- C. state the number of occupants on board and the color of the aircraft.

**2. [12-5/1/2]**

To get a complete weather briefing for the planned flight, the pilot should request

- A. a general briefing.
- B. an abbreviated briefing.
- C. a standard briefing.

**3. [12-5/1/3]**

Which type weather briefing should a pilot request when departing within the hour, if no preliminary weather information has been received?

- A. Outlook briefing.
- B. Abbreviated briefing.
- C. Standard briefing.

**4. [12-5/1/3]**

Which type of weather briefing should a pilot request to supplement mass-disseminated data?

- A. An outlook briefing.
- B. A supplemental briefing.
- C. An abbreviated briefing.

**5. [12-5/1/3]**

To update a previous weather briefing, a pilot should request

- A. an abbreviated briefing.
- B. a standard briefing.
- C. an outlook briefing.

**6. [12-5/1/4]**

When requesting weather information for the following morning, a pilot should request

- A. an outlook briefing.
- B. a standard briefing.
- C. an abbreviated briefing.

**7. [12-5/1/4]**

A weather briefing that is provided when the information requested is 6 or more hours in advance of the proposed departure time is

- A. an outlook briefing.
- B. a forecast briefing.
- C. a prognostic briefing.

**8. [12-5/2/2]**

When telephoning a weather briefing facility for pre-flight weather information, pilots should state

- A. the full name and address of the formation commander.
- B. that they possess a current pilot certificate.
- C. whether they intend to fly VFR only.

# Rod Machado's Sport Pilot Workbook



## 9. [12-5/3/1]

When telephoning a weather briefing facility for pre-flight weather information, pilots should state

- A. the full name and address of the pilot in command.
- B. the intended route, destination, and type of aircraft.
- C. the radio frequencies to be used.

## 10. [12-5/3/1]

When telephoning a weather briefing facility for pre-flight weather information, pilots should state

- A. the aircraft identification or the pilot's name.
- B. true airspeed.
- C. fuel on board.

### Other Sources of Weather Information

## 11. [12-7/1/2]

PATWAS is

- A. a regularly scheduled weather broadcast on a VOR frequency.
- B. a continuous recording of weather and aeronautical information for pilots.
- C. VHF radio receiver tuned to an Automatic Terminal Information Service (ATIS) frequency.

### Telephone Information Briefing Service (TIBS)

## 12. [12-7/1/3]

TIBS is

- A. a regularly scheduled weather broadcast on a VOR frequency.
- B. a continuous telephone briefing service consisting of prerecorded weather information.
- C. VHF radio receiver tuned to an Automatic Terminal Information Service (ATIS) frequency.

## 13. [12-7/1/3]

TIBS is

- A. offered by automated flight service stations.
- B. something that never provides information on airspace. For that you'll have to check the NOTAMs.
- C. is only found by listening to the Automatic Terminal Information Service (ATIS) frequency.

## 14. [12-7/1/3]

The telephone information briefing service (TIBS) is a service that requires

- A. a rotary phone.
- B. a touch-tone phone.
- C. an internet connection.

## 15. [12-7/1/3]

The telephone information briefing service (TIBS) is always based on

- A. prerecorded weather.
- B. conversations with an actual weather briefer from the AFSS who will take his or her time to chat with you about the weather.
- C. live, generated weather downloaded from the latest NEXRAD source and updated via phone lines to secure web servers in your local area.

### Hazardous In-flight Weather Advisory Service

## 16. [12-7/2/4]

HIWAS is a

- A. VHF radio receiver tuned to an Automatic Terminal Information Service (ATIS) frequency.
- B. Transcribed Weather Broadcast (TWEB) on an ADF radio receiver.
- C. continuous broadcast of in-flight weather advisory information for pilots.



## 17. [12-7/2/4]

On what frequency can a pilot receive Hazardous In-flight Weather Advisory Service (HIWAS) in the vicinity of Daggett VOR?

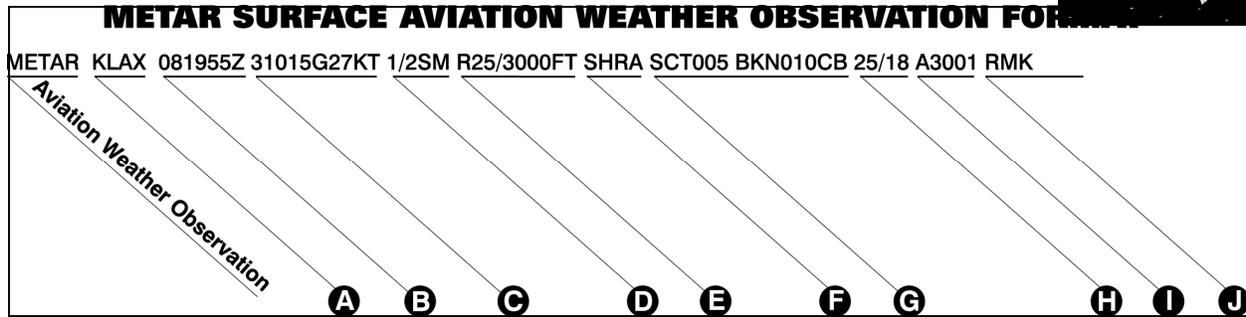
- A. 113.2 MHz.
- B. 121.5 MHz.
- C. 122.0 MHz.

### Enroute Flight Advisory Service

## 18. [12-8/1/1]

How should contact be established with an Enroute Flight Advisory Service (EFAS) station, and what service would be expected?

- A. Call EFAS on 122.2 for routine weather, current report on hazardous weather, and altimeter settings.
- B. Call flight assistance on 122.5 for advisory service pertaining to severe weather.
- C. Call Flight Watch on 122.0 for information regarding actual weather and thunderstorm activity along proposed route.



**19. [12-8/1/1]**

What service should a pilot normally expect from an Enroute Flight Advisory Service (EFAS) station?

- A. Actual weather information and thunderstorm activity along the route.
- B. Preferential routing and radar vectoring to circumnavigate severe weather.
- C. Severe weather information, changes to flight plans, and receipt of routine position reports.

V \_\_\_\_\_

R \_\_\_\_\_

W \_\_\_\_\_

C \_\_\_\_\_

T \_\_\_\_\_

D \_\_\_\_\_

A \_\_\_\_\_

**20. [12-8/1/1]**

Below FL180, enroute weather advisories should be obtained from an FSS on

- A. 122.0 MHz.
- B. 122.1 MHz.
- C. 123.6 MHz.

**24. [12-10/2/3]**

Referring to the figure at the top of this page, fill in the names of each segment of the METAR.

**Weather Reports**

**21. [12-10/1/2]**

METAR observations are taken

- A. weekly.
- B. hourly
- C. daily

**22. [12-10/1/2]**

A METAR report preceded by the letters SPECI means this is

- A. always a late report.
- B. a normal METAR report.
- C. an unscheduled report as a result of a significant weather change.

**23. [12-10/2/3]**

One way to remember the information sequence for the METAR is to use the acronym STWVRWCTDA which stands for:

S \_\_\_\_\_

T \_\_\_\_\_

W \_\_\_\_\_

**Station**

**25. [12-10/3/1]**

Referring to the figure on the top of the next page, the first four letters (KINK) at the beginning of the METAR represent

- A. the reporting station.
- B. the weather at the front of the airport.
- C. the visibility.

**26. [12-10/3/1]**

Referring to the figure on the top of the next page, the letter K at the beginning of each four letter METAR identifier is an international designator that precedes all

- A. domestic U.S. location identifiers.
- B. airports located in Kansas.
- C. domestic locations in the U.S. and Canada.



## METAR WEATHER REPORTING FORMAT

```
METAR KINK 081955Z 32014G20KT 1/2SM R30R/2400FT DZ FG OVC006 13/12 A3004
SPECI KMKC 081936Z 20014G24KT 1/2SM R34/2600FT -SHRA OVC008 04/03 A2898
METAR KBOI 081953Z 23008KT 5SM SCT015 19/13 A2994 RMK SLP156 T01930128
METAR KLAX 081955Z 01013G20KT 3SM HZ SKC 18/11 A2995
```

### Time

#### 27. [12-10/3/2]

Referring to the figure above, the second sequence of terms in the METAR such as 081955 indicates

- A. that the report was filed on the eighth month, 19th day and 55 minutes past 0000 Zulu.
- B. that this METAR observation was made on the 8th day of the month, at 1955 Zulu.
- C. that this station had winds from 080 degrees at 19 knots, gusting to 55 knots.

### Wind

#### 28. [12-10/3/3]

Referring to the figure above, the wind direction and velocity at Boise, Idaho (KBOI) is from

- A. 230° true at 8 knots.
- B. 023° magnetic at 8 knots.
- C. 230° magnetic at 8 knots.

#### 29. [12-10/3/3]

Referring to the figure above, what are the wind conditions at Los Angeles (KLAX)?

- A. Calm.
- B. 110° at 1.3 knots, gusts 2 knots.
- C. 010° at 13 knots, gusts 20 knots.

### Visibility

#### 30. [12-11/1/2]

The sequence "1/2SM" in the METAR for KMKC indicates

- A. the surface visibility is 1 to 2 miles in smoke and mist.
- B. the surface visibility is 1/2 statute miles.
- C. the surface winds are blowing 10 to 20 statute miles per hour.

#### 31. [12-11/1/2]

The sequence "3SM" in the METAR for KLAX indicates

- A. the surface visibility is 3 miles in smoke and mist.
- B. the surface visibility is 3 statute miles.
- C. the surface winds are blowing 3 statute miles per hour.

### Runway Visual Range

#### 32. [12-11/1/3]

Referring to the figure above, the sequence "R34/2600FT" in the METAR for KMKC indicates

- A. Runway 34 is 2,600 feet long.
- B. Runway 34 prevailing visibility is 2,600 feet.
- C. Runway 34 RVR is 2,600 feet.

Weather

#### 33. [12-11/2/2]

Referring to the figure above, the letters "-SHRA" found in the METAR for KMKC indicate

- A. that light snow showers and rain existed at the time this observation was made.
- B. that showers of rain will exist at some time in the future at this station.
- C. that light rain showers existed at the time this observation was made.

### Clouds

#### 34. [12-12/2/2]

Referring to the figure above, what are the current conditions for Wink, Texas (KINK)?

- A. sky 600 feet overcast, visibility 1/2SM, drizzle, fog.
- B. sky 6000 feet overcast, visibility 1 1/2SM, drizzle, fog.
- C. sky 60 feet overcast, visibility 1 1/2SM, drizzle, fog.

#### 35. [12-12/2/2]

Referring to the figure above, which of the reporting stations have VFR weather?

- A. All.
- B. KINK, KBOI, and KLAX.
- C. KBOI and KLAX.

#### 36. [12-12/4/3]

For aviation purposes, ceiling is defined as the height above the earth's surface of the

- A. lowest reported obscuration and the highest layer of clouds reported as overcast.
- B. lowest broken or overcast layer or vertical visibility into an obscuration.
- C. lowest layer of clouds reported as scattered, broken, or thin.



**Temperature/Dewpoint**

**37. [12-13/1/1]**

Referring to the figure above, the temperature and dewpoint for Boise, Idaho (KBOI) are

- A. 19 degrees C and 13 degrees C, respectively.
- B. 13 degrees F and 19 degrees F, respectively.
- C. 01 degrees C and 93 degrees F, respectively.

**Altimeter**

**38. [12-13/1/2]**

Referring to the figure above, which station listed in the METAR below has the lowest altimeter setting?

- A. KMKC.
- B. KBOI.
- C. KLAX.

**39. [12-11/Figure 8]**

Referring to the figure below, fill in the blanks for the weather codes used in METAR & other reports.

**WEATHER CODES**

Qualifiers	
Intensity or proximity 1	Descriptor 2
- _____	MI _____
(no qualifier)	BC _____
+ _____	PR _____
VC means: in the _____	DR _____
(METAR: between 5 & 10 sm of observation point(s) TAF: between 5 to 10 sm from center of runway complex)	BL _____
	SH _____
	TS _____
	FZ _____

Weather Phenomena		
Precipitation 3	Obscuration 4	Other 5
DZ _____	BR _____	PO _____
RA _____	FG _____	
SN _____	FU _____	SQ _____
SG _____	VA _____	FC _____
IC _____	DU _____	
PL _____		+FC _____
GR _____	SA _____	
GS _____	HZ _____	SS _____
UP _____	PY _____	DS _____

**40. [12-11/Figure 8]**

Referring to the figure below, fill in the blanks for the weather codes used in METAR and other reports

**WEATHER CODES**

Weather Phenomena		
Precipitation 3	Obscuration 4	Other 5
DZ _____	BR _____	PO _____
RA _____	FG _____	
SN _____	FU _____	SQ _____
SG _____	VA _____	FC _____
IC _____	DU _____	
PL _____		+FC _____
GR _____	SA _____	
GS _____	HZ _____	SS _____
UP _____	PY _____	DS _____

**41. [12-12/Figure 9]**

Referring to the figure below, fill in the blanks for the remarks used to append METARS:

**Remarks appended to METARS**

Remarks	Definition
<b>Sky and Ceiling</b>	
FEW CU	Few _____ clouds.
BINOV	_____ in overcast.
LWR CLDS NE	Lower clouds _____
CIG 14V19	Ceiling _____ between 1,400 feet and 1,900 feet.
<b>Obscuring Phenomena</b>	
FG7	_____ obscuring 7/10 of the sky.
BLSA3	_____ sand obscuring 3/10 of the sky.
THN FG NE	_____ fog northeast from reporting station.
<b>Visibility</b>	
VSBY S1W1/4	_____ south is 1 mile, west is 1/4 mile.
SFC VSBY 1/2	_____ visibility is 1/2 mile.





**46. [12-14/1/5]**

The ASOS will report \_\_\_\_\_ (meaning no clouds are reported below 12,000 feet) instead of the SKC value shown in the METAR

- A. NCL
- B. CLR
- C. OVC

**47. [12-14/1/6]**

If you see or hear something missing from a ASOS report, it doesn't mean it's not there. It just means that the ASOS unit \_\_\_\_\_.

- A. must be activated by the pilot
- B. is inoperative
- C. can't or didn't detect it

**48. [12-14/2/1]**

You can tell that an observation in a METAR was derived by an automated source because the word \_\_\_\_\_ appears directly after the location of the date/time signifier.

- A. AUTO
- B. MANU
- C. AUTOSRCE

**49. [12-14/3/3]**

Which AWOS level provides cloud-ceiling data?

- A. AWOS-2.
- B. AWOS-3.
- C. AWOS-4.

**Whither the Weather?**

**Terminal Aerodrome Weather Forecasts (TAF)**

**50. [12-16/1/1]**

Referring to the numbers at the beginning of the TAF (i.e., 101740Z), the first two numbers represent the \_\_\_\_\_ and the last four numbers represent the \_\_\_\_\_ the report was issued.

- A. time, date
- B. date, time
- C. local time, Zulu time

**51. [12-16/1/4]**

Referring to KLAX in the figure below, what does "SHRA" stand for?

- A. Rain showers.
- B. A shift in wind direction is expected.
- C. A significant change in precipitation is possible.

**52. [12-16/Figure 16]**

Referring to the figure below, fill in the diagonal blank lines of the accompanying TAF:

**DECODED TERMINAL AERODROME WEATHER FORECAST (TAF)**

**TAF**  
**KLAX** 101740Z 1018/1118 12020KT 4SM -RA OVC016  
 FM101920 30015G25KT 3SM SHRA OVC015 PROB40 1020/1022 1/2SM TSRA OVC008CB  
 FM102300 27008KT 5SM -SHRA BKN020 OVC040 TEMPO 1102/1105 00000KT 1SM -RA FG  
 FM110800 VRB04KT 5SM -SHRA OVC020 BECMG 1112/1114 20010KT P6SM NSW SKC

**KLAX** 101740Z 1018/1118 12020KT 4SM -RA OVC016

FM101920 30015G25KT 3SM SHRA OVC015 PROB40 1020/1022 1/2SM TSRA OVC008CB

FM102300 27008KT 5SM -SHRA BKN020 OVC040 TEMPO 1102/1105 00000KT 1SM -RA FG

FM110800 VRB04KT 5SM -SHRA OVC020 BECMG 1112/1114 20010KT P6SM NSW SKC



## TERMINAL AERODROME WEATHER FORECAST (TAF)

### TAF

KMEM 121720Z 121818 20012KT 5SM HZ BKN030 PROB40 1218/1222 1SM TRSA OVC008CB  
FM122200 33015G20KT P6SM BKN015 OVC025 PROB40 1222/1302 3SM SHRA  
FM130200 35012KT OVC008 PROB40 1302/1305 2SM -RASN BECMG 1306/1308 02008KT BKN012  
BECMG 1310/1312 00000KT 3SM BR SKC TEMPO 1312/1314 1/2SM FG  
FM131600 VRB04KT P6SM SKC

KOKC 051130Z 051212 14008KT 5SM BR BKN030 TEMPO 0513/0516 1 1/2SM BR  
FM051600 18010KT P6SM SKC BECMG 0522/0524 20013G20KT 4SM SHRA OVC020  
PROB40 0600/0006 2SM TRSA OVC008CB BECMG 0606/0608 21015KT P6SM SCT040

### 53. [12-16/Figure 16]

Referring to the figure above, during the time period from 0600Z to 0800Z, what significant weather is forecast for KOKC?

- A. Wind - 210° at 15 knots.
- B. Visibility - possibly 6 statute miles with scattered clouds at 4,000 feet.
- C. No significant weather is forecast for this time period.

### 54. [12-16/1/1]

Referring to the figure above, what is the valid period for the TAF for KMEM?

- A. 1200Z to 1200Z.
- B. 1200Z to 1800Z.
- C. 1800Z to 1800Z.

### 55. [12-16/1/3]

Referring to the figure above, between 1000Z and 1200Z, the visibility at KMEM is forecast to be?

- A. 1/2 statute mile.
- B. 3 statute miles.
- C. 6 statute miles.

### 56. [12-16/2/1]

Referring to the figure above, in the TAF from KOKC, the clear sky becomes

- A. overcast at 2,000 feet during the forecast period between 2200Z and 2400Z.
- B. overcast at 200 feet with a 40% probability of becoming overcast at 600 feet during the forecast period between 2200Z and 2400Z.
- C. overcast at 200 feet with the probability of becoming overcast at 400 feet during the forecast period between 2200Z and 2400Z.

### 57. [12-17/1/4]

Referring to the figure above, what is the forecast wind for KMEM from 1600Z until the end of the forecast?

- A. no significant wind.
- B. 020° at 8 knots.
- C. variable in direction at 4 knots.

### 58. [12-17/1/4]

Referring to the figure above, in the TAF from KOKC, the "FM (FROM) Group" is

- A. forecast for the hours from 1600Z to 2200Z with the wind from 180° at 10 knots.
- B. forecast for the hours from 1600Z to 2200Z with the wind from 180° at 10 knots, becoming 220° at 13 knots with gusts to 20 knots.
- C. forecast for the hours from 1600Z to 2200Z with the wind from 180° at 10 knots, becoming 210° at 15 knots.

### 59. [12-16/Figure 16]

The only cloud type forecast in TAF reports is

- A. nimbostratus.
- B. cumulonimbus.
- C. scattered cumulus.

### 60. [12-17/1/3] Fill in the blank:

Regarding the TAF, when gradual changes in the prevailing conditions are expected, the abbreviation \_\_\_\_\_ is used.

### 61. [12-17/1/3] Fill in the blanks:

Any weather condition forecast prior to the term "BECMG" which is not revised following the change time period, is expected to \_\_\_\_\_ the \_\_\_\_\_.

### 62. [12-17/1/4] Fill in the blank:

FM is followed by a four digit number which indicates the \_\_\_\_\_ time of a self contained portion of the forecast.

### 63. [12-17/2/2] Fill in the blank:

\_\_\_\_\_ indicates that fluctuations (temporary and usually lasting less than one hour) from the predominant weather conditions are expected.



**64. [12-17/2/3]** Fill in the blanks:  
 PROB30 is used when the likely occurrence of any weather phenomena falls in the \_\_\_\_\_% to \_\_\_\_\_% range of expectations. PROB40 is used when the likely occurrence of any weather phenomena falls in the \_\_\_\_\_% to \_\_\_\_\_% range of expectations. If the probability of the condition is \_\_\_\_\_% or higher, the terms BECMG, TEMPO and FM are used.

**Area Forecasts (FA)**

**65. [12-18/1/1]**  
 To best determine general forecast weather conditions over several states, the pilot should refer to  
 A. aviation Area Forecasts.  
 B. Weather Depiction Charts.  
 C. satellite maps.

**66. [12-18/1/1]**  
 From which primary source should information be obtained regarding expected weather at the estimated time of arrival if your destination has no terminal forecast?  
 A. Low-level prognostic chart.  
 B. Weather depiction chart.  
 C. Area forecast.

**67. [12-18/1/1]** Fill in the blank:  
 The Area Forecast is a general forecast covering a region that includes several \_\_\_\_\_.

**68. [12-18/1/1]** Fill in the blank:  
 To find the forecast weather between reporting stations you should refer to the \_\_\_\_\_ Forecast.

**69. [12-18/1/2]** Fill in the blanks:  
 Area Forecasts are issued \_\_\_\_\_ times daily for \_\_\_\_\_ specific areas in the lower 48 states.

**70. [12-18/1/2]** Fill in the blanks:  
 Area Forecasts are \_\_\_\_\_ hour forecasts with an additional \_\_\_\_\_ hour outlook.

**71. [12-18/1/2]** Fill in the blank:  
 All heights mentioned in the Area Forecast are \_\_\_\_\_.

**72. [12-18/1/3]** Fill in the blank:  
 The Area Forecast consists of \_\_\_\_\_ sections.

**73. [12-18/2/1]** Fill in the blank:  
 As with other weather reports, the times listed in the Area Forecast are in \_\_\_\_\_.

**74. [12-18/1/3]** Fill in the blanks:  
 The sections of the Area Forecast are:  
 1. \_\_\_\_\_  
 2. \_\_\_\_\_  
 3. \_\_\_\_\_  
 4. \_\_\_\_\_

**75. [12-19/2/2]**  
 The section of the Area Forecast entitled "SIG CLDS AND WX" contains a summary of  
 A. cloudiness and weather significant to flight operations broken down by states or other geographical areas.  
 B. forecast sky cover, cloud tops, visibility, and obstructions to vision along specific routes.  
 C. weather advisories still in effect at the time of issue.

**THE AREA FORECAST**

BOSC FA 241845  
 SYNOPSIS AND VFR CLDS/WX  
 SYNOPSIS VALID UNTIL 251300  
 CLDS/WX VALID UNTIL 250700...OTLK VALID 250700-251300  
 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...19Z CDFNT ALG A 160NE ACK-ENE LN...CONTG  
 AS A QSTNRY FNT ALG AN END-50SW MSS LN. BY 13Z...CDFNT  
 ALG A 140ESE ACK-HTO LN...CONTG AS A QSTNRY FNT ALG  
 A HTO-SYR-YYZ LN. TROF ACRS CNTRL PA INTO NRN VA.  
 ...REYNOLDS...  
 .  
 OH LE  
 NRN HLF OH LE...SCT-BKN025 OVC045. CLDS LYRD 150. SCT SHRA.  
 WDLY SCT TSRA. CB TOPS FL350. 23-01Z OVC020-030. VIS 3SM BR.  
 OCNL -RA. OTLK...IFR CIG BR FG.  
 SWRN QTR OH...BKN050-060 TOPS 100. OTLK...MVFR BR.  
 SERN QTR OH...SCT-BKN040 BKN070 TOPS 120. WDLY SCT -TSRA.  
 00Z SCT-BKN030 OVC050. WDLY SCT -TSRA. CB TOPS FL350.  
 OTLK...VFR SHRA.

**76. [12-20/Figure 21]**  
 Referring to the figure above, what is the forecast ceiling for the northern half of Ohio and Lake Erie from 2300Z to 0100Z?  
 A. Ceilings 2,000 to 3,000 feet overcast.  
 B. Ceilings 200 to 300 feet overcast.  
 C. No ceiling is forecast for this area during this time period.



**THE AREA FORECAST**

BOSC FA 241845  
SYNOPSIS AND VFR CLDS/WX  
SYNOPSIS VALID UNTIL 251300  
CLDS/WX VALID UNTIL 250700...OTLK VALID 250700-251300  
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...19Z CDFNT ALG A 160NE ACK-ENE LN...CONTG  
AS A QSTNRY FNT ALG AN END-50SW MSS LN. BY 13Z...CDFNT  
ALG A 140ESE ACK-HTO LN...CONTG AS A QSTNRY FNT ALG  
A HTO-SYR-YYZ LN. TROF ACRS CNTRL PA INTO NRN VA.  
...REYNOLDS...

OH LE  
NRN HLF OH LE...SCT-BKN025 OVC045. CLDS LYRD 150. SCT SHRA.  
WDLY SCT TSRA. CB TOPS FL350. 23-01Z OVC020-030. VIS 3SM BR.  
OCNL -RA. OTLK...IFR CIG BR FG.  
SWRN QTR OH...BKN050-060 TOPS 100. OTLK...MVFR BR.  
SERN QTR OH...SCT-BKN040 BKN070 TOPS 120. WDLY SCT -TSRA.  
00Z SCT-BKN030 OVC050. WDLY SCT -TSRA. CB TOPS FL350.  
OTLK...VFR SHRA.

**77. [12-20/Figure 21]**

Referring to the figure above, what precipitation (if any) is expected in the southeastern quarter of Ohio from 0700Z to 1300Z?

- A. No precipitation is expected.
- B. Moderate rain showers.
- C. Thunderstorms, but no rain is expected.

**78. [12-20/Figure 21]**

What are the tops of the cumulonimbus clouds expected during the forecast period in southeastern Ohio?

- A. 20,000 feet.
- B. 3,500 feet.
- C. 35,000 feet.

**79. [12-19/Figure 18B & 12-11/Figure 8]**

In the southwestern quarter of Ohio, the outlook calls for

- A. marginal VFR with mist.
- B. mostly VFR with blowing rain.
- C. marginal VFR with blowing rain.

**80. [12-20/1/4]** Fill in the blanks:

Only surface visibilities of \_\_\_\_\_ or less miles and sustained winds of \_\_\_\_\_ knots or greater are shown in the Area Forecast.

**81. [12-20/Figure 21]**

Referring to the figure above, what type of pressure system exists across central Pennsylvania into northern Virginia?

- A. A ridge
- B. A trough
- C. A Reynolds system.

**82. [12-20/Figure 21]**

Referring to the synopsis section in the figure above, where is the cold front located?

- A. At 16,000 feet over Nebraska.
- B. Along a line that begins at a point 160 nautical miles northeast of ACK and extends to ENE.
- C. At 160 nautical miles from NE that extends along a line from ACK to ENE.

**83. [12-19/Figure 18B & 12-11/Figure 8]**

In the southeastern quarter of Ohio, the outlook calls for

- A. VFR with moderate rain showers.
- B. mostly VFR with snow and rain.
- C. VFR with blowing rain.

**84. [12-20/Figure 21]**

Where does the scattered to broken layer begin in the northern half of Ohio and Lake Erie?

- A. 2,500 feet AGL
- B. 2,500 feet MSL
- C. 250 feet MSL



FD WBC 151745  
 BASED ON 151200Z DATA  
 VALID 1600Z FOR USE 1800-0300Z. TEMPS NEG ABV 24000

FT	3000	6000	9000	12000	18000	24000	30000	34000
ALS			2420	2635-08	2535-18	2444-30	245945	246755
AMA		2714	2725+00	2625-04	2531-15	2542-27	265842	256352
DEN			2321-04	2532-08	2434-19	2441-31	235347	236056
HLC		1707-01	2113-03	2219-07	2330-17	2435-30	244145	244854
MKC	0507	2006+03	2215-01	2322-06	2338-17	2348-29	236143	841652
STL	2113	2325+07	2332+02	2339-04	2356-16	2373-27	239440	730649

**Winds Aloft Forecasts (FD)**

**85. [12-21/1/2]** Fill in the blanks:

Winds aloft forecasts are issued \_\_\_\_\_ daily and are valid for either \_\_\_\_\_, \_\_\_\_\_ or \_\_\_\_\_ hours as indicated.

**86. [12-21/2/1]**

Winds aloft forecasts are provided in \_\_\_\_\_ (knots? mph?), their direction is always referenced to \_\_\_\_\_ north and their temperatures are always in degrees \_\_\_\_\_.

**87. [12-21/2/1]**

Referring to the figure above, what wind is forecast for STL at 18,000 feet?

- A. 230 degrees true at 56 knots.
- B. 235 degrees true at 06 knots.
- C. 235 degrees magnetic at 06, peak gusts to 16 knots.

**88. [12-21/2/2]**

Referring to the figure above, determine the wind and temperature aloft forecast for 3,000 feet at MKC.

- A. 050 degrees true at 7 knots, temperature missing.
- B. 360 degrees magnetic at 5 knots, temperature -7 degrees C.
- C. 360 degrees true at 50 knots, temperature +7 degrees C.

**89. [12-21/2/2]**

Referring to the figure above, what wind is forecast for STL at 6,000 feet?

- A. 210 degrees magnetic at 13 knots.
- B. 230 degrees true at 25 knots.
- C. 232 degrees true at 5 knots.

**90. [12-21/2/2]**

Referring to the figure above, determine the wind and temperature aloft forecast for DEN at 30,000 feet.

- A. 023 degrees magnetic at 53 knots, temperature 47 degrees C.
- B. 230 degrees true at 53 knots, temperature -47 degrees C.
- C. 235 degrees true at 34 knots, temperature -7 degrees C.

**91. [12-21/Figure 22]**

Referring to the figure above, what wind is forecast for STL at 34,000 feet?

- A. 007 degrees magnetic at 30 knots.
- B. 073 degrees true at 6 knots.
- C. 230 degrees true at 106 knots.

**92. [12-21/Figure 22]**

Referring to the winds aloft forecast in the figure above, what are the winds expected to be over MKC at 34,000 feet?

- A. 84 degrees at 16 knots.
- B. 840 degrees at 116 knots.
- C. 340 degrees at 116 knots.

**93. [12-21/3/1]**

If winds are expected to be light and variable, the identifier \_\_\_\_\_ is used; if they're expected to be calm, the identifier \_\_\_\_\_ is used.

**94. [12-21/3/1]**

When the term "light and variable" is used in reference to a winds aloft forecast, the coded group and wind-speed are

- A. 0000 and less than 7 knots.
- B. 9900 and less than 5 knots.
- C. 9999 and less than 10 knots.

# Rod Machado's Sport Pilot Workbook



## Weather Charts: Getting the Big Picture

### Weather Depiction Chart

#### 95. [12-23/1/1]

Referring to the figure below, of what value is the Weather Depiction Chart to the pilot?

- A. For determining general weather conditions on which to base flight planning.
- B. As a forecast of cloud coverage, visibilities, and frontal activity.
- C. For determining frontal trends and air mass characteristics.

#### 96. [12-23/1/1]

The Weather Depiction Chart is issued every \_\_\_\_\_ starting at \_\_\_\_\_ Z.

- A. six hours, 1200
- B. three hours, 0100
- C. four hours, 0600

#### 97. [12-23/1/3]

On the Weather Depiction Chart, areas of marginal VFR conditions are shown by contoured areas \_\_\_\_\_ shading.

- A. without
- B. with
- C. with and without

#### 98. [12-23/1/3]

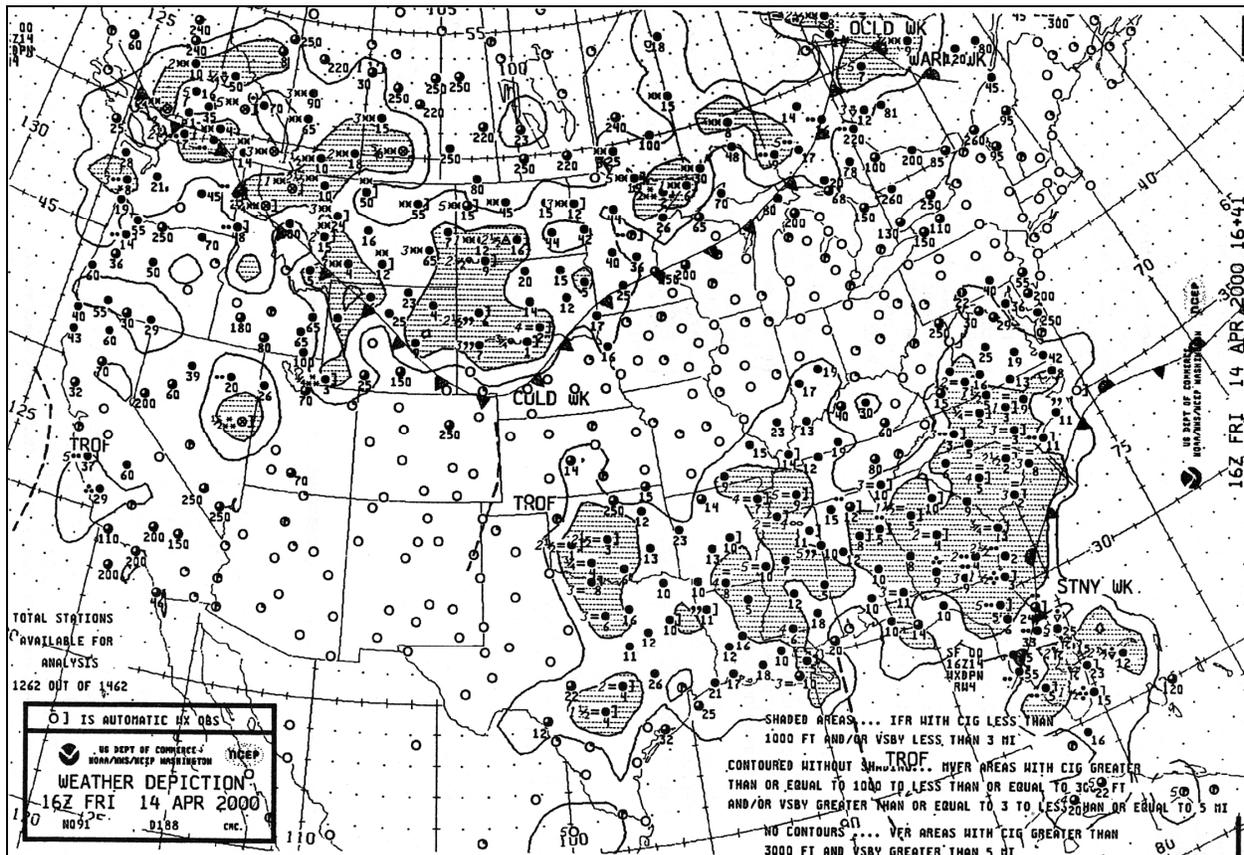
On the Weather Depiction Chart, areas of IFR conditions are shown by contoured \_\_\_\_\_ areas.

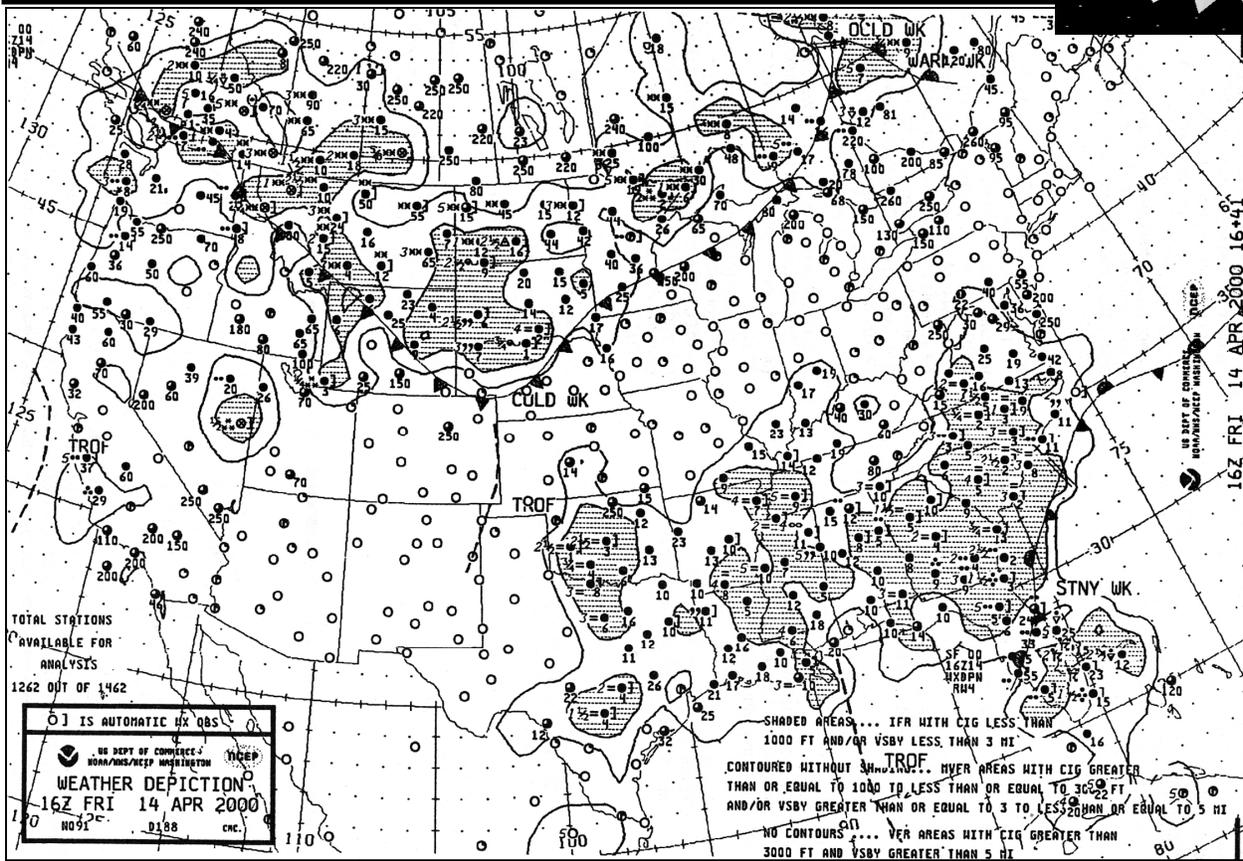
- A. non shaded
- B. shaded
- C. shaded and non shaded

#### 99. [12-23/1/3]

An MVFR area has ceilings of \_\_\_\_\_ to \_\_\_\_\_ feet and visibilities of \_\_\_\_\_ to \_\_\_\_\_ miles.

- A. 3,000, 5000, 3, 5
- B. 500, 1000, 1, 3
- C. 1,000, 3000, 3, 5





**100. [12-23/1/2 & 12-23/Figures 24 & 25]**

Referring to the figure above, according to the Weather Depiction Chart the weather for a flight from southern Michigan to north Indiana has ceilings

A. 1,000 to 3,000 feet and/or visibility 3 to 5 miles.  
 B. less than 1,000 feet and/or visibility less than 3 miles.  
 C. greater than 3,000 feet and visibility greater than 5 miles.

**101. [12-23/1/3 & 12-23/Figures 24 & 25]**

Referring to the figure above, the IFR weather in central Texas is due to

A. intermittent rain.  
 B. fog.  
 C. dust devils.

**102. [12-23/1/3 & 12-23/Figures 24 & 25]**

Referring to the figure above, what weather phenomenon is causing IFR conditions in central Oklahoma?

A. Low visibility only.  
 B. Low ceilings and visibility.  
 C. Heavy rain showers.

**103. [12-23/1/3 & 12-23/Figures 24 & 25]**

Referring to the figure above, the marginal weather in central Kentucky is due to low

A. visibility.  
 B. ceilings and visibility.  
 C. ceilings.

**104. [12-23/2/4]**

Referring to the figure above, what is the status of the front that is off the coast of Virginia, the Carolinas and Georgia?

A. Stationary.  
 B. Occluded.  
 C. Retreating.

**105. [12-23/2/4]**

Referring to the figure above, the front that cuts across Wisconsin is a

A. stationary front.  
 B. cold front.  
 C. warm front.



106. [12-23/Figure 24]

Referring to the figure below, fill in the blanks with the appropriate fraction in eighths represented by the symbol:

## SYMBOLS FOR SKY COVER

SYMBOL	TOTAL SKY COVER
	Sky _____
	FEW - (more than ____ to ____)
	SCT - Scattered (____ to ____)
	BKN - Broken (____ to ____)
	OVC - Overcast (____)

107. [12-23/Figure 25]

Referring to the figure below, fill in the blanks with the appropriate word which represents the symbol:

## Radar Summary Chart

108. [12-24/1/1]

The radar summary chart is issued \_\_\_\_\_ times during a 24 hour period.

- A. 24
- B. 16
- C. 8

109. [12-24/1/1]

The radar summary chart presents information on the location of radar echoes resulting from \_\_\_\_\_ suspended in \_\_\_\_\_.

- A. precipitation, clouds
- B. clouds, the air
- C. moisture, the stratosphere

110. [12-24/1/1]

Radar energy goes right through \_\_\_\_\_, but reflects off \_\_\_\_\_.

- A. hail, water
- B. rain, hail
- C. a cloud, water or hail

111. [12-24/1/1&2]

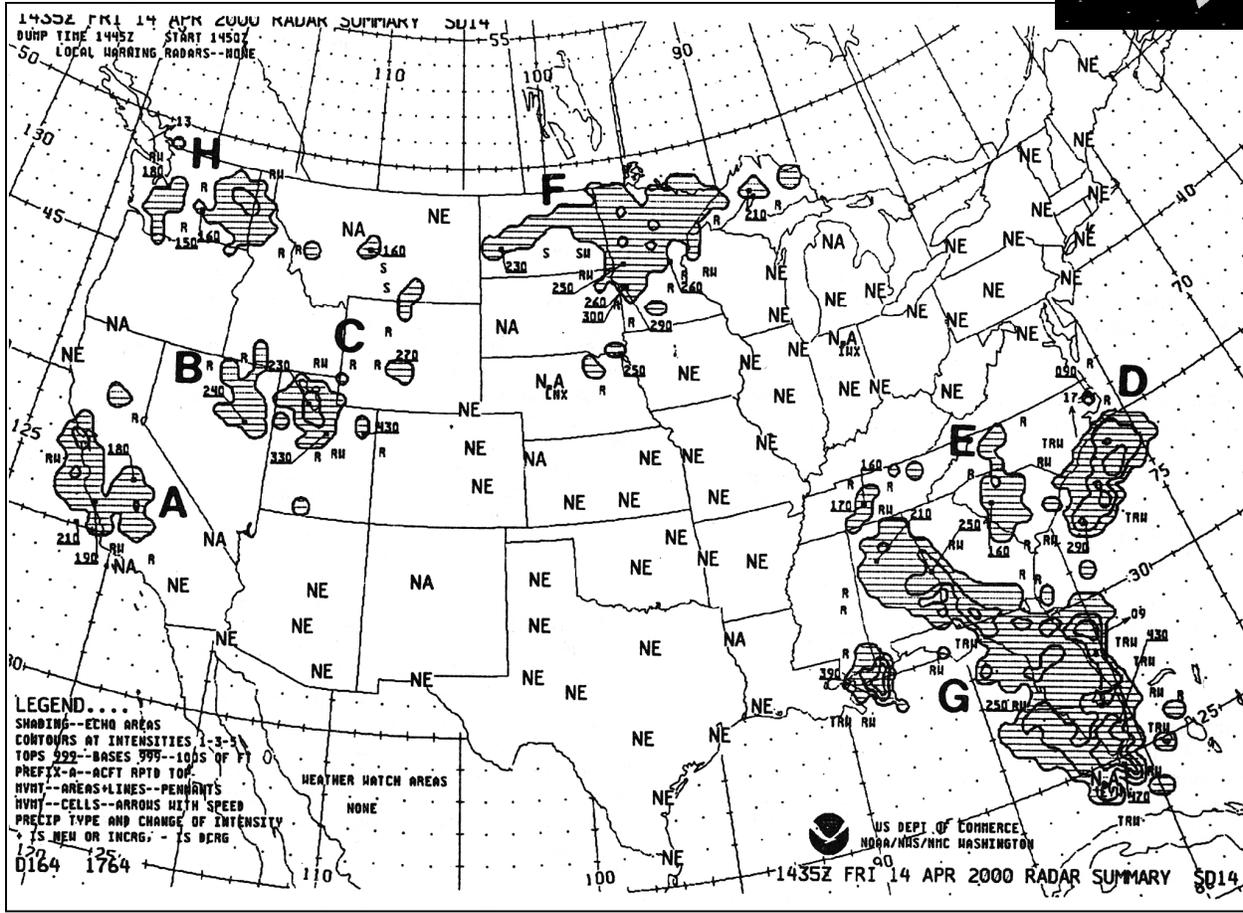
What information is provided by the radar summary chart that is not shown on other weather charts?

- A. Lines and cells of hazardous thunderstorms.
- B. Ceilings and precipitation between reporting stations.
- C. Types of clouds between reporting stations.

## WX DEPICTION PLOTTING SYMBOLS

PLOTTING SYMBOL	MEANING
	_____ clouds, base 800 feet, visibility more than _____ miles
	_____ sky cover, ceiling _____ feet, rain shower, visibility more than _____ miles
	Thin _____ with breaks, visibility _____ in _____
	Scattered at _____ feet, clouds topping _____, visibility more than 6 miles

PLOTTING SYMBOL	MEANING
2=	Sky _____ visibility 2, ground fog or fog
1/2	Sky partially _____, visibility _____, blowing snow, no cloud layers observed
2=	Sky _____ obscured, visibility 2, fog, cloud layer at _____ feet.
1/4 *	Sky _____, ceiling _____ feet, visibility 1/4, snow
1	_____, ceiling _____ feet, _____, rain showers, visibility 1



**112. [12-24/1/1&2, 12-24/Figure 27]**

Radar weather reports are of special interest to pilots because they indicate

- A. large areas of low ceilings and fog.
- B. location of precipitation along with type, intensity, and trend.
- C. location of broken to overcast clouds.

**113. [12-25/1/1, 12-24/Figure 27]**

Referring to the figure above, what type of weather is occurring in the radar return at position B?

- A. Rain showers increasing in intensity.
- B. Light to moderate rain showers.
- C. Continuous rain.

**114. [12-25/1/2, 12-24/Figure 27]**

Referring to the figure above, what is the direction and speed of movement of the cell at position D?

- A. South at 17 knots.
- B. North at 17 knots.
- C. North at 17 MPH.

**115. [12-25/1/2, 12-24/Figure 27]**

Referring to the figure above, the top of the precipitation of the cell at position E is

- A. 16,000 feet AGL.
- B. 25,000 feet MSL.
- C. 16,000 feet MSL.

**116. [12-25/1/3, 12-24/Figure 27]**

Referring to the figure above, what is the top for precipitation of the radar return at position B?

- A. 24,000 feet AGL.
- B. 24,000 feet MSL.
- C. 2,400 feet MSL.

**117. [12-25/1/4, 12-24/Figure 27]**

What does the heavy dashed line that forms a large rectangular box on a radar summary chart refer to?

- A. Areas of heavy rain.
- B. Severe weather watch area.
- C. Areas of hail 1/4 inch in diameter.

# Rod Machado's Sport Pilot Workbook



## Low Level Significant Weather Prognostic Chart 121. [12-27/1/2]

118. [12-26/1/3]

The Significant Weather Prognostic Chart provides a picture forecast for

- A. the eastern or western half of the United States.
- B. one of six areas in the United States.
- C. the entire United States.

119. [12-26 & M27/All]

Referring to the figure below, how are Significant Weather Prognostic Charts best used by a pilot?

- A. For overall planning at all altitudes.
- B. For determining areas to avoid (freezing levels and turbulence).
- C. For analyzing current frontal activity and cloud coverage.

120. [12-27/1/1]

Referring to the figure below, what weather is forecast for the Florida area just ahead of the stationary front during the first 12 hours?

- A. Ceiling 1,000 to 3,000 feet and/or visibility 3 to 5 miles with continuous precipitation.
- B. Ceiling 1,000 to 3,000 feet and/or visibility 3 to 5 miles with intermittent precipitation.
- C. Ceiling less than 1,000 feet and/or visibility less than 3 miles with continuous precipitation.

Referring to the figure below, at what altitude is the freezing level over the middle of Florida on the 12-hour Significant Weather Prognostic Chart?

- A. 4,000 feet.
- B. 12,000 feet.
- C. 8,000 feet.

122. [12-27/1/2]

Referring to the figure below, at what altitude is the freezing level in the northeastern tip of Montana on the 24-hour Significant Weather Prognostic Chart?

- A. At the surface.
- B. 8,000 feet.
- C. 12,000 feet.

123. [12-27/2/1]

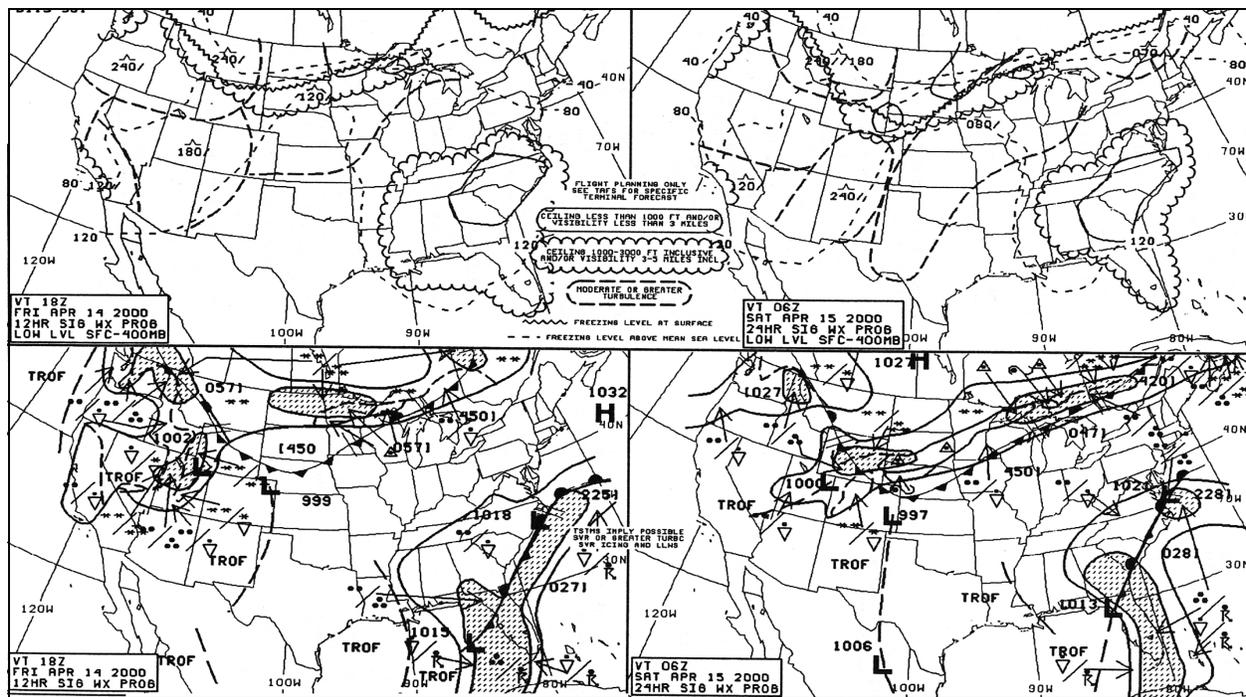
Referring to the figure below, interpret the weather symbol depicted in Utah on the 12-hour significant weather prognostic chart.

- A. Moderate turbulence, surface to 18,000 feet.
- B. Thunderstorm tops at 18,000 feet.
- C. Base of clear air turbulence, 18,000 feet.

124. [12-27/2/2]

Referring to the figure below, the enclosed shaded area associated with the low pressure system over northern Utah is forecast to have

- A. continuous snow.
- B. intermittent snow.
- C. continuous snow showers.





**Surface Analysis**

**125. [12-28/1/1]**

The surface analysis chart shows the location of \_\_\_\_\_ and \_\_\_\_\_.

- A. pressure patterns, fronts
- B. freezing levels, radar echoes.
- C. Airmets, Sigmets

**126. [12-28/1/1]**

This chart is based on reported weather data and is issued every \_\_\_\_\_ hours.

- A. twelve
- B. three
- C. six

**127. [12-28/1/2]**

You can think of the surface analysis as a very large visual portrayal of hundreds of \_\_\_\_\_.

- A. METARs
- B. Area Forecasts
- C. TAFs

**128. [12-28/1/2]**

The surface analysis chart shows the temperature/ dew point spread over a large area. From this you can get a good feel for the likelihood of \_\_\_\_\_ formation before and after sunset.

- A. thunderstorm
- B. wind shear
- C. fog or low cloud

**In-flight Aviation Weather Advisories**

**SIGMET (WS)**

**129. [12-28/2/2]**

In-flight aviation weather advisories are forecasts which advise pilots of potentially \_\_\_\_\_ weather.

- A. hazardous
- B. helpful
- C. rainy

**130. [12-28/2/2]**

In-flight advisories may also be obtained from \_\_\_\_\_ and \_\_\_\_\_ broadcasts over specific VORs and NDBs.

- A. EFAS, TCA
- B. TWEB, HIWAS
- C. MOA, UB12

**131. [12-29/1/2]**

SIGMETs are issued as a warning of weather conditions hazardous to which aircraft?

- A. Small aircraft only.
- B. Large aircraft only.
- C. All aircraft.

**132. [12-29/1/2]**

When are SIGMETs issued?

- A. Every six hours, on the hour.
- B. When, in the opinion of a forecaster, the weather will be marginal.
- C. Whenever any of the specified hazardous conditions occur or are expected to occur.

**133. [12-29/1/2]**

Which of the following would not be covered by a SIGMET:

- 1) severe icing not associated with thunderstorms
- 2) severe or extreme turbulence or clear air turbulence (CAT) not associated with thunderstorms
- 3) dust storms 4) sandstorms
- 5) volcanic ash that lowers surface visibilities to less than 3 miles
- 6) any volcanic eruption

- A. 5 and 6
- B. 3 and 6
- C. All of the above are covered

**134. [12-29/1/2]**

Which in-flight advisory would contain information on severe icing that's not associated with a thunderstorm?

- A. Convective SIGMET.
- B. SIGMET.
- C. AIRMET.

**135. [12-29/2/2]**

SIGMETs are named by the phonetic alphabet using designators from \_\_\_\_\_ through \_\_\_\_\_, excluding Sierra, Tango and Zulu.

- A. Oscar, November
- B. Alpha, Yankee
- C. November, Yankee



## AIRMET (WA)

### 136. [12-29/2/5]

AIRMETs are advisories of significant weather phenomena but of lower intensities than SIGMETs and are intended for dissemination to

- A. only IFR pilots.
- B. only VFR pilots.
- C. all pilots.

### 137. [12-29/2/6]

AIRMETs are issued once every \_\_\_\_\_ hours on a scheduled basis with unscheduled amendments issued as required.

- A. 2
- B. 12
- C. 6

### 138. [12-29/2/6]

AIRMETs are valid for a period of \_\_\_\_\_ hours.

- A. 6
- B. 12
- C. 18

### 139. [12-29/2/6]

Which of the following would not be covered by an AIRMET:

- 1) severe icing
- 2) moderate turbulence
- 3) sustained winds of 30 knots or more at the surface
- 4) ceilings less than 1,000 feet and/or visibilities less than 3 miles affecting over 50% of the area at one time
- 5) extensive mountain obscuration

- A. 5 only
- B. 2 and 5
- C. 1 only

### 140. [12-29/2/7]

An AIRMET with the phonetic name "TANGO" indicates that this AIRMET refers to \_\_\_\_\_.

- A. turbulence, strong surface winds, and low level wind shear
- B. icing and freezing
- C. IFR and mountain obscurations

### 141. [12-30/1/2]

An AIRMET with the phonetic name "SIERRA" indicates that this AIRMET refers to \_\_\_\_\_.

- A. turbulence, strong surface winds, and low level wind shear
- B. icing and freezing
- C. IFR and mountain obscurations

### 142. [12-30/1/4]

An AIRMET with the phonetic name "ZULU" indicates that this AIRMET refers to \_\_\_\_\_.

- A. turbulence, strong surface winds, and low level wind shear
- B. icing and freezing
- C. IFR and mountain obscurations

## Convective SIGMETs (WST)

### 143. [12-30/1/5]

A convective SIGMET is an advisory associated with convective activity such as severe \_\_\_\_\_.

- A. cumulus clouds
- B. thunderstorms
- C. fog

### 144. [12-30/1/5]

What information is contained in a convective SIGMET?

- A. Tornadoes, embedded thunderstorms, and hail 3/4 inch or greater in diameter.
- B. Severe icing, severe turbulence, or widespread dust storms lowering visibility to less than 3 miles.
- C. Surface winds greater than 40 knots or thunderstorms equal to or greater than VIP (Video Integrator Processor) level 4.

### 145. [12-30/1/5]

What is indicated when a current convective SIGMET forecasts thunderstorms?

- A. Moderate thunderstorms covering 30 percent of the area.
- B. Moderate or severe turbulence.
- C. Thunderstorms obscured by massive cloud layers.

## Pilot Reports (PIREPS)

### A TYPICAL PILOT REPORT (PIREP)

```
KTUL UA /OV KOKC-KTUL /TM 1800 /FL 120
/TP BE90 /SK BKN018-TOP055/OVC072-TOP089 /CLR ABV
/WX RA /TA M9 /WV 08021KT /TB LGT 055-072
/IC LGT-MDT RIME 072-089.
```

### 146. [12-31/1/1]

Referring to the PIREP above, if the terrain elevation is 1,295 feet MSL, what is the height above ground level of the base of the ceiling?

- A. 505 feet AGL.
- B. 1,295 feet AGL.
- C. 6,586 feet AGL.

**147. [12-31/1/1]**

Referring to the PIREP above, the base and tops of the overcast layer reported by a pilot are

- A. 1,800 feet MSL and 5,500 feet MSL.
- B. 5,500 feet AGL and 7,200 feet MSL.
- C. 7,200 feet MSL and 8,900 feet MSL.

**148. [12-31/1/1]**

Referring to the PIREP above, the wind and temperature at 12,000 feet MSL as reported by a pilot are

- A. 008 degrees at 121 MPH and 90 degrees F.
- B. 080 degrees at 21 knots and 9 degrees F.
- C. 080 degrees at 21 knots and -9 degrees C.

**149. [12-31/1/1]**

Referring to the PIREP above, the intensity of the turbulence reported at a specific altitude is

- A. moderate at 5,500 feet and at 7,200 feet.
- B. light from 5,500 feet to 7,200 feet.
- C. light to moderate from 7,200 feet to 8,900 feet.

**150. [12-31/1/1]**

Referring to the PIREP above, the intensity and type of icing reported by a pilot is

- A. light to moderate rime.
- B. light to moderate clear.
- C. moderate rime.

**Putting It All Together****Surface Map and Weather Depiction Chart****151. [12-32/1/2]**

Looking at the surface weather map tells you where the fronts and pressure systems are. Comparing this with the Weather Depiction Chart provides you with a picture of what effect these fronts and pressure centers \_\_\_\_\_.

- A. will have at some time in the future
- B. are having on surface weather
- C. are having on the potential for thunderstorms

**Weather Depiction Chart and Radar Summary Chart****152. [12-32/1/3]**

By comparing the Weather Depiction Chart and the Radar Summary Chart, you get an idea of the \_\_\_\_\_ activity associated with areas of IFR, MVFR and VFR conditions.

- A. convective
- B. forecast
- C. predicted

**Area Forecast and Prog Charts****153. [12-32/1/4]**

Since the Area Forecast is a textual description and the prog chart is a picture, a comparison of the two provides you with a \_\_\_\_\_.

- A. forecast of convective weather only
- B. present moment complete description of the weather
- C. complete, big picture description of forecast weather

**Weather Depiction and Prog Charts****154. [12-33/1/1]**

Since the Weather Depiction Chart shows the location of fronts and pressure systems, you can see \_\_\_\_\_ by comparing it to the 12 and 24 surface prog chart.

- A. the present speeds of high altitude winds
- B. which way these systems will move
- C. the precise position of a frontal system and how these systems will move

**METARs/Surface Map****155. [12-33/1/2]**

Comparing individual METARs with the surface weather map provides you with an understanding of \_\_\_\_\_ weather around and between your departure and \_\_\_\_\_ destination airports.

- A. convective
- B. surface
- C. high altitude

# Rod Machado's Sport Pilot Workbook



1. A
2. C
3. C
4. C
5. A
6. A
7. A
8. C
9. B
10. A
11. B
12. B
13. A
14. B
15. A
16. C
17. A
18. C
19. A
20. A
21. B
22. C
23. Should/Tina/Walk/Vera's/Rabbit/Without/Checking/The/Dog's/Appetite
24. A/station identifier, B/time (UTC), C/wind direction & velocity, D/visibility, E/runway visual range, F/ weather, G/cloud amount and type, H/temperature & dewpoint I/altimeter, J/optional remarks
25. A
26. A
27. B
28. A
29. C
30. B
31. B
32. C
33. C
34. A
35. C
36. B
37. A
38. A
- 39.

40.

Weather Phenomena		
Precipitation	Obscuration	Other
3	4	5
DZ <u>Drizzle</u>	BR <u>Mist</u> ( $\geq 5/8$ sm)	PO <u>Well developed dust/sand whirls</u>
RA <u>Rain</u>	FG <u>Fog</u> ( $< 5/8$ sm)	SQ <u>Squalls</u>
SN <u>Snow</u>	FU <u>Smoke</u>	FC <u>Funnel cloud(s)/</u>
SG <u>Snow grains</u>	VA <u>Volcanic ash</u>	+FC <u>Tornado/waterspout</u>
IC <u>Ice crystals</u>	DU <u>Widespread dust</u>	SS <u>Sandstorm</u>
PL <u>Ice pellets</u>	SA <u>Sand</u>	DS <u>Duststorm</u>
GR <u>Hail</u>	HZ <u>Haze</u>	
GS <u>Small hail &amp;/or snow pellets</u>	PY <u>Spray</u>	
UP <u>Unknown Precip</u>		

41.

Remarks appended to METARS	
Remarks	Definition
<b>Sky and Ceiling</b>	
FEW CU	Few cumulus clouds.
BINOC	Breaks in overcast.
LWR CLDS NE	Lower clouds <u>northeast</u> .
CIG 14V19	Ceiling <u>variable</u> between 1,400 feet and 1,900 feet.
<b>Obscuring Phenomena</b>	
FG7	Fog obscuring 7/10 of the
BLSA3	Blowing sand obscuring 3/10 of the sky.
THN FG NE	<u>Thin fog</u> northeast from reporting station.
<b>Visibility</b>	
VSBY S1W1/4	<u>Visibility</u> south is 1 mile, west is 1/4 mile.
SFC VSBY 1/2	<u>Surface</u> visibility is 1/2 mile.

42.

Remarks appended to METARS	
Remarks	Definition
<b>Weather and Obstruction to Vision</b>	
RAB30	Rain <u>began</u> 30 minutes after the hour.
RAE30	Rain <u>ended</u> 30 minutes after the hour.
OCNL DST LTG NW	Occasional distant lightning <u>northwest</u> of reporting station.
T OVHD MOVG NE	Thunderstorm <u>overhead</u> , moving northeast.
<b>Wind</b>	
WND 20V26	Wind variable between 200 degrees and <u>260</u> degrees.
PK WND 15027/35 <small>("PK WND" is used whenever the peak winds exceed 25 knots)</small>	Peak wind within the past hour from <u>150</u> degrees at 27 knots occurred <u>35</u> minutes past the hour.
<b>Pressure</b>	
PRESSR	Pressure <u>rising</u> rapidly.
PRESFR	Pressure <u>falling</u> rapidly.



**METAR WEATHER REPORTING FORMAT**

METAR KINK 100655Z 35016G22KT 1/2SM R30R/2000FT -RA BKN010 09/06 A3000  
 SPECI KMKC 100655Z 25014G28KT 3/4SM R34/2600FT -SHRA OVC003 06/02 A2998  
 METAR KBOI 100655Z 30010KT 4SM SCT025 18/11 A3004 RMK SLP158 T01820114  
 METAR KLAX 100655Z 01011G18KT 3SM FUHZ SKC 18/11 A2995

**Above METAR Decoded**

METAR KINK 100655Z	35016G22KT	1/2SM	R16L/2000FT	-RA	BKN010	09/06	A3000
Station: Wink, TX	Issued on 10th day at 0655 Zulu	Wind is 350° at 16 knots gusting to 22 knots	Reported visibility 1/2 statute mile	Runway 16 Left, visual range is 2,000 feet	Light rain showers	(Ceiling) Broken clouds at 1000 feet AGL	Altimeter 30.00" Hg Temperature 09° C Dewpoint 6° C
SPECI KMKC 100655Z	25014G28KT	3/4SM	R34/2600FT	+SHRA	OVC003	06/02	A2998
Special, unscheduled report	Issued on 10th day at 0655 Zulu	Wind is 250° at 14 knots gusting to 28 knots	Reported visibility 3/4 statute mile	Runway 34 visual range is 2,600 feet	Heavy rain showers	(Ceiling) Overcast clouds at 300 feet AGL	Altimeter 29.98" Hg Temperature 6° C Dewpoint 2° C
METAR KBOI 100655Z	30010KT	4SM	SCT025	18/11	A3004	RMK SLP158	T01820114
Station: Boise, Idaho	Issued on 10th day at 0655 Zulu	Wind is 300° at 10 knots	Reported visibility 4 statute miles	Scattered clouds at 2,500 feet AGL	Altimeter 30.04" Hg	Remarks (follow)	Temp 18.2° C./Dewpoint 11.4° C. Sea Level Pressure in millibars (Huh?) (Don't worry about this. You'll never use it!)
METAR KLAX 100655Z	01011G18KT	FUHZ	3SM	SKC	18/11	A2995	
Station: Los Angeles, CA	Issued on 10th day at 0655 Zulu	Wind is 010° at 11 knots gusting to 18 knots	Reported visibility 3 statute miles	Smoke & Haze	Sky is clear - no clouds	Temp 18° C Dewpoint 11° C	Altimeter 29.95" Hg

- 43.
- 44. B
- 45. A
- 46. B
- 47. C
- 48. A
- 49. B
- 50. B
- 51. A



## DECODED TERMINAL AERODROME WEATHER FORECAST (TAF)

### TAF

KLAX 101740Z 1018/1118 12020KT 4SM -RA OVC016  
 FM101920 30015G25KT 3SM SHRA OVC015 PROB40 1020/1022 1/2SM TSRA OVC008CB  
 FM102300 27008KT 5SM -SHRA BKN020 OVC040 TEMPO 1102/1105 0000KT 1SM -RA FG  
 FM110800 VRB04KT 5SM -SHRA OVC020 BECMG 1112/1114 20010KT P6SM NSW SKC

### Above TAF Decoded

KLAX 101740Z Station: Los Angeles	1018/1118 Issued on 10th day at 1740 Zulu	12020KT Forecast time beginning on the 10th at 1800Z ending the 11th at 1800Z	4SM Wind forecast 120° at 20 knots	-RA 4 statute miles visibility	OVC016 Light rain	Overcast (ceiling) at 1,600 feet AGL
FM101920 Letters FM (meaning From) indicate significant change in weather expected on the 10th at 1920Z	30015G25KT Wind of 300° at 15 knots gusting to 25 knots	3SM 3 statute miles visibility	SHRA Moderate rain showers	OVC015 Overcast (ceiling) at 1,500 feet AGL	PROB40 1020/1022 1/2SM TSRA OVC008CB 40-49% probability between 2000Z & 2200Z (on the 10th) of 1/2 statute mile visibility with thunderstorms & rain with an overcast (ceiling) of 800 foot AGL & cumulonimbus clouds*	*CBs are the only cloud type forecast in the TAF
FM102300 Letters FM (meaning From) indicate significant change in weather expected on the 10th at 2300Z	27008KT Wind of 270° at 8 knots	5SM 5 statute miles visibility	-SHRA Light rain showers	BKN020 OVC040 Broken clouds (ceiling) at 2,000 feet AGL & an overcast at 4,000 feet AGL	TEMPO 1102/1105 0000KT 1SM -RA FG A temporary change between 0200Z & 0500Z (on the 11th) is expected with calm winds and one statute mile visibility due to light rain & fog	
FM110800 Letters FM indicate another significant change in weather expected at 0800Z on the 11th	VRB04KT Wind variable in direction at 4 knots	5SM 5 statute miles visibility	-SHRA Light rain showers	OVC020 Overcast clouds (ceiling) at 2,000 feet AGL	BECMG 1112/1114 20010KT P6SM NSW SKC Between 1200Z to 1400Z (on the 11th) the weather is forecast to become: winds of 200° at 10 knots, plus 6 miles visibility and no significant weather & a sky that's clear	



- 53. A
- 54. C
- 55. B
- 56. A
- 57. C
- 58. A
- 59. B
- 60. BECMG
- 61. remain, same
- 62. beginning
- 63. TEMPO
- 64. 30% to 39%, 40% to 49%, 50%
- 65. A
- 66. C
- 67. states
- 68. area
- 69. 3, 6
- 70. 12, 6
- 71. MSL
- 72. 4
- 73. Zulu
- 74. 1/Communications & Header Section  
2/Precautionary Statements Section  
3/Synopsis Section  
4/VFR Clouds & Weather Section
- 75. A
- 76. A
- 77. B
- 78. C
- 79. A
- 80. 6, 20
- 81. B
- 82. B
- 83. A
- 84. B
- 85. twice, 6, 12, 24
- 86. knots, true, celsius
- 87. A
- 88. A
- 89. B
- 90. B
- 91. C
- 92. C
- 93. 9900, 0000
- 94. B
- 95. A
- 96. B
- 97. A
- 98. B
- 99. C
- 100. C
- 101. B
- 102. B
- 103. C

- 104. A
- 105. B
- 106.

SYMBOL	TOTAL SKY COVER
	<b>Sky Clear</b>
	<b>FEW - (more than 1/8 to 2/8)</b>
	<b>SCT - Scattered (3/8 to 4/8)</b>
	<b>BKN - Broken (5/8 to 7/8)</b>
	<b>OVC - Overcast (8/8)</b>

107.

**WX DEPICTION  
PLOTING SYMBOLS**

PLOTING SYMBOL	MEANING
	Few clouds, base 800 feet, visibility more than <u>6</u>
	Broken sky cover, ceiling <u>1,200</u> feet, rain shower, visibility more than <u>6</u>
	Thin overcast with breaks, visibility <u>5</u> in haze
	Scattered at <u>3,000</u> feet, clouds topping ridges, visibility more than <u>6</u>
	Sky clear, visibility <u>2</u> , ground fog or fog
	Sky partially obscured, visibility <u>1/2</u> blowing snow, no cloud layers observed
	Sky partially obscured, visibility <u>2</u> , fog, cloud layer at <u>20,000</u> feet.
	Sky obscured, ceiling <u>500</u> feet, visibility <u>1/4</u> snow
	Overcast, ceiling <u>1,200</u> feet thunderstorms, rain showers, visibility <u>1</u>

## ***Rod Machado's Sport Pilot Workbook***

---



- 108. B
  - 109. A
  - 110. C
  - 111. A
  - 112. B
  - 113. C
  - 114. B
  - 115. C
  - 116. B
  - 117. B
  - 118. C
  - 119. B
  - 120. A
  - 121. B
  - 122. A
  - 123. A
  - 124. A
  - 125. A
  - 126. B
  - 127. A
  - 128. C
  - 129. A
  - 130. B
  - 131. C
  - 132. C
  - 133. C
  - 134. B
  - 135. C
  - 136. C
  - 137. C
  - 138. A
  - 139. C
  - 140. A
  - 141. C
  - 142. B
  - 143. B
  - 144. A
  - 145. C
  - 146. A
  - 147. C
  - 148. C
  - 149. B
  - 150. A
  - 151. B
  - 152. A
  - 153. C
  - 154. B
  - 155. B
-