

AN EXERCISE ON THE MOS FPC MESSAGE (FOUS 12)  
J. Paul Dallavalle, Techniques Development Laboratory

The attached exercise is intended to provide some facility in interpreting the FPC message. The pertinent Technical Procedures Bulletins should be consulted for further information (TPB Nos. 260, 281, 283, 289, 299, 303, 318, 319, 325, 347, and 356).

NMCFPCHDG

FOUS12 KLWC 241425

HDNG FOUS12 LFM-MOS GUIDANCE 1/24/86 1200 GMT

DY/HR 24/18 25/00 25/06 25/12 25/18 26/00 26/06 26/12 27/00  
NMCFPCDCA

FOUS12 KLWC 241425

DCA ESC

POP06		0	2	10	30	60	70	70	
POP12				5		60		90	70
QPF06	000/1	000/1	000/1	100/1	110/1				
QPF12			0000/1		2100/1		4210/2		
TSTM			0		4		12		
POPT	0099/2	0198/2	0198/2	0493/2	0489/2	1062/2	0956/2	0841/3	
POSA		0300/0000	0000/0						
MN/MX			28		36		33	43	
TEMP	37 39	34 33	32 31	30 31	33 35	35 36	37 37	37 37	
DEWPT	12 12	14 16	17 18	20 21	23 25	27 30	32 33	33 33	
WIND	0308	0705	0609	0609	1308	0807	0707	3609	
CLDS	7300/1	7310/1	7211/1	2214/3	0127/4	0019/4	0019/4	0119/4	
CIG	000009	000009	000009	000117	011324	012331	012430	012430	
VIS	000009	000009	000009	001018	011117	012116	012214	012214	
C/V	6/6	6/6	6/6	6/6	4/6	3/4	3/3	2/3	
OBVIS	9000/1	9000/1	9000/1	9001/1	7102/1	7003/1	60X4/4	5004/4	

- What is the temperature forecast for 9Z on the 25th?
- What is the probability of 0.25 inches or more of precipitation in the 6 hrs ending at 00Z on the 26th?
- What is the probability of 0.50 inches or more of precipitation in the 12 hrs ending at 12Z on the 26th?
- What is the probability of .01 inches or more of precipitation in the 12 hrs ending at 12Z on the 26th?
- What is the "best" category of 12-h QPF for the period 00Z on the 26th to 12Z on the 26th?
  - 0.25 inch or less
  - .25 to .49 inches
  - .50 to .99 inches
  - 1.00 to 1.99 inches
  - 2.00 inches or more
- Which 12-hr period has the smallest probability of precipitation?
- Which 6-hr period has the greatest probability of precipitation?
- What is the probability of .01 inch or more of precipitation in the 6 hrs ending at 12Z on the 25th? Is there a problem with this forecast?

9. What is the conditional probability of 2 inches or more of snow in the 12-hr period ending at 12Z on the 25th?
10. What is the unconditional probability of 2 inches or more of snow in the 12-hr period ending at 12Z on the 25th?
11. What is the conditional probability of 6 inches or more of snow in the 12-hr period ending at 12Z on the 25th?
12. What is the categorical forecast of snow amount in the 12-hr period ending at 12Z on the 25th?
  - a. an inch or less
  - b. 2 or 3 inches
  - c. 4 or 5 inches
  - d. 6 inches or more
13. The POPT for frozen precipitation valid 00Z on the 26th is:
14. The POPT for freezing precipitation valid 00Z on the 26th is:
15. What does the number "2" in the POPT group 0956/2 indicate?
16. What is the probability of thunderstorms in the 12-hr period ending at 12Z on the 26th?
17. What is the probability of overcast skies at 12Z on the 25th?
18. What is the probability of broken sky conditions at 12Z on the 25th?
19. What is the "best" category forecast of opaque sky cover at 12Z on the 25th?
20. The "best" category of ceiling at 00Z on the 26th is:
  - a. greater than 7500 ft
  - b. 3000 - 7500 ft
  - c. 1000 - 2900 ft
  - d. 500 - 900 ft
  - e. 200 - 400 ft
  - f. less than 200 ft
21. The "best" category of visibility at 06Z on the 26th is:
  - a. less than 1/2 mile
  - b. 1/2 - 7/8 miles
  - c. 1 - 2 3/4 miles
  - d. 3 - 4 miles
  - e. 5 - 6 miles
  - f. greater than 6 miles
22. POPTs are conditional probabilities of precipitation type and apply to:
  - a. 12-hr periods
  - b. 6-hr periods
  - c. Specific times

23. In the POPT scheme, which of the following are considered frozen precipitation? (circle one or more)
- a. snow
  - b. sleet
  - c. snow and sleet mixed
  - d. rain and snow mixed
  - e. freezing rain
  - f. freezing drizzle
24. In the POPT scheme, which of the following are considered "liquid" precipitation? (circle one or more)
- a. rain
  - b. rain and snow mixed
  - c. freezing rain
  - d. sleet
  - e. drizzle
  - f. freezing drizzle
25. Which of the following statements best describes the MOS system?
- a. statistical relationships between the forecast output of numerical prediction models and observed occurrences of a particular weather element.
  - b. statistical relationships between actual surface and/or upper-air observations and observed occurrences of a particular weather element.
26. Which of the following statements best describes the "perfect prog" system?
- a. statistical relationships between the forecast output of numerical prediction models and observed occurrences of a particular weather element.
  - b. statistical relationships between actual surface and/or upper-air observations and observed occurrences of a particular weather element.
27. What is the dew point forecast for 21Z on the 24th?
28. What is the maximum temperature forecast for the daytime of the 26th?
29. What is the minimum temperature forecast for the nighttime beginning the evening of the 24th and ending the morning of the 25th?
30. What is the wind direction and speed forecast for 18Z on the 24th?
31. What is the obstruction to visibility forecast for 00Z on the 26th?
- a. blowing snow
  - b. fog
  - c. smoke or haze
  - d. no obstruction to visibility

32. What is the probability of fog at 6Z on the 26th?
33. What is the probability of  $1/2 - 7/8$  miles visibility at 6Z on the 26th?
34. What is the proper call on AFOS to get FOUS12 guidance for Richmond, VA?

Answer Key: FPC Quiz

1. 31° 2. 10% 3. 20% 4. 90% 5. b 6. 00Z/25-12Z/25
7. 00Z/26-06Z/26 and 06Z/26-12Z/26 8. 10%; yes, inconsistency with the  
12-h PoP ending at 12Z on the 25th
9. 3% 10. 0% 11. 0% 12. a 13. 62% 14. 10%
15. Snow 16. 12% 17. 40% 18. 10% 19. broken 20. d
21. c 22. c 23. a,b,c 24. a,b,e 25. a
26. b 27. 12° 28. 43° 29. 28° 30. 30°, 8 kts
31. d 32. 40% 33. 10% 34. FPCRIC

SCIENTIFIC SERVICES DIVISION, ERH  
June 30, 1986