



3^d Weather Squadron

Integrity - Service - Excellence



FORECAST PERFORMANCE METRICS

**RGAAF Weather Station
October 2016**





Overview

- Monthly Weather Summary
- How do we measure our performance?
- Verification Statistics
- Flight Weather Briefings
- Weather Warnings

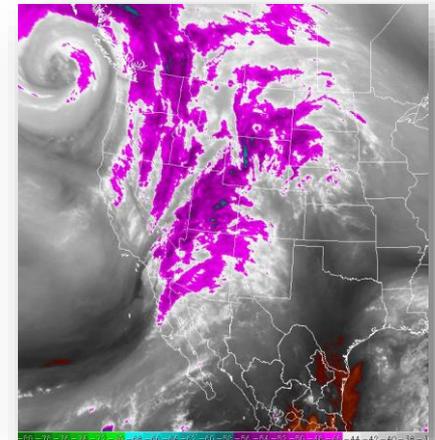
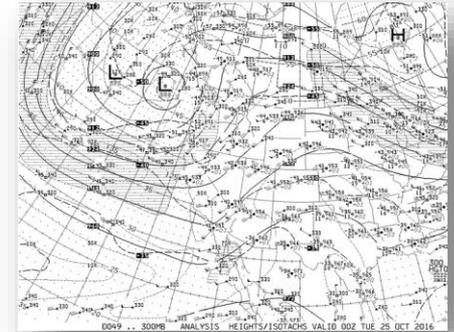




October 2016 Weather Summary

Headlines...Warm and dry!

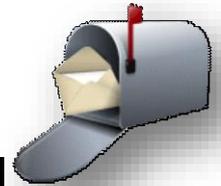
- Average daily maximum temperature was 84...3 degrees above normal; mean temperature 72...3 degrees above normal
- Lowest daily maximum temperature was 72 degrees on 21 Oct
- Only 0.27" of rain was recorded for the month...below the average of 3.4" inches
 - Oct is normally one of the wettest months of the year at Fort Hood, only behind the months of May and June
 - We start Nov more than 2 inches below where we should be at this point in the year





How well are we forecasting mission impacting weather?

- Best measure of our performance is direct feedback from aircrews and other operators
 - Click on “Feedback Icon” on our flimsy; send an E-mail
 - Complete Flight Weather Briefing Feedback Form on our webpage or faxed with all DD175-1s
 - Call RGAAF weather station Flight Chief at 288-9166
- Please provide mission specifics:
 - Was weather forecast for your mission Go or No Go?
 - Was actual weather for your mission Go or No Go?
 - Was your mission altered or cancelled due to weather?
- We'll take good and bad comments!



How are we doing?
Your feedback is important to us!

Please circle the appropriate response, provide mission specifics, and enter any additional comments or Remarks.

1. Weather Forecast for your mission was: GO NO GO
2. Actual weather for your mission was: GO NO GO
3. Was your mission altered or cancelled due to weather: YES NO
4. Mission Details:
Aircraft Type: _____ Call Sign/Tail # _____ Type: Briefing _____ Brief Date/Time _____
Remarks: _____

Please fax this form to the Weather Operations Center (RGAAF Weather Station) at 288 728 1100. Copies 288 288 1100 or send an Email to the Flight Chief: flight.chief@3dws.af.mil



Aircrew Feedback

- **2** Feedback Forms / E-mails in **October**

We Need feedback!!!

Forecasters...don't forget to pass along the feedback forms...solicit feedback during re-briefs!



PIREPs

- We received “2” PIREPs...

Please call us!
“Gray METRO - UHF 306.5
Help the next aircrew/mission!





Objective Method

- In addition to direct feedback we employ an objective method to measure (verify) our forecast performance:
 - We selected three key operational parameters:
 - Ceiling / Visibility < 1000 feet / 3 miles (*IFR*)
 - Ceiling / Visibility < 500 feet / 1/2 mile (*HLR Airfield Minimums*)
 - Thunderstorms (*Lightning Warning issued for Fort Hood*)
 - We measure the accuracy of each Fort Hood Reservation Forecast (Flimsy) published on the 3 WS web page
 - We use weather observations at GRK, HLR, GOP (Gatesville), and any PIREPs to verify each Flimsy at the 3-, 6-, and 12- hour point from the original issuance time

The image shows a complex weather forecast report for Fort Hood. It includes sections for 'FLIGHT LEVELS, WINDS (MKTG) AND TEMPERATURES (C)', 'FLIGHT FORECAST FOR LOCAL FLYING AREA (over Fort Hood)', and 'FORECAST DETAILS'. The report contains various data points such as wind speed/direction, temperature, and visibility for different time periods and altitudes. It also includes a 'TEST FLIGHT ANALYSIS' section with columns for 'LOCATIONS', 'TIME', 'TYPE', 'STATUS', 'HE', 'SE', 'SW', and 'NW'. The report is densely packed with text and numbers, typical of a professional meteorological forecast.

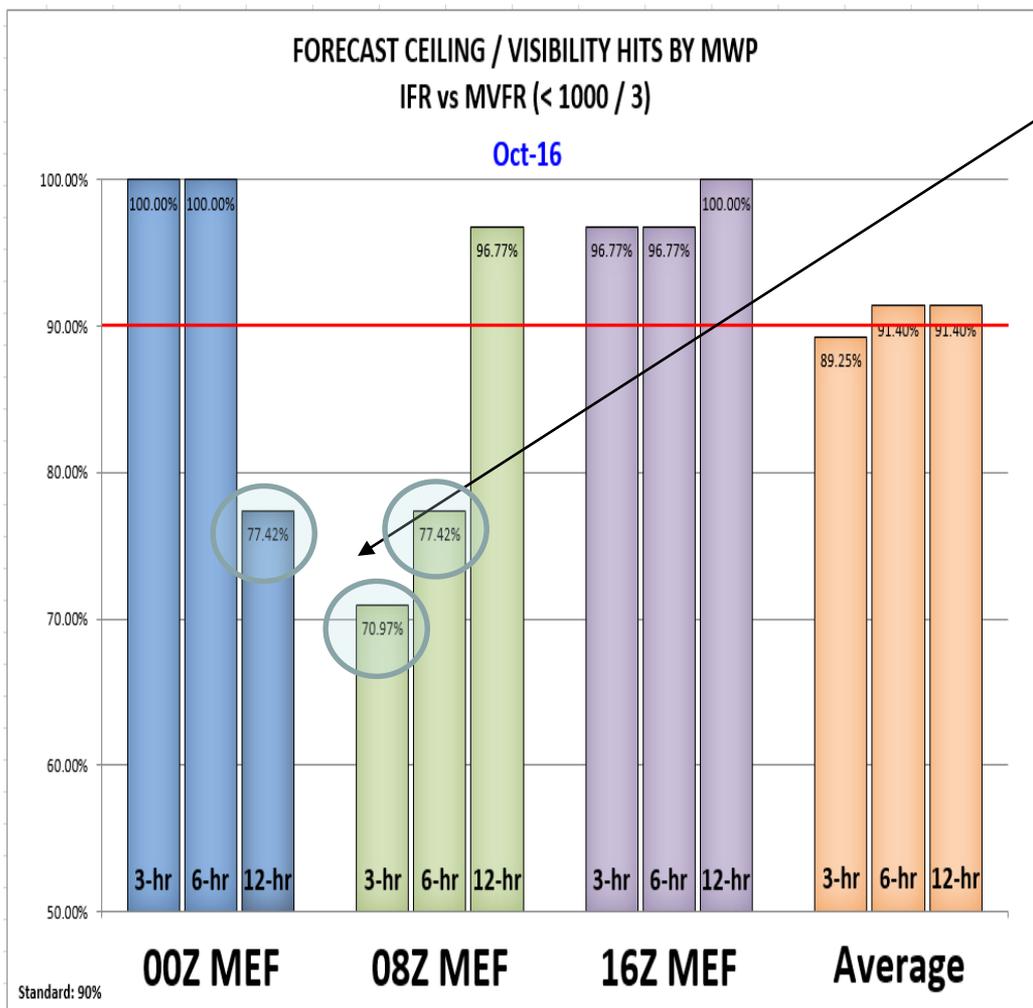


Did the Forecast or Weather Impact the Mission?

- Did we forecast “GO” weather for your mission and weather was “GO”--mission completed
- Did we forecast “GO” weather for your mission and weather was “NO GO”--mission cancelled or changed due to un-forecast weather
- Did we forecast “NO GO” weather for your mission and weather was “GO”--mission cancelled or changed due to forecast (*lost opportunity or needless change*)
- Did we forecast “NO GO” weather for your mission and weather was “NO GO”--mission cancelled or changed due to forecast/weather (*if inserted early in planning process this situation can prevent wasted time and enhance overall planning process*)



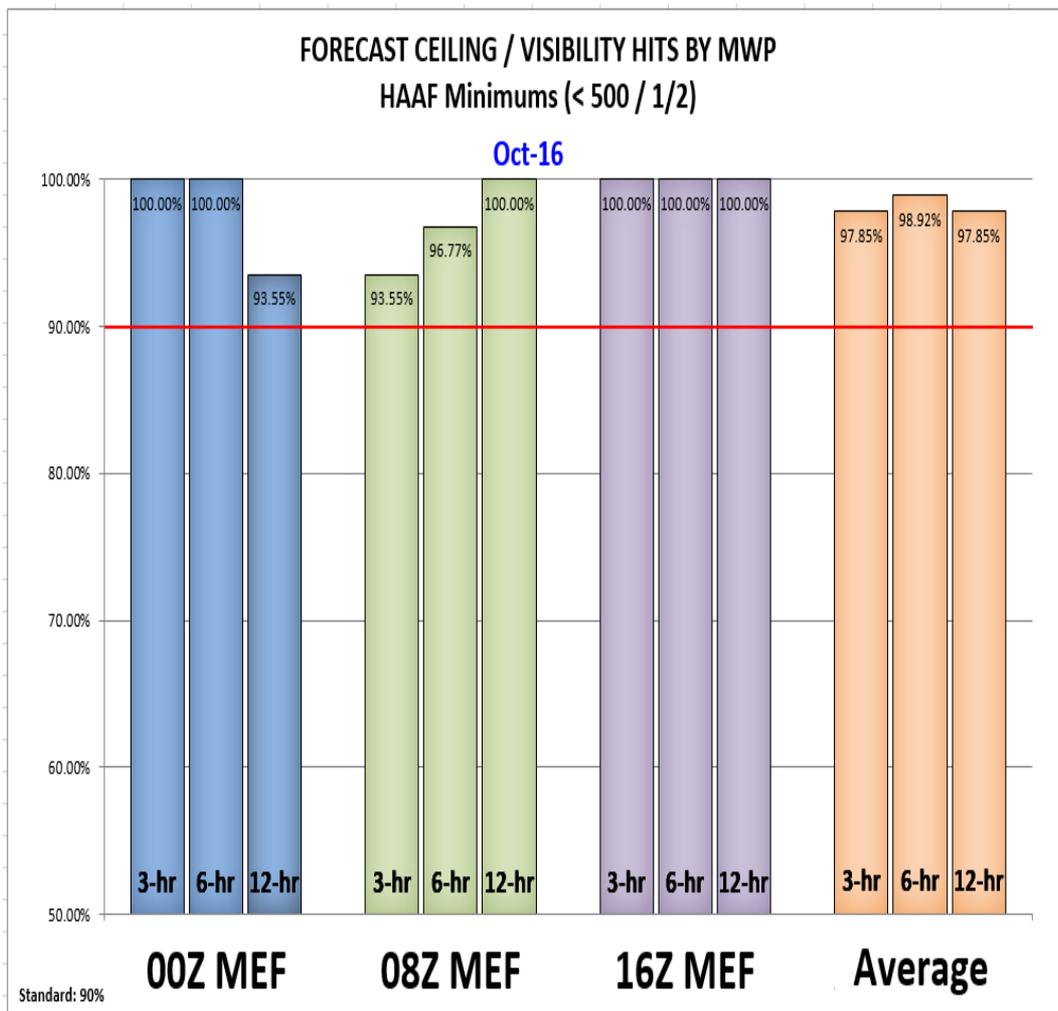
October 2016 IFR vs VFR



- We over-forecasted IFR conditions due to low clouds at sunrise
- Unfortunately we continue to predict improving conditions too soon by mid-morning (0900L)--we missed 5 events and 2 false alarms...we did not correctly forecast IFR or "NoGo" events at this hour



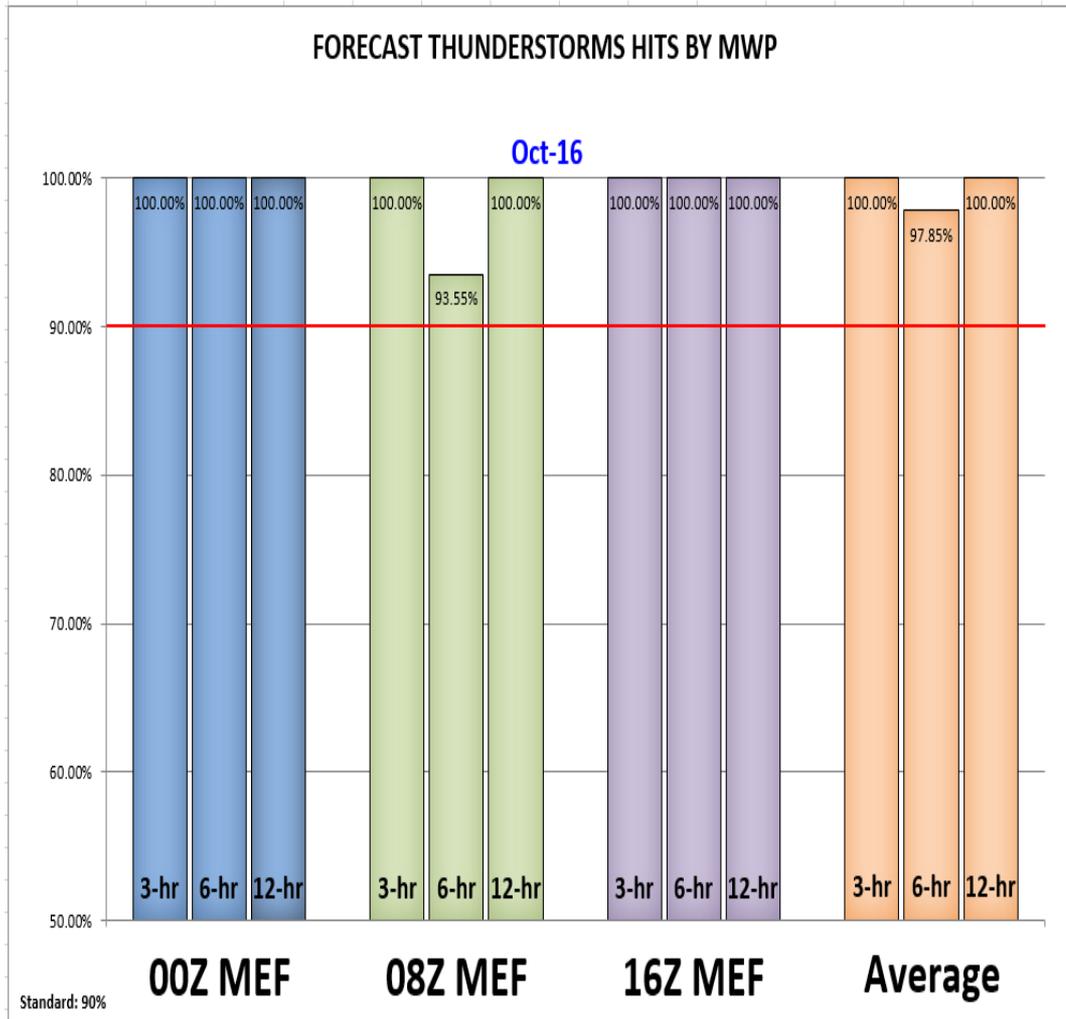
October 2016 HAAF Minimum



- LIFR conditions are always the most challenging to forecast
- Few LIFR events in Oct
- We also slightly over-forecasted LIFR conditions early morning



October 2016 Thunderstorms

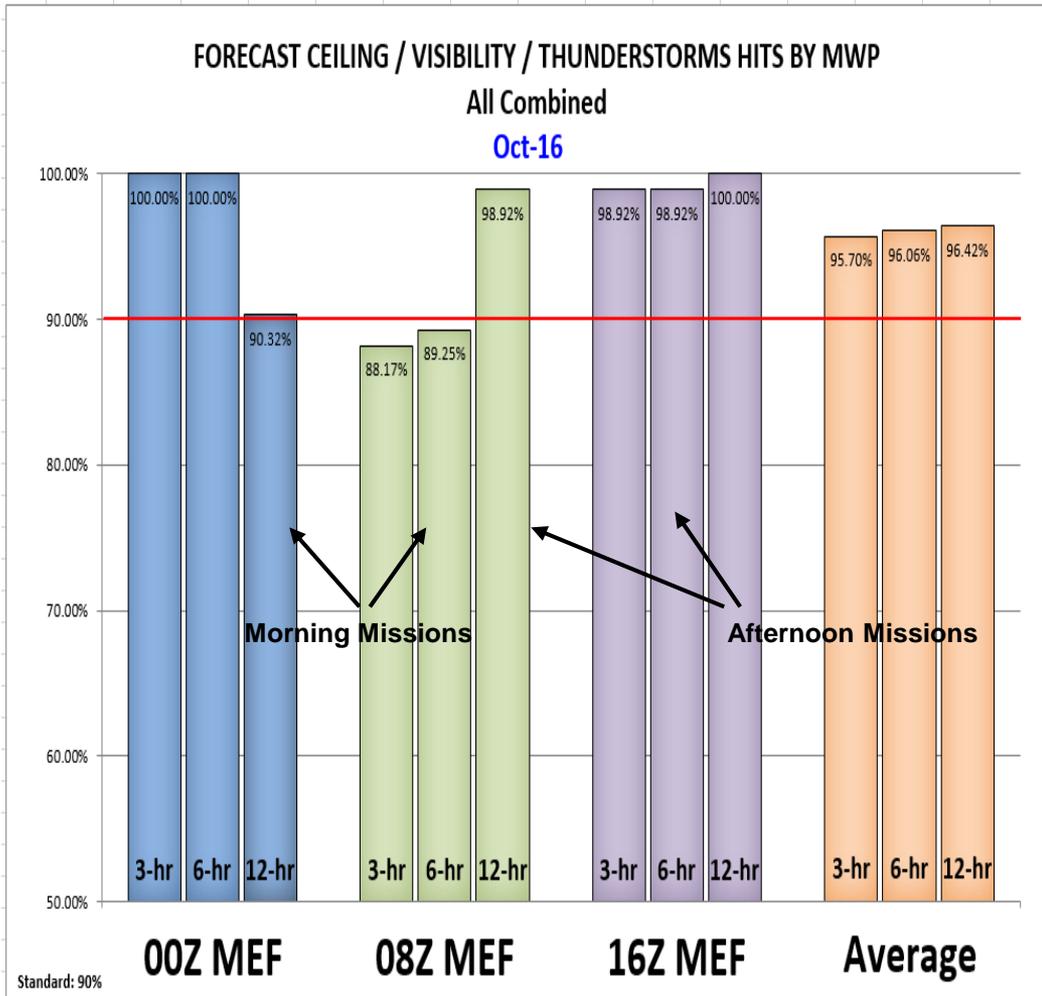


- *Thunderstorms on Fort Hood and subsequent Lightning Warnings have a larger impact during Summer months while low ceilings/visibilities occur more during Winter*

- No actual thunderstorms events occurred on the Fort Hood Reservation during Oct
- We tried forecasting thunderstorms twice, but they did not occur...rain showers prevailed



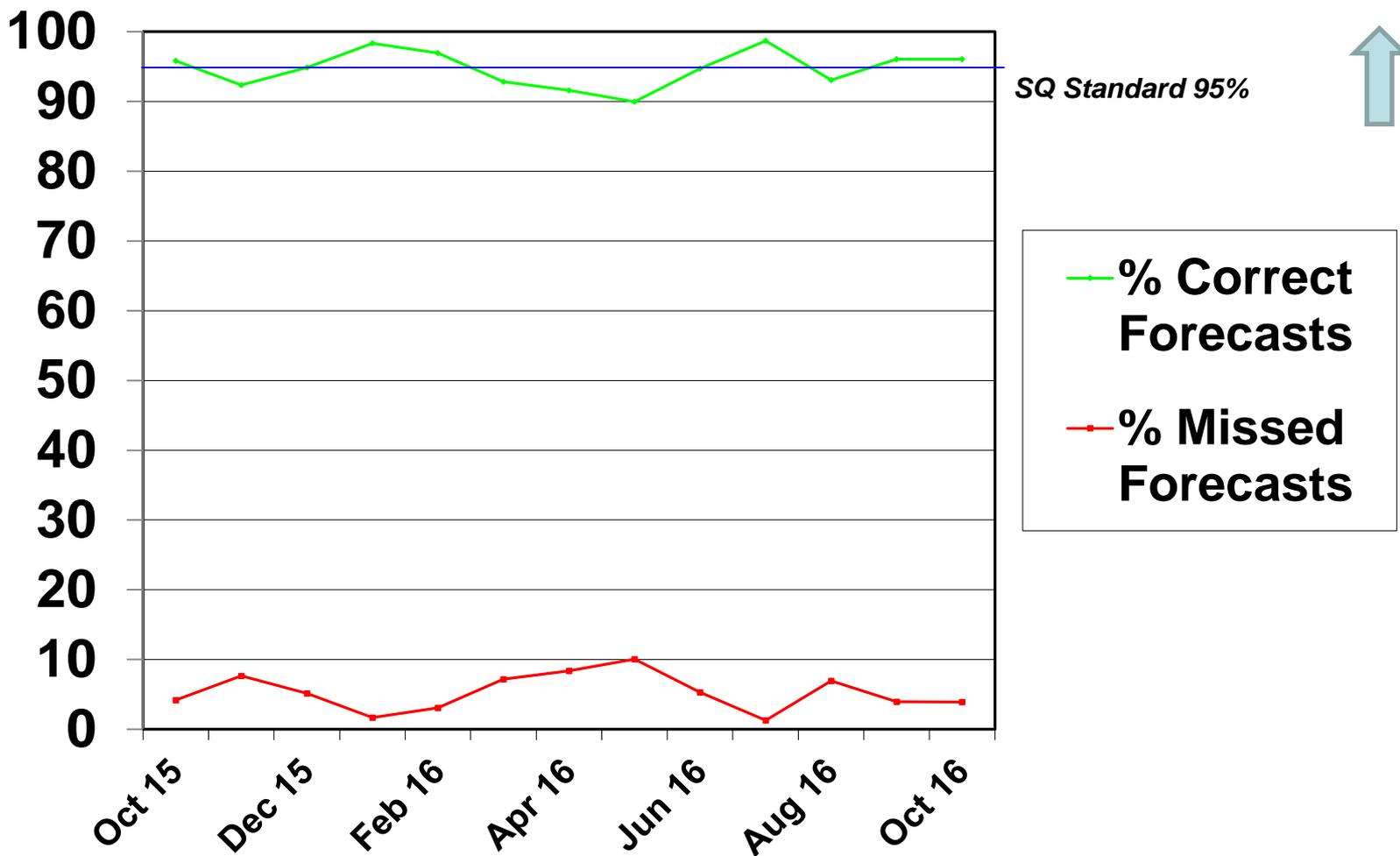
October 2016 All Combined



- Overall **96%** accuracy
- Early morning forecasts were once again the most challenging especially the 08Z MEF (0300L) flimsy
- *Use our forecasts early in your planning process--they can prevent wasted time and enhance your overall flight/mission planning*

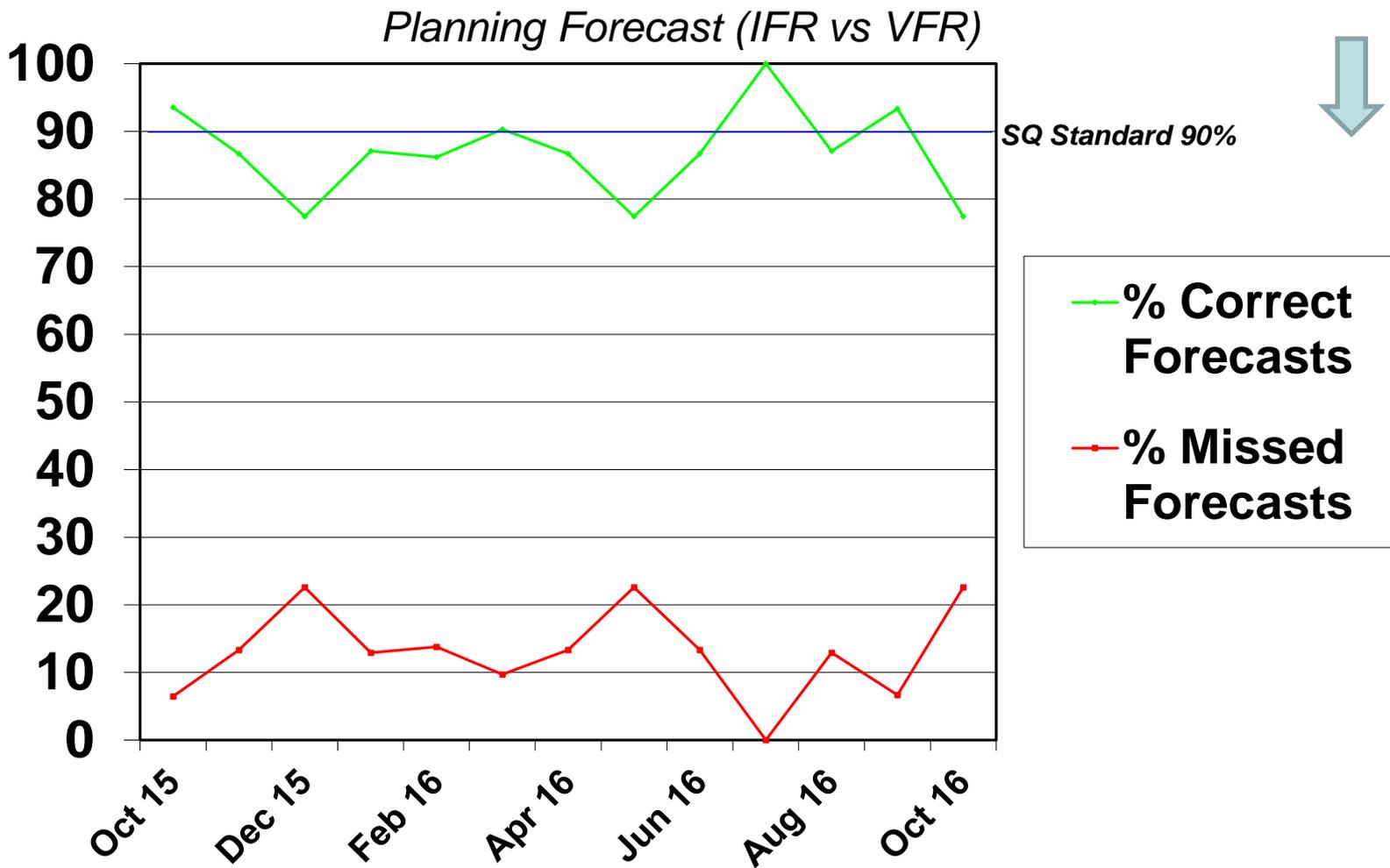


Overall MWPVER Trend



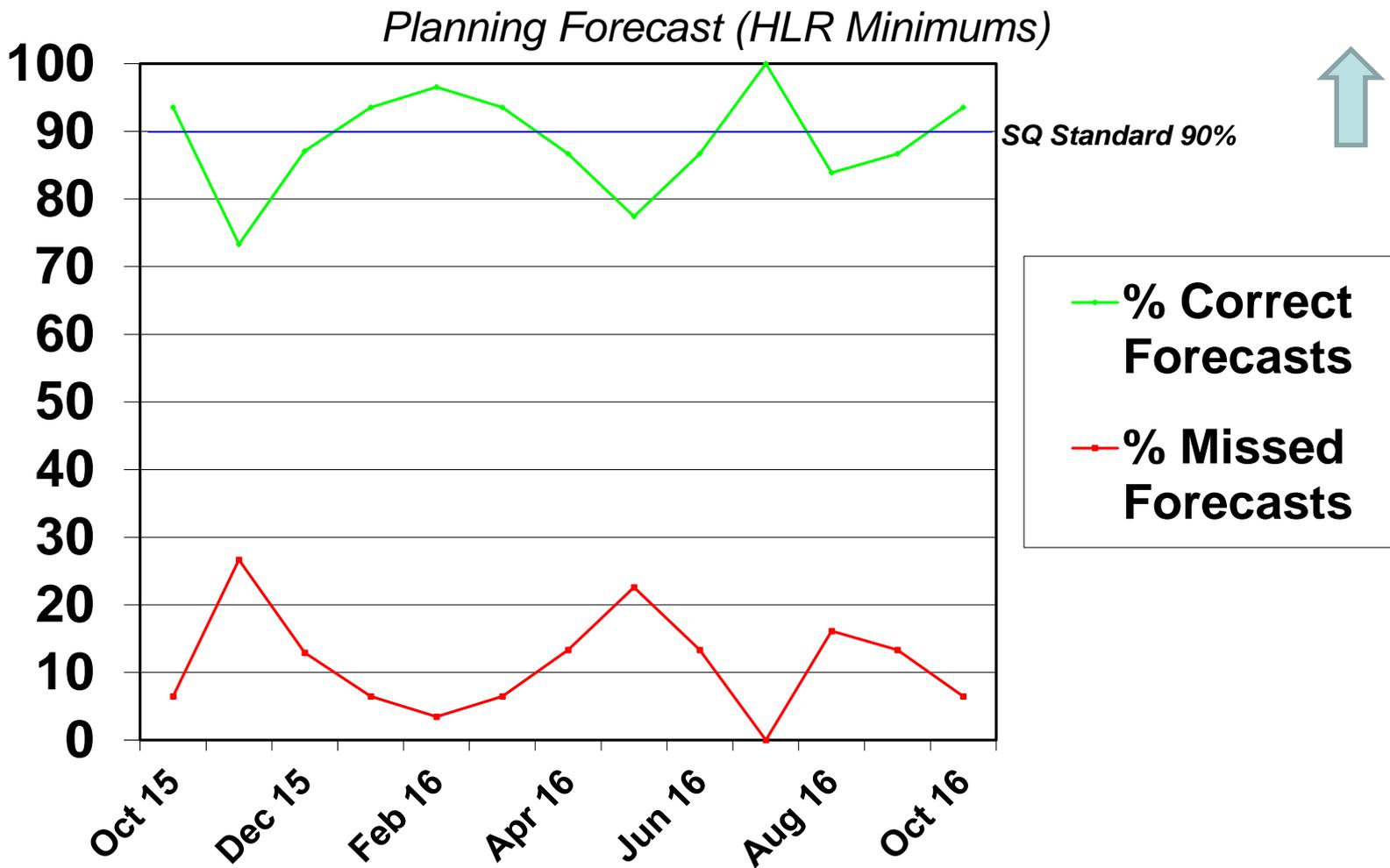


00Z MWP 12-Hour IFR vs VFR Forecast Trend





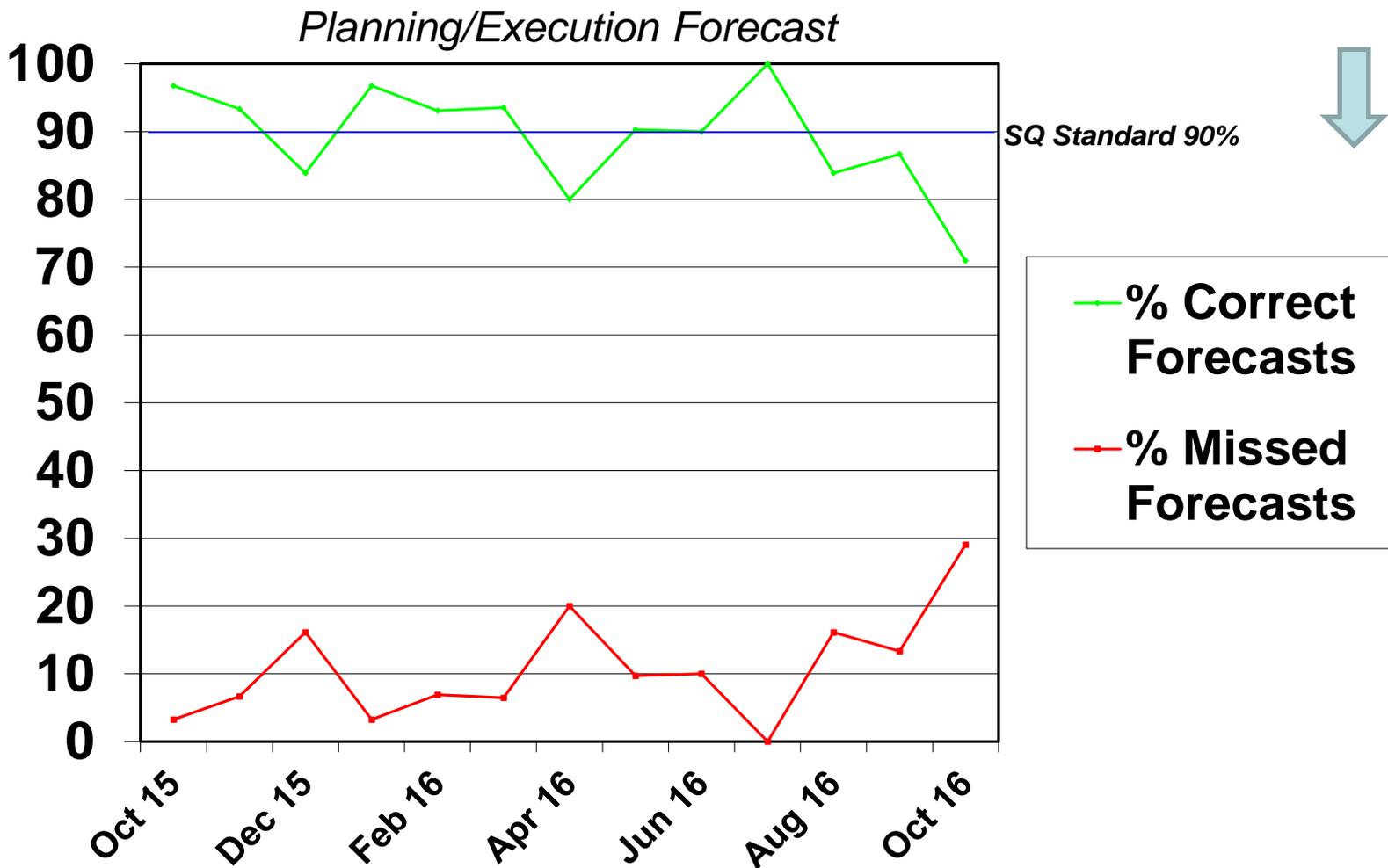
00Z MWP 12-Hour **500 / 1/2** Forecast Trend





08Z MWP

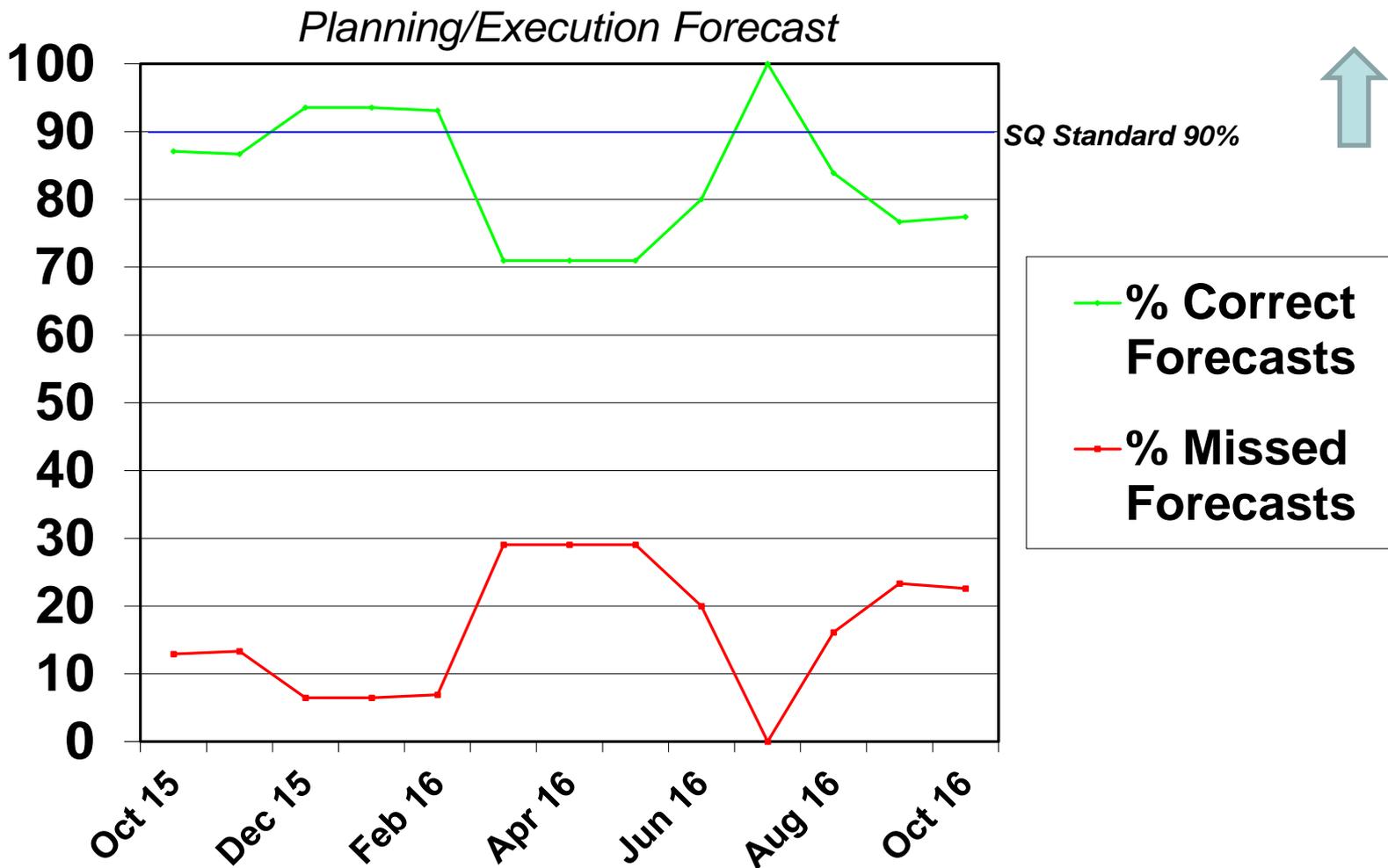
3-Hour IFR vs VFR Forecast Trend





08Z MWP

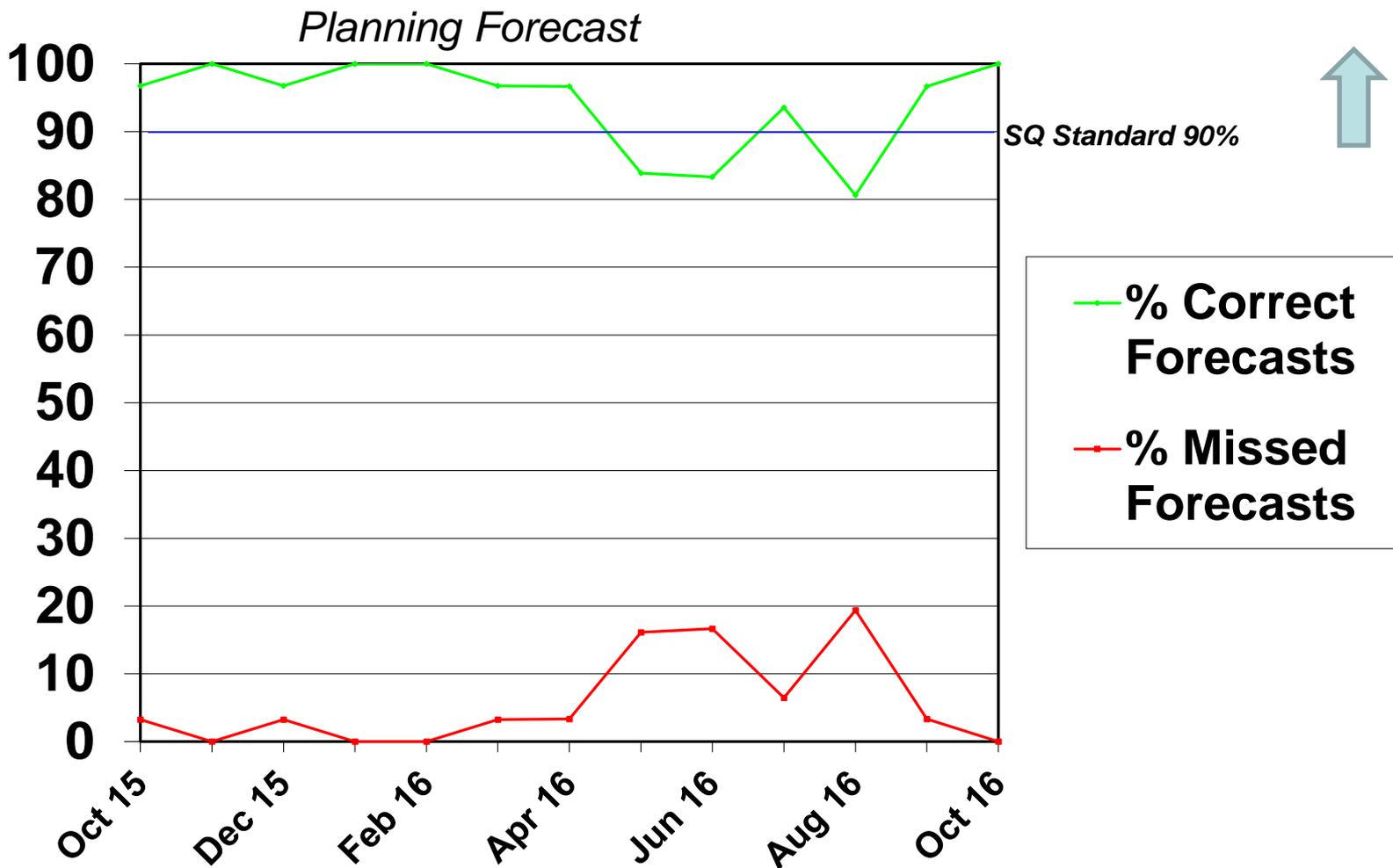
6-Hour IFR vs VFR Forecast Trend





08Z MWP

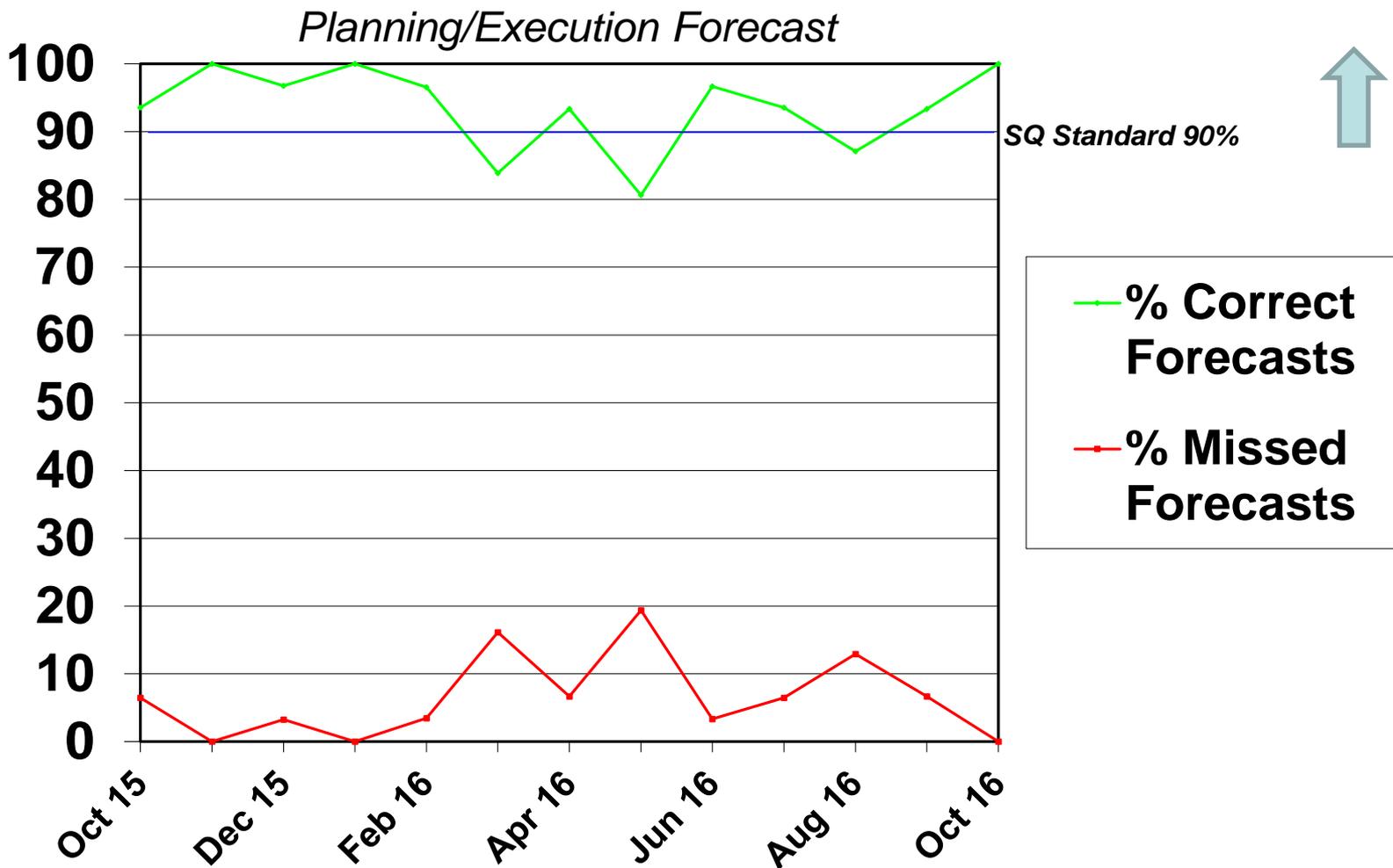
12-Hour Thunderstorm Forecast Trend





16Z MWP

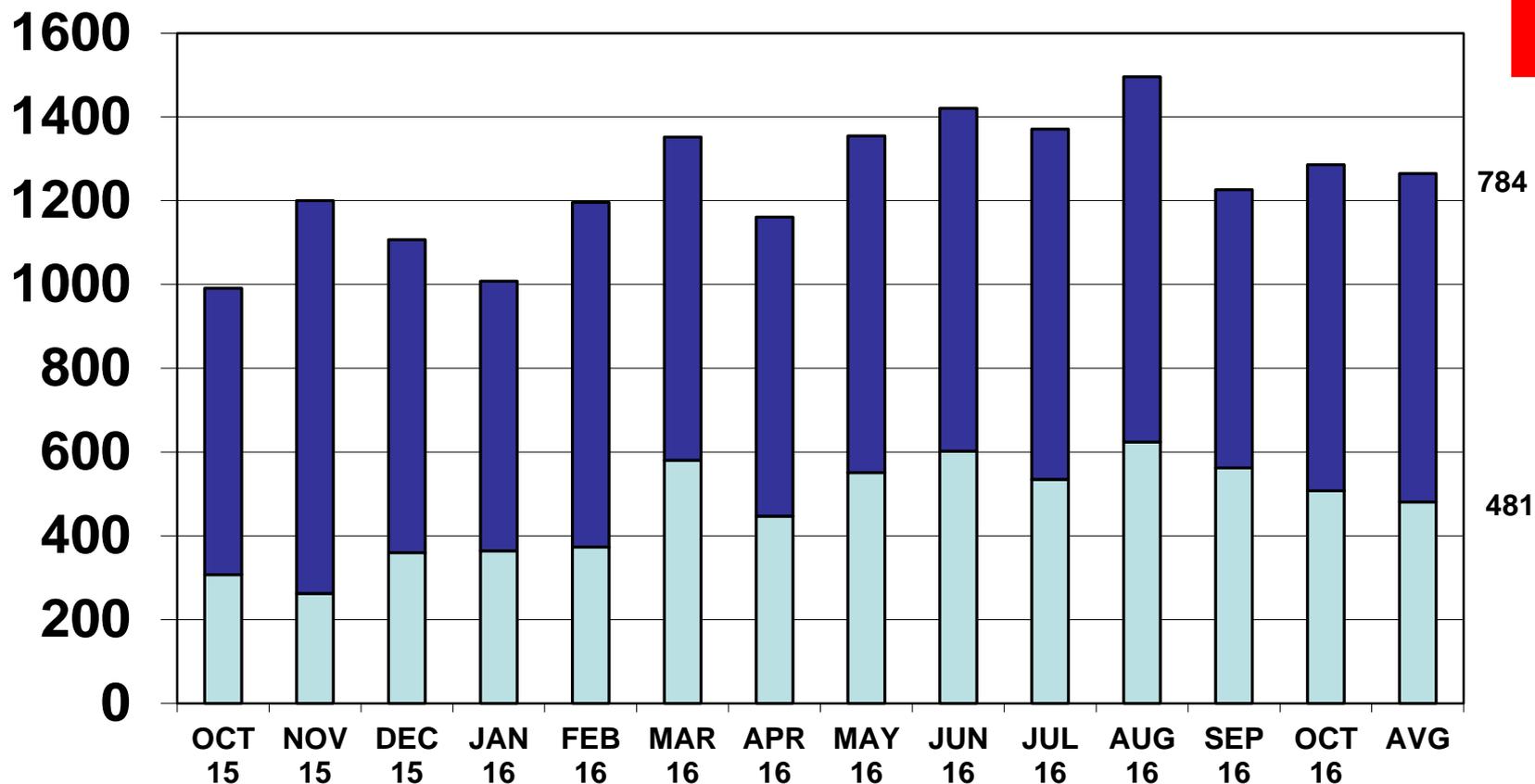
6-Hour Thunderstorm Forecast Trend





Flight/Mission Weather Briefings

□ DD175-1 □ Verbal



*****Average ~41 Flight Weather Briefings per day in October 2016*****

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26 OWS WARNVER – Fort Hood

IWWC – October 2016

WWA SUMMARY

Criteria	Req	Issued	MDLT	LT > 0	Neg LT	False Alarm	RNI	QPM	CAP	FAR
Tornado										
Damaging Wind ≥ 45 kt										
Severe Thunderstorm										
Moderate Thunderstorm										
Strong Wind $\geq 35 < 45$ kt										
Freezing Precipitation										
Heavy Rain ≥ 2 in /12 hr										
TOTALS	0	0	0	0	0	0	0			

NOTE: The 3 WS is responsible for issuance of all forecast warnings (+ lightning watch) for proof of concept 1Feb-31Dec2016



26 OWS WARNVER – Fort Hood

IWWC – October 2016

Lightning Watches (Lightning within 5nm of Fort Hood Reservation) Desired Lead-Time (Advance Notice) = 30 minutes

Req	Issued	MDLT	LT > 0	Neg LT	False Alarm	RNI	QPM	CAP	FAR
0	2	0	0	0	2	0			100%

NOTE: The 3 WS is responsible for issuance of all forecast warnings (+ lightning watch) for proof of concept 1Feb-31Dec2016



3 WS WARNVER

IWWC – October 2016

Western Training Area (WTA) - Thunderstorm Watches
Desired Lead-Time (Advance Notice) = 2 hours

Req	Issued	MDLT	Met 50% DLT	LT > 0	Neg LT	False Alarm	RNI	QPM	CAP	FAR
3	8	2	3	3	0	5	0	67%	100%	62%

- **67% had full 2 hours desired lead-time** ↑
- **100% had at least 1 hour lead-time** ↑
- **100% had positive lead-time**

Observed Weather Advisories Issued:

- 3 Surface Wind \geq 25KT (**1 RBNI**)
- 2 LLWS



Questions?

**Please contact
3 WS/DOV
at
288-4259/4258
or E-mail:**

usarmy.hood.3-asog.mbx.3w3-woc@mail.mil