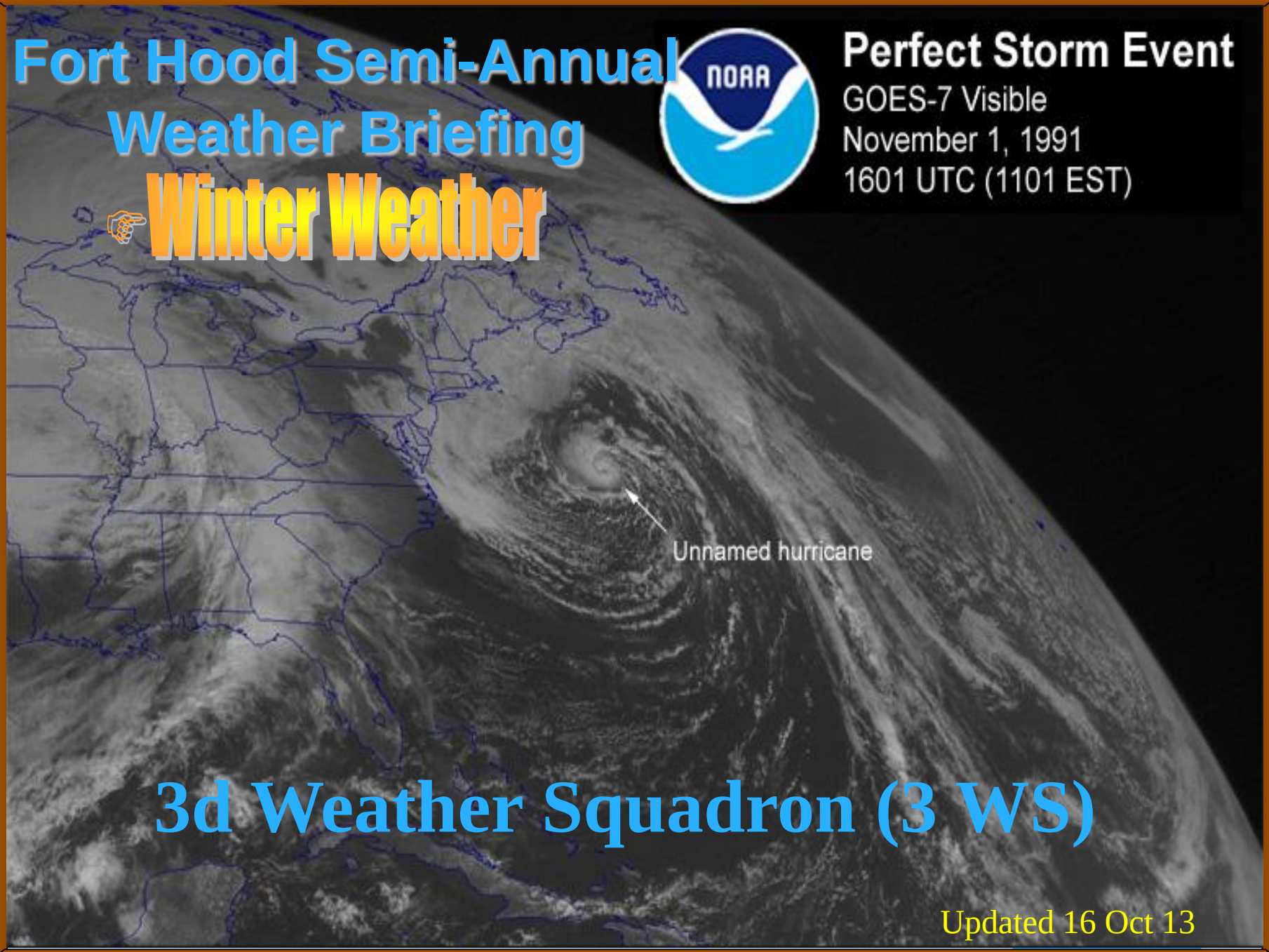
Fort Hood Semi-Annual Weather Briefing

☞ Winter Weather



3d Weather Squadron (3 WS)

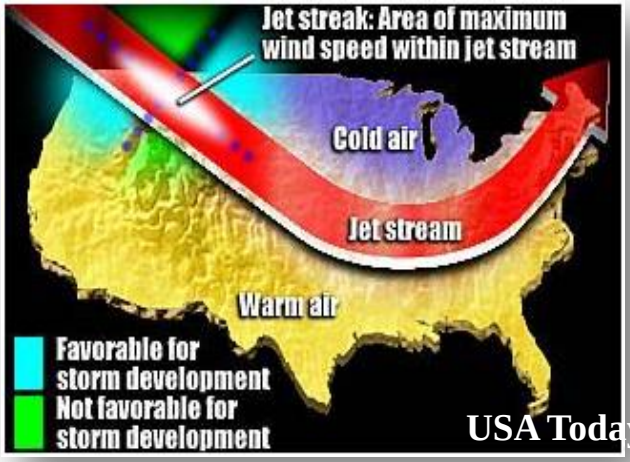
Updated 16 Oct 13

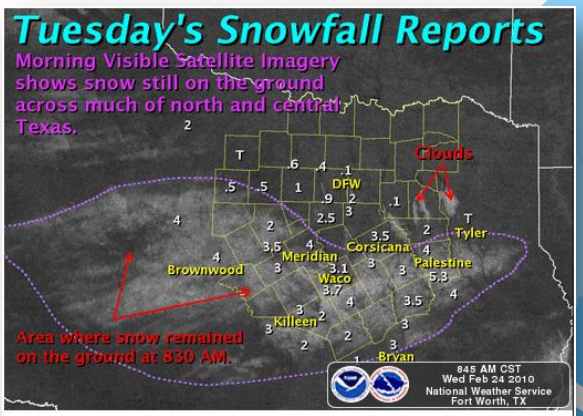
OVERVIEW

- Local Area Influences
- Winter Climatology
- Winter Hazards
- Watches/Warnings/Advisories
- Weather Operations
- POCs

Winter Synoptic Pattern

- Polar Front Jet (PFJ) moves further south
- Frontal passages occur ~ every 5-7 days
- Fall second (minor) severe season (Sep-Nov)
- Decrease in thunderstorm activity, but increase in morning fog and low ceilings





Here is a summary of snowfall totals received across North Texas on February 23. The heaviest of the snowfall has fallen across the southern half of North Texas.

Local Area Influences

- Rolling hills with peaks up to 1,500 feet
- Upslope under easterly flow can cause <u>prolonged</u> IFR conditions
- Large lake areas and abundant foilage
  - Act as moisture sources for fog and low ceilings
- Isolated weather conditions throughout reservation
  - What looks good at RGAAF and HAAF can be different on the far north and east side of the reservation
- Low river crossings, hard ground, low water retention causes flash flood situations

Winter Climatology

- Degraded Flying Operations
  - Lower AM visibility/ceilings due to fog/stratus
    - Can extend into afternoon
    - Induced by upslope conditions (easterly flow)
    - Cooler temperatures
  - Aircraft Icing
    - Major winter weather hazard—lower freezing level
    - Can extend down to surface (frost)

Climatological Data

	Oct	Nov	Dec	Jan	Feb
Temperature					
Mean Max (F)	79	68	60	58	62
Mean Min (F)	59	48	41	39	42
Extm Max (F)	101	93	89	88	102
Precipitation					
Mean Month (inch)	3.6	2.3	2.1	1.7	2.5
Mean # TSTM Days	3	2	2	2	2

CEILING CLIMO
(< 1,000 Ft)

% Ceiling < 1000 ft

Name: ROBERT GRAY AAF, TX United States Block Station: 722576
ICAO: KGRK Lat: 31.067 Lon: −97.833 Time Offset: −6.00
Data Derived from 14WS Surface Observation Database / POR: 1973 – 2005

14WS (AFWA)
151 Patton Ave, Rm 120
Asheville, NC 28801−5002

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
23Z (17L)	14	12	9	4	2	1	0	1	3	5	10	14
22Z (16L)	15	12	7	5	2	1	0	1	3	5	9	14
21Z (15L)	15	12	8	5	2	1	0	0	3	6	10	14
20Z (14L)	16	13	10	6	1	1	0	1	3	7	10	15
19Z (13L)	19	15	11	7	2	2	0	1	3	8	12	15
18Z (12L)	20	17	13	8	3	1	1	1	5	9	11	17
17Z (11L)	24	20	17	11	5	2	1	2	6	11	14	20
16Z (10L)	25	25	20	14	7	4	1	3	7	14	19	23
15Z (09L)	27	27	22	19	12	5	2	4	11	20	23	25
14Z (08L)	27	27	25	23	16	10	4	6	15	24	26	25
13Z (07L)	27	29	24	25	21	13	7	7	17	25	25	25
12Z (06L)	26	28	25	22	21	12	7	6	16	25	23	23
11Z (05L)	25	24	22	18	20	13	6	5	12	19	21	22
10Z (04L)	27	23	21	16	17	11	5	5	12	18	21	22
09Z (03L)	25	23	20	15	12	7	4	4	10	17	19	21
08Z (02L)	24	20	18	14	10	6	3	3	10	15	17	21
07Z (01L)	22	19	18	11	9	4	2	2	9	12	17	20
06Z (00L)	21	17	17	9	7	3	2	2	6	10	14	19
05Z (23L)	20	16	14	9	5	3	1	2	5	9	14	20
04Z (22L)	18	16	12	8	4	2	1	1	4	8	13	17
03Z (21L)	16	14	11	6	3	2	1	1	4	7	13	16
02Z (20L)	14	16	11	6	3	2	0	1	3	6	12	15
01Z (19L)	14	14	10	5	3	1	0	1	3	5	11	14
00Z (18L)	14	13	10	5	2	1	0	1	3	5	10	13

5 20

VISIBILITY CLIMO
(< 3 SM)

% Visibility < 3 SM
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ICAO: KGRK Lat: 31.067 Lon: −97.833 Time Offset: −6.00
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	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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22Z (16L)	9	8	4	2	2	1	0	1	2	3	4	8
21Z (15L)	9	7	4	3	2	1	0	1	2	3	5	8
20Z (14L)	10	6	5	3	1	1	0	1	3	2	4	9
19Z (13L)	11	7	5	4	1	1	1	1	2	3	5	9
18Z (12L)	11	7	8	3	2	1	0	1	3	3	5	9
17Z (11L)	15	9	8	5	2	1	1	0	3	4	7	9
16Z (10L)	16	12	9	7	4	1	1	1	3	7	10	13
15Z (09L)	19	16	12	9	5	1	1	1	4	10	14	17
14Z (08L)	20	18	16	11	6	2	1	2	6	15	17	17
13Z (07L)	19	18	15	13	9	4	3	3	10	19	18	16
12Z (06L)	17	16	16	13	11	5	3	4	9	16	16	13
11Z (05L)	16	13	13	8	9	5	3	2	5	10	14	12
10Z (04L)	17	13	10	7	5	3	2	1	4	7	12	12
09Z (03L)	16	12	9	7	3	2	2	1	3	7	11	11
08Z (02L)	15	11	10	5	3	2	1	1	2	7	9	11
07Z (01L)	14	11	10	4	3	1	1	1	2	5	8	12
06Z (00L)	13	9	8	4	3	1	0	1	1	4	7	12
05Z (23L)	13	7	7	4	2	1	0	0	1	4	7	13
04Z (22L)	13	9	5	4	2	1	0	0	1	4	7	11
03Z (21L)	10	7	5	4	2	1	0	1	1	3	6	9
02Z (20L)	9	8	6	3	1	1	0	0	1	3	6	9
01Z (19L)	10	8	7	3	2	1	0	0	1	2	5	9
00Z (18L)	10	8	6	3	1	1	0	0	2	3	5	7

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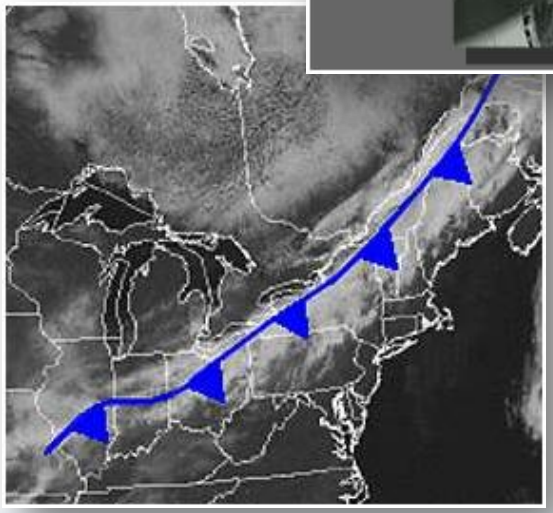
Winter Hazards

- Turbulence
- Icing
- Low-Level Wind Shear
- Reduced Visibility
- Colder Temps



Turbulence

TURBULENCE

- Turbulence is one of the most unexpected aviation hazards to fly through and one of the most difficult to forecast
- Caused by *abrupt, small-scale variations in wind speed and direction*
- **Pilot Reports (PIREPS) are crucial!**
  - May trigger advisories to help warn others
  - Always include location, time, intensity, flight level, and aircraft type

Gray METRO: UHF 306.5

TURBULENCE

(Continued)

- May occur any time without warning

  - Directly proportional to <u>speed</u>:

  Faster aircraft=more turbulence experienced

  - Inversely proportional to <u>weight</u>:

  Heavier aircraft=less turbulence experienced

  - Directly proportional to <u>wing area</u>

  Greater distance between leading and trailing edge of wing=more turbulence

TURBULENCE

(Continued)

- Intensities based upon Airspeed & Climb Rate
  - Light: Slight, erratic changes in altitude and or attitude (pitch, roll, yaw)
  - Moderate: Greater intensity than light, but aircraft remains in positive control
  - Severe: Large abrupt changes in altitude/attitude, large variations in airspeed; control becomes very difficult
  - Extreme: Aircraft violently tossed around with control virtually impossible; may cause structural damage

TURBULENCE

(Continued)

- Also caused by strong wind over rough terrain *(Fort Hood area <u>not</u> considered rough terrain)*
  - Rougher terrain = More turbulence
  - Higher wind speed = More Turbulence
- Frontal Transition Zone Turbulence
- Jet Stream (CAT)

TURBULENCE
(Continued)

- Wake Turbulence: Caused by ‘Wingtip Vortices’
- **Virtually all aircraft produce wingtip vortices while in flight, even rotary wing aircraft; this is especially apparent with heavier aircraft**

LOW-LEVEL WIND SHEAR (LLWS)

- Rapid change in wind direction or speed below 2,000 feet AGL
- May occur with or without Turbulence
- Causes sudden changes in aircraft performance and attitude
- Common occurrence in Central Texas associated with night-time low-level jet
- Can occur with fronts and thunderstorm gust fronts (microburst)

Gray METRO: UHF 306.5

ICING

ICING

- **Types of Icing**
  - Rime: Rough, milky, and opaque--similar to ice in a refrigerator; associated with stratiform clouds; lighter in weight than clear ice
  - Clear: Glossy and clear; formed by slow freezing of large supercooled water droplets; found in cumulus clouds and freezing precip—hard to remove
  - Mixed Rime and Clear: Water droplets vary in size or mixed rain and snow; can form rapidly
  - Frost: Light feathery deposit occurring when an aircraft is descending from cold air to warmer air layers or parked on the surface and exposed to freezing temps

ICING
(Continued)

- Adds weight, blocks air flow into engine
- Destroys efficiency of airfoil by altering its shape—when lifting qualities of the wing are gone, the aircraft can no longer remain airborne!
- Icing on rotary-wing aircraft may cause vibration, loss of efficiency or control; rotational speed of main and tail rotors can produce rapid icing growth on certain surfaces
- Shedding of ice can result in structural damage (FOD) or injury to ground personnel

VISIBILITY & CEILINGS

Visibility and Ceilings

- Historically, poor visibilities & low ceilings have contributed to many aircraft accidents
- Types of visibility:
  - **Prevailing**: greatest horizontal visibility observed throughout at least half of the horizon circle
  - **Tower**: prevailing visibility determined to be different by tower personnel (trained controllers)
  - **Sector**: visibility within a specific 45 degree arc (NE, SE, etc.) of the horizon circle
  - **Slant Range**: angle from which you view an airfield or target from above ground vantage point—often lower than prevailing visibility

Visibility and Ceilings
(Continued)

- ASOS (*HLR Automated Sensor*)
  - There are inherit limitations especially during rapidly changing weather conditions when some delay in reporting cloud ceilings and visibilities may occur
- Ceilings:
  - Height above the earth's surface (AGL) of the lowest (thin or opaque) layer as broken or overcast, or vertical visibility into surface-based total obscuration (indefinite ceiling)

Fog

- Surface-based cloud composed of either water droplets or ice crystals
- Ideal fog conditions:
  - Small temperature dew point spread 1 to 2 C
  - Abundant condensation nuclei
  - Light surface wind
  - Cooling land surfaces, warmer air above
- Rarely forms at Fort Hood under west to north wind

Fog
(Continued)

- Reduces Visibility and Ceilings
  - **Patchy** Fog
    - Visibility can be severely restricted; 1/4 mile away it can be unrestricted
    - Usually appears in low lying areas
    - Not very thick
    - **Hardest to forecast**
  - **Wide-spread** Fog
    - Large continuous even fog
    - Usually at least 800 ft thick

Weather Alerts

WEATHER **WATCHES**

- Special notice for the ***potential*** of environmental conditions/threats of such intensity as to pose hazard to life or property
- Issued for *Fort Hood Reservation and the Western Training Area*
- Command decision on whether or not operations are altered (FHR95-1)
- Valid times per text and valid for the area described in the text

WEATHER **WARNINGS**

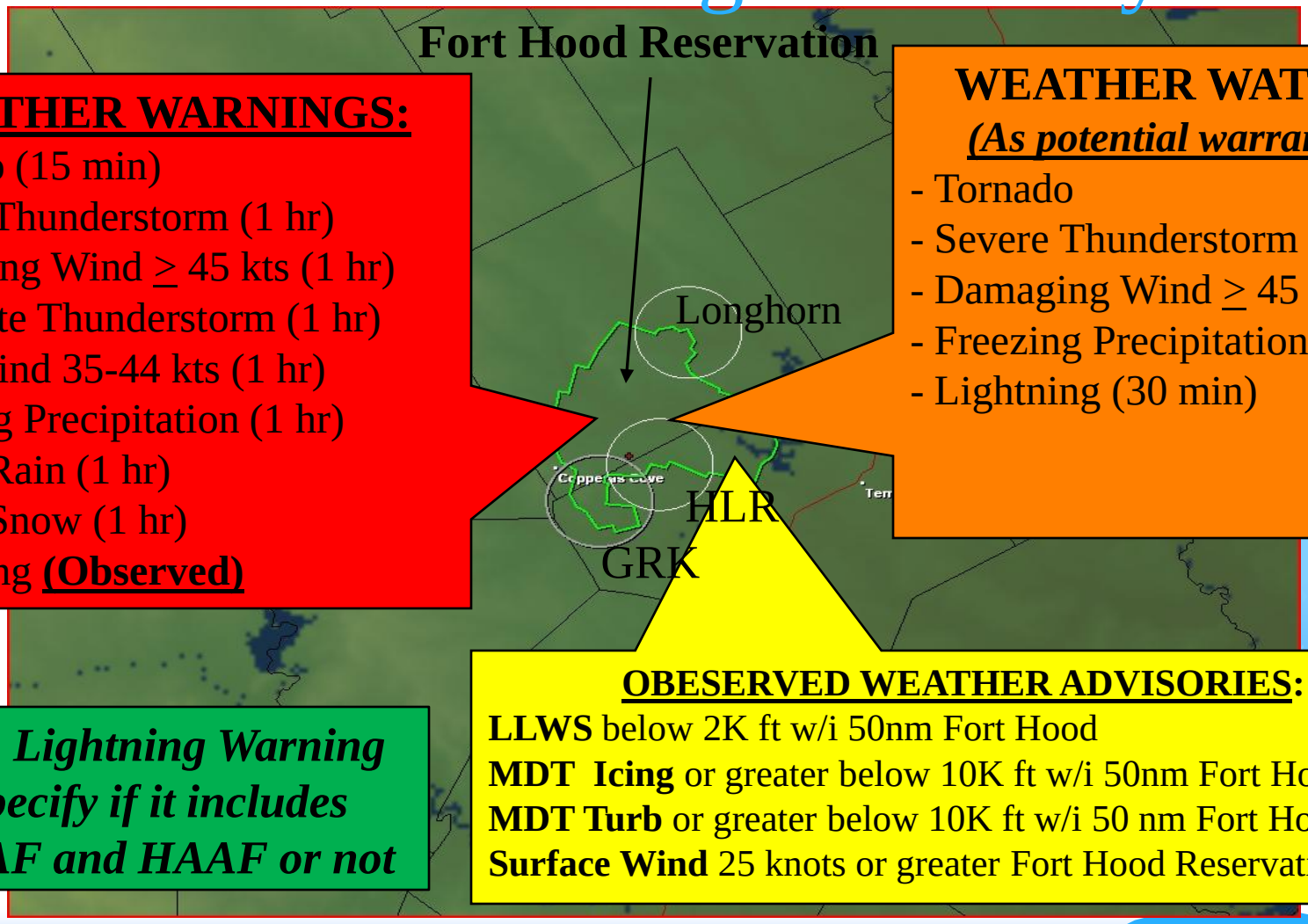
- Special notice when an established weather condition/threat of such intensity as to pose a hazard to life or property is **occurring or is expected to occur *(imminent)***
- Take actions to protect property and life
- Valid times per text and valid for the area described in the text

WEATHER **ADVISORIES**

- Advisories provide specific notice to an operational agency of weather phenomena ***impacting operations***
- All Fort Hood weather advisories are observed advisories, meaning when the condition is observed by Doppler weather radar, weather sensors, or PIREPs, the advisory will be issued
- Valid for the area described in the text
- It will be valid “Until Further Notice” and it will be cancelled when the condition is no longer occurring

Fort Hood Reservation

Watch / Warning / Advisory



WEATHER WARNINGS:

- Tornado (15 min)
- Severe Thunderstorm (1 hr)
- Damaging Wind ≥ 45 kts (1 hr)
- Moderate Thunderstorm (1 hr)
- High Wind 35-44 kts (1 hr)
- Freezing Precipitation (1 hr)
- Heavy Rain (1 hr)
- Heavy Snow (1 hr)
- Lightning **(Observed)**

WEATHER WATCH

(As potential warrants)

- Tornado
- Severe Thunderstorm
- Damaging Wind ≥ 45 kts
- Freezing Precipitation
- Lightning (30 min)

Note: Lightning Warning will specify if it includes RGAAF and HAAF or not

OBESERVED WEATHER ADVISORIES:

LLWS below 2K ft w/i 50nm Fort Hood
MDT Icing or greater below 10K ft w/i 50nm Fort Hood
MDT Turb or greater below 10K ft w/i 50 nm Fort Hood
Surface Wind 25 knots or greater Fort Hood Reservation

Fort Hood Reservation

- **Severe Thunderstorm**
  - Damaging wind ≥ **45** knots ***and/or***
  - Damaging hail ≥ ½ inch in diameter
- **Moderate Thunderstorm**
  - High wind ≥ **35** knots to < **45** knots ***and/or***
  - Large hail ≥ ¼ inch to < ½ inch

- **IMPORTANT: Refer to FH Reg 95-1 for specific severe weather plans/actions**

WESTERN TRAINING AREA

Watch / Warning

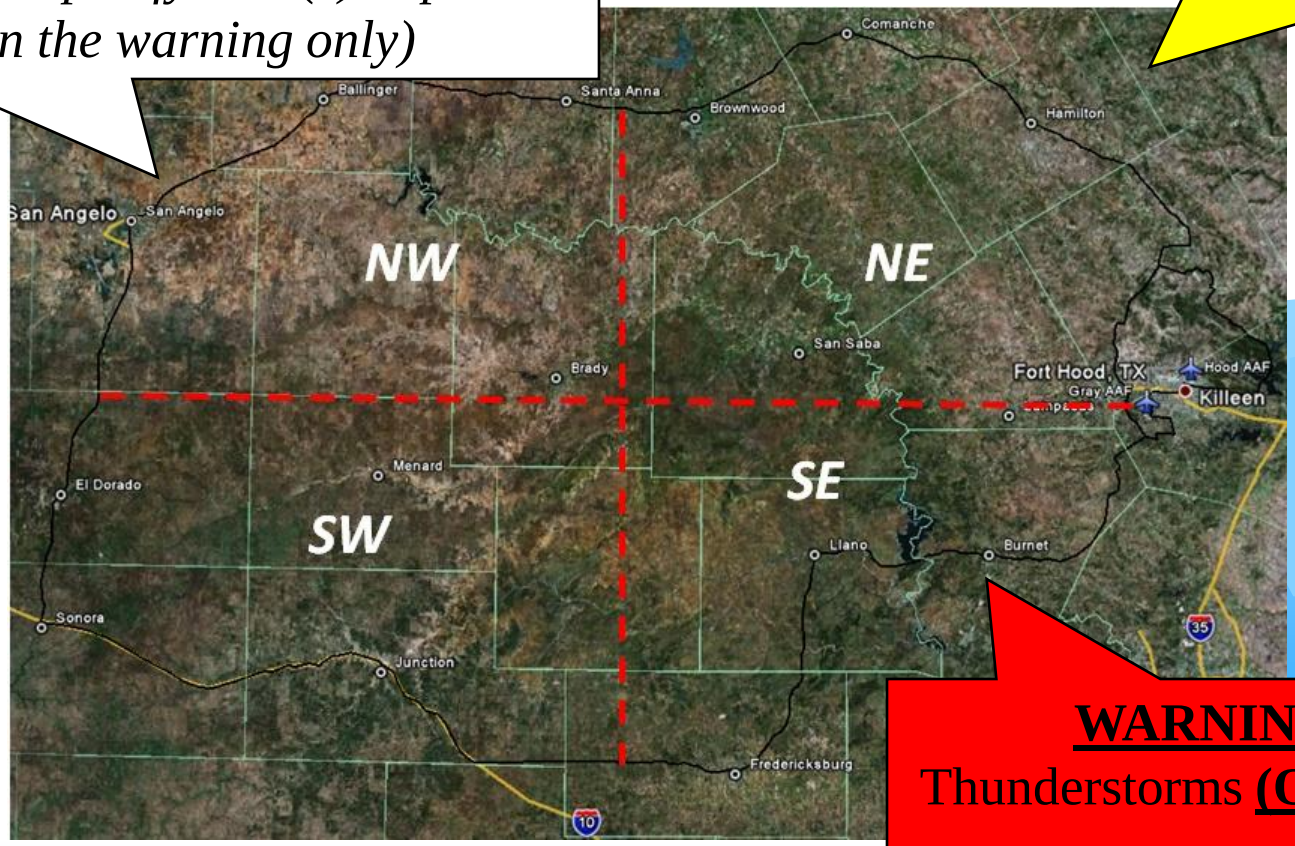
WTA

Divided into 4 sectors

(Text will specify area(s) impacted in the warning only)

WEATHER WATCH

Thunderstorms **(2 hr advance notice)**



WARNING:

Thunderstorms **(Observed)**

PILOT REPORTS (PIREPs)

- Provide forecasters additional observations around the reservation and Western training areas
  - Thunderstorms
  - Turbulence
  - Icing
  - Low-Level Wind Shear (LLWS)
  - Cloud conditions
  - Wind, temperature, etc..
  - Visibility, weather (i.e., fog, rain, etc.)
- PMSV frequencies: **UHF 306.5**

PLEASE CALL US!!!

Weather Ops

RGAAF Weather Station Operations

- RGAAF Weather Station located on West Fort Hood, Airfield Ops Bldg 90029:
  - 24/7 Operations
  - 2 Forecasters Mon-Fri 0600-1400L
  - 1 Forecaster Nights, Weekends, & Holidays
  - Manual Weather Observations
  - Flight Weather Briefings
- HAAF: Automated Weather Observations Only

Gray METRO: UHF 306.5

FLIGHT WEATHER BRIEFINGS

- Call 288-9620 or 288-9400
- E-mail: **usarmy.hood.3-asog.mbx.3ws-woc@mail.mil**
- Please follow up flight weather briefing requests sent via E-mail with a phone call
- Please arrange DD175-1 weather briefings as far in advance as possible
- **IAW AR 95-1, ONLY PILOTS CAN RECEIVE FLIGHT WEATHER BRIEFINGS**

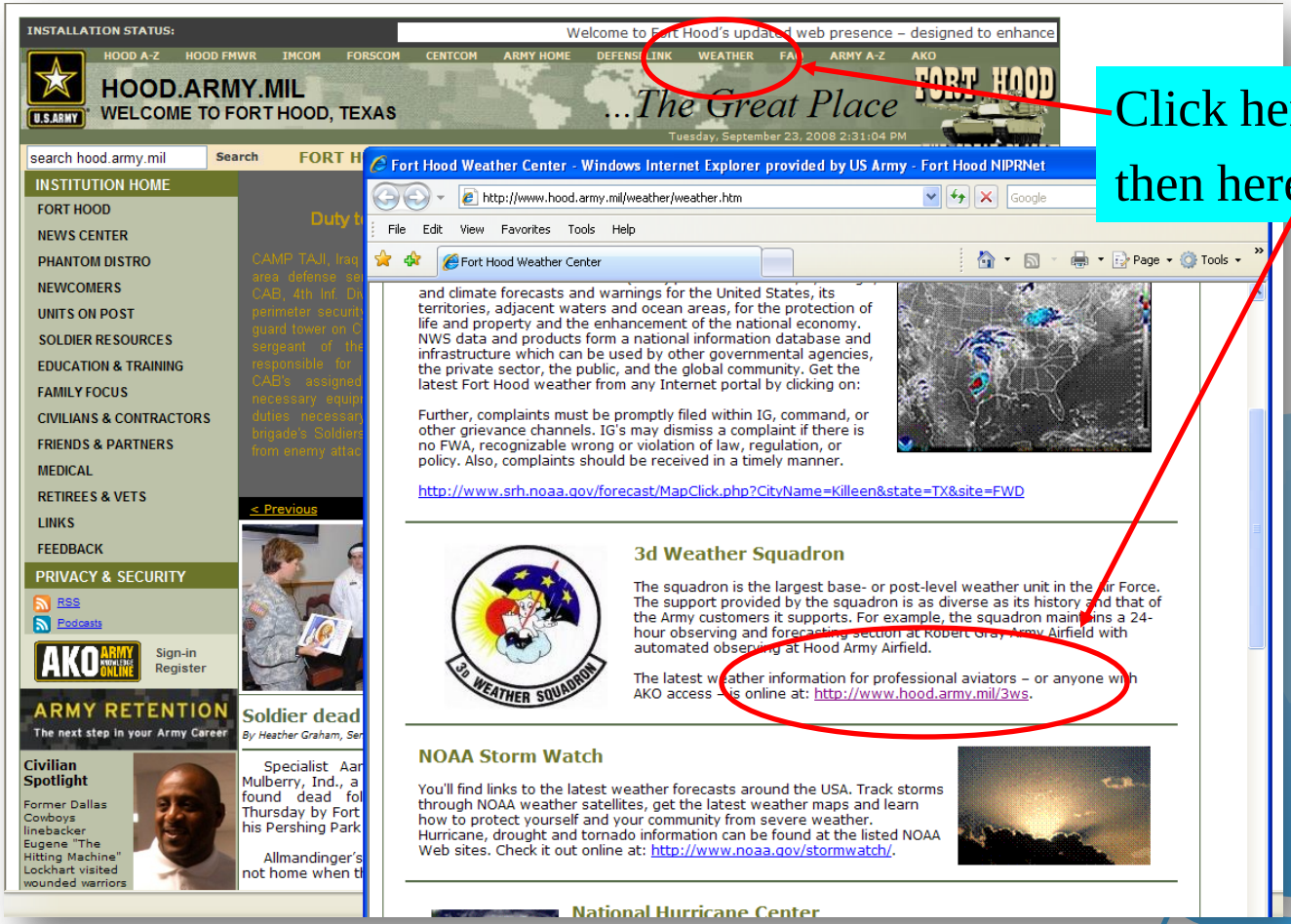
FLIGHT WEATHER BRIEFINGS (Continued)

- DD175-1 Weather Briefs can be faxed or E-mailed
- **IMPORTANT:** Aircrews must call 288-9620/9400 after receiving the brief for briefer's initials, brief & void times--otherwise briefing is not official!

3D Weather Squadron Homepage

www.hood.army.mil/3ws

Fort Hood Home Page



Click here, then here

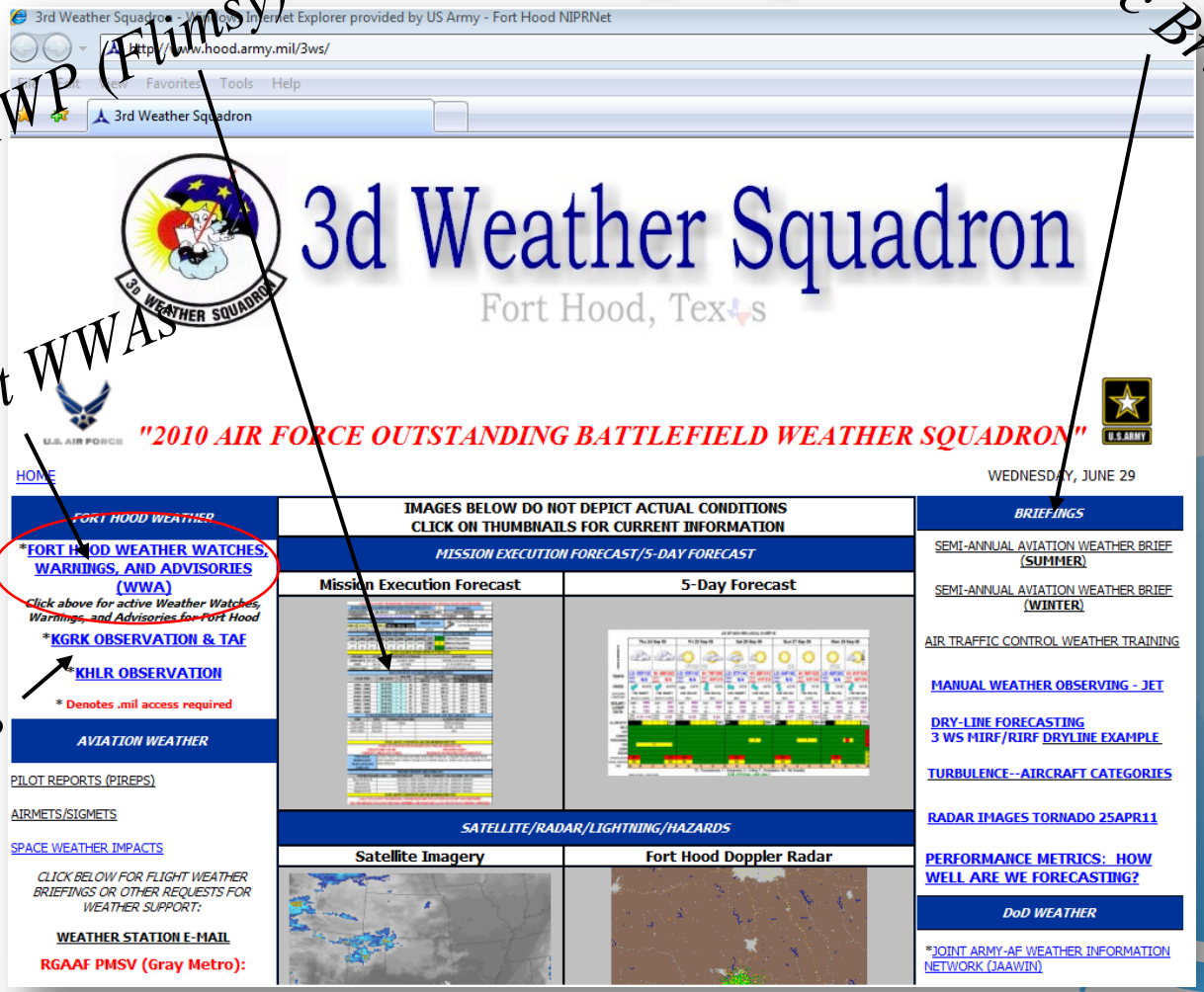
3D Weather Squadron Homepage

Current MWP (Flimsy)

Current WWAS

Current Obs

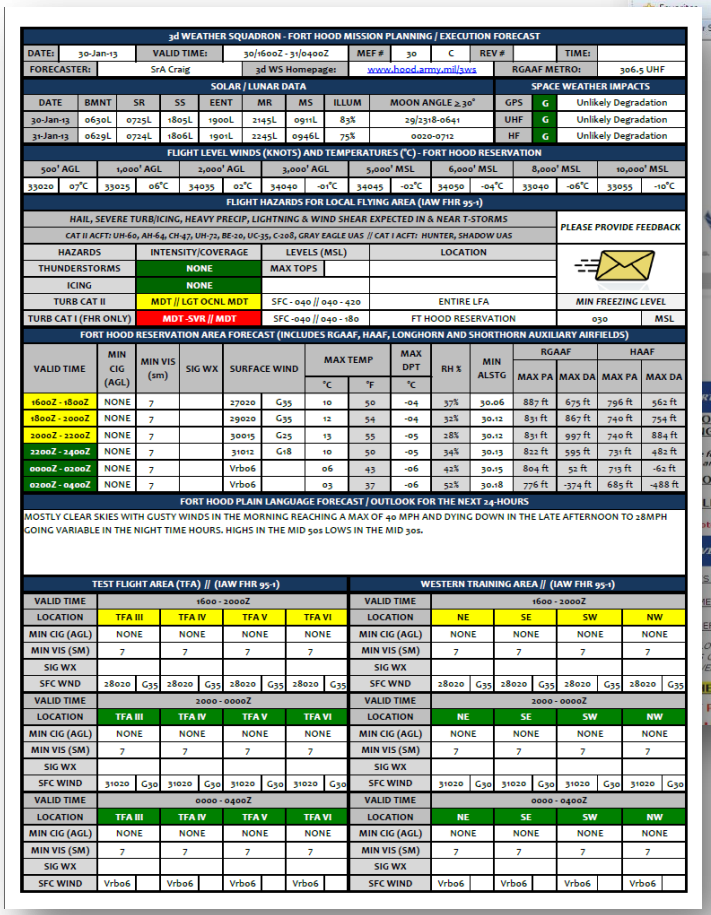
Misc Briefings



3 WS Mission Weather Product (MWP) - Flimsy

- Located on our web page:
  www.hood.army.mil/3ws
- Updated 3 times daily (0000Z, 0800Z, 1600Z)
- Can be used by aircrews flying VFR within the Fort Hood Reservation & Maintenance Test Flight Areas--must call for official brief
  - Call the weather station at 288-9620/9400 to verify current Flimsy #, any updates, brief/void time and forecaster's initials
  - Units' ops may post copy of flimsy in common areas for aircrews ***(IMPORTANT: Check website periodically for changes especially during inclement weather)***

MWP (3 WS Flimsy)



3d WEATHER SQUADRON - FORT HOOD MISSION PLANNING / EXECUTION FORECAST

DATE:	30-Jan-13	VALID TIME:	30/1600Z - 31/0400Z	MEF #	30	C	REV #		TIME:	
FORECASTER:	SrA Craig	3d WS Homepage:	www.hood.army.mil/3ws				RGAAF METRO:	306.5 UHF		

SOLAR / LUNAR DATA

DATE	BMNT	SR	SS	EENT	MR	MS	ILLUM	MOON ANGLE ≥ 30°
30-Jan-13	0630L	0725L	1805L	1900L	2145L	0911L	83%	29/2318-0641
31-Jan-13	0629L	0724L	1806L	1901L	2245L	0946L	75%	0020-0712

SPACE WEATHER IMPACTS

GPS	G	Unlikely Degradation
UHF	G	Unlikely Degradation
HF	G	Unlikely Degradation

FLIGHT LEVEL WINDS (KNOTS) AND TEMPERATURES (°C) - FORT HOOD RESERVATION

500' AGL		1,000' AGL		2,000' AGL		3,000' AGL		5,000' MSL		6,000' MSL		8,000' MSL		10,000' MSL	
33020	07°C	33025	06°C	34035	02°C	34040	-01°C	34045	-02°C	34050	-04°C	33040	-06°C	33055	-10°C

FLIGHT HAZARDS FOR LOCAL FLYING AREA (IAW FHR 95-1)

HAIL, SEVERE TURB/ICING, HEAVY PRECIP, LIGHTNING & WIND SHEAR EXPECTED IN & NEAR T-STORMS

CAT II ACFT: UH-60, AH-64, CH-47, UH-72, BE-20, UC-35, C-208, GRAY EAGLE UAS // CAT I ACFT: HUNTER, SHADOW UAS

PLEASE PROVIDE FEEDBACK

HAZARDS	INTENSITY/COVERAGE	LEVELS (MSL)	LOCATION	
THUNDERSTORMS	NONE	MAX TOPS		
ICING	NONE			
TURB CAT II	MDT // LGT OCNL MDT	SFC - 040 // 040 - 420	ENTIRE LFA	MIN FREEZING LEVEL
TURB CAT I (FHR ONLY)	MDT -SVR // MDT	SFC -040 // 040 - 180	FT HOOD RESERVATION	030 MSL

FORT HOOD RESERVATION AREA FORECAST (INCLUDES RGAAF, HAAF, LONGHORN AND SHORTHORN AUXILIARY AIRFIELDS)

VALID TIME	MIN CIG (AGL)	MIN VIS (sm)	SIG WX	SURFACE WIND		MAX TEMP °C	MAX TEMP °F	MAX DPT °C	RH %	MIN ALSTG	RGAAF MAX PA	RGAAF MAX DA	HAAF MAX PA	HAAF MAX DA
1600Z - 1800Z	NONE	7		27020	G35	10	50	-04	37%	30.06	887 ft	675 ft	796 ft	562 ft
1800Z - 2000Z	NONE	7		29020	G35	12	54	-04	32%	30.12	831 ft	867 ft	740 ft	754 ft
2000Z - 2200Z	NONE	7		30015	G25	13	55	-05	28%	30.12	831 ft	997 ft	740 ft	884 ft
2200Z - 2400Z	NONE	7		31012	G18	10	50	-05	34%	30.13	822 ft	595 ft	731 ft	482 ft
0000Z - 0200Z	NONE	7		Vrb06		06	43	-06	42%	30.15	804 ft	52 ft	713 ft	-62 ft
0200Z - 0400Z	NONE	7		Vrb06		03	37	-06	52%	30.18	776 ft	-374 ft	685 ft	-488 ft

FORT HOOD PLAIN LANGUAGE FORECAST / OUTLOOK FOR THE NEXT 24-HOURS

MOSTLY CLEAR SKIES WITH GUSTY WINDS IN THE MORNING REACHING A MAX OF 40 MPH AND DYING DOWN IN THE LATE AFTERNOON TO 28MPH GOING VARIABLE IN THE NIGHT TIME HOURS. HIGHS IN THE MID 50s LOWS IN THE MID 30s.

TEST FLIGHT AREA (TFA) // (IAW FHR 95-1)

VALID TIME	1600 - 2000Z							
LOCATION	TFA III		TFA IV		TFA V		TFA VI	
MIN CIG (AGL)	NONE		NONE		NONE		NONE	
MIN VIS (SM)	7		7		7		7	
SIG WX								
SFC WND	28020	G35	28020	G35	28020	G35	28020	G35
VALID TIME	2000 - 0000Z							
LOCATION	TFA III		TFA IV		TFA V		TFA VI	
MIN CIG (AGL)	NONE		NONE		NONE		NONE	
MIN VIS (SM)	7		7		7		7	
SIG WX								
SFC WIND	31020	G30	31020	G30	31020	G30	31020	G30
VALID TIME	0000 - 0400Z							
LOCATION	TFA III		TFA IV		TFA V		TFA VI	
MIN CIG (AGL)	NONE		NONE		NONE		NONE	
MIN VIS (SM)	7		7		7		7	
SIG WX								
SFC WIND	Vrb06		Vrb06		Vrb06		Vrb06	

WESTERN TRAINING AREA // (IAW FHR 95-1)

VALID TIME	1600 - 2000Z							
LOCATION	NE		SE		SW		NW	
MIN CIG (AGL)	NONE		NONE		NONE		NONE	
MIN VIS (SM)	7		7		7		7	
SIG WX								
SFC WND	28020	G35	28020	G35	28020	G35	28020	G35
VALID TIME	2000 - 0000Z							
LOCATION	NE		SE		SW		NW	
MIN CIG (AGL)	NONE		NONE		NONE		NONE	
MIN VIS (SM)	7		7		7		7	
SIG WX								
SFC WIND	31020	G30	31020	G30	31020	G30	31020	G30
VALID TIME	0000 - 0400Z							
LOCATION	NE		SE		SW		NW	
MIN CIG (AGL)	NONE		NONE		NONE		NONE	
MIN VIS (SM)	7		7		7		7	
SIG WX								
SFC WIND	Vrb06		Vrb06		Vrb06		Vrb06	

Click here

www.hood.army.mil/3ws/Flimsy/MEF.pdf

MWP – Flight Hazards

FLIGHT HAZARDS FOR LOCAL FLYING AREA (IAW FHR 95-1)					
HAIL, SEVERE TURB/ICING, HEAVY PRECIP, LIGHTNING & WIND SHEAR EXPECTED IN & NEAR T-STORMS				PLEASE PROVIDE FEEDBACK	
CAT II ACFT: UH-60, AH-64, CH-47, UH-72, BE-20, UC-35, C-208, GRAY EAGLE UAS // CAT I ACFT: HUNTER, SHADOW UAS					
HAZARDS	INTENSITY/COVERAGE	LEVELS (MSL)	LOCATION		
THUNDERSTORMS	NONE	MAX TOPS			
ICING	NONE				
TURB CAT II	MDT // LGT OCNL MDT	SFC - 040 // 040 - 420	ENTIRE LFA	MIN FREEZING LEVEL	
TURB CAT I (FHR ONLY)	MDT -SVR // MDT	SFC -040 // 040 - 180	FT HOOD RESERVATION	030	MSL

- Flight hazards are for the Local Flying Area as defined in FHR95-1 and are color coded for the threat based on table below

Criteria	Green	Amber	Red
Thunderstorms	None		Any
Icing	None	Light	≥ Moderate
Turbulence (CAT II)	None - Light	Moderate	≥ Severe
Turbulence (CAT I)	None - Light	Moderate	≥ Severe

MWP – Turbulence

FLIGHT HAZARDS FOR LOCAL FLYING AREA (IAW FHR 95-1)					
HAIL, SEVERE TURB/ICING, HEAVY PRECIP, LIGHTNING & WIND SHEAR EXPECTED IN & NEAR T-STORMS				PLEASE PROVIDE FEEDBACK	
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TURB CAT I (FHR ONLY)	MDT -SVR // MDT	SFC -040 // 040 - 180	FT HOOD RESERVATION	030	MSL

- An aircraft's sensitivity varies considerably with its weight (amount of fuel, cargo, munitions, etc.), air density, wing surface area, wing sweep angle, airspeed, and aircraft flight "attitude"
- All manned aircraft on Fort Hood are considered CAT II while all UAS (Shadow, Hunter, & Gray Eagle) are considered CAT I for turbulence forecasts
- CAT I turbulence forecasts are for the Ft Hood Reservation only and Surface to 18,000 feet

MWP – Fort Hood Reservation Forecast

FORT HOOD RESERVATION AREA FORECAST (INCLUDES RGAAF, HAAF, LONGHORN AND SHORTHORN AUXILIARY AIRFIELDS)														
VALID TIME	MIN CIG (AGL)	MIN VIS (sm)	SIG WX	SURFACE WIND		MAX TEMP		MAX DPT	RH %	MIN ALSTG	RGAAF		HAAF	
						°C	°F	°C			MAX PA	MAX DA	MAX PA	MAX DA
1600Z - 1800Z	NONE	7		04012	G35	29	84	15	43%	29.92	1016 ft	3343 ft	925 ft	3231 ft
1800Z - 2000Z	030	3	BR	16027	G22	29	84	16	45%	29.90	1034 ft	3365 ft	943 ft	3253 ft
2000Z - 2200Z	020	2	BR	16027	G25	31	88	14	36%	29.88	1053 ft	3663 ft	962 ft	3550 ft
2200Z - 2400Z	015	2	BR	16027	G30	29	84	15	43%	29.50	1407 ft	3821 ft	1316 ft	3709 ft
0000Z - 0200Z	010	1 1/2	BR	16027	G38	25	77	16	57%	29.60	1313 ft	3166 ft	1222 ft	3054 ft
0200Z - 0400Z	004	1/4	FG	16010		21	70	16	73%	30.30	666 ft	1842 ft	575 ft	1729 ft

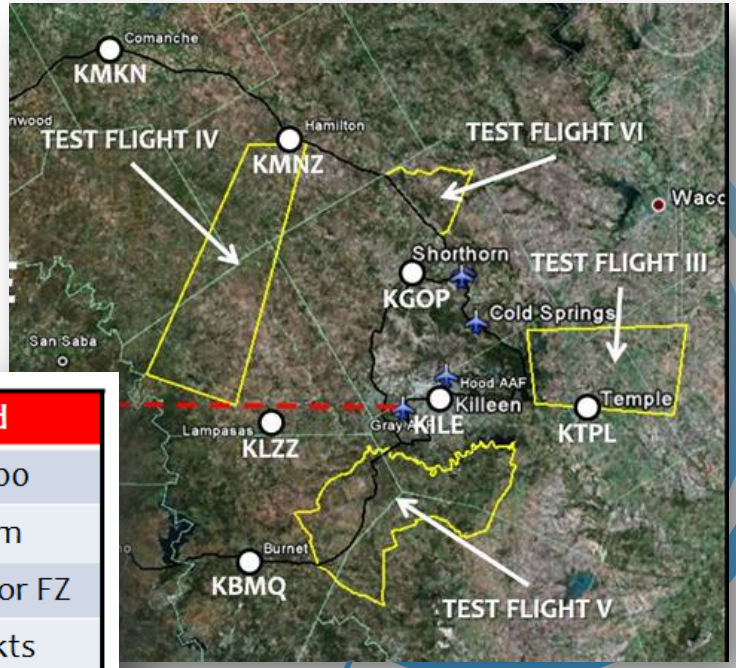
- Color coded based on forecast conditions/threat (2-hour blocks)
- Forecast is for worse case conditions for the time period
- PA and DA specifically for RGAAF and HAAF

Criteria	Green	Amber	Red
Minimum Ceiling	≥ 3,000	< 3,000	< 500
Minimum Visibility	≥ 3sm	< 3sm	< 1/2sm
Significant Wx	None	SHRA, DZ, RA	TS and/or FZ
Winds	< 25 kts	≥ 25 kts	≥ 45 kts

MWP – Maintenance Test Flight Areas

TEST FLIGHT AREA (TFA) // (IAW FHR 95-1)								
VALID TIME	1600 - 2000Z							
LOCATION	TFA III		TFA IV		TFA V		TFA VI	
MIN CIG (AGL)	060		005		060		060	
MIN VIS (SM)	5		1/4		1/4		5	
SIG WX	BR		TSRA		BR		BR	
SFC WND	14015	G27	14015	G50	14015		14015	G27
VALID TIME	2000 - 0000Z							
LOCATION	TFA III		TFA IV		TFA V		TFA VI	
MIN CIG (AGL)	060		060		060		060	
MIN VIS (SM)	5		5		5		5	
SIG WX	BR		BR		BR		BR	
SFC WIND	14015	G27	14015	G27	14015	G27	14015	
VALID TIME	0000 - 0400Z							
LOCATION	TFA III		TFA IV		TFA V		TFA VI	
MIN CIG (AGL)	060		060		060		060	
MIN VIS (SM)	5		5		5		5	
SIG WX	BR		BR		BR		BR	
SFC WIND	14015	G27	14015	G27	14015	G27	14015	G27

- Primary Test Flight Areas as defined in FHR95-1
- 4-hour forecasts color-coded based on the table below



Criteria	Green	Amber	Red
Minimum Ceiling	≥ 3,000	< 3,000	< 1,000
Minimum Visibility	≥ 3sm		< 3sm
Significant Wx	None	SHRA, DZ, RA	TS and/or FZ
Winds	< 35 kts	≥ 35 kts	≥ 45 kts

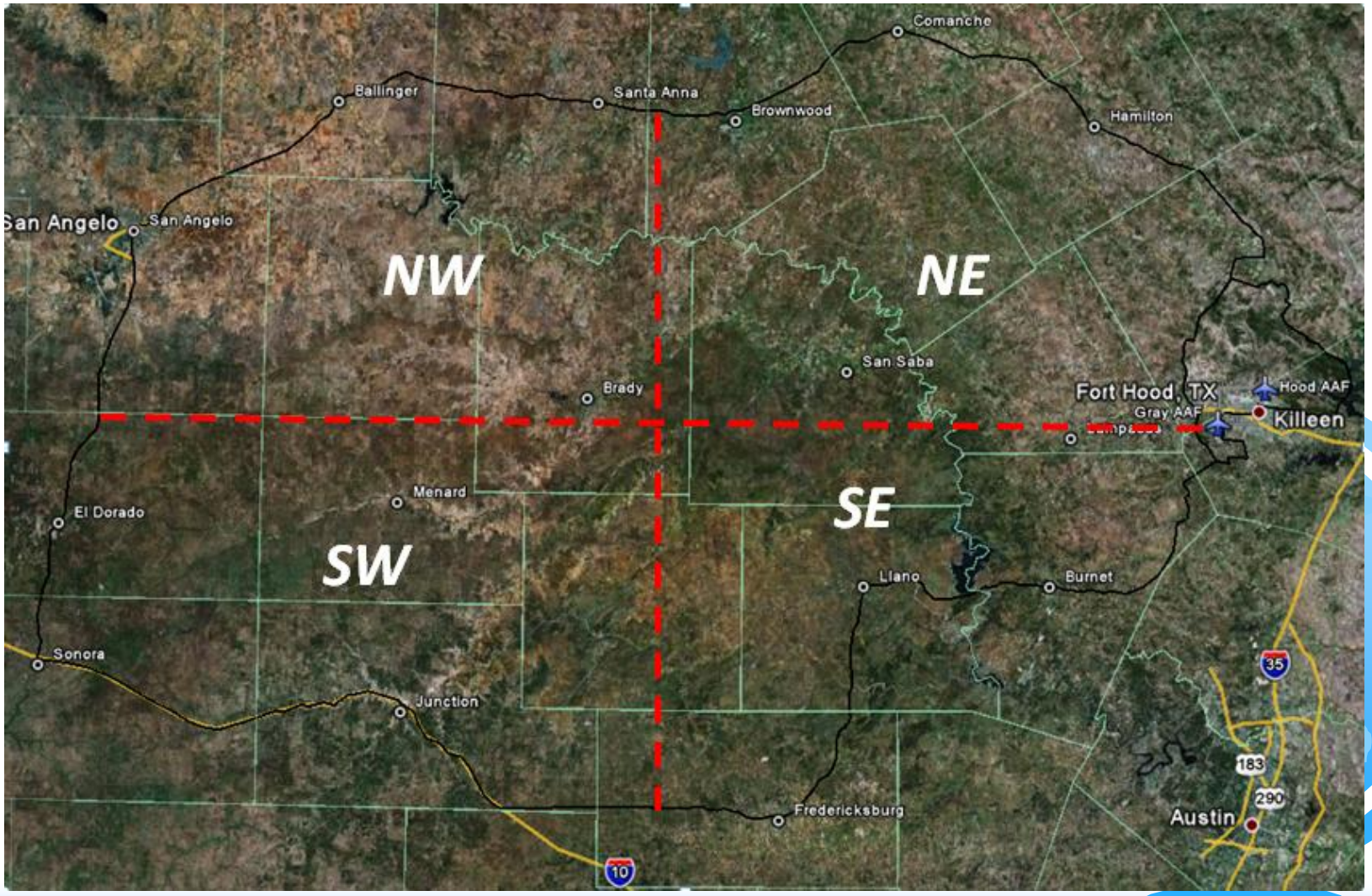
MWP – Western Training Area (WTA)

WESTERN TRAINING AREA // (IAW FHR 95-1)								
VALID TIME	1600 - 2000Z							
LOCATION	NE		SE		SW		NW	
MIN CIG (AGL)	060		060		060		060	
MIN VIS (SM)	5		5		5		5	
SIG WX	BR		BR		BR		BR	
SFC WND	14015	G27	14015	G27	14015	G27	14015	
VALID TIME	2000 - 0000Z							
LOCATION	NE		SE		SW		NW	
MIN CIG (AGL)	060		060		060		060	
MIN VIS (SM)	5		5		5		5	
SIG WX	BR		BR		BR		BR	
SFC WIND	14015	G27	14015	G27	14015	G27	14015	G27
VALID TIME	0000 - 0400Z							
LOCATION	NE		SE		SW		NW	
MIN CIG (AGL)	060		060		060		060	
MIN VIS (SM)	5		5		5		5	
SIG WX	BR		BR		BR		BR	
SFC WIND	14015	G27	14015	G27	14015	G27	14015	G27

- WTA as defined by FHR95-1 (separated into 4-sections)
- 4-hour forecasts color-coded based on the table below

Criteria	Green	Amber	Red
Minimum Ceiling	≥ 3,000	< 3,000	< 1,000
Minimum Visibility	≥ 3sm		< 3sm
Significant Wx	None	SHRA, DZ, RA	TS and/or FZ
Winds	< 35 kts	≥ 35 kts	≥ 45 kts

Western Training Area



Shadow UAS MWP

- **Only used by Shadow UAS units**
- Use 3 WS MWP (Flimsy) for mission planning
- Contact RGAAF weather station for actual flight weather briefs
  - Provide Unit, Phone #, Location (i.e., LSCS), Aircraft Tail#, Launch/Landing Time, Flight Level, and Operator Name

SHADOW UAS MISSION WEATHER PRODUCT (MWP)					
Unit / Phone #			Location		
Aircraft Tail #		Launch DTG		Recovery DTG	
FLIGHT LEVEL		WWA(s)	NONE		
Temp (C)		Freezing Level		Brief Time	
Dew Point (C)		Wind/Temp Aloft (C)		Void time	
RH (%)		2K MSL		Extended Time	
ALSTG		4K MSL		Initials Briefer	
PA		6K MSL		Name Operator	
DA		8K MSL		Remarks	
SFC Wind--Lauch		10K MSL			
SFC Wind--Recovery		Thunderstorms			
Minimum Visibility/WX		Turbulence (CAT I)			
Minimum Ceiling		Icing			

CAT I Turbulence

Minimum/worst conditions expected for the mission duration

5-Day Forecast

III ARMORED CORPS

PHANTOM

Fort Hood

March Climatology
Avg Hi: 72F Avg Low: 51F
Avg Precip: 2.5 Inches

5-Day Weather Outlook & Effects

FORT HOOD 5-DAY FORECAST

AS OF 0300 HRS LOCAL 18 MAR 13

	Mon 18 Mar 13		Tue 19 Mar 13		Wed 20 Mar 13		Thu 21 Mar 13		Fri 22 Mar 13	
FORECAST	MIST				MIST MIST MIST		MIST	MIST	MIST	MIST
TEMPS	LO: 61F/16C	HI: 81F/27C	LO: 61F/16C	HI: 79F/26C	LO: 57F/14C	HI: 70F/21C	LO: 59F/15C	HI: 79F/26C	LO: 37F/3C	HI: 73F/23C
	WIND CHILL N/A	HEAT INDEX N/A	WIND CHILL N/A	HEAT INDEX N/A	WIND CHILL N/A	HEAT INDEX N/A	WIND CHILL N/A	HEAT INDEX N/A	WIND CHILL N/A	HEAT INDEX 92F/33C
WINDS	12 KTS	12G25 KTS	9 KTS	10 KTS	10 KTS	10 KTS	13 KTS	16 KTS	12G18 KTS	15G25 KTS
SKY/VIS/WX CONDITIONS	5 MI / 1000FT MIST	7 MI / NO CIG PARTLY CLOUDY	7 MI / NO CIG MOSTLY CLEAR	7 MI / 3000FT RAIN	5 MI / 3000FT RAIN	5 MI / NO CIG MIST	5 MI / NO CIG MIST	2 MI / 2200FT SCATTERED TSTMS	<1 MI / 300FT RAIN	2 MI / NO CIG MIST
DA / PA	MAX DA: +2858FT	MAX PA: +1212FT	MAX DA: +2561FT	MAX PA: +1110FT	MAX DA: +2346FT	MAX PA: +916FT	MAX DA: +2773FT	MAX PA: +1212FT	MAX DA: +3947FT	MAX PA: +1389FT
SOLAR / LUNAR DATA	BMNT: 0645	EENT: 2033	BMNT: 0643	EENT: 2034	BMNT: 0642	EENT: 2035	BMNT: 0641	EENT: 2036	BMNT: 0639	EENT: 2036
	SR: 0737	SS: 1941	SR: 0736	SS: 1942	SR: 0734	SS: 1943	SR: 0733	SS: 1943	SR: 0732	SS: 1944
	MR: 1159	MS: 0121	MR: 1248	MS: 0209	MR: 1340	MS: 0255	MR: 1433	MS: 0337	MR: 1528	MS: 0417
	DARK PERIOD 5:24	MOON PERIOD 1:21 / 3:27	DARK PERIOD 4:34	MOON PERIOD 2:09 / 3:26	DARK PERIOD 3:47	MOON PERIOD 2:55 / 3:25	DARK PERIOD 3:04	MOON PERIOD 3:37 / 3:24	DARK PERIOD 2:22	MOON PERIOD 4:17 / 3:24
ILLUM DATA	42%	50%	52%	59%	61%	68%	70%	77%	79%	84%
HELO	TU			TU	TU			TS V	V C CV V	
UAS	TU C	W		TU	TU			C TS CV	C V VW W	
PERSONNEL								TS		T
VEHICLES								P		
VIS SYSTEMS	RH							P V	V	
IR SENSORS	RH							P V	V	
TIME	00 06 12 18	00 06 12 18	00 06 12 18	00 06 12 18	00 06 12 18	00 06 12 18	00 06 12 18	00 06 12 18	00 06 12 18	00 06 12 18 00

W – Wind TU – Turbulence TS – Thunderstorms T – Temperature C – Ceiling P – Precipitation V – Visibility RH – Rel. Humidity

FORECASTER : 3 WS

FOR OFFICIAL USE ONLY

FOR PLANNING PURPOSES ONLY

Integrity - Service - Excellence

5-Day Forecast Impacts

III ARMORED CORPS

PHANTOM

WEATHER IMPACTS ON OPERATIONS

FOR OFFICIAL USE

OPERATION	FAVORABLE (No Degradation)	MARGINAL (Some Degradation)	UNFAVORABLE (Significant Degradation)
HELO	CIG >= 1000 FT	CIG 500 - 999 FT	CIG < 500 FT
	VIS >= 4800 METERS	VIS 0800 - 4799 METERS	VIS < 0800 METERS
	WIND < 35 KTS	WIND 35 - 44 KTS	WIND >= 45 KTS
			LGT OR MDT OR SVR TSTM
			LGT OR MDT OR HVY FZ PRECIP
		MDT TURB	SVR TURB
		LGT OR MDT ICING	SVR ICING
UAS	CIG >= 3000 FT		CIG < 3000 FT
	VIS >= 4800 METERS		VIS < 4800 METERS
	WIND < 25 KTS		WIND >= 25 KTS
		LGT OR MDT PRECIP	HVY PRECIP
			LGT OR MDT OR SVR TSTM
			LGT OR MDT OR HVY FZ PRECIP
		LGT TURBC	MDT OR SVR TURBC
			LGT OR MDT OR SVR ICING
PERSONNEL	TEMP 33 - 84 F	TEMP < 33 F	TEMP <= -25 F
		TEMP >= 85 F	TEMP >= 95 F
	LGT PRECIP	MDT PRECIP	HVY PRECIP
			LGT OR MDT OR SVR TSTM
VEHICLES	LGT PRECIP	MDT PRECIP	HEAVY PRECIP
		LGT FZ PRECIP	MDT OR HVY FZ PRECIP
	TEMP 01 - 104 F	TEMP < 1 F	
		TEMP > 104 F	
VIS SYSTEMS	VIS >= 3200 METERS	VIS 1000 - 3199 METERS	VIS < 1000 METERS
	LGT PRECIP	MDT PRECIP	HVY PRECIP
	TEMP < 100 F	TEMP >= 100 F	
	REL HUMIDITY < 80%	TEMP < -25 F	
		REL HUMIDITY >= 80%	
IR SENSORS	VIS >= 3200 METERS	VIS < 3200 METERS	
	LGT PRECIP	MDT PRECIP	HVY PRECIP
	TEMP 20 - 125 F		TEMP > 125 F
	REL HUMIDITY < 80%		TEMP < -25 F
			REL HUMIDITY >= 80%

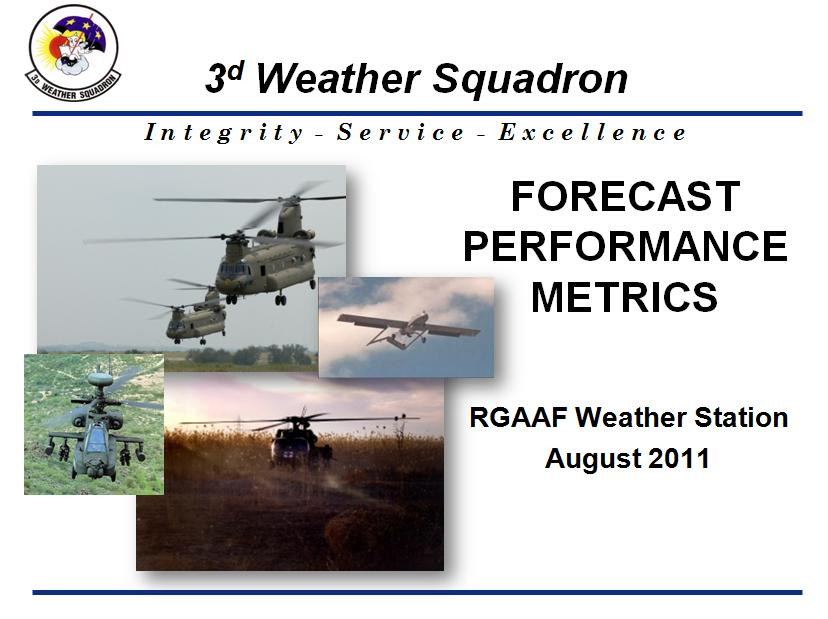
FHR115-1

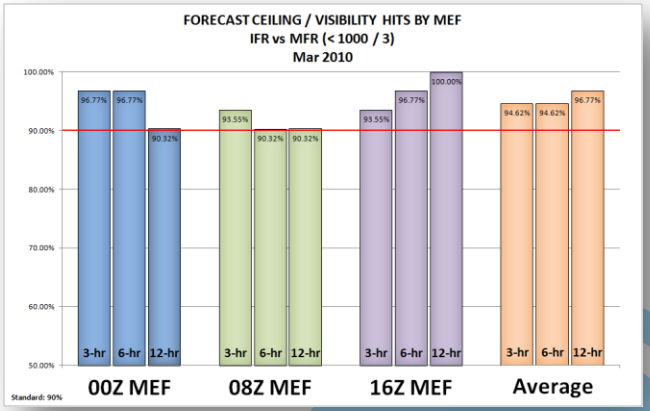
Forecast Performance Metrics

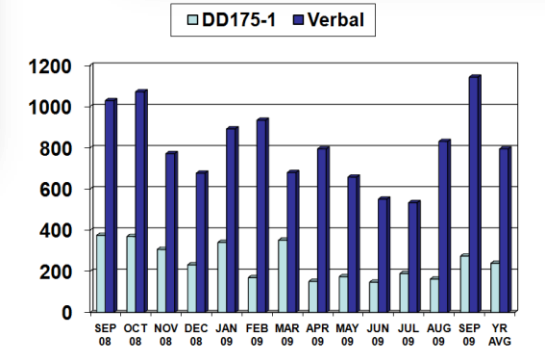
- How well are we forecasting mission impacting weather?
- **Best measure of our performance is direct feedback from aircrews:**
  - Click on “Feedback Icon” on flimsy; send an E-mail
  - Complete Flight Weather Briefing Feedback Form on our webpage or faxed with all DD175-1s
  - Call RGAAF weather station NCOIC at 288-9166
- We’ll take good and bad comments!!!

Monthly Performance Metrics

- Check out our monthly performance reports on our web site: www.hood.army.mil/3ws/MEFVERFeedback.ppt







Objective Verification

- 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**
  - We measure the accuracy of each Fort Hood Reservation Forecast (Flimsy) published on the 3 WS web page
  - We use observations at GRK, HLR, and GOP (Gatesville) and any PIREPs to verify each flimsy at the 3-, 6-, and 12-hour point from the original issuance time

Did the Forecast or Weather Impact the Mission?

- Did we forecast **"GO"** weather for your mission and weather was a **"GO"** -- mission completed
- Did we forecast **"GO"** weather for your mission and weather was a **"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 planning process)*

POCs

– 3 WS Commander:	**288-1313**
– 3 WS Operations Officer:	**287-7397**
– Operations Superintendent:	**287-2960**
– RGAAF Weather Station:	**288-9620/9400**
– RGAAF Weather Station NCOIC	**288-9166**
– Integration Flight (SWOs)	**288-4326/4255**

Gray METRO: UHF 306.5

SUMMARY

- Local Area Influences
- Winter Climatology
- Winter Hazards
- Watches/Warnings/Advisories
- Weather Operations
- POCs

THE END!!
Any Question or comments?