2017 Low Level Route Survey

For 301st Operations Group JRB-NAS Fort Worth

Customer
301st Operations Group

Customer

301st Operations Group

The 301st Fighter Wing, based at Naval Air Station Joint Reserve Base Fort Worth Carswell Field, Texas, is equipped with the F-16C+ Fighting Falcon. It is the only Air Force Reserve (AFRC) fighter unit in the state of Texas.

The 301st Fighter Wing is the largest tenant unit on NAS Fort Worth JRB. With approximately 2,100 reservists and civilians, the wing has an economic impact of $254 million on the local community.

Day to day activities of the wing are managed by full time air reserve technicians and department of the Air Force civilians. Ready reservist assigned to the wing are required to attend unit training assemblies which are scheduled for one weekend each month, plus serve 15 days active duty each year to fulfill their reserve commitment. Since reserve pilots are required to maintain the same degree of readiness as their active duty counterparts, flying activities are scheduled Tuesday through Saturday of each week throughout the year.

Customer

301st Operations Group

The 301st Fighter Wing at JRB-NAS Fort Worth conducts extensive low-level training within 200 miles of the base.

Military pilots use the routes to maintain proficiency by simulating wartime missions. Actual wartime missions require high speed low-level penetrations, to avoid detection by the enemy.

MTRs are not only used by the 301st FW aircraft, but also by various other fighter, bomber, and transport aircraft.

Mission Objectives

- Primary Mission Objective – To locate and plot the *EXACT* location and height of any obstacles above 200 feet AGL within the areas of the low level training routes designated by the 301 OG/OSA. Aircrews will use current Sectional Charts as reference for determining whether or not an obstacle has already been identified.
- Secondary Mission Objective – Improve proficiency of mission staff and aircrews under search conditions. Provide qualification missions for aircrew members in training.

Points of Contact

- LLRS IC Maj Mark Hammack
  - ❖ Phone 214 478 0955
  - ❖ Email hammackm@dentoncap.org
- LLRS Deputy IC Lt Col Steve Robertson
  - ❖ Phone 940 232 4635
  - ❖ Email robertsons@dentoncap.org

Mission Basics

- Entire route (all segments) must be flown in the same month.
- IC will request/assign routes to accomplish this
- Photos of new towers are requested
- Any major construction or landmarks should be noted
- Note bird activity (flyways) that could cause conflict with AF training flights.

Mission Basics

- Deconfliction requires that we notify the 301 OG/OSA 24 hours in advance of when we intend to fly a specific route. Routes may be flown any day of the week.
- Standard crew of three is preferred, minimum crew is two for any sortie to be flown
- There must be a current mission pilot on the sortie, others may be trainees
- Detailed planning is a must – plan to launch early when it is cool

Mission Basics

- Typical mission is one 2.5 - 3.5 hour sortie. Some sorties may include a fuel stop before RTB. Some sorties are paired back to back with a lunch/fuel stop in between. Whenever the engine is shut down, another sortie is required.
- Normal cruise speed to/from the route at a cooler altitude
- Route survey is NLT 1000' AGL @ a recommended 100 KTS **ground speed**. Track spacing varies by MTR route. Search area extends two miles outside of the charted area. Search speed may be increased at the discretion of the MP as long as ability to locate uncharted towers is maintained

Mission Basics

- Locate and plot the EXACT location and estimated height of any new obstacles above 200’ AGL , any charted obstacles that have been removed, and verify charted obstacles in the Low Level routes
- Fly over the top of the obstacle to locate it. You may briefly descend to 500’ AGL to estimate the obstacle height then return to NLT 1000’ AGL. Never descend below the top of the tower

Mission Basics

Kneeboard sheets for every route with turn points are posted at http://dentoncap.org/low-level-route-surveys/

In the NAS JRB Low Level Route Mission section

Other documents posted there include:

- Low Level Route Sighting Sheet
- Observer – Scanner Work Sheet
- PIREP kneeboard form
- This briefing presentation

Mission Basics

- Weather
  - CAP aircraft may fly IFR to reach the survey area but will not conduct the route survey unless the flight visibility is at least 5 miles and ceilings are at least 3000’ AGL.
  - The MP will abort the sortie if the weather falls below these minimums while conducting the survey.
- Lights On for Safety
  - All sorties will be flow with all aircraft exterior lights turned on.

Mission Basics

Guy Wires

Guy wires extend as far a ½ mile beyond towers. CAP aircraft will not descend below 500’ AGL or below the top of any tower while attempting to measure the tower’s height.

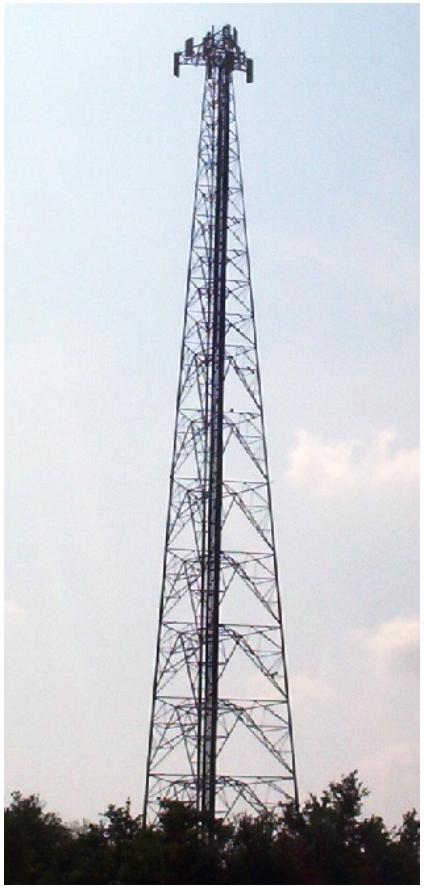
Surviving The Wires Environment

Mission Basics

Guyed Tower – Guyed towers used to be the cheapest tower to construct, but require the greatest amount of land. For taller heights (300' and greater) it is much cheaper to build a guyed tower. Most radio and television towers are guyed towers. A guyed tower is a straight tower supported by guy wires to the ground which anchor the tower.

Mission Basics

Lattice Tower- also referred to as a self-support tower or SST



Monopole Tower- A monopole tower is a single tube tower. It requires one foundation and typically does not exceed 200 ‘ AGL.

Mission Basics

Types of Towers

MET towers or Meteorological towers are used to gather wind data necessary for site evaluation and development of wind turbine projects. They can be erected very rapidly and may be on site from a few days to up to a year or longer. At this time there is no standardized notification system in place to indicate when and where these towers are erected.

Mission Basics

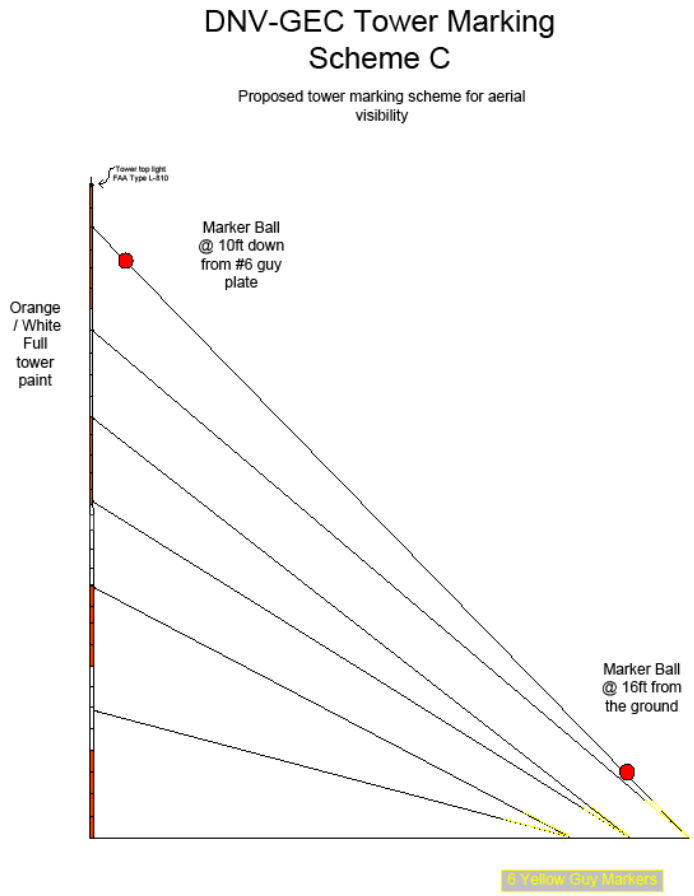
Wind Turbines – large 1.5 to 3.5MW wind turbines typically used in this area are 200’ to 300’ AGL with blades reaching another 120’ to 150’. Usually arrayed in wind farms.

Document the approximate total area of any new wind farms located.

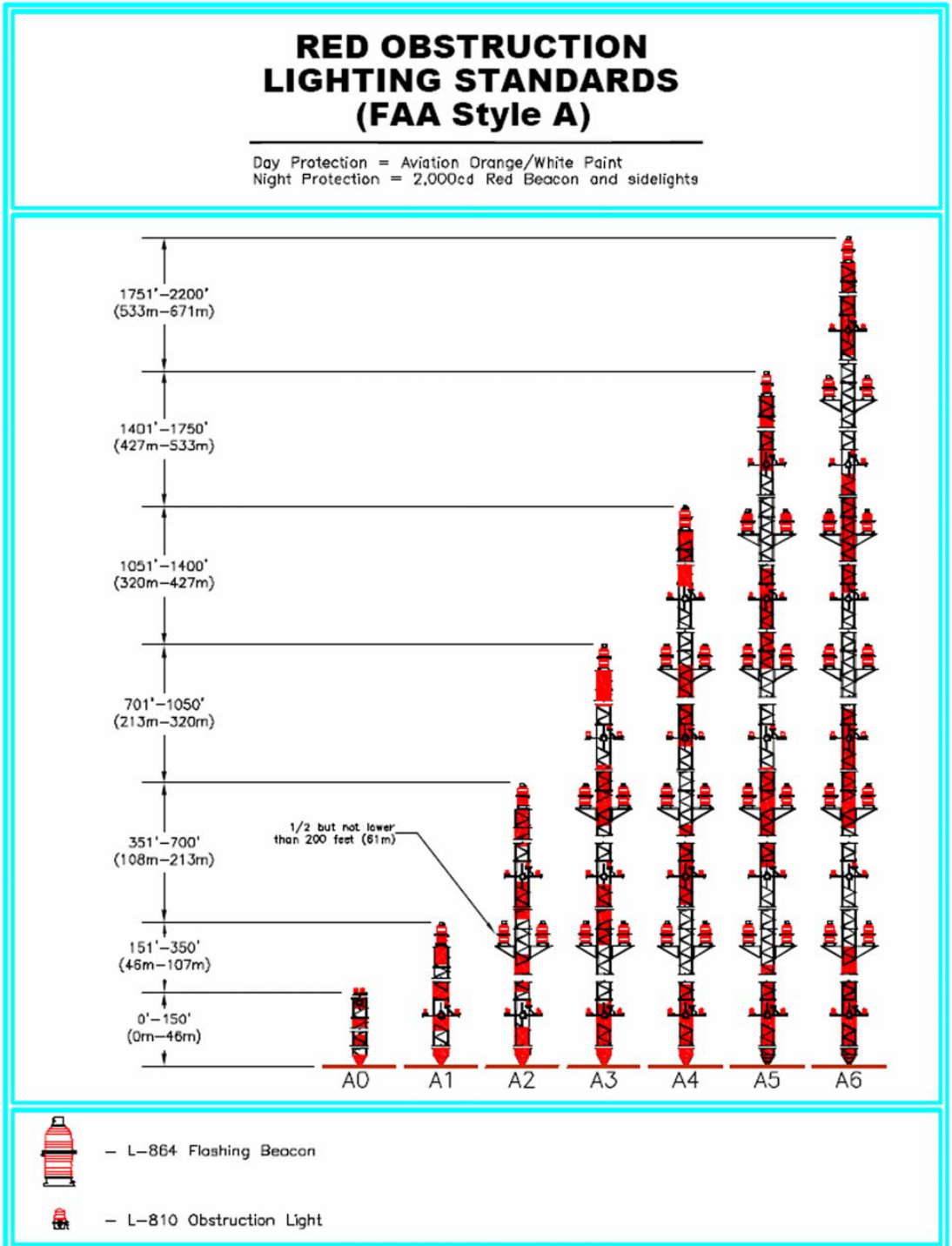
Mission Basics

MET towers generally vary in height from 100, 150, 200 and 250 feet tall.

There are no standards for markings and towers less than 200 feet tall are not required to be lighted.



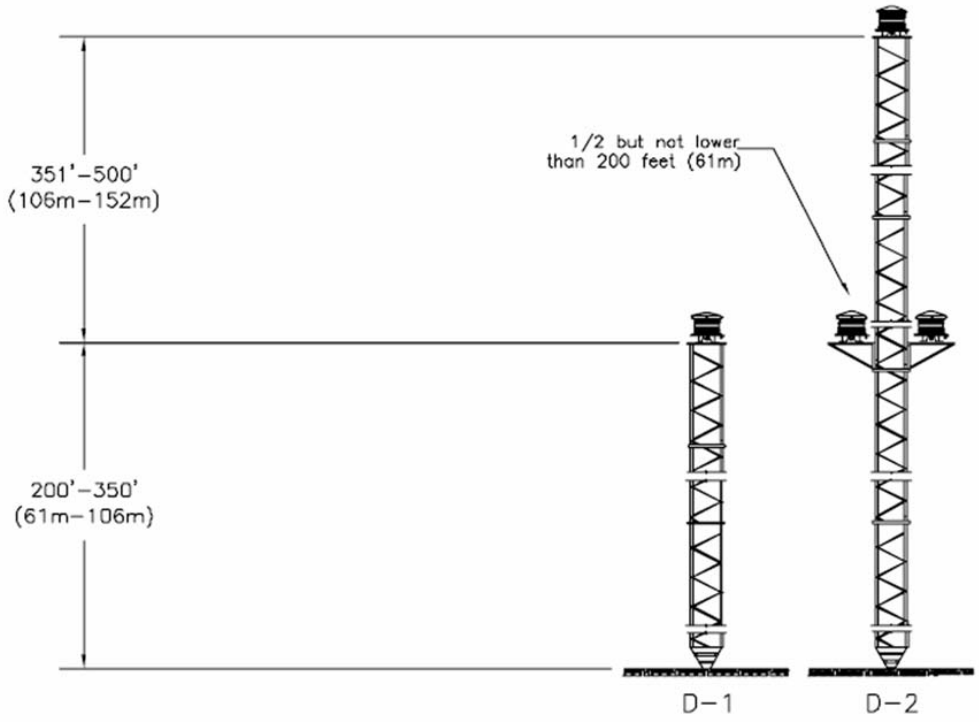
Estimating Height by Lighting



Estimating Height by Lighting

MEDIUM INTENSITY WHITE OBSTRUCTION LIGHTING STANDARDS (FAA Style D)

Day/Twilight Protection = 20,000cd White Strobe
Night Protection = 2,000cd White Strobe
Painting of tower is typically not required.



– L–865 Flashing White Strobe

Mission Basics

Bird strikes

- While not considered a big issue for light general aviation aircraft, birds have been responsible for some major accidents and more than 300 fatalities since the age of flight began. According to an FAA study, more than 16,000 collisions occurred during a recent seven-year period over the United States, Puerto Rico, and the U.S. Virgin Islands. Nearly 80 percent occurred less than 1,000 feet above the ground
- Most general aviation aircraft windshields etc are NOT required to be able to withstand bird strikes

Mission Basics

The Air Force Bird Aircraft Strike Hazard Team and FAA's *Aviation News* from January 1996 offer this guidance for avoiding bird strikes:

- Strikes are most likely in **August, September, and October** - particularly in migratory flyways. These tend to be the larger birds. Keep a lookout, just as you would for other flying objects.

- Dawn and dusk are the times with the highest probability of a bird encounter.

- Turn on landing or recognition lights. This helps birds see oncoming aircraft.

- Plan to climb. Birds almost invariably dive away, but there are exceptions.

Mission Basics

The Air Force Bird Aircraft Strike Hazard Team and FAA's *Aviation News* from January 1996 offer this guidance for avoiding bird strikes:

- Slow down. This will allow birds more time to get out of your way and will lessen the impact force if you do hit one.
- If a collision seems likely, duck below the glareshield to avoid being hit by the bird and flying plexiglass. Advise passengers to do the same. Protect your eyes and head.
- If a collision occurs, fly the aircraft first. Assess the damage and decide whether you can make it to an airport or you should make an off-airport landing. Declare an emergency - it doesn't cost anything. Even if no damage is visible, divert to the nearest airport and have a mechanic look at the airplane.

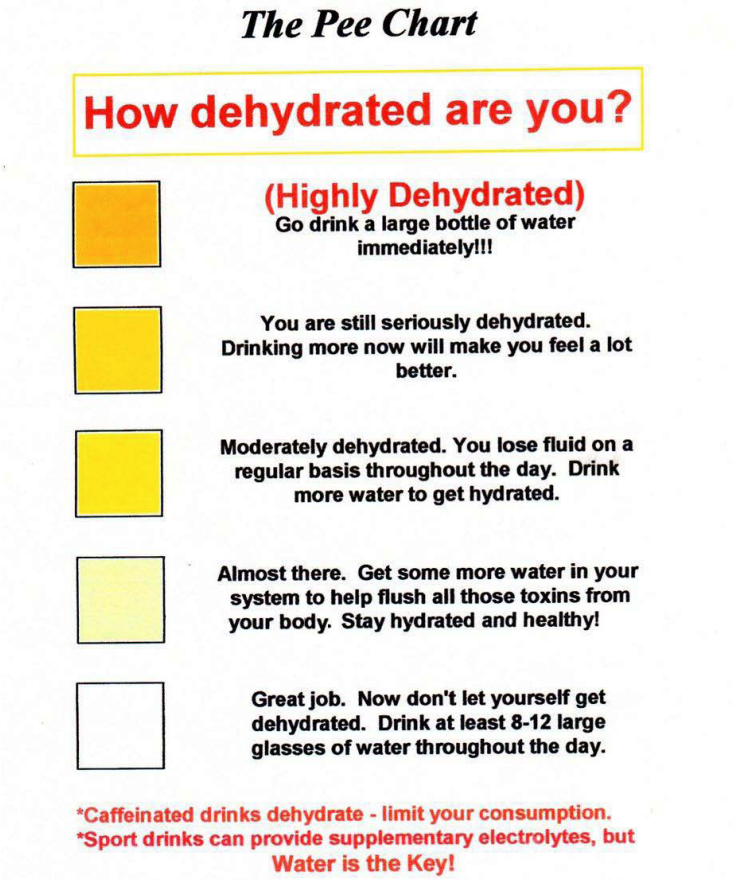
210 vs. Bird

Mission Basics

Bird strikes

Mission Basics

- Watch for signs of heat related problems
- You can fly with windows open at any speed
- Hydrate – Hydrate – Hydrate



Drink one sport drink for every three to four bottles of water. Don't wait to get thirsty. If you're thirsty, you're a quart low.

Mission Basics

- **Safety is of paramount importance**
- **Never compromise your safety**
- **ORM Uploaded to eServices Required**
- **Weight & Balance Uploaded to eServices Required**
- **FAA VFR Flight Plan Required**
- ***Don't forget to Close your Flight Plan***
- **Suggestions that improve safety are always welcome**

Mission Basics

Form Approved: OMB No. 2120-0026
09/30/2006

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

FLIGHT PLAN

(FAA USE ONLY) ☐ PILOT BRIEFING ☐ VNR ☐ STOPOVER

TIME STARTED | SPECIALIST INITIALS

1. TYPE	2. AIRCRAFT IDENTIFICATION	3. AIRCRAFT TYPE / SPECIAL EQUIPMENT	4. TRUE AIRSPEED	5. DEPARTURE POINT	6. DEPARTURE TIME		7. CRUISING ALTITUDE
✓ VFR ☐ IFR ☐ DVFR	CAP4238	C182/G	120 KTS	KADM	PROPOSED (Z) 1700	ACTUAL (Z)	2000'

8. ROUTE OF FLIGHT
ADM070009/D2+30 ADM225040

9. DESTINATION (Name of airport and city)	10. EST. TIME ENROUTE HOURS	MINUTES	11. REMARKS
KDTO	03	30	CAP/USAF LOW LEVEL ROUTE SURVEY *NOTE-MAY ADD SPOT INFO HERE IF PERTINENT Aircraft N7636N

12. FUEL ON BOARD HOURS	MINUTES	13. ALTERNATE AIRPORT(S)	14. PILOT'S NAME, ADDRESS & TELEPHONE NUMBER & AIRCRAFT HOME BASE	15. NUMBER ABOARD
04	30		Steve Robertson, 940 232 4635, KDTO	3

17. DESTINATION CONTACT/TELEPHONE (OPTIONAL)
Rick Woolfolk, 940 391 3728

16. COLOR OF AIRCRAFT
WHITE/RED/BLUE

CIVIL AIRCRAFT PILOTS. FAR Part 91 requires you file an IFR flight plan to operate under instrument flight rules in controlled airspace. Failure to file could result in a civil penalty not to exceed $1,000 for each violation (Section 901 of the Federal Aviation Act of 1958, as amended). Filing of a VFR flight plan is recommended as a good operating practice. See also Part 99 for requirements concerning DVFR flight plans.

- Route is entry point reference a VOR radial/distance
- /D (for delay) (time in grid) Example /D2+30
- Exit point reference a VOR radial/distance
- Full Route of Flight example: ADM070009/D2+30 ADM225040
- Remarks : CAP/USAF LOW LEVEL ROUTE SURVEY and N-number
- Destination Contact: Your FRO

VFR Flight Plans

Don't forget to close your VFR flight plan with FSS. There have been several instances recently when CAP aircraft have failed to close their flight plan and FSS has had to initiate search procedures at 30 minutes overdue.

- **CAP4230** filed VFR to WPA, (Wiley Post), ETA was 5/7/11 1800z closed flight plan at 1845z 45 minutes past ETA.
- **CAP3072** filed VFR to SKX, (Taos), ETA was 2/26/12 0115z closed Flight plan 0150z 35 minutes past ETA.
- **CAP3039** filed VFR to ALM, (Alamogordo), ETA was 2/25/12 2359z closed Flight plan 0032z 33 minutes past ETA.
- **CAP2151** filed VFR to SGS, (South St. Paul), ETA was 2/10/12 1829z closed Flight plan 1853z 34 minutes past ETA
- **CAP2152** filed VFR to SGS, (South St. Paul), ETA was 2/10/12 1829z closed Flight plan 1853z 34 minutes past ETA

Communication

Before departing the MP will contact the IC/FRO.

All participants will be checked in via WMIRS.

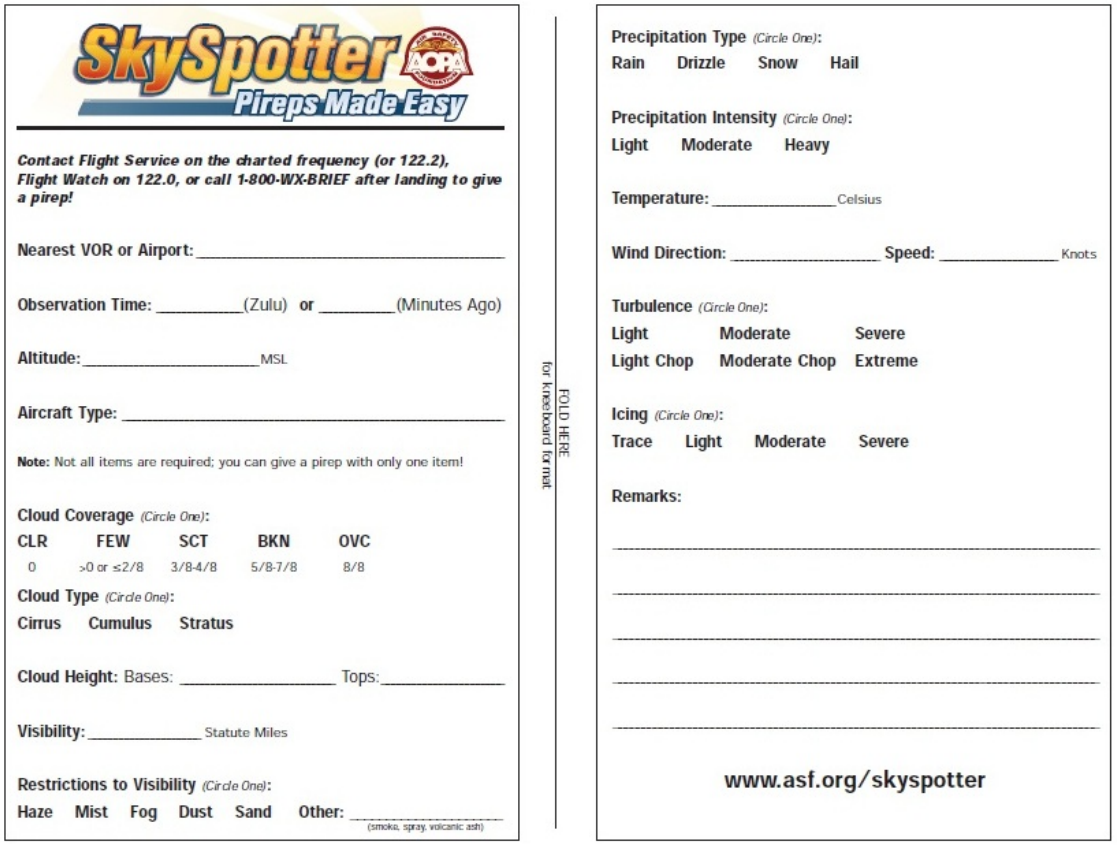
Safety currency will be checked and anyone who is not current will not be allowed to participate.

There will be no High Bird for these sorties.

It is anticipated that most communication will be via cell phone, email, TEXT message, or local flight following.

Communication

Contact FSS every 60 minutes for altimeter setting, update your position, provide PIREP



SkySpotter
Pireps Made Easy

Contact Flight Service on the charted frequency (or 122.2), Flight Watch on 122.0, or call 1-800-WX-BRIEF after landing to give a pirep!

Nearest VOR or Airport: _____

Observation Time: _____(Zulu) **or** _____(Minutes Ago)

Altitude: _____MSL

Aircraft Type: _____

Note: Not all items are required; you can give a pirep with only one item!

Cloud Coverage *(Circle One)*:

CLR	FEW	SCT	BKN	OVC
0	>0 or ≤2/8	3/8-4/8	5/8-7/8	8/8

Cloud Type *(Circle One)*:
Cirrus **Cumulus** **Stratus**

Cloud Height: Bases: _____ Tops: _____

Visibility: _____ Statute Miles

Restrictions to Visibility *(Circle One)*:
Haze **Mist** **Fog** **Dust** **Sand** **Other:** _____
(smoke, spray, volcanic ash)

FOLD HERE
for kneeboard fit

Precipitation Type *(Circle One)*:
Rain **Drizzle** **Snow** **Hail**

Precipitation Intensity *(Circle One)*:
Light **Moderate** **Heavy**

Temperature: _____Celsius

Wind Direction: _____ **Speed:** _____ Knots

Turbulence *(Circle One)*:
Light **Moderate** **Severe**
Light Chop **Moderate Chop** **Extreme**

Icing *(Circle One)*:
Trace **Light** **Moderate** **Severe**

Remarks:

_____

_____

_____

_____

_____

www.asf.org/skyspotter

Paperwork Flow

- The IC will load sorties into WMIRS and obtain a sortie number.

  Mission Symbol is A99

- Route assignment requests will be sent to all participating squadrons
- *Each new month the squadron will upload a current Aircraft Inspection Form to the Mission Files in WMIRS for the aircraft used*
- **Do not fly if the sortie without a verbal Flight Release**
- *Sorties sometimes get missed in the approval process. If the sortie is not green on the day to be flown contact the IC or Deputy IC who will call the NOC for approval*

Paperwork Flow

- The MP will update sorties in WMIRS with aircrew names
- **Check aircraft discrepancies in WMIRS and CAPERS**
- eFlight release from LLRS IC or Deputy IC only:
  Mark Hammack: 214-478-0955
  Steve Robertson: 940-232 4635

  If other CAP personnel are providing support such as local flight following let us know so they can be signed into the mission via WMIRS.

Paperwork Flow

<u>BEFORE calling for a Flight Release at the start of the day's sorties the MP will</u>:

1. Complete the following sections in the e104
   - Manifest, Qualifications, Aircraft
   - Cell phone number(s) in crew contact line
   - Briefing including N/A in boxes as appropriate
   - Current and forecast weather (actual weather not just VFR)
   - ORM

2. Upload into the appropriate location in the e104:
   - W&B – REQUIRED by IC

Paperwork Flow

<u>At the completion of the day's sorties the MP will</u>:

1. Complete the Sortie Debriefing Section including Hobbs hours, tach hours, fuel gallons & dollars, Summary Section, and Results/Deliverables Section (photos/route survey sheets completed, etc.)
2. Upload into the appropriate location in WMIRS:
   - Fuel Receipt (appropriately annotated)
   - Route Survey Sighting Sheets into the e104 "Sighting Sheets" folder
3. Upload any photos to WMIRS
4. Update CAPERS tach and Hobbs time for maintenance tracking
5. Write up any A/C discrepancies in both WMIRS and CAPERS

ORM

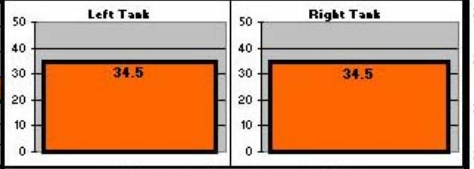
- Required mission paperwork
- Increased safety awareness

Weight & Balance

Flight Details			
02/18/2009 21:20			
Registration #	N4736N		Gear Pos
Aircraft Type	C182Q	CPF4238	RD/WT/BL
Usable Fuel Tank Configuration (US gals)			M
Full Fuel	92.0	3/4	69.0
Middle Tab		1/2	46.0
Bottom Tab	64.0	1/4	23.0
Custom Fuel		TOT Fuel	69.0
Taxi Fuel	-1.7		
Fuel Burn (13.5 GPH)	12.0	FOB (NR)	5:25
Reserve (Minutes)	60	FOB (WR)	4:25

REMARKS

- - Database Currency Date: 12/28/2008



Loading Details - (Avail. Useful Load = 49 lbs)				
		Wt (lbs)	Arm	Moment
Basic Empty WT		1890.7	38.1	71976.7
Usable Fuel (lbs)		390.0	46.5	18135.0
R 1	Seat 1	200.0	41.0	8200.0
	Seat 2	180.0	41.0	7380.0
R 2	Seat 3	200.0	74.0	14800.0
	Seat 4		74.0	
R 3	Seat 5		97.0	
	Seat 6		97.0	
R 4				

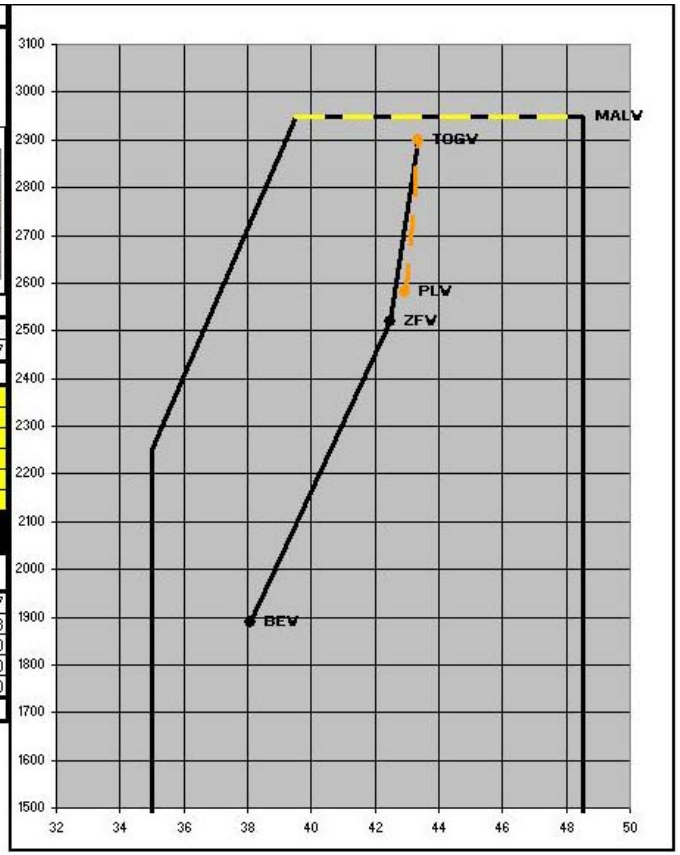
Safety Details / Crew Manifest

		Wt (lbs)	Arm	Moment
Zero Fuel (ZFW)		2520.7	42.5	107106.7
POS	**NAME**		**CAPID**	**RMKS**
MP	Woolfolk, R		233124	
MO	Faas, J		281354	
MS	Thomas, C		292770	

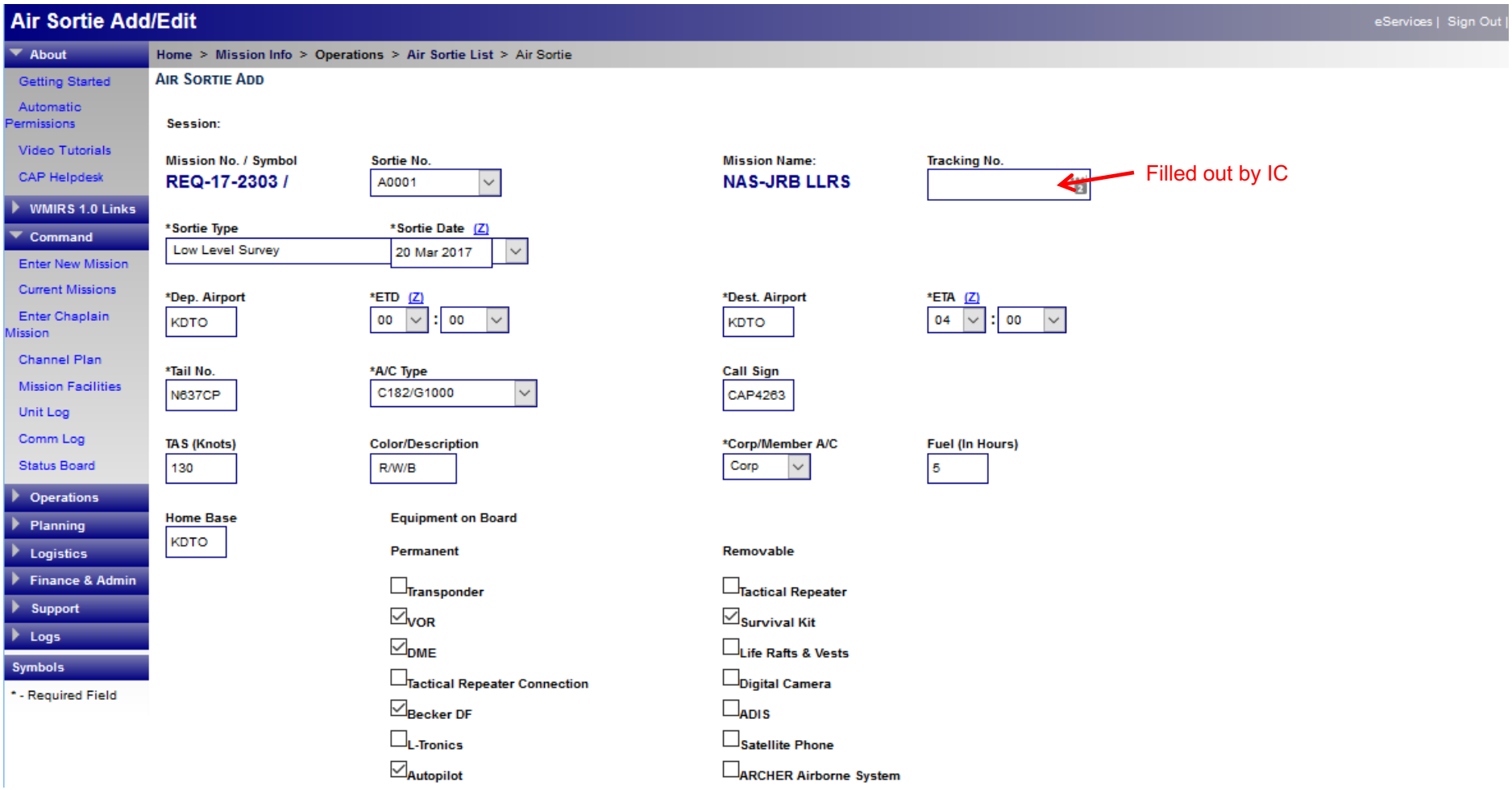
Prepositioned Equipment Button

Baggage	Wt (lbs)	Add. Wt (lbs)	Arm	Moment
A - 120	25.0	25.0	95.0	4750.0
B - 80			116.0	
C - 80			129.0	

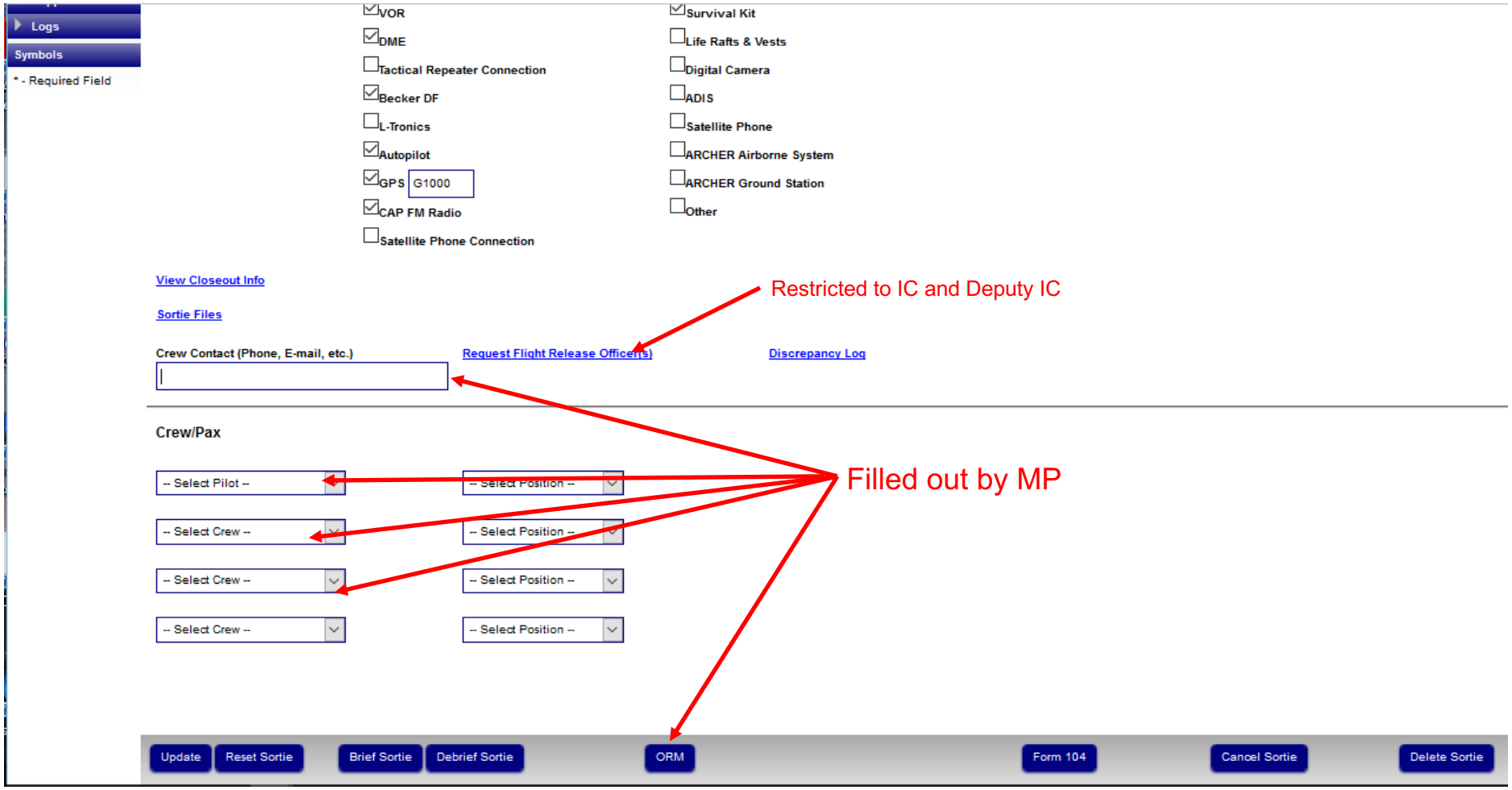
Ramp Wt	2910.7	43.0	125241.7
Taxi Fuel	-10.2	46.5	-474.3
Takeoff Wt (TOGW)	2900.5	43.3	125716.0
Planned Fuel Burn	-318.0	46.5	-14787.0
Landing Wt (PLW)	2582.5	43.0	110929.0
Useful Load	49.5		



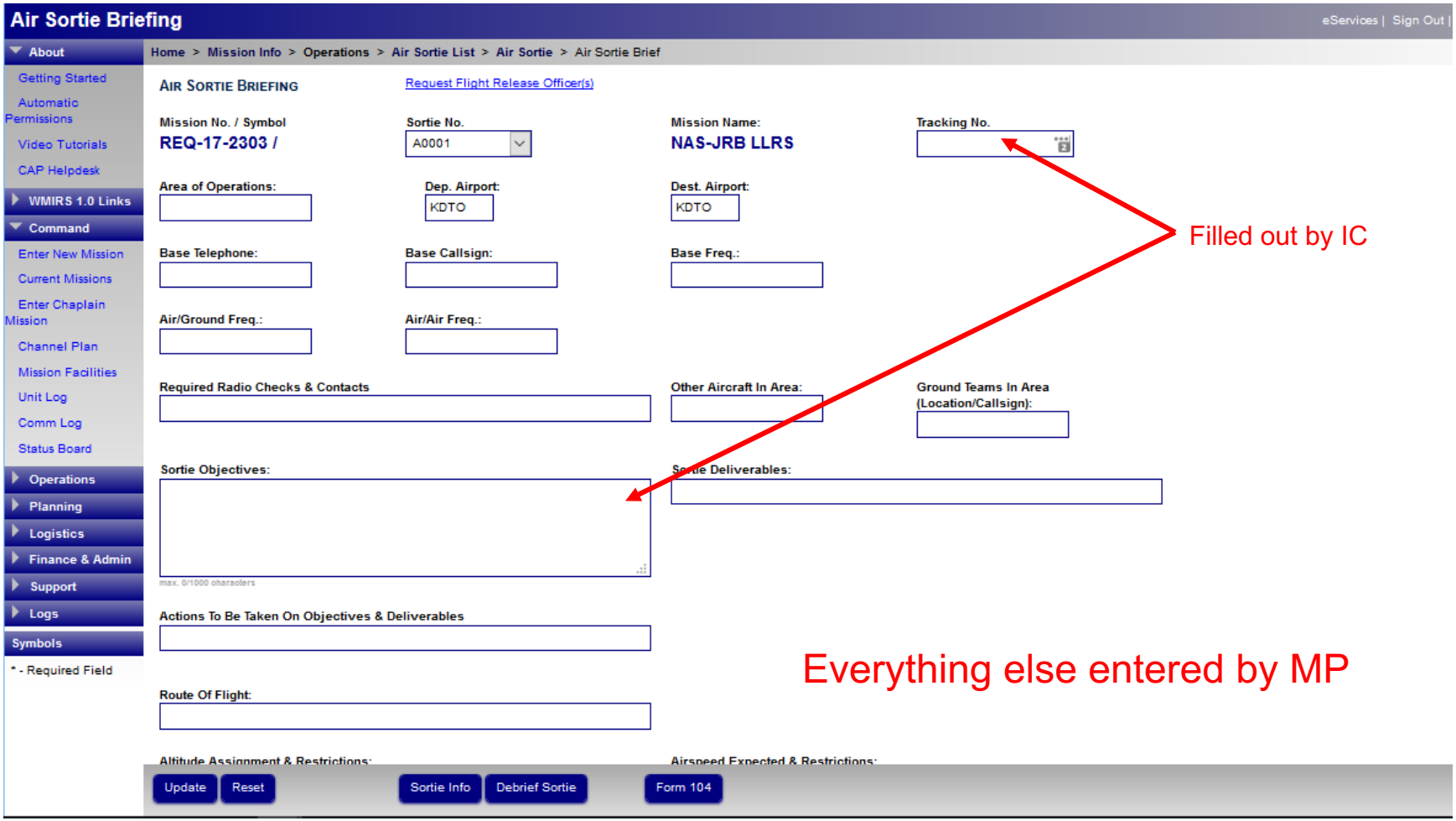
Before Sortie



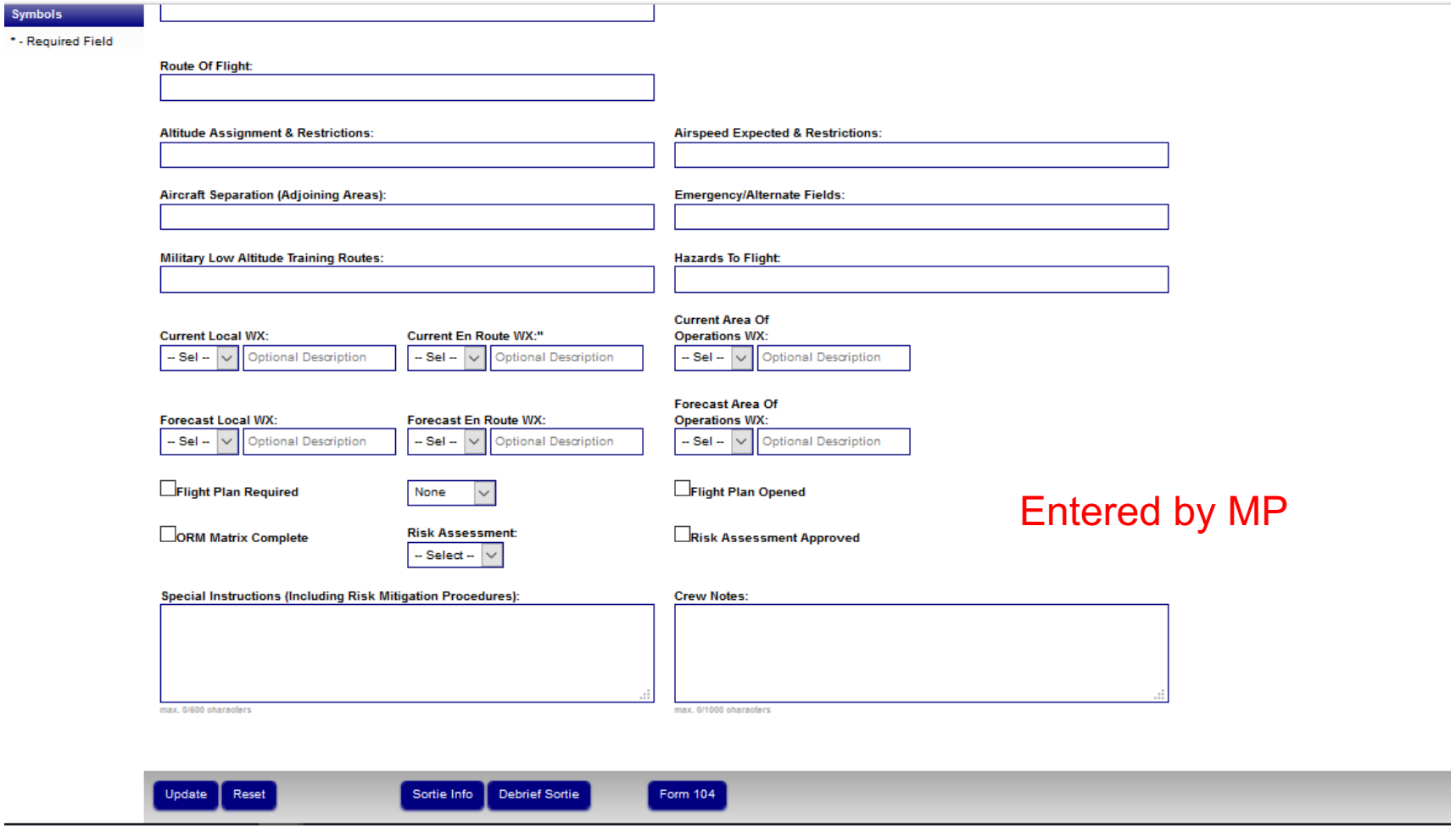
Before Sortie



Before Sortie



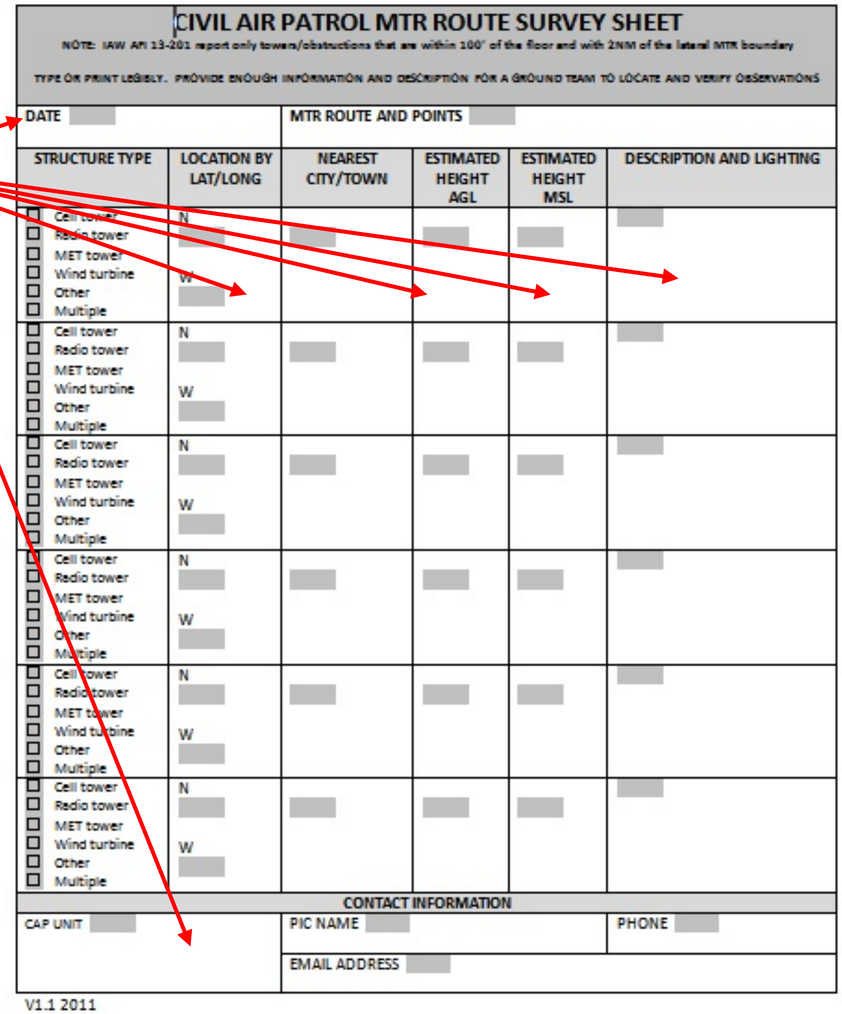
Before Sortie



Entered by MP

Route Survey Sighting Sheets

- Available on website
- Fill out all fields
- Report changes only
- Uncharted towers
- Missing towers
- Location information so a ground team can locate the obstacle
- Upload to the "Sighting Sheets" folder for each sortie



CIVIL AIR PATROL MTR ROUTE SURVEY SHEET

NOTE: IAW AFI 13-201 report only towers/obstructions that are within 100' of the floor and with 2NM of the lateral MTR boundary

TYPE OR PRINT LEGIBLY. PROVIDE ENOUGH INFORMATION AND DESCRIPTION FOR A GROUND TEAM TO LOCATE AND VERIFY OBSERVATIONS

DATE | MTR ROUTE AND POINTS

STRUCTURE TYPE	LOCATION BY LAT/LONG	NEAREST CITY/TOWN	ESTIMATED HEIGHT AGL	ESTIMATED HEIGHT MSL	DESCRIPTION AND LIGHTING
☐ Cell tower ☐ Radio tower ☐ MET tower ☐ Wind turbine ☐ Other ☐ Multiple	N W				
☐ Cell tower ☐ Radio tower ☐ MET tower ☐ Wind turbine ☐ Other ☐ Multiple	N W				
☐ Cell tower ☐ Radio tower ☐ MET tower ☐ Wind turbine ☐ Other ☐ Multiple	N W				
☐ Cell tower ☐ Radio tower ☐ MET tower ☐ Wind turbine ☐ Other ☐ Multiple	N W				
☐ Cell tower ☐ Radio tower ☐ MET tower ☐ Wind turbine ☐ Other ☐ Multiple	N W				
☐ Cell tower ☐ Radio tower ☐ MET tower ☐ Wind turbine ☐ Other ☐ Multiple	N W				

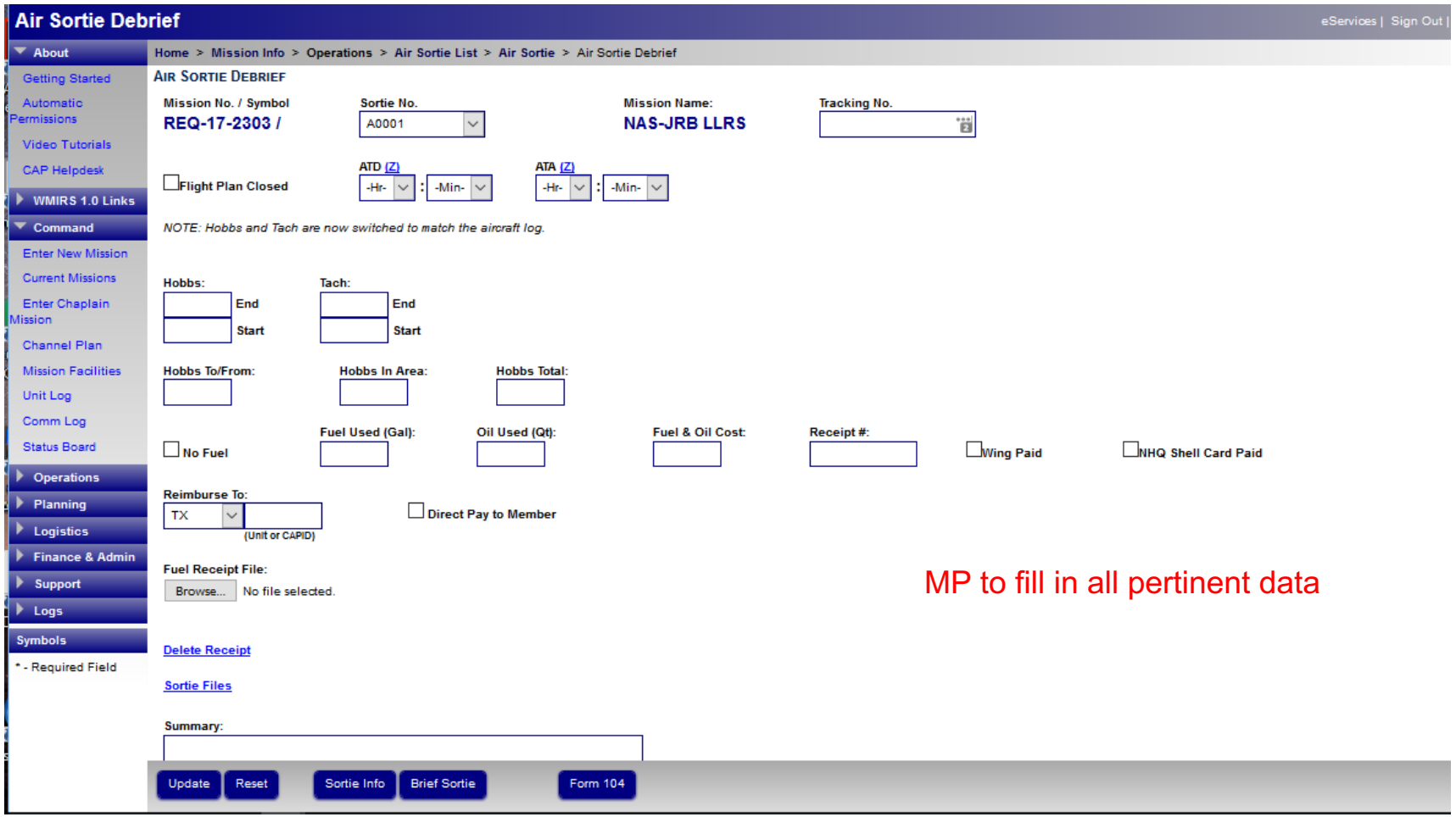
CONTACT INFORMATION

CAP UNIT | PIC NAME | PHONE

EMAIL ADDRESS

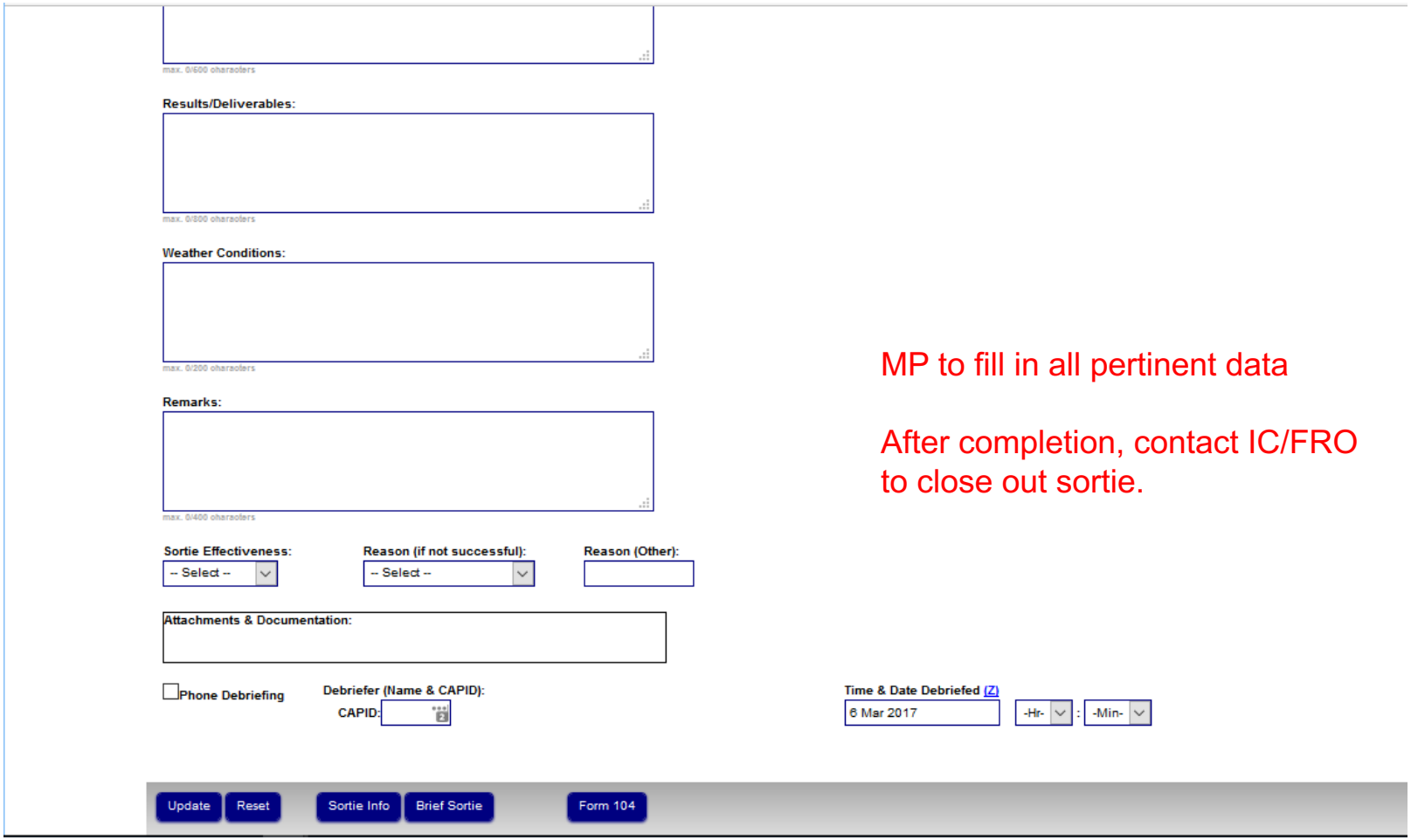
V1.1 2011

After Sortie



MP to fill in all pertinent data

After Sortie



MP to fill in all pertinent data

After completion, contact IC/FRO to close out sortie.

Training Opportunities

Mission Aircrew Training for MS, MO, and MP

Depending on the complexity of the sortie we will try to pair a MP SET or IP crew in the following priority:

- MP Trainees
- MO Renewals/Requals
- MO Trainees
- MS Renewals/Requals
- MS Trainees

Questions?

Let's Fly!