2023 Low Level Route Survey

For 301st Operations Group JRB-NAS Fort Worth

Customer
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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 100 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 ForeFlight MFB with current database 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

- Lt Col Steve Robertson
  - Phone 940 232 4635
  - Email srobertson@cap.gov
- Lt Col Rick Woolfolk
  - Phone 940 391 3728
  - Email rwoolfolk@cap.gov

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
- Report changes via the Route Survey Sheet uploaded to the sortie files and noted in the Debriefing Summary.
- Capture the ForeFlight track log for the flight and upload to the sortie files.

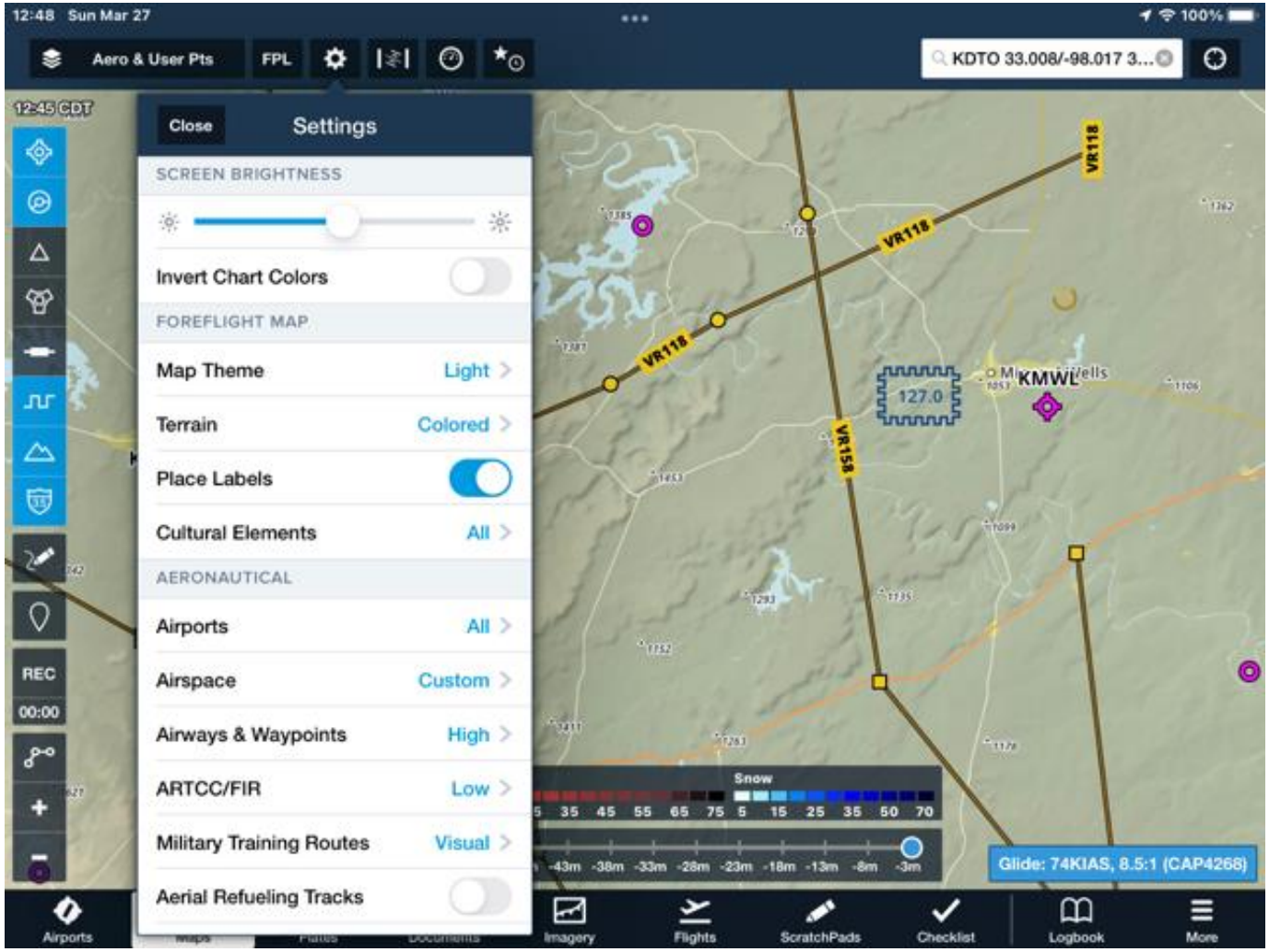
Mission Basics

- Deconfliction requires that we notify the 301 OG/OSA at least 24 hours in advance of when we intend to fly a specific route so they can post a NOTAM to training commands. 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

Use of Foreflight Military Flight Bag

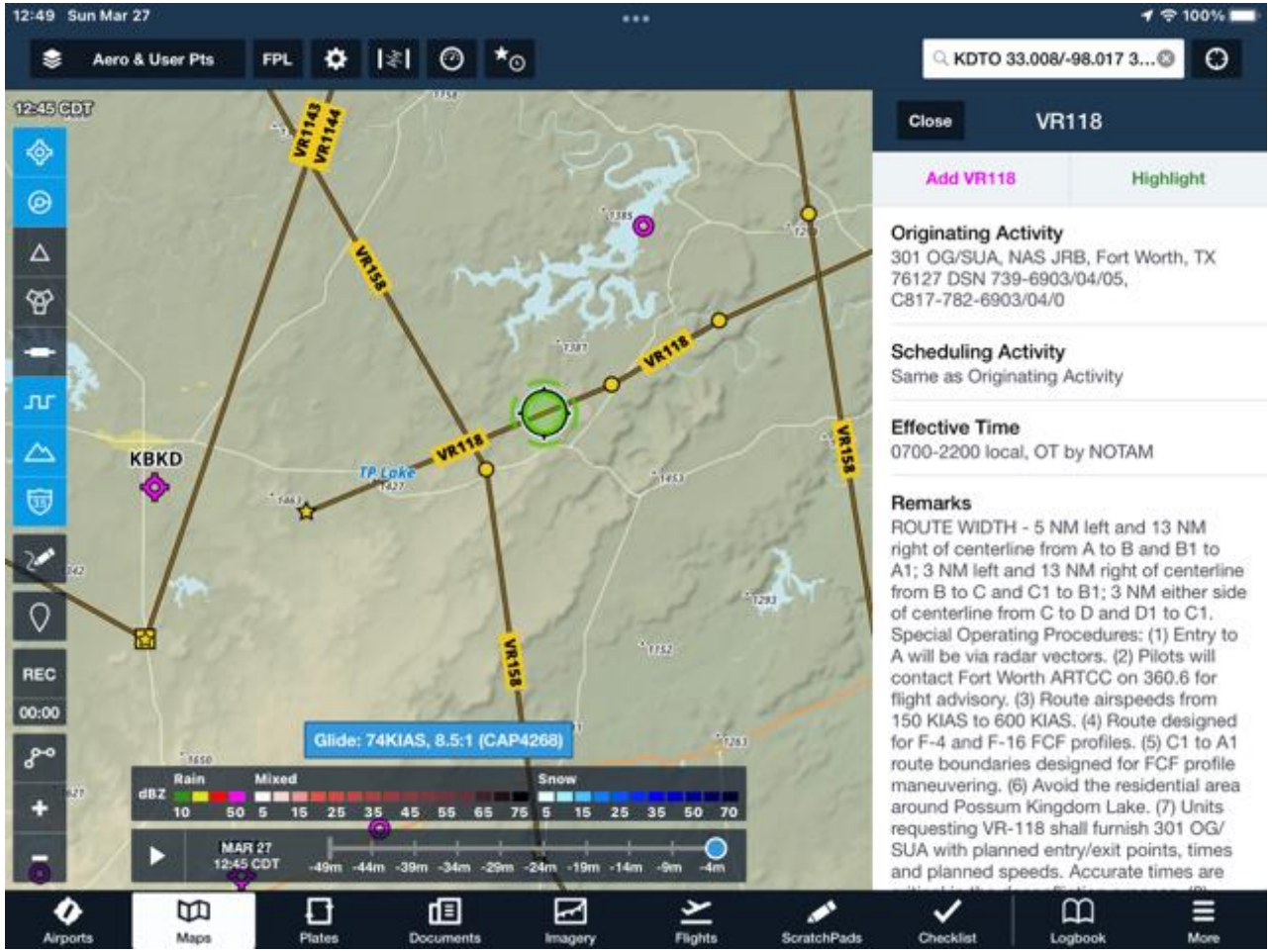
In the “Layers” drop down, turn on obstacles layer to help locate towers charted towers.

In the “Settings” drop down (the gear), turn on MTRs to see the route you are surveying



Use of Foreflight Military Flight Bag

When the MTR's are turned on touch the route you are assigned then press "Highlight" to display the full area to be surveyed.



Use of Foreflight Military Flight Bag

With Highlight selected the entire operational area of an MTR is displayed to ensure you are covering it all.

Use of Foreflight Military Flight Bag

Video ForeFlight MFB How-To: Military Training Routes

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 will vary with MTR route. 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

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

Guide Wires

Guide 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

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

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 televion towers are guyed towers. A guyed tower is a straight tower suppported by guy wires to the ground which anchor the tower.

Mission Basics

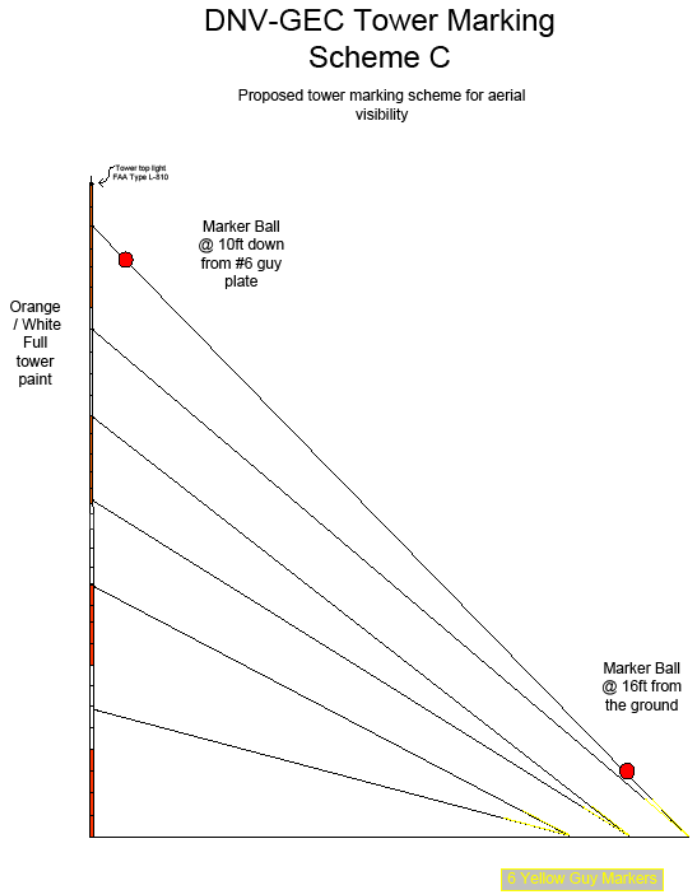
Types of Towers

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

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

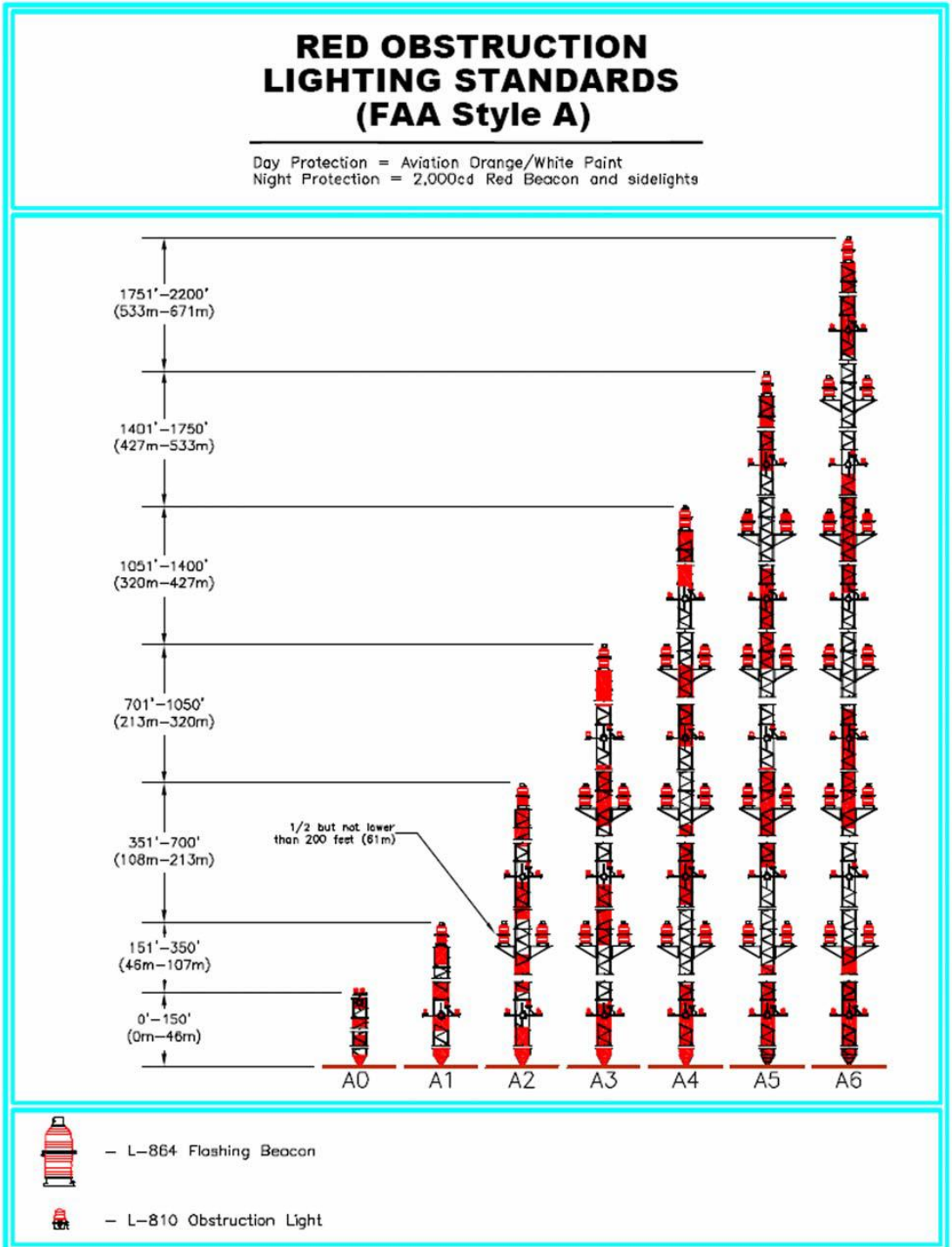
There are no standards for markings and towers less than 200 feet tall are not required to be lighted.



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.

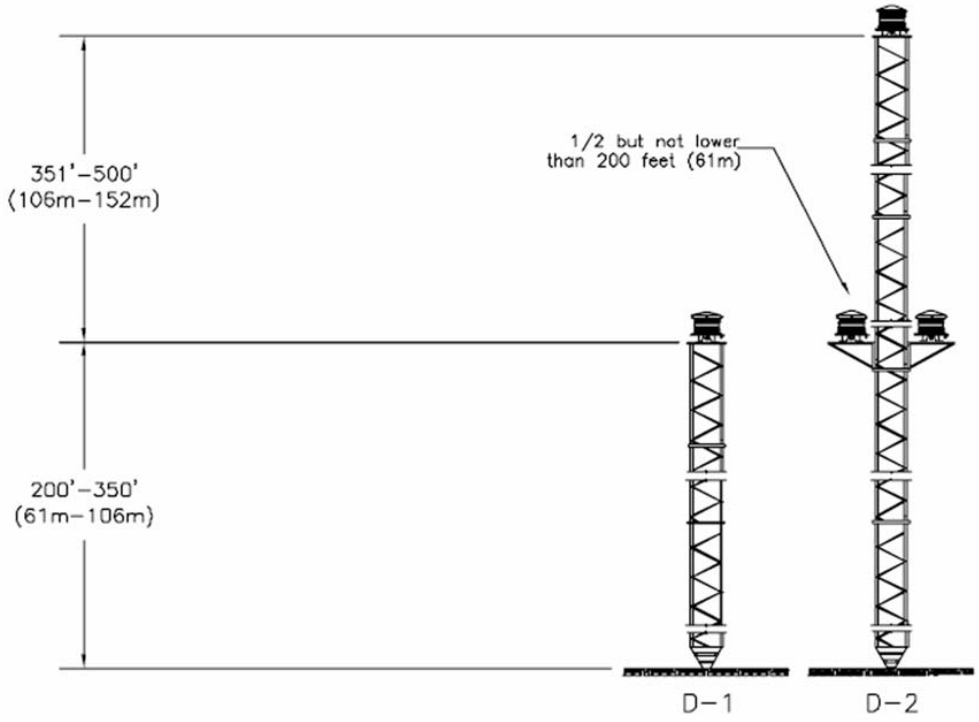
Estimating Height by Lighting



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, 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.

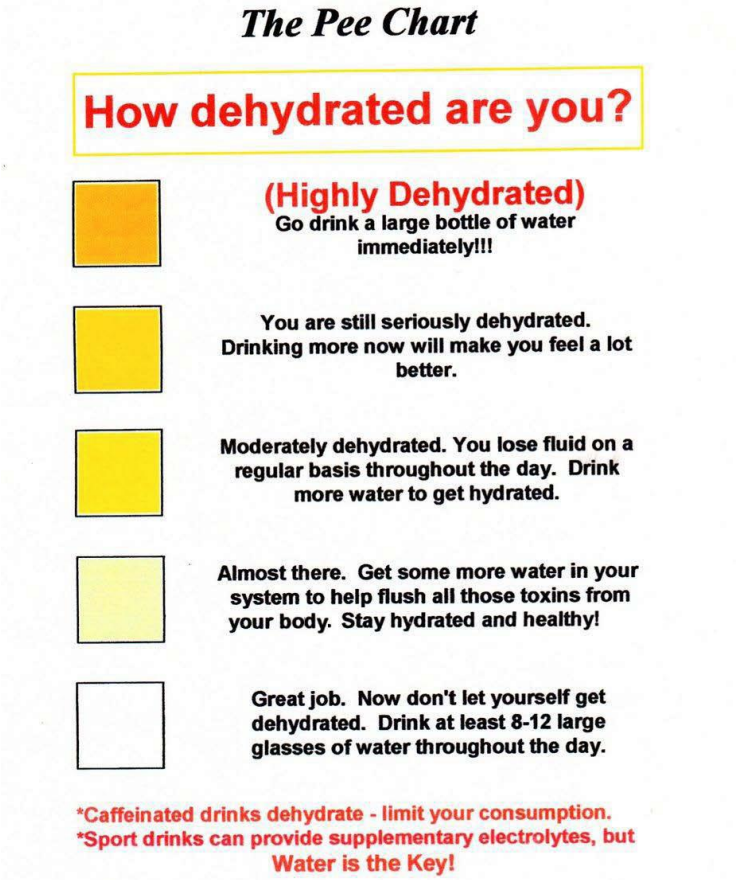
- If a collision occurs, fly the aircraft first. Assess the damage and decide whether you can make it to an airport or you should make an off-airport landing. Declare an emergency - it doesn't cost anything. Even if no damage is visible, divert to the nearest airport and have a mechanic look at the airplane.

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
- Weight & Balance Uploaded to the sortie is Required
- FAA VFR Flight Plan Required
- *Don't forget to Close your Flight Plan*
- Contact your local FRO for flight release
- Suggestions that improve safety are always welcome

VFR Flight Plans

- VFR flight plans are required and may be filed through Foreflight (FFM). Flight plans may be opened and closed through FFM or by contacting Flight Services via radio or phone. *It is recommended that your FRO be listed as a contact.*

- If filing through FFM, do a commonsense check of times and duration before clicking on FILE.

- *Don't forget to close your VFR flight plan with FSS or through FFM*.

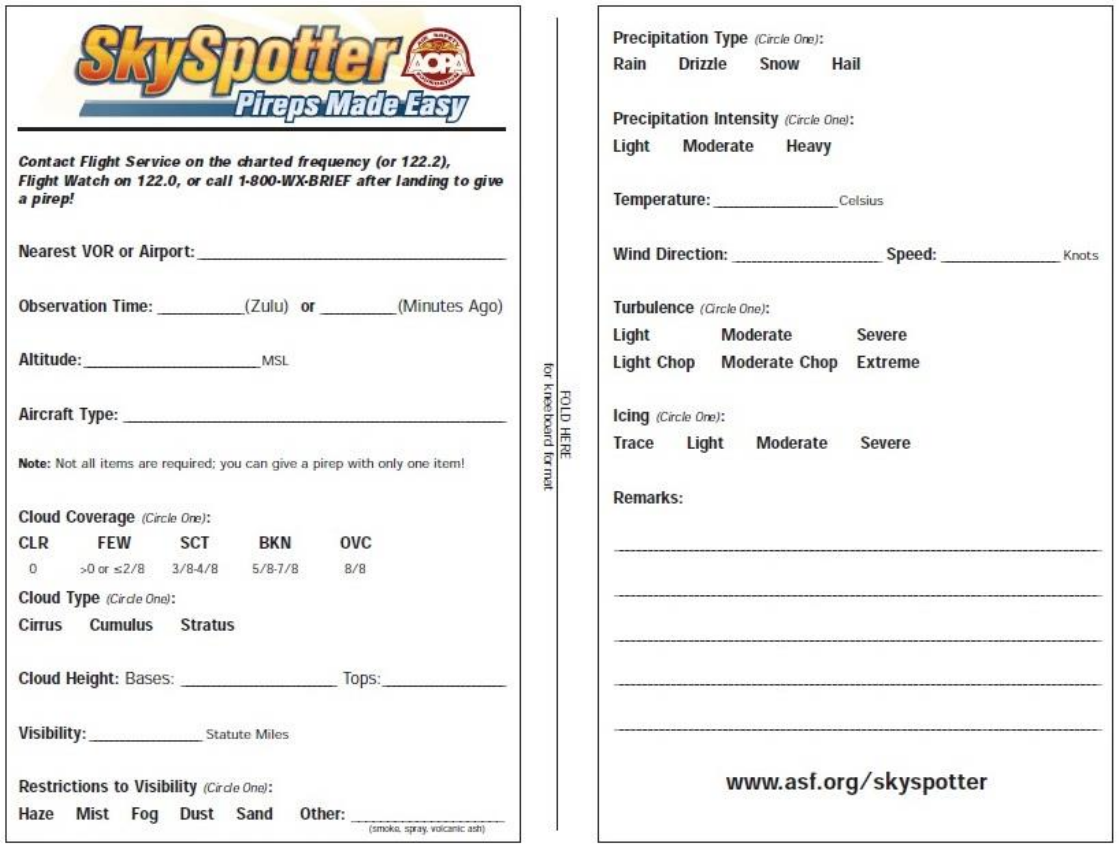
VFR Flight Plans

- DOUBLE CHECK YOUR FLIGHT PLAN BEFORE YOU FILE

- On 4/9/22, CAP3089 filed a VFR flight plan through ForeFlight and in Remarks indicated “SURVEY IR126”. Time enroute filed for 0+20. The pilot activated flight plan on line at 1340Z. ETA 1400Z. The flight plan becomes overdue at 1430Z and SAR procedures started. Flight Service personnel confirmed that CAP3089 departed. At 1452Z FSS attempted to contact CAP personnel. At 1511, again attempted to contact local CAP with no luck. At 1518Z N589CP ADS-B data observed along flight plan route. INREQ issued on CAP3089 at 1522Z. At 1531 FSS personnel made contact with the pilot, and the ETE was amended to 4+45. SAR event was cancelled at that time. The VFR flight plan was cancelled at 1826Z.

Communication

Recommend contacting 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 format

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 staff will load all sorties into WMIRS. The NOC approves sorties Wednesday to Wednesday a week in advance so squadrons should plan their sorties accordingly.
- We must have sorties entered into WMIRS by 1200 EST on Thursday the week BEFORE you want to fly.
- Mission Symbol is A96
- 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 the sortie without a verbal Flight Release**
- Sorties sometimes get missed in the approval process. If the sortie is not Pending Release on the day to be flown, contact the IC staff who will call the NOC for approval

Paperwork Flow

- The MP will update sorties in WMIRS with aircrew names
- **Check aircraft discrepancies in WMIRS**
- *If other CAP personnel are providing support such as local flight following make sure they can be signed into the mission*

Paperwork Flow

At the completion of the day's sorties the MP will ensure:

1. The Debriefing Section of the sortie including Hobbs hours, tach hours, fuel gallons & dollars, Summary Section, and Results/Deliverables Section (photos/route survey sheets completed, etc.), summary of changes noted are completed.

2. Upload into the appropriate location in WMIRS and the e104:
   - Fuel Receipt
   - Route Survey Sighting Sheets into the "Sighting Sheets" folder
   - **ForeFlight track log**

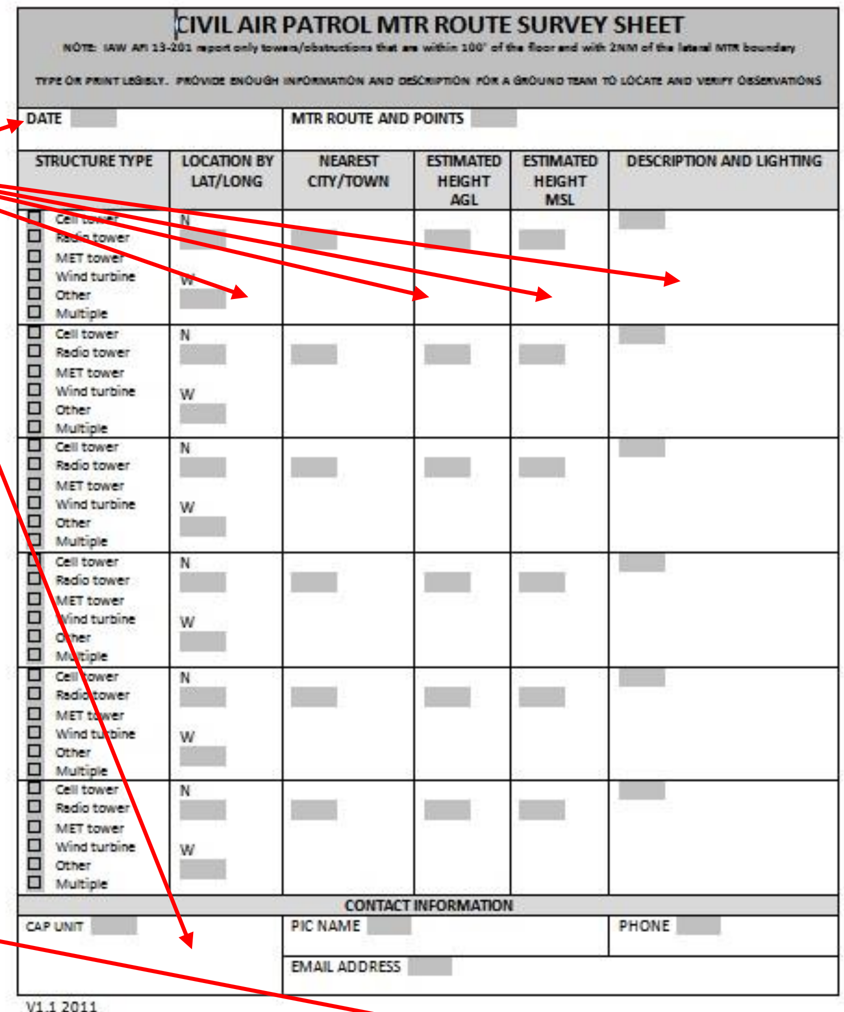
3. Upload any photos to the sortie

4. Write up any A/C discrepancies in WMIRS

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 Sighting Sheets in to the Sighting Sheet box 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

Questions?

Let’s Fly!