

20th Fighter Wing

Welcome to Shaw AFB

NTSB Visit

13 Apr 16



This Briefing is:
UNCLASSIFIED



Introductions



- **NTSB Inspectors**
- **20th Fighter Wing**
 - **20th Operations Group Commander**
 - **20th Fighter Wing Safety**
 - **20th Fighter Wing Judge Advocate**
- **ACC Safety**
- **AIB Representatives**
- **9th Air Force Flight Safety**



20th Operations Group CC





USAF Mission



“The Air Force mission is to fly / fight / win in air, space, and cyberspace”

**Air & Space
Superiority**

ISR

**Rapid
Global**

**Global
Strike**

**Command
& Control**

Core Values

Integrity

Service Before Self

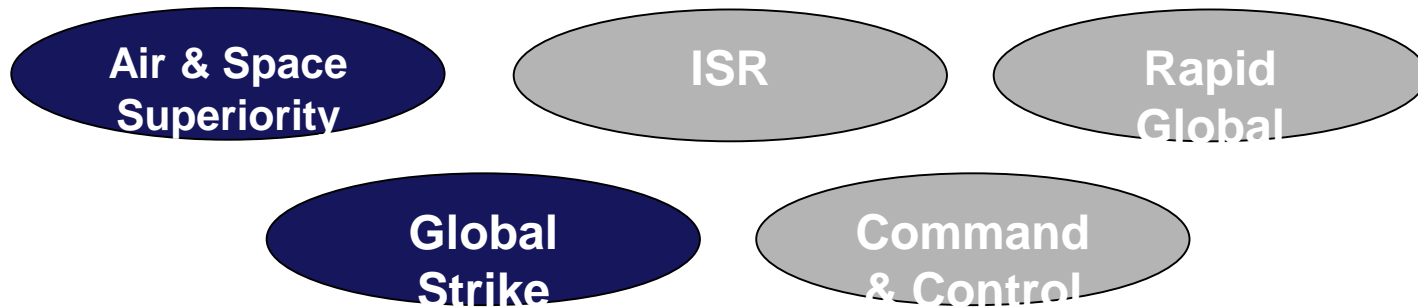
Excellence In All We Do



20 FW Contribution



“The Air Force mission is to fly / fight / win in air, space, and cyberspace”



Primary Missions

- **Suppression of Enemy Air Defenses**
- **Offensive Counter Air – Escort**
- **Defensive Counter Air**

Secondary Missions

- Air Interdiction**
- Offensive Counter Air – Attack Operations**
- Close Air Support**
- Counter Fast Attack Craft/Fast Inshore Attack Craft**



20 FW Mission Statement



Provide combat ready airpower and Airmen, to meet any challenge, anytime, anywhere.

The wing is capable of meeting all operational requirements worldwide, maintains a state of combat readiness and operates as the host unit at Shaw by providing facilities, personnel and material.

Combat Readiness, Compliance, Community, Core Values

Safety, Security, Stewardship



20 FW Safety Org Chart



20 FW/CC

Chief of Safety (F-16 IP)

1x GS-12 Occupational Safety Program Manager (***Vacant***)

Flight

1x CGO + 2x SNCOs

Occupational

4x NCOs

1x GS-9 (***Vacant***)

Weapons

2x SNCOs



Occupational Safety



Provide Safety support for 20th Fighter Wing, Tenant Units, and Geographically Separated Units

Mishap Prevention Program:

- **The purpose is to minimize loss of Air Force resources and protect Air Force personnel from death, injuries or occupational illness by managing risks on- and off- duty.**
- **Determine the root cause of a mishap to provide Commander's and Supervisor's recommendations on how to mitigate hazards to ultimately prevent future mishaps from occurring.**



Occupational Safety



- **Mishap Investigations and Reports**
- **Safety Inspections, Program Assessments & Spot Inspections**
- **Safety Training**
- **Safety Campaigns**
- **Unit Safety Representatives**



Weapons Safety





Weapons Safety

Focal Point for all Explosive Safety Issues

Programs:

- **Additional Duty Weapons Safety Representatives**
- **Nuclear Certified Equipment**
- **Explosive Siting on Installation**
- **EMR (Electromagnetic Radiation) Hazards to Munitions**



Weapons Safety



Responsible for:

- **Continuous monitoring for safety compliance through spot inspections / annual inspections / recurring assessments on 32 High Explosive Locations, 13 Licensed Facilities MEQ, & Poinsett Electronic Combat Range**
- **Advisor to leaders on impacts / limiting factors with explosive operations (reviews all unit instructions / operations involving explosives)**
- **Investigate mishaps involving explosives / weapons to ascertain root cause and implement preventative measures. Report trends to AFSEC**



Weapons Safety





Flight Safety



- **20 FW Flight Safety Composition**
 - **3 Fighter Squadrons FSOs**
 - **AMIC/FSPM/JEMIC Trained Members**

- **Programs**
 - **BASH**
 - **Mishap Response**
 - **Safety Training**
 - **Trend Tracking**

- **QFSM**



Jan 16' QFSM Agenda



- Introduction
- Airfield Ops
- Winter/Spring Weather
- Air Traffic Control
- Mishaps/Events
 - Stats
 - Spangdahlem Class A
 - “There I was (1)...”
 - “There I was (2)...”
 - Forth Worth Class A
 - Flight Safety Awards
- CoS Takeaways
- OG Comments
- CC Comments



Apr 16' QFSM Agenda



- Introduction
- Airfield Ops
- Spring/Summer Weather
- Air Traffic Control
- Mishaps/Events
 - Stats
- GLOC
- Flight Safety/ HATR
- REOS Testing
- Hollman Class A Mishap
- Takeaways
- OG Comments
- CC Comments



Flight Safety



- **MACA**
 - **Charleston & McEntire**
 - **Engagements**
 - **Sumter, SCAA, SCASC (CHS), & GA Fly In**

- **Flight Safety Reporting Procedures**



Questions Before MACA Briefing?

(SEG, SEW Cleared Off!)



20 FW's MACA Presentation



Combat Readiness • Compliance • Community • Core Values



Capabilities



Fighter aircraft are designed to take the fight to our enemies

What we have:

Radar
IFF Interrogator
UHF and VHF Radios
Link-16 (Datalink)
JHMCS
TGP
World's Greatest Fighter Pilots
in the World!

What we don't have/limfacs:

TCAS
LOS vs slow moving A/C
No alt w/ Interrogator returns
No ADS-B
Basic Radar capabilities

- Doppler Notch
- RCS





F-16 Cockpit





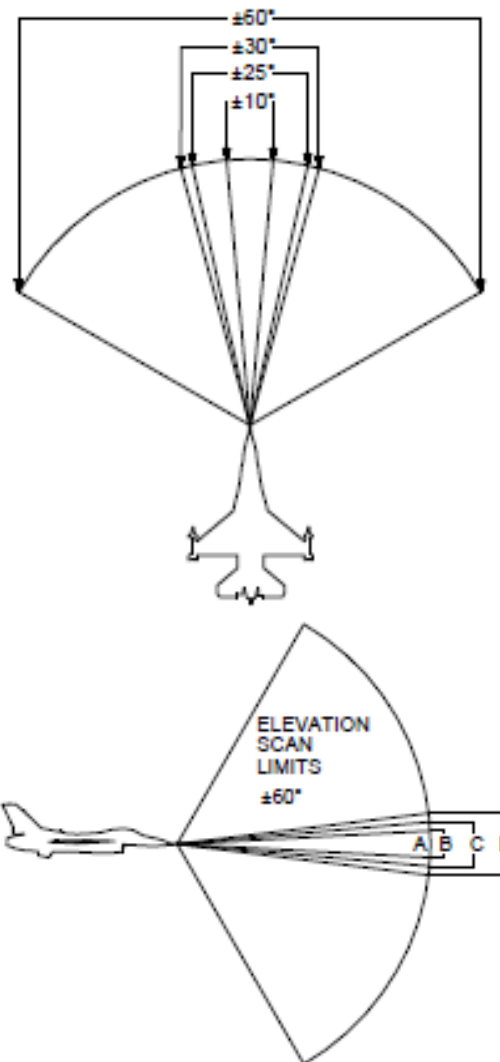
F-16 Radar



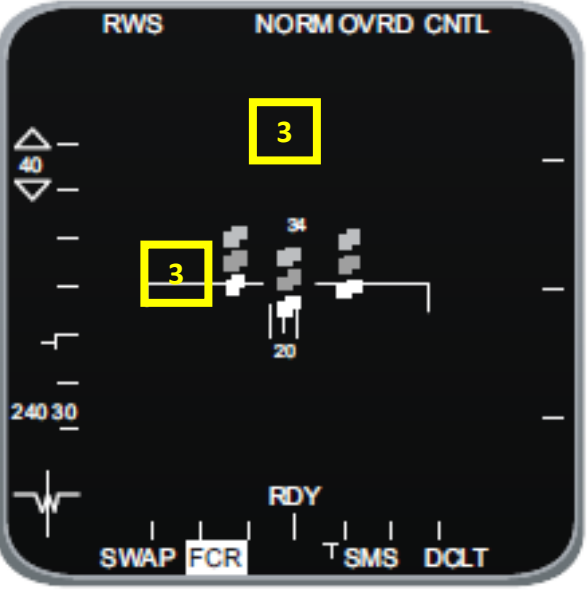
Radar Basics:

- +/- 60 deg in elevation and azimuth
- Detection range based upon RCS
 - A C-172 does not have the RCS of a 737
- Doppler Notch
- Not searching entire volume all the time

Bottom Line – the radar **DOES NOT** see/display everything

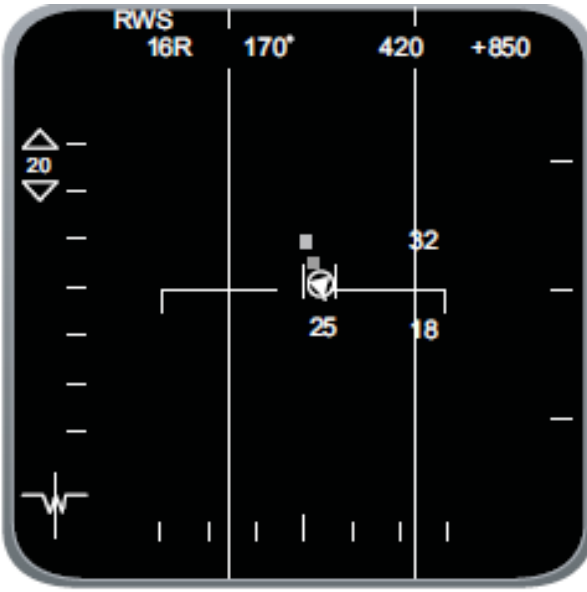


F-16 Multi-Function Displays



Radar without a lock

- Hovering cursor over contact will provide an altitude cut to the nearest thousand feet
- Yellow “3’s” indicate symbology of a IFF M3 interrogation return
 - No altitude associated with IFF interrogation returns

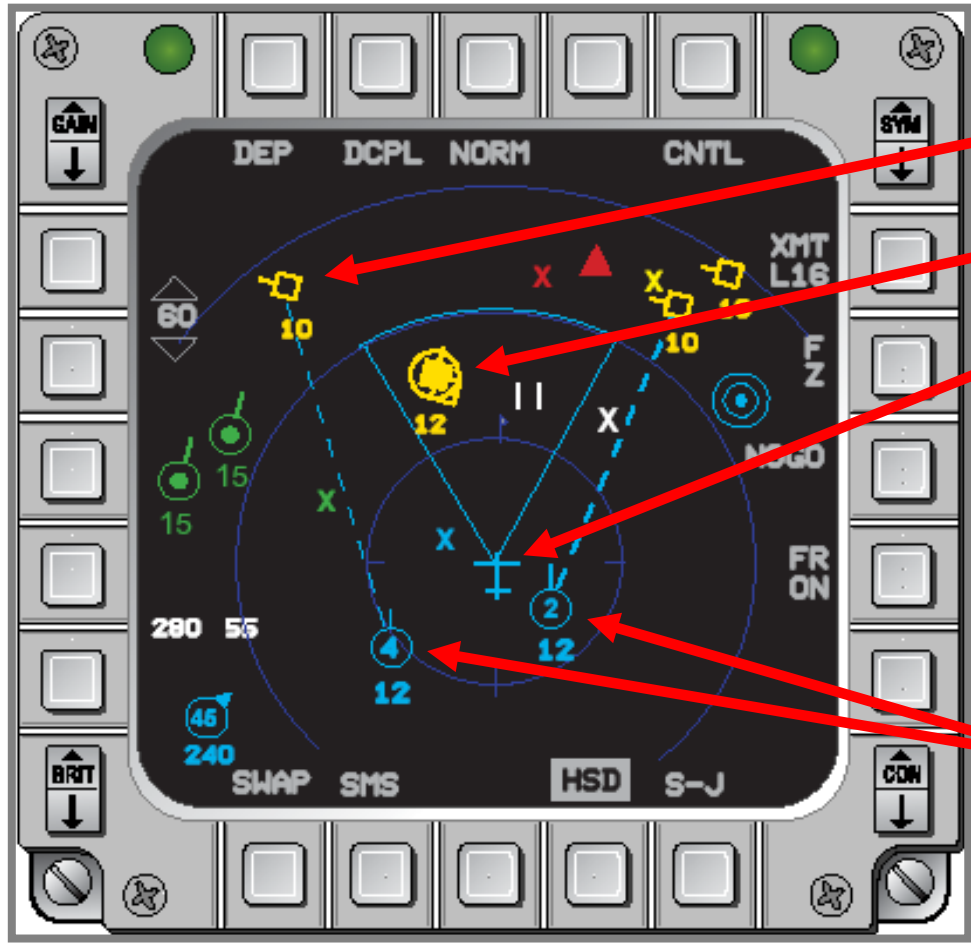


Radar with a lock

- Expanded data across the top of the screen (Aspect, Heading, Airspeed, Closure)



F-16 Multi-Function Displays



Horizontal Situation Display

Flight member radar lock

Ownship radar lock

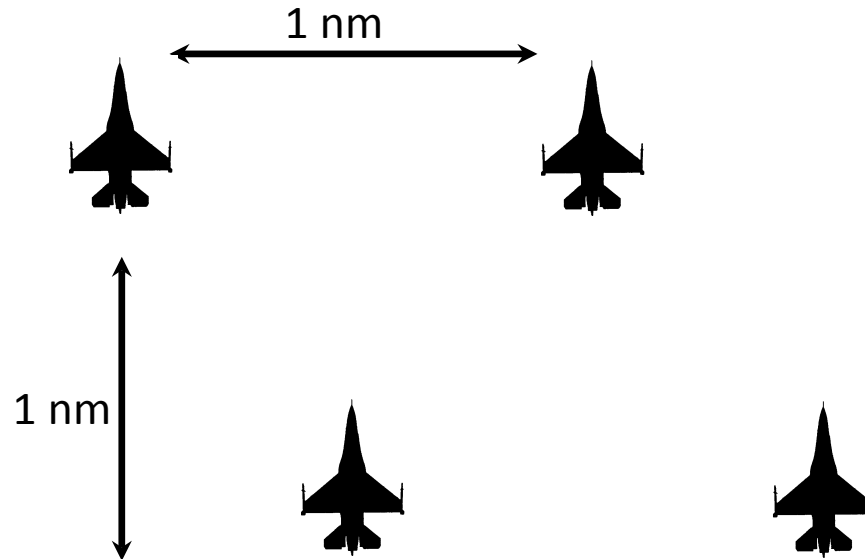
Ownship aircraft position

Flight members location via datalink

**Also receive the same symbology of IFF interrogation returns on this screen as on the Radar.



Typical Formations

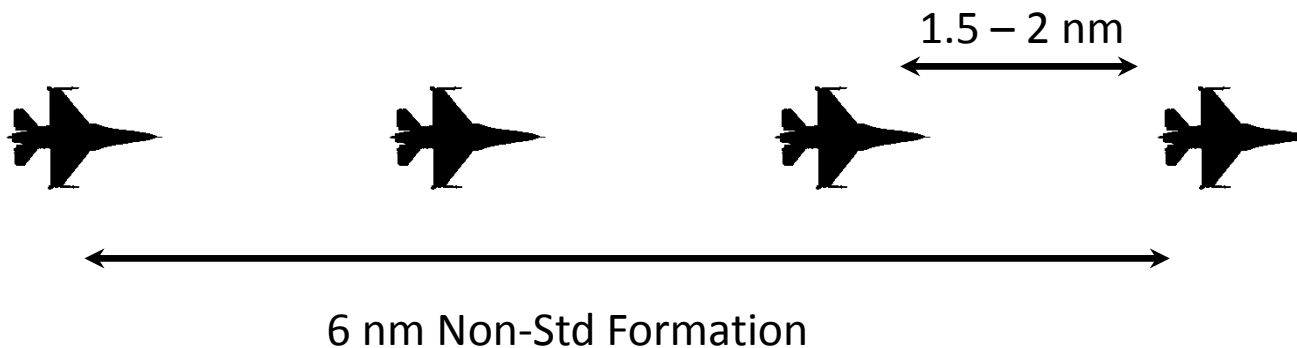


Most often used for:

- To / From Airspace
- Recovery to VFR pattern / Tactical Initial



Typical Formations



Most often used for:

- Departure and arrival when transiting weather
- Vectors to an Instrument Approach (even if VMC)



Typical Airspeeds / Altitudes



F-16 Standard Airspeeds:

Departure – 350 kts
Pattern / Arrival – 300 kts
On Vectors for Appch – 250 kts
Final Appch – 150-175 kts

Others:

Gear Speed – 300 kts
Configured in Trail – 180 kts

**Spend very little time below 10k on departure. Arrival descent below 10k into pattern occurs about 25-35nm from field (on average).

****Waivered from abiding by 250 kts below 10k**

Enroute Airspace:

Airspeed: 300 - 350 kts
Altitude: FL200 – 220

In Airspace:

Airspeed: 350 – 450 kts
Altitude: 15k – Top of Airspace

Low Altitude Training:

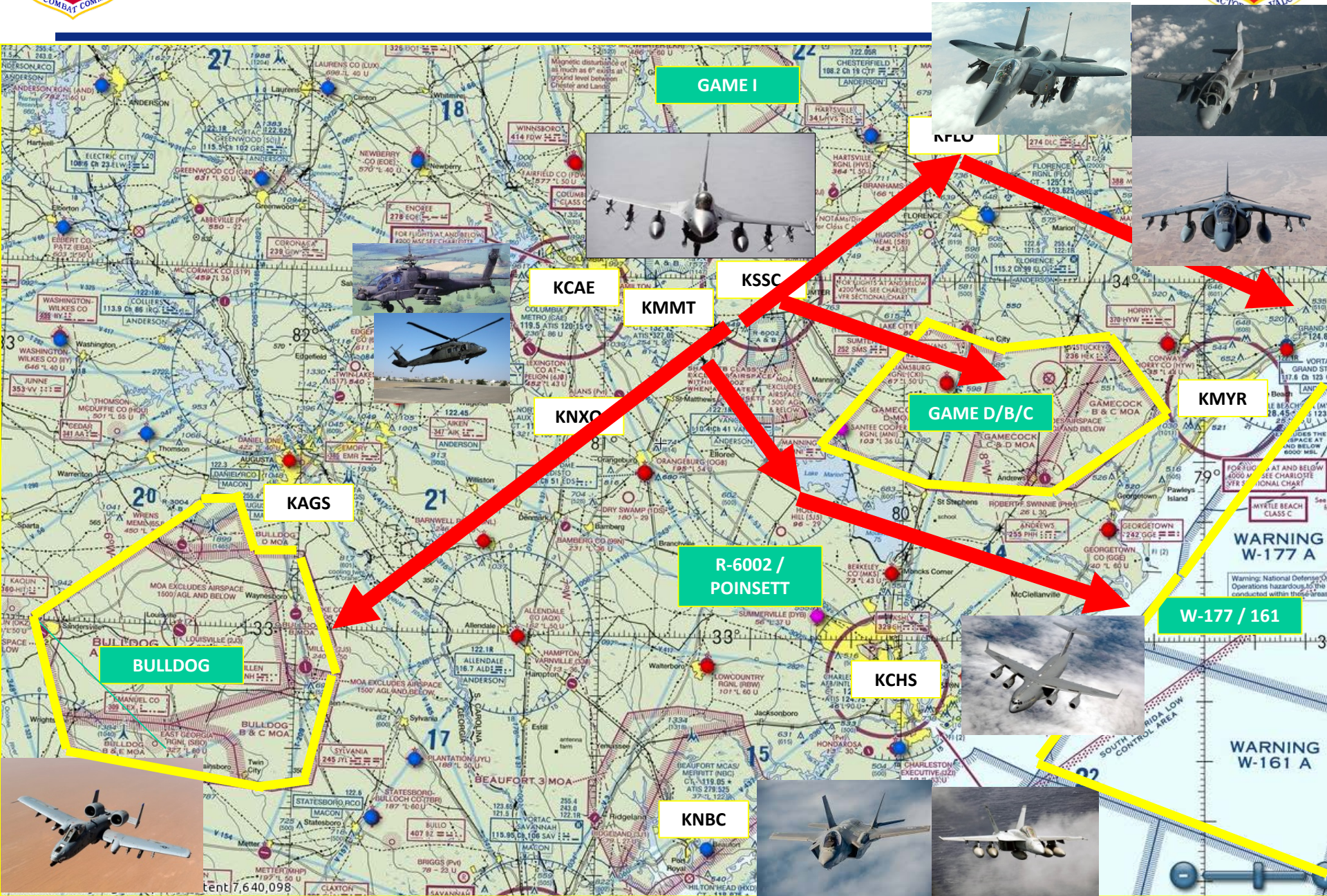
Airspeed: 480 kts Ground Speed
Altitude: 500' AGL

High G Maneuvering (BFM/ACM):

Airspeed: 480 kts depleting to 150 kts
Altitude: 17k descending to 5k AGL



Local Aircraft



Weasel Temporary MOA

December 3, 2015

33°54'25"N
80°24'11"W

33°55'15"N
79°58'14"W

33°53'02"N
79°54'57"W

33°51'15"N
79°50'50"W

33°37'06"N
79°55'01"W

33°24'45"N
79°58'30"W

33°22'47"N
80°11'24"W

33°53'38"N
80°31'02"W

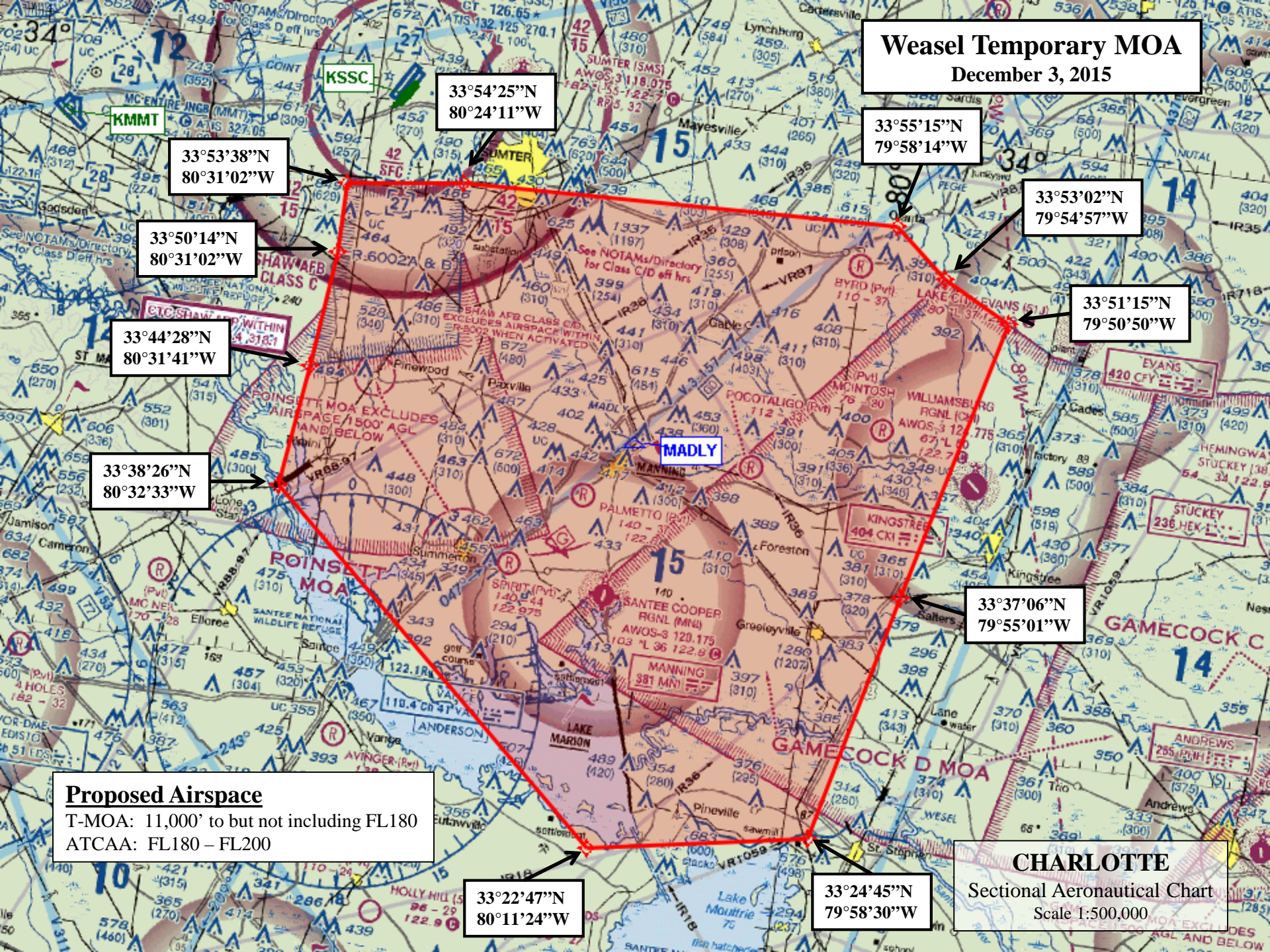
33°50'14"N
80°31'02"W

33°44'28"N
80°31'41"W

33°38'26"N
80°32'33"W

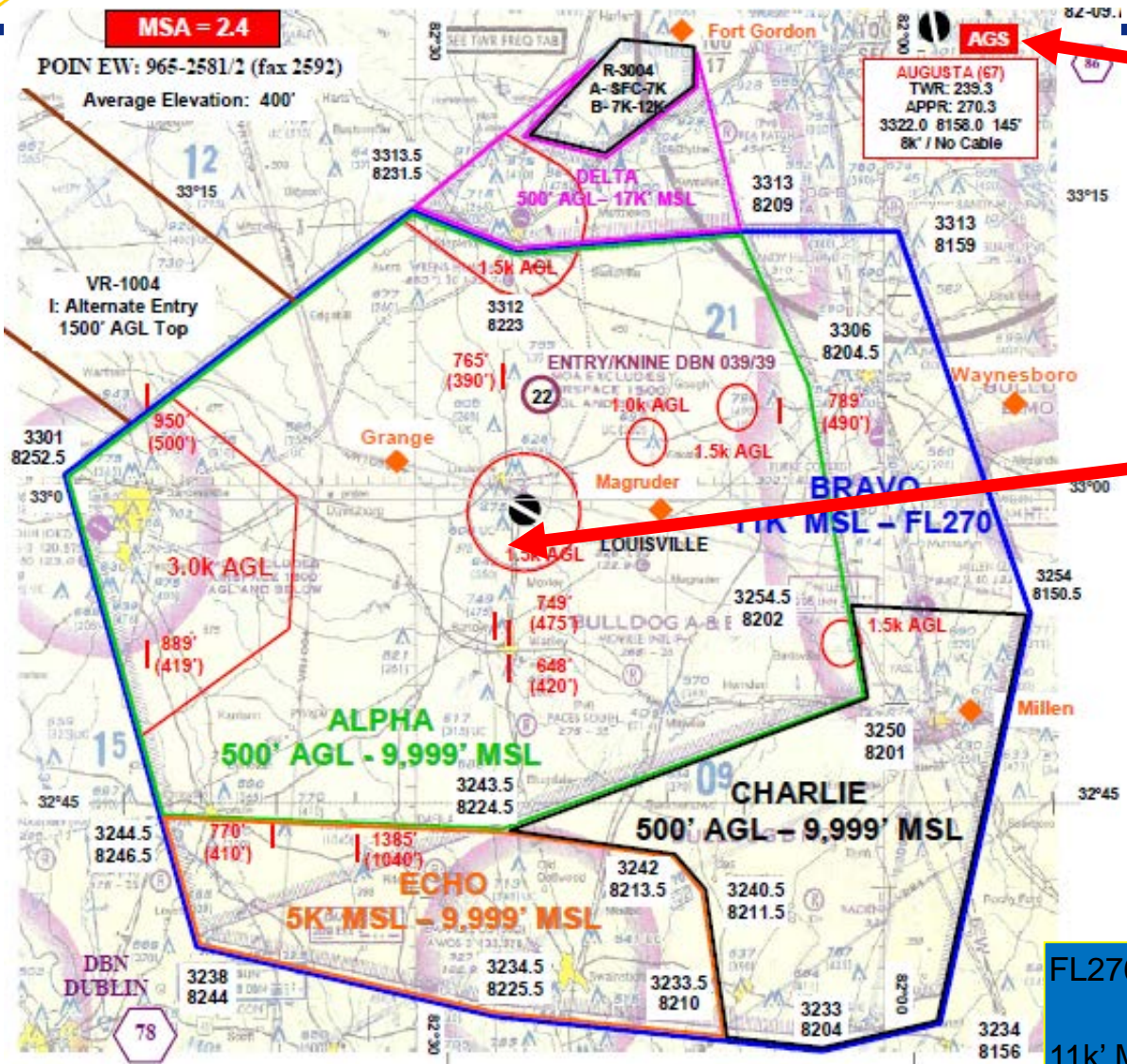
Proposed Airspace
T-MOA: 11,000' to but not including FL180
ATCAA: FL180 – FL200

CHARLOTTE
Sectional Aeronautical Chart
Scale 1:500,000





Bulldog MOA



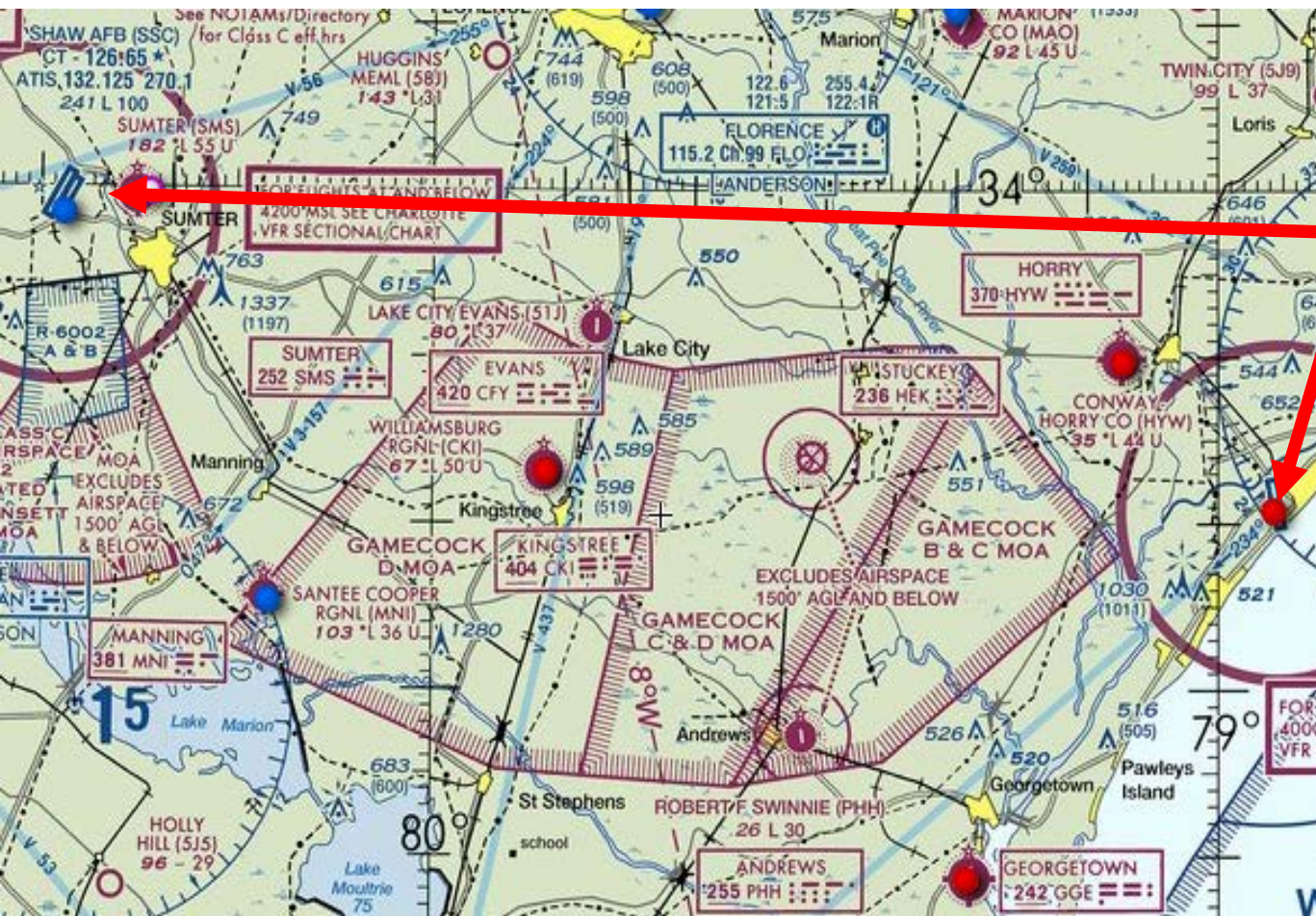
Primary Divert

Factor Airfields

FL270	Bravo
11k' MSL	Charlie
9,999' MSL	Echo
500' AGL	Alpha



Gamecock D / B / C



Primary Divert

Grandstand View

Gamecock Delta
12000'-FL 220

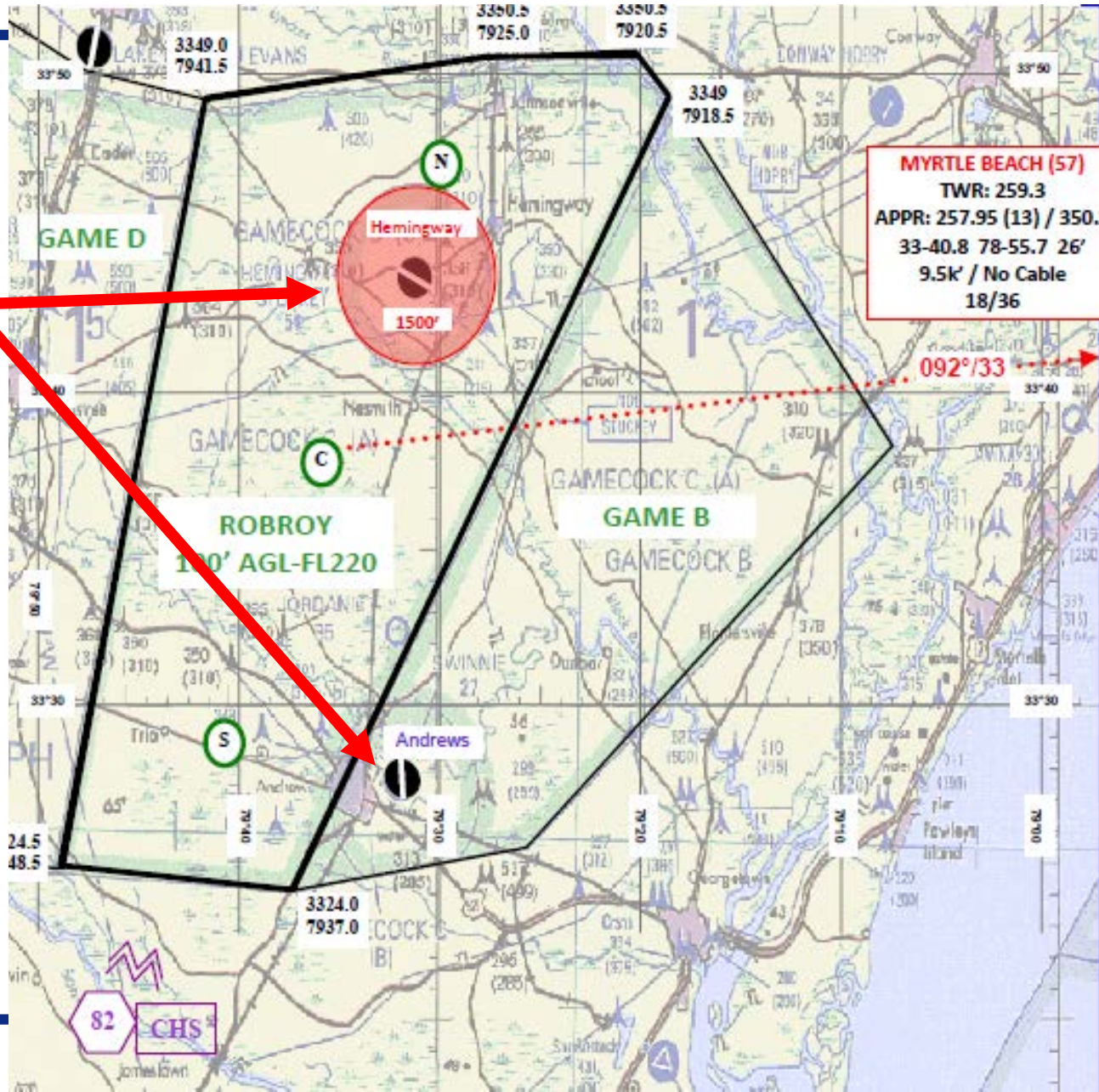
Game Bravo
10000'-17999'

Gamecock Charlie
100'-10000'



Robroy

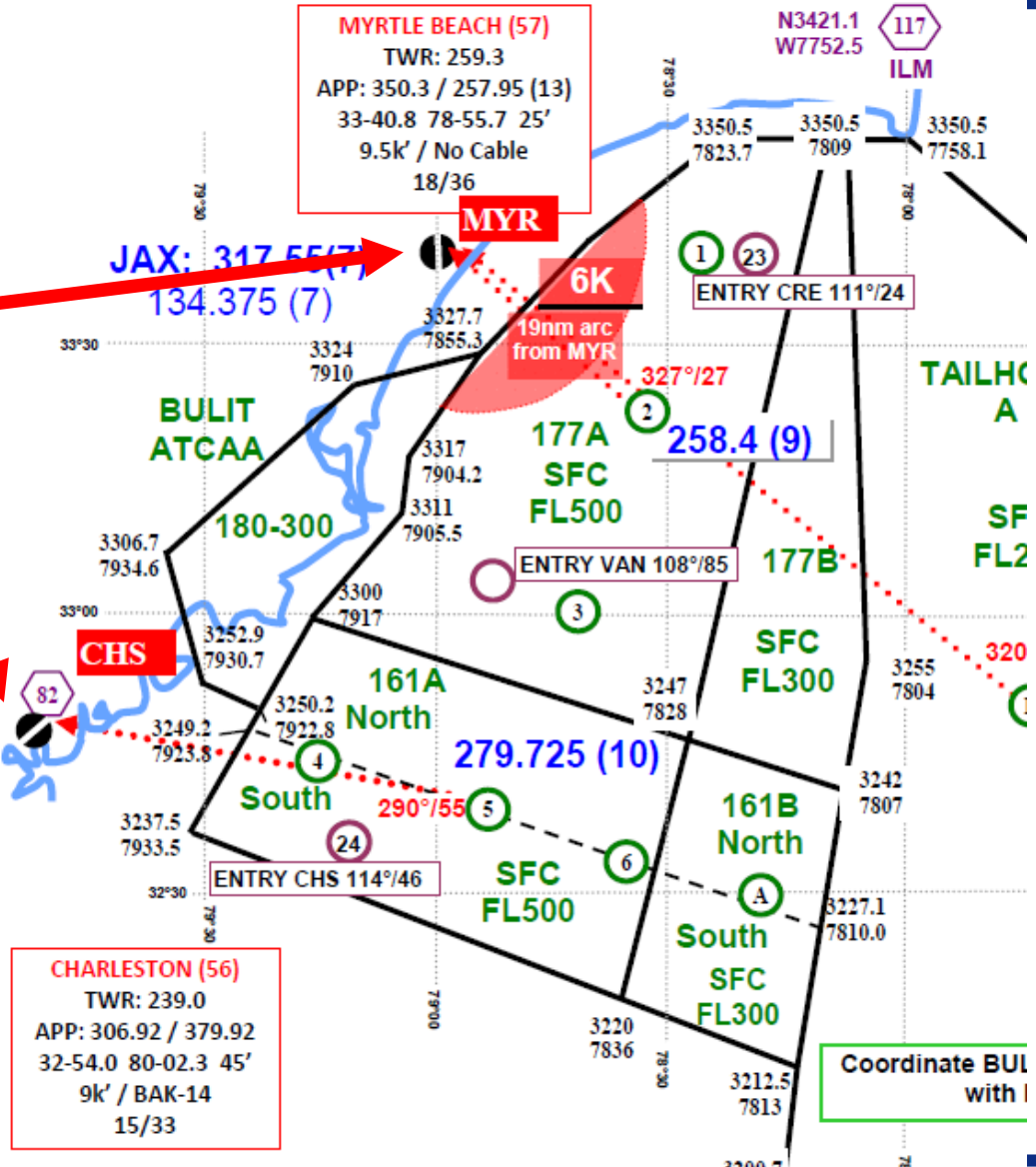
**Factor
Airfields**





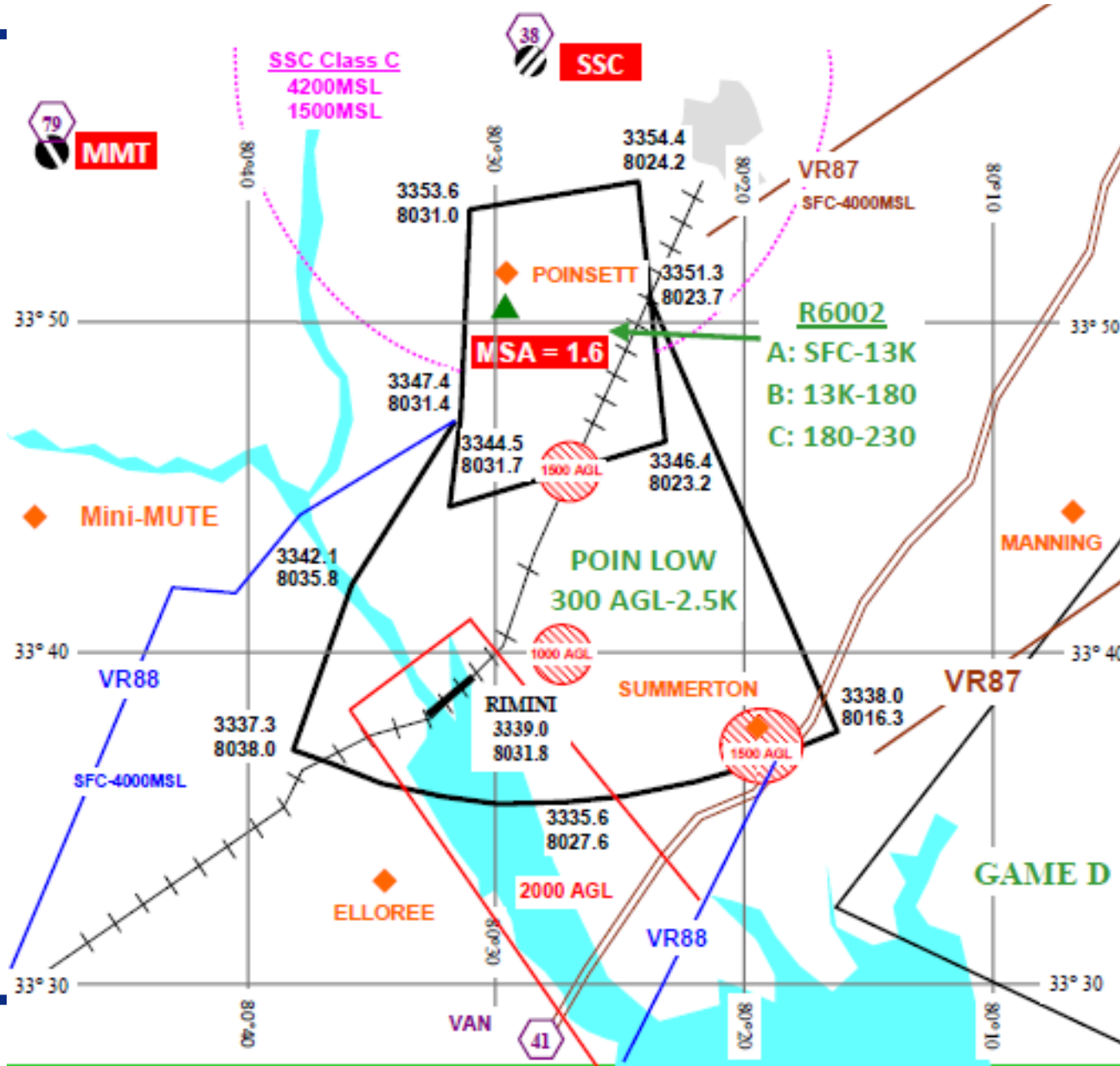
W-177 / 161

Primary Divert

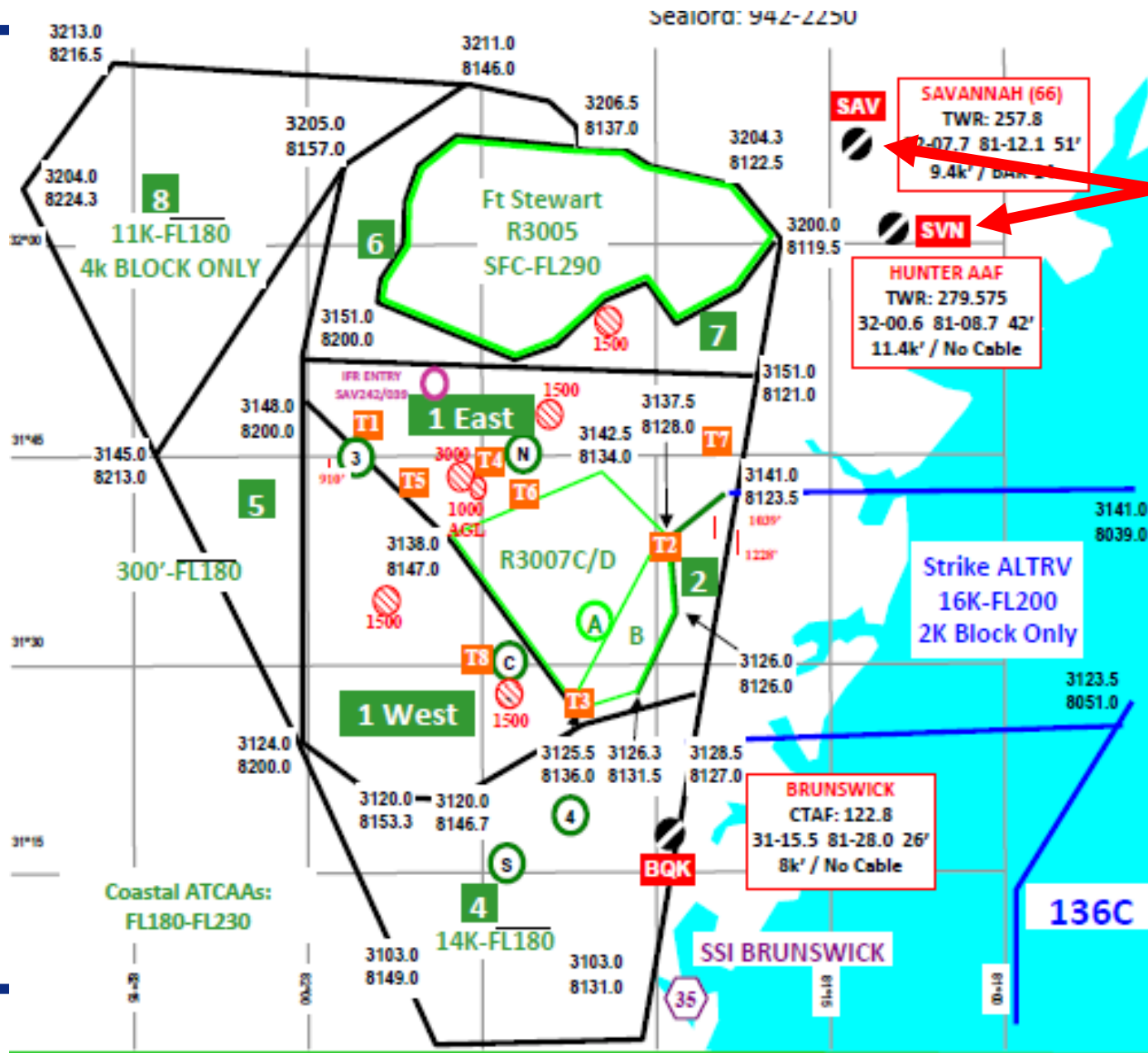




Poinsett Range / MOA



Townsend Range / Coastal MOA



Primary Divert

SAVANNAH (66)
TWR: 257.8
32-07.7 81-12.1 51'
9.4k' / No Cable

HUNTER AAF
TWR: 279.575
32-00.6 81-08.7 42'
11.4k' / No Cable

Strike ALTRV
16K-FL200
2K Block Only

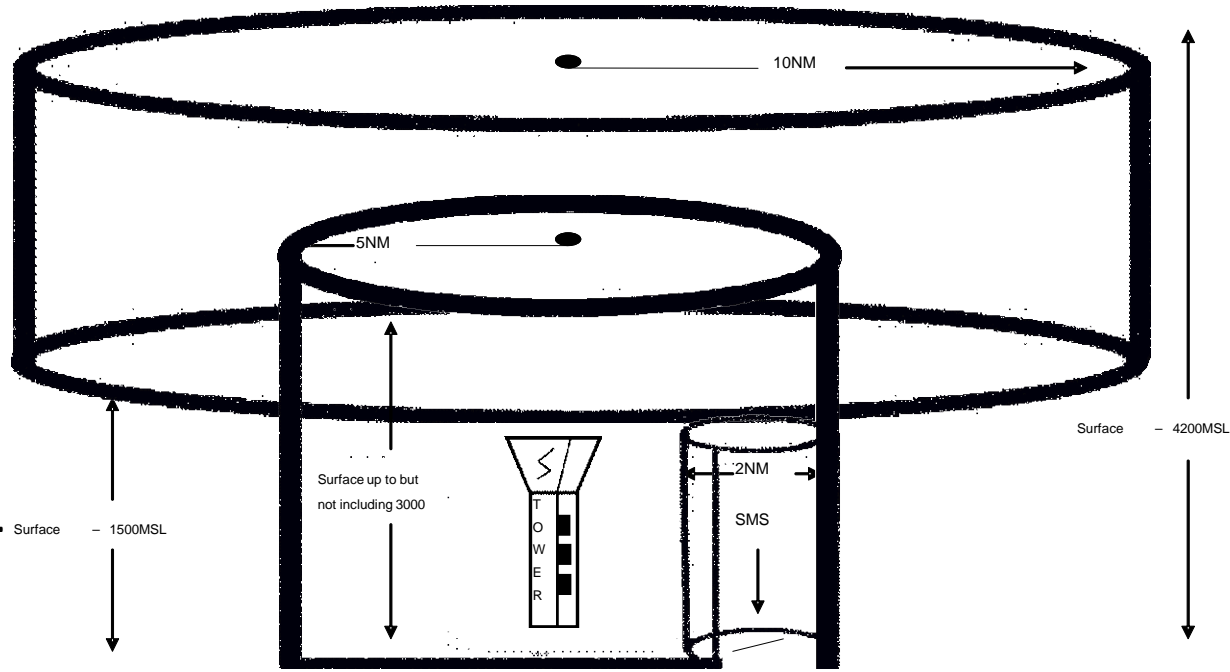
BRUNSWICK
CTAF: 122.8
31-15.5 81-28.0 26'
8k' / No Cable



Shaw Class C Airspace



Airspace	Dimensions	Altitudes
Surface Area/ Inner Core	5 NM with 2 NM cutout centered on Sumter Muni	Surface to 4,200' MSL (4,000' AGL)
Outer Circle	5 NM to 10 NM	1,500' MSL to 4,200' MSL
Outer Area	20 NM Radius of Shaw AFB	Lower limits of radio/radar coverage to 10,000'MSL



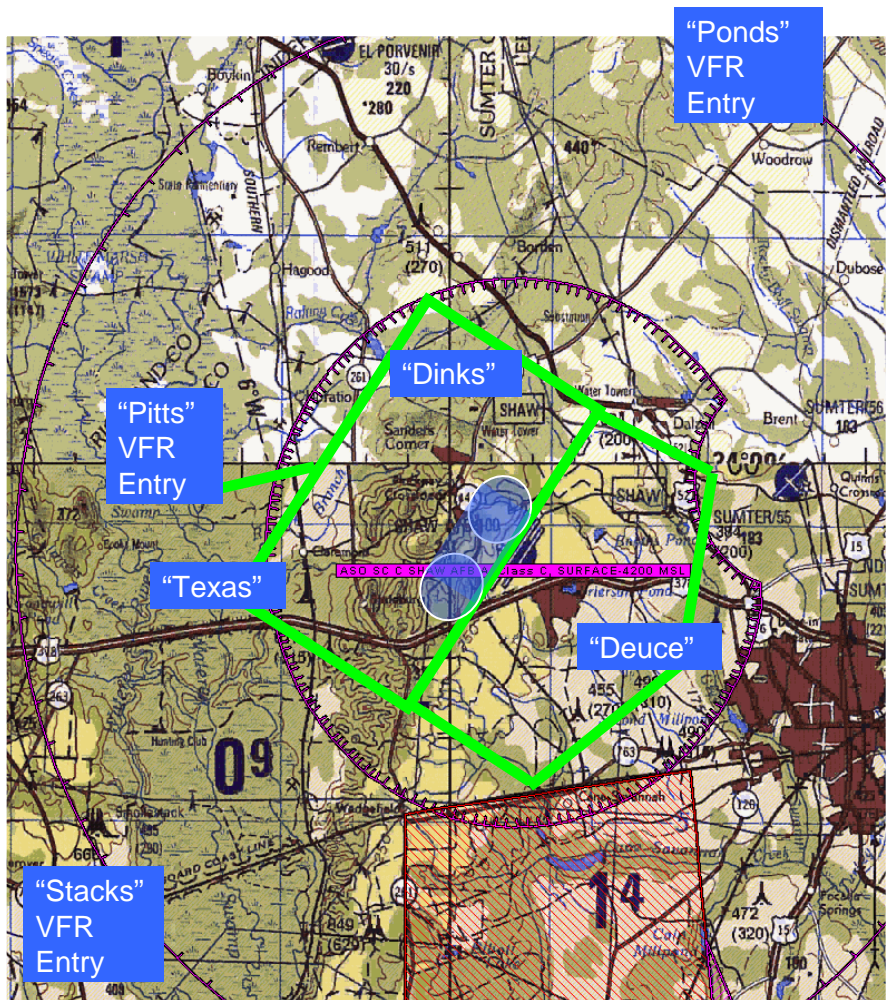
Dep/Appch - 125.4

Arrival - 133.25

Tower - 126.65



Shaw Traffic Pattern



F-16 Standard Airspeeds:

Departure – 350 kts

Pattern / Arrival – 300 kts

On Vectors for Appch – 250 kts

Final Appch – 150-175 kts

Others:

Gear Speed – 300 kts

Configured in Trail – 180 kts



Simulated Flameout Landings



What is it:

Practice for engine out emergency divert / recovery.

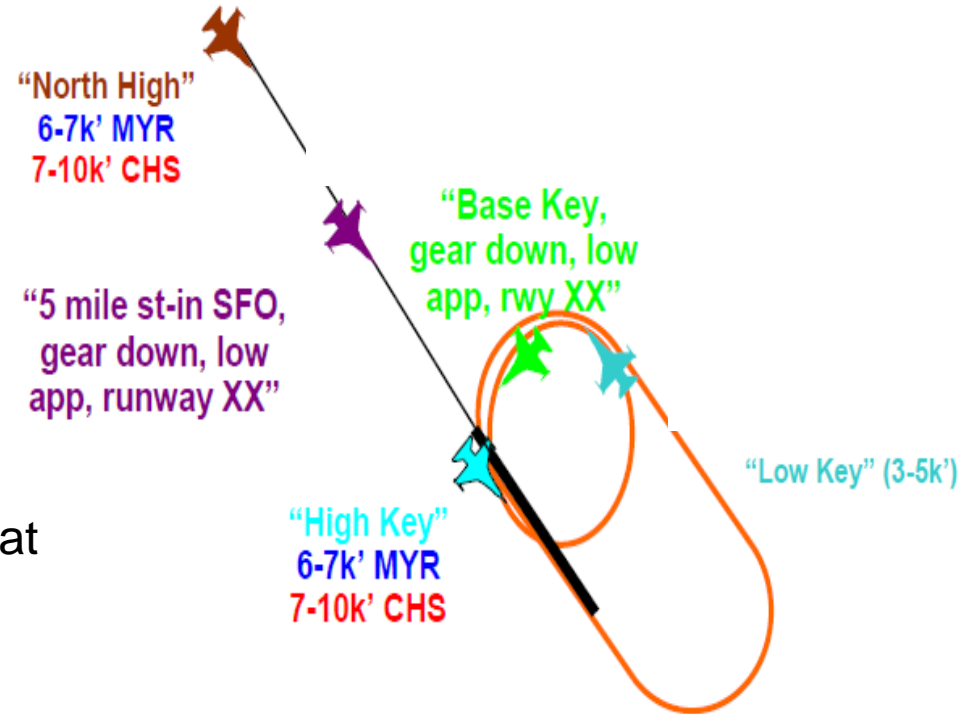
Where are they flown:

KSSC, KMMT, (KNBC), KMYR, KCHS

Who flies them:

Shaw and McEntire assigned F-16's and newly assigned F-35's at Beaufort

F-16 Comm for SFO's:



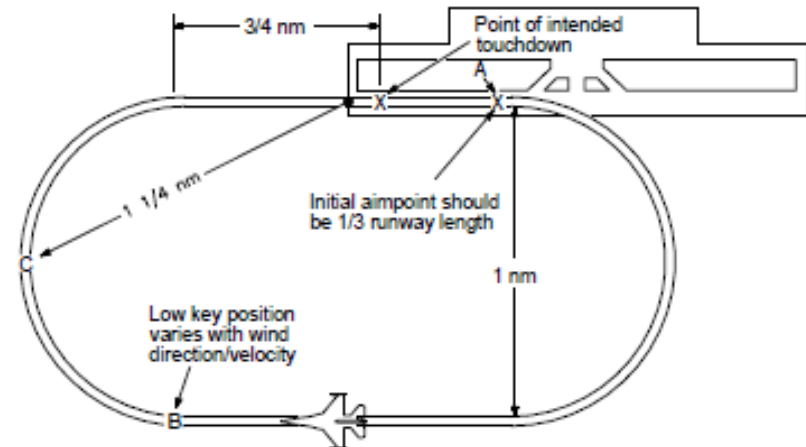
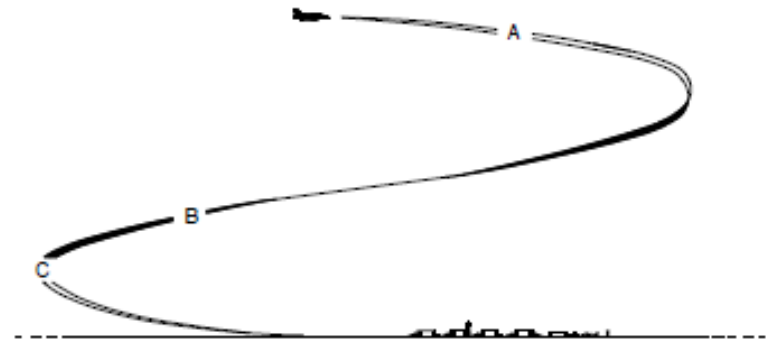


Simulated Flameout Landings



Execution Highlights:

- High rate of decent (10+ deg NL, 50+ deg bank)
- Slow speed (~220 kts)
- Less Maneuverable
- Performed as singleton, trail or with chase



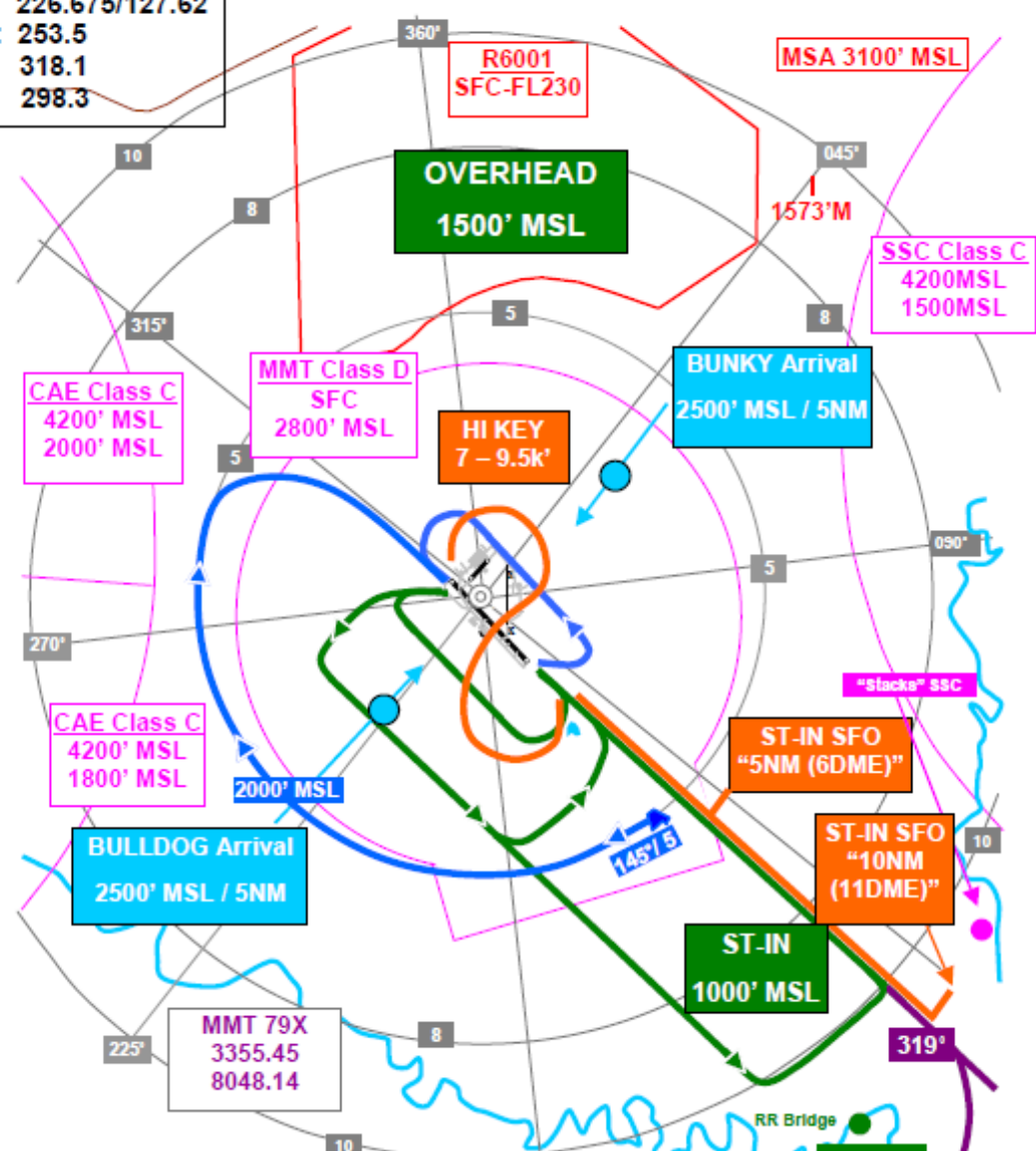


McEntire Class D Airspace



McENTIRE PATTERN

GND: 226.675/127.62
 TWR: 253.5
 APP: 318.1
 OPS: 298.3



Airspace	Dimensions	Altitude
Class D	4.5 NM radius centered on McEntire JNGB	Surface to 2,800' MSL
GCA	Approx. 15 NM south and southeast of McEntire	Surface to 2,000' MSL



Takeaways



- High airspeed vs slow airspeed = Very little perceived LOS
 - This means very difficult to see
- We are always talking to ATC, if you are near known airspace the smart thing is to do the same. It benefits all parties involved.
- If you have a transponder and are flying VFR, squawk 1200.
 - Even if it is not required.
- Use proper scan techniques in order to “See and Avoid”
- Thoroughly check the NOTAMS
 - KNXO C-17 operations (usually 3,000’ MSL and below)
- Call FSS to check on schedule / status of MTR’s.
- If you have questions, ASK! We are available for site visits and briefs.

Shaw AFB Flight Safety
(803) 895-1977 / 1971



Wing Safety Wrap Up



- **“Above Average” Wing Safety Program**
 - **9 AF Safety Working Group Visit, Nov 16**
 - **Showcases USAF Safety “Inspection” Process/Philosophy**
 - **Wing Safety relationship w/CCs via Unit Safety Reps**
 - **9 Higher HQ Safety Awards since Oct 2015**
- **Challenges**
 - **Resources (Manning, Time, \$\$)**
 - **High Ops Tempo / Turnover coupled with GS vacancies**
- **Focused Preparation for HHQ Inspection, Aug 16**
- **Continued MACA Engagements**
 - **29 Apr 16 Flight Safety G.A. Fly-In (USAF 1st since May 2015)**
 - **21-22 May 16 Air Expo**



DISCUSSION...

...F-16 Tour