



**DEPARTMENT OF THE AIR FORCE**  
142d WING (ACC)  
PORTLAND AIR NATIONAL GUARD BASE OREGON

1 May 2021

MEMORANDUM FOR AIRPORT MANAGERS, FBOs, AND PILOTS

FROM: 142d Wing Safety  
Portland Air National Guard Base, Portland OR

SUBJECT: Mid-Air Collision Avoidance

Midair collisions are an area of vital concern to everyone who flies the skies of the Pacific Northwest. Although the actual number of midair collisions between military aircraft and general aviation is relatively low; 80% of reported Air Force near misses occur with general aviation aircraft. Because of increasing civilian air traffic and our unique type of flying, I would like to pass along a Mid-Air Collision Avoidance (MACA) poster and handouts to inform you about the Oregon Air National Guard and our flying activity.

Portland Air National Guard Base is situated on the south side of the Portland International Airport (KPDX) and is home to the 142d Wing, Oregon Air National Guard. The 142WG engages in intensive F-15 air-to-air fighter aircraft training as well as a 24/7 homeland defense alert mission. Additionally, the 142d Wing recently stood up a Special Tactics Squadron that operates Small Unmanned Aerial Systems (sUAS) which will operate at a number of small airfields in the Pacific Northwest. Our goal is to promote the safest possible flying environment in the area where our military aircraft and UAS's fly. As such, the 142d Wing would like to partner with the local civil aviation community in an effort to minimize the potential for a collision between military and civilian aircraft. The handouts that accompany this letter depict our routine flight patterns, visual identification, and basic specifications. We have designed this information with the civil aviation community in mind. Electronic copies of these items as well as other useful information can be found at <https://www.142fw.ang.af.mil/resources/safety/>.

Please hang the enclosed poster and handouts in a prominent place where pilots can easily see them. If you would like any additional copies, please let me know. I would be happy to forward as many additional copies as you need.

If you have any questions on these products or what the 142d Wing does, or you would like me to attend one of your pilot meetings to speak to your pilots about our operations, or simply want to talk airplanes, I would be happy to assist and can be reached at (503) 335-4024 or email me at [142.WG.FW-SE.Org@us.af.mil](mailto:142.WG.FW-SE.Org@us.af.mil).

Sincerely,

A handwritten signature in black ink, appearing to read "Joel G. Thesing".

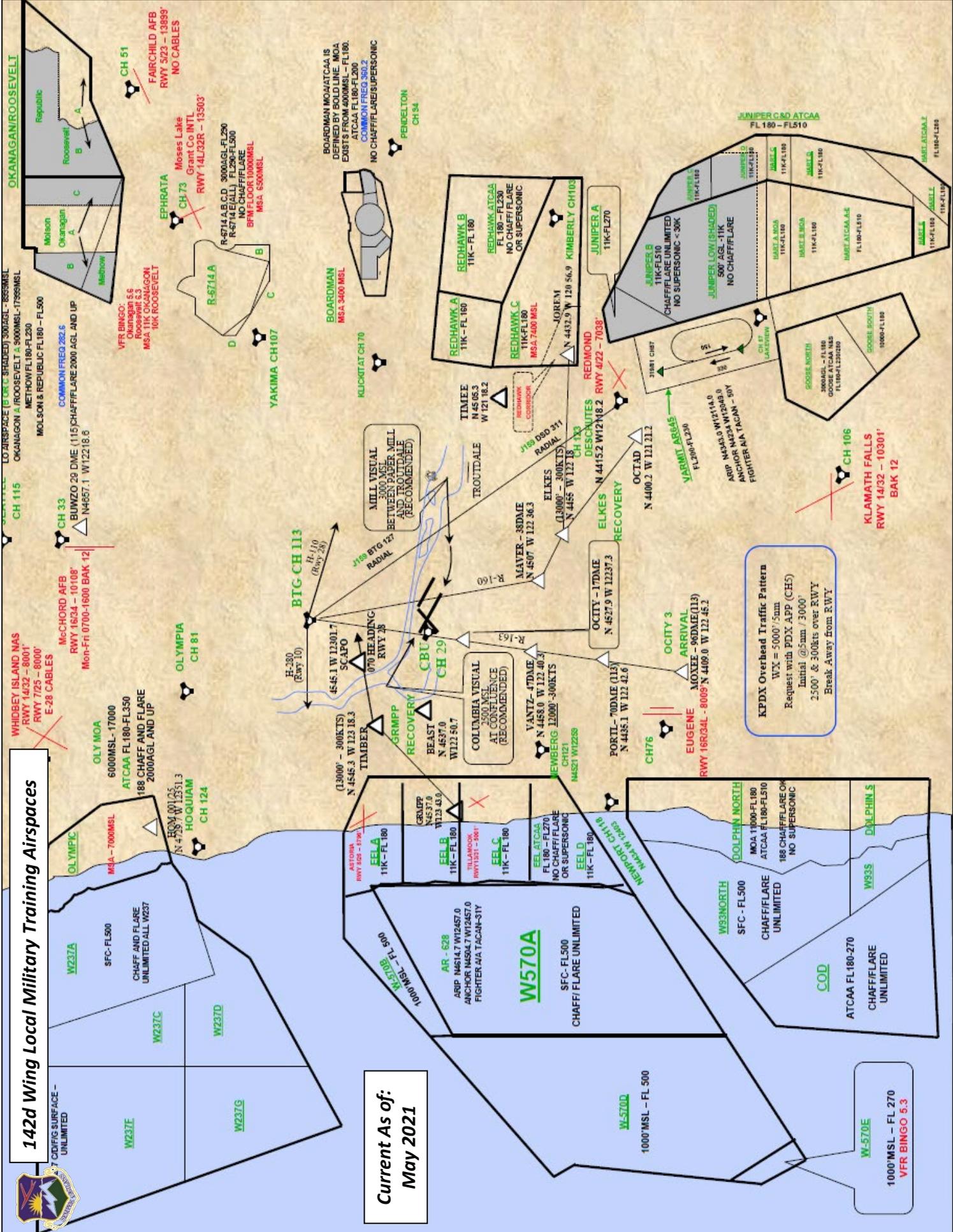
JOEL G. THESING, Lt Col, ORANG  
Chief of Safety, 142d Wing

# 142d Wing Local Military Training Airspaces



**Current As of:**  
May 2021

**W-570E**  
1000' MSL - FL 270  
VFR BINGO 5.3



**KPDIX Overhead Traffic Pattern**  
WX = 5000' / 5mm  
Request with PDX APP (CH5)  
Initial @ 5mm / 3000'  
2500' & 3000kts over RWY  
Break Away from RWY

**LO AIRSPACE (B/C/D) 3000AGL - 8500MSL**  
OKANAGAN A ROOSEVELT A 9000MSL-1795MSL  
METHOW FL180-FL230  
MOLSON & REPUBLIC FL180 - FL500  
COMMON FREQ 282.5

**VFR BINGO:**  
Okanagan 5.3  
Roosevelt 5.3  
MSA 11K OKANAGAN  
10K ROOSEVELT

**FAIRCHILD AFB**  
RWY 523 - 13899  
NO CABLES

**BOARDMAN**  
MSA 3400 MSL  
KLUCKIT AT CH 70  
YAKIMA CH107

**REDHAWK A**  
11K - FL 180  
**REDHAWK B**  
11K - FL 180  
**REDHAWK C**  
11K-FL180  
MSA 7400 MSL

**REDHAWK ATCAA**  
FL180 - FL230  
NO CHAFF/FLARE  
OR SUPERSONIC

**JUNIPER A**  
11K-FL270  
**JUNIPER B**  
11K-FL150  
CHAFF/FLARE UNLIMITED  
NO SUPERSONIC < 30K

**JUNIPER LOW (SHADE)**  
500 AGL - 1110 AGL  
NO CHAFF/FLARE

**GOOSE NORTH**  
11K-FL180  
**GOOSE SOUTH**  
10000-FL110

**KLAMATH FALLS**  
RWY 14/32 - 10301'  
BAK 12

**WHIDBEY ISLAND NAS**  
RWY 14/32 - 8001'  
RWY 7/25 - 8001'  
E-28 CABLES

**McCHORD AFB**  
RWY 16/34 - 10108'  
Mon-Fri 0700-1600 BAK 12

**OLYMPIA**  
CH 81

**TROUTDALE**  
TIMEE  
N 4505.3  
W 121 18.2

**ELKES**  
N 4455 W 122 36.3  
**ELKES RECOVERY**  
N 4415.2 W 121 18.2  
RWY 4/22 - 7038'

**OCTAD**  
N 4400.2 W 121 21.2

**OCITY - 17DME**  
N 4527.9 W 122 37.3  
**OCITY 3**  
ARRIVAL  
MOXEE - 96DAE (113)  
N 4409.0 W 122 45.2

**EUGENE**  
16R/34L - 8000' N 4409.0 W 122 45.2

**W-570A**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570B**  
1000' MSL - FL 500  
CHAFF/FLARE UNLIMITED

**W-570C**  
SFC - FL 500  
CHAFF AND FLARE UNLIMITED ALL W-570

**W-570D**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570E**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570F**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570G**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570H**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570I**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570J**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570K**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570L**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570M**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570N**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570O**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570P**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570Q**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570R**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570S**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570T**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570U**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570V**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570W**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570X**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570Y**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED

**W-570Z**  
SFC - FL 500  
CHAFF/FLARE UNLIMITED



# 142d Wing Mid-Air Collision Avoidance (MACA) Program

Portland Air National Guard Base, Portland OR 97218

## F-15C EAGLE



### OUR NUMBERS

Portland international Airport is a high volume airport with over 330,000 aircraft operations per year with military aircraft accounting for approximately 4,000 of the operations.

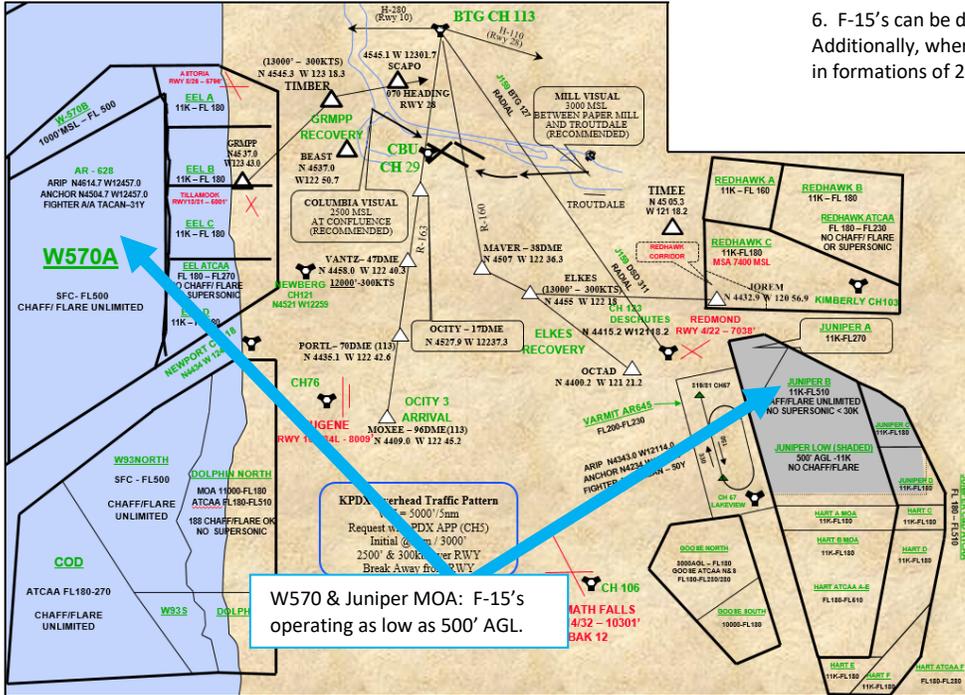
### WHEN WE FLY

F-15 operations at PDX occur during both day and night. Day operation takeoff times are typically 0845 and 1245. Night operations are conducted so that we can takeoff ½ hour after sunset, complete a mission and land by 10pm local. This limits summer night flying due to sunset times.

### WHERE WE FLY

The Oregon ANG primarily conducts its training operations in the warning area off the coast and the Juniper/Hart MOA located 160 NM southeast of KPDX.

**F-15 operations in the EEL, DOLPHIN, REDHAWK, and HART MOAs are 11,000 ft MSL and up. Operations in the W570 complex and Juniper MOA (shaded region) are 500 ft AGL and up!**



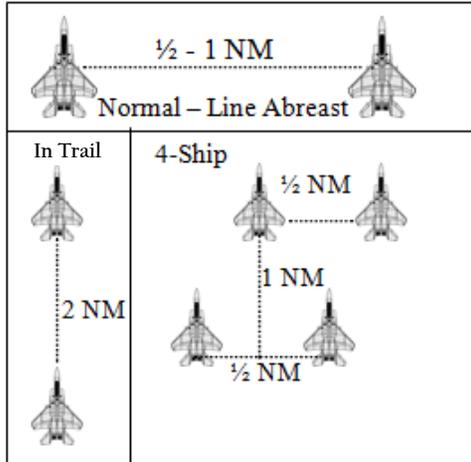
W570 & Juniper MOA: F-15's operating as low as 500' AGL.

### WHAT YOU CAN DO TO HELP

Midair collisions are of vital concern to everyone in the aviation community. Simple awareness to the threat as well as adherence to some basic safety precautions can significantly reduce the risk for a potential midair collision. Below are some simple steps to take to ensure that every pilot can use to avoid conflict and stay safe.

1. Familiarize yourself with your aircrafts blind spots and ensure all windows are clean and not obstructed.
2. Try not to fly through MOAs during expected operating times, **~0900 to 1100L and 1300 to 1400L during the day, and 30 minutes after sunset for the next 2 hours.**
3. Brief everyone traveling with you on proper scanning procedures and how to report aircraft.
4. Obey all flight rules and maintain your altitude and assigned route.
5. Monitor ATC frequency. Use your radio to help gain situational awareness on arriving and departing traffic.
6. F-15's can be difficult to see due to their subdued grey paint scheme. Additionally, where there is one, there is likely more. F-15s typically fly in formations of 2 or 4 aircraft.

**Questions?**  
142d Wing Safety: (503) 335-4024



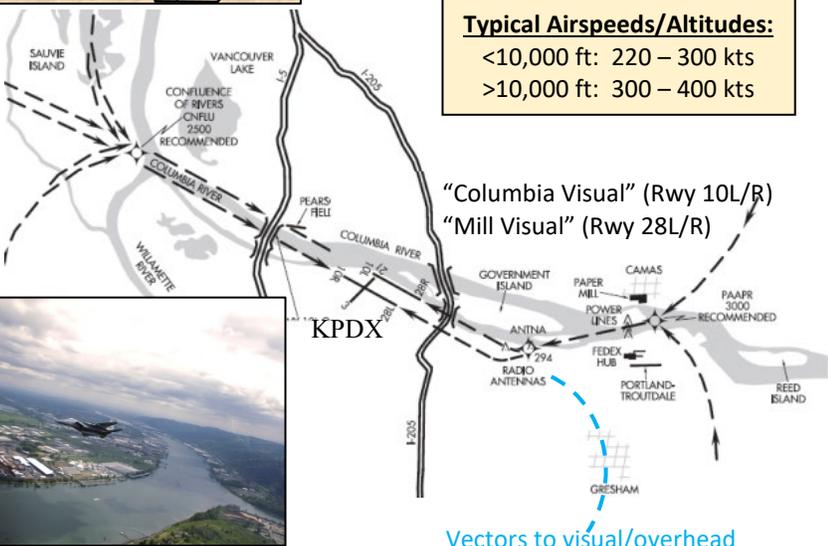
**Typical Airspeeds/Altitudes:**  
<10,000 ft: 220 – 300 kts  
>10,000 ft: 300 – 400 kts

### DEPARTURES

- ✓ All departures are under IFR
- ✓ Military Aircraft follow published noise abatement departure procedures which track runway heading to 6,000 feet, then Radar Vectors to training areas

### RECOVERIES

- VORTAC or ILS Approach:**
- ✓ Wx or Training Requirements
- VFR Patterns**
- ✓ Mill or Columbia Visual (rarely used)
  - ✓ Vectors to Visual or Overhead,
    - 3500 ft MSL until w/in 5 NM KPDX





# 142d Wing Mid-Air Collision Avoidance (MACA) Program

Portland Air National Guard Base, Portland OR 97218

## Small Unmanned Aerial Systems



### Department of Defense Unmanned Aerial System (UAS) Groups

UAS Group	Max Take-Off Weight (lbs)	Nominal Operating Altitude (ft)	Speed (kts)	Example UAS
Group 1	0 - 20	< 1200 AGL	< 100	Mavic Pro, FLIR Skyraider, AeroVironment PUMA AE, RQ-11 Raven, WASP
Group 2	21 - 55	< 3500 AGL	< 250	Northrop Grumman Stalker XE, AeroVironment PUMA LE, ScanEagle
Group 3	< 1320	< FL 180		RQ-7B Shadow, RQ-21 Blackjack
Group 4	> 1320	< FL 180	Any airspeed	MQ-8B Fire Scout, MQ-1A/B Predator, MQ-1C Gray Eagle
Group 5		> FL 180		MQ-9 Reaper, RQ-4 Global Hawk, MQ-4C Triton

The 142d Wing employs **Small Unmanned Aerial Systems** (sUAS), which consist of only Groups 1 and 2 (groups 3-5 are not utilized). The specific sUAS's employed are depicted below for familiarization.

### DJI Mavic Pro (Group 1)



- ◆ Max Speed: 39 kts
- ◆ Size: ~ 1 ft x 1 ft
- ◆ Max Loiter time: ~30 minutes
- ◆ Operating altitude: 20 ft – 500 ft
- ◆ Max link range from controller: 3-5 NM
- ◆ Not ADS-B compliant
- ◆ Not radar controlled

### FLIR R80 SkyRaider (Group 1)



- ◆ Max speed: 26 Kts
- ◆ Size: ~3 ft x 3 ft
- ◆ Max Loiter time: ~40 minutes
- ◆ Operating Altitude: 20 ft – 500 ft
- ◆ Max link range: ~5 NM
- ◆ Not ADS-B compliant
- ◆ Not radar controlled

### Northrop Grumman Stalker XE (Group 2)



- ◆ Max speed: 39 Kts
- ◆ Wingspan: 12 ft
- ◆ Max Loiter time: 8 hours
- ◆ Maximum Altitude: 12,000 ft
- ◆ Max link range: ~10 NM
- ◆ Not ADS-B compliant
- ◆ Not radar controlled

### AeroVironment PUMA LE (Group 2)



- ◆ Max speed: 41 Kts
- ◆ Wingspan: 15 ft
- ◆ Max Loiter time: 6 hours
- ◆ Operating Altitude: ~ 500 ft
- ◆ Max link range: ~10 NM
- ◆ Not ADS-B compliant
- ◆ Not radar controlled

### **What you need to know:**

sUAS activity will be listed in the airfield NOTAMS (typically (D) series NOTAMS), so please review these. sUAS's operate under a "Certificate of Waiver or Authorization" (COA), which is an authorization issued by the Air Traffic Organization to a public operator for a specific UA activity. After a complete COA application is submitted, the FAA conducts a comprehensive operational and technical review. If necessary, provisions or limitations may be imposed as part of the approval to ensure the UA can operate safely with other airspace users. It is basically a waiver to Part 91's requirement to see and avoid.

When sUAS operations are planned, the 142d Wing will assist the local airport in publishing a NOTAM. Do not expect to be able to talk to the sUAS operator as they will likely not be on the radio. The sUAS must always remain in visual contact with a ground observer, so expect the sUAS's to operate close to the airport, from 50 – 1000 ft, but the actual altitudes will be published via NOTAM.

Questions? Call 142d Wing Safety, (503) 335-4024