

June 20, 2011

TAAC Conference Air Show Plan

Introduction: The New Mexico State University (NMSU) Technical Analysis and Applications Center (TAAC) UAS Conference is being held at the Hyatt Tamaya Resort, on the Pueblo of Santa Ana, Sandoval County, NM (3 mile North of Bernalillo). The small Unmanned Aircraft Systems (sUAS) Air Show portion of the conference will be held above a field just east of the Hotel/Resort. All sUAS will be under twenty pounds and in compliance with all FAA regulations, guidance and procedures. A permit has been obtained for the air show from the Santa Ana Pueblo. The TAAC Conference SUAS air show has the following schedule:

Monday December 5, Initial Air show brief (afternoon) Practice

Tuesday December 6, primary day.

Wednesday December 7, back-up day.

Air Show

Security: The entire hotel is reserved for the TAAC Conference and its guests. Security is provided by the Santa Ana Pueblo Police which keep protestors and unwanted visitors away from the hotel. Additionally, the Hyatt has security personnel on-site who also assist in providing security for the conference. Access to the hotel from the public road is limited to two on Pueblo roads, one primarily for guests, the other primarily for delivery. The two roads have the same starting point on Pueblo property approximately 2 miles SW of the hotel.

Attendees: Attendees for the air show will be approximately 550 persons, the majority of which will be conference attendees. Members of the local press will be invited to the air show only.

Air show location: In the fields east of the Tamaya Hyatt Resort Santa Ana Pueblo, Sandoval County, NM (see attached map).

Duration: Air show will be less than one and one half hours. Specific has yet to be determined. Preferable time is approximately one PM, but weather and wind will be a prime factor in determining the actual time.

FAA Authorization: Authorization for the UAS participation in the air show will be submitted via on-line COA authorized by the FAA. The on-line COA request will be

submitted in June of 2011 to provide time to coordinate between the UAPO (407) and FAA AFS-800. A second COA (Form 7711-2) request for the air show will be submitted through normal FAA air show request channels and a soft copy forwarded to the FAA UAPO to ensure ease of coordination.

Participants: Flight teams from three manufacturers are scheduled to participate in the Air Show flight demonstration.

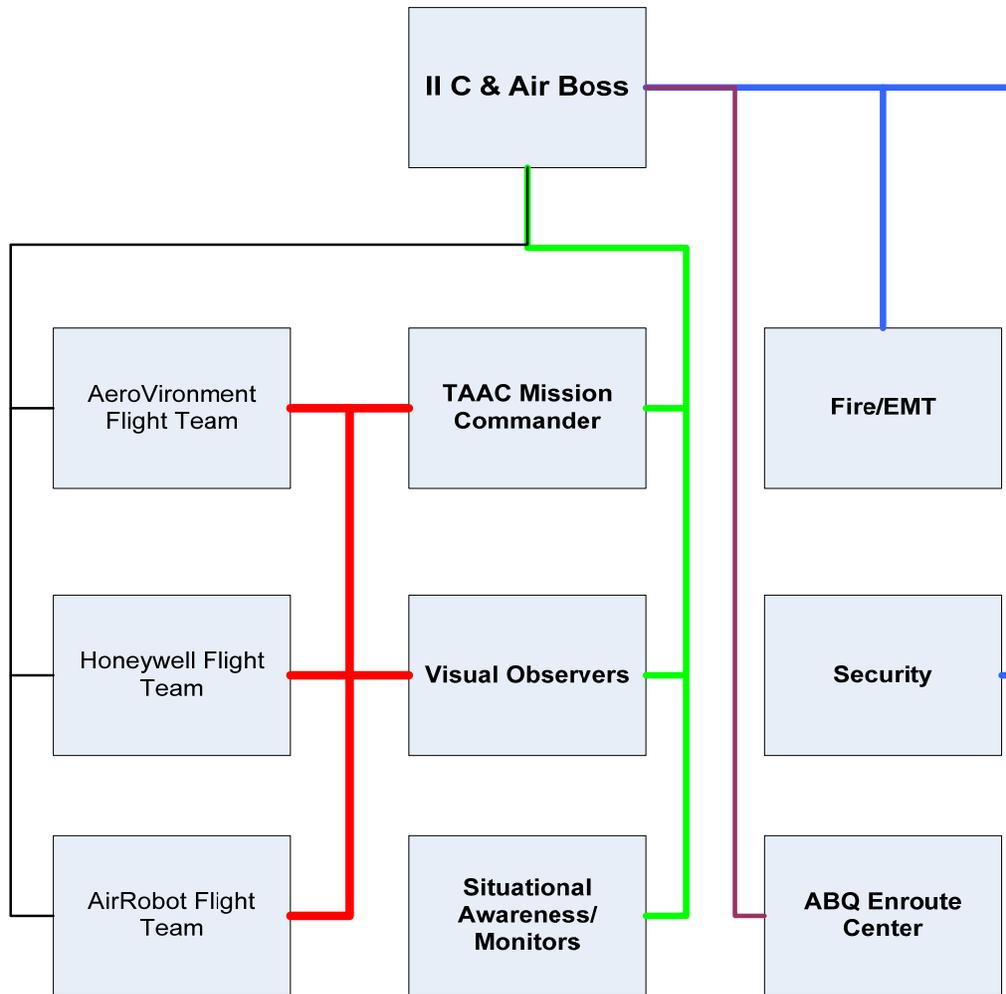
TAAC Conference Air Show 2011

Name	Manufacturer	Weight	Wingspan	Length	Speed
Wasp III	AeroVironment	.95 lbs	2.38 ft	1.25 ft	22 - 35 Kts
Raven B	AeroVironment	4.2 lbs	4.5 ft	3.0 ft	17 - 44 kts
Puma AE	AeroVironment	13 lbs	9.2 ft	4.6 ft	20 - 45 kts
T-Hawk	Honeywell	19 lbs	VTOL		39 kts
AR-100B	AirRobot	2.2 lbs	VTOL		23 kts

All UAS involved in the air show will be certified airworthy by NMSU/PSL/TAAC prior to and will be subject to inspection by the FAA and TAAC before any flights.

Air Show Organization

The NMSU TAAC will be responsible for the Air Show. The Responsible Person and Air Boss will be Dennis Zaklan. He will work very closely with the II C and all other air show participants. The following depicts the Air show Organization.



FAA IIC: The FAA Aviation Safety Inspector responsible for the safe conducting and compliance of all participants in the air show. The IIC works directly with the Air Boss to ensure all aspects of the air show are conducted properly and safely.

FAA IIC Maintenance: Ensures all aircraft are in compliance with airworthiness. Person will work closely with the TAAC Air Boss and UAPO ASI as required.

UAPO ASI: Ensures compliance with the UAS COA requirements.

Air Boss: Air Boss will be the NMSU TAAC Responsible Person. The Air Boss is responsible for FAA coordination, air show organizing, communications and dialogue between all involved parties, scheduling, and the safe conducting of the air show.

TAAC Mission Commander (MC): The TAAC representative which will be with the flight team to ensure all aspects of the pre-flight and flight procedures are performed and that the UAS is operating properly prior to flight. The Air Boss will coordinate directly with the MC providing authorization for launch, and any guidance as required during flight.

Visual Observer (VO): The TAAC Visual Observer will provide “see and avoid” for the UAS pilot during flight. The VO will be co-located with the UAS pilot to provide verbal updates and guidance as required to ensure collisions with other aircraft do not occur.

Situational Awareness Monitors: The TAAC Situational Awareness Monitors will perform support of the flight by monitoring for intruders. They will be positioned to listen and view the airspace around the flight operations box and the ground in the box to determine if any safety hazards appear during operations.

Official Photographers: no more than 3 official photographers will be in the box. At least two, a still and video will be with or near to the launch/recovery area and be in contact with the Air Boss/Mission Commander.

FIRE/EMT: Sandoval County will provide Fire/EMS support for the Air Show. As per there requirements, at least one Fire Truck will be on the premises with EMT persons in attendance. They have been contacted, and will have a vehicle/team located near the SW corner of the Hotel to ensure speedy response.

All primary emergency communications will be handled by the Fire/EMT team, unless requested otherwise.

Secondary communications will be from the Pueblo/hotel security staff.

Hyatt security/Pueblo Police: Pueblo Police and Hyatt security will provide overall security for the event. This will include blocking the appropriate trial inside the flight box during the show. They will be on a separate radio system from the TAAC system. However, a radio will be in the control center for emergency use and coordination.

ATC: ABQ Enroute Center will be notified before all flights and in case of any in flight emergency. Pre-coordination with the center will be accomplished by the Air Boss in preparation for the show. Primary means of communications will radio with cell or land line being secondary.

Flight Box

All UAS flights will occur in the flight box. This includes launch and recovery.

Control Point: 35° 20'57.98" N 106° 32' 43.89W (NMSU 27 ft Trailer). Location is on Turquoise Trail near the Carriage Turn Around, SE of the Corn Maiden Restaurant.

Corner Markers: Marked with a three foot pole with red/orange streamer tape. And a 3' x 3' "X" on the spot.

Show Center: Show Center will be marked by a red or orange "X" using streamers.

Lost Link Point (LLP): LLP will be near Show Center Point (see map).

Flight Termination Points (FTP): FTP will be located in the box, between the North and South of Show Center (See map).

Show Line: The show line will be marked by red or orange streamer tape for the fixed wing, and blue stream tape for the T Hawk VTOL.

Crowd Line: The crowd line will be the western edge of the dirt road between the hotel/conference building and the field. See yellow line on map. The barrier will be colored tape on some sort 2 ft poles. Additionally, TAAC persons will be assigned to be near or over the crowd line to advise persons to stay to the west of the line.

TAAC Conference Attendees will be briefed on restrictions (crowd line) prior to the air show.

Persons in the BOX: Persons in the flight box will be very limited. All TAAC persons inside the box will be wearing a bright Green Vest and have a radio for communications with the Air Boss and others as needed.

TAAC Persons: Mission Commander, Visual Observer, Situational Awareness Monitors, and Official Photographer.

Air Crews: For flight preparations, launch, and recovery, aircrews will be in the box. They will be escorted by the TAAC Mission Commander and the Visual Observer.

Others: As Determined by the Air Boss and the FAA IIC.

Spectator Areas

Primary Spectator Area: The primary spectator area will be to the east of the Tamaya hotel and south of the Corn maiden Restaurant/carriage turn around along the South Turquoise Trail (See attached Hyatt Trail Map). On the southern end of the hotel, a native gas area provides a natural line from South Turquoise Trail to the building.

Secondary Spectator Area: (A) North of the Corn Maiden Restaurant/carriage turnaround and west of Turquoise Trail.

Flight Paths:

Flight paths, especially for the fixed wing aircraft will be primarily North/South. This will limit the potential risk of the UA going into the crowd.

Weather Minimums: VFR minimums as listed in 14 CFR 91.155 flight visibility of 3 statute miles and clear of clouds.

Frequency Coordination:

ATC Frequency: 123.9 MHz or 354.1 MHz

UAS Frequencies: All air show UASs will have, for the Tamaya area, either

- 1) An FCC license for their system frequencies
- 2) A DOD coordinated frequency authorization
- 3) Or be in unlicensed frequency bands at the appropriate wattage

Frequency checks for each systems frequencies will be accomplished prior to launch to ensure frequencies are clear.

Pilots/operators will be briefed in advance to ensure they monitor their communications closely, although the small size of the box should ensure great line-of-sight communications between the GCS and the UA.

Schedule:

Dec 3 - NOTAM filed

Dec 5 – 1300 Air Show Briefing with FAA and participants

- 1400- 1600 Practice

Dec 6 – NOTAM checked, Weather check

1200 – Air show briefing, FAA and all participants

Preparations

1245 – Wasp III begins System checks.

1250 – Announcer informs crowd of launch preparation

1300 – Wasp Launch & Honeywell T-Hawk system checks

1310 –WASP Recovery

1315 – T-Hawk final Checks & Launch, and Raven B system checks

1325 – T-Hawk recovery

1330 – Raven B launch & AirRobot AR 100B system checks

1340 – Raven B recovery

1345 – AirRobot AR 100B launch & Puma AE system checks

1350 – Puma AE launch

1400 – Puma recovery

1430 – Air show debrief with participants/flight teams

Briefing

Briefing will be conducted as per FAA 8900.1, Chapter 6, change 86 dated 2/26/10.

A pre-show briefing will be conducted on 5 December for all participants.

Practice flights will follow, and any items needing to be addressed will be addressed, discussed and changed as necessary before the air show. All changes will be approved by the FAA IIC.

A roll call will be conducted at the pre-show briefing. Attendance of the team is necessary to participate in the air show.

Briefing will be conducted just prior to show and will include;

- Key personnel and communications

- Weather

- Method of contacting ATC & NOTAM filed

- Event site including:

 - Primary and secondary spectator areas

 - Show line

 - Show center

 - Demonstration area and boundaries/markings

- Schedule of events

- Location of emergency persons

- Mission Commander and Visual Observer interface with Air Boss & Pilot

Time Check

Following the demonstration, lessons learned document will be provided to the Albuquerque FSDO, Enroute Center, and the UAPO to assist with further delineation and development of the process for UAS air shows.