CHASE PLANE SUPPORT OF THE REMOTELY PILOTED AIRCRAFT
163d ATTACK WING, CALIFORNIA AIR NATIONAL GUARD

1. GENERAL DESCRIPTION OF SERVICES: Chase aircraft (Chase) will be overhead March Air Reserve Base (KRIV) or Southern California Logistics Airport (KVCV) at scheduled Remotely Piloted Aircraft (RPA) takeoff time. Chase can coordinate with tower to orbit outside the traffic pattern at tower's discretion. After initial RPA takeoff, chase will accompany the RPA during pattern operations and transit to R2515 via the guidelines set forth within the current Certificate of Authorization (COA) and current Letter of Agreements (LOA). Chase must be able to communicate on two separate frequencies. One frequency will be set to RPA inter-plane and the other to assigned ATC agencies. Chase will follow the RPA to R2515, loiter inside R2515 and return to base after handoff is complete. The chase aircraft and crew will be on standby until scheduled handover time, or until notified to return prior to scheduled return. Chase will report to R2515 10 minutes prior to scheduled handover time and orbit until Sport clears chase to rejoin on the RPA. The rejoin should normally occur 3 miles inside the S.E. corner of R2515. Chase will then follow the RPA back to KVCV or KRIV and return to base after the RPA completes a full stop landing.

2. SAFETY: Chase support of the RPA has a single objective: THE SAFETY OF NON-PARTICIPATING AIRCRAFT FLYING IN THE VICINITY of KRIV, KVCV, and in transit to R2515. It is absolutely essential that the Chase crew provide uninterrupted visual scanning of the flight path in front of and on all sides of the RPA. If Chase sees a possible flight conflict, Chase shall immediately contact the RPA with a clear order to make an immediate maneuver for conflict avoidance. The RPA must clearly understand that an immediate maneuver is of utmost importance. Chase's radio call should be clear and concise: "RPA 1234 this is Chase, turn right," and will be repeated if an immediate maneuver is not executed. A Chase order to maneuver is very rare; however, the RPA crew must be continuously alert for a maneuver order.

3. CHASE CREW REQUIREMENTS: For Chase operations, Chase qualified pilot and Chase qualified observer are required. Two qualified Chase pilots are required when oxygen is required by FAA regulations.

a. Chase pilot is responsible for aircraft control and visual separation with the RPA.
b. Chase observer is responsible for clearing for traffic.
c. Chase will advise the RPA if the flight path indicates a possible conflict with other aircraft or if weather minimums cannot be maintained.

4. WEATHER MINIMUMS:

a. Chase operations will be conducted in Visual Meteorological Conditions (VMC).
b. Standard cloud clearance requirements apply.
c. For rejoins underneath a ceiling, the ceiling/visibility criteria are 1000 feet/3 NM.

5. ALTITUDE MINIMUMS: Chase aircraft will not go below 500 feet Above Ground Level (AGL) during enroute Chase procedures.

6. DISTANCE MINIMUMS:
   a. Chase aircraft will maintain a distance of 300 feet to 1500 feet from the RPA.
   b. Chase aircraft should maintain a position slightly higher or lower and 20 to 45 degrees left or right of center of the RPA.

7. EQUIPMENT PROCEDURES:
   a. Chase and RPA will have their beacons and strobe lights on during daylight and night time operations to increase visibility for other aircraft.
   b. The RPA will squawk the transponder code for the formation. Chase will squawk 'standby' with the transponder code set and ready to transmit in the event the RPA's transponder fails.
   c. Chase will comply with FAA standards for onboard equipment.

8. JOIN UP PROCEDURES:
   a. Initial pick-up on takeoff - best performed by having Chase in the air first. Chase will orbit southeast or as directed by tower of the KVCV runway complex at 4000 ft MSL (1000 ft AGL) or KRIV at 2,500 ft MSL (1000 ft AGL). When Chase is in position for pick-up, Chase will call "Ready for departure". Chase will confirm with the RPA the planned departure route from the traffic pattern. Chase will call "In position" when joined up with the RPA.
   b. Airborne Join-up – Chase will ask RPA for its current position and altitude. Chase will climb to and maintain 500 feet below RPA's attitude. As Chase is climbing to altitude, it will be scanning area for the RPA. Chase will call "In position" when joined up with the RPA.

9. CHASE COMMUNICATION PROCEDURES:
   a. Two-way radio communications will be maintained between Chase and the RPA.
   b. A radio check will be accomplished every 10 minutes if no other communications have been made.
   c. The RPA will call all altitude and airspeed changes, all turns in close formations and call descent to the airport.
   d. The Chase crew will call prior to entering KVCV Class D airspace or KRIV Class C airspace, call positions in the pattern before landing, report all gear up and gear down positions, call 'in position', and relay any communications from ATC if necessary.
   e. Upon each frequency change to a new controlling agency, Chase will ensure Grizzly has followed them to the new frequency by saying, "Grizzly Check". RPA will acknowledge with "Two".

10. RANGE DROP-OFF from KVCV:
   a. RPA will utilize Runway 21 primarily for training missions. Chase will execute a pick-up on takeoff and follow the RPA to range drop-off point.

b. Approximate Drop-off point coordinates for R-2515 – N 34 53 09 W 117 13 16
c. For drop off in R-2515 RPA will depart VCV traffic pattern to the north and climb to 8500 ft MSL.
d. Chase will monitor RPA communications with Joshua Approach and will acknowledge frequency change to SPORT on RPA/Chase frequency.
e. RPA will ask Chase to break formation when in R-2515 at the drop-off point.
f. Chase will break and RTB for standby.

11. RANGE DROP-OFF from KRIV:
a. RPA will utilize Runway 32 primarily for training missions. Chase will execute a pick-up on takeoff and follow the RPA to range Drop-off point.
b. Approximate Drop-off point coordinates for R-2515 – N 34 53 09 W 117 13 16
c. For drop off in R-2515 RPA will depart KRIV traffic pattern following the WOLFSKILL VFR Departure to the north as outlined in the LOA and climb to 8500 ft MSL while following ATC instructions on directed frequencies.
d. Chase will monitor RPA communications with range controlling agency and will acknowledge good radio communications have been established over range control frequency. RPA will then take over radio communications.
e. RPA will ask Chase to break formation when in R-2515 at the drop-off point.
f. Chase will break and RTB for standby.

12. RANGE PICK-UP:
a. Approximate Pick-up coordinates for R-2515 - N 34 53 09 W 117 13 16
b. Chase will depart KVCV/KAPV 20 minutes prior to exit time for 2515 (unless otherwise instructed). In all cases the chase will plan to be at the pick-up point no later than the scheduled pick-up time.
c. Contact ATC 10 miles from pick-up point.
d. Climb to 9000 ft MSL (ensures 500 ft altitude separation from RPA)
e. If Chase arrives before exit time, Chase will hold in the vicinity of the pick-up point
f. RPA will contact Chase when approaching pick-up point at 9500 ft MSL.
g. Chase will acknowledge radio call and will proceed to pick-up point and attempt to visually acquire RPA. Chase may ask ATC for radar vectors to RPA.
h. Chase will call “have visual” when RPA is in sight.
i. Chase will begin join up procedures and will advise ATC that RPA is in sight.
j. Chase will call “In position” when joined up and will change transponder to Standby and will squawk the same code as the RPA.
k. Chase will monitor communications with ATC.

13. TRANSFER CHASE TO GROUND OBSERVER: Chase will maintain position until the RPA enters the KVCV or KRIV traffic pattern and the ground observer takes-over visual responsibilities.

14. LOST COMMUNICATIONS:

a. If Chase recognizes a communication failure with the RPA, Chase will continue the Chase operation until retrieval is successfully concluded. Chase should take all the recommended steps to re-establish radio communications. Chase may ask the RPA to raise a wing if RPA crew can hear Chase's radio transmissions. Chase should make blind calls to the RPA and issue an order to retrieve the RPA. If Chase cannot safely continue to execute Chase responsibilities (maintain VMC, Chase low on fuel, potential threat of a collision, and/or blind/lost visual), Chase will proceed to and orbit as directed by tower of the KVCV or KRIV landing complex. In the event of RPA lost radio communication, chase will attempt to contact the Ground Control Station (GCS) or the Supervisor of Flying (SOF) via cockpit Bluetooth cellular device. If both the telephone and/or radio communication attempts fail prior to WOLFSKILL, the RPA will lower gear (which signals intent to RTB) for one minute and continue with Chase making the appropriate calls to ATC. However, once a commitment has been made to transit to 2515, the RPA will continue to 2515 four corners region and hold for 30 minutes until either communication has been reestablished or a decision has been made to RTB. The decision to RTB without communication will be indicated by another one-minute cycling of the gear.

b. If the RPA detects a communication failure with the Chase aircraft outbound, the RPA will continue to the restricted area making radio calls for the formation. The Chase aircraft will be auto-cleared off upon RPA entry into the restricted area. If the RPA detects a communication failure with the Chase aircraft inbound, the RPA will recover to the local area making radio calls for the formation. The Chase aircraft will be auto-cleared off upon RPA landing.

c. If radio communications are regained, Chase may attempt to rejoin with the RPA's permission; otherwise, Chase will land.

15. LOSS OF VISUAL CONTACT: If Chase aircraft loses visual with the RPA, immediate separation is essential.

Upon losing sight of the RPA, Chase aircraft will call "LOST VISUAL" over the radio. The RPA will acknowledge the lost visual call and immediately transmit heading, altitude, and airspeed. The RPA will remain predictable and continue its current flight path unless directed otherwise. The Sensor Operator will utilize the MTS (if available) in an attempt to clear the RPA flight path and avoid a collision. Chase aircraft will maintain a minimum of 500 feet altitude separation until visual contact is regained. If visual contact is lost for more than 30 seconds, Chase aircraft will proceed to and orbit as directed by KVCV or KRIV tower, until visual contact is reestablished. While the Chase aircraft is visually searching, the RPA will make position reports and call turns. Permission for Chase aircraft to rejoin must be obtained from the RPA after lost visual procedures have been executed.

16. ENCOUNTERING IMC: Chase should be directive to avoid IMC penetration; however, if an inadvertent IMC penetration occurs resulting in lost visual, immediate separation from the RPA is essential. Smooth application of control inputs is imperative to minimize the effects of spatial disorientation. Chase will simultaneously transition to instruments, maneuver away from the last known RPA position, and call "LOST VISUAL – POPEYE" over the radio. The RPA will acknowledge the lost visual call and immediately transmit heading, altitude, and airspeed. The RPA will remain predictable and continue its current flight path unless directed otherwise. The Sensor Operator will utilize the MTS (if available) in an attempt to clear the RPA flight path and avoid a collision. Chase aircraft will maintain a minimum of 500 feet altitude separation until visual contact is regained. If visual contact is lost for more than 30 seconds, Chase aircraft will proceed to and orbit as directed by controlling agency, until visual contact is reestablished. Chase and the RPA will separately coordinate with ATC to ensure separation with each other as well as other aircraft (IFR clearance, squawk code, etc). Once clear of IMC and visual contact reestablished, the formation may rejoin and continue the mission. Permission for the Chase aircraft to rejoin must be obtained from the RPA.

17. AIRCRAFT EMERGENCY:
    a. If RPA experiences an in-flight emergency, communicate intentions to Chase. Chase will maintain position until recovery is successful. Chase will provide assistance as requested by the RPA.
    b. If Chase experiences an in-flight emergency, communicate intentions to the RPA. Chase will follow aircraft POH and company SOP in response to the emergency. Continuation of the RPA mission is at the discretion of the 160th Attack Squadron.

18. NIGHT CHASE:
    a. The chase aircraft provider will ensure that qualified crew members are adequately trained to provide night chase support. Night rendezvous procedures are inherently dangerous; therefore, it is imperative that chase pilots and observers receive contractor provided training in formation flight path de-confliction, terrain awareness/avoidance, night spatial disorientation and mid-air collision avoidance.
    b. As outlined in paragraph 3 a., night chase requests will typically be requested by Friday for the following week's chase support. However, the possibility exists that night chase support will be requested on short notice due to real-world State and Federal tasking. These particular missions require chase to be overhead KVCV and KRIV within 6 hours of notice.
    c. Prior to launch for night operations, the chase crew will check in with the SOF for a formal crew briefing.

19. LETTER OF AGREEMENT (LOA):
All Chase pilots will read the Letter of Agreement between Victorville Airport Air Traffic Control Tower, High Desert Terminal Radar Approach Control, and U.S. Air

Force California Air National Guard, Letter of Agreement between the 163D Operations Group and 425D Operations Group, current Certificate of Authorization, and will keep a copy of the current LOAs and its attachments in their on-board SOP.

20. CHASE WEATHER SHIP:
The Chase aircraft can act as a “weather bird” while in transit between KAPV, KRIV, and KVCV. If circumstances arise that will prohibit RPA normal operations, the chase pilot will make every attempt to contact the Supervisor of Flying as soon as possible. Chase pilots are required to know the operating criteria for safe RPA operations. A copy of AFI 11-2MQ-1and 9 Vol. 3 will be provided by 163d ATKW.