

UPDATED 12-4-19



**ORANGE COUNTY SHERIFF'S
DEPARTMENT**

AIR SUPPORT BUREAU

TACTICAL FLIGHT OFFICER

TRAINING MANUAL

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1.0 ASB TACTICAL FLIGHT OFFICER TRAINING

- .1 The Air Support Bureau (ASB) Tactical Flight Officer trainee will be assigned to training officers for approximately the first four months of the assignment.
- .2 Training officers will complete the daily performance evaluation form and review it with the trainee each day. This record will be placed in the Tactical Flight Officer trainee's training binder.
- .3 The ASB Lieutenant, Sergeant or ASB Chief Tactical Flight Officer may interrupt, extend or terminate Tactical Flight Officer training at any time if there are facts, conditions or circumstances to indicate that it is not in the best interest of ASB, or the trainee to continue training.
- .4 The Tactical Flight Officer will demonstrate knowledge and proficiency in all areas of this manual. The ASB Sergeant or ASB Chief Tactical Flight Officer will review all performance evaluations and determine when the Tactical Flight Officer training is complete.

1.1 AIRPORT ENTRY AND SECURITY

- .1 Airport entry and security is of paramount importance since the terrorist attacks on the United States. Maintenance of security procedures assures the safety of all persons on John Wayne Airport (SNA) property. Tactical Flight Officer Trainees will attend a security class presented by John Wayne Airport Personnel where they will be instructed in current airport security measures, airport operations and regulations including:
 - a. Vehicles hang tags.
 - b. Rules governing vehicle operations.
 - c. Parking guidelines.
 - d. Use of office and hanger keys.

1.2 SHIFT HOURS

- .1 Tactical Flight Officer Trainees will be instructed on schedules and shift hours.
- .2 Tactical Flight Officers will be in uniform and ready for duty at the start of each shift. Crews are subject to call out at any time during the shift.
- .3 Leaving the airport for Code-7 (take a cell-phone/pager/radio).

1.3 PREFLIGHT DUTIES AND EQUIPMENT

- .1 The Tactical Flight Officer will ensure that the windows on the duty aircraft are clean and the aircraft is configured appropriately as requested by the pilot.
 - a. FLIR.
 - b. Night-Sun.
 - c. Moving Map.
 - d. Equipment Bag.
 - e. Bambi Bucket.
 - f. Video Downlink Equipment.
- .2 The Tactical Flight Officer will preflight the Tactical Flight Officer equipment, assuring that each of the following items are installed, functional and in order, as necessary:
 - a. Maps.
 - b. Radios.
 - c. FLIR controller.
 - d. Night-sun controller.
 - e. Binoculars.

- f. Kneeboard.
- g. Flashlight and Night Vision Goggles.
- h. Crew cell phone.
- i. Rear seat headsets.

1.4 HELICOPTER LOG PROGRAM

- .1 The Tactical Flight Officer will become familiar with the ASB computer log program and demonstrate proficiency in the following areas:
 - a. Log-on procedure.
 - b. Helicopter log overview.
 - 1. Log date selection (aircraft, pilot and Tactical Flight Officer).
 - 2. Flight summary – fuel (flight type, fuel consumption and down time).
 - 3. Description / Times / Address Tab
 - 4. Arrests / Activity / Fire / Search Tab
 - 5. Maintenance Log
 - 6. Significant Activity
 - c. DR#'s and Followup Reports

1.5 PERSONAL EQUIPMENT

- .1 The Tactical Flight Officer will be in uniform and ready for duty at the beginning of each shift. The following items are required:
 - a. Nomex Flight suit.
 - b. Nomex Gloves
 - c. Handgun or appropriate weapon, magazines, additional ammunition and handcuffs.
 - d. Helmet and Skull Cap.
 - e. Flashlight.
 - f. Knife / multi-tool.
 - g. Leather boots.
 - h. Kneeboard, pens and pencils.
 - i. Jacket.
 - j. Pac Set.
 - k. Cellular Telephone.

1.6 AVIONICS

- .1 The Tactical Flight Officer will demonstrate proficiency in locating and operating the following avionics and systems:
 - a. 800 MHz digitally trunked county-wide system.
 - b. TFM 550 tri-band transceiver.
 - c. Moving Map.
 - d. PA / Siren.
 - e. ETS / LoJack.

1.7

HELICOPTER FLIGHT OPERATIONS

- .1 Tactical Flight Officers will demonstrate their knowledge and proficiency in the safe operation in and around aircraft that are in flight, running on the ground, and static. This includes the following:
 - a. Approaching helicopter.
 - b. Sloping terrain considerations.
 - c. Tail-rotor hazards.
 - d. Rotor blade hazards.
 - e. Inadvertent Instrument Meteorological Conditions. See ASB Policy and Procedure Manual section VII for the ASB's IIMC Procedure.
- .2 Tactical Flight Officers will demonstrate their knowledge and proficiency in giving passengers safety briefings as requested by the pilot.
- .3 Tactical Flight Officers will demonstrate their knowledge and proficiency in safely refueling the helicopter:
 - a. Engine stopped.
 - b. Operation of the fuel truck to include aircraft refueling
 - c. Hot refueling procedures. ASB Policy Manual page 22.
 - d. Fire extinguisher use.
 - e. Grounding cord and receptacle.
 - f. Fuel cap.
- .4 Tactical Flight Officers will demonstrate their knowledge and proficiency in ground handling operations including:
 - a. Attaching and the use of auxiliary power units or ground power units.
 - b. Moving aircraft on platform.

- c. Installing chocks.
 - d. Helicopter movement in and out of hangar.
 - e. Blade clearance.
 - f. Positioning flight-ready aircraft located on a platform.
 - g. Movement on flight line / safety.
- .5 Tactical Flight Officers will demonstrate their knowledge and proficiency in emergency procedures and Tactical Flight Officer responsibilities.
- a. In the event of an engine failure and autorotation, the Tactical Flight Officer should:
 1. Illuminate landing area with searchlight during darkness, if requested by the pilot.
 2. Advise Communications of location and nature of emergency.
 3. Request unit response (Code 3, if necessary) and emergency equipment.
 4. Assist the Pilot if possible by calling out rotor speed, airspeed and watching for hazards (wires or obstructions)
 5. If able, update status immediately after landing and cancel emergency equipment as necessary.
 6. Secure area if possible.
 - b. In the event of a precautionary landing the Tactical Flight Officer should:
 1. During darkness illuminate landing area with searchlight if requested by the pilot.
 2. Advise Communications of location and nature of problem.
 3. Request unit response (Code 3, if necessary) and emergency equipment.
 4. If able, update status immediately after landing and cancel emergency equipment as necessary.
 5. Secure area if possible.

- c. In the event of smoke or fire, the Tactical Flight Officer should:
 - 1. With power on, use searchlight during darkness, if requested by the pilot.
 - 2. Assist the pilot with emergency check list or as directed.
 - 3. Advise Communications of location and circumstances.
 - 4. Open door to ventilate and clear smoke if requested by the pilot.
 - 5. Secure area if possible

- .6 Tactical Flight Officers will demonstrate their knowledge and proficiency in receiving call information, including:
 - a. In the air.
 - b. On the ground.
 - c. Asking dispatcher for additional information.
 - d. Communicating effectively.
 - e. Sound judgment in responding to calls from the airport, including:
 - 1. Communications' expectations.
 - 2. Pilots go/ no-go decision-making.
 - 3. Response based on many factors:
 - a. Time of occurrence and response time delay.
 - b. Nature of incident.
 - c. Workable suspect / vehicle information.
 - d. Field request for callout by Deputy or Supervisor.
 - e. Perimeter vs. no perimeter.

- .7 Tactical Flight Officers will be proficient in utilizing the appropriate maps, equipment and radios when responding to calls for service. Tactical Flight Officer Trainees will demonstrate their knowledge and ability to effectively direct resources on the ground and effectively

communicate all relevant information that will ensure successful completion of the call.

a. Utilize appropriate map(s).

1. Operation and capabilities of the moving-map system.
2. Location and order of back-up maps.

b. Equipment considerations and set-up.

Have a predetermined plan as to which equipment will be initially used for a specific call.

Have FLIR ready to go.

Know where FLIR and light are pointing (slaved).

1. Advise enroute to the call.
2. Advise pilot of updates, as needed.
3. Obtain additional information, if necessary.

c. Advise units of your observations even if you see nothing unusual; update as necessary.

d. Direct units and utilize your resources appropriately and efficiently.

1. Set perimeters.
2. Direct search teams.
3. Set up a systematic search pattern.
 - a. Last known position of the suspect.
 - b. Direction of travel.
 - c. Probable escape route of suspect (path of least resistance).
 - d. Any known destination for suspect.

e. Clearing the call.

1. Advise ground units or supervisors when you have searched all reasonable areas.

2. Advise ground units if you receive a higher priority call and that you will be leaving.
3. Clearing for fuel.
 - a. Give ground units at least 15 minutes notice.
 - b. Arrange for a relief helicopter if requested.

1.8 ASSISTING OUTSIDE AGENCIES

- .1 ASB crews are often requested to provide support to outside agencies. Tactical Flight Officers will demonstrate their knowledge and sound judgment regarding response. Tactical Flight Officers should listen for differing radio procedures and should attempt to adapt to them.
 - a. Calls of countywide concern, Mutual Aids.
 - b. Assistance or relief for neighboring Air Support units.
 - c. C.H.P.
 1. Purple frequency for Santa Ana area.
 2. Gray frequency for Westminster area
 3. Green frequency for San Juan Capistrano area.
 4. When calling, use “Santa Ana Dispatch” for all areas.
 - d. Fire Radio (FM 2)
 1. Common Fire frequencies.
 - a. Zone 4 OCFA/Common fire
 - b. Zone 9 Lifeguards (Aqua)
 - c. Zone 12 Air Call, Yellow 1-8, Y-TAC Channels
 - d. Zone 13 Sheriff Harbor / Airport
 - e. C.L.E.M.A.R.S.

1.9 CREW RESOURCE MANAGEMENT

- .1 **CRM** is essential in our demanding cockpit environment. As the complexity of the mission increases, the need for open two-way communications between pilot and Tactical Flight Officer increases. As we increasingly add hi-tech equipment to our mission, the levels of efficiency and complexity also increase. Above all, the key is maintaining an open line of verbal communication.
- .2 Ensuring the safety of the flight crew is at the center of good **CRM**.
- .3 Flight safety, maintenance and tactical issues need to be openly shared
- .4 Tactical Flight Officers are part of the **CRM** equation. They should help the pilot when needed and be alert for any safety issues. Tactical Flight Officers will keep an open line of communication in the cockpit to ensure a safe working environment.

1.10 PATROL PATTERNS

- .1 The Tactical Flight Officer should understand that the pilot will maintain a random patrol pattern at a constant speed and altitude. He will try to avoid patterns, where noise over certain areas becomes constant. Although we frequent high activity areas the Tactical Flight Officer should understand that the pilot will:
 - a. Adjust altitude and airspeed as needed.
 - b. Consider loiter time.
 - c. Consider priority of call.

1.11 OBSTACLES AND LOCAL HAZARDS

- .1 Tactical Flight Officers should assist the pilot by identifying hazards and obstacles.

1.12 RADIO MANAGEMENT

- .1 Enroute, consider what radio set up you may need. Deputies, at the scene of a call, may request you to communicate on a Y-TAC or TALK AROUND (T.A.) Channel as a secondary means of communication.

1.13 ETS / LOJACK

- .1 A quick response followed by a slow methodical search is typical for LoJack and ETS searches. As the Tactical Flight Officer, considerations should include:
 - a. Obtain pertinent information relating to the suspect and or vehicle.
 - b. Advise communications of aircrafts location and strength of signal.
 - c. Avoiding fixation on the ETS / LoJack receiver.
 - d. Working as a team, employing good Crew Resource Management (CRM).

1.14 PURSUIT TACTICS

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

1.15 SURVEILLANCES

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

1.16 FIRES

- .1 Structure or wildland fires can vary in complexity for the Pilot and Tactical Flight Officer. Depending on the severity of the incident, multiple frequencies might be required and additional coordination in the air and on the ground may be needed. The crew needs to prepare for the possibility of the incident becoming more complex and have a plan to safely coordinate activities.
- .2 On severe fires, firefighting personnel may need to take a flight for aerial assessment and coordination. The Tactical Flight Officer may or may not be aboard during these flights. In either instance, the mission should be well-defined, radio frequencies preset and a thorough passenger safety briefing completed.

- .3 The Tactical Flight Officer should assist the pilot during off site landings by clearing the tail and other duties as requested by the Pilot. The Tactical Flight Officer should immediately provide security after the aircraft lands.

1.17 EMERGENCY / TEMPORARY LZ'S

- .1 Landing at a location other than an FAA approved helipad may occur with some pre-planning, or may occur on a moment's notice (usually termed "scheduled" or "non-scheduled" landings). The pilot is the ultimate authority as to the decision to land off-site, and should not be influenced by the severity or nature of an incident. Extreme caution should be exercised. The Tactical Flight Officer can assist with the following.
 - a. Radio coordination.
 - b. Ground coordination as requested by the Pilot.
 - c. Advise the Pilot of unseen obstacles – GOOD RECON
 - d. Ensure safe zone around tail.
 - e. Tactical Flight Officer should be the first one out and last one in to enhance area safety.

1.18 SCHOOL LANDINGS

- .1 Landing at or within 1,000 feet of a school (grades K through 12) requires CALTRANS approval. Selected ASB crewmembers have been trained as designees to survey landing sites to facilitate these permits.

1.19 MOUNTAIN FLYING

- .1 Mountain flying at night, challenges the pilot as terrain, weather, and lighting tend to change from one extreme to another in relatively short periods. Listed below are safety related concerns for the Tactical Flight Officer:

- a. Dim map, FLIR screen, and lights. This helps to adjust your eyes to the terrain. Refrain from any changes without first advising the Pilot and receiving his approval.
- b. Caution for obstacles. Towers and power lines are hard to see.
- c. Survival gear. Consider assembling a personal survival kit and carrying it with you at all times.

1.20 WEATHER

- .1 ASB pilots are responsible for the safe operation of the aircraft and will follow the procedures outlined in the ASB Policy Manual.
- .2 Tactical Flight Officers should be familiar with local weather patterns. Rapidly changing weather conditions, particularly at night, can cause the weather to change from VMC to IMC in a matter of minutes.
- .3 Use rotor blade tie-downs as necessary; Consider using tie-downs while helicopter is parked outside overnight during windy or forecast windy conditions.
- .4 Rain considerations include:
 - a. Ceiling and visibility limitations.
 - b. Calls for service.
 - c. Severity of calls during call-outs vs. inclement conditions.
 - d. Degraded performance of FLIR and Night sun.
 - e. Pilot will make the final decision on go or no during adverse weather.

1.21 INADVERTENT METEOROLOGICAL CONDITIONS (IMC)

- .1 Pilots usually encounter Spatial Disorientation almost immediately after entering IMC. The Tactical Flight Officer can be of assistance in helping the pilot maintain situational awareness and sharing the workload.

See ASB Policy and Procedure Manual section VII for the ASB's IIMC Procedure.

1.22 OVER WATER OPERATIONS

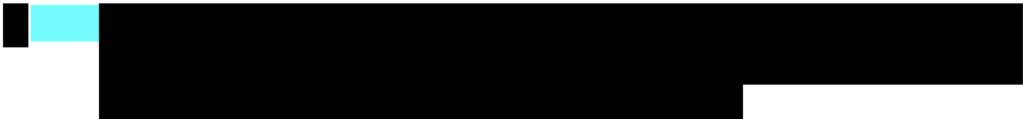
- .1 Over-water operations will be conducted in accordance with the ASB Policy and Procedures Manual.
- .2 Wear a personal flotation device when planning to work a call over water, and the call is beyond autorotation glide distance.
- .3 Normal or routine flight operations should not be conducted beyond normal autorotation glide distance to dry land.
- .4 Other considerations when handling calls over water:
 - a. Life threatening incidents
 - b. How can the helicopter be most effective, yet limit the exposure and danger to the aircrew.
 - c. Crew capability's
 - d. Review ditching procedures with pilot.
 - e. Current weather conditions and forecasts. Is the weather deteriorating?
 - f. CRM during flight. Communication is essential.

1.23 BIRD STRIKES

- .1 Bird strikes occur during daylight and nighttime hours.
- .2 The use of helmet safety visors may help protect the aircrew during these circumstances

1.24 SWAT HELICOPTER OPERATIONS





1.25 DIVE TEAM HELICOPTER OPERATIONS

- .1 Dive Team members may utilize the helicopter when the situation indicates resources will assist or increase safety.
- .2 Dive Team members utilizing ASB aircraft during a tactical assignment or training exercise shall adhere to the procedures set forth in this manual.
- .3 Pilots, Tactical Flight Officers and Dive Team personnel should participate in Dive Training in order to deploy from the helicopter in an actual Dive Team mission effectively.

1.26 K-9 HELICOPTER OPERATIONS

- .1 K-9 Deputies and their K-9s may utilize the helicopter when the situation indicates that resources will assist or increase safety, or it is otherwise tactically advantageous to deploy K-9 members with a helicopter.
- .2 K-9 Deputies utilizing ASB aircraft during a tactical assignment or training exercise shall adhere to the procedures set forth in this manual.
- .3 K-9 Deputies and their K-9s will participate in periodic training and orientation flights in the helicopter.
- .4 During normal K-9 operations the Tactical Flight Officer will be on board the aircraft and assist the pilot as necessary.

1.27 BAMBI BUCKET OPERATIONS

- .1 Refer to the ASB External Load Manual.

1.28 NIGHT VISION (NVG) OPERATIONS

- .1 Refer to ASB Night Vision Goggle Operation Manual.

1.29 TACTICAL FLIGHT OFFICER CHECK FLIGHT

- .1 Upon completion of training, the ASB Chief Tactical Flight Officer will administer a check flight to the Tactical Flight Officer trainee to assure competency as a crewmember.
- .2 Tactical Flight Officer Training will be documented on the ASB TFO Trainee Checklist located on the next 2 pages.



ASB TFO Trainee Checklist



SECTION	TOPIC	INSTRUCTOR	TRAINEE	REVIEW DATE
1.0	ASB TFO Training			
1.1	Airport Entry & Security			
1.2	Shift Hours			
1.3	Preflight Duties & Equipment			
1.4	ASB Log Program			
1.5	Personal Equipment			
1.6	Avionics			
1.7	Helicopter Flight Ops			
1.8	Assisting Outside Agencies			
1.9	Crew Resource Management			
1.10	Patrol Patterns			
1.11	Obstacles & Local Hazards			
1.12	Radio Management			
1.13	ETS / LOJACK			
1.14	Pursuit Tactics			
1.15	Surveillances			
1.16	Fires			
1.17	Emergency / Temporary LZ's			
1.18	School Landings			
1.19	Mountain Flying			
1.20	Weather			
1.21	IIMC			
1.22	Over Water Ops			

1.23	Bird Strikes			
1.24	SWAT Helicopter Ops			
1.25	Dive Team Helicopter Ops			
1.26	K-9 Helicopter Ops			
1.27	Bambi Bucket Operations			
1.28	NVG Operations			
1.29	TFO Check Flight			