COUNTERDRUG (CD) TACTICS C-26B AND UC-26C AIRCRAFT

This manual interfaces with AFPD 10-11, Operations Security, and implements tactics for the National Guard Bureau's Counterdrug (CD) C-26B and UC-26C aircraft. The Air National Guard C-26 CD mission operates in a dynamic environment. Accomplishing the mission requires flexibility, adaptability and situational awareness (SA). Tactics presented in this manual are intended to aid in training of new aircrews and to document procedures in use by operational units.

Tactical considerations in this manual are guidance only. They are not directive. Nothing in this manual should be interpreted in such a way as to limit or prohibit air crews from reacting to mission changes, developing new techniques, or making decisions necessary to accomplish the mission in a safe, effective manner. This manual will be reviewed annually and updated accordingly.

Recommended changes or suggestions should be addressed to Lt Cols Russ Erler or P.J. Rowen at NGB-CDO-A, DSN 278-8349/8360, 301-836-8349/8360, email rerler@angrc.ang.af.mil or prowen@angrc.ang.af.mil, fax DSN 278-8242, 301-836-8242.

In this manual, the acronym for infrared and the Northrup Grumman WF360-TL will be IR, referred to as Forward Looking IR (FLIR) and/or IR Detection Set (IRDS) in other literature.

In this manual, Law Enforcement Agent (LEA) provided coordinates will be referred to as targets.

1. Abbreviations and Acronyms. See attachment 1.

2. CD Mission General:

2.1. Commercially available computer programs can be used to determine target coordinates.
2.2. Do not use addresses. Convert addresses to target coordinates. Do not maintain addresses or suspect names.
2.3. Altitudes:
2.3.1. For CD operations over open ocean or isolated objects in international airspace, use a minimum altitude of 500 feet above sea level (ASL) and 500 feet from the controlling object.
2.3.2. Minimum acceptable altitude for CD operations in United States airspace is 1000 feet above ground level (AGL).
2.3.3. Crew should set altitude alerter to operating altitude or 1,500 feet.
2.4. Crews should develop multiple window (canopy) codes to facilitate coordination between Mission Sensor Operator (MSO) and pilots for positioning the IR/TV line of sight (LOS).
2.5. Crews are encouraged to perform an Instrument Flight Rules (IFR) low approach at an airport in the vicinity of a target to assess actual ceiling/cloud cover. The approach should not be to a landing but will be used to descend IFR below cloud cover, with the intention of continuing the mission either IFR or Visual Flight Rules (VFR) to the target. Unless the Minimum Descent Altitude or Decision Height for the approach in use occur above 1,500 feet AGL, if the ceiling and visibility are unacceptable at 1,500 feet AGL or DH/MDA (whichever occurs first), a missed approach should be executed.
2.6. Solicit pre-mission, real time, and post-mission feedback to evaluate tactical employment of the aircraft.
2.7. The communications net is the weakest link in the CD mission. Plan accordingly.
2.8. Flitefone is available as a backup to dedicated aircraft radio frequency communications.

3. Communications Security (COMSEC):

3.1. All radio frequency communications are subject to monitoring and intercept.

3.2. For Air Traffic Control communications, consider discrete UHF frequencies. Monitor appropriate VHF frequencies.
3.3. If Flitefone is used, recommend privacy mode use.

4. LEA Interface:
4.1. Development of unit SOP/checklist for LEA coordination is encouraged.
4.2. If LEA coordinates are not Global Positioning System (GPS) derived, they are questionable.
4.3. LEA provided coordinates may be in Universal Transverse Mercator (UTM) grid coordinates which can be converted to lat/long format, if preferred. UTM coordinates can be entered directly into Situational Awareness Display (SAD) computer.
4.4. LEA provided coordinates should be confirmed as degrees and seconds or hundredths. Hand-receipted portable GPS units to the LEA will confirm target coordinates format.
4.5. Target area coordinates should be confirmed with the LEA before any mission when the LEA may not be aboard.
4.6. Preferred CD mission mode would be to have the LEA direct mission to targets.
4.7. LEA may provide ground reference point, day or night, for range and bearing to targets.
4.8. If LEA provided coordinates are offset from actual targets, attempt to obtain a description of the area of interest, range and bearing estimates, or have the LEA on board to confirm the area of interest. Coordinate with LEA about making a photo pass axis along the known bearing if range is uncertain or not available. An alternative for LEA offset coordinates would be to shoot wide area coverage photos first as a reference for determination of actual target coordinates.
4.9. Discussion with LEA should include foliage, physical cover, and any aviation visual reference points in vicinity of targets.
4.10. LEA Communications. Coordination with LEA communications personnel is vital to positively identify mission frequencies. Field LEA may not know operating frequencies. Ensure LEAs bring appropriately sized hand held 800 MHz radio to fit our converter and/or spare batteries for their hand held units.

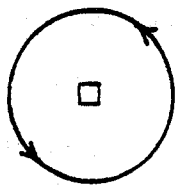
5. Preflight:
5.1. Situational customer relationship should be included as part of the preflight briefing. As the customer, LEA always has ability to call "Knock it off" during any mission.
5.2. Any crew member has the prerogative to make a decision concerning participation in consecutive night missions. Units are encouraged to provide guidance in Operating Instructions (OI)/Standard Operating Procedures (SOP).
5.3. The effects of moon illumination upon night mission must be considered both for backlighting our aircraft and when Night Vision Devices are employed.
5.4. Night missions targeted for indoor marijuana grows require the longest cool down period. Recommend 1 hour prior to daybreak for maximum effective IR.
5.5. Mountainous terrain may require a daylight overflight to visually establish borders and hazards prior to night operations.
5.6. Map-only derived boundaries should be 5 nautical miles laterally from the highest obstruction or obstacle.
5.7. If registering scanned-in maps, obtain at least two sets of accurate registration coordinates for each map segment via hand held GPS or computerized map software.
5.8. Tactical deception should be considered during mission planning, e.g. uniforms, call signs, minimized radio communications (EMCON), or pod story.
5.9. Camera configuration should be appropriate for the mission. Reference the unit inflight guide for appropriate camera setup and settings.
5.10. Use of the aircraft intrusion system is recommended whenever the aircraft is left unattended
5.11. Recommend velcroing the connected trackball in an accessible position as a fallback cursor controller.

6. Photo Missions:
6.1. Film is the least expensive consumable.
6.2. Generally, run both cameras and process both rolls.

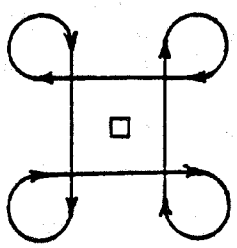
6.3. If possible, leave power off or minimize camera in the standby position unless necessary for environmental considerations/control. Placing the camera in standby will keep both magazine motors running and produce continuous wear over extended periods.
6.4. LEA input, target cultural environment, airspace, weather, lens selection, sun angle and location of airways help determine single vs multiple passes.
6.5. For a single point photo, recommend an activated steerpoint.
6.6. A route may be used for multiple photo points in a single pass or to build mosaics. Tracks, marks, or steerpoints may be used to plot multiple targets and routes drawn through them.
6.7. Routes should extend 4 miles prior to and at least 1 mile past camera activation points. For additional situational awareness (SA), an inactive steerpoint may be placed at photo targets. As an alternative, consider creating a route equidistant from photo targets so a camera run can be made on a reciprocal heading.
6.8. If possible, try two axes 90 degrees apart for each set of targets.
6.9. Always photograph the target coordinates. If a description of the area of interest at target coordinates is available, take another picture of the possible area of interest.
6.10. Recommend 56 percent overlap for all photography.
6.11. For large number of targets, prioritize them with LEAs.
6.12. For single camera/lens runs, consider different altitudes along axes of photography.
6.13. Crew coordination requires development of unit standard terminology.
6.14. MSO should make positive call for pilots to follow steering from the SAD on the Control Display Unit (CDU) or to select video on the CDU.
6.15. MSO should make call to pilots prior to camera on.
6.16. Any crew member should make a SA "Camera door open" and "1/2 mile prior" call.
6.17. MSO should make a positive "Camera on/off" call.
6.18. As a backup, pilots should note altitude, heading, and ground speed for photo log.
6.19. Inertial Navigation System drift information is currently more accurate than Flight Management System GPS drift information.
6.20. The 0-25-50 percent cloud cover setting should be 0 percent unless a different f-stop is desired due to ambient light conditions.
6.21. During low sun angle photography, recommend using 50 percent setting.
6.22. Clearing shots, with 50 percent cloud cover selected, camera door closed, or other diversion may be used to positively separate photo runs. If camera door closed method is used, crew should ensure a SA door open call is made prior to subsequent camera runs.
6.23. Video tape recording (VTR) and/or captured images can be used in conjunction with photo runs.
6.24. Consider reviewing/recording and narration of captured images on SAD VTR to enhance the mission package for LEA review.

7. Surveillance Missions:
7.1. Acquisition of targets:
7.1.1. Aircraft should be slowed and configured (recommend 1/2 flaps) 5 to 10 miles prior and offset approximately .8 miles from the targets to establish an orbit.
7.1.2. For visual acquisition prior to IR, pilots should use azimuth and elevation (canopy codes) to initially direct MSO control of IR/TV. Once a point is identified in pilots CDU, pilots should use up/down and left/right directions to identify targets to MSO.
7.1.3. If the pilot visually acquires the target, another alternative is to position the IR/TV LOS to a given azimuth and elevation and maneuver the aircraft to position the target at the same azimuth and elevation.
7.1.3.1. When target enters the field of view (FOV), MSO can create a mark/track or "move to LOS".
7.1.4. Recommend VTRs record from time of LEA request and/or positive identification of the target until departing the target area or LEA apprehension of suspects. Recording of audio should be determined by LEA. Crew should be aware of the context of their recorded observations.
7.2. Point surveillance of a stationary object:
7.2.1. Any maneuver may be offset to account for vertical obstruction of the IR view.
7.2.2. Altitudes may vary during structure analysis (heat detection). Optimum IR analysis is achieved at slant range of 3,000 feet.

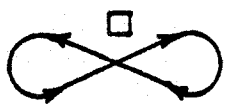
7.2.2.1. One common maneuver is the Orbit technique, a 35 degree bank, 1/2 ball skid, at medium altitude. Angle of bank should be modified for wind. Avoid maneuvering the aircraft wing which can continuously block the target from sensor view. Change altitude to break the wing block pivot spiral.



7.2.2.2. The Cloverleaf maneuver may be used for sensitive tracks. This method is appropriate for photo and IR maneuvering. Vary ranges and time of approach. Vary aircraft lighting patterns.

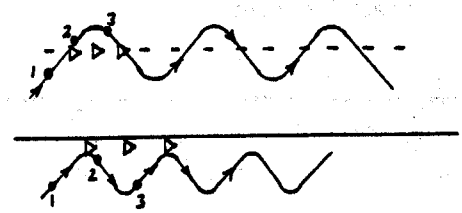


7.2.2.3. The Figure Eight may be used when a close approach is required or when terrain prevents a standard orbit.

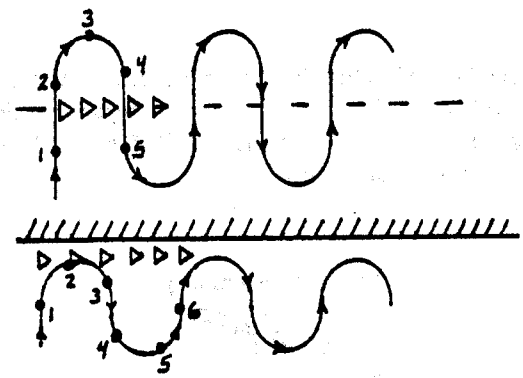


7.3. Moving target surveillance:
7.3.1. Flexibility (altitude, orientation, tactical deception, aspect of the moving target relative to the nose of the aircraft) is the key to all maneuvers for surveilling moving targets.
7.3.2. An appropriate starting IR or visual surveillance maneuver for moving targets is the Daisy Chain described below in 7.3.4.4. Other maneuvers may provide more covert surveillance/observation.
7.3.3. Nighttime, urban environment, an LEA ground support team, and higher surveillance altitudes make maintaining contact easier.
7.3.4. Positive identification of the ground target should be accomplished initially and periodically between pilot, MSO, and/or supporting ground units using ground references and other vehicles. The flying pilot should attempt to maintain eyes on target for supplemental crew information such as turn signals, brake lights, traffic signals, etc. Crew should coordinate which position has the primary eyes on target. The pilot not flying (PNF) should maintain SA (airspace, airspeed, altitude, radio calls, terrain, towers, traffic) during the changing tactical environment associated with surveillance of a moving target.

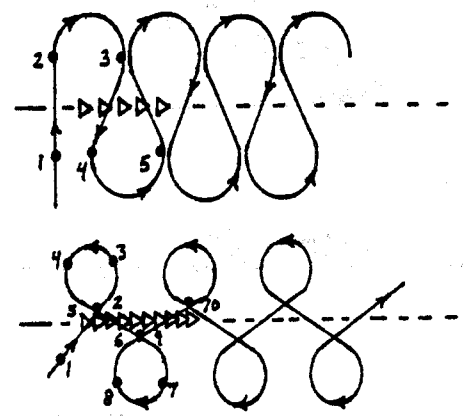
7.3.4.1. The Sawtooth and Border Sawtooth are appropriate for fast moving targets. The maneuver can be expanded to match target speed or compressed to the Standard S described in 7.3.4.2.



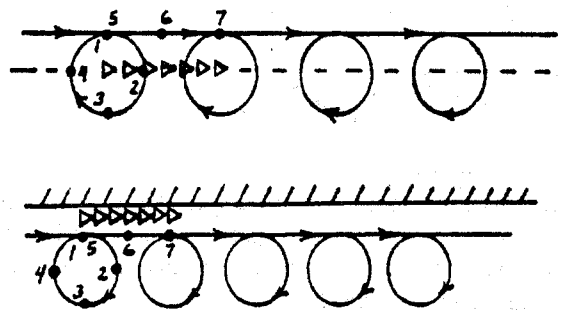
7.3.4.2. The Standard S and Border S can be used for average speed targets. The "S" may be expanded or compressed to accommodate target speed. The Border S expands to a Sawtooth or compresses to a Bowtie (described in 7.3.4.3. below) with the border at one side of the maneuver. Transition to a Daisy Chain (described in 7.3.4.4. below) should be made if target reduces speed.



7.3.4.3. The Bowtie can be used for slow moving targets. For very slow moving targets, revert to the Reverse Bowtie. Daisy Chain (described in 7.3.4.4. below) is recommended for slow movers along the border.

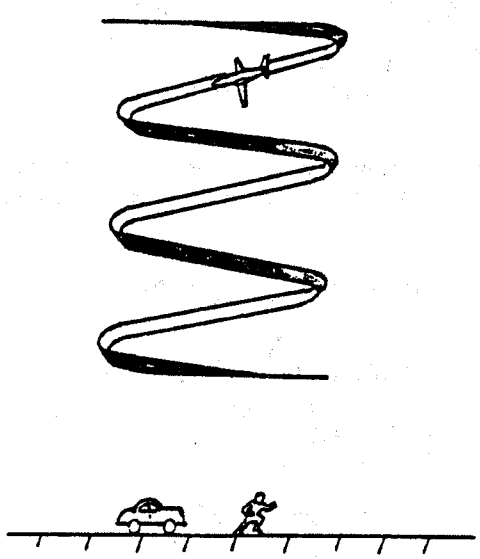


7.3.4.4. The Daisy Chain is recommended for slow moving targets and stop-and-go traffic situations. Also used for daylight visual contact tracking. Adjust bank angle during turn toward target to maintain visual contact without crossing too far ahead of target. Avoid placing shadow on target. Border maneuver turns along a border should be away from the border. Avoid wing block on backside of turn.



7.4. Surveillance transition maneuver:

7.4.1. The Corkscrew maneuver can be used to transition from higher to lower altitudes in a time critical situation. An example would be during a surveillance mission when personnel depart a vehicle or structure. Use gear down, 1/2 flaps, speeds high if necessary. Due to high descent rates, the PNF should be alert for altitude SA calls and at 1,500 feet AGL to ensure minimum altitude compliance.



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1 Attachment
Abbreviations and Acronyms

Attachment 1

ABBREVIATIONS AND ACRONYMS

Abbreviations/Acronyms

AGL	Above Ground Level
ASL	Above Sea Level
CD	Counterdrug
CDU	Control Display Unit
COMSEC	Communications Security
DH	Decision Height
EMCON	Minimized radio Communications
FLIR	Forward Looking Infra Red
FOV	Field of View
GPS	Global Positioning System
IR	Infra Red
IRDS	Infra Red Detection Set
IFR	Instrument Flight Rules
LEA	Law Enforcement Agency
LOS	Line of Sight
MDA	Minimum Descent Altitude
MSO	Mission Sensor Operator
OI	Operating Instructions
PNF	Pilot Not Flying
UHF	Ultra High Frequency
VHF	Very High Frequency
VFR	Visual Flight Rules
VTR	Video Tape Recording
SA	Situational Awareness
SAD	Situational Awareness Display
SOP	Standard Operating Procedure
UTM	Universal Transverse Mercator