AIR FORCE AUXILIARY

CIVIL AIR PATROL

CAPABILITIES HANDBOOK

A FIELD OPERATIONS RESOURCE GUIDE

Revision 2
1 August 2010

INTRODUCTION

The Civil Air Patrol (CAP) is a national community service organization made up of over 31,000 professionally trained volunteers. CAP represents a locally-available talent and asset pool for municipal, state and federal government entities to utilize as a cost-effective aerial and ground support resource.

We are proud to present this latest edition of our CAPabilities Handbook, a field operations guide that local, state and federal agencies can utilize to task CAP for incident response assistance.

This guide identifies ways in which CAP can assist you and your agency in both routine operations as well as local and national emergency and humanitarian missions.

Please let your CAP point of contact know if there is any additional information we can provide to help better show how CAP can meet your operational requirements.

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OVERVIEW

- The Civil Air Patrol (CAP) is a **Congressionally-chartered volunteer community service organization** which, when performing missions for any agency of the Federal government, is deemed to be an **auxiliary of the United States Air Force**.
- CAP can assist state and local governments in performing various missions. In an Air Force auxiliary status, CAP can support federal agencies to include assistance to state and local governments requested by a Lead Federal Agency (LFA) if the mission approval authority determines there is a federal interest in the state or local government request
- The Posse Comitatus Act generally applies to CAP. USAF assigned missions are flown under military command and control, usually at the operational level, under authority of the Air Component Commander (ACC).
- Types of missions CAP can perform:
  - **Airborne reconnaissance** of border and coastal areas, ports and harbors, and critical infrastructure as "presence" missions; damage assessment and recovery support for disaster areas.
  - **Aerial transportation** of personnel, equipment, blood, tissue, organs and various customer-supplied sensor packages (subject to FAA reimbursement rules).
  - **Communications support:** VHF-FM and HF capability and aerial communications relay platforms.
  - **Augment Incident Command staff:** CAP has ICS/NIMS trained emergency services personnel available to serve at all levels in the Incident Command System mission organization from incident commanders down to primary responders.
  - **Damage assessment and disaster recovery** with trained ground teams able to augment civil and military authorities.

CAPABILITY

- **Aerial imaging** with ability to quickly transmit geo-referenced still-frame digital photos. Have ability to contact aircraft to re-task or request different photo orientation.
- **Light air transport** capability for human blood, tissue or organs, equipment, passengers, or search dog teams to austere or remote airfields (subject to FAA reimbursement rules).
- **Fleet of over 900 ground vehicles** for use by ground search and rescue teams or for transportation.
- **Extensive communications network** includes over 11,000 fixed-land, mobile and portable VHF-FM radios, as well as a nationwide HF network. Possess interoperable ground and airborne communications platforms for use during major man-made, natural, or technological disasters. *
- **Cadre of 550+ Chaplains** available for weekly religious services or general support.
- **Emergency airlift** availability between specific locations over time (specialized, customer-specific "air shuttle").
- Can assist in **crisis / consequence management**.
- Able to perform **aerial reconnaissance** of critical infrastructure such as power plants, gas pipelines, and reservoirs.
- **Geo-referenced hyperspectral and panchromatic imagery for** sophisticated target detection and high resolution imagery.
- Trained **Critical Incident Stress Management (CISM) personnel** available with prior notice. *
- **Extremely cost-effective mission support, often at a fraction of the cost** of other agencies.

* *Check with your CAP representative for local availability.*

AVAILABILITY

- Over 31,000 emergency services qualified personnel and a fleet of 550 aircraft nationwide (including Alaska, Hawaii and Puerto Rico) available for tasking, generally with a 2-hour response time.

- With sufficient advanced coordination, CAP crews can be put on alert status to allow a very quick response by ground and air assets.

- For non-immediate routine support, plan ahead and make requests several days in advance (one week preferable) to ensure enough time to approve request through the normal ATO (Air Tasking Order) process.

- Willing and able to work under a Lead Federal Agency (LFA). In the past, CAP has worked with agencies such as the Federal Emergency Management Agency (FEMA), the Department of Homeland Security (DHS), the Drug Enforcement Agency (DEA), Immigration and Customs Enforcement (ICE), Customs and Border Protection (CBP), the Transportation Security Administration (TSA), the U.S. Forest Service (USFS), the Department of Natural Resources (DNR) as well as numerous state and local emergency management and law enforcement agencies.

- Volunteers are available for multi-day missions (with crew / team rotation), even those that stretch into weeks or months.

- Availability of specialized assets may be limited in some locations and might require more than a few hours notification. *

* *Check with your CAP representative for local availability.*

ASSETS

- 550 light civil aircraft, including Cessna C-172, C-182 and C-206 models, as well 16 Gippsland GA-8 eight seat aircraft, strategically placed throughout the nation.
- Over 900 7, 11, & 12 passenger vans, 4X4s, and long-bed pickups.
- Dedicated communications vehicles with limited all-band capability and public service band interoperability. *
- A nationwide radio communications system comprised of over 23,000 CAP-owned base, mobile, and portable two-way radios.
- National & regional HF radio networks providing survivable, infrastructure-independent command and control communications (not dependent on satellite/cellular telephone systems).
- Over 500 VHF-FM radio repeater stations located strategically throughout the country.
- 133 transportable VHF-FM suitcase radio repeaters. Units operate on CAP radio frequencies, and can be used either on the ground or from aircraft to support remote operations. *
- 4 transportable UHF suitcase repeaters. Operating on federal interagency frequencies, they can be used either on the ground or from aircraft to support remote operations.
- 100+ Advanced Digital Imagery Systems (ADIS) used to transmit aerial and ground-based geo-referenced still-frame digital pictures in near real time. Can also communicate directly with our aircraft from almost anywhere. *
- 1,600 airborne, mobile, and hand-held DF units.
- 15 geo-referenced hyperspectral and panchromatic imagery systems for sophisticated target detection and high resolution imagery.

* *Check with CAP for local system and satellite availability.*

COMMUNICATIONS

- The nationwide CAP communications system has deployed assets in all 50 states, the District of Columbia and Puerto Rico.
- Over 11,500 VHF-FM base, mobile and portable radios.
- Over 11,200 UHF intra-squad (ISR) portable radios.
- Over 1,200 next generation HF/ALE long-range base, mobile and 166 Rapid Deployment Packaged (RDP) stations.
- 133 airborne/transportable VHF FM suitcase radio repeaters. Units operate on CAP radio frequencies, and can be used on the ground to support remote operations or from the air to provide wide area coverage. *
- 4 transportable UHF suitcase repeaters. Operating on federal interagency frequencies, they can be used either on the ground or from aircraft to support remote operations.
- Over 500 VHF-FM radio repeater stations located strategically in all 50 states, the District of Columbia and Puerto Rico providing essentially seamless airborne local coverage.
- 100+ airborne satellite telephone systems usable for either voice communications or digital data transmission. *
- Dedicated communications vehicles with limited all-band capability and public service band interoperability. *
- 1,600 airborne, mobile, and hand-held Direction Finder (DF) units, capable of receiving aviation, marine or personal distress beacons on 121.5, 243, and 406 MHz.
- CAP National Technology Center in Richmond, VA provides depot-level radio equipment maintenance and stores emergency response radio kits for delivery to mission sites.

* *Check with CAP for local system and satellite availability.*

PERSONNEL

- Over 31,000 NIMS compliant emergency services qualified personnel nationwide.
- Over 6,700 qualified mission aircrew members.
- Over 2,500 members have been federally screened for Drug Enforcement Agency (DEA), U.S. Forest Service (USFS), and Customs and Border Patrol (CBP) missions.
- All adults are fingerprinted and screened by the FBI before they are allowed to become members.
- A limited number of personnel have Department of Defense (DoD) Secret and Top Secret clearances or other Federal agency clearances. Additional members can be cleared as needed for long-term missions.
- Over 4,300 mission-qualified ground team members serving on search teams; many are credentialed First Responder, Emergency Medical Technicians (EMT). *
- Over 25,000 trained communicators, many also hold advanced Amateur Radio licenses.
- Over 500 ICS-qualified Incident Commanders, and thousands of command and general staff personnel.
- Trained Critical Incident Stress Management (CISM) personnel available with sufficient advance notice. *

* *Check with your CAP representative for local availability.*

MISSION REQUEST CONTACTS

- **For Search And Rescue (SAR) / Life-Saving Missions**
  (Including emergency blood, organ & tissue transport):

  AIR FORCE RESCUE COORDINATION CENTER (AFRCC)

  - MANNED 24/7/365
  - TOLL FREE NUMBER: (800) 851-3051
  - COMMERCIAL NUMBER: (850) 283-5955
  - MILITARY DSN NUMBER: 523-5955

- **For All Other Mission Requests**
  (Includes immediate response missions to prevent human suffering or to mitigate great property damage as well as "routine" missions):

  CAP NATIONAL OPERATIONS CENTER (CAP-NOC)

  - MANNED 24/7/365
  - TOLL FREE NUMBER: (888) 211-1812, Ext 300
  - COMMERCIAL NUMBER: (334) 953-5000, Ext 300
  - MILITARY DSN NUMBER: 493-3922, Ext 300
  - E-MAIL: OPSCENTER@CAPNHQ.GOV

- **If CAP-NOC Not Reachable**
  (For CONUS and PR immediate response missions only):

  AFNORTH CAP LIAISON OFFICER (CAPLNO)

  - MANNED NORMAL DUTY HOURS ONLY
  - TOLL FREE NUMBER: (800) 896-8806 (Tyndall AFB Operator)
  - COMMERCIAL NUMBER: (850) 283-5880
  - MILITARY DSN NUMBER: 523-5880

  CAOC SENIOR OPERATIONS DUTY OFFICER (SODO)

  - MANNED 24/7/365
  - TOLL FREE NUMBER: (800) 896-8806 (Tyndall AFB Operator)
  - COMMERCIAL NUMBER: (850) 283-5573
  - MILITARY DSN NUMBER: 523-5573

COST

- Typically $120 - $160 per hour of flight time, depending on aircraft used.

- Specialized sensors such as Advanced Digital Imagery System (ADIS) or Airborne Real-Time Cueing Hyperspectral Enhanced Reconnaissance imaging system (ARCHER) incur additional cost. Contact CAP National Operations Center (CAP-NOC) for more information.

- Reimbursement of lodging / meal expenses usually required for volunteers deploying for multi-day / multi-location missions.

- For Air Force assigned missions (i.e. federal missions), CAP members receive Federal Employees' Compensation Act / Federal Tort Claims Act (FECA / FTCA) benefits. These benefits normally do not apply to missions performed for state or local entities, unless the missions are specifically approved in advance by the Air Force. For missions executed solely for state or local entities, these entities are expected to provide their equivalent of FECA / FTCA benefit coverage for CAP personnel and equipment if allowed by state law.

- Contact the CAP-NOC for more details and information on specific mission types.

LEGAL ISSUES & LEA SUPPORT

- CAP can provide a variety of assistance to LEAs (Law Enforcement Agencies), especially when an LEA is tasked with missions that are not truly enforcement (i.e. SAR).
- CAP can provide limited LEA transportation support (subject to FAA reimbursement rules):
  - CAP may transport LEAs to attend planning meetings and to do aerial surveys in support of mission planning.
  - CAP may not transport prisoners or contraband, though there are some exceptions for contraband as long as the LEA maintains the chain of custody.
  - CAP may not transport LEAs in direct support of an ongoing operational mission.
  - CAP may not transport when hostilities are imminent.
- CAP personnel may make spot reports of suspicious activities to LEAs, but cannot direct LEA activities.
- Posse Comitatus applies for all USAF assigned or approved missions. Although it does not apply to CAP corporate missions, CAP has similar restrictions to protect members.
- CAP personnel cannot be involved in the search, seizure, detention, interrogation, or arrest of people or property.
- CAP can often provide airborne reconnaissance to provide photos of a crime scene or to help LEAs develop future plans.
- CAP can assist with searches for missing persons not believed to be in the custody of criminals.

ADDITIONAL INFORMATION

- Local CAP contacts:
  (For assistance go to: HTTP://CAP.FINDLOCATION.COM/)

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  _____

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- State / Federal contacts:

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- Other contacts:

  _____

  _____

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  _____

AIRCRAFT DESCRIPTIONS
CESSNA 172

- **Performance:**
  - Cruise Speed: 110 knots
  - Range: 520 nautical miles
  - Full Fuel Payload: 525 pounds
  - Passengers: 2 or 3
  - Endurance: 3½ hours (with 1 hour reserve)
  - Service Ceiling: 13,000 feet
- **Special Capabilities:**
  - Communications: VHF-FM Only
  - Navigation: Enroute GPS, VOR
  - Reconnaissance: Direction Finder (all aircraft)
- **Number / Locations:**
  - 201 / Nationwide

AIRCRAFT DESCRIPTIONS
CESSNA 182

- **Performance:**
  - Cruise Speed: 135 knots
  - Range: 630 nautical miles
  - Full Fuel Payload: 650 pounds
  - Passengers: 3
  - Endurance: 4 hours (with 1 hour reserve)
  - Service Ceiling: 15,000 feet

- **Special Capabilities:**
  - Communications: VHF-FM, satellite telephone (≈100 aircraft) *
  - Navigation: Approach GPS, VOR
  - Reconnaissance: Direction Finder (all aircraft)
    Advanced Digital Imagery System (≈100 aircraft) *
    Camera Window (185 aircraft) *

- **Number / Locations:**
  - 286 / Nationwide

* *Check with your CAP representative for local availability.*

AIRCRAFT DESCRIPTIONS

CESSNA 206 *

- **Performance:**
  - Cruise Speed: 145 knots
  - Range: 650 nautical miles
  - Full Fuel Payload: 725 pounds
  - Passengers: 5
  - Endurance: 4½ hours (with 1 hour reserve)
  - Service Ceiling: 15,000 feet

- **Special Capabilities:**
  - Communications: VHF-FM, satellite telephone (≈10 aircraft) *
  - Navigation: Approach GPS, VOR
  - Reconnaissance: Direction Finder (all aircraft)
    Advanced Digital Imagery System (6 aircraft) *
    Camera Window (6 aircraft) *

- **Number / Locations:**
  - 20 / Nationwide

* *Check with your CAP representative for local availability.*

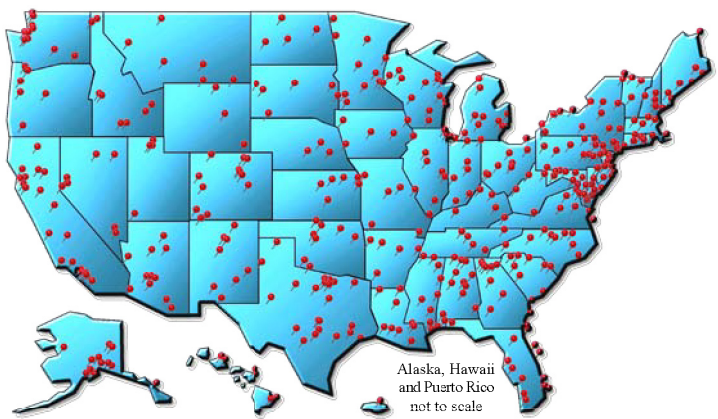
AIRCRAFT DESCRIPTIONS

GIPPSLAND GA-8 *

- **Performance:**
  - Cruise Speed: 120 knots
  - Range: 730 nautical miles
  - Full Fuel Payload: 1,000 pounds
  - Passengers: 7
  - Endurance: 5 hours (with 1 hour reserve)
  - Service Ceiling: 15,000 feet
- **Special Capabilities:**
  - Communications: VHF-FM, satellite telephone (all aircraft)
  - Navigation: Approach GPS, VOR
  - Reconnaissance: Direction Finder (all aircraft)
    Advanced Digital Imagery System (all aircraft)
    Geo-referenced panchromatic and hyperspectral imagery (15 aircraft)
    Camera Window
- **Number / Locations:**
  - 16 / Nationwide

* *Check with your CAP representative for local availability.*

AIRCRAFT LOCATIONS



Approximate locations of home bases of CAP aircraft.

- **NOTE:** Check with your local CAP representative or the CAP National Operations Center (CAP-NOC) to determine local availability of a specific aircraft type desired.

- Aircraft equipped with specialized sensors such as the Advanced Digital Imagery System (ADIS) or the Airborne Real-Time Cueing Hyperspectral Enhanced Reconnaissance (ARCHER) hyperspectral imaging system may not always be locally available. Contact the CAP National Operations Center (CAP-NOC) as soon as your requirements are known, to minimize delay.

SENSOR DESCRIPTIONS

DIRECTION FINDER (DF)

- Designed to locate Emergency Locator Beacons (ELT) on downed aircraft, Emergency Position Indicating Radio Beacons (EPIRB) from ships in distress, or Personal Locator Beacons (PLB) from lost hikers or other outdoorsmen.
- All units can receive emergency signals on 121.5 MHz (civil frequency), and 243 MHz (military frequency), and most airborne units can receive 406 MHz (next generation distress beacon frequency).
- Receiving units indicate approximate bearing and distance directly to the distress beacon.
- In addition to DF units on every CAP aircraft, ground teams can use handheld DF units to pinpoint the location of downed aircraft in the field.
- Urban DF teams can locate false alarms in buildings, marinas, airport parking ramps, etc. to prevent the masking of real distress signals by false transmissions.
- Airborne searches can generally locate a distress signal from as far away as 75-80 miles at altitude.
- Every aircraft currently in CAP has a DF receiver on board. Generally speaking, every CAP squadron has at least one handheld DF unit too.
- Not all local units may have DF equipment capable of receiving the data burst from the new 406 MHz emergency beacons, but all 406 MHz beacons also have a 121.5 MHz transmitter that can be tracked with current equipment. *

* *Check with your CAP representative for local availability.*

SENSOR DESCRIPTIONS

ADVANCED DIGITAL IMAGERY SYSTEM (ADIS)

- Note: Problems with the Globalstar™ satellite constellation coverage are expected to continue through Fall 2010 when new satellites are scheduled to be launched. If satellite coverage and other picture transmission methods are not available, CAP will provide the imagery to the requesting agency ASAP after landing.

- ADIS is point-to-multi-point transmission of aerial and ground geo-referenced digital imagery of variable resolutions using multiple delivery systems.

- Uses off-the-shelf hardware and customized software to produce near real-time delivery of a 150 kb-sized image - about 2 minutes from digital photo to receipt by customer.

- Photo is attached to standard MS Outlook e-mail, allowing for text information to accompany photo - e.g. latitude / longitude coordinates, time stamp, site identification, conditions, and other descriptive text.

- One picture transmission method uses satellite telephones. It allows two-way voice communication and text (e-mail) between aircraft or ground assets and customers to refine or revise target information and requirements.

- The near real-time nature of ADIS images has proven effective in SAR; disaster response and damage assessment; environmental impact damage and facility security reconnaissance, among many other tasks.

- Approximately 100 ADIS units are available nationwide, and are carried in select C-182, C-206, and all GA-8 aircraft.

SENSOR DESCRIPTIONS

AIRBORNE REAL-TIME CUEING HYPERSPECTRAL ENHANCED RECONNAISSANCE (ARCHER)

- Has direct applications for Search and Rescue (SAR), Disaster Relief (DR), Environmental Impact, Critical Infrastructure and Homeland Security (HLS) operations.

- ARCHER is a non-invasive reflected light technology that uses three separate methods for target identification:

  - **Spectral signature matching:** Evaluates reflected light against a library of spectral signatures to identify specifically-targeted objects.

  - **Anomaly detection:** Compares reflected light against a continuously calculated background spectrum. Anomalies are flagged as potential targets for further evaluation.

  - **Change detection:** Executes a pixel-by-pixel comparison of current image against ground conditions that were obtained in a previous mission over the same area. Scene changes are identified and new, moved or departed targets are highlighted for evaluation.

- As a mission is flown, the image is plotted on the airborne monitor in real time. Identified targets are highlighted with circumscribed squares. Target location is recorded with a high degree of accuracy in latitude, longitude, and elevation.

- At any time during the flight, target images and their location information can be transmitted to ground observers using the Advanced Digital Imagery System (ADIS).

- All missions are recorded for later post-flight analysis with the ARCHER ground station.

- ARCHER can also produce very high resolution, open, geo-referenced GEOTIFF data files that agencies can view with their GIS software.

TASKING DECISION TREES

FOR ALL LOCAL, STATE OR FEDERAL AGENCIES

- Requesting CAP support is much simpler than getting assistance from other Department of Defense (DoD) assets. The Tasking Decision Trees on the following pages are designed ***only*** to show the internal CAP workflow when a customer submits a request. This does ***not*** mean a prospective customer must go through all these steps to receive CAP mission support.

- Except for SAR missions, your first call should be to the CAP-NOC. There, a Duty Officer will initiate appropriate steps to determine whether or not a mission can be accepted, and if so, whether it falls under the State / Local or Federal request guidelines.

- The existence of a Memorandum of Understanding (MOU) between the customer and CAP may not affect the workflow from your point of view. However, the existence of an MOU will serve to ***significantly*** expedite the approval process.

- If a requested mission is turned down, the CAP-NOC will inform you as to why we were unable to accept the tasking. They may be able to suggest alternate ways that such a mission could possibly be accomplished by CAP in the future.

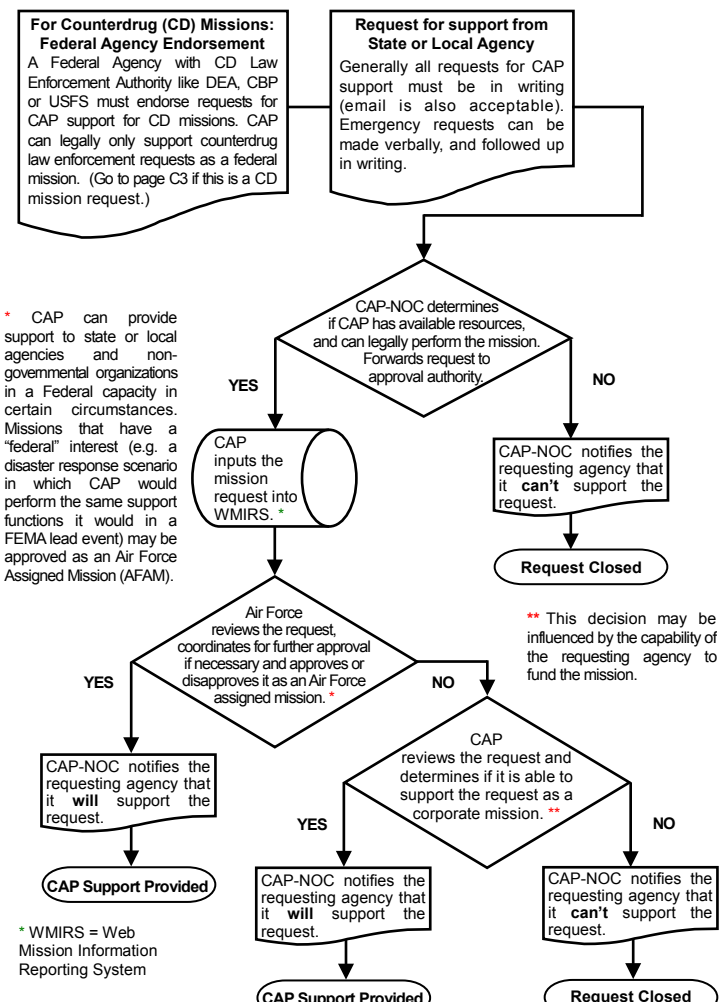
- For contingency or disaster response with a LFA, CAP support is requested through that LFA.

  - State and local agencies may bypass the LFA and the federal request process by going directly to the CAP-NOC. CAP support will be functionally the same ***but your organization will be financially responsible for the mission instead of the LFA***. If response time is critical, this may be the quickest option.

- Please use the point of contact numbers listed on page 7 to request CAP support.

TASKING DECISION TREES

STATE / LOCAL REQUEST



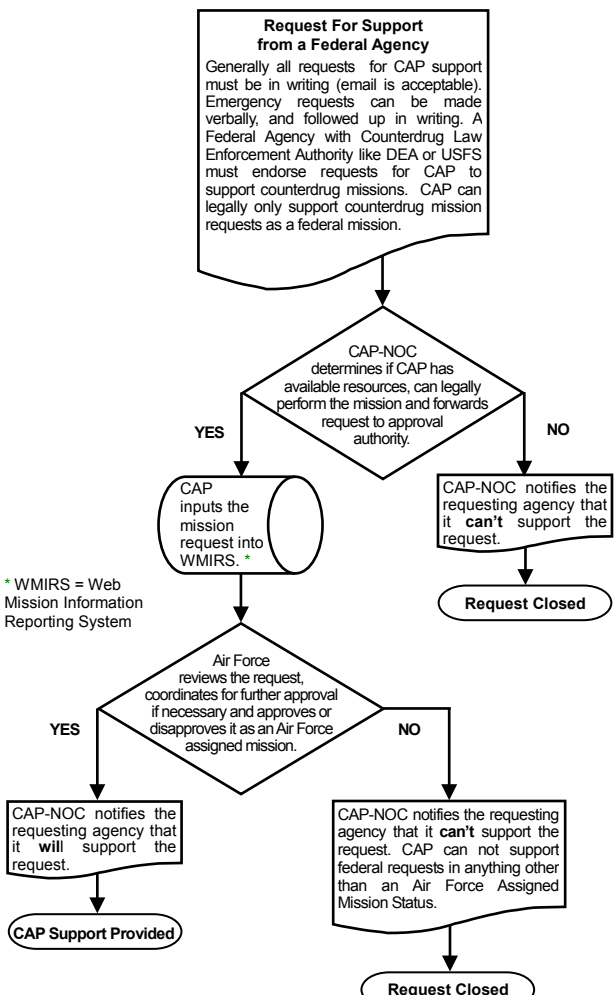
* CAP can provide support to state or local agencies and non-governmental organizations in a Federal capacity in certain circumstances. Missions that have a "federal" interest (e.g. a disaster response scenario in which CAP would perform the same support functions it would in a FEMA lead event) may be approved as an Air Force Assigned Mission (AFAM).

** This decision may be influenced by the capability of the requesting agency to fund the mission.

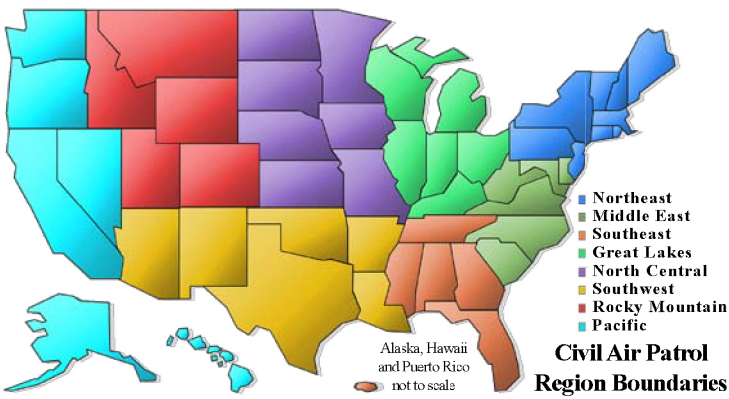
* WMIRS = Web Mission Information Reporting System

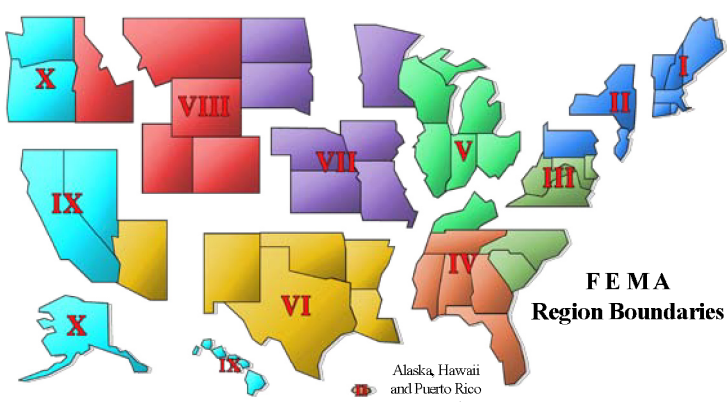
TASKING DECISION TREES

FEDERAL REQUEST



CAP REGION DEFINITIONS





NOTES

Emergency Numbers

CAP National Operations Center	**(888) 211-1812, Ext 300**
Air Force Rescue Coordination Center	**(800) 851-3051**

Citizens Serving Communities

Above and Beyond

http://www.gocivilairpatrol.com