

**INDIANA WING  
CIVIL AIR PATROL**

**CAPABILITY GUIDE  
FOR  
STATE AND LOCAL ORGANIZATIONS**



**A Field Operations Resource Guide  
For  
Emergency Management / Homeland Security**

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# INDIANA WING CIVIL AIR PATROL CAPABILITIES

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# INDIANA WING CIVIL AIR PATROL CAPABILITIES

## OVERVIEW

- The Civil Air Patrol (CAP) is a Congressionally-chartered public benefit corporation which is available to assist:
  - Federal agencies
  - State agencies
  - local authoritiesto perform various Reconnaissance, Emergency Services, Disaster Relief and Homeland Security missions.
  
- When tasked by the Air Force, CAP, in its Air Force Auxiliary role, can support federal authorities to include assistance to state and local authorities as requested by a lead federal agency (LFA).
  
- Types of missions that are able to be carried out include:
  - Airborne reconnaissance of isolated areas, ports, harbors and other critical infrastructure to help identify suspicious activity.
  - Aerial transportation of personnel, equipment, search dog teams, blood and organs, etc.
  - In-flight damage assessment.
  - Ongoing visual reconnaissance.
  - Near real time photographic downloads via satellite downlinks.
  - Communication support; VHF and HF capability and can provide an aerial communications relay platform.
  - Command and Control of CAP units with ICS-qualified emergency services mission / incident commanders.
  - Qualified Ground teams for search and rescue
  - Damage assessment and mitigation, disaster recovery and limited security with trained ground teams able to augment civil and military authorities.
  
- Capable (with sufficient advance coordination) of carrying various customer-supplied sensor packages aloft.
  
- Low cost due to volunteer status of the Civil Air Patrol professional.

## INDIANA WING CIVIL AIR PATROL CAPABILITIES

### CAPABILITIES

- Aerial imaging with ability to download high resolution digital photos in near real time.
- Transportation of light air cargo such as blood, organs and tissue, equipment and critical personnel.
- Ground vehicles and qualified teams to support search and rescue and disaster relief.
- Communications system; which includes VHF and HF capabilities.
- Ability to assist law enforcement and VIP personnel with aerial reconnaissance.
- Aerial surveillance of critical infrastructure such as power plants, gas and oil lines, reservoirs, etc.
- Trained Critical Stress Management Teams (CISM) personnel.
- Low cost missions at a fraction of the cost of other agencies.

**AVAILABILITY**

- The following resources are dispersed throughout the state
  - 1100 + unpaid professionals
  - 12 ground vehicles
  - 9 aircraft
- Most of these resources are available for tasking, generally with a 2-hour notice.
- With advance coordination, a pre-deployment alert notice can be issued to alert our personnel of a pending task.
- Willing and able to work under a Lead Agency.
- Unpaid professionals are available for multi-day missions.

# INDIANA WING CIVIL AIR PATROL CAPABILITIES

## MISSIONS

### Emergency Services

- Search and rescue – air or ground
- Counter Drug missions coordinated with the State Police and the CAP Counter Drug coordinator.
- Disaster Relief and Assessment of any type.
- Assistance to law enforcement as long as not directly involved in actual law enforcement action.
- Communications platform
- Ground forces to assist with traffic, communications, and other support.

### Support for Non-Emergency Agencies

- Route surveys.
- Traffic flow surveillance.
- Photo missions of critical infrastructure.
- Effects of chemical or other environmental effects.

### Hospitals

- Planning for emergency routes
- Planning for triage and other mass casualty treatment

### Humane Services

- Transport of human blood, issue or organs.
- Personnel transport for critical need personnel.

**MISSION REQUEST PROCEDURES**

**SEARCH AND RESCUE AND/OR LIFE SAVING EFFORT**

- Contact the Air Force Rescue Coordination Center (AFRCC)
- Manned 24/7/365 at 800-851-3051

**NOTE: *For SAR / life-saving operations only***

**FOR ALL OTHER MISSION REQUESTS**

- Contact the Indiana Department of Homeland Security (IDHS) at (317) 232-5392. IDHS may coordinate with the Civil Air Patrol National Operations Center (CAP-NOC).
- CAP-NOC contact information is 1-888-211-1812 from 0830-1730 Eastern Time, excluding holidays
- An on-call duty officer is available during non-duty hours.

## INDIANA WING CIVIL AIR PATROL CAPABILITIES

### COST

- Typical aircraft costs will be in the range of \$110 to \$160 per flight hour. The cost is dependent upon which the type of aircraft utilized. The maximum number of personnel on an aircrew could be three unpaid CAP professionals.
- Utilization of specialized sensors such as Aerial Digital Imaging System or the Archer system with Hyperspectral Imaging will incur additional costs.
- Possible food and lodging expenses for our unpaid professionals for multi-day or multi-location missions.
- For Federal mission, CAP members receive Federal Employees' Compensation Act / Federal Tort Claims Act benefits. These benefits normally do not apply to missions performed for local entities. For local mission, the local entities may be requested to provide equivalent benefits to cover CAP members and equipment before the mission can be performed by CAP.
- Ground team costs are usually the actual cost of fuel/oil for the deploying vehicles. Additional support for food or lodging for our unpaid professionals is encouraged and appreciated, but not required.

# INDIANA WING CIVIL AIR PATROL CAPABILITIES

## LOCAL AIRCRAFT AVAILABILITY AND CAPABILITY

### CESSNA 172



### **PERFORMANCE:**

Cruise Speed:	120 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 only
Navigation	Enroute GPS, VOR
Reconnaissance:	Direction Finder (all aircraft), Visual

### **NUMBER:**

4 aircraft stationed around the state.

## INDIANA WING CIVIL AIR PATROL CAPABILITIES

### CESSNA 182



#### **PERFORMANCE:**

Cruise Speed:	135 knots
Range:	630 nautical miles
Full Fuel Payload:	650 pounds
Passengers:	2 or 3
Endurance:	4 hours (with 1 hour reserve)
Service Ceiling:	15,000 feet

#### **SPECIAL CAPABILITIES:**

Communications	VHF, satellite phone*
Navigation	Approach GPS, VOR
Reconnaissance:	Direction Finder (all aircraft), Aerial Digital Imaging System (ADIS), Visual

#### **NUMBER:**

There are 2 aircraft with ADIS capability in the state.

# INDIANA WING CIVIL AIR PATROL CAPABILITIES

## GIPPSLAND GA-8



### **PERFORMANCE:**

Cruise Speed:	120 knots
Range:	730 nautical miles
Full Fuel Payload:	950 pounds
Passengers:	6
Endurance:	4.5 hours (with 1 hour reserve)
Service Ceiling:	20,000 feet

### **SPECIAL CAPABILITIES:**

Communications	VHF, satellite phone*
Navigation	Approach GPS, VOR
Reconnaissance:	Direction Finder (all aircraft), Aerial Digital Imaging System (ADIS), ARCHER ***

### **NUMBER:**

There is 1 aircraft in the state.

## INDIANA WING CIVIL AIR PATROL CAPABILITIES

### REGIONAL AIRCRAFT AVAILABILITY AND CAPABILITY

Civil Air Patrol has the largest single engine fleet in the USA, if not the world. This gives the Indiana Wing Civil Air Patrol the ability, if requested, to reach out and garner additional aviation support.

Total Airframes	Airframe Type
25	C172
31	C182
2	GA8

Airframes per State	State
9	IL
9	IN
8	KY
10	MI
9	OH
13	WI

# INDIANA WING CIVIL AIR PATROL CAPABILITIES

## GROUND CAPABILITY

- Search and rescue
- Disaster relief support
- VHF and HF communications
- Damage assessment and mitigation
- Command and control of CAP units with ICS-qualified emergency services mission/incident commanders



### Ground Vehicles:

- 7 to 15 passenger vans equipped with search and rescue gear.

### Communications platform:

- Wing Mobile Incident Command Posts (MICP)
- Each MICP is capable of deployment as a command and control center which provides VHF & HF communications to all CAP ground and aerial vehicles within its operational vicinity.
- MICPs are capable of wide area communication through the Indiana Wing radio repeaters located throughout the state.



## **SENSORS AND EQUIPMENT**

### **DIRECTION FINDER ( DF )**

- Designed to locate Emergency Locator Beacons (ELT) on downed aircraft or Emergency Position Indicating Radio Beacons (EPIRB) from ships in distress
- Can receive emergency signals on 121.5 MHz (old civil frequency), 243 MHz (old military frequency), and 406 MHz (new universal frequency).
- Receiving units indicate approximate bearing and distance directly to the distress beacon.
- In addition to DF units on every CAP aircraft, DF ground teams can use handheld 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.

**SENSORS AND EQUIPMENT**

**AERIAL DIGITAL IMAGING SYSTEM ( ADIS )**

- Point - to - multi - point transmission of aerial digital photography delivered in-flight via satellite communications.
- 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.
- An ADIS functional unit is comprised of an aircraft equipped with a photo window, a digital camera, laptop computer, aircraft satellite telephone equipment and a trained three-person crew. Since images are sent directly to customer's computer, no specialized ground equipment is needed.
- 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.
- Satellite telephone allows two-way voice communication and text (e-mail) between aircraft and customer to refine or revise target information and requirements.
- ADIS can be used in conjunction with CAP's Airborne Real-Time Cueing Hyperspectral Enhanced Reconnaissance imaging system (ARCHER).
- The near real-time nature of ADIS images has proven effective in SAR; disaster response and damage assessment; environmental impact damage, destruction appraisal, and tracking; and facility security reconnaissance, among many other tasks.
- 2 ADIS units are operational statewide. The units are carried in the C-182 CAP aircraft.

SENSORS AND EQUIPMENT

**AIRBORNE REAL-TIME CUEING HYPERSPECTRAL  
ENHANCED RECONNAISSANCE ( ARCHER ) \*\*\***

- Most sophisticated unclassified hyperspectral imaging system available.
- Have direct application for Search and Rescue (SAR); Counterdrug (CD); Disaster Relief and Impact Assessment (DRIA); and Homeland Security (HLS).
- 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 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 Aerial Digital Imaging System (ADIS).
- All missions are recorded for later post-flight analysis with the ARCHER ground station.

# INDIANA WING CIVIL AIR PATROL CAPABILITIES

## INDIANA WING CONTACTS FOR CAP MISSIONS

Commander:

Col Matt Creed, CAP  
[mcreed@inwg.cap.gov](mailto:mcreed@inwg.cap.gov)  
(502) 664-7795 (cell)

Vice Commander:

Maj Matt Crawford, CAP  
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Chief of Staff:

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Director of Operations:

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INDIANA WING CIVIL AIR PATROL CAPABILITIES



*...performing missions for America!*