## RED CROSS MISSION

The American Red Cross, a humanitarian organization led by volunteers, guided by its Congressional Charter and the Fundamental Principles of the International Red Cross Movement, will provide relief to victims of disasters and help people prevent, prepare for, and respond to emergencies.

## ECRV AND DISASTER RELIEF OPERATION AUTOMATION MISSION

The DRO Automation Team mission is to support DRO operations with the best possible technology tools and customer service to the direct services functions and DRO locations so that rapid quality service to the clients can be provided.

**TECHNICAL INFORMATION**

**The 9 vehicles are placed strategically around the United States for fast response in times of need:** Fall Church, VA; Louisville, KY; Atlanta, GA; Chicago, IL; Kansas City, MO; Houston, TX; Spokane, WA; Phoenix, AZ; and Sacramento, CA

**The communication equipment on board:**

**Front console:**
Icom 706Mk2G (Amateur Radio HF/VHF/UHF)
Bendix-King EMV (460 UHF)
Vertex FTL1011BH/99 (ARC Low-Band VHF)
Bendix-King GMH (150 VHF)
BC780 XLT Scanner
Midland 79-290 (Citizens Band)
Cell phones: Satellite, Conventional, and Nextel

**Rear console:**
RELM Plus (400 UHF)
Bendix-King EMV (460 UHF)
Bendix-King GMH (150 VHF)
Vertex FTL1011BH/99 (ARC Low-Band VHF)
BC780 XLT Scanner
ICOM Aircraft Band Radio
Motorola Micom 2E (Channelized HF)
Kenwood TS-2000 (Amateur Radio HF/VHF/UHF)
VSAT satellite system
SGC SmartPowerCube 500W RF amplifier
SGC SmarTuner Antenna tuner
Datron DSS system
Davis Weather Station
JPS radio switch and phone patch system
Toshiba VCR
Kantronics 98 TNC

**Roof Deck**
16 assorted radio antennas, mounted storage under roof deck for additional antennas and mast sections
A 52' pneumatic mast with N-type RF runs
Yaesu antenna rotator
Pan-Tilt remote control camera
Datron automatic deployment DSS dish
AMSC satellite phone antenna
Davis weather station
12 NMO mounts
AVL technologies VSAT dish
Mosley TA-33 Jr. Tri-band HF Yagi

**I/O Panel**
12VDC
3 antenna connections for extra-vehicular radios
F-type connections for external VSAT dish
DSS out
Broadcast TV in
eight analog phone lines in (connect to PSTN)
eight analog phone lines out (VoIP from Vsat)
Six network connections
Mast controls
2 120vac GFCI outlets

American Red Cross

Disaster Services

# Emergency Communications Response Vehicle

# ECRV HISTORY AND PURPOSE

**The ECRV project began in early 2000 when Ford Motor Company donated 10 Excursion vehicles to The American Red Cross national headquarters.**

**A project committee of communications volunteers and paid staff began investigating how the vehicle could fill a long-standing problem of supporting local chapter communications during a disaster.** These local chapters traditionally respond with a variety of communications capabilities, from the local amateur radio club's equipment and operators to sophisticated communications vehicles supported by the chapter. In developing the communications capabilities of the ECRV, the group looked at all modes of terrestrial communications equipment that could support the local operation with radio- based systems.

**Several needs were identified:**
1. Radios and frequencies had to be licensed by the FCC and other agencies.
2. Amateur radio was to be an integral part of the communications package.
3. The vehicle had to be self sufficient, providing power not only for internal radios but for an external 110 volt supply. It had to have telephone communication systems independent of local telephone utilities. It had to provide local, mid-range and long distance radio communications
4. The vehicle had to be able to respond within 2 to 4 hours of activation to areas distant from the custodial chapters. Custodial chapters had to be chosen with secure facilities capable of supplying power and shelter from the weather.

**During the next 3 years, Red Cross national headquarters added the capability of providing broadband Internet connectivity for telephone service and data by satellite, via a 1.2 meter dish mounted directly on top of the vehicle.** As a part of the American Red Cross Disaster Services Technology Integration Program (DS-TIP), this satellite capability provides critical technology to disaster relief operations in the form of 10 wireless IP phones and 10 laptop computers with wireless Internet connectivity that are available almost immediately upon arriving at the scene of a disaster. Providing direct computer connectivity to national headquarters via the secure satellite connection ensured that national headquarters management could assist the local job administration to provide more efficient and timely service to clients.

**Many discussions took place concerning other kinds of equipment beyond communications to place in the ECRV.** AC power was a priority, since a goal was to have the unit not only self sufficient but able to provide power to a temporary disaster headquarters for short periods of time. The final design was an auxiliary AC generator of 8000 watts that runs off the vehicle diesel engine with its 45-gallon fuel tank and cooling capacity to run for hours without overheating.

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# The ECRV FAQ

**Q**) ***Is this where my donated dollars are going?***

**A**) The vehicles and most of the equipment were donated to the American Red Cross.

**Q**) ***What equipment is in the ECRV?***

**A**) 14 radios, 3 cell phones (including one SAT phone), a VSAT mobile satellite transceiver, a JPS Interoperability Radio Switch capable of tying any of the radios and phones together, a weather station, a DSS digital television receiver, a VHS recorder/player, 11 wireless laptop computers, 10 IP wireless telephones, 6 portable UHF radios, and a portable low-band radio.

**Q**) ***What does the JPS Interoperability Radio Switch do?***

**A**) In large-scale disasters communication between agencies continues to be a challenge. The JPS switch allows agencies and the Red Cross to communicate with each other on their own frequencies.

**Q**) ***What do I do if I want to volunteer in California or I have more questions?***

**A**) Contact Kim Planck. @ (916)368-3171 , planckk@usa.redcross.org or Dan Hardesty @ (916)434-1524, dan@danhardesty.com