Appendix 11 – MCU Mission Procedures

MISSION PREPARATION

Individual mission preparation starts before you receive the page-out, phone call or radio alert. It should include preparation of your deployment kit containing necessary personal medications and necessary clothing for the prevailing weather conditions. A sample list of items for your 8-hr or 24-hr kit can be found in Appendix 15 of the RACES member manual. Although we try to keep the MCU stocked with bottled water and a few Army Surplus "Meals-Ready-To-Eat" (MRE), Mountain House dehydrated meals or "Heater Meals" but you should plan to deploy with sufficient water and snacks to cover the first 6-8 hours of a deployment. MRE's may be purchased online or at military surplus stores. Mountain House meals may be purchased at Walmart or other camping outlets. Heater Meals may be purchased online at www.heatermeals.com. Search and Rescue (SAR) team members are instructed to be self-sufficient for 24 hours - RACES members should strive to meet the same standard. Extended missions will usually provide for some basic meals and water, but it usually takes time to get everything up and running. If you do not have anything handy when called out, pick up a couple bottles of water and/or snacks at the first convenience store or gas station on the way out of town. A sleeping bag or blanket is also a valuable thing to have handy on a mission. I have been able to use one many times, even if it was only for a short power nap. We generally will try to schedule shift relief after 6-8 hours into a mission, but that is not always possible.

MCU Pre-Deployment Checks

Before you jump in and start down the road, there are a number of things that should be checked. Vehicle fluid levels (engine & generator) should be verified while you are still on relatively level ground at the vehicle storage point. If you wait to check the generator until you are on the scene, it may be too late to fill or you may not be able to check the fluids while the vehicle is level. **There is a checklist velcroed to the bottom and middle of the dash.** Plug in the APRS and Garmin GPS before heading down the road. Note the beginning mileage in the Emergency Response Manager (ERM) software and on one of the Mission Logs in the folder in the cab. You will need this during post mission activities and sign out on ERM**. <u>Don't forget to unplug Shore Power before you head down the road!</u>**

UPON DEPARTURE

As you leave Green Acres you need to check out with Dispatch center on the Motorola Cab radio. Using the channel **CC LAW1**, be sure to listen for a few seconds to be sure the channels is clear before calling in. The channel is on a Trunked System and requires that you hold down the transmit button for about 2 seconds for the system to pick up

before you start talking. You will hear a beep indicating you may proceed. If you don't wait for the beep, your first couple seconds will be cut off. Use the MCU callsign "**Cochise 78".** Example **"Dispatch this is Cochise 78**", after they acknowledge you, "**This is Cochise 78 departing quarters for (Mission Name/Location**)". They will acknowledge you and give a time hack.

INCIDENT COMMAND SYSTEM

Most missions will be performed under the Incident Command System (ICS) for operational control. We will generally be co-located with the command post of the mission and perform communications functions for the Incident Commander (IC). Upon arrival to the mission location, your first task is to determine who the IC is and where he/she wants us to set up and receive a mission briefing. Your second task is to park the MCU where designated and get it operational. Your third task is to be sure all of our team members understand the mission support requirements as well.

PERSONNEL ACCOUNTABILITY

It is critical that all personnel sign to Emergency Response Manager (ERM) prior to departing for the mission. It is just as important that everyone sign out upon arriving at home. This will help us ensure that everyone is accounted for when the mission is complete and that no one is left behind. This also ensures that you are covered for AZ Workmen's Compensation if you become sick or injured anytime during the mission.

LOCATION

The IC will usually designate the location where the MCU will be parked. It will usually be co-located with the Command Post and physically separated from the staging area. If the MCU driver is aware of specific communications problems associated with the chosen location, such as no radio path to known repeater sites, please bring this problem to the attention of the IC and make a recommendation for a better location. The IC may or may not be able to accommodate the recommendation. Remember, ultimately the IC is responsible for the mission and it is our responsibility to aid him or her as best we can. *Do not put yourself in a position where we appear to be argumentative or less than totally cooperative!* The IC has a lot on his/her mind managing the mission and doesn't have time for prolonged discussion. Make the recommendation politely, and then accept the IC's direction. The Starlink satellite system recommends pointing the truck in a northerly direction but is somewhat flexible in acquiring the necessary satellite constellation. I recommend logging any mission directions/instructions in the Unit Log for use later in the After Action Report.

LEVELING JACK SYSTEM

The control panel for the HWH Hydraulic Leveling system located on the street side of the MCU and is designed to help stabilize the vehicle before raising the pneumatic mast. **Ensure that hand brake is set and tire chocks are in place before operating the leveling jacks**. The controls are located in the same compartment as the I/O Panel on the street side of the shelter. First, try to get the vehicle as level as possible before you lower the jacks. There are wood blocks in the Antenna Side Compartment to put under the tires to aid in this process. Be sure the "parking brake" is applied. After the generator is started, activate the jacks to the "down" position to stabilize the vehicle and attempt to make it nearly level. There are leveling bubbles on the "I/O – Jack panel" to aid you in this procedure. The jacks will stabilize the vehicle from moving and provide a stable platform. Just remember, the direction of the arrows indicates the direction the truck moves when you press the buttons. For example, pressing the Up Arrows means the truck will move in the directions of the arrow, pressing the Down arrows means the truck is moving down. The leveling jacks must be in place before raising the mast.

POWER DISTRIBUTION

There are three modes of operating: Battery power, Generator Power (GEN), and Shore (EXT) Power. Most often we will be on Generator.

GENERATOR OPERATION

The 7.5 KW Onan diesel generator is located on the driver's side of the vehicle body. The MCU should be relatively level before starting the generator. You can't put down the stabilizing jacks until the generator is running. Be sure all the switches on the large power distribution panel (located on the curb side in the shelter) are turned off before starting the generator. Also, check wind direction to ensure that exhaust fumes will not blow back into the vehicle before starting it. Install the GenTuri exhaust extension on the diesel exhaust pipe (photo on right). This device performs two functions. First, it routes exhaust above the vehicle and secondly mixes fresh air into the exhaust stream by pulling fresh air in at the bottom. We do have a Carbon Monoxide warning device in the vehicle to assist in protecting staff. If you did not check the generator oil and coolant levels before leaving Green Acres, check it now.

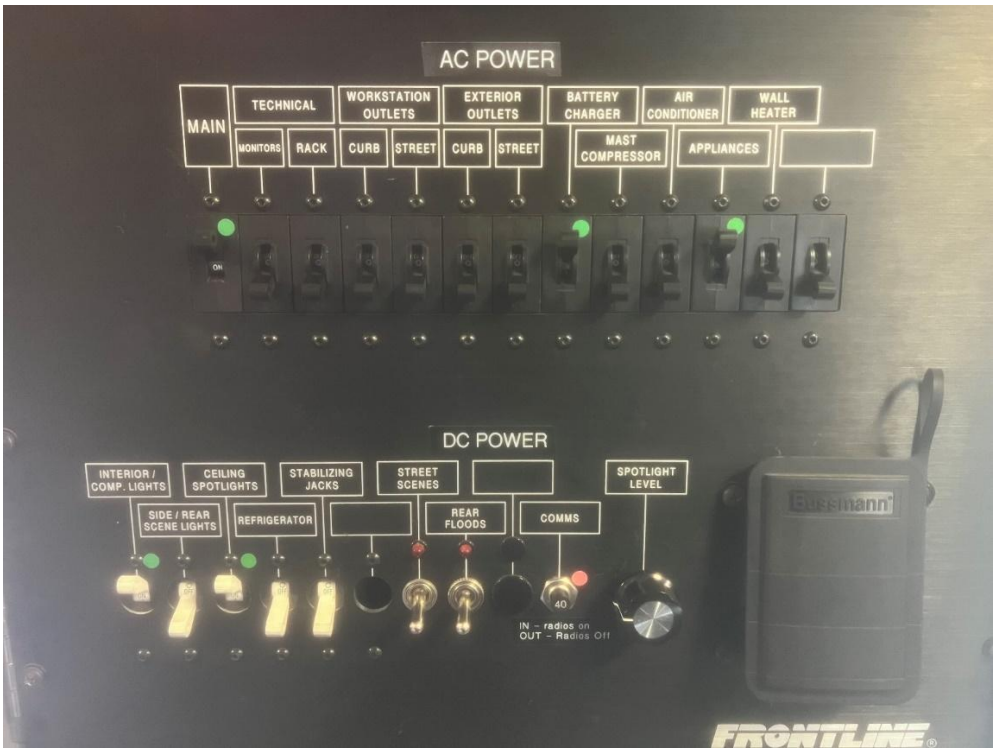
GENERATOR START PROCEDURE

1. There are three positions for the Power Distribution switch: Left for **GEN** (generator power, center **OFF**, and right for **EXT** (shore power). It should be in the center **OFF** position while starting.

2. Press the Red **START** rocker switch until the generator turns over. It should kick over in about 10-15 seconds. The Preheat light may flash initially for a few seconds, especially during cold weather, but the generator should start almost immediately upon completion of the “preheat” function. Allow the generator to run approximately 3-5 minutes to stabilize at 60 Hz. During very cold weather, it may take a little longer to stabilize. If, for any reason the generator starting batteries are too weak to start the generator, you may temporarily press and hold the red “BATTERY PARALLEL” button long enough to parallel with the main vehicle battery to start the generator. It is recommended the truck engine be running if this is required. You should never allow the starter to attempt to start for more than 30 seconds. You could damage the starter through overheating.
3. Once running and stabilized you can switch the “Power Select” switch to the **GEN** position and turn on the MAIN AC breaker and the remainder of the AC switches and the other DC switches as needed for operations.

POWER PANEL

The top row switches are breakers for AC power and the bottom row are all DC power. Typically, all the AC power switches are turned on except the wall heater. The wall heater and Air Conditioner should never be used at the same time. The bottom row has switches for the various identified lights or systems. The REFRIGERATOR switch should not normally turned on at the same time the APPLIANCE switch is on. The APPLIANCE breaker also provides power to the coffee maker. The item marked COMMS, is a push/pull switch. The "IN" position is on and "OUT" position is off. It provides power to all the radios not in the ACU stack. You will note GREEN dots by some switches and RED dots by others. When you are stowing everything after the mission is complete, leave the switches with GREEN dots in the ON position, but ensure those with RED dots are OFF.



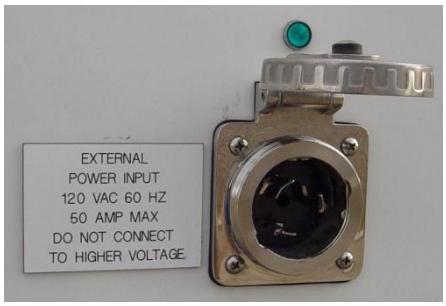
GENERATOR SHUT DOWN

1. Be sure any device using AC power has been shut down (Technical, Workstation outlets, Air Conditioner, Coffee Pot, Laptop Computers, Mast Compressor, Satellite System, Wall Heater).
2. Turn off MAIN AC power switch. (Radios, Lights, Stabilizing Jacks are on battery power.)
3. Turn the “Power Select” switch back to off position.
4. You may now press and hold the generator switch to the STOP/PRIME position until the generator shuts down.

EXERCISING THE GENERATOR SET

The generator should be run at least two hours a month if use is infrequent. Run the generator at approximately ½ power (turn on the Air Conditioner). A single 2-hour exercise period is better than several shorter periods. Exercising a generator set drives off moisture, relubricates the engine, replaces stale fuel in the fuel lines, removes oxides from electrical contacts and generator slip rings. The result is better starting, longer engine life, and greater reliability. Unless there was a mission during the preceding month, it should be run on the first Saturday of each month.

SHORE POWER



The MCU has an external power cord that allows it to be plugged into AC commercial power if conditions permit. On the Main Power Control panel, you must select the Shore Power (EXT) position vice the generator position. When connecting the Shore Power cable to the vehicle, always connect the vehicle side of the cable first, then to the shore power source. Disconnect in the reverse order, Shore Power source first, then the vehicle. The cable has a 30amp RV style plug with a 20amp adapter if necessary to plug into a standard plug. Just be aware that using lower than 30 amps restricts the ability to use things like the coffee pot, wall heater, microwave, or air conditioner, etc. at the same time.

BATTERY POWER

There are two deep cycle RV type operations batteries that may be used for very short missions. If they are fully charged, they may support 2-3 hours of operations, but one should not depend on this capability. Unfortunately, lights have been left on in the past and drained down the operations batteries to a point where they only had enough charge from the drive out to last for a short period (in spite of the fact that they were replaced in 2023). These batteries can be charged while driving or from the generator. The charger switch on the Main Power Distribution Panel (Top row of breakers) should be on whenever operating off the generator. All the mission radios except the ACU stack run off the vehicle batteries. This is the main reason the charger should always be turned on when the generator is on or shore power is plugged in. The ACU radios are provided DC by the 50 amp Astron power supply at the bottom of the ACU stack. This should only be turned on after the generator is up and running and power stabilized. It should also be turned off as part of the shutdown procedure.

RADIO PROCEDURES

TACTICAL (Public Service) COMMUNICATIONS

Amateur operators or SAR team members are authorized to use the Sheriff Department Public Service Band frequencies/radios under the county's FCC radio license. As mentioned earlier, while enroute to the mission the MCU call sign is "**COCHISE 78**". If dispatch wants to know who is driving, give the dispatch your RACES Card number, for example, "**RACES Operator 123**" or your County Rescue ID # if you have one. Once in place at the mission site, the vehicle is usually designated as "**MCU**". People or teams may also call in to the "**Command Post**", **"Search Command**", or **"CP"** but for most missions the preferred voice callsign will simply be **"MCU"**. Be prepared to respond to any of these call signs. If the Incident or Search Commander (IC) wants to designate the MCU another call sign during operations, use whatever call sign he/she designates. Search teams will usually be designated as "**Rescue One**", "**Ground Team One**", "**Horse Team One**", "**Mobile One**", etc. They are strongly encouraged to use one of those designators or their actual assigned Rescue number such as "**RESCUE 74**". It is a good

idea to write the team designators down on one of the white boards. It is also important to capture the names or Rescue numbers of the individuals making up each team, and the last time you had contact and/or attempted contact with them. A printed roster of SAR members is located in the wall shelf above the computer to cross reference Names to Rescue numbers. If it is necessary to operate on the Arizona Department of Emergency Management (ADEM) Channel, our ADEM assigned call sign for the MCU is "**HORNED TOAD**". The county EOC callsign is" **FIVE ONE CHARLIE HOTEL".** ADEM will usually call themselves **"51A".** See the ADEM Manual for additional information.

AMATEUR COMMUNICATIONS

Only licensed amateur radio operators are authorized to use the amateur radio equipment in the vehicle. The privileges used on the amateur bands are consistent with the privileges of the highest license class person present as a control operator. This is particularly important on the HF band. We are also encouraged to use tactical call signs named according to your assignment, but please remember to still use your amateur call on amateur bands in accordance with standard FCC regulations (after a completed call or every ten minutes, whichever period is shorter). Of course, non-hams can talk on the amateur radio as long as a licensed ham operator is present as the "control" operator.

MARS OPERATIONS

Operations on MARS frequencies are governed by Department of Defense regulations. You must be a licensed MARS operator to operate on the MARS frequencies or have a MARS control operator present. Manuals for MARS operations are also available in the MCU.

PNEUMATIC ANTENNA MAST

The control panel for the 42' Will-Burt pneumatic mast is located in the same hatch on the street side of the MCU and is load rated by the amount of square foot area of the antenna(s) attached to the mast. There is a safety override that will not allow the mast to go up if the hand brake is not set. You press and hold the switch to raise the mast. You only need to press the down switch and release and it will continue to drop. With nothing mounted the mast is rated to 150 mph wind load. With the maximum square foot area of 10 sq ft the rating is reduced to 70 mph. There are a variety of configurations that can be mounted. The most common antenna used for VHF Public Safety radio operation is the so called "Big Stick" 106 inch tall antenna. An amateur VHF antenna is stored in the RACES CONEX and can be used when supporting public service events by mounting it on a quick disconnect on the MCU roof. At night or under adverse weather conditions, you should also activate the Amber Strobe on top of the mast. It is also a good idea when there are helicopters working in and around your area during daylight operations. There is no flood light installed.

INTERNET Access

The MCU is equipped with STARLINK internet access. At incident scenes, you can access the SARTopo map program, current weather data, Google Earth Satellite imagery, send and receive email with attachments such as photos of the scene. There are a number of applications for this service. Both the computer laptops used for the ACU control software, and the Mapping and Digital Support Computer can be connected to the internet via the MCU local area network. Other computer stations can connect via the Wi-Fi network or the wired Local Area Network through the external I/O port on the driver's side of the vehicle. More information about the various computer applications can be found in Appendix 12 of the RACES manual.

The MCU has a web-mail account at Gmail. It is: "**cochise.mcu@gmail.com**". The password to access the account is posted above the keyboard on the laptop computer in the MCU and may change as needed.

RADIOS/ANTENNAS

SELECTION OF ANTENNAS

There is an antenna patch panel located above the ACU-2000 stack. For most operations there will be no need to change the default patching configuration. However,

when using the 106" fiberglass "Big Stick" antenna on the Public Service Band Radios when mounted on the pneumatic mast you will need to switch the roof mounted antenna feed to the mast using the switch above the ACU radios (see photo below). Remember to move the switch back to the VHF1 position when finished with the external antenna.

If you do choose one of the antennas mounted to the top of the mast, ensure you match the radio to the proper Mast position at the top of the mast and as well as the proper patch position on the panel. There are three RF cables labeled "Mast-1, -2 & -3" running between the top of the mast and the Antenna Patch Panel. And whenever making a change to the patch panel or antenna switch, ensure you return it to the baseline configuration when the mission is complete!

If using a HamStick or the long-wire HF antenna you may need to change one of the patches. They are clearly

labeled. Two points to remember when changing a patch:

1. Be careful not to “cross-thread” the cable end when re-attaching to the panel.
2. Be careful when pulling on the radio cables and to allow sufficient loop for the RF cable to bend gently.

PUBLIC SERVICE BAND RADIOS

There are two VHF, one UHF and one Dual Band (VHF/700 Trunk) public service band radios mounted in the MCU. Two radios are in the cab and is used primarily enroute or returning from a mission to maintain contact with CCSO Dispatch. Use the callsign “**COCHISE 78**” when checking in with dispatch. Using the Motorola APX radio on the console between driver and passenger seat “CCSO LAW 1” (Sheriff’s Office Channel 1) on the trunked system is normally used as the primary channel to and from a mission. The Kenwood radio mounted near the center and just below the ceiling of the cab will normally be used to contact the SAR CP on the **CC SAR** channel while arriving on the scene.

Inside the vehicle the Tait TM 9155 VHF radio mounted on the countertop on the street side in the vehicle is the main mission radio and includes the narrow band channels used by the county and is P25 (digital) compliant. The power-on/off is a push button near the upper left corner. and is used routinely with the Big Stick during SAR operations to maintain contact with the deployed teams. For simplex operations in the mountains, it may provide you a better option for reaching search teams.

A Motorola APX 7500 series dual band radio is mounted on the wall. This is a single radio with two control heads, the second control head is in the cab on the console. Please note in the photo below the “shortcut” keys identified as MS1, MS2, and MS3. Pressing MS1 will take you to SO1, MS2 goes to CCSO SAR, and MS3 to LAW1. <u>DO NOT PRESS THE **ORANGE** BUTTON</u>. It is ONLY to be pressed when you need to notify Dispatch of an emergency. If it is ever pressed accidentally, notify dispatch as soon as possible to avoid emergency officers showing up on your doorstep. The “On/Off” button is bottom button located on the left side off the screen. See the photo below.

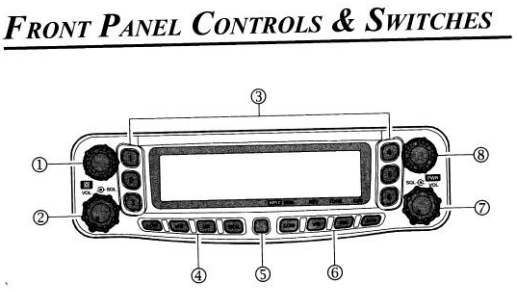
Connecting it to the "Big Stick" and pushing up the pneumatic mast may give you your best combination for search operations. The antenna mast adapter to mount this antenna is found in the tall storage compartment next to the side entrance door. This antenna is normally stowed in a big black plastic pipe stowed on the floor while traveling.

ACU 2000 OPERATIONS

The Audio Control Unit (ACU) 2000 is a computer- controlled device used to interconnect agencies or units on scene that do not have compatible radios or our frequencies loaded in them. It allows the control operator to program radios in the ACU Stack to match radio frequencies from other participating agencies. The ACU stack has eight Kenwood radios currently configured (4 ea VHF, 2 ea UHF, 2 ea 800 MHz). The Astron Power Supply at the bottom of the rack provides DC power during operations and should be shut down after operations are complete. The control operator can match up audio channels between radios to allow visiting agencies to work together using a channel already programmed in their organic radios. Many of the channels may already be programmed into one of our Kenwood's and will only need to be selected on one radio and then matched up with one of the other radios in the stack. Once a pair of radios has the proper channel or frequency selected the Control Operator simply does a couple mouse clicks in the ACU software to match the two audio channels for the two agencies to work together. Up to four different links can be made with the software. Use of the ACU 2000 or the Kenwood Armada programming software is taught in a separate hands-on class. Be prepared to use whatever channel or combination the IC wants or needs us to communicate on.

AMATEUR RADIOS

There is one mobile (Yaesu FT8800 Dual Band) located in the cab for use to and from a mission. It is switched through the vehicle ignition and uses an antenna mounted on the top of the cab. It is still a good idea to turn it on and off using the radio switch. This ensures the memory channels will come up as the default when the system is turned back on. A frequent operator error is accidentally turning on the “WIRES” function (Wide-coverage Internet Repeater Enhancement System). When turned on, it will send a short digital burst when you key the microphone. There are no WIRES repeaters in our service area so we do not use that function. There will be a small **“int**” symbol near the top of the screen when it is



activated. If it is on, press the left volume bottom briefly and it will be turned off. You will see the screen flash for a couple seconds "**INTOFF**" when you change status. We will normally use the left VFO tuned to "RACES 02" and the right VFO set to "**SX 56**" while enroute to missions. The right VFO is activated by briefly pressing the top right channel selector (#1 on photo) and used while keeping touch with the chase vehicle. To select the left VFO, briefly press the top left channel selector (#8 on photo). We use **RACES 02** when keeping in touch with the "Home Unit".

The other amateur radios are located inside the vehicle for communicating on amateur bands. There is one High Frequency (Icom IC 7300), one V/UHF dual-band (Icom IC-2730a), one 2-meter VHF (FT-2600) radio, and one UHF (Icom F621) radio. These radios can be used to maintain contact with other amateurs acting as relays to other agencies who may not have direct communications to the vehicle on our channels. We may use amateur repeaters or simplex communications as appropriate. Operating Manuals for these radios are located in the supply cabinet (Top right on curb-side). The ICOM IC-2730a may also be used to contact the AZ Department of Emergency Management via the DRN radio network. The frequency is identified as DRN-Mule. Offsets and PL are preset. Our callsign on that channel is "Horned Toad".

The Icom IC-F621 (UHF) and IC-2730a (Dual-Band) radios

The VHF radio (FT2600M) is located in the digital workstation below the top cabinets on the curb side of the vehicle and is used primarily for packet or APRS operations. If not required for packet or APRS, it may also be used to support voice operations. The antenna for this radio is mounted near the telescoping mast at the back of the vehicle. The KAM Terminal Node Controller (TNC) is also below the upper storage cabinets.

There are two Terminal Node Controllers (TNC) that are used with the HF radio for HF digital operations. The first is an SCS PACTOR capable of PACTOR Levels I, II, & III modes. The second is the ICOM IC 7300 internal sound card controller used primarily for various soundcard related digital modes (PSK31, MT63, Winlink HF, ARDOP, VARA, etc.).

We use WinLink Express software for PACTOR III, Ardop, or VARA modes by radio or TelNet Winlink (via Starlink). There are other software applications available for APRS and Packet operations, but we don't have any of them currently installed. See Appendix 12 for further computer operations information.

The ICOM IC-7300 HF radio is located on the curb side desktop towards the rear of truck. A remote antenna tuner is mounted in the storage cabinet above the radios and controlled from the front of the IC-7300. The accompanying laptop computer is also normally found in the upper storage cabinet during transport and only put down on the desktop during portable operations.

There is also an ICOM IC-706MKIIG radio, tuner, and power supply available located in their original boxes in the RACES CONEX and available as backup or for additional capability during emergencies. We usually take it to Paradise every year for testing.

A set of HamStick HF antennas are stored in the Antenna Cabinet to the right of the main vehicle entrance and accessible only from outside the truck. Select the one you need for the band you wish to operate on, attach to the "Quick Disconnect" mount on the roof of the shelter (shown to the left), and press the "TUNER/CALL" button to match the transceiver to the antenna and you are ready to operate. The mounting stub is on the street side roof of the vehicle at the rear of the antenna "Z-Rail". Push down and twist to lock in place. *Be sure it is removed before moving the truck!* Please note that the antenna stinger is color coded to match the black coil bottom. If you mismatch the coil with the stinger, the standing wave ratio (SWR) will not be optimal.

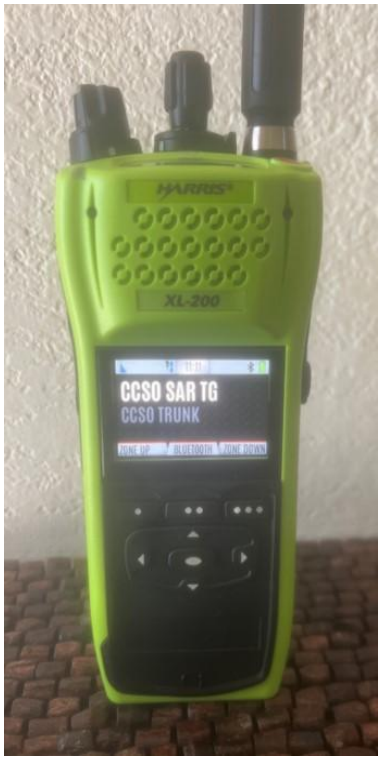
Additionally, there is a “Long Wire” antenna that can also be used connecting to the same “Quick Disconnect” mount. It is a 66’ long wire kept in a plastic case in the same cabinet as the handheld radios. In the case you will find a “Quick Disconnect” mount attached to a spring, at the top end of the spring the long wire is attached using a bolt and a ring connector. After you unwind the wire you may attach it to a tree, bush, a mast section away from the vehicle. We carry white mast sections in the antenna cabinet, to the right of the primary MCU Entrance door that can be supported away from the vehicle for you to use. You may have to be innovative to find the best solution. It normally works well on 75M and 40M frequencies.

AIRCRAFT RADIO

There is also an Icom aircraft-band radio located above the ACU-2000 stack. This radio is licensed by the FCC to the County Sheriff's Office for use on the nationwide SAR channel (123.10 MHz, AM). The FCC registered call sign assigned to the Sheriff’s Department for the unit is: **KE 5202**. DPS helicopters responding to our SAR missions normally come up on our SAR frequency or other CCSO tactical channels, but this radio may be used to contact other aircraft responding to a mission if they do not have that capability. Military response helicopters and Civil Air Patrol search aircraft will usually not have access to our public service channels and will rely on this radio for contact.

TACTICAL HANDHELDS

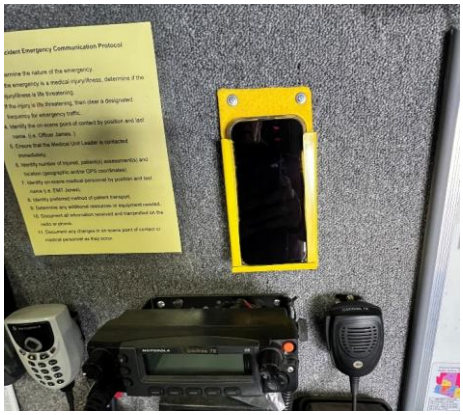
We also have ten Harris VHF XL-200 radios that have a standardized county load of law enforcement and fire service frequencies.



A charger (Harris #14100) for these radios is located on the street side below the counter by the aft operator position. Two additional dual-band Harris XL-200 VHF/700-800 radios are issued to the RACES officer and deputy. One Motorola APX 7000 dual band radio is issued to one of the MCU drivers who is an active SAR member, and one other APX 7000 radio is in a tray in the storage cabinet located below the counter on the street side of the vehicle. Both the Harris and Motorola radios have a couple hundred channels including the current county trunked system channels (SO & Sierra Vista Police Dept). There are also eight older single-band VHF Icom handheld radios available as backups in the tray behind the XL200s. A charger for these radios (BC-121N) is located on the street side below the counter between the two operator positions. One of the MCU operator responsibilities is to sign out these radios out as required or requested by the mission IC. Each individual radio will be signed out on the radio log identifying radio # (a white # on top front of radio), name, phone number and agency. They are usually used on the CCSO SAR channel. The charger is a fast charger and can recharge the radios quite quickly. The LED lights on the charger go from Orange to Green when the radio is fully charged. Be sure that the radios are recharged after each mission. If you do not have time to recharge at the end of the mission, be sure the RACES Officer is aware of that issue so that they can be recharged as soon as possible (usually the following Saturday morning). An operations manual for these radios is maintained in the supply cabinet and in the MCU Manual. The RACES Officer usually fully discharges and recharges these radios on a quarterly basis.

CELL PHONE

A T-Mobile cell phone (520-678-6981) is stored on the wall above the Motorola Public Service radio and billed to the Office of Emergency Services. Another of the MCU operator's responsibilities is to ensure that outgoing calls are logged including the person and agency making the call and the number called. A clipboard with a cellular log should be maintained near the phone for this purpose. All documented official calls on valid missions can be reimbursed by the state. Logs should be turned into the mission commander after the mission is over or to the RACES Officer. Remember to recharge the cell phone during any missions. It is critical to ensure it is correctly turned off between missions. If not done correctly, it will be dead the next time we go on a mission. If you are unsure of the procedure, ask one of the more senior operators. If cellular coverage is unavailable one can usually make network calls through the Starlink by connecting to the MCU wifi network.



COMPUTERS

There are four computers in the MCU and stored in the upper storage cabinets. Each has a primary purpose, and they will be discussed separately. Copies of the various ICS forms such as the ICS 214 (Unit Log) and ICS 309 (Comm Log) are also stored on the two primary laptop computers (MCU#1 and MCU#2) and either may be used to send and receive emails through the MCU Gmail account. Specific information on the various software packages and instructions on using these computers are documented separately in Appendix 12.

MISSION SUPPORT / ACU 2000 LAPTOP (MCU #1)

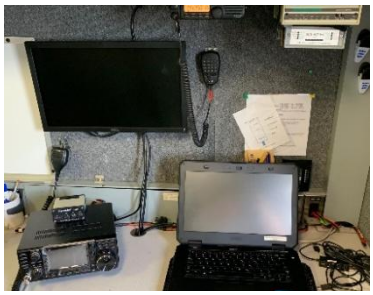
This computer is primarily used to prepare mission logs but can also control the ACU 2000 switching unit. Using the ACU software, it is used to connect radio channels from different agencies to each other. Plug in the network (Cat 5) cable, the mouse, and power connector before turning on. This computer should be turned on before the Mapping Operations Computer when setting up for operations to allow the network to be properly established. While connected to the Internet, it can also connect to the SARTOPO Map software application.

MAPPING OPERATIONS COMPUTER (MCU#2)

This computer is used primarily to provide mapping support when needed. Topographic and street maps are also loaded on this computer. We have transitioned to the SARTOPO mapping software for mapping support, and this software can be used to track the status of deployed search teams and clues that are found. It is discussed in more detail in Appendix 12.

DIGITAL OPERATIONS COMPUTER (MCU #3)

This laptop computer is stored on the curb side overhead compartment and setup on the operating bench curb side near the rear of the MCU next to the IC-7300 radio. An additional flat screen monitor is affixed to the wall with security screws.



Digital Operations Computer

Front Wall Display

MCU Front Wall Display

A large computer screen located on the front wall above the pass-thru opening to the cab can also be connected a computer (normally MCU#2, but MCU#1 can also be used). Connect the HDMI cable on the countertop to the laptop, then power up the monitor using the remote located in the top drawer on the curb side of the cab. Once the monitor is fully booted – hit the “Select Source” button on the remote, then arrow over to the “HDMI #2” icon and select it. Remember to return the remote to the drawer at the end of mission.

Apple iPad

This computer adds additional mission flexibility. Its most common use is to receive texts of runner numbers when supporting public service events like the Sky Island Summit Challenge but can also be used to control the mast camera when both mission support laptops are occupied with other tasks. There is a shortcut on the iPad screen to control the camera – if it locks up just reload the camera IP (listed on the white board) in Safari. Remember to power off this device before storing it.

MCU PRINTER and SCANNER

There is a laser printer located on the desktop near the ACU rack. It can be used to print out forms, maps and, of course, mission logs at the end of a mission. Spare print cartridges and paper are stored in the compartments directly overhead. It is connected to the local area network and normally requires little maintenance. You will have to load paper into the drop-down compartment on the front of the printer and check for alignment. You cannot leave paper in the printer while in motion. Clear the paper, put the excess in the folder located behind the printer. There should be a replacement toner cartridge in the storage compartment above the printer. If not, please report that in your After Action Report (AAR) so that a replacement can be purchased. If you need to scan and print a document, a separate document scanner is located in the compartment above the printer

and can be attached to one of the Dell Laptops. More on the scanner operation is found in Appendix 12.

Printer

Scanner

MISSION OPERATIONS

As soon as the MCU is operational (jacks stabilized, power available, antennas in place, radios on, at least one laptop set up with a ICS 309 Comm Log ready for logging) advise the IC we are operational. IC will routinely instruct the search teams to do a communications check before the teams depart the base camp area for their field assignment. This will ensure that the teams are on the correct channel and that their radio is working.

Record all key communications events on the ICS 309 log (special instructions provided by the IC, names/call signs of each search team, the time when each team deploys, time of team welfare checks, when teams return to base, etc**.). Key events should be logged whether they are between the MCU and another field unit or overheard between other deployed elements**

In those situations when the IC may already have teams in the field when the MCU becomes operational, contact the IC to ascertain their tactical assignments and perform a radio welfare check with them as soon after you are operational as possible. The white board is used to track several key data items:

a. Team Name/Tactical Callsign
b. Who is on each team
c. Status
d. Last time we made Radio Contact

We will normally conduct a “Welfare Check” every hour and inquire as to the team’s location (coordinates). The results will be updated on the white board and be logged on the ICS 309.

At this point a second laptop should be setup to begin tracking teams and posting to SARTopo. If multiple mission radios are active, each assigned operator should keep a log for that position.

As the ears for the IC we must be sure to pass along critical mission reports as soon as they come in to the IC or his/her designated representative. **This means someone**

should be on duty in the MCU and able to monitor the radios at all times that we are considered operational. Normally at least two persons, preferably three, are assigned per shift. This allows one operator to depart periodically to deliver messages, run errands, eat, potty breaks, take a nap. etc.
The team leader should also create a **Unit Log** (ICS Form-214) and log the time and mission identifier by name (and mission number if available).

MISSION COMPLETE

It is just as important that the teams report in when they return from the field so that we can clear our status board. We do not want to leave any teams or personnel in the field when we pack up and go home.

AFTER ACTION REPORTS

At the end of each mission, each communications operator involved (deployed or home unit) should turn in to the Communications Team Chief an After Action Report or AAR with a summary of their participation and any lessons learned. Lessons learned may include good things you learned, areas where you need more training, or items that need follow-up such as radio, vehicle or equipment problems and potential solutions to the problems found. Any of these items are appropriate. These items will be included as the Team Chief writes his/her summary report to be filed with the County Emergency Service Coordinator. A sample After Action Report can be found in Appendix 19 of this manual. There is also a Maintenance Log mounted to the right of the printer on the wall. Please annotate date, and any issues identified during the mission that may require repair or the attention of the RACES Officer.

REFUEL

Always refuel the MCU before putting it away after a mission. This ensures that the MCU is ready to roll for the next mission. It may be days, hours, or even minutes between missions. The most common after-hours refuel point will be the Sierra Vista City Public Works & Maintenance Yard at 401 N Giulio Cesare Ave between Fry Blvd and Charleston Road in Sierra Vista. Use the city-provided white access card to get in the gate whenever it is closed. At the diesel pump island there is a central access station. Using the county gas card you will be asked to enter the vehicle mileage off the odometer, and then enter the vehicle number and appropriate pump number. The ID number will be “7xxx7” where xxx equals the proper vehicle number. Then proceed to pump the fuel. Please remember to log the mileage and amount of fuel in your ERM entry. Hopefully you remembered to log your beginning mileage before you left Green Acres. If for some highly unusual reason you must refuel at a commercial fuel station rather than at one of the standard refuel points listed below, fill out the Vehicle Expense form and enter the mileage and fuel used data on the expense form, then deliver the form and the fuel receipt K7OED or N7INK. The expense forms are normally found on a clip board or in a red plastic folder in the cab. Standard refuel locations include these County Fuel Points:

- Benson – Highway Yard, 901 E 4th St
- Bisbee – Highway Yard, 1229 Hereford Rd (Near Fleet Maintenance).

- Douglas - Highway Department, 3665 N. Lesley Canyon Rd. (on the east side of road). It is just south of County Fairground.
- Elfrida - Highway Department, 4019 W Thompson Rd.
- Willcox – Highway Yard, 140 E. Maley St. (on the east side of State Rte Hwy 186),

The gate combination code is the same at all locations.

POST MISSION CHECKS

Once the MCU has been returned to the club site, clear with Dispatch so they know you have completed your mission. Note the MCU mileage so you can report miles driven when you sign out of ERM. Reattach the AC power to the MCU. Turn the wall breaker back on and the green LED on the side of the MCU will be lit. Inside the MCU, set the power distribution back to EXT and turn on the MAIN BREAKER. Be sure the BATTERY CHARGER breaker is also turned on to ensure that unit batteries will continue to be trickle charged while it is parked. There are “Green Dots” on the panel to indicate breakers/switches that need to be left in the “On” position. Red dots indicate critical items that need to be turned off while parked at Green Acres. If there are any maintenance issues to be looked at, be sure to log them in the Maintenance Log Book posted on the wall to the right of the printer. Be sure all the doors and panel hatches are secure and reset the alarm. The alarm will sound if any of the doors or hatches are not **completely** closed. Close and lock the MCU gate enclosure as well as the Green Acres gate as you leave.