



Pinellas County ACS Command Runner Equipment Maintenance Procedures

25 August 2023 Rev (-)

Abstract

This document defines the periodic maintenance procedures used to maintain the six Pinellas County ACS Command Runner Compact Rapid Deployable (CRD) units.

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FOREWORD

This document defines the periodic maintenance procedures used to maintain the six Pinellas County (PinCo) Auxiliary Communication Service (ACS) Command Runner Compact Rapid Deployable (CRD) units. It defines the safety precautions and individual qualification requirements needed to safely perform maintenance; describes the periodicity codes used to schedule each maintenance action; details each equipment maintenance procedure; and contains the equipment maintenance record and equipment inventory forms used to document each maintenance action.

The document is divided into five sections.

Section 1. Applicable Documents.

Section 2. Acronyms and Abbreviations.

Section 3. Maintenance Procedure Overview.

Section 4. Command Runner Maintenance Procedures.

Section 5. Records and Forms.

Comments, suggestions, or questions on this document should be addressed to Michael Drake, WA1RYQ, email: WA1RYQ@arrl.net.

Record of Changes

REVISION	DESCRIPTION	DATE
REV (-)	Initial Release	8/252023

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1 APPLICABLE DOCUMENTS

1.1 REFERENCE DOCUMENTS

The following equipment operating manuals contain additional information about equipment operation and maintenance procedures.

- a. Bogen Classic Series Amplifiers C35, C60, & C100 Models Installation and Use Manual; 2009
- b. Command-Runner™ PodRunner® User Manual; 2017
- c. Honda Owner's Manual Generator EU2200i; 2022
- d. ICOM IC-7300 Full Manual; July 2022
- e. ICOM VHF Mobile Transceivers IC-F5020 Series Instruction Manual; 2009
- f. Motorola APX Two-Way Radios; APX 4500; APX Mobile O2 Control Head User Guide; April 2023
- g. Motorola Solutions MOTOTRBO™ XPR5550/XPR5550e Alphanumeric display mobile radio user guide; October 2018
- h. MX44H4 HDMI Matrix Switch
- i. Victron Energy Battery Monitor Manual; Version 11; November 2019
- j. Yaesu FTM-400R/DE Operating Manual; 2015

2 ACRONYMS AND ABBREVIATIONS

2.1 ACRONYMS

The following acronyms are used in this document.

<u>ACRONYM</u>	<u>DEFINITION</u>
AC	Alternating Current
ACS	Auxiliary Communication Service
CR	Command Runner
CRD	Compact Rapid Deployable
DC	Direct Current
DMR	Digital Mobile Radio
EMR	Equipment Maintenance Record
EOC	Emergency Operations Center
FCC	Federal Communication Commission
FDARN	Florida Digital Amateur Radio Network
FM	Frequency Modulation
GPS	Global Positioning System
HDMI	High-Definition Multimedia Interface
HF	High Frequency
HT	Hand-Held Transceiver
N/A	Not Applicable
NLGI	National Lubricating Grease Institute
OS	Operating System
PA	Public Address
PoE	Power Over Ethernet
RMS	Radio Message Server
SWR	Standing Wave Ratio

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<u>ACRONYM</u>	<u>DEFINITION</u>
TBD	To Be Determine
TNC	Terminal Node Controller
UHF	Ultra High Frequency
USB	Universal Serial Bus
UUT	Unit Under Test
VFO	Variable Frequency Oscillator
VHF	Very High Frequency
VOIP	Voice over Internet Protocol
WAN	Wide Area Network

2.2 ABBREVIATIONS

The following abbreviations are used in this document.

<u>ABBREVIATION</u>	<u>DEFINITION</u>
ACC	Accessory
FT	Feet
GHz	Gigahertz
Hrs	Hours
Hz	Hertz
ID	Identification
Maint	Maintenance
MHz	Megahertz
P25	Project 25
PinCo	Pinellas County
Qty	Quantity
SHARES	Shared Resources
SW	Software
TV	Television

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<u>ABBREVIATION</u>	<u>DEFINITION</u>
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V	Volts
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3 MAINTENANCE PROCEDURE OVERVIEW

This section defines the safety precautions and individual qualification requirements needed to safely perform maintenance on the Command Runner CRD; describes the periodicity codes used to schedule each maintenance action; and lists each periodic maintenance procedure defined for the CRD.

3.1 SAFETY

3.1.1 Safety Definitions

The following safety definitions are applicable to all Command Runner Equipment Maintenance Procedures.

- a. **WARNING:** Death or injury may result if the operating/handling procedures and practices are not correctly followed.
- b. **CAUTION:** Damage to equipment may result if the operating procedures and practices are not correctly followed.
- c. **NOTE:** Amplifying information or procedural advisory.

3.1.2 Safety Precautions

The following warning and caution statements are incorporated into Command Runner Equipment Maintenance Procedures.

- a. **WARNING: Do Not** operate radio equipment during a lightning storm.
Disconnect the power source and antenna before a storm.
- b. **WARNING:** Never touch an antenna or antenna connector while transmitting.
This action could cause an electrical shock or burns.
- c. **WARNING:** While lowering the top cover of the Command Runner, use the two silver latching handles to carefully guide and lower the cover. Keep fingers away

from the front lip of the top cover to prevent fingers from being pinched or injured.

- d. **WARNING:** Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.
 - (1) Stop the generator and let it cool before handling fuel.
 - (2) Keep heat, sparks, and flame away from generator
 - (3) Handle fuel only outdoors.
 - (4) Keep the generator away from vehicles.
 - (5) Wipe up fuel spills immediately.
 - (6) **Do Not** use an electric pump to remove fuel from the generator.
- e. **WARNING:** Generator exhaust contains poisonous carbon monoxide gas that can build up to dangerous levels in enclosed or partly enclosed areas. Breathing carbon monoxide can cause unconsciousness or death. Never run the generator engine in an enclosed, or even partly enclosed area.
- f. **WARNING:** The exhaust system on the rear of the generator becomes extremely hot during operation. **Do Not** touch the exhaust system while the generator is operating or before it has completely cooled. Failure to comply with this warning could result in serious burns.
- g. **CAUTION:** The Command Runner is heavy and can be unstable while in motion. **Do Not** attempt to move the Command Runner unless two qualified maintainers are present.
- h. **CAUTION:** When moving the Command Runner by hand:
 - (1) Ensure that the frame assembly is set to its lowest position.
 - (2) **Do Not** move the Command Runner unless two qualified maintainers are present.
 - (3) Avoid soft terrain such as soil or sand.
 - (4) Avoid steep inclines and slopes. The brakes are designed to help with maneuverability but are not failsafe.
 - (5) Always keep one hand on the transport handle with access to the brake lever.

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- i. **CAUTION:** The Command Runner is not designed for operation in a wet environment. **Do Not** deploy the Command Runner to a location where the unit will be exposed to rain, mist, or snow.
- j. **CAUTION:** **Do Not** overextend the frame when raising the frame assembly as it may damage the thrust screw and/or scissor legs.
- k. **CAUTION:** **Do Not** attempt to transmit unless the antenna system SWR is less than 3:1. Permanent equipment damage can occur when transmitting into an antenna system with high SWR.
- l. **CAUTION:** **Do Not** overtighten the Quick Clamp adjustment screw. Overtightening can damage the Quick-Clamp.
- m. **CAUTION:** **Do Not** use harsh solvents such as benzine, alcohol, ammonia, or Windex when cleaning computer monitors or transceiver display screens. These solvents can damage the protective coating used to combat glare, reflections, and fingerprints.
- n. **CAUTION:** **Do Not** use abrasive pads, paper towels, or cloth towels when cleaning computer monitors or transceiver display screens. These products can scratch and damage the displays.
- o. **CAUTION:** Keep the nozzle of the compressed air duster 3 to 4 inches away from the surface being cleaned. **Do Not** allow the nozzle to touch a computer monitor or transceiver display screen. The nozzle may damage the display.
- p. **CAUTION:** When wiping a computer monitor or transceiver display screen, be careful not to push too hard or scratch the surface with your fingernails. Either action can damage the display.
- q. **CAUTION:** Before securing the front panel, verify that hinge and vertical contact points are clear of obstructions. Pay close attention to cables to ensure nothing is pinched or compressed.
- r. **CAUTION:** Carefully guide and lower the top cover of the Command Runner. Equipment damage may occur if the cover is not lowered slowly.

- s. **CAUTION:** Confirm that the parking brake is fully engaged and locked before proceeding.
- t. **CAUTION:** Operating the generator less than 3 feet from a building, obstruction, or when it is in an enclosure, a storage or security compartment, can cause overheating and damage the generator.

For proper cooling, allow 3 feet of empty space above and around the generator. Keep all cooling holes open and clear of debris, mud, water, etc. Cooling holes are located on the side panel of the control panel, and the bottom of the generator. If the cooling holes are blocked, the generator may overheat and damage the engine, inverter, or windings.
- u. **CAUTION: Do Not** allow the generator starter grip to snap back against the generator. Return it gently to prevent damage to the generator.

3.2 QUALIFICATIONS

The Command Runner CRD is a complex set of equipment that could easily be damaged if improperly transported, operated, or maintained. The Command Runner also contains radio equipment that only authorized Federal Communications Commission (FCC) license holders are permitted to operate. Therefore, individuals performing maintenance on a Command Runner CRD must meet the qualifications listed below to perform the identified actions.

- a. The maintainer must have successfully completed the PinCo Command Runner CRD maintenance training program to perform any maintenance action.
- b. The maintainer must have a ***Technician, General, Advanced, or Amateur Extra class*** FCC license to perform any task that requires the maintainer to transmit voice or digital information via a VHF or UHF amateur radio.
- c. The maintainer must have a ***General, Advanced, or Amateur Extra class*** FCC license to perform any task that requires the maintainer to transmit voice or digital information via an HF amateur radio.

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- d. Only a PinCo ACS software system administrator is authorized to perform the following maintenance actions:
 - (1) Update the Cradlepoint router software, Victron Battery Monitor firmware, or Victron Bluetooth Interface firmware.
 - (2) Use the ***VictronConnect*** application to evaluate the status of the Command Runner battery.
 - (3) Update the firmware or code plug files installed in Command Runner transceivers.
- e. Only a Pinellas County facilities department technician qualified to perform small engine repair is authorized to perform generator maintenance.

3.3 MAINTENANCE PROCEDURES

The maintenance procedures defined for each PinCo Command Runner CRD are listed in Table II. The table includes the following information.

- a. ID – A sequential number used to identify each maintenance activity.
- b. Description – A brief description of each maintenance procedure.
- c. Maintenance Code – This field consists of two parts. The first part specifies how frequently the maintenance task should be performed. Refer to Table I for the definition of each periodicity code. The second part is a sequential number that uniquely identifies each maintenance task that has a common periodicity.

Table I. Periodicity Codes

D	– Daily	S	– Semiannually
W	– Weekly	A	– Annually
M	– Monthly	R	– Situation Requirement
Q	– Quarterly	U	– Unscheduled

- (1) Unscheduled (U) procedures are used to perform the following activities.
 - (a) Restore equipment to an operational state when a failure is detected during periodic maintenance or equipment deployment.
 - (b) Set-up, shutdown, and transport equipment.
- (2) Situation (R) dependent procedures are performed prior to equipment deployment, following equipment deployment, and during long periods of equipment inactivity.

A Situation Requirement code (R) will also be used with a calendar periodicity code when, in addition to the calendar, a situation dictates that the procedure must be performed.

 - (a) **S-3R:** The procedure is performed semiannually or prior to and after each deployment, whichever comes first.
 - (b) **R-1M:** The procedure is scheduled to be performed during a month that does not include a scheduled quarterly test.
- d. Maintainers – The total number of maintainers required to perform the maintenance procedure.
- e. Elapsed Time – The time from start to finish of the maintenance procedure.
- f. Special Qualifications – Identifies the special qualifications the maintainer must hold to perform the maintenance action.
 - (1) **General:** The maintainer must hold a General Class FCC amateur radio license or higher.
 - (2) **Technician:** The maintainer must hold a Technician Class FCC amateur radio license or higher.
 - (3) **Sys Admin:** The maintainer must be a PinCo ACS Software System Administrator.

- (4) **PinCo Small Eng:** The maintainer must be a member of the Pinellas County facilities department qualified to perform small engine repair and maintenance.
- g. Related Maint – Identifies each additional maintenance activity that must be performed in conjunction with the defined maintenance procedure.

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Table II. Command Runner Maintenance Procedures

ID	Description	Maintenance Code	Maintainers	Elapsed Time	Special Qualifications	Related Maint
1	Power, Computer, and Network Checks	Q-1	2	2		U-1
1. Perform power system checks using shore and battery power. 2. Perform computer system and network operability checks.						
2	Software and Firmware Maintenance	Q-2	2	2		U-1
1. Check and update, as required, Windows operating system. 2. Check and update, as required, Winlink Express application and templates. 3. Check and update, as required, virtual TNC applications.						
3	VHF/UHF System Communication Checks	Q-3	3	2	Technician	U-1
1. Perform voice communication tests using the amateur VHF/UHF transceiver. 2. Perform voice communication tests using the VHF and UHF public safety transceivers. 3. Perform voice communication tests using the 800/700 MHz public safety transceiver. 4. Exchange Winlink traffic with EOC using Vara FM and VHF packet protocols.						
4	HF System Communication Checks	Q-4	3	2	General	U-1
1. Perform voice communication tests using the amateur HF transceiver. 2. Exchange Winlink traffic with EOC using amateur radio HF Vara and Pactor protocols. 3. Exchange Winlink traffic with EOC using SHARES.						

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Table II. Command Runner Maintenance Procedures

ID	Description	Maintenance Code	Maintainers	Elapsed Time	Special Qualifications	Related Maint
5	Battery Monitor/Cradlepoint Maintenance	Q-5	2	1	Sys Admin	U-1
1. Check and update, as required, Victron Battery Monitor and Bluetooth Interface firmware. 2. Check and update, as required, Cradlepoint router software.						
6	Generator Maintenance	S-1	1	1	PinCo Small Eng	
1. Check Engine oil level and replace as required. 2. Check and clean the air filter. 3. Check, clean, adjust, replace spark plug. 4. Clean fuel tank filter. <u>NOTE:</u> This maintenance action will be performed by the Pinellas County facilities department in accordance with the procedures documented in the owner's manual for the Honda Generator EU2200i.						
7	Radio Code Plug Maintenance	S-2R	2	0.5		U1
1. Check and document the radio code plug version installed in the amateur VHF/UHF transceiver. 2. Check and document the radio code plug versions installed in the VHF and UHF public safety transceivers. 3. Check and document the radio code plug version installed in the 800/700 MHz public safety transceiver. 4. Check and document the radio code plug version installed in the amateur HF transceiver. <u>NOTE:</u> This procedure is performed semiannually or prior to each deployment whichever comes first.						

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Table II. Command Runner Maintenance Procedures

ID	Description	Maintenance Code	Maintainers	Elapsed Time	Special Qualifications	Related Maint
8	Inspect, Clean, and Inventory Equipment	S-3R	2	1		
<ol style="list-style-type: none"> 1. Inspect and verify that hitch assembly, rubber wheel chocks, and 15 ft mast are present and properly secured. 2. Test brake, turn signal, and running lights. 3. Clean computer monitors and radio displays. 4. Inspect and Inventory contents of the two accessory storage drawers. 5. Inspect and inventory contents of auxiliary equipment bag. <p><u>NOTE:</u> The procedure is performed semiannually or prior to and after each deployment whichever comes first.</p>						
9	Radio Firmware Maintenance	A-1	2	TBD	Sys Admin	TBD
<ol style="list-style-type: none"> 1. Check and update, as required, radio firmware. 						
10	Mechanical System Checks	A-2R	2	1		
<ol style="list-style-type: none"> 1. Test parking brake system. 2. Tighten hitch adaptor bolts. 3. Inspect and lubricate as needed hitch adapter and chassis thrust screw. 4. Inspect and tighten pivot bolts. <p><u>NOTE:</u> The procedure is performed annually or prior to each deployment whichever comes first.</p>						

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Table II. Command Runner Maintenance Procedures

ID	Description	Maintenance Code	Maintainers	Elapsed Time	Special Qualifications	Related Maint
11	Battery Status	R-1M	1	0.25	Sys Admin	
<p>1. Check and Record battery state-of-charge and Amp-Hours consumed.</p> <p><u>NOTE:</u> Command Runner battery status is checked during each scheduled quarterly maintenance activity. Since the battery status of each Command Runner should be checked monthly, this procedure, R-1M, is only scheduled to be performed during a month that does not include a scheduled quarterly test.</p>						
12	Generator Storage	R-2	1	0.5		
<p>1. Drain generator fuel tank. 2. Run engine to consume fuel in carburetor. 3. Clean and store generator.</p> <p><u>NOTE:</u> The generator <u>cannot</u> be stored inside the Pinellas County Safety Complex if it contains any fuel within its fuel tank. This procedure must be performed prior to equipment storage if, during a deployment, fuel was added to the generator.</p>						
13	Emplace, Shutdown, and Store	U-1	2	1		
<p>1. Emplace Command Runner and connect to AC power Source. 2. Power down, transport, and store Command Runner.</p>						

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Table II. Command Runner Maintenance Procedures

ID	Description	Maintenance Code	Maintainers	Elapsed Time	Special Qualifications	Related Maint
14	Charge Internal Battery	U-2	2	0.25	Sys Admin	
<p>1. Charge the internal battery to 80% capacity.</p> <p><u>NOTE:</u> This unscheduled maintenance action is performed when a qualified maintainer finds that the Command Runner's internal battery has a state-of-charge that is less than 50%.</p>						
15	Update Transceiver Code Plugs	U-3	2	2	Sys Admin	
<p>1. Update, as required, the radio code plug file installed in the amateur VHF/UHF transceiver.</p> <p>2. Update, as required, the radio code plug files installed in the VHF and UHF public safety transceivers.</p> <p>3. Update, as required, the radio code plug file installed in the 800/700 MHz public safety transceiver.</p> <p>4. Update, as required, the radio code plug file installed in the amateur HF transceiver.</p> <p><u>NOTE:</u> This unscheduled maintenance action is performed when a qualified maintainer determines that the Code Plug file installed in a Command Runner transceiver is out-of-date.</p>						

EQUIPMENT MAINTENANCE PROCEDURES

Name of Equipment: PinCo Command Runner

Version: 20230615

Title: Power, Computer, and Network Checks

Periodicity: Q-1

MAINTENANCE TASK DESCRIPTION

1. Perform power system checks using shore and battery power.
2. Perform computer system and network operability checks.

MAINTAINER REQUIREMENTS AND QUALIFICATIONS

Number of Maintainers Required: 2

Individual Man-Hours: 2

Elapsed Time: 2

QUALIFICATIONS

1. The maintainer must have successfully completed the PinCo Command Runner CRD maintenance training program to perform any maintenance action.

SAFETY PRECAUTIONS

1. The Command Runner is heavy and can be unstable while in motion. **Do Not** attempt to move the Command Runner unless two qualified maintainers are present.
2. The Command Runner is not designed for operation in a wet environment. **Do Not** deploy the Command Runner to a location where the unit will be exposed to rain, mist, or snow.
3. **Do Not** operate radio equipment during a lightning storm. Disconnect the power source and antenna before a storm.

MATERIALS, TOOLS, AND TEST EQUIPMENT

MATERIALS

1. Notepad and pencil / pen
2. AA Batteries (Qty 3)

TOOLS

1. None

TEST EQUIPMENT

1. Digital Multimeter
2. USB Multimeter
3. AC Outlet / Receptacle Tester

MISCELLANEOUS

1. **PinCo ACS CR U-1** Maintenance Procedures
2. **Equipment Maintenance Record** for the PinCo Command Runner under test
3. Command Runner auxiliary equipment bag
4. Command Runner PA System speaker bag.
5. 100Ft CAT 5/6 Ethernet cable
6. 2-meter CAT 5/6 Ethernet cable
7. Cigarette lighter to Power Pole adaptor
8. WI-FI enabled device (E.g., Cell Phone, tablet, etc.)

PROCEDURES

A. Preliminary – Emplace Command Runner

NOTE 1: Use the [Equipment Maintenance Record \(EMR\)](#) for the unit under test (UUT) to document the maintenance action performed. For each action performed, enter the date, name, and FCC call sign of the individual completing the action. Document all discrepancies in the **NOTES** section of the EMR.

1. Emplace the Command Runner in accordance with the procedure documented in **Part A** of **PinCo ACS CR U-1**.

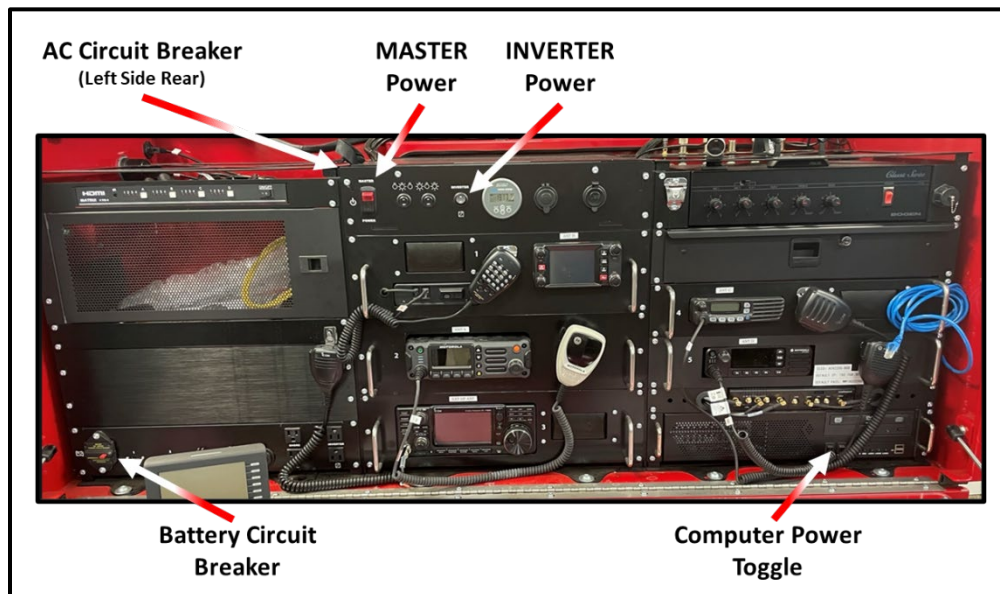


Figure 1. Command Runner Circuit Breakers and Power Switches

B. Power System Maintenance

1. **Test system operation using shore power.**
 - a. Set the AC Circuit Breaker to the **ON** position.
 - b. Set the Battery Circuit breaker to the **OFF** position.
 - c. Examine the Victron Battery Monitor.
 - (1) Use the “+” and “-” keys on the front of the battery monitor to select and display the following parameters.
 - (a) *Voltage on the 12V MAIN bus.* When operating properly, the voltage displayed should be 14.6V ± 10%.
 - (b) *Battery Current:* This parameter should read zero.
 - d. Unlatch and lower the rear panel of the Command Runner.
 - e. Confirm that the cooling fan located at the top rear of the center console is running.
 - f. Set the MASTER POWER switch to the **ON** position. The switch should illuminate.

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Command Runner – Q-1

- g. Set the INVERTER Power Switch to the **ON** position.
- h. Power on the radio equipment listed below and adjust the volume and squelch setting to minimize the ambient noise. Verify that each radio is energized.
 - (1) Yaesu FTM-400XD amateur VHF/UHF transceiver.
 - (2) Motorola APX 4500 P25 public safety transceiver.
 - (3) Motorola XPR 5550e UHF public safety transceiver.
 - (4) ICOM IC-F5021 VHF public safety transceiver.
 - (5) ICOM IC-7300 HF Transceiver.
- i. Power on the following equipment.
 - (1) Computer System.
 - (2) Bogen Public Address System Amplifier.

NOTE 2: Command Runner shutdown and storage procedures dictate that the unit specific power switches for the equipment listed below remain in the POWER ON position. These units should automatically energize when the inverter power switch is set to the ON position.

- j. Confirm that the following equipment is energized.
 - (1) Cradlepoint AER 2200 Router
 - (2) MX4414 HDMI Matrix Switch
 - (3) BenQ Computer Monitors (Qty 2)
- k. Set both cover light power switches to the ON position. Confirm that the center red and two white lights are energized.

NOTE 3: The Command Runner has two shore power AC outlets and two AC outlets sourced by the Inverter. All four AC outlets are located on the bottom of the left console.

- l. Test the four AC Power outlets on the front of the Command Runner.
 - (1) Insert an AC Outlet / Receptacle tester into each of the AC power outlets.
 - (2) The tester should indicate that each outlet has AC power present, is properly wired, and has a working safety ground.

2. Test system operation using internal battery.

- a. Set the Battery Circuit breaker to the **ON** position.
- b. Examine the Victron Battery Monitor.

NOTE 4: The Battery Monitor will display a NEGATIVE battery current value when the battery is supplying power to the Command Runner and a POSITIVE (no sign) value when the battery is being charged.

- (1) Use the “+” and “-” keys on the front of the battery monitor to select and display the following parameters.
 - (a) Voltage on the 12V MAIN bus. When operating properly, the voltage displayed should be 14.6V ± 10%.
 - (b) Battery Current: This parameter should display a positive value.
- c. Set the AC Circuit Breaker to the **OFF** position.

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Command Runner – Q-1

- d. Examine the Victron Battery Monitor.
 - (1) Use the “+” and “-” keys on the front of the battery monitor to select and display the following parameters.
 - (a) *Voltage on the 12V MAIN bus.* When operating properly, the voltage displayed should be $13.8V \pm 10\%$.
 - (b) *Battery Current:* This parameter should display a **NEGATIVE** value.
- e. Confirm that the cooling fan located at the top rear of the center console is no longer running.
- f. Confirm that the radio, computer, and networking equipment listed in **steps B.1.h, B.1.i, and B.1.j** is still energized.
- g. Set the AC Circuit Breaker back to the **ON** position.

3. Test operation of USB, Power Pole, and 12Vdc charging ports.

- a. Use a digital multimeter to measure the voltage across each set of Power Pole connectors located on the bottom of the left console. The voltage measured should correspond to the value displayed on the Victron battery monitor.

NOTE 5: The Command Runner has two panel mounted cigarette lighter 12V DC power ports. The first is in the center console to the right of the Victron battery monitor. The second is located on the bottom of the left console to the right of the Power Pole connectors.

- b. Insert the cigarette lighter-to-power pole adapter into each of the 12 V DC power ports.
- c. Use a digital multimeter to measure the voltage across the Power Pole connectors on the adaptor’s pig tail. The voltage measured should correspond to the value displayed on the Victron battery monitor.
- d. Remove and store the cigarette lighter-to-Power Pole adapter.

NOTE 6: The Command Runner has two panel mounted USB charging stations. The first is in the center console to the right of the Victron battery monitor. The second is located on the bottom of the left console to the right of the Power Pole connectors. Each charging station has two USB connectors.

- e. Insert the USB Multimeter into each of the four USB charging connectors. The voltage displayed on the multimeter should be $5V\ DC \pm 5\%$.
- f. Remove and store the USB multimeter.

C. Computer System and Network Checks

1. Test operation of computer, keyboard, mouse, HDMI switch, and monitors.

- a. Remove the computer keyboard and mouse from the accessory storage drawer located on the left front of the Command Runner.
- b. Set the power switch on the top of the Bluetooth keyboard to the **ON** position.
- c. Set the power switch on the bottom of the Bluetooth mouse to the **ON** position.
- d. Use the four white input selection buttons on the front of the HDMI Matrix to configure the matrix in accordance with the settings shown in Figure 2 below.

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- (1) Output Port A Input Port 1
- (2) Output Port B Input Port 2
- (3) Output Port C Input Port 3
- (4) Output Port D Input Port 4

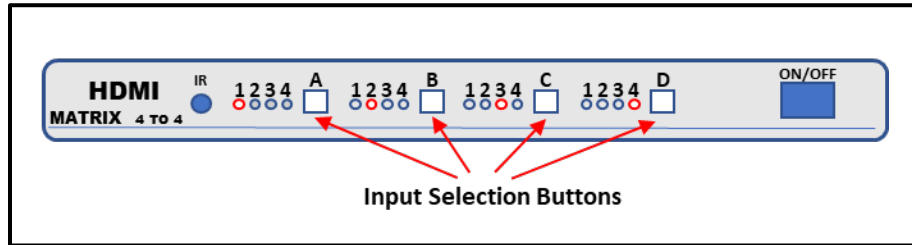


Figure 2. HDMI Switch Controls and Indicators

NOTE 7: If the two computer monitors appear to be in a sleep mode, depress the **Return/Enter** key on the Bluetooth keyboard several times to wake the computer.

- e. Examine each computer monitor. Each monitor should display the Windows 10 Desktop.
- f. Use the keyboard and mouse to open a web browser. Then, display the Pinellas ACS website, <https://www.pcacs.org/>.

**2. Test Cradlepoint WAN connectivity to both wired and cellular networks.
Confirm auto switchover.**

- a. Connect one end of the 100-foot CAT5/6 cable to the WAN connector on the left side of the Command Runner.
- b. Connect the other end of the CAT5/6 cable to an unused PinCo EOC network jack.
- c. Examine the front of the Cradlepoint router. Refer to Figure 3. The status indicator for the modem should transition from **GREEN** to **AMBER**.

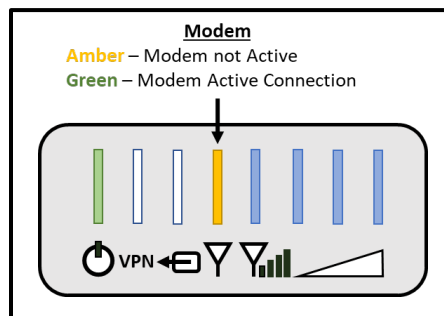


Figure 3. Cradlepoint Status Indicators

- d. After the modem status indicator transitions to **AMBER**, confirm that the Command Runner has an internet connection by using the web browser on the computer to display the Pinellas ACS website, <https://www.pcacs.org/>.
- e. Disconnect the 100-foot CAT 5/6 cable from the WAN connector on the left side of the Command Runner.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – Q-1

- f. Examine the front of the Cradlepoint router. The status indicator for the modem should transition from **AMBER** to **GREEN**.
- g. After the modem status indicator transitions to **GREEN**, confirm that the Command Runner has an internet connection by using the web browser on the computer to display the Pinellas ACS website, <https://www.pcacs.org/>.
- h. Disconnect the 100-ft CAT 5/6 cable from the PinCo EOC network jack, coil and store the cable, and reinstall the environmental cover on the external WAN jack.

3. Test operation of Cradlepoint Wi-Fi network.

- a. Use a wi-fi enabled device (e.g., Cell phone, tablet, laptop, etc.), to find the wi-fi networks available in the immediate vicinity of the Command Runner under test. If the Cradlepoint router is working correctly, the following two networks should be listed.

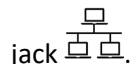
NOTE 8: The letter “n” in the following list of Wi-Fi networks corresponds to the Command Runner under test.

- (1) 2.4 GHz Network: PinCo-CRn
- (2) 5 GHz Network: PinCo-CRn-5g

- b. Use a Wi-Fi enabled device to select and connect to the 2.4 GHz wi-fi network. When the wi-fi device requests a password, enter the following information.
(1) Password: 1a2b3c4e5f
- c. Once the Wi-Fi enabled device confirms that it is connected to the 2.4 GHz network, use the web browser on the device to display the Pinellas ACS website, <https://www.pcacs.org/>.
- d. Instruct the Wi-Fi enabled device to disconnect/forget the 2.4 GHz wi-fi network under test.
- e. Use a Wi-Fi enabled device to select and connect to the 5 GHz wi-fi network. When the wi-fi device requests a password, enter the following information.
(1) Password: 1a2b3c4e5f
- f. Once the Wi-Fi enabled device confirms that it is connected to the 5 GHz network, use the web browser on the device to display the Pinellas ACS website, <https://www.pcacs.org/>.
- g. Instruct the Wi-Fi enabled device to disconnect/forget the 5 GHz wi-fi network under test.

4. Test operation of Voice Over IP (VOIP) Phone.

- a. Remove the VOIP phone from the accessory storage cabinet located on the left front of the Command Runner.
- b. Connect the VOIP phone to the Cradlepoint router.
(1) Insert one end of a 2-meter CAT 5/6 cable to the VOIP phone’s network



Pinellas County ACS Equipment Maintenance Procedures
Command Runner – Q-1

- (2) Insert the other end of the CAT 5/6 cable into an unused Power-over-Ethernet (PoE) port on the rear of the Cradlepoint router.
- c. Examine the front of the phone and confirm that the display is illuminated and reports that the phone is booting.
- d. The phone's initialization sequence will take several minutes to complete. During this period, the phone will display a series of messages to the user.
 - (1) "Booting"
 - (2) "Phone is starting Please wait..."
 - (3) "No Telephony possible (LI1)"
- e. When the phone completes initialization and establishes communication with the phone network, the correct **time** and **date** will be shown at the top of the phone's display, the phone number associated with the phone will be shown at the bottom of the display, and the word **UNIFY** will be shown in the middle of the display.
- f. Lift the phone's headset and confirm that a dial tone is present.

5. Test operation of TV Receiver.

- a. Remove the TV antenna from the accessory drawer located on the right front of the Command Runner.
- b. Connect the TV antenna to the **WinTV-HVR** dongle attached to the rear of the computer.



Figure 4. WinTV-HDR Dongle

- c. **TBD**

NOTE 9: The audio associated with the TV channel displayed by the WinTV application will be used to test the auxiliary audio output of the computer and the public address system. The WinTV application will be closed and the TV antenna stored at the conclusion of the public address system test.

6. Test operation of Public Address system.

- a. Set the controls on the front panel of the Bogen amplifier to the settings listed below.

	<u>Control</u>	<u>Setting</u>
(1)	MIC 1 Volume:	0
(2)	MIC 2 / AUX 1 Volume:	0
(3)	AUX2 Volume:	0
(4)	MIC2/ AUX1 Switch:	AUX1

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – Q-1

- | | | |
|-----|---------|----|
| (5) | TREBLE: | 0 |
| (6) | BASS: | 0 |
| (7) | POWER | ON |

- b. Remove the 15-foot telescoping mast from the top cover of the Command Runner.
- c. Open the two mast clamps on the left side of the Command Runner, insert the bottom of the 15-foot telescoping mast into the clamps, and then close and tighten the clamps.



Figure 5. Command Runner Mast Mount Location

- d. Remove the horn speaker assembly from the PA System Speaker bag.
- e. Attach the horn speaker assembly to the top of the 15-foot mast.
- f. Connect the speaker assembly audio cable to the RCA speaker jack located on the far right of the antenna distribution assembly. The assembly is located just below the computer monitor on the top right of the Command Runner. Refer to Figure 6 for jack location.

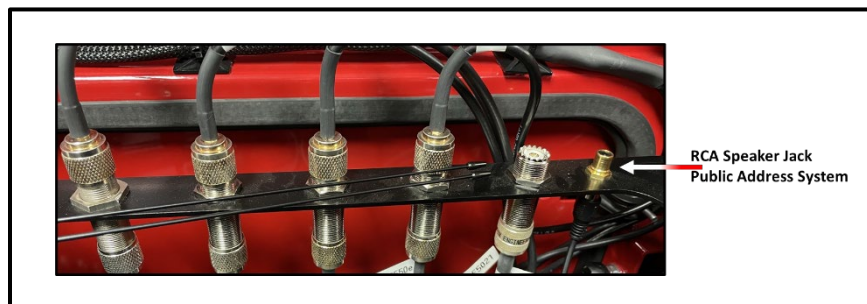



Figure 6. RCA Speaker Jack Location

- g. Remove the microphone from the accessory drawer located on the right front of the Command Runner.
- h. Connect the microphone to the jack located to the left of the Bogen amplifier.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – Q-1

- i. Key the microphone. While talking into the microphone, slowly increase the **MIC1 volume control** until you can hear your voice through the horn speaker assembly.
- j. Unkey the microphone and rotate the **MIC1 volume control** back to the zero (0) setting.
- k. Use the computer mouse to click on the Windows Start logo  in the bottom left corner of the screen and then click on the Settings option. This will cause the Settings window to be displayed.
- l. Select the System option. This will cause the System page to be displayed.
- m. Select the Sound option. Use the output device pull-down menu to select the **TBD** option.
- n. Slowly increase the **MIC2/AUX1 volume control** until you can hear the audio associated with the TV channel through the horn speaker assembly.
- o. Rotate the **MIC2/AUX1 volume control** back to the zero (0) setting.
- p. From the computer Sound Options window, use the output device pull-down menu to select the **TBD** option.
- q. Set the Bogen Amplifier power switch to the OFF position.
- r. Disconnect the speaker assembly audio cable from the RCA speaker jack.
- s. Remove the horn speaker assembly from the top of the 15-foot mast, coil the speaker audio cable, and store the speaker assembly and cable within the PA System Speaker bag.
- t. Loosen and then open the mast clamps on the left side of the Command Runner. Remove the 15-foot mast and store the mast back on the top cover of the Command Runner.
- u. Close and tighten the mast clamps.
- v. Disconnect the Bogen microphone and store it in the accessory drawer located on the right front of the command runner.
- w. Close the **TBD** TV receiver application.
- x. Disconnect the TV antenna from the **WinTV-HVR** dongle attached to the rear of the computer. Coil the antenna cable and store the antenna in the accessory drawer located on the right front of the command runner.

D. Equipment Shutdown and Storage

NOTE 10: At the conclusion of the planned maintenance activity, power down, configure for transport, and return the Command Runner to its long-term storage location.

1. Power down, transport, and store the Command Runner in accordance with the procedure documented in **Part B** of PinCo ACS CR U-1.

EQUIPMENT MAINTENANCE PROCEDURES

Name of Equipment: PinCo Command Runner

Version: 20230622

Title: Software and Firmware Maintenance

Periodicity: Q-2

MAINTENANCE TASK DESCRIPTION

1. Check and update, as required, Windows operating system.
2. Check and update Winlink Express application and templates.
3. Check and update, as required, virtual TNC applications.

MAINTAINER REQUIREMENTS AND QUALIFICATIONS

Number of Maintainers Required: 2

Individual Man-Hours: 2

Elapsed Time: 2

QUALIFICATIONS

1. The maintainer must have successfully completed the PinCo Command Runner CRD maintenance training program to perform any maintenance action.

SAFETY PRECAUTIONS

1. The Command Runner is heavy and can be unstable while in motion. **Do Not** attempt to move the Command Runner unless two qualified maintainers are present.
2. The Command Runner is not designed for operation in a wet environment. **Do Not** deploy the Command Runner to a location where the unit will be exposed to rain, mist, or snow.

MATERIALS, TOOLS, AND TEST EQUIPMENT

MATERIALS

1. Notepad and pencil / pen.

TEST EQUIPMENT

1. None

TOOLS

1. None

MISCELLANEOUS

1. **PinCo ACS CR U-1** Maintenance Procedures.
2. **Equipment Maintenance Record** for the PinCo Command Runner under test.

PROCEDURES

A. Preliminary – Emplace Command Runner

NOTE 1: Use the [Equipment Maintenance Record \(EMR\)](#) for the unit under test to document each maintenance action performed. For each maintenance action performed, enter the date, name, and FCC call sign of the individual completing the action. Document all discrepancies in the **NOTES** section of the EMR.

1. Emplace the Command Runner in accordance with the procedure documented in **Part A** of **PinCo ACS CR U-1**.

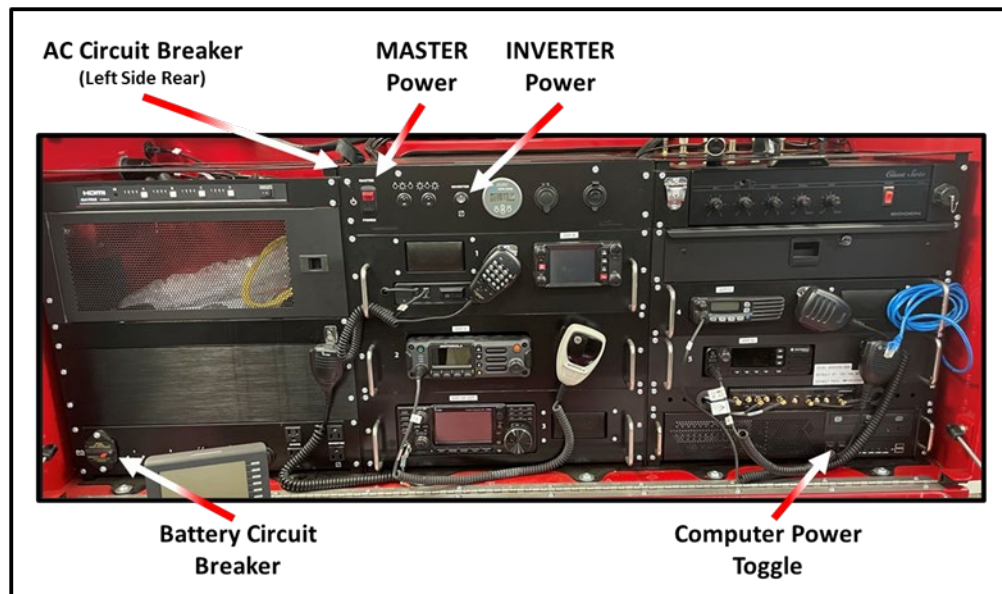



Figure 1. Command Runner Circuit Breakers and Power Switches

2. Set the AC Circuit Breaker to the **ON** position.
3. Set the MASTER POWER switch to the **ON** position. The switch should illuminate.
4. Set the INVERTER Power Switch to the **ON** position.
5. Power on the following equipment.
 - a. Computer System.



NOTE 2: Command Runner shutdown and storage procedures dictate that the unit specific power switches for the equipment listed below remain in the POWER ON position. These units should automatically energize when the inverter power switch is set to the ON position.

6. Confirm that the following equipment is energized.
 - a. Cradlepoint AER 2200 Router
 - b. MX4414 HDMI Matrix Switch
 - c. BenQ Computer Monitors (Qty 2)

B. Check/Update Windows operating system.


1. Use the mouse to click on the Windows **Start** logo  in the bottom left corner of the screen and then click on the **Settings** option. This will cause the Settings window to be displayed.
2. Select the **Update & Security** option. This will cause the Windows Update page to be displayed.
3. Select the **Check for Updates** option. If the Windows software is up to date, the system will display the message shown below in the upper left corner of the window. The time the system checked for updates will also be displayed.

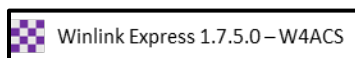


4. If one or more software updates are available, Windows will begin to download the updates automatically. Once the update process is complete, Windows may display a **Restart Now** button . If this button is displayed, use the mouse to click the button and restart the computer.
5. Record the Windows Version and OS build numbers on the **STATUS** page of the **Equipment Maintenance Record** form.
 - a. Press the Windows **Start** key  on the keyboard.
 - b. Type "**about**" and then press the **Enter** key. This will cause the System About window to be displayed.
 - c. The Windows Version and OS build numbers are displayed near the bottom of the window in the **Windows specifications** area.

C. Check/Update Winlink Express application and templates.

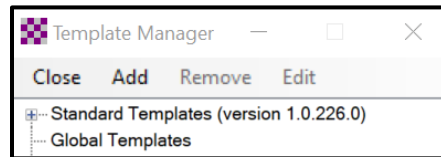
NOTE 3: Winlink Express is configured to automatically install software and template updates without prompting the user for authorization. The program will automatically check for updates immediately after being launched by the user.

1. Launch the Winlink Express Application .
2. If an update to the application or message template set is available, Winlink Express will display a window notifying the user that an update is in progress.
 - a. If the application software was updated, Winlink Express will automatically perform a program restart.
3. Record the Winlink Express software and template version numbers on the **STATUS** page of the **Equipment Maintenance Record** form.
 - a. The Winlink Express Version number is displayed in the upper left corner of the application Window.



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Command Runner Q-2

- b. To display the template version number, use the Message pull-down to select the **Template Manager...** The template version number is displayed to the right of the line labeled **Standard Templates**.




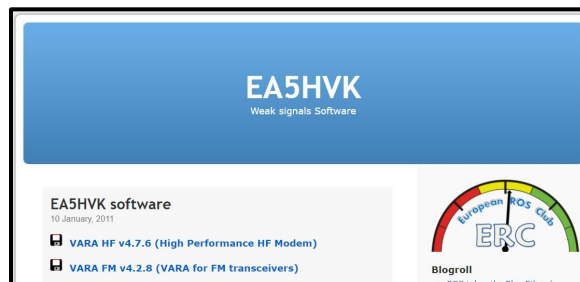
- c. Close the Winlink application.

D. Check/Update Virtual TNC applications.

NOTE 4: Three virtual TNC applications are installed on the Command Runner computer: VARA HF, VARA FM, and UZ7HO. Each application has a desktop shortcut.

1. Check/Update the VARA HF application.

- a. Open the VARA HF application by using the desktop shortcut .
- b. Record on a notepad the VARA HF software version number displayed in the upper left corner of the application window. Then close the VARA HF computer program.
- c. Use the web browser on the computer to display the EA5HVK website <https://rosmodem.wordpress.com/>.

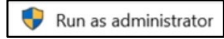


- d. Compare the version number displayed on the EA5HVK web site to the version number of the software currently installed on the computer.
- (1) If the version number on the web site is newer than the version number installed on the computer, then proceed to **step D.1.e**
 - (2) If the version number on the web site is the same as the version number installed on the computer, then proceed to **step D.2** and perform the Check/Update tasks for the **VARA FM application**.
- e. Click the VARA HF line item. This will cause a download page to be displayed.
- f. Click on the **Download** button located in the lower right corner of the window. This will cause the application to be downloaded to the computer.
- g. Use Windows Explorer to examine the contents of the **Downloads** folder. Open the **VARA HF Setup.zip** folder and then depress the **Extract all** button.


Pinellas County ACS Equipment Maintenance Procedures
Command Runner Q-2

- h. When the **Select a Destination and Extract Files** window is displayed, leave the default location unchanged and depress the **Extract** button.

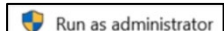
NOTE 5: The letters “*n.n.n*” in the following step identify the version number of the software.

- i. Use Windows Explorer to examine the contents of the **Downloads** folder. Open the **VARA HF vn.n.n Setup** folder. Use the mouse to right click on the **VARA Setup.exe** file. Select the Run as Administrator option .
- j. If a Windows Defender window is displayed, select the **More info** option and then press the **Run anyway** button.
- k. Answer yes to any window that requests permission to make changes to the computer.
- l. Follow the directions displayed by the Setup Wizard. Accept the License Agreement and use the default location for program installation.
- m. Open the VARA HF application by using the desktop shortcut and confirm that the installed version number matches the version displayed on the EA5HVK web site. Then, close the VARA HF computer program.

2. Check/Update the VARA FM application.

- a. Open the VARA FM application by using the desktop shortcut .
- b. Record on a notepad the VARA FM software version number displayed in the upper left corner of the application window. Then close the VARA FM computer program.
- c. Use the web browser on the computer to display the EA5HVK website <https://rosmodem.wordpress.com/>.
- d. Compare the version number displayed on the EA5HVK web site to the version number of the software currently installed on the computer.
 - (1) If the version number on the web site is newer than the version number installed on the computer, then proceed to **step D.2.e**.
 - (2) If the version number on the web site is the same as the version number installed on the computer, then proceed to **step D.3** and perform the Check/Update tasks for the UZ7HO Application.
- e. Click the VARA FM line item. This will cause a download page to be displayed.
- f. Click on the **Download** button located in the lower right corner of the window. This will cause the application to be downloaded to the computer.
- g. Use Windows Explorer to examine the contents of the **Downloads** folder. Open the **VARA FM Setup.zip** folder and then press the **Extract all** button.
- h. When the **Select a Destination and Extract Files** window is displayed, leave the default location unchanged and depress the **Extract** button.


NOTE 6: The letters “*n.n.n*” in the following step identify the version number of the software.

- i. Use Windows Explorer to examine the contents of the **Downloads** folder. Open the **VARA FM vn.n.n Setup** folder. Use the mouse to right click on the **VARA FM Setup.exe** file. Select the Run as Administrator option. 

Pinellas County ACS Equipment Maintenance Procedures
Command Runner Q-2

- j. If a Windows Defender window is displayed, select the **More info** option and then press the **Run anyway** button.
- k. Answer yes to any window that requests permission to make changes to the computer.
- l. Follow the directions displayed by the Setup Wizard. Accept the License Agreement and use the default location for program installation.
- m. Open the VARA FM application by using the desktop shortcut and confirm that the installed version number matches the version displayed on the EA5HVK web site. Then, close the VARA FM computer program.

3. Check/Update the UZ7HO (Sound Modem) application.

- a. Open the UZ7HO application by using the desktop shortcut .
- b. Record on a notepad the UZ7HO software version number displayed in the upper left corner of the application window. Then close the UZ7HO computer program.
- c. Use the web browser on the computer to display the UZ7HO website <http://uz7.ho.ua/packetradio.htm>.



NOTE 7: The letters “*nnn*” in the following steps identify the version number of the software.

- d. Compare the version number of the **soundmodem*nnn*.zip** file displayed on the UZ7HO web site to the version number of the software currently installed on the computer.

Soundmodem versions, manuals and utility:			
CHANGELOG.txt	09-Jun-22 06:22	10.02K	
greentnc.zip	25-Dec-22 11:33	1.35M	
hs_soundmodem27.zip	11-Feb-21 09:15	454.19K	
other-versions.zip	05-Oct-22 00:03	6.99M	
plt-dll.zip	30-Oct-19 22:39	247.22K	
soundmodem114.zip	09-Jun-22 06:18	465.62K	
user_guide_v045b_FR.pdf	11-Oct-13 19:13	333.12K	
user_guide_v114_EN.pdf	24-Oct-22 05:14	705.45K	
utils.zip	28-Feb-15 04:59	68.21K	

- (1) If the version number on the web site is newer than the version number installed on the computer, then proceed to **step D.3.e**.
- (2) If the version number on the web site is the same as the version number installed on the computer, then proceed to **step E** and return the Command Runner to its long term storage location.
- e. Click the **soundmodem*nnn*.zip** line item. This will cause the application to be downloaded to the computer.
- f. Use Windows Explorer to examine the contents of the **Downloads** folder. Open the **soundmodem*nnn*.zip** folder and then press the **Extract all** button.

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Command Runner Q-2

- g. When the **Select a Destination and Extract Files** window is displayed, leave the default location unchanged and depress the **Extract** button.
 - h. Use Windows Explorer to examine the contents of the **Downloads** folder.
 - (1) Open the **Soundmodemnnn** folder.
 - (2) Move the Soundmodemn.exe file to the UZ7HO folder on the local hard drive.
4. Record the **VARA HF**, **VARA FM**, and **UZ7HO sound modem** software version numbers on the **STATUS** page of the **Equipment Maintenance Record** form.



E. Equipment Shutdown and Storage

NOTE 8: At the conclusion of the planned maintenance activity, power down, configure for transport, and return the Command Runner to its long-term storage location.

- 1. Power down, transport, and store the Command Runner in accordance with the procedure documented in **Part B** of **PinCo ACS CR U-1**.

EQUIPMENT MAINTENANCE PROCEDURES

Name of Equipment: PinCo Command Runner

Version: 20230615

Title: VHF/UHF System Communication Checks

Periodicity: Q-3

MAINTENANCE TASK DESCRIPTION

1. Perform voice communication tests using the amateur VHF/UHF transceiver.
2. Perform voice communication tests using the VHF and UHF public safety transceivers.
3. Perform voice communication tests using the 800/700 MHz public safety transceiver.
4. Exchange Winlink traffic with EOC using VARA FM and VHF packet protocols.

MAINTAINER REQUIREMENTS AND QUALIFICATIONS

Number of Maintainers Required: 3

Individual Man-Hours: 2

Elapsed Time: 2

QUALIFICATIONS

1. The maintainer must have successfully completed the PinCo Command Runner CRD maintenance training program to perform any maintenance action.
2. The maintainer must have a ***Technician, General, Advanced, or Amateur Extra class*** FCC license to perform any task that requires the maintainer to transmit voice or digital information via a VHF or UHF amateur radio.

SAFETY PRECAUTIONS

1. The Command Runner is heavy and can be unstable while in motion. ***Do Not*** attempt to move the Command Runner unless two qualified maintainers are present.
2. The Command Runner is not designed for operation in a wet environment. ***Do Not*** deploy the Command Runner to a location where the unit will be exposed to rain, mist, or snow.
3. ***Do Not*** operate radio equipment during a lightning storm. Disconnect the power source and antenna before a storm.
4. Never touch an antenna or antenna connector while transmitting. This action could cause an electrical shock or burns.

MATERIALS, TOOLS, AND TEST EQUIPMENT

MATERIALS

1. Note Pad and pencil / pen

TOOLS

1. None

TEST EQUIPMENT

1. None

MISCELLANEOUS

1. **PinCo ACS CR U-1** Maintenance Procedures.
2. **Equipment Maintenance Record** for the PinCo Command Runner under test.
3. Command Runner Auxiliary Equipment bag.
4. 2-Meter amateur hand-held transceiver (Qty 2).

PROCEDURES

A. Preliminary

NOTE 1: The 2-meter hand-held transceivers (HT) will be used to coordinate operations between the deployed command runner and the EOC radio room.

1. Prior to Command Runner deployment, perform the following tasks.
 - a. Tune each 2-meter HT to the W4ACS repeater.
 - b. Exchange voice traffic between the two HTs to confirm that each radio is operating properly.

NOTE 2: Use the [Equipment Maintenance Record \(EMR\)](#) for the unit under test (UUT) to document the maintenance action performed. For each action performed, enter the date, name, and FCC call sign of the individual completing the action. Document all discrepancies in the **NOTES** section of the EMR.

2. Emplace the Command Runner in accordance with the procedure documented in **Part A** of **PinCo ACS CR U-1**.

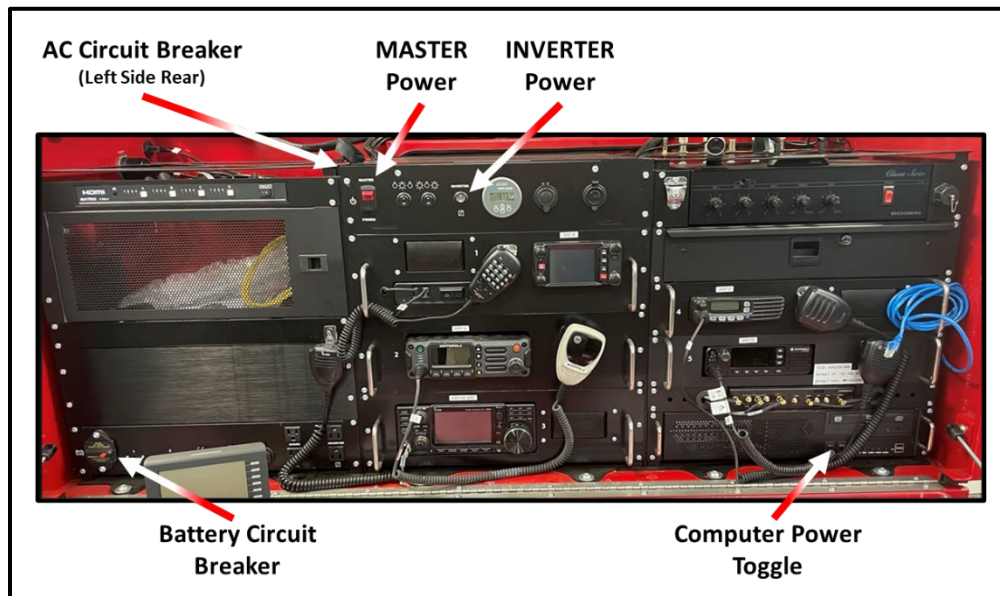


Figure 1. Command Runner Circuit Breakers and Power Switches

3. Set the AC Circuit Breaker to the **ON** position.
4. Set the MASTER POWER switch to the **ON** position. The switch should illuminate.
5. Set the INVERTER Power Switch to the **ON** position.
6. Power on the radio equipment listed below and adjust the volume setting to minimize the ambient noise. Verify that each radio is energized.
 - a. Yaesu FTM-400XD VHF/UHF amateur transceiver.
 - b. Motorola APX 4500 P25 public safety transceiver.
 - c. Motorola XPR5550e UHF public safety transceiver.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – Q-3

- d. ICOM IC-F5021 VHF public safety transceiver.
- 7. Power on the following equipment.
 - a. Computer System.

NOTE 3: Command Runner shutdown and storage procedures dictate that the unit specific power switches for the equipment listed below remain in the POWER ON position. These units should automatically energize when the inverter power switch is set to the ON position.

- 8. Confirm that the following equipment is energized.
 - a. Cradlepoint AER 2200 Router
 - b. MX4414 HDMI Matrix Switch
 - c. BenQ Computer Monitors (Qty 2)

B. Perform voice communication tests using amateur VHF/UHF radio (Yaesu FTM-400XD).

NOTE 4: Each of the tasks in Section B, C, and D require two maintainers; One maintainer to operate the transceiver located in the Command Runner and a second maintainer to operate the transceiver located in the Pinellas County EOC radio room. Both maintainers use the same procedure.

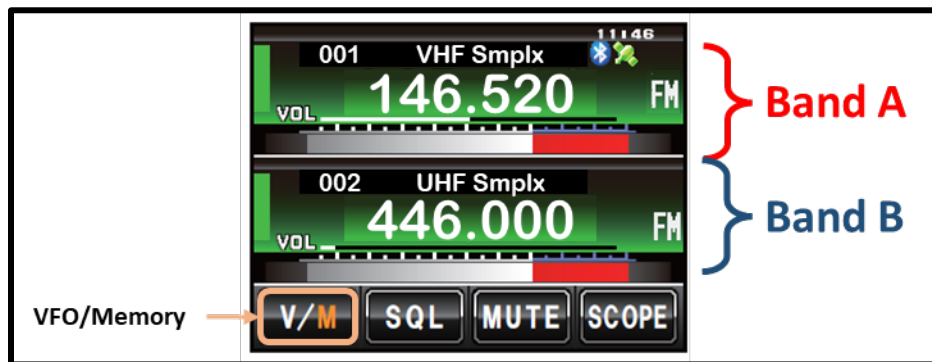


Figure 2. FTM-400XD Touch Screen Display

- 1. **Test VHF Operation using Band A**
 - a. Select Band A by lightly touching the Band A region of the display.
 - b. Verify that Band A is operating in memory mode. When in memory mode, the **M** within the **V/M** control will be displayed in **orange** and a memory channel number will be displayed in the tag region of Band A. If Band A is operating in VFO mode, lightly touch the **V/M** to switch to Memory mode.
 - c. Use the Band A DIAL knob to select the memory channel for the VHF National Simplex frequency, 146.520 MHz.
 - d. Use a 2-Meter HT to notify the EOC Radio Room or Command Runner that the Yaesu FTM-400XD is configured and ready for test.

WARNING: Never touch an antenna or antenna connector while transmitting. This action could cause an electrical shock or burns.

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Command Runner – Q-3

- e. Once the radios in the Command Runner and the EOC radio room are both ready for test, exchange voice traffic between the two Yaesu FTM-400XD radios to confirm that each radio is operating properly.

2. Test UHF Operation using Band B

- a. Select Band B by lightly touching the Band B region of the display.
- b. Verify that Band B is operating in memory mode. When in memory mode, the **M** within the **V/M** control will be displayed in **orange** and a memory channel number will be displayed in the tag region of Band B. If Band B is operating in VFO mode, lightly touch the **V/M** to switch to Memory mode.
- c. Use the Band B DIAL knob to select the memory channel for the UHF National Simplex frequency, 446.000 MHz.
- d. Use a 2-Meter HT to notify the EOC Radio Room or Command Runner that the Yaesu FTM-400XD is configured and ready for test.
- e. Once the radios in the Command Runner and the EOC radio room are both ready for test, exchange voice traffic between the two Yaesu FTM-400XD radios to confirm that each radio is operating properly.

C. Perform voice communication tests using the VHF public safety transceiver (ICOM IC-F5021).

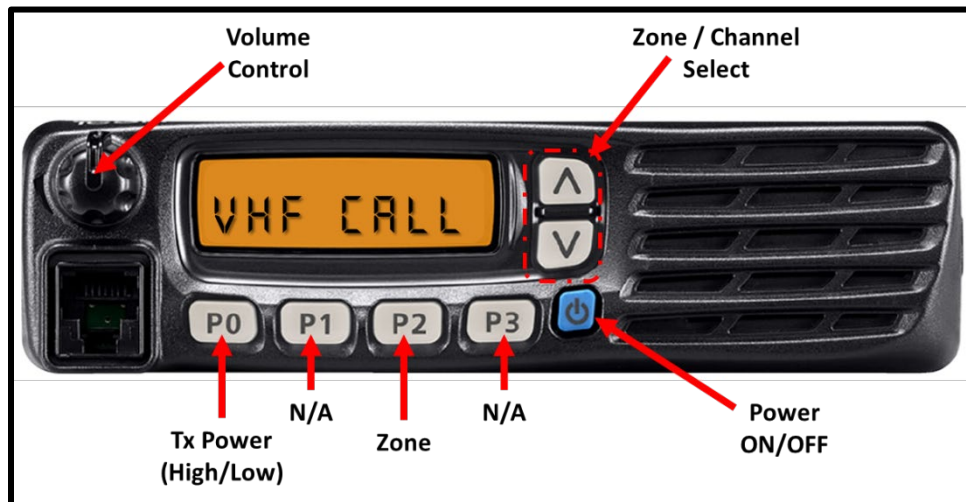


Figure 3. IC-F5021 Controls

1. Test VHF Analog Operation

- a. Press the Zone (**P2**) key.
- b. Use the Zone Select keys (**^**) (**v**) to select the **AMATEUR** zone.
- c. Once the zone has been selected, press the Zone key (**P2**) to display the channel.
- d. Use the Channel Select keys (**^**) (**v**) to select the **VHF CALL** channel.
- e. Use a 2-Meter HT to notify the EOC Radio Room or Command Runner that the ICOM IC-F5021 is configured and ready for test.

WARNING: Never touch an antenna or antenna connector while transmitting. This action could cause an electrical shock or burns.

- f. Once the radios in the Command Runner and the EOC radio room are both ready for test, exchange voice traffic between the two ICOM IC-F5021 radios to confirm that each radio is operating properly.

D. Perform voice communication tests using the UHF public safety transceiver (Motorola XPR 5550e).

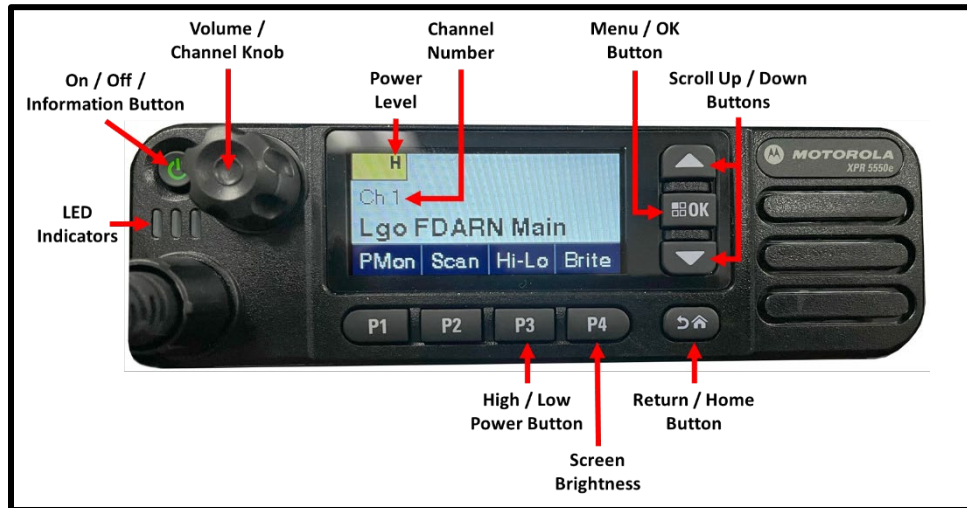


Figure 4. Motorola XPR 5550e Controls and Indicators

1. Test UHF Analog Operation

- a. Press the **Menu / OK** button.
- b. Use the **Scroll Up** and **Down** keys to highlight the **ZONE** menu. Then, press the **Menu / OK** button to select and view the list of available zones.
- c. Use **Scroll Up** and **Down** keys to highlight the **ACS & Analog** zone. Then, press the **Menu / OK** button. The message displayed in Figure 5 will be displayed momentarily confirming the zone selection. A green checkmark will be displayed next to the selected zone.

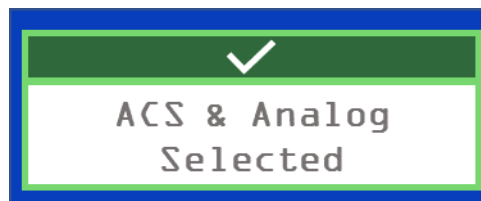


Figure 5. Zone Selection Confirmation

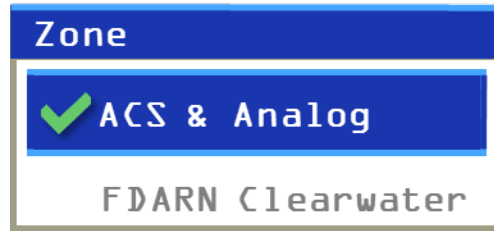


Figure 6. Zone Selection Confirmation

- d. Press the **Return / Home** key to display the currently selected channel.

NOTE 5:

The Volume / Channel Knob can be used to scroll through the list of channels assigned to the selected zone. To use this control, press the knob until the channel list is displayed. Then rotate the knob to find and highlight the desired channel. To select the channel, press the Menu / OK button.

- e. Use **Scroll Up** and **Down** keys to select channel **14**, the **UHF Call** channel.
- f. Use a 2-Meter HT to notify the EOC Radio Room or Command Runner that the Motorola XPR 5550e is configured and ready for test.

WARNING: Never touch an antenna or antenna connector while transmitting. This action could cause an electrical shock or burns.

- g. Once the radios in the Command Runner and the EOC radio room are both ready for test, exchange voice traffic between the two Motorola XPR 5550e radios to confirm that each radio is operating properly.

2. Test UHF DMR Operation

- a. Press the **Menu / OK** button.
- b. Use the **Scroll Up** and **Down** keys to highlight the **ZONE** menu. Then, press the **Menu / OK** button to select and view the list of available zones.
- c. Use **Scroll Up** and **Down** keys to highlight the **FDARN Largo** zone. Then, press the **Menu / OK** button. The message displayed in Figure 7 will be displayed momentarily confirming the zone selection. A green checkmark will be displayed next to the selected zone.



Figure 7. Zone Selection Confirmation

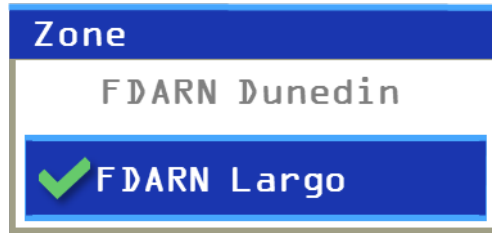


Figure 8. Zone Selection

- d. Press the **Return / Home** key to display the currently selected channel.
- e. Use **Scroll Up** and **Down** keys to select channel **2**, the **Lgo FD-TAC 1** channel.
- f. Use a 2-Meter HT to notify the EOC Radio Room or Command Runner that the Motorola XPR 5550e is configured and ready for test.

WARNING: Never touch an antenna or antenna connector while transmitting. This action could cause an electrical shock or burns.

- g. Once the radios in the Command Runner and the EOC radio room are both ready for test, exchange voice traffic between the two Motorola XPR 5550e radios to confirm that each radio is operating properly.

E. Perform voice communication tests using the 800/700 MHz public safety transceiver (Motorola APX 4500).

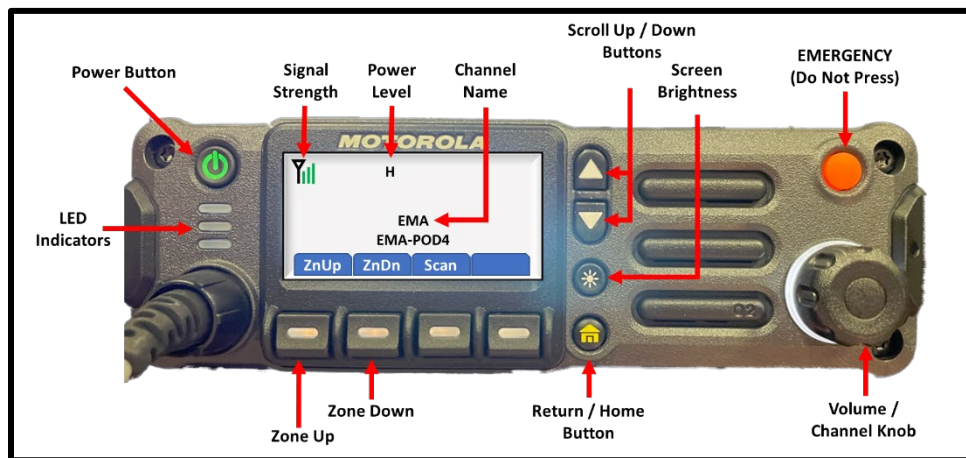


Figure 9. Motorola APX 4500 Controls and Indicators

1. Motorola APX 4500 Operation

- a. Use the Zone Select keys (**ZnUp**) (**ZnDn**) to select **Zone 5**.
- b. Once the zone has been selected, use the Scroll Up and Scroll Down (**▲**) (**▼**) to select the **EMA** channel. Refer to Table I and Table II for Code Plug information.
- c. Use a 2-Meter HT to notify the EOC Radio Room that the Motorola APX 4500 is configured and ready for test.

WARNING: Never touch an antenna or antenna connector while transmitting. This action could cause an electrical shock or burns.

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Command Runner – Q-3

- f. Once the radios in the Command Runner and the EOC radio room are both ready for test, exchange voice traffic to confirm that each radio is operating properly.

Table I. Motorola APX 4500 Code Plug (Zones 1 through 6)


Chan	ZONE-1	ZONE-2	ZONE-3	ZONE-4	ZONE-5	ZONE-6
1	PATROL-1	PTRL-18	F-DISP	PCW-1	EMA	F-LP-A
2	PATROL-2	PTRL-28	FTAC-8	PCW-2	HAZMAT-A	F-LP-B
3	PATROL-3	PTRL-38	FTAC-C	EOC-A	HAZMAT-8	F-LP-C
4	PATROL-4	PTRL-48	FTAC-D	EOC-8	MED-A	F-LP-D
5	PATROL-5	PTRL-58	FTAC-E	EOC-C	MED-8	F-LP-E
6	PATROL-6	PTRL-68	FTAC-F	EOC-D	PSTA-CLW	F-LP-F
7	SPPD-1	ANIMAL-A	FTAC-G	FD/PD-1	PSTA-SP	F-LP-G
8	SPPD-2	APPD-OPS	FTAC-H	FD/PD-2	PSTA-MNT	F-LP-H
9	SPPD-3	PARKS-FD	FTAC-I	LE-HAIL	PSTA-ADM	F-LP-I
10	CLW PD-2	PARK-RES	BAYFLITE	MA-FLA	PSC-N	F-LP-J
11	CLW PD-3	SE-1	F-ADMIN	8CALL-90	PSC-S	FD-TA
12	PP-DISP	SE-2	FD-TA	8TAC-91		
13	VAPD-A	SE-3	HAZMAT-A	8TAC-92		
14	LE-1	SE-4	HAZMAT-8	8TAC-93		
15	LE-2	SE-5	POP-25	8TAC-94		
16	LE-3					

Table II. Motorola APX 4500 Code Plug (Zones 7 through 13)

Chan	ZONE-7	ZONE-8	ZONE-9	ZONE-10	ZONE-11	ZONE-12	ZONE-13
1	SS-A	GMD-N	7CALL-50	POLK-01	HIL-01	CLW-01	PIN-01
2	SS-B	GMD-S	7TAC-51	POLK-02	HIL-02	CLW-02	PIN-02
3	SS-C	PLANT-N	7TAC-52	POLK-03	HIL-03	CLW-03	PIN-03
4	SS-D	PLANT-S	7TAC-53	POLK-04	HIL-04	CLW-04	PIN-04
5	SS-E	SW-A	7TAC-54	POLK-05	HIL-05	CLW-05	PIN-05
6	SS-F	TRAFIC-A	7TAC-55	POLK-06	HIL-06	CLW-06	PIN-06
7	SS-G	RISK	7TAC-56	POLK-07	HIL-07	CLW-07	PIN-07
8	SS-H	PARK-NO	7GTAC-57	POLK-08	HIL-08	CLW-08	PIN-08
9	FLEET	PARK-SO	7CALL-70	POLK-09	HIL-09	CLW-09	PIN-09
10	T&S-A	PARK-FD	7TAC-71	POLK-10	HIL-10	CLW-10	PIN-10
11	MOSQ-A	PARK-RES	7TAC-72	POLK-11	HIL-11		PIN-11
12	ANIMAL-A	PARK-HRT	7TAC-73	POLK-12	HIL-12		PIN-12
13	CODES-1	PARK-TLK	7TAC-74	POLK-13	HIL-13		PIN-13
14	BDRS-DSP	PARK-AIR	7TAC-75	POLK-14	HIL-14		PIN-14
15		FD-TA	7TAC-76	POLK-15	HIL-15		PIN-71
16			7GTAC-77	POLK-16	HIL-16		PIN-72

**F. Exchange Winlink traffic with EOC using VARA FM and Packet protocols.
Confirm operation with both amateur and tactical addresses.**

1. Update Command Runner Position Data used by Winlink

- a. Launch the Winlink Express Application .
- b. From the Winlink Main Menu, use the **Settings** button to select the **GPS / Position Reports...** option.
- c. In the lower half of the **GPS / Position Report** Window, enter the Command Runner's current location.
 - (1) Obtain the Command Runner's current location from one of the following devices.
 - (a) Yaesu FTM-400XD VHF/UHF amateur transceiver
 - (b) Cell Phone GPS
 - (c) Hand-held GPS receiver
 - (2) Enter the **Latitude** and **Longitude** data into the fields identified in Figure 10.
 - (3) Verify that the Check box at the bottom of the **GPS / Position Report** Window is checked. If not, check the box.
 - (4) Click on the **Close** button.

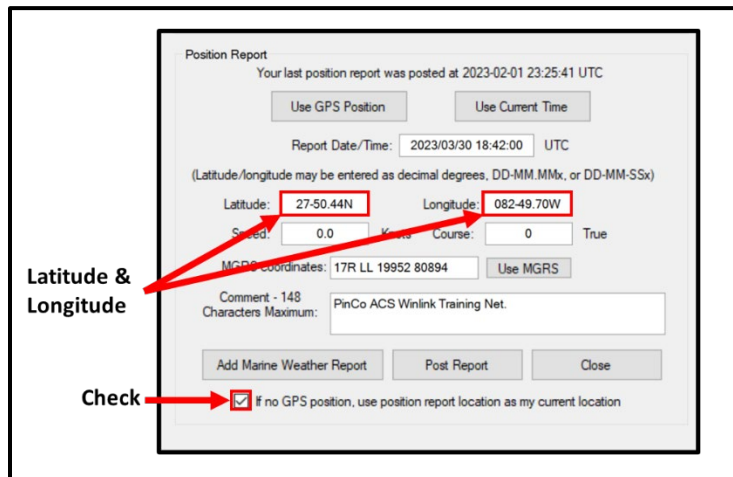


Figure 10. Winlink GPS / Position Report Window

2. Send Winlink Message using VARA FM Protocol and Amateur Call Sign

- a. Create a new Winlink message using the following information.
 - (1) From: Use the pull-down menu to select the **Winlink call sign** for the unit under test. Refer to Table III for call sign information and Figure 11 for call sign selection window location.
 - (2) Send as: Winlink Message.
 - (3) Request message receipt: Check this box.
 - (4) To: W4ACS
 - (5) Subject: PinCo ACS CR Q-3 Test Message

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- (6) *Message text:* This is a test message using the VARA FM protocol and the Command Runner amateur radio call sign.

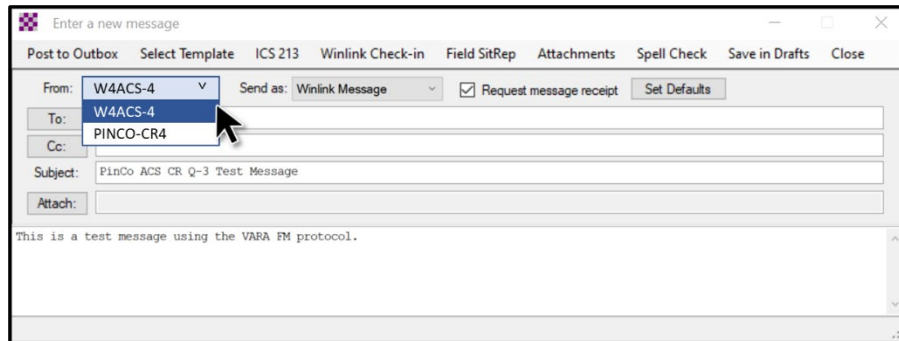




Figure 11. Winlink Call Sign Selection

Table III. Winlink Call Signs and Tactical Addresses

Location	Winlink Call Sign	Winlink Tactical Address
CR1	W4ACS-1	PINCO-CR1
CR2	W4ACS-2	PINCO-CR2
CR3	W4ACS-3	PINCO-CR3
CR4	W4ACS-4	PINCO-CR4
CR5	W4ACS-5	PINCO-CR5
CR6	W4ACS-6	PINCO-CR6
PinCo EOC	W4ACS	PINCO-EOC

- b. Post the message to the Winlink Outbox.
- c. From the *Winlink main menu*, use the **Open Session** pull-down to select **Vara FM Winlink**.
- d. Click the **Open Session** button.
- e. Once the *VARA FM Winlink session window* is open, click the **Channel Selection** button.
- f. From the *Vara FM Channel Selector window*, double-click on the entry for **W4ACS-10**.

NOTE 6: The Yaesu FTM-400XD transceiver is configured to use Band B for all Winlink digital operations.

- g. Tune the Yaesu FTM-400XD transceiver to the frequency displayed in the **Freq:** field of the *Vara FM Winlink Session Window*.
 - (1) Select Band B by lightly touching the Band B region of the display.
 - (2) Verify that Band B is operating in **VFO** mode. When in VFO mode, the **V** within the  control will be displayed in **orange**. If Band B is operating in Memory mode, lightly touch the  to switch to VFO mode.

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- (3) Use the Band B DIAL knob to select the frequency displayed in the **Freq:** field of the Vara FM Winlink Session Window.

- h. Click the **Start** button on the Vara FM Winlink session window.
- i. When the exchange of data is complete, click the **Exit** button on the Vara FM Winlink session window.

3. Send Winlink Message using Packet Protocol and Tactical Address

- a. Create a new Winlink message using the following information.
 - (1) From: Use the pull-down menu to select the **Winlink Tactical Address** for the unit under test. Refer to Table III for Tactical Address information and Figure 11 for call sign selection window location.
 - (2) Send as: Winlink Message.
 - (3) Request message receipt: Check this box.
 - (4) To: PINCO-EOC
 - (5) Subject: PinCo ACS CR Q-3 Test Message
 - (6) Message text: This is a test message using the Packet protocol and Command Runner Winlink Tactical Address.
- b. Post the message to the Winlink Outbox.
- c. From the Winlink main menu, use the **Open Session** pull-down to select **Packet Winlink**.
- d. Click the **Open Session** button.
- e. Once the Packet Winlink session window is open, click the **Channel Selection** button.
- f. From the Packet Channel Selector window, double-click on the entry for **W4ACS-10**.
- g. Confirm that the Yaesu FTM-400XD transceiver is still tuned to the frequency displayed in the **Freq:** field of the Packet Winlink Session Window.
 - (1) If the transceiver is tuned to the wrong frequency, use the steps shown in **F.2.g** to tune the transceiver to the correct frequency.
- h. Click the **Start** button on the Packet Winlink session window.
- i. When the exchange of data is complete, click the **Exit** button on the Packet Winlink session window.
- j. Close the Winlink application.

4. Verify that Winlink messages were received by the EOC.

- a. Use the 2-Meter HT to contact the maintainer working in the EOC.
- b. Request that the maintainer download any pending Winlink messages and confirm that both Winlink messages were received and that they were formatted properly.

G. Equipment Shutdown and Storage

NOTE 7: At the conclusion of the planned maintenance activity, power down, configure for transport, and return the Command Runner to its long-term storage location.

1. Power down, transport, and store the Command Runner in accordance with the procedure documented in **Part B** of PinCo ACS CR U-1.

EQUIPMENT MAINTENANCE PROCEDURES

Name of Equipment: PinCo Command Runner

Version: 20230615

Title: HF System Communication Checks

Periodicity: Q-4

MAINTENANCE TASK DESCRIPTION

1. Perform voice communication tests using the amateur HF transceiver.
2. Exchange Winlink traffic with EOC using amateur radio HF Vara and Pactor protocols.
3. Exchange Winlink traffic with EOC using SHARES.

MAINTAINER REQUIREMENTS AND QUALIFICATIONS

Number of Maintainers Required: 3

Individual Man-Hours: 2

Elapsed Time: 2

QUALIFICATIONS

1. The maintainer must have successfully completed the PinCo Command Runner CRD maintenance training program to perform any maintenance action.
2. The maintainer must have a ***Technician, General, Advanced, or Amateur Extra class*** FCC license to perform any task that requires the maintainer to transmit voice or digital information via a VHF or UHF amateur radio.
3. The maintainer must have a ***General, Advanced, or Amateur Extra class*** FCC license to perform any task that requires the maintainer to transmit voice or digital information via an HF amateur radio.

SAFETY PRECAUTIONS

1. The Command Runner is heavy and can be unstable while in motion. **Do Not** attempt to move the Command Runner unless two qualified maintainers are present.
2. The Command Runner is not designed for operation in a wet environment. **Do Not** deploy the Command Runner to a location where the unit will be exposed to rain, mist, or snow.
3. **Do Not** operate radio equipment during a lightning storm. Disconnect the power source and antenna before a storm.
4. Never touch an antenna or antenna connector while transmitting. This action could cause an electrical shock or burns.

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MATERIALS, TOOLS, AND TEST EQUIPMENT

MATERIALS

1. Note Pad and pencil / pen

TOOLS

1. None

TEST EQUIPMENT

1. Antenna Analyzer; 2-50 MHz

MISCELLANEOUS

1. **PinCo ACS CR U-1** Maintenance Procedures
2. **Equipment Maintenance Record** for the PinCo Command Runner under test.
3. Command Runner auxiliary equipment bag
4. 2-Meter amateur hand-held transceiver (Qty 2).
5. Portable HF antenna system

PROCEDURES

A. Preliminary

NOTE 1: The 2-meter hand-held transceivers (HT) will be used to coordinate operations between the deployed command runner and the EOC radio room.

1. Prior to Command Runner deployment, perform the following tasks.
 - a. Tune each 2-meter HT to the W4ACS repeater.
 - b. Exchange voice traffic between the two HTs to confirm that each radio is operating properly.

NOTE 2: Use the [Equipment Maintenance Record \(EMR\)](#) for the unit under test (UUT) to document the maintenance action performed. For each action performed, enter the date, name, and FCC call sign of the individual completing the action. Document all discrepancies in the **NOTES** section of the EMR.

2. Emplace the Command Runner in accordance with the procedure documented in **Part A** of **PinCo ACS CR U-1**.

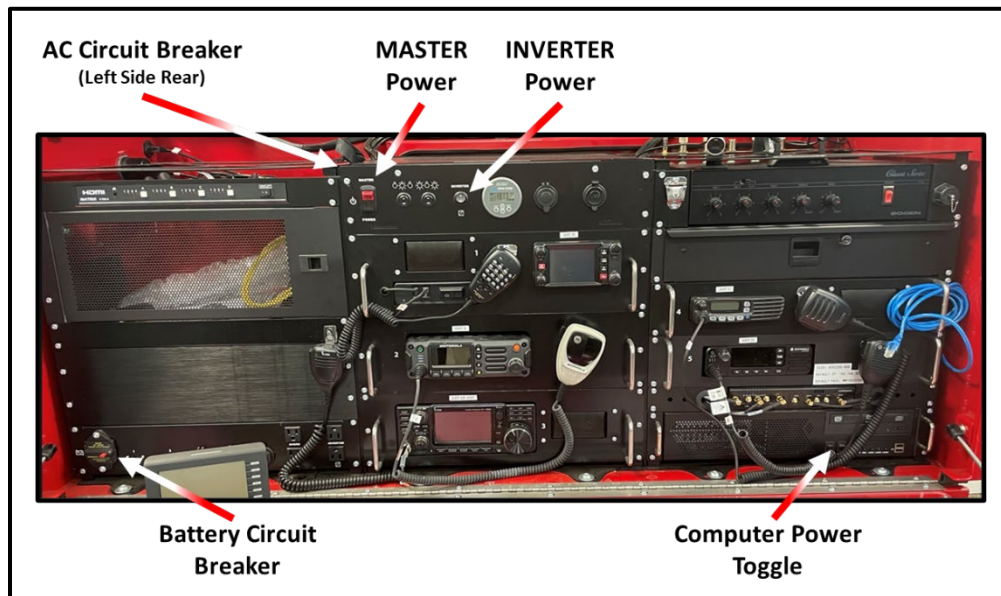


Figure 1. Command Runner Circuit Breakers and Power Switches


3. Set the AC Circuit Breaker to the **ON** position.
4. Set the MASTER POWER switch to the **ON** position. The switch should illuminate.
5. Set the INVERTER Power Switch to the **ON** position.
6. Power on the radio equipment listed below and adjust the volume and squelch setting to minimize the ambient noise. Verify that each radio is energized.
 - a. Yaesu FTM-400XD VHF/UHF amateur transceiver.
 - b. ICOM IC-7300 HF transceiver.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – Q-4

7. Power on the following equipment.
 - a. Computer system.

NOTE 3: Command Runner shutdown and storage procedures dictate that the unit specific power switches for the equipment listed below remain in the POWER ON position. These units should automatically energize when the inverter power switch is set to the ON position.

8. Confirm that the following equipment is energized.
 - a. Cradlepoint AER 2200 router
 - b. MX4414 HDMI matrix switch
 - c. BenQ computer monitors (Qty 2)
9. Update the time displayed on the ICOM IC-7300 HF Transceiver.

- a. Use the mouse to launch the **ST-400W time adjustment Software** .
 - b. Once the Program's control menu is displayed, click the **Run** button.
 - c. Close the application after the program reports that the time has been updated.

10. Install portable HF antenna system.

NOTE 4: The IC-7300 has a built-in antenna tuner that will match the transceiver to an antenna system that has an SWR of less than 3:1.

11. Measure the Standing Wave Ratio (SWR) of the HF Antenna System.
 - a. Power on and connect the Antenna Analyzer to the coax cable feeding the HF antenna system.
 - b. Configure the Antenna Analyzer to sweep and measure the SWR over the frequency range listed below.
 - (1) 2.0 through 54 MHz
 - c. Use the notepad to document frequency regions within each amateur band that have an SWR of 3:1 or less.
 - d. Disconnect, power off, and store the Antenna Analyzer.
12. Connect the coax cable feeding the HF antenna system to the HF Antenna Connector located on the far right of the antenna distribution assembly. The assembly is located just below the computer monitor on the top right of the Command Runner. Refer to Figure 2 for connector location.

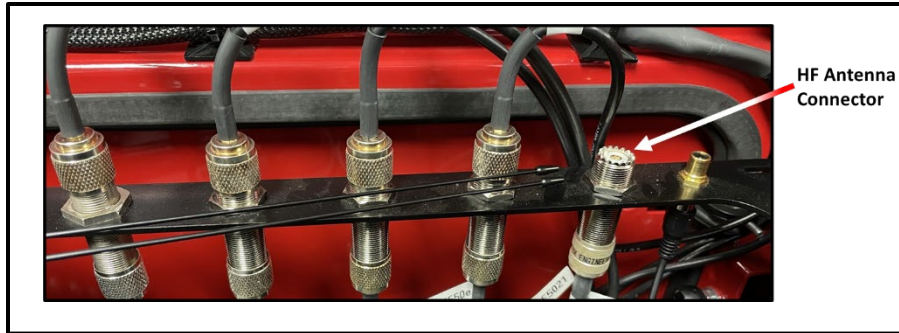


Figure 2. Antenna Distribution Assembly

B. Perform voice communication tests using amateur HF radio (ICOM IC-7300).

NOTE 5: Each of the tasks in Section B require two maintainers; One maintainer to operate the HF transceiver located in the Command Runner and the second maintainer to operate the HF transceiver within the Pinellas County EOC radio room. Both maintainers use the same procedure.

1. Select an HF voice frequency.
 - a. Use a 2-Meter HT to coordinate between the EOC and Command Runner.

CAUTION: **Do Not attempt to transmit unless the antenna system SWR is less than 3:1. Permanent equipment damage can occur when transmitting into an antenna system with high SWR.**


- b. Select an HF frequency that meets the following requirements.
 - (1) Frequency is authorized for use by the control operator at each location.
 - (2) Frequency is in the voice segment of its respective band.
 - (3) Frequency is not in use.
 - (4) The antenna system has an SWR of less than 3:1 on the selected frequency.
2. Tune the IC-7300 to the selected frequency.
 - a. Use the **touch screen** to select the frequency band.
 - b. Use the **Main Dial** to select the operating frequency.
3. Use a 2-Meter HT to notify the EOC Radio Room or Command Runner that the ICOM IC-7300 is configured and ready for test.

WARNING: **Never touch an antenna or antenna connector while transmitting. This action could cause an electrical shock or burns.**

- -
 -
 4. Once the radio in the Command Runner and the EOC radio room are both ready for test, exchange voice traffic between the two ICOM IC-7300 radios to confirm that each radio is operating properly.

C. Exchange Winlink traffic with EOC using amateur radio HF Vara and Pactor protocols.

1. Update Command Runner Position Data used by Winlink.

- a. Launch the Winlink Express Application .
- b. From the Winlink Main Menu, use the **Settings** button to select the **GPS / Position Reports...** option.
- c. In the lower half of the **GPS / Position Report** Window, enter the Command Runner's current location.
 - (1) Obtain the Command Runner's current location from one of the following devices.
 - (a) Yaesu FTM-400XD VHF/UHF amateur transceiver
 - (b) Cell Phone GPS
 - (c) Hand-held GPS receiver
 - (2) Enter the **Latitude** and **Longitude** data into the fields identified in Figure 3.
 - (3) Verify that the Check box at the bottom of the **GPS / Position Report** Window is checked. If not, check the box.
 - (4) Click on the **Close** button.

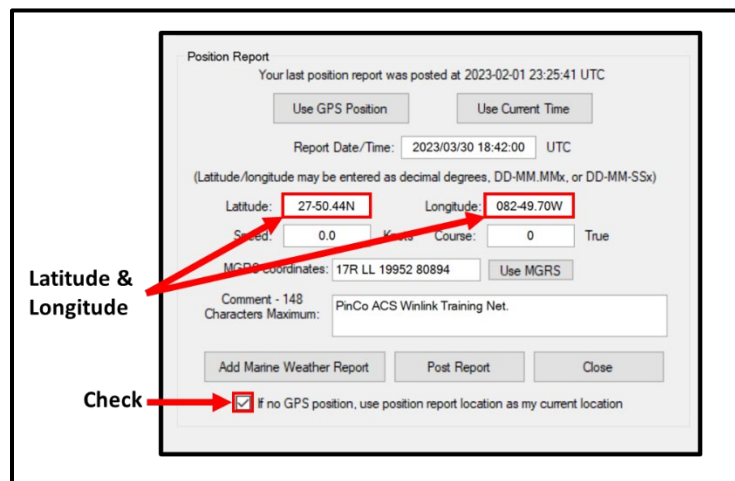



Figure 3. Winlink GPS / Position Report Window

2. Configure the IC-7300 for VARA HF Operation.

NOTE 6: The IC-7300 receives digital information directly from the computer during Winlink Vara HF operation and from the P4 Dragon Pactor Modem during Winlink Pactor operation. The computer uses the IC-7300 USB interface to exchange digital information while the P4 Dragon Pactor Modem uses the IC-7300 Auxiliary (ACC) interface. The IC-7300 must be configured to select the appropriate data modulation source prior to starting an HF Winlink session.

- a. Press the **MENU** button on the front panel of the IC-7300.

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- b. From the **MENU** display, touch the **SET**  button.
- c. When the **SET** menu is displayed, use the up and down arrow keys to find and select the **Connectors** menu. Refer to Figure 4 for menu displays.

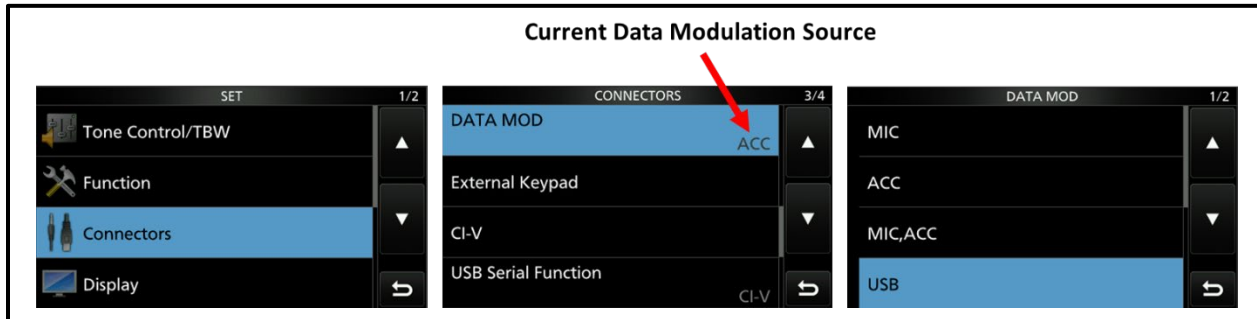


Figure 4. IC-7300 Configuration Menus

- d. From the **CONNECTORS** window, use the up and down arrows to find and examine the **DATA MOD** selection.
- e. If the current Data Modulation Source is set to **ACC**, then perform the following steps.
- (1) Select the **DATA MOD** option. When the **DATA MOD** window is displayed, use the up and down arrows to find and select the **USB** option.
 - (2) The radio will automatically return to the **CONNECTORS** window and the Current Data Modulation Source should now be set to **USB**.
 - (3) On the front panel of the IC-7300, press the **EXIT** button twice.
- f. If the Data Modulation Source is set to **USB**, then the IC-7300 is already configured for Vara HF operation.
- (1) On the front panel of the IC-7300, press the **EXIT** button twice.
3. **Send Winlink Message using VARA HF Protocol and Amateur Call Sign.**
- a. Create a new Winlink message using the following information.
- (1) From: Use the pull-down menu to select the **Winlink call sign** for the unit under test. Refer to Table I for call sign information and Figure 5 for call sign selection window location.
 - (2) Send as: Winlink Message.
 - (3) Request message receipt: Check this box.
 - (4) To: W4ACS
 - (5) Subject: PinCo ACS CR Q-4 Test Message
 - (6) Message text: This is a test message using the VARA HF protocol and the Command Runner amateur radio call sign.

Pinellas County ACS Equipment Maintenance Procedures Command Runner – Q-4

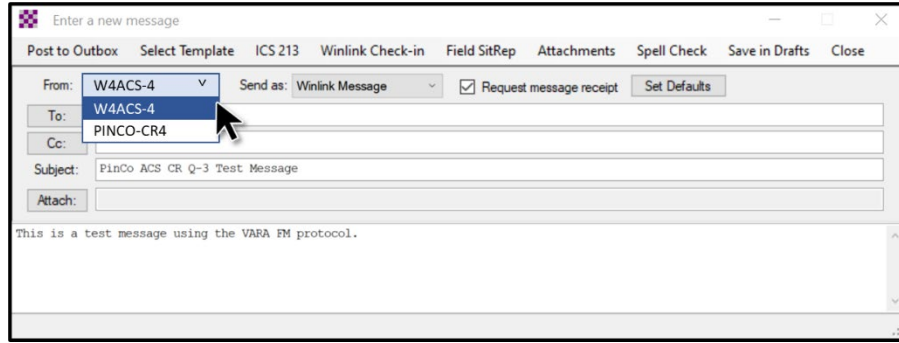


Figure 5. Winlink Call Sign Selection

Table I. Winlink Call Signs and Tactical Addresses

Location	Winlink Call Sign	Winlink Tactical Address	SHARES Call Sign
CR1	W4ACS-1	PINCO-CR1	NNA4EZ
CR2	W4ACS-2	PINCO-CR2	NNA4FA
CR3	W4ACS-3	PINCO-CR3	NNA4FE
CR4	W4ACS-4	PINCO-CR4	NNA4FF
CR5	W4ACS-5	PINCO-CR5	NNA4FG
CR6	W4ACS-6	PINCO-CR6	NNA4FI
PinCo EOC	W4ACS	PINCO-EOC	NCS728

- b. Post the message to the Winlink Outbox.
- c. From the Winlink main menu, use the **Open Session** pull-down to select **Vara HF Winlink**.
- d. Click the **Open Session** button.
- e. Once the Vara HF Winlink session window is open, click the **Channel Selection** button.
- f. From the Vara HF Channel Selector window, click on the **Update Via Internet** button to update the RMS channels propagation indices.
- g. When the update is complete, double-click on any RMS station that meets the following requirements.
 - (1) Distance: At least 100 miles
 - (2) Path Reliability Estimate: At least 75.

NOTE 7: Winlink Express controls the operation of the IC-7300. The frequency and operating mode of the selected RMS station is automatically set as soon as the RMS station is selected.

- h. Confirm that the **Dial Frequency** displayed in the Vara HF Winlink session window matches the frequency displayed on the front of the IC-7300.
 - (1) If the frequencies do not match perform the following actions:
 - (a) Document the error in the **NOTES** section of the Equipment Maintenance Record.
 - (b) Stop testing and return the equipment to storage in accordance with the steps in Section E.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – Q-4

- i. Click the **Start** button on the Vara HF Winlink session window.
- j. When the exchange of data is complete, click the **Exit** button on the Vara HF Winlink session window.

4. Configure the IC-7300 for Pactor Operation.

- a. Use the procedure described in section **C.2** to set the **DATA MOD** source to **ACC**.

5. Send Winlink Message using the Pactor Protocol and Tactical Address.

- a. Create a new Winlink message using the following information.
 - (1) From: Use the pull-down menu to select the **Winlink Tactical Address** for the unit under test. Refer to Table I for Tactical Address information and Figure 5 for call sign selection window location.
 - (2) Send as: Winlink Message.
 - (3) Request message receipt: Check this box.
 - (4) To: PINCO-EOC
 - (5) Subject: PinCo ACS CR Q-3 Test Message
 - (6) Message text: This is a test message using the Pactor protocol and Command Runner Winlink Tactical Address.
- b. Post the message to the Winlink Outbox.
- c. From the Winlink main menu, use the **Open Session** pull-down to select **Pactor Winlink**.
- d. Click the **Open Session** button.
- e. Once the Pactor Winlink session window is open, click the **Channel Selection** button.
- f. Double-click on any RMS station that meets the following requirements.
 - (1) Distance: At least 100 miles
 - (2) Path Reliability Estimate: At least 75.

NOTE 8: Winlink Express controls the operation of the IC-7300. The frequency and operating mode of the selected RMS station is automatically set as soon as the RMS station is selected.

- g. Confirm that the **Dial Frequency** displayed in the Pactor Winlink session window matches the frequency displayed on the front of the IC-7300.
 - (1) If the frequencies do not match perform the following actions:
 - (a) Document the error in the **NOTES** section of the Equipment Maintenance Record.
 - (b) Stop testing and return the equipment to storage in accordance with the steps in Section E.
- h. Click the **Start** button on the Pactor Winlink session window.
- i. When the exchange of data is complete, click the **Exit** button on the Pactor Winlink session window.

D. Exchange Winlink traffic with EOC using SHARES.

1. Configure Winlink for SHARES Network Operation.

- a. From the **Winlink Main Menu**, use the **Call Sign** pull-down menu to select the **SHARES** Call Sign.
- b. Refer to Table I for SHARES call sign information and Figure 6 for call sign selection window location.

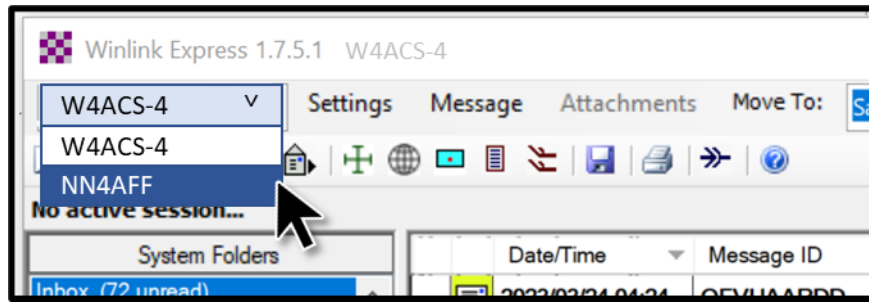


Figure 6. Winlink Call Sign Pull-Down Menu

2. Send Winlink Message using SHARES network

- a. Create a new Winlink message using the following information.
 - (1) From: No Change.
 - (2) Send as: Winlink Message.
 - (3) Request message receipt: Check this box.
 - (4) To: NCS728
 - (5) Subject: PinCo ACS CR Q-3 Test Message
 - (6) Message text: This is a test message using the SHARES network.
- b. Post the message to the Winlink Outbox.
- c. From the Winlink main menu, use the **Open Session** pull-down to select **Pactor Winlink**.
- d. Click the **Open Session** button.
- e. Once the Pactor Winlink session window is open, click the **Channel Selection** button.
- f. Double-click on any RMS station that meets the following requirements.
 - (1) Distance: At least 100 miles
 - (2) Path Reliability Estimate: At least 75.

NOTE 9: Winlink Express controls the operation of the IC-7300. The frequency and operating mode of the selected RMS station is automatically set as soon as the RMS station is selected.

- g. Confirm that the **Dial Frequency** displayed in the Pactor Winlink session window matches the frequency displayed on the front of the IC-7300.
 - (1) If the frequencies do not match perform the following actions:
 - (a) Document the error in the **NOTES** section of the Equipment Maintenance Record.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – Q-4

- (b) Stop testing and return the equipment to storage in accordance with the steps in Section E
- h. Click the **Start** button on the Pactor Winlink session window.
 - i. When the exchange of data is complete, click the **Exit** button on the Pactor Winlink session window.
 - j. Close the Winlink application.
- 3. **Verify that Winlink messages were received by the EOC.**
 - a. Use the 2-Meter HT to contact the maintainer working in the EOC.
 - b. Request that the maintainer download any pending Winlink messages and confirm that all three Winlink messages were received and that they were formatted properly.

E. Equipment Shutdown and Storage

NOTE 10: At the conclusion of the planned maintenance activity, power down, configure for transport, and return the Command Runner to its long-term storage location.

- 1. Power down, transport, and store the Command Runner in accordance with the procedure documented in **Part B** of PinCo ACS CR U-1.

EQUIPMENT MAINTENANCE PROCEDURES

Name of Equipment: PinCo Command Runner

Version: 20230621

Title: Battery Monitor / Cradlepoint Maintenance

Periodicity: Q-5

MAINTENANCE TASK DESCRIPTION

1. Check and update, as required, Victron Battery Monitor and Bluetooth Interface firmware.
2. Check and update, as required, Cradlepoint router software.

MAINTAINER REQUIREMENTS AND QUALIFICATIONS

Number of Maintainers Required: 2

Individual Man-Hours: 1

Elapsed Time: 1

QUALIFICATIONS

1. The maintainer must have successfully completed the PinCo Command Runner CRD maintenance training program to perform any maintenance action.
2. Only a PinCo ACS software system administrator is authorized to update the Cradlepoint router software, Victron Battery Monitor firmware, or Victron Bluetooth Interface firmware.

SAFETY PRECAUTIONS

1. The Command Runner is heavy and can be unstable while in motion. **Do Not** attempt to move the Command Runner unless two qualified maintainers are present.
2. The Command Runner is not designed for operation in a wet environment. **Do Not** deploy the Command Runner to a location where the unit will be exposed to rain, mist, or snow.

MATERIALS, TOOLS, AND TEST EQUIPMENT

MATERIALS

1. Notepad and pencil / pen.

TEST EQUIPMENT

1. None

TOOLS

1. None

MISCELLANEOUS

1. **PinCo ACS CR U-1** Maintenance Procedures.
2. **Equipment Maintenance Record** for the PinCo Command Runner under test.
3. Bluetooth enabled device with **VictronConnect** application installed.

PROCEDURES

A. Preliminary – Emplace Command Runner

NOTE 1: Use the [Equipment Maintenance Record \(EMR\)](#) for the unit under test to document each maintenance action performed. For each maintenance action performed, enter the date, name, and FCC call sign of the individual completing the action. Document all discrepancies in the **NOTES** section of the EMR.

1. Emplace the Command Runner in accordance with the procedure documented in **Part A** of **PinCo ACS CR U-1**.

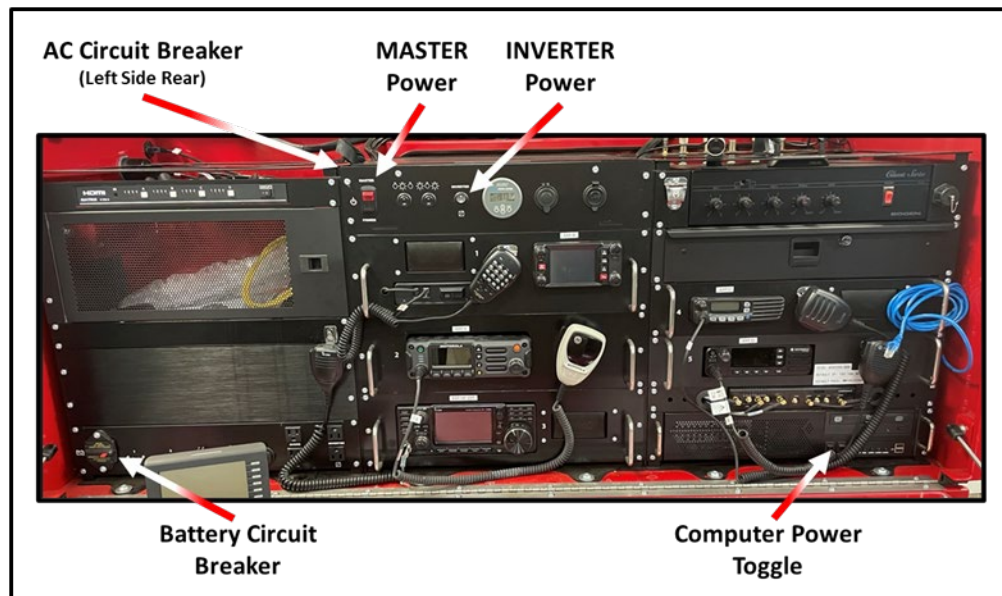


Figure 1. Command Runner Circuit Breakers and Power Switches

2. Set the AC Circuit Breaker to the **ON** position.
3. Set the MASTER POWER switch to the **ON** position. The switch should illuminate.
4. Set the INVERTER Power Switch to the **ON** position.
5. Power on the following equipment.
 - a. Computer System.

NOTE 2: Command Runner shutdown and storage procedures dictate that the unit specific power switches for the equipment listed below remain in the POWER ON position. These units should automatically energize when the inverter power switch is set to the ON position.





6. Confirm that the following equipment is energized.
 - a. Cradlepoint AER 2200 Router
 - b. MX4414 HDMI Matrix Switch
 - c. BenQ Computer Monitors (Qty 2)

B. Check/Update Victron Battery Monitor and Bluetooth Interface Firmware.

NOTE 3: The firmware in the Victron Battery Monitor is updated by using the [VictronConnect](#) application and a Bluetooth Smart enabled device. Prior to performing this procedure, the user must install the application on the Bluetooth enabled device and pair the device to the Battery Monitor under test. Since Bluetooth has a limited range of operation, the Bluetooth device must remain within 6 feet of the Battery Monitor throughout the firmware update process.

1. Open the **VictronConnect** App on the Bluetooth enabled device.
2. Select the Victron Battery Monitor associated with the unit under test.

<u>Unit Under Test</u>	<u>Serial Number</u>
Command Runner 1	<i>N/A</i>
Command Runner 2	HQ2030MEAXR
Command Runner 3	HQ2113MNXRD
Command Runner 4	HQ21137UKMR
Command Runner 5	HQ2113CDCDX
Command Runner 6	HQ2037TAV6G

3. Examine the Settings option  on the Main Menu (SCREEN 1) of the **Victron Connect** App.
 - a. If the Settings option  is highlighted with an exclamation point symbol , it indicates that a firmware update is available, and the following steps should be performed.
 - (1) Select the Settings option  on the Main Menu (SCREEN 1) of the **Victron Connect** App. This will cause the Settings Menu to be displayed.
 - (2) If a firmware update is available, the message box shown on SCREEN 2 of Figure 2 will be displayed. Depress the **UPDATE** option.
 - (3) The Firmware update page, SCREEN 3, should now be displayed. Depress the **UPDATE** option.
 - (4) An activity bar will be displayed during the update process. When the update is complete, SCREEN 4 will be displayed. Depress the CONTINUE option to complete the update process.
 - (5) Proceed to step E.4.

Pinellas County ACS Equipment Maintenance Procedures Command Runner Q-5

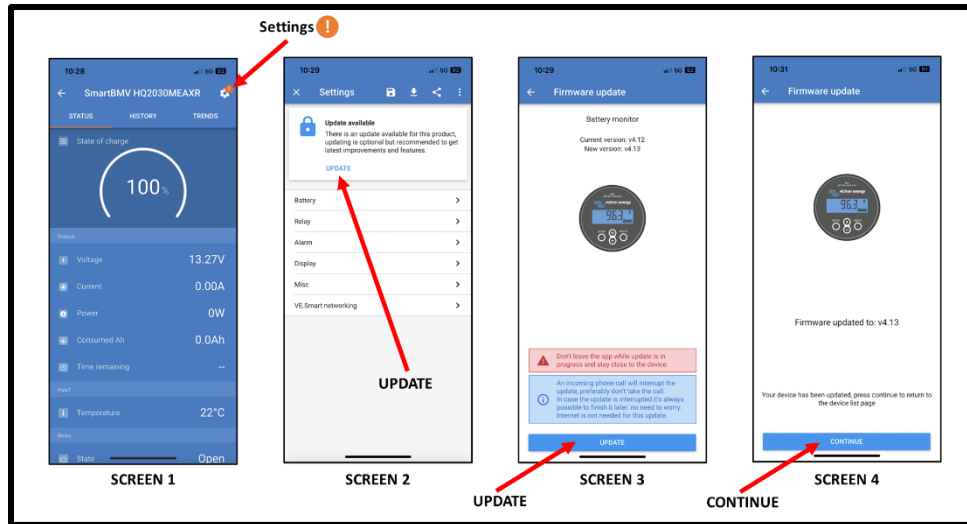






Figure 2. Victron Battery Monitor Firmware Update

- b. If the Settings option  is **not** highlighted with an exclamation point symbol , it indicates that the firmware is up to date. Proceed to step E.4.
4. Record the Victron Battery Monitor and Bluetooth Interface firmware version numbers on the **STATUS** page of the **Equipment Maintenance Record** form.
 - a. Select the Settings option  on the Main Menu (SCREEN 1) of the **Victron Connect App**.
 - b. In the upper right-hand corner of the Settings screen, depress the kebab menu  (three vertical dots).
 - c. From the list of displayed options, select **Product Info**.
 - d. The **Product Info** page displays the firmware versions for both the Victron Battery Monitor and Bluetooth Interface. Refer to Figure 3

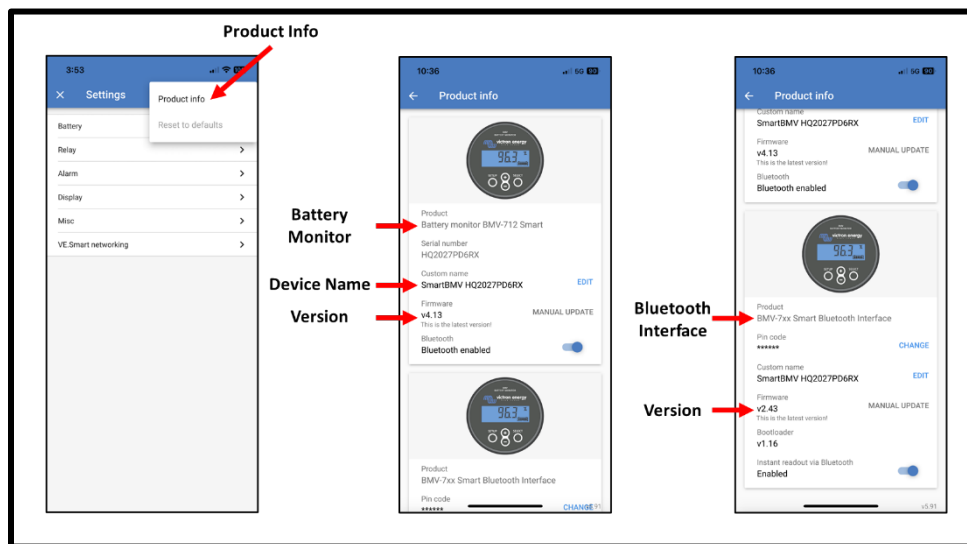


Figure 3. Victron Battery Monitor Product Info

C. Check/Update Cradlepoint Software.

1. **TBD**
4. Record the Cradlepoint software version numbers on the **STATUS** page of the **Equipment Maintenance Record** form.

D. Equipment Shutdown and Storage

NOTE 4: At the conclusion of the planned maintenance activity, power down, configure for transport, and return the Command Runner to its long-term storage location.

1. Power down, transport, and store the Command Runner in accordance with the procedure documented in **Part B** of **PinCo ACS CR U-1**.

EQUIPMENT MAINTENANCE PROCEDURES

Name of Equipment: PinCo Command Runner

Version: 20230624

Title: Radio Code Plug Maintenance

Periodicity: S-2R

MAINTENANCE TASK DESCRIPTION

1. Check and document the radio code plug version installed in the amateur VHF/UHF transceiver.
2. Check and document the radio code plug versions installed in the VHF and UHF public safety transceivers.
3. Check and document the radio code plug version installed in the 800/700 MHz public safety transceiver.
4. Check and document the radio code plug version installed in the amateur HF transceiver.

MAINTAINER REQUIREMENTS AND QUALIFICATIONS

Number of Maintainers Required: 2

Individual Man-Hours: 1

Elapsed Time: 1

QUALIFICATIONS

1. The maintainer must have successfully completed the PinCo Command Runner CRD maintenance training program to perform any maintenance action.

SAFETY PRECAUTIONS

1. The Command Runner is heavy and can be unstable while in motion. **Do Not** attempt to move the Command Runner unless two qualified maintainers are present.
2. The Command Runner is not designed for operation in a wet environment. **Do Not** deploy the Command Runner to a location where the unit will be exposed to rain, mist, or snow.

MATERIALS, TOOLS, AND TEST EQUIPMENT

MATERIALS

1. Note Pad and pencil / pen

TOOLS

1. None

TEST EQUIPMENT

1. None

MISCELLANEOUS

1. **PinCo ACS CR U-1** Maintenance Procedures.
2. **Equipment Maintenance Record** for the PinCo Command Runner under test.

PROCEDURES

A. Preliminary

NOTE 1: This procedure is performed semiannually or prior to each deployment, whichever comes first.

NOTE 2: Use the **Equipment Maintenance Record (EMR)** for the unit under test (UUT) to document the maintenance action performed. For each action performed, enter the date, name, and FCC call sign of the individual completing the action. Document all discrepancies in the **NOTES** section of the EMR.

1. Emplace the Command Runner in accordance with the procedure documented in **Part A** of **PinCo ACS CR U-1**.

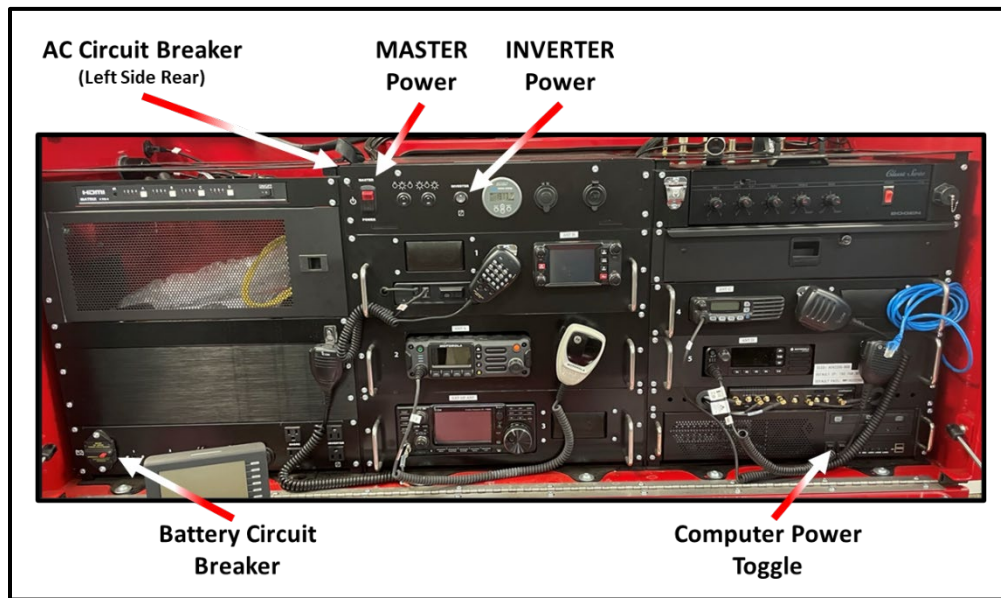


Figure 1. Command Runner Circuit Breakers and Power Switches

2. Set the AC Circuit Breaker to the **ON** position.
3. Set the MASTER POWER switch to the **ON** position. The switch should illuminate.
4. Set the INVERTER Power Switch to the **ON** position.
5. Power on the radio equipment listed below and adjust the volume setting to minimize the ambient noise. Verify that each radio is energized.
 - a. Yaesu FTM-400XD VHF/UHF amateur transceiver.
 - b. Motorola APX 4500 P25 public safety transceiver.
 - c. Motorola XPR 50550e UHF public safety transceiver.
 - d. ICOM IC-F5021 VHF public safety transceiver.
 - e. ICOM IC-7300 HF transceiver
6. Power on the following equipment.
 - a. Computer System.

NOTE 3: Command Runner shutdown and storage procedures dictate that the unit specific power switches for the equipment listed below remain in the POWER ON position. These units should automatically energize when the inverter power switch is set to the ON position.

7. Confirm that the following equipment is energized.
 - a. Cradlepoint AER 2200 Router
 - b. MX4414 HDMI Matrix Switch
 - c. BenQ Computer Monitors (Qty 2)

B. Check and document the radio code plug version installed in the amateur VHF/UHF transceiver (Yaesu FTM-400XD).

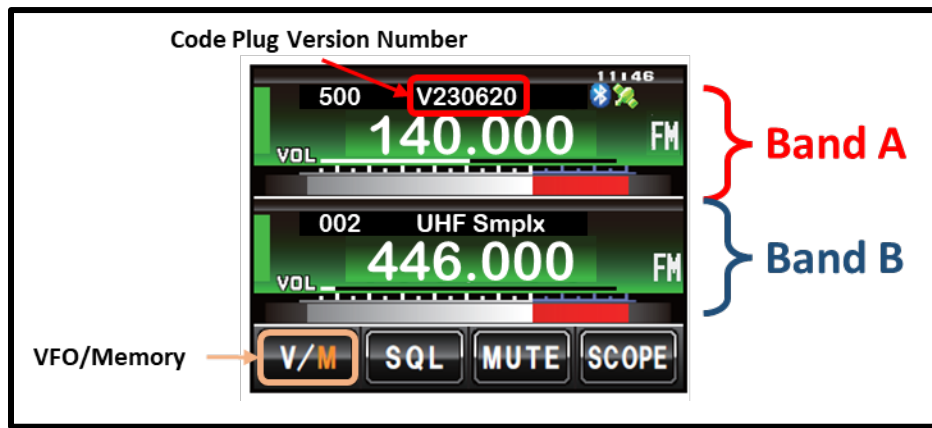


Figure 2. FTM-400XD Touch Screen Display

1. Select Band A by lightly touching the Band A region of the display.
2. Verify that Band A is operating in memory mode. When in memory mode, the **M** within the **V/M** control will be displayed in **orange** and a memory channel number will be displayed in the tag region of Band A. If Band A is operating in VFO mode, lightly touch the **V/M** to switch to Memory mode.
3. Use the Band A DIAL knob to select memory channel 500.
4. The version number for the code plug currently installed in the transceiver is displayed in the tag area above the frequency. Refer to Figure 2 for the location of the code plug version number.
5. Record the code plug version number on the STATUS page of the Equipment Maintenance Record form.

C. Check and document the radio code plug version installed in the VHF public safety transceiver (ICOM IC-F5021).

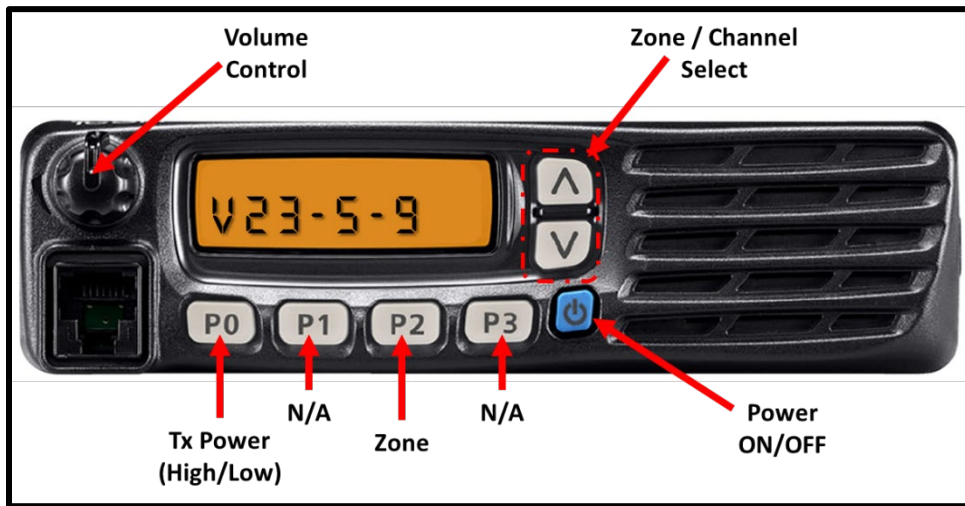


Figure 3. IC-F5021 Controls

1. Press the Zone (**P2**) key.
2. Use the Zone Select keys (**Λ**) (**V**) to select the **VERSION** zone.
3. Once the zone has been selected, press the Zone key (**P2**) to display the channel.

NOTE 4: The **VERSION** zone has a single receive only channel that displays the Code Plug version.

4. Record the Code Plug version number on the STATUS page of the Equipment Maintenance Record form.
5. Press the Zone (**P2**) key.
6. Use the Zone Select keys (**Λ**) (**V**) to select the **AMATEUR** zone.
7. Once the zone has been selected, press the Zone key (**P2**) to display the channel.

D. Check and document the radio code plug version installed in the UHF public safety transceiver (Motorola XPR 5550e).

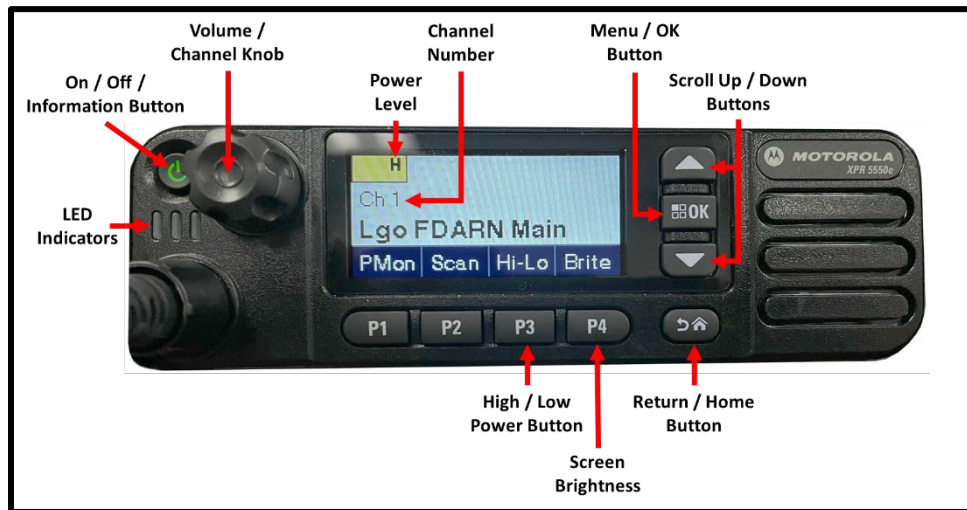


Figure 4. Motorola XPR 5550e Controls and Indicators

1. Press the **Menu / OK** button.
2. Use the **Scroll Up** and **Down** keys to highlight the **Zone** menu. Then, press the **Menu / OK** button to select and view the list of available zones. Refer to Figure 5.



Figure 5. Options Menu – Zone

3. Use **Scroll Up** and **Down** keys to highlight the **Version** zone. Then, press the **Menu / OK** button. Refer to Figure 6.



Figure 6. Option Menu - Version

4. Press the **Return / Home** key to display channels in the currently selected zone.

NOTE 5: The **VERSION** zone has a single receive only channel that displays the Code Plug version.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – S-2R

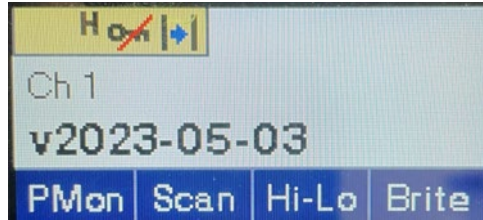
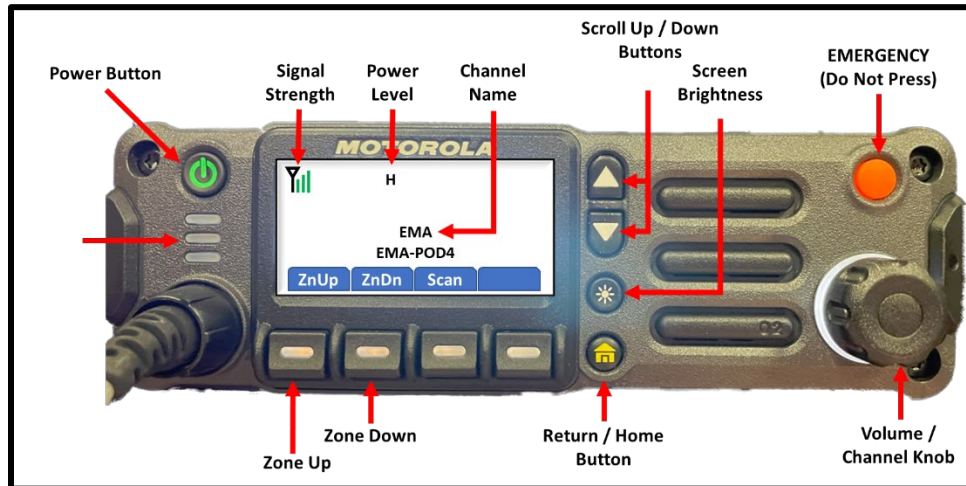


Figure 7. Code Plug programming date

5. Record the Code Plug version number on the STATUS page of the Equipment Maintenance Record form.

E. Check and document the radio code plug version installed in the 800/700 MHz public safety transceiver.



1. **TBD**

F. Check and document the radio code plug version installed in the amateur HF transceiver.

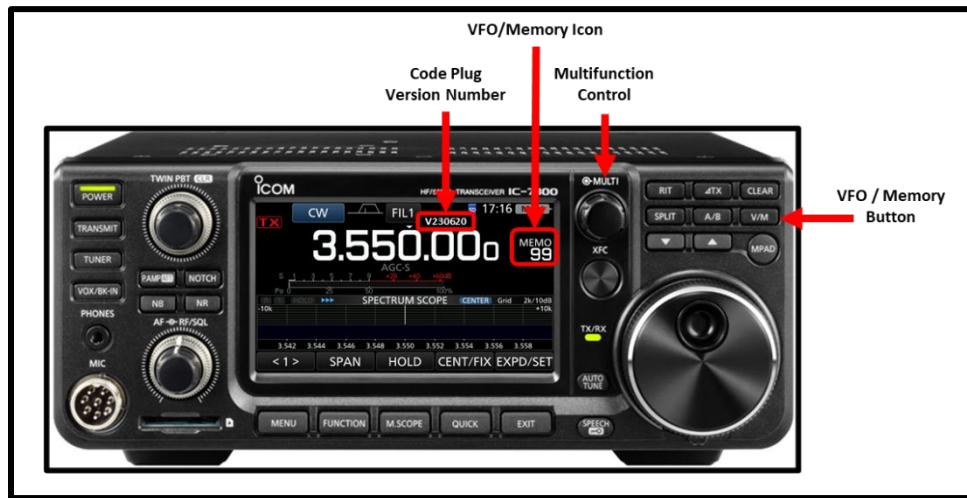


Figure 8. IC-7300 Controls and Indicators

1. Verify that the transceiver is operating in memory mode. When in memory mode, **VFO/ Memory Icon** will display **MEMO** and the memory channel number. When in VFO mode, the Icon will display **VFO**. If the transceiver is operating in VFO mode, depress the **V/M** button to toggle the transceiver to memory mode. Refer to Figure 7 for control and indicator locations.
2. Use the multifunction control to select memory channel 99.
3. The version number for the code plug currently installed in the transceiver is displayed in the tag area above the frequency. Refer to Figure 8 for the location of the code plug version number.
4. Record the code plug version number on the STATUS page of the Equipment Maintenance Record form.

G. Equipment Shutdown and Storage

NOTE 6: At the conclusion of the planned maintenance activity, power down, configure for transport, and return the Command Runner to its long-term storage location.

1. Provide a copy of the EMR STATUS page to the Pinellas ACS Radio Officer. The Radio Officer will determine if one or more of the code plugs need to be updated.
2. Power down, transport, and store the Command Runner in accordance with the procedure documented in **Part B** of PinCo ACS CR U-1.

EQUIPMENT MAINTENANCE PROCEDURES

Name of Equipment: PinCo Command Runner

Version: 20230615

Title: Inspect, Clean, and Inventory Equipment

Periodicity: S-3R

MAINTENANCE TASK DESCRIPTION

1. Inspect and verify that the hitch adapter, rubber wheel chocks, and 15-ft mast are present and properly secured.
2. Test break, turn signal, and running lights.
3. Clean computer monitors and radio displays.
4. Inspect and Inventory contents of the two accessory storage drawers.
5. Inspect and inventory contents of the auxiliary equipment bag.

MAINTAINER REQUIREMENTS AND QUALIFICATIONS

Number of Maintainers Required: 2

Individual Man-Hours: 1

Elapsed Time: 1

QUALIFICATIONS

1. The maintainer must have successfully completed the PinCo Command Runner CRD maintenance training program to perform any maintenance action.

SAFETY PRECAUTIONS

1. The Command Runner is heavy and can be unstable while in motion. **Do Not** attempt to move the Command Runner unless two qualified maintainers are present.
2. While lowering the top cover of the Command Runner, use the two silver latching handles to carefully guide and lower the cover. Keep fingers away from the front lip of the top cover to prevent fingers from being pinched or injured.

MATERIALS, TOOLS, AND TEST EQUIPMENT

MATERIALS

1. Soft microfiber cleaning Cloth
2. Distilled water

TOOLS

1. Screwdriver; #3 Phillips.
2. Compressed air duster

TEST EQUIPMENT

1. None

MISCELLANEOUS

1. **Equipment Inventory Record** for the PinCo Command Runner under test.
2. **Equipment Maintenance Record** for the PinCo Command Runner under test.
3. Command Runner auxiliary equipment bag.
4. Hitch Interface test kit

PROCEDURES

A. Preliminary

NOTE 1: This procedure is performed semiannually or prior to and after each deployment, whichever comes first.

NOTE 2: Use the **Equipment Maintenance Record (EMR)** for the unit under test (UUT) to document the maintenance action performed. For each action performed, enter the date, name, and FCC call sign of the individual completing the action. Document all discrepancies in the **NOTES** section of the EMR.

CAUTION: When moving the Command Runner by hand:

- a. Ensure that the frame assembly is set to its lowest position.
 - b. **Do Not** move the Command Runner unless two qualified maintainers are present.
 - c. Avoid soft terrain such as soil or sand.
 - d. Avoid steep inclines and slopes. The brakes are designed to help with maneuverability but are not failsafe.
 - e. Always keep one hand on the transport handle with access to the brake lever.
1. Move the Command Runner to a location where the maintainer will have easy access to all sides of the Command Runner.
 2. Engage and lock the parking brakes on the Command Runner.

CAUTION: **Do Not** overextend the frame when raising the frame assembly as it may damage the thrust screw and/or scissor legs.

3. Using the crank handle, raise the upper frame assembly to a height of approximately 30 inches (approximately 12 full rotations of the crank handle).
4. Secure the transport handle in the upright position and lock it in place using the Red Safety lanyard.
5. Unlatch and open the top cover of the Command Runner.
6. Extend the front panel support legs.
 - a. Remove the locking pin from the two support legs located on the front panel of the Command Runner.
 - b. Rotate each support leg 90 degrees into its deployment position.
 - c. Reinsert the locking pin into each support leg and engage the locking mechanism.
7. Unlatch and lower the front panel of the Command Runner.
8. Adjust the height of each front panel support leg so that the legs support the weight of the front panel and keep the front panel perpendicular to the front of the Command Runner.
 - a. Remove the locking pin from the foot of each support leg.
 - b. Extend or reduce the length of each support leg until the legs properly support the front panel.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – S-3R

- c. Reinsert the locking pin into the foot of each support leg and engage the locking mechanism.
9. Verify that all Command Runner power switches are set to the OFF position.
 - a. MASTER POWER switch: OFF
 - b. INVERTER power switch: OFF
 - c. Cover Lights: OFF

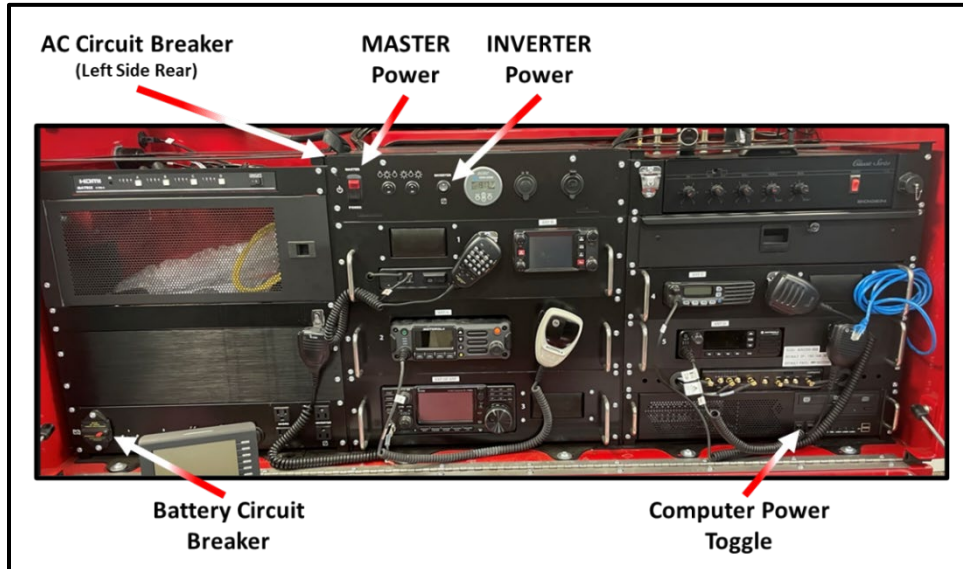


Figure 1. Command Runner Circuit Breakers and Power Switches

B. Inspect and verify that hitch adapter and rubber wheel chocks are present and properly secured.

NOTE 3: The Hitch Adapter Assembly is located on the left side of the lower frame assembly.

1. Examine the hitch adapter assembly and verify that it is properly secured to the hitch adaptor bed. Refer to Figure 2. Confirm that the installation meets each of the following requirements.
 - a. The receiver end of the hitch adapter is mounted to the hitch adapter lynch pin.
 - b. The hitch adapter is secured to the hitch adaptor bed by the hitch adapter elastic latch.
 - c. The bolt and cotter pin are installed in the hitch adapter.
2. If the hitch adapter is not properly secured, perform the following actions.
 - a. Document the discrepancy in the NOTES section of the equipment maintenance record.
 - b. Secure the hitch adapter in accordance with the requirements listed in **B.1**.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – S-3R



Figure 2. Hitch Adaptor

NOTE 4: The rubber wheel chocks are located on the right side of the lower frame assembly.

3. Examine the rubber wheel chocks and verify that they are properly secured to the lower frame assembly. Refer to Figure 3. Confirm that the installation meets each of the following requirements.
 - a. The two rubber wheel chocks are mounted to the wheel chock lynch pin.
 - b. The locking pin is in place and the retaining ring is secured over the lynch pin.
4. If the wheel chocks are not properly secured, perform the following actions.
 - a. Document the discrepancy in the NOTES section of the equipment maintenance record.
 - b. Secure the rubber wheel chocks in accordance with the requirements listed in **B.3.**

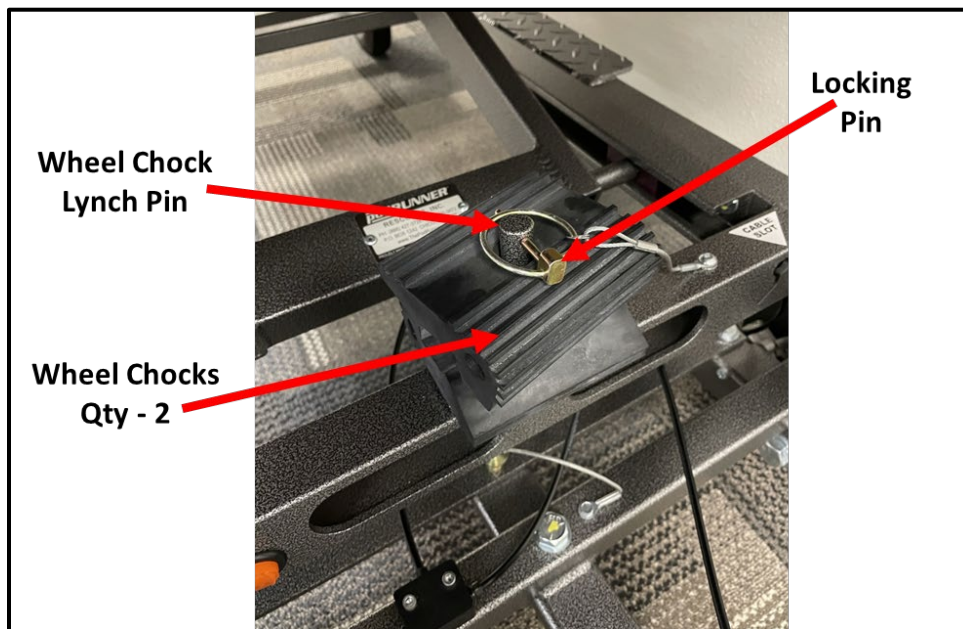


Figure 3. Wheel Chocks

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – S-3R

NOTE 5: The 15-ft fiberglass mast is mounted to the top cover of the Command Runner.

5. Examine the 15-ft fiberglass mast and verify that it is properly secured to the top of the Command Runner. Confirm that the installation meets each of the following requirements.
 - a. The mast is attached to the top of the Command Runner and both mast clamps grip the mast firmly. Refer to Figure 4.
 - b. Each mast section is fully retracted (Minimum mast length).
 - c. The thumb lever on each mast Quick-Clamp is in the **locked** position. Refer to Figure 5.
 - (1) Each mast section is gripped firmly by a Quick-Clamp and cannot be easily extended.



Figure 4. Mast Assembly

CAUTION: **Do Not overtighten the Quick Clamp adjustment screw. Overtightening can damage the Quick-Clamp.**

NOTE 6: The adjustment screw is reverse threaded so turn counterclockwise to tighten. Adjust the screw until the mast section does not easily move while the thumb lever is in the locked position.

- (2) If a mast section can easily be extended while the Quick-Clamp is in the locked position, use a #3 Phillips screwdriver to tighten the adjustment screw.

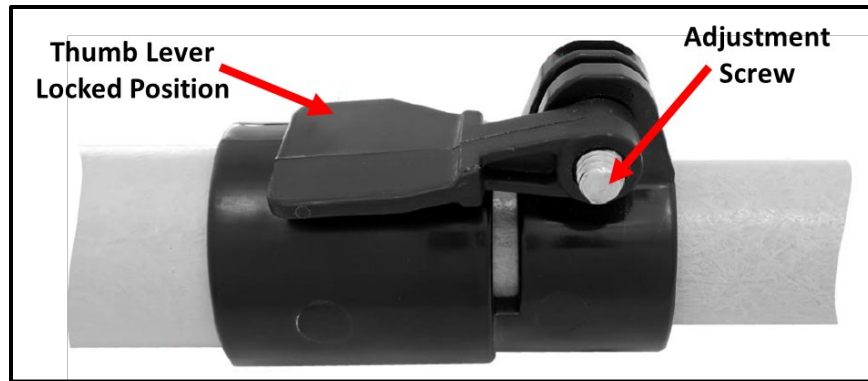


Figure 5. Mast Quick-Clamp

C. Test break, turn signal, and running lights.

1. Connect the Command Runner's 4-pin taillight connector to the Hitch Interface test kit.
2. Connect the Power-Pole pig tail attached to the Hitch Interface test kit to one of the Power Pole connectors located on the bottom of the Command Runner's left console.
3. Set each of the switches on the Hitch Interface test kit to the OFF position.
 - a. RUNNING LIGHTS: OFF
 - b. RIGHT BREAK LIGHT: OFF
 - c. LEFT BREAK LIGHT: OFF
4. Set the MASTER POWER switch to ON.
5. Verify that the license plate light, both break lights, and the two running lights on the side of the Command Runner, are OFF. Refer to Figure 6 for the location of each light.
6. Set the RUNNING LIGHTS switch on the Hitch Interface test kit to the ON position.
7. Verify that the license plate light, both break lights, and the two running lights on the side of the Command Runner, are ON.
8. Set the RUNNING LIGHTS switch to OFF.
9. Set the RIGHT BREAK LIGHT switch to ON.
10. Verify that only the right break light is ON.
11. Set the RIGHT BREAK LIGHT switch to OFF.
12. Set the LEFT BREAK LIGHT switch to ON.
13. Verify that only the left break light is ON.
14. Set the LEFT BREAK LIGHT switch to OFF.
15. Set the MASTER POWER switch to OFF.
16. Disconnect the Command Runner's 4-pin taillight connector from the Hitch Interface test kit and store the connector in the Command Runner chassis.
17. Disconnect the Power Pole pig tail from the Command Runner's left console.

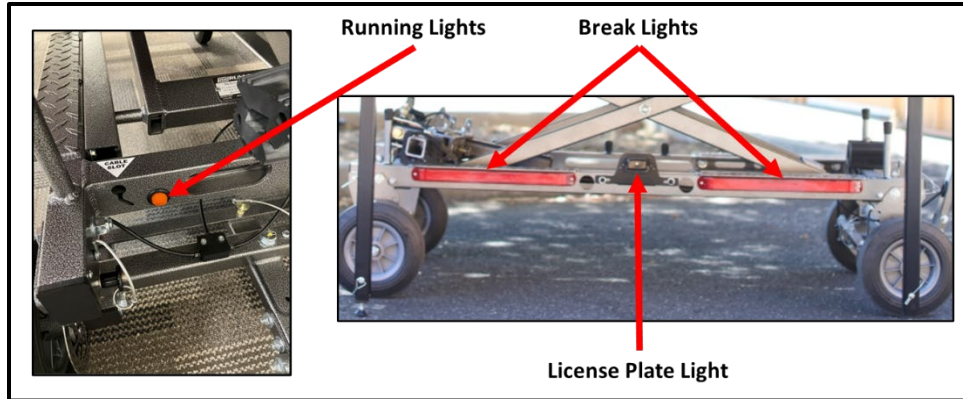


Figure 6. Command Runner lights

D. Clean computer monitors and radio displays.

CAUTION: *Do Not* use harsh solvents such as benzine, alcohol, ammonia, or Windex when cleaning computer monitors or transceiver display screens. These solvents can damage the protective coating used to combat glare, reflections, and fingerprints.

CAUTION: *Do Not* use abrasive pads, paper towels, or cloth towels when cleaning computer monitors or transceiver display screens. These products can scratch and damage the displays.

CAUTION: Keep the nozzle of the compressed air duster 3 to 4 inches away from the surface being cleaned. *Do Not* allow the nozzle to touch a computer monitor or transceiver display screen. The nozzle may damage the display.

CAUTION: When wiping a computer monitor or transceiver display screen, be careful not to push too hard or scratch the surface with your fingernails. Either action can damage the display.

1. Examine the surface of each computer monitor. If dust or fingerprints are visible, perform the following actions.
 - a. Use a compressed air duster to remove any dust from the surface of each computer monitor.
 - b. Use a clean microfiber cloth to gently wipe the surface of the display.
 - c. If fingerprints are still visible, spray a small amount of distilled water onto the microfiber cloth and again gently wipe the surface of the display.
2. Examine the display screen on each transceiver listed below.
 - a. Yaesu FTM-400XD amateur VHF/UHF transceiver.
 - b. Motorola APX 4500 P25 public safety transceiver.
 - c. Motorola XPR 5550e UHF public safety transceiver.
 - d. ICOM IC-F5021 VHF public safety transceiver.
 - e. ICOM IC-7300 HF Transceiver.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – S-3R

3. If dust or fingerprints are visible on a transceiver display screen, perform the following actions.
 - a. Use a compressed air duster to remove any dust from the surface of the display.
 - b. Use a clean microfiber cloth to gently wipe the surface of the display.
 - c. If fingerprints are still visible, spray a small amount of distilled water onto the microfiber cloth and again gently wipe the surface of the display.

E. Inspect and Inventory contents of the two accessory storage drawers.

1. Use the **Equipment Inventory Record** for the PinCo Command Runner under test to inventory the contents of the two Command Runner Accessory storage drawers.
2. If any item is missing, perform the following actions.
 - a. Note the discrepancy in the **NOTES** section of the **Equipment Maintenance Record** form.
 - b. Notify the Pinellas ACS Radio Officer.

F. Inspect and inventory contents of the auxiliary equipment bag.

1. Use the **Equipment Inventory Record** for the PinCo Command Runner under test to inventory the contents of the auxiliary equipment bag.
2. If any item is missing, perform the following actions.
 - a. Note the discrepancy in the **NOTES** section of the **Equipment Maintenance Record** form.
 - b. Notify the Pinellas ACS Radio Officer.

G. Return to Storage.

CAUTION: Before securing the front panel, verify that hinge and vertical contact points are clear of obstructions. Pay close attention to cables to ensure nothing is pinched or compressed.

1. Raise and latch the access panel on the front of the Command Runner.
2. Store the front panel support legs.
 - a. Remove the locking pin from the two support legs located on the front panel of the Command Runner.
 - b. Rotate each support leg 90 degrees into its storage position.
 - c. Reinsert the locking pin into each support leg and engage the locking mechanism.

CAUTION: Carefully guide and lower the top cover of the Command Runner. Equipment damage may occur if the cover is not lowered slowly.

WARNING: While lowering the top cover of the Command Runner, use the two silver latching handles to carefully guide and lower the cover. Keep fingers away from the front lip of the top cover to prevent fingers from being pinched or injured.

3. Carefully lower the top cover of the Command Runner and latch the cover in place.

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Command Runner – S-3R

CAUTION: Confirm that the parking brake is fully engaged and locked before proceeding.

4. Unlatch the red safety lanyard from the transport handle and lower the handle to the ground.
5. Use the crank handle to lower the upper frame assembly to its transport position.

CAUTION: When moving the Command Runner by hand:

- a. **Do Not** move the Command Runner unless two qualified maintainers are present.
 - b. Avoid soft terrain such as soil or sand.
 - c. Avoid steep inclines and slopes. The brakes are designed to help with maneuverability but are not failsafe.
 - d. Always keep one hand on the transport handle with access to the brake lever.
6. Raise the transport handle and release the parking brake.
 7. Move the Command Runner and its associated auxiliary equipment bag to its long-term storage location.
 8. Secure the transport handle in the upright position and lock it in place using the Red Safety lanyard.

EQUIPMENT MAINTENANCE PROCEDURES

Name of Equipment: PinCo Command Runner

Version: 20230701

Title: Mechanical Checks

Periodicity: A-2R

MAINTENANCE TASK DESCRIPTION

1. Test parking brake system.
2. Tighten hitch adaptor bolts.
3. Inspect and lubricate as needed the hitch adapter and chassis thrust screw.
4. Inspect and tighten pivot bolts.

MAINTAINER REQUIREMENTS AND QUALIFICATIONS

Number of Maintainers Required: 2

Individual Man-Hours: 1

Elapsed Time: 1

QUALIFICATIONS

1. The maintainer must have successfully completed the PinCo Command Runner CRD maintenance training program to perform any maintenance action.

SAFETY PRECAUTIONS

1. The Command Runner is heavy and can be unstable while in motion. **Do Not** attempt to move the Command Runner unless two qualified maintainers are present.

MATERIALS, TOOLS, AND TEST EQUIPMENT

MATERIALS

1. NLGI Grade 2 Grease
2. NLGI Grade 2 Moly Grease
3. Wooden Cotton Swabs
4. Clean Rag

TOOLS

1. 15/16" wrench.
2. 3/4" wrench

TEST EQUIPMENT

1. None

MISCELLANEOUS

1. **Equipment Maintenance Record** for the PinCo Command Runner under test.

PROCEDURES

A. Preliminary

NOTE 1: This procedure is performed annually or prior to deployment, whichever comes first.

NOTE 2: Use the [Equipment Maintenance Record \(EMR\)](#) for the unit under test (UUT) to document the maintenance action performed. For each action performed, enter the date, name, and FCC call sign of the individual completing the action. Document all discrepancies in the **NOTES** section of the EMR.

CAUTION: When moving the Command Runner by hand:

- a. Ensure that the frame assembly is set to its lowest position.
 - b. **Do Not** move the Command Runner unless two qualified maintainers are present.
 - c. Avoid soft terrain such as soil or sand.
 - d. Avoid steep inclines and slopes. The brakes are designed to help with maneuverability but are not failsafe.
 - e. Always keep one hand on the transport handle with access to the brake lever.
1. Move the Command Runner to a location where the maintainer will have easy access to all sides of the Command Runner.

B. Test parking brake System.

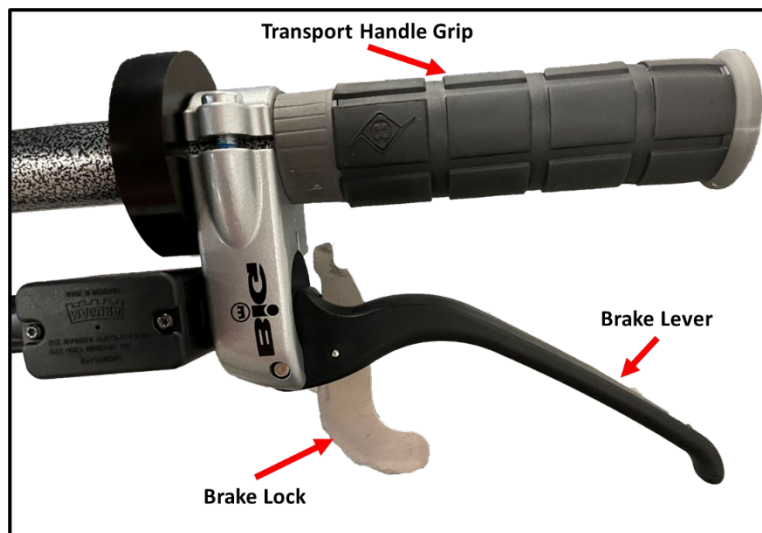


Figure 1. Parking Brake

1. While holding the Command Runner transport handle, squeeze the break lever and pull it toward the handle grip to engage the parking brake.
2. With the parking brake engaged but not locked, attempt to pull the Command Runner forward. If the brakes are properly aligned and working correctly, movement of the Command Runner should be extremely difficult.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – A-2R

3. With the parking brake engaged, rotate the brake lock into the locked position; then, release the brake lever. The brake system should remain engaged.
4. With the parking brake engaged and locked, attempt to pull the Command Runner forward. If the brake lock is working properly, the brake system should remain engaged, and movement of the Command Runner should be extremely difficult.
5. Notify the PinCo Radio Officer if one or more of the following symptoms is detected while testing the parking brake system.
 - a. The parking brake feels loose or sticky.
 - b. With brake system engaged, the Command Runner can still be moved easily.
 - c. The brake lock does not keep the brake system fully engaged.

C. Tighten hitch adapter bolts.

CAUTION: Do Not overextend the frame when raising the frame assembly as it may damage the thrust screw and/or scissor legs.

1. Lower the transport handle to ground.
2. Using the crank handle, raise the upper frame assembly to a height of approximately 30 inches (approximately 12 full rotations of the crank handle).
3. Secure the transport handle in the upright position and lock it in place using the Red Safety lanyard.

NOTE 3: The Hitch Adapter Assembly is located on the left side of the lower frame assembly.

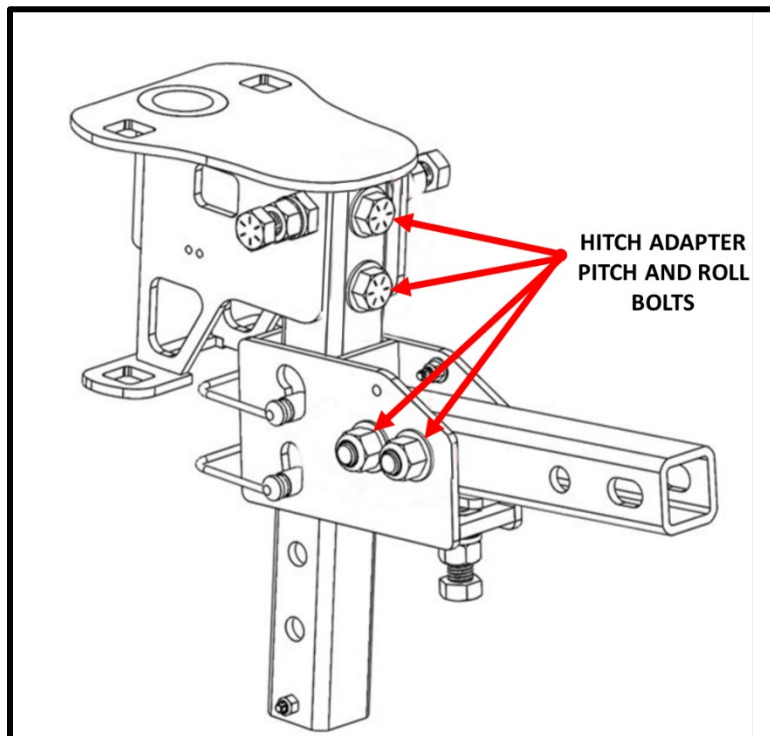


Figure 2. Hitch Adapter Pitch/Roll Bolts

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – A-2R

4. Remove the hitch adapter from the lower frame assembly.
5. Examine the four hitch adapter pitch and roll bolts shown in Figure 2.

CAUTION: *Do Not over tighten bolts. Too much force can damage or break the bolt.*

6. Use a 15/16" wrench to verify that each bolt is tight.
7. Tighten any bolt that appears loose.

D. inspect and lubricate as needed the Hitch Adapter

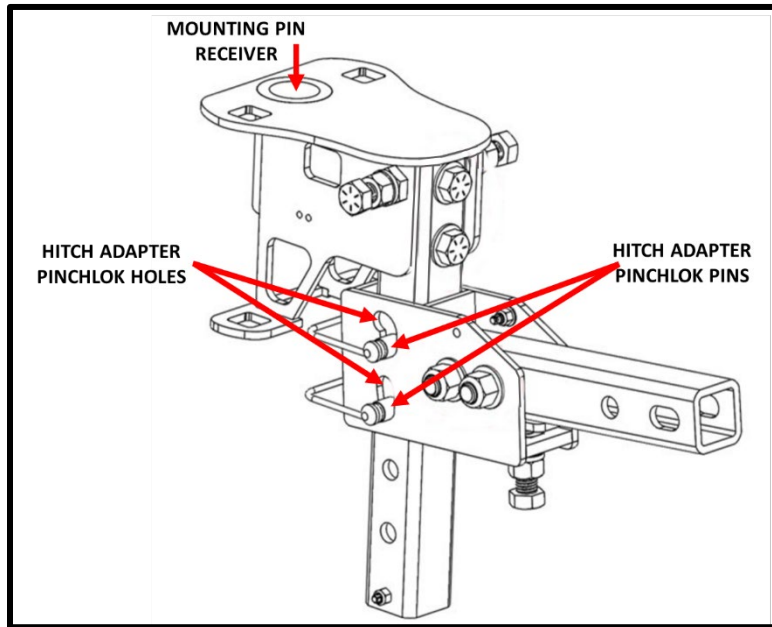


Figure 3. Hitch Adapter Lubrication Points

1. Use a wooden cotton swap to apply NLGI Grade 2 Grease to the following locations identified in Figure 3.
 - a. Hitch Adapter Pinchlok pins.
 - b. Hitch Adapter Pinchlok holes.
 - c. Hitch Adapter Mounting Pin Receiver.
2. Use a clean rag to remove any excess grease on the surface of the hitch adapter.
3. Reinstall the hitch adapter on the lower frame assembly. Refer to Figure 4. Verify that:
 - a. The receiver end of the hitch adapter is mounted to the hitch adapter lynch pin.
 - b. The hitch adapter is secured to the hitch adaptor bed by the hitch adapter elastic latch.
 - c. The bolt and cotter pin are installed in the hitch adapter.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – A-2R

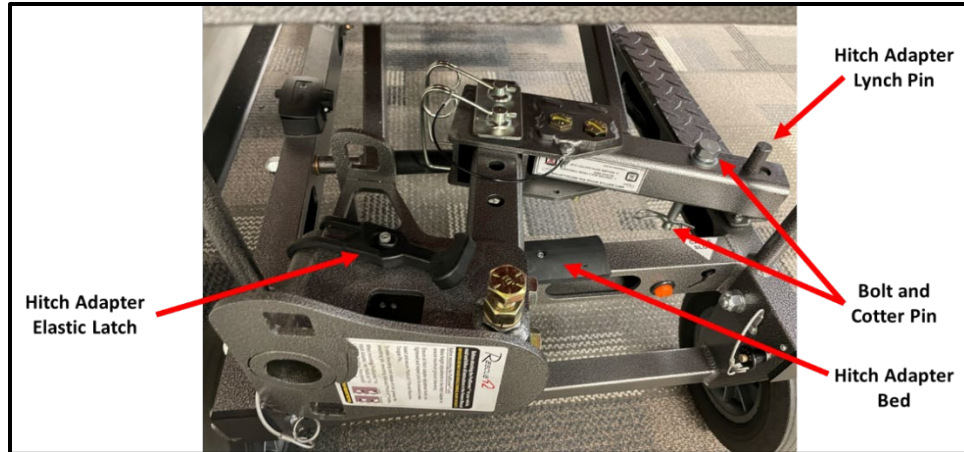


Figure 4. Hitch Adaptor

E. inspect and lubricate as needed the Chassis Thrust Screw.

NOTE 4: The Chassis Thrust Screw is located in the center of the upper frame assembly.

1. Use a wooden cotton swap to apply NLGI Grade 2 Moly Grease to the chassis thrust screw shown in Figure 5.
2. Using the crank handle, lower the upper frame assembly to its transport position.

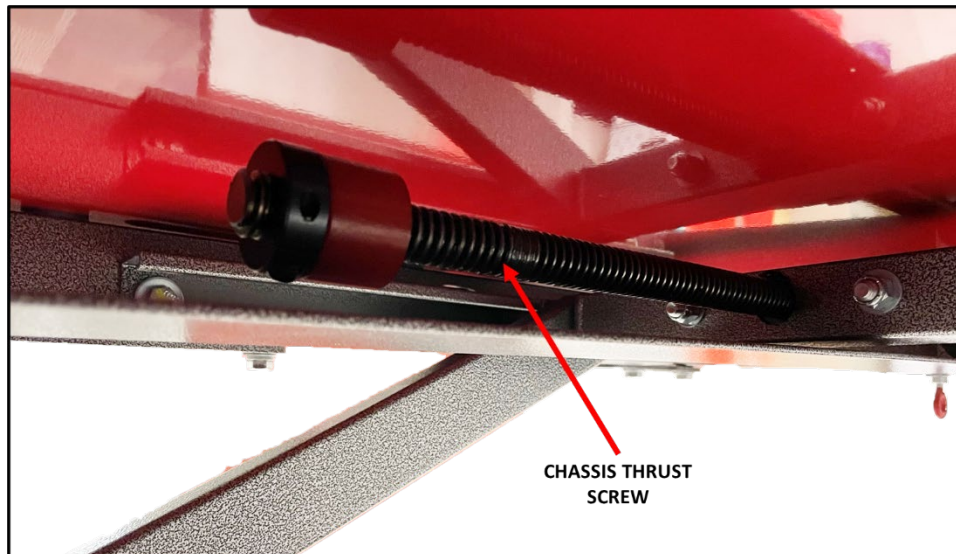


Figure 5. Chassis Thrust Screw

F. Inspect and tighten pivot bolts.

NOTE 5: With a lot of use the pivot bolts on the chassis will slowly wear in over time. These can easily be retightened using two wrenches.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – A-2R

1. Inspect and tighten each of the pivot bolts listed below. Each bolt should be tightened enough to provide light friction but an easy range of motion. Refer to Figure 6 and Figure 7 for pivot bolt locations.
 - a. Tail Axle Pivot Bolts
 - b. Steering Axle Pivot Bolts
 - c. Wheel Pivot Bolts
 - d. Handle Pivot Bolt

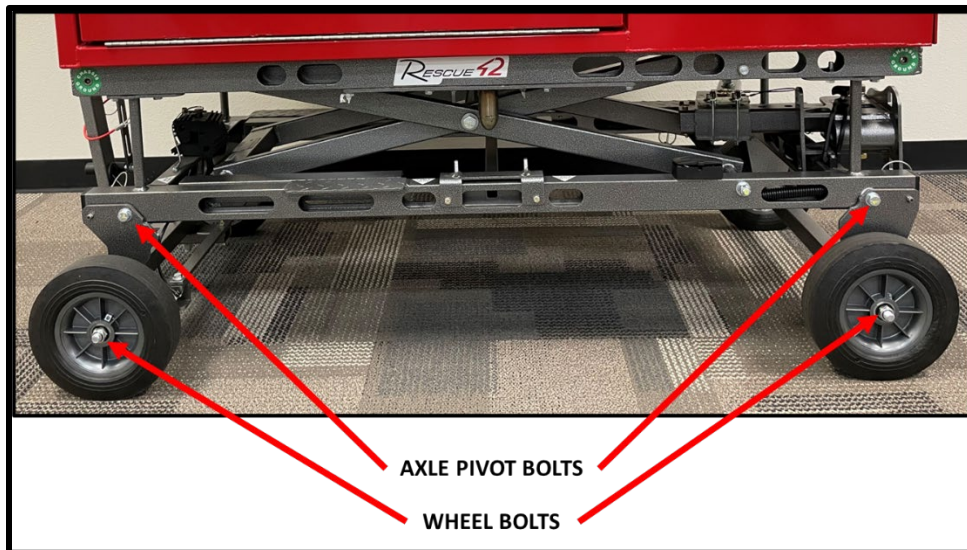


Figure 6. Wheel and Axle Pivot Bolts

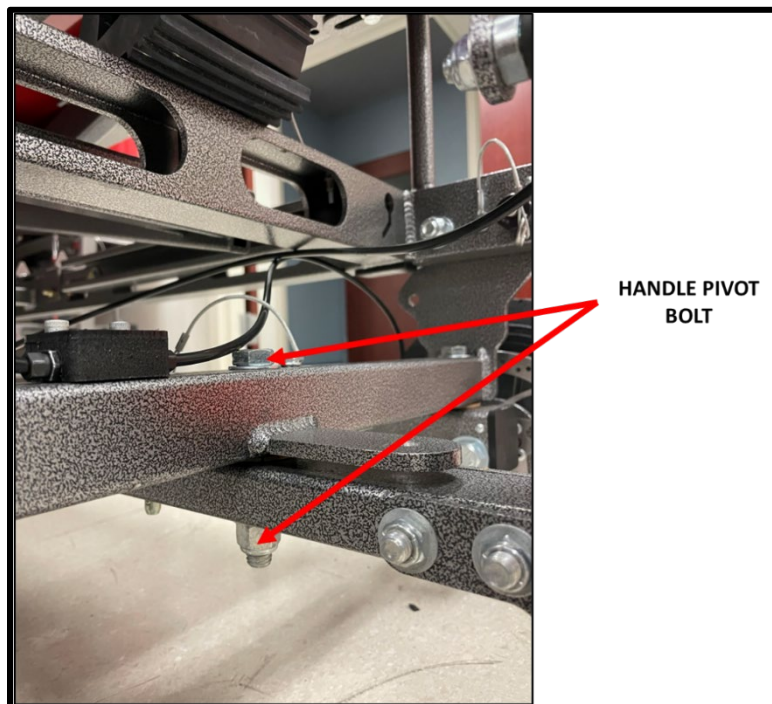


Figure 7. Handle Pivot Bolt

G. Return to Storage.

CAUTION: Confirm that the parking brake is fully engaged and locked before proceeding.

CAUTION: When moving the Command Runner by hand:

- a. **Do Not** move the Command Runner unless two qualified maintainers are present.
 - b. Avoid soft terrain such as soil or sand.
 - c. Avoid steep inclines and slopes. The brakes are designed to help with maneuverability but are not failsafe.
 - d. Always keep one hand on the transport handle with access to the brake lever.
1. Raise the transport handle and release the parking brake.
 2. Move the Command Runner to its long-term storage location.
 3. Secure the transport handle in the upright position and lock it in place using the Red Safety lanyard.

EQUIPMENT MAINTENANCE PROCEDURES

Name of Equipment: PinCo Command Runner

Version: 20230621

Title: Battery Status

Periodicity: R-1M

MAINTENANCE TASK DESCRIPTION

1. Check and Record battery state-of-charge and Amp-Hours consumed.

MAINTAINER REQUIREMENTS AND QUALIFICATIONS

Number of Maintainers Required: 1

Individual Man-Hours: 0.25

Elapsed Time: 0.25

QUALIFICATIONS

1. The maintainer must have successfully completed the PinCo Command Runner CRD maintenance training program to perform any maintenance action.
2. Only a PinCo ACS software system administrator is authorized to use the **VictronConnect** application to evaluate the status of the Command Runner battery.

SAFETY PRECAUTIONS

1. The Command Runner is heavy and can be unstable while in motion. **Do Not** attempt to move the Command Runner unless two qualified maintainers are present.
2. The Command Runner is not designed for operation in a wet environment. **Do Not** deploy the Command Runner to a location where the unit will be exposed to rain, mist, or snow.

MATERIALS, TOOLS, AND TEST EQUIPMENT

MATERIALS

1. Notepad and pencil / pen.

TEST EQUIPMENT

1. None

TOOLS

1. None

MISCELLANEOUS

1. **Equipment Maintenance Record** for the PinCo Command Runner under test.
2. Bluetooth enabled device with **VictronConnect** application installed.

PROCEDURES

A. Preliminary

NOTE 1: Command Runner battery status is checked during each scheduled quarterly maintenance activity. Since the battery status of each Command Runner should be checked monthly, this procedure, **R-1M**, is only scheduled to be performed during a month that does not include a scheduled quarterly test.

NOTE 2: Use the **Equipment Maintenance Record (EMR)** for the unit under test (UUT) to document the maintenance action performed. For each action performed, enter the date, name, and FCC call sign of the individual completing the action. Document all discrepancies in the **NOTES** section of the EMR.

NOTE 3: Only a PinCo ACS software system administrator is authorized to use the **VictronConnect** application to evaluate the status of the Command Runner battery. **Do Not** perform the steps in **Section B** unless you are a system administrator.

B. Check Command Runner Battery Status.

NOTE 4: Prior to performing this procedure, the user must install the **VictronConnect** application on a Bluetooth enabled device and pair the device to the Battery Monitor located within the unit under test. Since Bluetooth has a limited range of operation, the Bluetooth device must remain within 6 feet of the Battery Monitor during the battery status checks.

1. Open the **VictronConnect** App on the Bluetooth enabled device.
2. Select the Victron Battery Monitor associated with the unit under test.

<u>Unit Under Test</u>	<u>Serial Number</u>
Command Runner 1	N/A
Command Runner 2	HQ2030MEAXR
Command Runner 3	HQ2113MNXRD
Command Runner 4	HQ21137UKMR
Command Runner 5	HQ2113CDCDX
Command Runner 6	HQ2037TAV6G

3. Use the **VictronConnect** App to display the following parameters.
 - a. **Consumed Amp-hours:** Record this value on the **STATUS** page of the **Equipment Maintenance Record** form.
 - b. **State-of-Charge:** Record this value on the **STATUS** page of the **Equipment Maintenance Record** form.
4. As a minimum, the battery state-of-charge should be greater than 50%. If the value is less than 50%, then perform the following actions.
 - a. Note the discrepancy in the **NOTES** section of the **Equipment Maintenance Record** form
 - b. Notify the Pinellas ACS Radio Officer.

EQUIPMENT MAINTENANCE PROCEDURES

Name of Equipment: PinCo Command Runner

Version: 20230616

Title: Generator Storage

Periodicity: R-2

MAINTENANCE TASK DESCRIPTION

1. Drain generator fuel tank.
2. Run engine to consume fuel in carburetor.
3. Clean and store generator.

MAINTAINER REQUIREMENTS AND QUALIFICATIONS

Number of Maintainers Required: 1

Individual Man-Hours: 0.5

Elapsed Time: 0.5

QUALIFICATIONS

1. The maintainer must have successfully completed the PinCo Command Runner CRD maintenance training program to perform any maintenance action.

SAFETY PRECAUTIONS

1. The Command Runner is heavy and can be unstable while in motion. **Do Not** attempt to move the Command Runner unless two qualified maintainers are present.
2. Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.
3. Generator exhaust contains poisonous carbon monoxide gas that can build up to dangerous levels in enclosed or partly enclosed areas. Breathing carbon monoxide can cause unconsciousness or death. Never run the generator engine in an enclosed, or even partly enclosed area.
4. The exhaust system on the rear of the generator becomes extremely hot during operation. **Do Not** touch the exhaust system while the generator is operating or before it has completely cooled. Failure to comply with this warning could result in serious burns.

MATERIALS, TOOLS, AND TEST EQUIPMENT

MATERIALS

1. Clean Rag
2. Distilled water

TOOLS

1. None

TEST EQUIPMENT

1. None

MISCELLANEOUS

1. **Equipment Maintenance Record** for the PinCo Command Runner under test.
2. Gasoline hand pump
3. Approved gasoline container

PROCEDURES

A. Preliminary

NOTE 1: The generator cannot be stored inside the Pinellas County Safety Complex if it contains any fuel within its fuel tank. This procedure must be performed prior to equipment storage if, during a deployment, fuel was added to the generator.

NOTE 2: Use the **Equipment Maintenance Record (EMR)** for the unit under test (UUT) to document the maintenance action performed. For each action performed, enter the date, name, and FCC call sign of the individual completing the action. Document all discrepancies in the **NOTES** section of the EMR.

CAUTION: When moving the Command Runner by hand:

- a. Ensure that the frame assembly is set to its lowest position.
 - b. **Do Not** move the Command Runner unless two qualified maintainers are present.
 - c. Avoid soft terrain such as soil or sand.
 - d. Avoid steep inclines and slopes. The brakes are designed to help with maneuverability but are not failsafe.
 - e. Always keep one hand on the transport handle with access to the brake lever.
1. Move the Command Runner to a location outside where the maintainer will have easy access to all sides of the Command Runner.
 2. Engage and lock the parking brakes on the Command Runner.
 3. Secure the transport handle in the upright position and lock it in place using the Red Safety lanyard.

B. Drain Generator Fuel Tank.

WARNING: Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.

- a. Stop the generator and let it cool before handling fuel.
 - b. Keep heat, sparks, and flame away from generator
 - c. Handle fuel only outdoors.
 - d. Keep the generator away from vehicles.
 - e. Wipe up fuel spills immediately.
 - f. **Do Not** use an electric pump to remove fuel from the generator.
1. Unlock the generator access door located on the left side of the Command Runner. Refer to Figure 1 for access door location.

NOTE 3: The keys for the Command Runner are in the accessory storage drawer located on the **right** front of the Command Runner.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – R-2

2. Open the access door and remove the generator. Place the generator at a safe distance from the Command Runner.

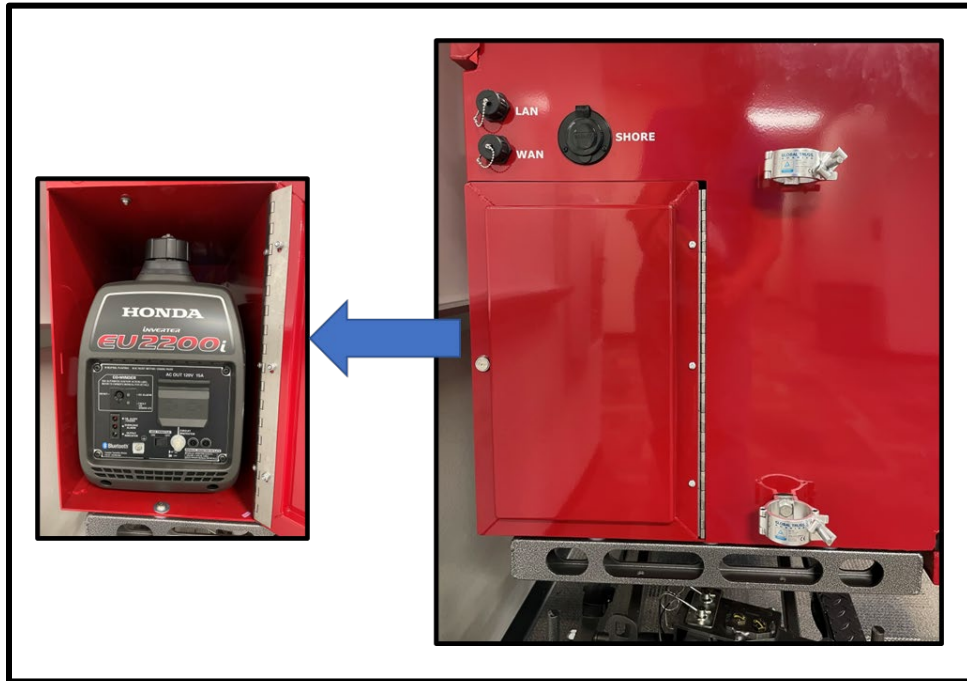


Figure 1. Generator Access Door

3. Unscrew the fuel filler cap located on the top of the generator.
4. Remove the fuel strainer. Place the fuel strainer in a clean location where it will not collect dirt or debris. Refer to Figure 2 for fuel strainer location.

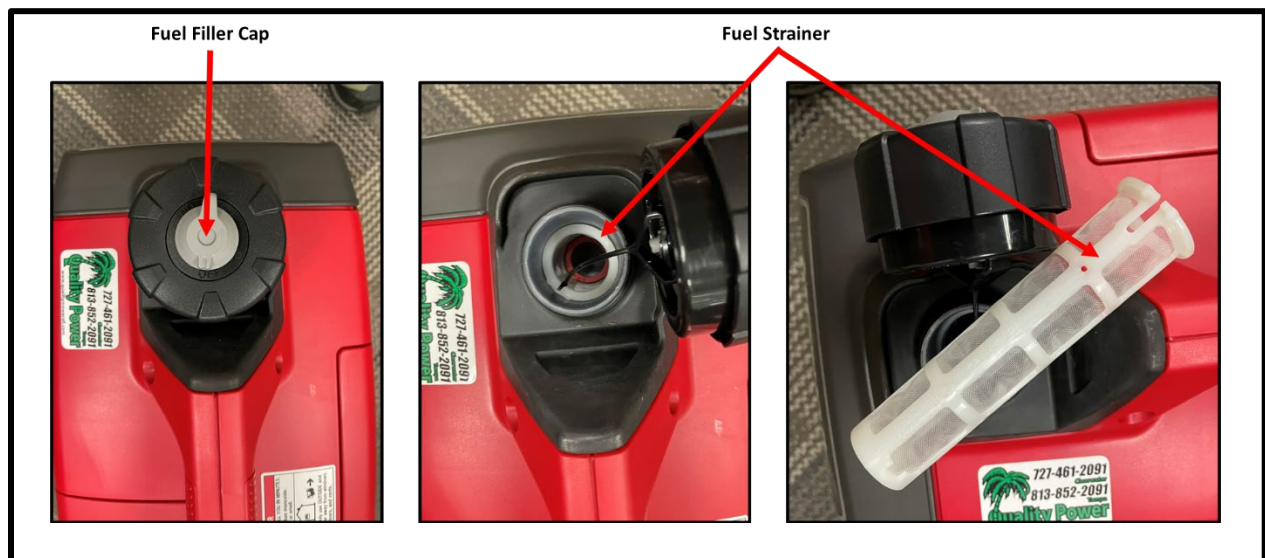


Figure 2. Generator Fuel Filler Cap and Fuel Strainer

5. Insert the gasoline hand pump into the generator fuel tank and empty the fuel into an approved gasoline container.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – R-2

- Once the fuel tank is empty, remove the hand pump from the generator fuel tank and reinstall the fuel strainer.
- Reinstall and tighten the fuel filler cap.

C. Run Engine to Consume Fuel in the Carburetor.

WARNING: Generator exhaust contains poisonous carbon monoxide gas that can build up to dangerous levels in enclosed or partly enclosed areas. Breathing carbon monoxide can cause unconsciousness or death. Never run the generator engine in an enclosed, or even partly enclosed area.

CAUTION: Operating the generator less than 3 feet from a building, obstruction, or when it is in an enclosure, a storage or security compartment, can cause overheating and damage the generator.

For proper cooling, allow 3 feet of empty space above and around the generator.

Keep all cooling holes open and clear of debris, mud, water, etc. Cooling holes are located on the side panel of the control panel, and the bottom of the generator. If the cooling holes are blocked, the generator may overheat and damage the engine, inverter, or windings.

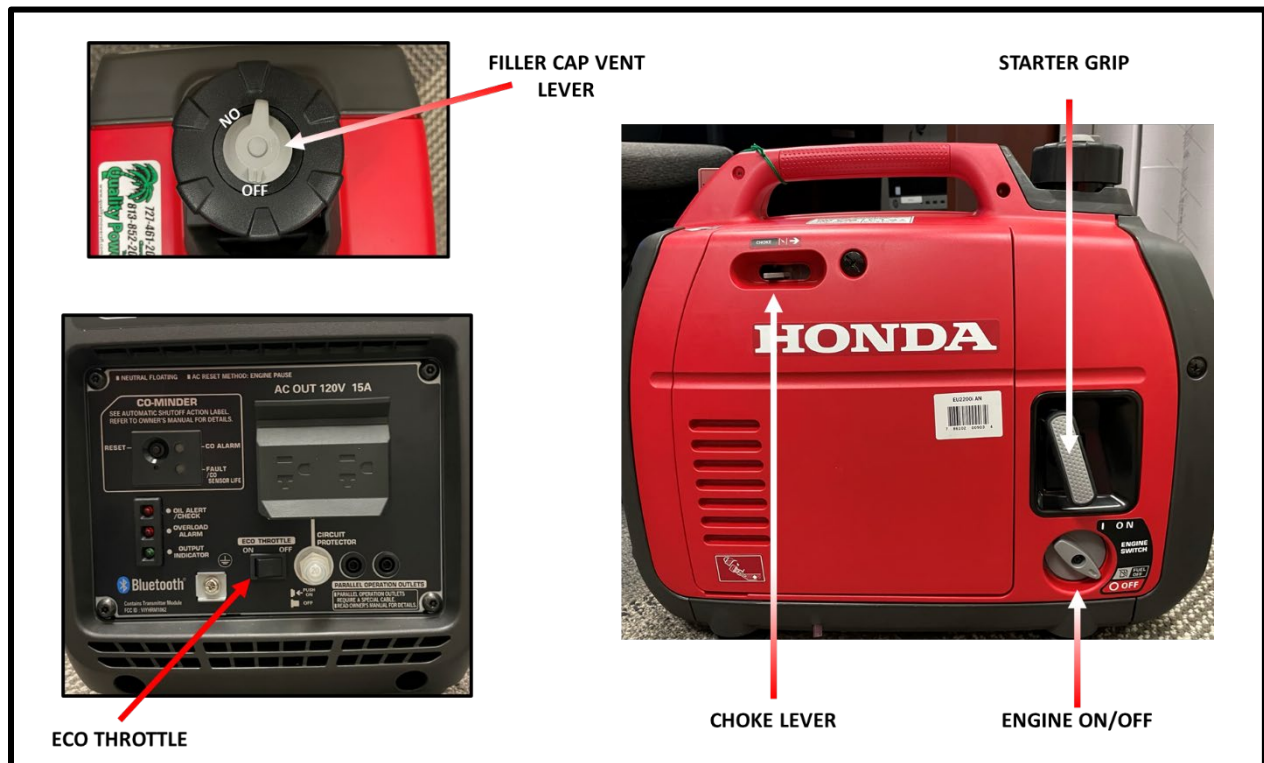


Figure 3. Generator Controls

- Turn the fuel filler cap vent lever to the ON position. Refer to Figure 3 for location of generator controls.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – R-2

2. Set the Eco Throttle switch to the OFF position.
3. Move the choke lever to the CLOSED position.
4. Turn the engine switch to the ON position.

CAUTION: **Do Not allow the generator starter grip to snap back against the generator. Return it gently to prevent damage to the generator.**

5. Pull the starter grip. Several pulls may be required to start the engine.
6. Slowly move the choke lever to the OPEN position as the engine warms up.
7. Continue to run the engine until it stops on its own.

NOTE 4: **The generator will continue to run for several minutes until the fuel in the carburetor and fuel lines has been consumed.**

8. Once the generator stops, perform the following steps.
 - a. Turn the engine switch to the OFF (Fuel off) position.
 - b. Allow the engine to cool, then turn the fuel filler cap vent lever to the OFF position.

D. Clean Store the Generator.

WARNING: **The exhaust system on the rear of the generator becomes extremely hot during operation. Do Not touch the exhaust system while the generator is operating or before it has completely cooled. Failure to comply with this warning could result in serious burns.**

1. Wait for the generator to completely cool before proceeding.
2. Use distilled water and a clean rag to wipe down the exterior of the generator.

NOTE 5: **While cleaning the exterior of the generator, the cleaning rag may become contaminated with fuel or oil. Therefore, discard the cleaning rag after the generator has been cleaned.**

3. Place the generator back into the generator storage compartment located on the left side of the Command Runner.
4. Close and lock the generator storage compartment.
5. Return the key to the accessory storage drawer located on the right front of the Command Runner.

E. Equipment Transport and Storage

1. Unlatch the red safety lanyard from the transport handle and release the parking brake.

CAUTION: **When moving the Command Runner by hand:**

- a. **Do Not move the Command Runner unless two qualified maintainers are present.**
- b. **Avoid soft terrain such as soil or sand.**
- c. **Avoid steep inclines and slopes. The brakes are designed to help with maneuverability but are not failsafe.**
- d. **Always keep one hand on the transport handle with access to the brake lever.**

Pinellas County ACS Equipment Maintenance Procedures
Command Runner – R-2

2. Move the Command Runner to its long-term storage location.
3. Secure the transport handle in the upright position and lock it in place using the Red Safety lanyard.

EQUIPMENT MAINTENANCE PROCEDURES

Name of Equipment: PinCo Command Runner

Version: 20230622

Title: Emplace, Shutdown, and Store

Periodicity: U-1

MAINTENANCE TASK DESCRIPTION

1. Emplace Command Runner and connect to AC power Source.
2. Power down, transport, and store Command Runner.

MAINTAINER REQUIREMENTS AND QUALIFICATIONS

Number of Maintainers Required: 2

Individual Man-Hours: 1

Elapsed Time: 1

QUALIFICATIONS

1. The maintainer must have successfully completed the PinCo Command Runner CRD maintenance training program to perform any maintenance action.

SAFETY PRECAUTIONS

1. The Command Runner is heavy and can be unstable while in motion. **Do Not** attempt to move the Command Runner unless two qualified maintainers are present.
2. The Command Runner is not designed for operation in a wet environment. **Do Not** deploy the Command Runner to a location where the unit will be exposed to rain, mist, or snow.
3. While lowering the top cover of the Command Runner, use the two silver latching handles to carefully guide and lower the cover. Keep fingers away from the front lip of the top cover to prevent fingers from being pinched or injured.

MATERIALS, TOOLS, AND TEST EQUIPMENT

MATERIALS

1. Note pad and pencil / pen.

TEST EQUIPMENT

1. None

TOOLS

1. None

MISCELLANEOUS

1. Command Runner auxiliary equipment bag
2. **Equipment Maintenance Record** for the PinCo Command Runner under test.

PROCEDURES

A. Preliminary – Emplace Command Runner

NOTE 1: Use the [Equipment Maintenance Record \(EMR\)](#) for the unit under test (UUT) to document the maintenance action performed. For each action performed, enter the date, name, and FCC call sign of the individual completing the action. Document all discrepancies in the **NOTES** section of the EMR.

CAUTION: When moving the Command Runner by hand:

- a. Ensure that the frame assembly is set to its lowest position.
- b. **Do Not** move the Command Runner unless two qualified maintainers are present.
- c. Avoid soft terrain such as soil or sand.
- d. Avoid steep inclines and slopes. The brakes are designed to help with maneuverability but are not failsafe.
- e. Always keep one hand on the transport handle with access to the brake lever.

1. Move the Command Runner to a location that has access to AC power.
2. Engage and lock the parking brakes on the Command Runner.
3. Remove the wheel chocks from the frame assembly and deploy the chocks behind the rear wheels of the command runner. If the Command Runner is emplaced on a slight incline, the wheel chocks must be placed on the downhill side of the rear wheels.

CAUTION: **Do Not** overextend the frame when raising the frame assembly as it may damage the thrust screw and/or scissor legs.

4. Using the crank handle, raise the upper frame assembly to a height of approximately 30 inches (approximately 12 full rotations of the crank handle).
5. Secure the transport handle in the upright position and lock it in place using the Red Safety lanyard.
6. Unlatch and open the top cover of the Command Runner.
7. Extend the front panel support legs.
 - a. Remove the locking pin from the two support legs located on the front panel of the command runner.
 - b. Rotate each support leg 90 degrees into its deployment position.
 - c. Reinsert the locking pin into each support leg and engage the locking mechanism.
8. Unlatch and lower the front panel of the Command Runner.
9. Adjust the height of each front panel support leg so that the legs support the weight of the front panel and keep the front panel perpendicular to the front of the Command Runner.
 - a. Remove the locking pin from the foot of each support leg.
 - b. Extend or reduce the length of each support leg until the legs properly support the front panel.
 - c. Reinsert the locking pin into the foot of each support leg and engage the locking mechanism.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner U-1

NOTE 2: The three dual band VHF/UHF antennas are stored inside the Command Runner on the top shelf under the cover. The 700/800 MHz UHF antenna is stored within accessory storage drawer located on the left front of the Command Runner.

10. Install the 700/800 MHz antenna on to the top cover of the Command Runner in the position marked **1**.
11. Install the three dual band VHF/UHF antennas on to the top cover of the Command Runner in the positions marked **2, 3, and 4**.
12. Verify that all Command Runner AC circuit breakers and power switches are set to the OFF position.
 - a. AC circuit breaker: OFF
 - b. MASTER POWER switch: OFF
 - c. INVERTER power switch: OFF
 - d. Cover Lights: OFF

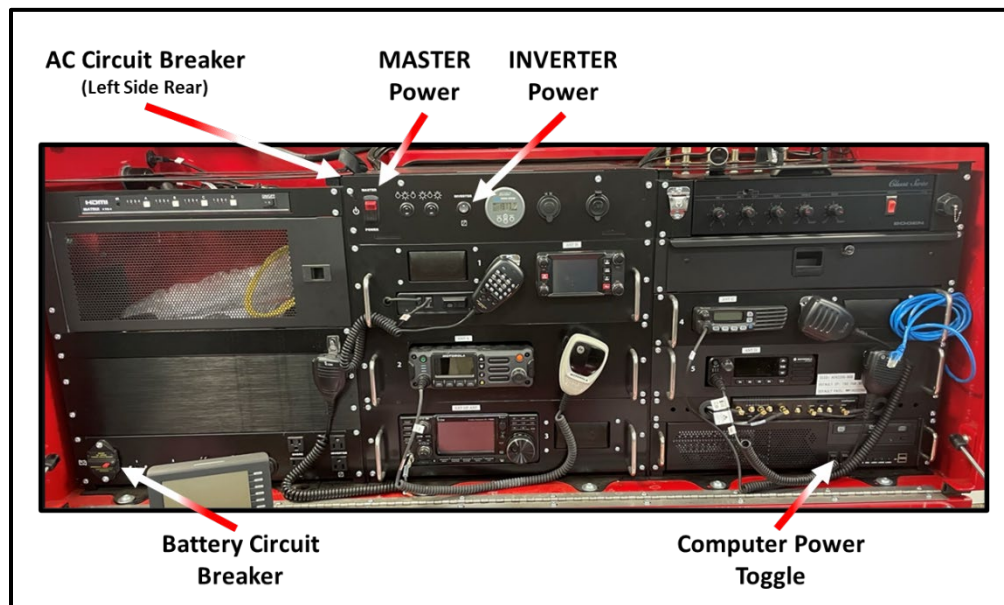


Figure 1. Command Runner Circuit Breakers and Power Switches

13. Connect the Command Runner to an AC Power Source. The power source must be capable of supporting a 15Amp load.
 - a. Remove the 50-ft yellow extension cord from the auxiliary equipment bag.
 - b. Connect the female end of the extension cord to the **SHORE** receptacle on the left side of the command runner.
 - c. Connect the other end of the extension cord to the AC power source.

B. Equipment Shutdown and Storage

NOTE 3: At the conclusion of the planned maintenance activity, power down, configure for transport, and return the Command Runner to its long-term storage location.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner U-1

1. Power **OFF** the radio equipment listed below.
 - a. Yaesu FTM-400XD amateur VHF/UHF transceiver.
 - b. Motorola APX 4500 P25 public safety transceiver.
 - c. Motorola XPR 5550e UHF public safety transceiver.
 - d. ICOM IC-F5021 VHF public safety transceiver.
 - e. ICOM IC-7300 HF Transceiver.
2. Shutdown the windows computer system.
 - a. Using the computer mouse and keyboard, shut down the windows computer. Wait for confirmation that the computer has completed its shutdown sequence.
 - b. Set the power switch on the bottom of the Bluetooth keyboard to the **OFF** position.
 - c. Set the power switch on the bottom of the Bluetooth mouse to the **OFF** position.
 - d. Store the keyboard and mouse in the accessory storage drawer located on the left front of the Command Runner.
3. Set the cover light power switches (qty 2) to the **OFF** position.
4. Set the INVERTER Power Switch to the **OFF** position.
5. Set the MASTER POWER switch to the **OFF** position. The switch should no longer be illuminated.
6. Set the AC Circuit Breaker to the **OFF** position.
7. Examine the Victron Battery Monitor.
 - a. Use the “+” and “-” keys on the front of the battery monitor to select and display the following parameters.
 - (1) Consumed Amp-Hours: Record this value on the **STATUS** page of the **Equipment Maintenance Record** form.
 - (2) State-of-Charge: Record this value on the **STATUS** page of the **Equipment Maintenance Record** form.
8. Disconnect the Command Runner from the AC Power Source. Coil the yellow extension cord and store the cord within the auxiliary equipment bag.

CAUTION: Before securing the front and rear access panels, verify that hinge and vertical contact points are clear of obstructions. Pay close attention to cables to ensure nothing is pinched or compressed.

9. Raise and latch access panel on the rear of the command runner.
10. Raise and latch access panel on the front of the command runner.
11. Store the front panel support legs.
 - a. Remove the locking pin from the two support legs located on the front panel of the command runner.
 - b. Rotate each support leg 90 degrees into its storage position.
 - c. Reinsert the locking pin into each support leg and engage the locking mechanism.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner U-1

CAUTION: Carefully guide and lower the top cover of the Command Runner. Equipment damage may occur if the cover is not lowered slowly.

WARNING: While lowering the top cover of the Command Runner, use the two silver latching handles to carefully guide and lower the cover. Keep fingers away from the front lip of the top cover to prevent fingers from being pinched or injured.

12. Carefully lower the top cover of the Command Runner and latch the cover in place.

CAUTION: Confirm that the parking brake is fully engaged and locked before proceeding.

13. Unlatch the red safety lanyard from the transport handle and lower the handle to the ground.
14. Use the crank handle to lower the upper frame assembly to its transport position.
15. Carefully remove the wheel chocks from the rear wheels and store the chocks on the frame assembly.

CAUTION: When moving the Command Runner by hand:

- a. **Do Not** move the Command Runner unless two qualified maintainers are present.
 - b. Avoid soft terrain such as soil or sand.
 - c. Avoid steep inclines and slopes. The brakes are designed to help with maneuverability but are not failsafe.
 - d. Always keep one hand on the transport handle with access to the brake lever.
16. Raise the transport handle and release the parking brake.
 17. Move the Command Runner and its associated auxiliary equipment bag to its long-term storage location.
 18. Secure the transport handle in the upright position and lock it in place using the Red Safety lanyard.

EQUIPMENT MAINTENANCE PROCEDURES

Name of Equipment: PinCo Command Runner

Version: 20230621

Title: Charge Internal Battery

Periodicity: U-2

MAINTENANCE TASK DESCRIPTION

1. Charge the internal battery to 80% capacity.

MAINTAINER REQUIREMENTS AND QUALIFICATIONS

Number of Maintainers Required: 2

Individual Man-Hours: 0.5

Elapsed Time: 0.5

QUALIFICATIONS

1. The maintainer must have successfully completed the PinCo Command Runner CRD maintenance training program to perform any maintenance action.
- 2 Only a PinCo ACS software system administrator is authorized to use the **VictronConnect** application to evaluate the status of the Command Runner battery.

SAFETY PRECAUTIONS

1. The Command Runner is heavy and can be unstable while in motion. **Do Not** attempt to move the Command Runner unless two qualified maintainers are present.
2. The Command Runner is not designed for operation in a wet environment. **Do Not** deploy the Command Runner to a location where the unit will be exposed to rain, mist, or snow.

MATERIALS, TOOLS, AND TEST EQUIPMENT

MATERIALS

1. Notepad and pencil / pen.

TEST EQUIPMENT

1. None

TOOLS

1. None

MISCELLANEOUS

1. **Equipment Maintenance Record** for the PinCo Command Runner under test.
2. Command Runner auxiliary equipment bag.
3. Bluetooth enabled device with **VictronConnect** application installed.

PROCEDURES

A. Preliminary

NOTE 1: This unscheduled maintenance action is performed when a qualified maintainer finds that the Command Runner's internal battery has a state-of-charge that is less than 50%.

NOTE 2: Use the [Equipment Maintenance Record \(EMR\)](#) for the unit under test (UUT) to document the maintenance action performed. For each action performed, enter the date, name, and FCC call sign of the individual completing the action. Document all discrepancies in the **NOTES** section of the EMR.

CAUTION: When moving the Command Runner by hand:

- a. Ensure that the frame assembly is set to its lowest position.
 - b. **Do Not** move the Command Runner unless two qualified maintainers are present.
 - c. Avoid soft terrain such as soil or sand.
 - d. Avoid steep inclines and slopes. The brakes are designed to help with maneuverability but are not failsafe.
 - e. Always keep one hand on the transport handle with access to the brake lever.
1. Move the Command Runner to a location that has access to AC power.
 2. Engage and lock the parking brakes on the Command Runner.
 3. Remove the wheel chocks from the frame assembly and deploy the chocks behind the rear wheels of the command runner. If the Command Runner is emplaced on a slight incline, the wheel chocks must be placed on the downhill side of the rear wheels.
 4. Secure the transport handle in the upright position and lock it in place using the Red Safety lanyard.
 5. Connect the Command Runner to an AC Power Source. The power source must be capable of supporting a 15Amp load.
 - a. Remove the 50-ft yellow extension cord from the auxiliary equipment bag.
 - b. Connect the female end of the extension cord to the **SHORE** receptacle on the left side of the command runner.
 - c. Connect the other end of the extension cord to the AC power source.
 6. Set the AC Circuit Breaker to the ON position. Refer to Figure 1 for breaker location.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner U-2

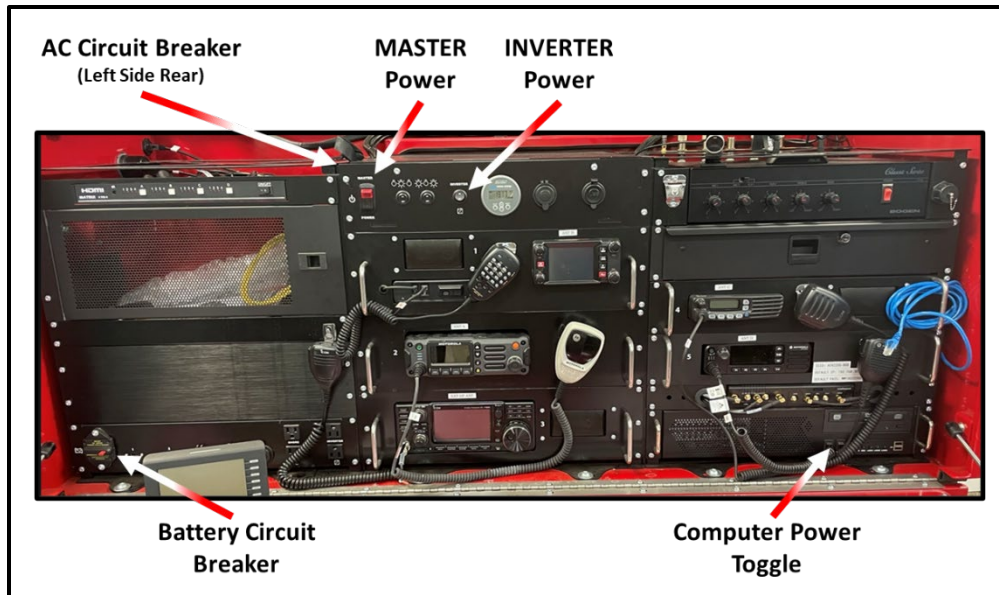


Figure 1. Command Runner Circuit Breakers and Power Switches

NOTE 3: Only a PinCo ACS software system administrator is authorized to use the [VictronConnect](#) application to evaluate the status of the Command Runner battery. **Do Not** perform the steps in **Section B** unless you are a system administrator.

B. Charge Internal Battery to 80% Capacity.

NOTE 4: Prior to performing this procedure, the user must install the [VictronConnect](#) application on a Bluetooth enabled device and pair the device to the Battery Monitor located within the unit under test. Since Bluetooth has a limited range of operation, the Bluetooth device must remain within 6 feet of the Battery Monitor during the battery status checks.

1. Open the [VictronConnect](#) App on the Bluetooth enabled device.
2. Select the Victron Battery Monitor associated with the unit under test.

<u>Unit Under Test</u>	<u>Serial Number</u>
Command Runner 1	N/A
Command Runner 2	HQ2030MEAXR
Command Runner 3	HQ2113MNXR
Command Runner 4	HQ21137UKMR
Command Runner 5	HQ2113CDCDX
Command Runner 6	HQ2037TAV6G

3. Use the [VictronConnect](#) App to display the following battery system parameters.
 - a. Battery Current: This parameter should display a **positive** value.
 - b. State-of-Charge: This parameter should slowly **increase** in value.
 - c. Consumed Amp-hours: This parameter should slowly **decrease** in value.
4. Continue to monitor the battery system parameters until the **State-of-Charge** parameter reaches a value of approximately 80%. Then, perform the following actions.

Pinellas County ACS Equipment Maintenance Procedures
Command Runner U-2

- a. Set the AC Circuit Breaker to the OFF position.
- b. Disconnect the Command Runner from the AC power source. Coil the yellow extension cord and store the cord within the auxiliary equipment bag.
- c. Record the value for the following parameters on the **STATUS** page of the **Equipment Maintenance Record** form.
 - (1) State-of-Charge
 - (2) Consumed Amp-Hours
- d. Return equipment to storage.

C. Return to Storage.

1. Carefully remove the wheel chocks from the rear wheels and store the chocks on the frame assembly.

CAUTION: When moving the Command Runner by hand:

- a. **Do Not move the Command Runner unless two qualified maintainers are present.**
 - b. **Avoid soft terrain such as soil or sand.**
 - c. **Avoid steep inclines and slopes. The brakes are designed to help with maneuverability but are not failsafe.**
 - d. **Always keep one hand on the transport handle with access to the brake lever.**
2. Unlatch the red safety lanyard from the transport handle.
 3. Release the parking brake.
 4. Move the Command Runner and its associated auxiliary equipment bag to its long-term storage location.
 5. Secure the transport handle in the upright position and lock it in place using the Red Safety lanyard.

EQUIPMENT MAINTENANCE RECORD							
Name of Equipment:		Command Runner		Serial Number:			
Task Description		Maintenance Code		Date Work Performed			
				Date		Date	
				Maintainer Initials		Maintainer Initials	
Power, Computer, and Network Checks		Q-1					
Test system operation using shore power.							
Test system operation using internal battery.							
Test operation of USB, Power Pole, and 12Vdc charging ports.							
Test operation of computer, keyboard, mouse, HDMI switch, and monitors.							
Test Cradlepoint WAN connectivity to both wired and cellular networks. Confirm auto switchover.							
Test operation of Cradlepoint WI-FI network.							
Test operation of VOIP phone.							
Test operation of TV Receiver.							
Test operation of Public Address System.							
Software and Firmware Maintenance		Q-2					
Check/Update Windows operating system.							
Check/Update Winlink Express application and templates.							
Check/Update virtual TNC Applications.							
VHF/UHF System Communication Checks		Q-3					
Perform voice communication tests using amateur VHF/UHF radio.							
Perform voice communication tests using the VHF and UHF public safety transceivers.							
Perform voice communication tests using the 800/700 MHz public safety transceiver.							
Exchange Winlink traffic with EOC using VARA FM and VHF packet protocols. Confirm operation with both amateur and tactical addresses.							

EQUIPMENT MAINTENANCE RECORD							
Name of Equipment:		Command Runner		Serial Number:			
Task Description		Maintenance Code		Date Work Performed			
				Date	Date	Date	Date
				Maintainer Initials	Maintainer Initials	Maintainer Initials	Maintainer Initials
HF System Communication Checks		Q-4					
Perform voice communication tests using amateur HF transceiver.							
Exchange Winlink traffic with EOC using amateur radio HF Vara and Pactor protocols.							
Exchange Winlink traffic with EOC using SHARES.							
Battery Monitor / Cradlepoint Maintenance		Q5					
Check/Update Victron Battery Monitor and Bluetooth Interface firmware.							
Check/Update Cradlepoint software.							
Generator Maintenance		S-1					
Check Engine oil level and replace as required.							
Check and clean the air filter.							
Check, clean, adjust, replace spark plug.							
Clean fuel tank filter.							
Radio Code Plug Maintenance		S-2R					
Check and document the radio code plug version installed in the amateur VHF/UHF transceiver.							
Check and document the radio code plug versions installed in the VHF and UHF public safety transceivers.							
Check and document the radio code plug version installed in the 800/700 MHz public safety transceiver.							
Check and document the radio code plug version installed in the amateur HF transceiver.							

EQUIPMENT MAINTENANCE RECORD							
Name of Equipment:		Command Runner		Serial Number:			
Task Description		Maintenance Code		Date Work Performed			
				Date	Date	Date	Date
				Maintainer Initials	Maintainer Initials	Maintainer Initials	Maintainer Initials
Inspect, Clean, and Inventory Equipment		S-3R					
Inspect and verify that the hitch assembly, rubber wheel chocks, and 15-ft mast are present and properly secured.							
Test brake, turn signal, and running lights.							
Clean computer monitors and radio displays.							
Inspect and Inventory contents of the two accessory storage drawers.							
Inspect and inventory contents of auxiliary equipment bag.							
Radio Firmware Maintenance		A-1					
Check and update, as required, radio firmware.							
Mechanical System Checks		A-2R					
Test parking brake system.							
Tighten hitch adaptor bolts.							
Inspect and lubricate as needed hitch adapter and thrust screw.							
Inspect and tighten pivot bolts.							

EQUIPMENT MAINTENANCE RECORD – STATUS				
Name of Equipment:		Command Runner		Serial Number:
Equipment Status	Date Value Recorded			
		Date	Date	Date
	Value	Value	Value	Value
Battery Status Monitor Readings				
Consumed Amp-Hours				
State-of-Charge				
System Software Versions				
Windows operations system version and build				
Winlink express version				
Winlink template version				
Vara HF version				
Vara FM version				
UZ7HO sound modem version				
Victron BMV-712 Battery Monitor version				
Victron BMV-712 Bluetooth Interface version				
Cradlepoint router version				
Radio Firmware Versions				
Yaesu FTM-400XD amateur VHF/UHF transceiver				
Motorola APX 4500 P25 public safety transceiver				
Motorola XPR 5550e UHF public safety transceiver				
ICOM IC-F5021 VHF public safety transceiver				
ICOM IC-7300 HF Transceiver				
SCS DR-7400 Pactor Modem				
Radio Code Plug Versions				
Yaesu FTM-400XD amateur VHF/UHF transceiver				
Motorola APX 4500 P25 public safety transceiver				
Motorola XPR 5550e UHF public safety transceiver				

EQUIPMENT MAINTENANCE RECORD – STATUS				
Name of Equipment:	Command Runner	Serial Number:		
Equipment Status	Date Value Recorded			
		Date	Date	Date
	Value	Value	Value	Value
ICOM IC-F5021 VHF public safety transceiver				
ICOM IC-7300 HF Transceiver				

EQUIPMENT MAINTENANCE RECORD – NOTES			
Name of Equipment:		Command Runner	Serial Number:
Date	Notes		

EQUIPMENT MAINTENANCE RECORD – SIGNATURE

Name of Equipment:

Command Runner

Serial Number:

Maint
Activity

Date

Name

Initials

Call Sign

Signature

EQUIPMENT INVENTORY RECORD							
Name of Equipment:		Command Runner	Serial Number:			Date:	
Check	Qty	Description		Check	Qty	Description	
Command Runner Auxiliary Equipment Bag							
	1	Black Equipment bag				Mast Guy Kit	
	1	50-Ft Yellow Extension Cord			1	Black Guy Kit Bag	
	1	Rubber mallet			3	Individual Guy Bags	
	3	Guy Stakes			3	Guy Lines (50 ft)	
	1	Cat 5/6 Ethernet Cable (100 ft)			3	Guy Line Tensioners	
	2	Cat 5/6 Ethernet Cable (3 ft)			3	Orange Tensioner Strap	
	1	SAE 10W30 Oil (1 Quart)			1	Mast Guy Ring	
Command Runner Accessary Storage Drawer – Left							
	1	VOIP Phone			1	700/800 MHz Antenna	
	1	7/8” Wrench			1	Computer Mouse	
	1	15/16” Wrench			1	Computer Keypad	
	1	Mouse Pad			3	AA Batteries	
Command Runner Accessary Storage Drawer – Right							
	2	Wi-Fi Antennas			1	Key Ring – Command Runner Set	
	1	Microphone; Public Address Sys			1	Operating Manuals - Packet	
	1	TV Antenna			1	Spare Fuse kit	
	1	USB Clip Light					
Command Runner General							
	3	VHF/UHF Antennas			1	Honda EU2200 Generator	

EQUIPMENT MAINTENANCE SCHEDULE (sample)

Equipment Description	Serial Number	Month 1				Month 2				Month 3			
		Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4
Command Runner	CR1	Q-1, Q-3	Q-4				Q-2				R-1M		
Command Runner	CR2			Q-1, Q-3	Q-4		Q-2				R-1M		
Command Runner	CR3	R-1M				Q-1, Q-3	Q-2, Q-4				R-1M		
Command Runner	CR4	R-1M						Q-1, Q-3	Q-4		Q-2		
Command Runner	CR5	R-1M				R-1M				Q-1, Q-3	Q-2, Q-4		
Command Runner	CR6	R-1M				R-1M					Q-2	Q-1, Q-3	Q-4
SatRunner	POD1		Q-1, Q-3				R-1M				R-1M		
SatRunner	POD2				Q-1, Q-3				R-1M				R-1M
Shelter Radio Cache	N/A												
Radio Room	N/A												

Legend: M – Monthly
 R-1M – Monthly if no other maintenance performed on UUT.
 Q – Quarterly
 S – Semi-Annually
 A – Annually