## CHAPTER 92

## ENG VERSION


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# CHAPTER 92

# ENG VERSION

## 92-00 Description

The Electronic News Gathering (ENG) version of the R66 helicopter (R66 Turbine Newscopter) is configured for a typical news crew consisting of a pilot (in standard, right front seat), an onboard reporter in the left front seat, and a camera operator in the left aft seat.

The ENG version is a four-place helicopter. An equipment console is installed in lieu of the center aft seat.

The camera operator uses a laptop controller to operate an HD video camera and zoom lens mounted to a gyro-stabilized gimbal on the helicopter chin. Micro cameras are located in the cabin for filming an onboard reporter, and another micro camera is mounted to the horizontal stabilizer sometimes used for weather reporting or to display the aircraft in flight.

A seven-inch monitor and a Geneva digital audio controller are located on each side of the instrument console. A ten-inch monitor is mounted on an arm assembly in front of the left aft passenger and controls are located in the equipment console. Each monitor allows for independent monitoring and transmitting of video from cameras.

R66 ENG is equipped with a microwave system which provides live broadcasting capability.

Other features include a video recorder, TV tuners for monitoring local television broadcasts, and radios for monitoring AM/FM radio broadcasts and for talking with ground personnel.

ENG equipment has a dedicated circuit breaker panel with a second master switch. Some ENG equipment is 14-volt equipment (R66 electrical system is 28-volt) requiring a separate 14-volt sub-bus powered by a voltage converter.

Flight with gimbal camera removed is permissible with D050-13 cover assembly installed. Refer to § 92-171 Part F for maintenance procedures.

Flight with pod antenna removed is permissible with mounting brackets removed and cables stowed. Refer to § 92-184 Part E for maintenance procedures.

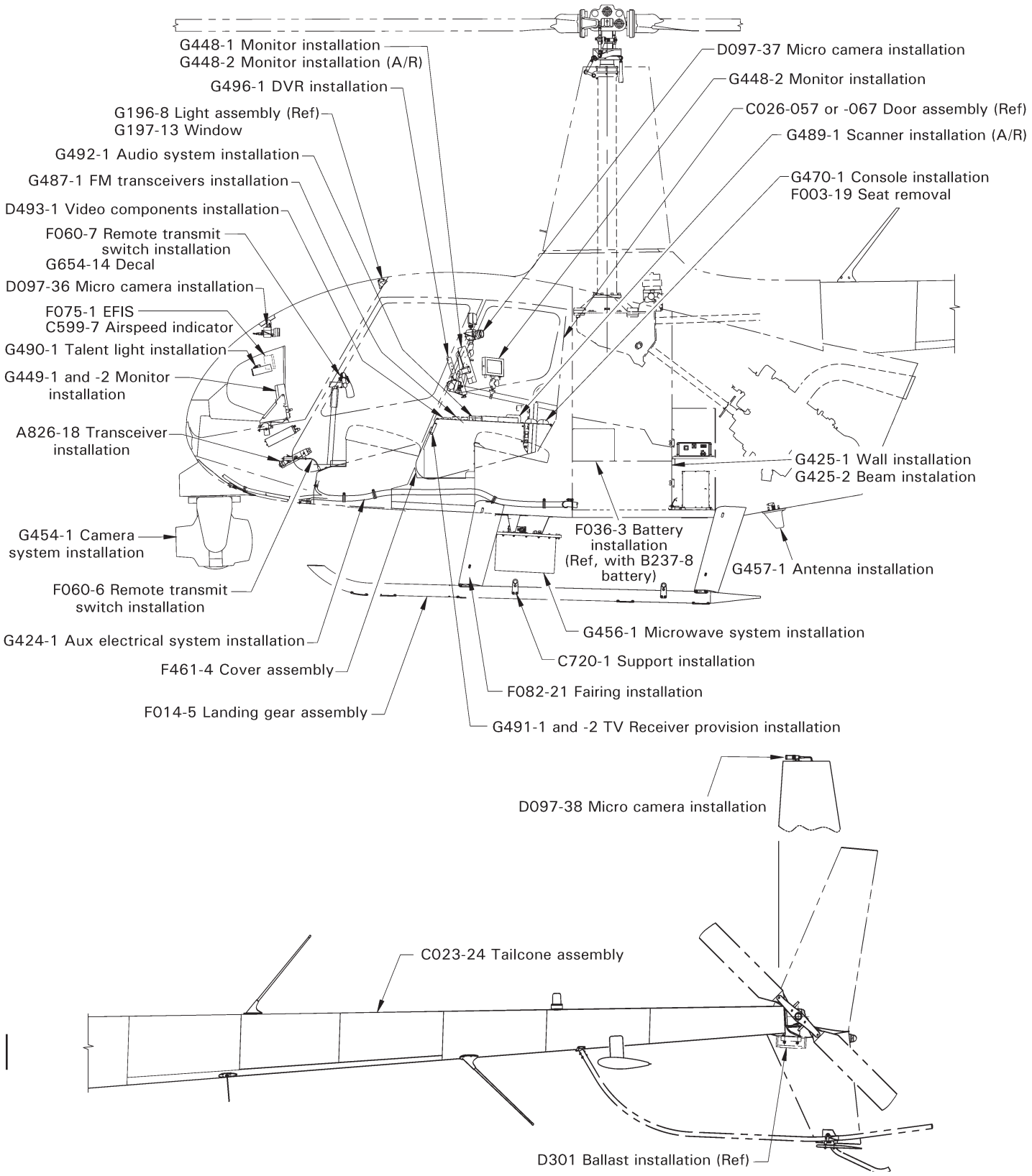



FIGURE 92-1 ENG VERSION

## 92-10 A826-18 Transceiver Installation (FM1)

### A. Description

The A826-18 (Kenwood TK-7180 series or TK-8180 series) FM transceiver is installed in the avionics console and includes an antenna, associated wiring, and mounting hardware. The transceivers are used by the pilot and/or crew to communicate with ground-based media personnel.

### B. Schematic

Refer to Figure 92-3 for A826-18 transceiver installation wiring diagram.

### C. Removal

1. Refer to Figure 92-1. Turn battery & avionics switches off and pull out FM1 (10 amp) circuit breaker at panel.
2. Loosen radio key securing A824-18 transceiver to upper console radio tray.
3. Remove transceiver from tray. Disconnect G459 harness assembly from back of transceiver and remove transceiver.

### D. Installation

1. Refer to Figure 92-1. Turn battery & avionics switches off and pull out FM1 (10 amp) circuit breaker at panel.
2. Connect G459 harness assembly to A824-18 transceiver and verify security. Install transceiver in upper console radio tray.
3. Tighten radio key securing transceiver to tray. Verify equipment security.
4. Push in FM1 (10 amp) circuit breaker at panel. Turn battery & avionics switches on.
5. Perform appropriate functional checks per Kenwood TK-7180/TK-8180 FM Transceiver Instruction Manual. Turn battery & avionics switches off.

### E. Scheduled Inspections

Every 100-hour or annual inspection, inspect A824-18 transceiver for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part D steps 4 and 5.

### F. Special Inspections

1. Refer to Figure 92-1. Turn battery & avionics switches off. Open circuit breaker panel.
2. As required, remove A824-18 transceiver per Part C. Inspect condition of and verify no obvious damage to transceiver, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install transceiver per Part D if removed.

## 92-20 C023-24 Tailcone Assembly

### A. Description

Refer to Figure 92-1. The C023-24 tailcone assembly has wiring provisions for the ENG version's D097-38 HD micro camera (tail).

### B. Maintenance Procedures

Refer to § 53-40 for tailcone assembly maintenance procedures.

## 92-30 C599-7 Airspeed Indicator

### A. Description

Refer to Figure 92-1. C599-7 (120 knot $V_{NE}$, KM/H) airspeed indicator replaces C599-2 (140 knot $V_{NE}$, KM/H) airspeed indicator.

### B. Maintenance Procedures

Refer to § 95-42 for airspeed indicator maintenance procedures.

## 92-40 C720-1 Support Installation

### A. Removal

Refer to Figure 92-1. Remove hardware securing C719-1 support to C242 skid tube and remove support.

### B. Installation

Install hardware securing C719-1 support to C242 skid tube, special torque bolt per § 20-33, and torque stripe per Figure 5-1.

## 92-50 HD Micro Camera Installations

### A. Description

The micro camera system consists of three small cameras and their control units. The micro cameras are mounted at the tip of the horizontal stabilizer, on the windshield bow, and in the center of the cabin. The control units are located in the rear equipment console. The horizontal stabilizer camera is enclosed in a weatherproof case.

### B. Schematic

Refer to Figure 92-4 for D097 HD micro camera installation wiring diagram.

92-51 D097-36 HD Micro Camera Installation (Windshield Bow)

**A. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out MICRO CAMS (2 amp) circuit breaker at panel.
2. Disconnect CV505/345-10FTCBLE cable and G459-2798 wire from CV345-CS/CSB camera at connectors.
3. Remove D368-2 clamps securing wiring to windshield bow and remove camera.
4. As required, remove screws securing D368-8 mount and D368-10 plate to camera and remove mount and plate.

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out MICRO CAMS (2 amp) circuit breaker at panel.
2. If removed, install screws securing D368-10 plate and D368-8 mount to CV345-CS/CSB camera. Verify security.
3. Install D368-2 clamps every six inches (5 maximum) securing wiring to windshield bow. Verify security.
4. Connect CV505/345-10FTCBLE cable and G459-2798 wire to camera at connectors. Verify security.
5. Push in MICRO CAMS circuit breaker (2 amp) at panel. Turn battery & news equipment switches on.
6. Perform appropriate functional checks per Marshall Electronics CV345 Operation Manual. Turn battery & news equipment switches off.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect CV345-CS/CSB micro camera for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 5 and 6.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open news equipment circuit breaker panel.
2. As required, remove CV345-CS/CSB micro camera per Part A. Inspect condition of and verify no obvious damage to micro camera, mount, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install micro camera per Part B if removed.

92-52 D097-37 HD Micro Camera Installation (Aft-center Cabin)

**A. Removal**

1. Remove ILED-MA (aft talent) light per § 92-232.
2. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out MICRO CAMS (2 amp) circuit breaker at panel.
3. Disconnect CV505/345-10FTCBLE cable and G459-756 wire from CV345-CS/CSB camera at connectors.
4. Unscrew camera from RAM-B-366-201U arm assembly and remove camera.

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out MICRO CAMS (2 amp) circuit breaker at panel.
2. Screw CV345-CS/CSB camera onto RAM-B-366-201U arm assembly Verify security.
3. Connect CV505/345-10FTCBLE cable and G459-756 wire to camera at connectors. Verify security.
4. Install ILED-MA (aft talent) light per § 92-232.
5. Push in MICRO CAMS circuit breaker (2 amp) at panel. Turn battery & news equipment switches on.
6. Perform appropriate functional checks per Marshall Electronics CV345 Operation Manual. Turn battery & news equipment switches off.

**C. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open news equipment circuit breaker panel.
2. As required, remove CV345-CS/CSB micro camera per Part A. Inspect condition of and verify no obvious damage to micro camera, RAM-B-366-201U arm assembly, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install micro camera per Part B if removed.

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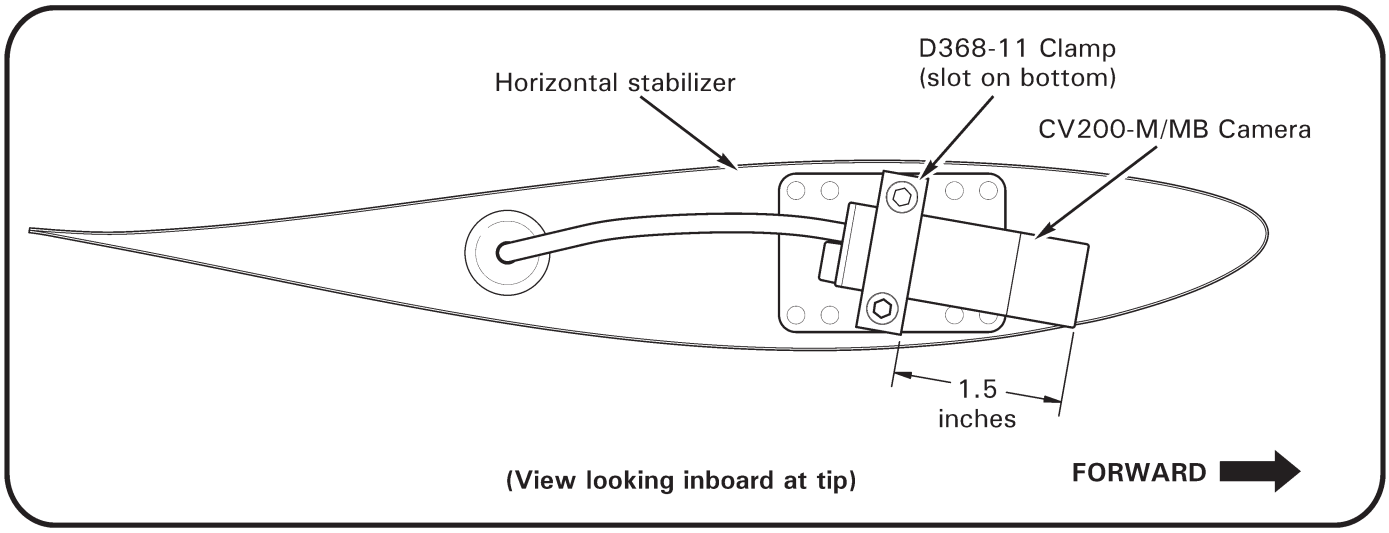



FIGURE 92-2 ENG VERSION

## 92-53 D097-38 HD Micro Camera Installation (Tail)

### A. Removal

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out MICRO CAMS (2 amp) circuit breaker at panel.

| NOTE |
| --- |
| Use caution not to overstretch or sharply-bend HD camera's cable assembly; cable is soft and susceptible to damage. |

2. Remove grommet from inboard side of horizontal stabilizer at tail gearbox. Pull C023 wires through hole in stabilizer to access connectors; disconnect CV200-M/MB camera cable from C023 wires at connectors.
3. Supporting camera, remove screws securing D368-11 clamp to stabilizer and remove camera and clamp. Carefully remove grommet from outboard side of stabilizer and pull camera cable through hole in stabilizer. Remove grommet and clamp.

### B. Installation

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out MICRO CAMS (2 amp) circuit breaker at panel.

| NOTE |
| --- |
| Use caution not to overstretch or sharply-bend HD camera's cable assembly; cable is soft and susceptible to damage. |

92-53 D097-38 HD Micro Camera Installation (Tail; continued)

**B. Installation (continued)**

2. Install grommet on CV200-M/MB camera cable. Tape camera cable connector to 4.5-ft length of lockwire; route lockwire thru horizontal stabilizer toward gearbox and thru opposite hole. Pull camera cable thru stabilizer, remove taped lockwire, and connect C023 wires to cable at connectors. Verify security.

3. Refer to Figure 92-2. Position D368-11 clamp on camera (clamp slot on bottom) with camera protruding 1.5 inches from clamp as shown. Install screws securing clamp and camera to horizontal stabilizer. Verify security.

4. Secure inboard and outboard horizontal stabilizer grommets.

5. Push in MICRO CAMS (2 amp) circuit breaker at panel. Turn battery & news equipment switches on.

6. Perform appropriate functional checks per Marshall Electronics CV200-M/MB Operation Manual. Turn battery & news equipment switches off.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect CV200-M/MB micro camera for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 5 and 6.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.

2. As required, remove CV200-M/MB micro camera per Part A. Inspect condition of and verify no obvious damage to micro camera, horizontal stabilizer tip and doubler, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.

3. Secure circuit breaker panel. Install micro camera per Part B if removed.

92-54 D097 HD Micro Camera Controller

**A. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out MICRO CAMS (2 amp) circuit breaker at panel.
2. Remove screws securing G472 face to G471 panels and remove face.
3. Remove screws securing D344 support assembly to G472 face.
4. Cut and discard ty-raps as required and disconnect micro camera cable(s) from CV505/345-10FTCBLE and/or CV200-M/MB cable controller(s) at connectors. Detach controller(s) from support assembly (controllers are taped to support).

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out MICRO CAMS (2 amp) circuit breaker at panel.
2. Connect micro camera cable(s) to CV505/345-10FTCBLE and/or CV200-M/MB cable controller(s) at connectors. Verify security. Install ty-raps as required. Cinch ty-raps until snug without overtightening, and trim tips flush with heads.
3. Position controller(s) on D344 support assembly. Install screws securing support to G472 face. Verify security.
4. Install screws securing face to G471 panels. Verify security.
5. Push in MICRO CAMS circuit breaker (2 amp) at panel. Turn battery & news equipment switches on.
6. Perform appropriate functional checks per Marshall Electronics CV200-MB/M or CV345-CS/CSB Operation Manual. Turn battery & news equipment switches off.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect CV505/345-10FTCBLE and/or CV200-M/MB cable controllers for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 5 and 6.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove CV505/345-10FTCBLE and/or CV200-M/MB cable controller(s) per Part A. Inspect condition of and verify no obvious damage to cable controllers, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install cable controller(s) per Part B if removed.

## 92-60 F003-19 Seat Removal

Refer to Figure 92-1. ENG version helicopters have no aft center seat installed. The following equipment is omitted: F628-4 connector assembly, center F628-6 buckle assembly, F931-1 seat assembly, A752-3 angle, & (2) NAS1352-04-8 screw. Associate hardware is replaced or omitted; refer to R66 Illustrated Parts Catalog for installation information.

## 92-70 Landing Gear Assembly

### A. Description

Refer to Figure 92-1. The F014-5 extended landing gear raises the forward cross tube approximately 2 inches higher off the ground, providing additional ground clearance for optional equipment installations that project below the fuselage.

For ground handling, a second set of wheel installation supports is provided forward on the landing gear skids. For ground handling using MT950 towcart, install wheels at forward supports and use cart at aft cross tube as indicated on cart instructions (online at https://robinsonheli.com). For ground handling without towcart, wheels may be installed at all four support locations.

### B. Maintenance Procedures

Refer to Chapter 32 for landing gear assembly maintenance procedures (identical to standard gear maintenance procedures unless otherwise specified). Forward wheel support maintenance procedures are located in § 92-40.

## 92-80 F060 Remote Transmit Switch Installations

### A. Description

Refer to Figure 92-1. A handheld remote switch is installed at the co-pilot seat, allowing the occupant to transmit on the radio selected without touching the flight controls, or when the co-pilot flight controls are removed.

The switch plugs into a socket on the base of the seat.

### B. Schematic

Refer to Figure 98-24 thru 98-25B for F060 intercom system installation wiring diagram.

## 92-90 F075-1 EFIS Installation

### A. Description

Refer to Figure 92-1. The R66 ENG version is equipped with the Garmin G500H Electronic Flight Instrument System (EFIS).

### B. Maintenance Procedures

Refer to § 97-62 for Garmin G500H EFIS maintenance procedures.

## 92-100 F082-21 Fairing Installation

### A. Description

Refer to Figure 92-1. Extended landing gear F082-21 strut fairings are longer than but are otherwise identical to standard strut fairings. F082-21 fairing installation replaces F082-1 fairing installation.

### B. Maintenance Procedures

Refer to § 32-40 fairing assemblies for maintenance procedures.

## 92-110 F461-4 Cover Assembly

Refer to Figure 92-1. Refer to R66 Illustrated Parts Catalog Chapter 6 for access and inspection panel locations. F461-4 cover assembly replaces F461-1 cover assembly.

## 92-120 G197-13 Window

### A. Description

Refer to Figure 92-1. The G197-13 window illuminates the ENG version instrument console for night lighting. G197-13 window replaces G197-9 window.

### B. Maintenance Procedures

Refer to § 33-21 for panel light maintenance procedures. Adjust window laterally as required to ensure even light spread on console.

## 92-130 G425-1 Wall Installation

### A. Removal

1. Refer to Figure 92-1. Open baggage compartment door. Release quarter-turn slot and wing head fasteners securing G428-1 wall assembly to G238-1 bulkhead and G428-2 angles. Carefully remove wall.

### B. Installation

1. Refer to Figure 92-1. Open baggage compartment door. Verify no foreign objects aft of wall mounting points. Verify proper installation and security of equipment.
2. Align G428-1 wall assembly quarter-turn slot and wing head fasteners with receptacles on G238-1 bulkhead and G428-2 angles, and lock fasteners. Verify security. Close baggage compartment.

## 92-140 G445-2 Aux Circuit Breaker Panel Installation

### A. Description

ENG equipment has a dedicated circuit breaker panel with a second news master switch, allowing the pilot to easily remove power for the majority of ENG equipment simultaneously.

### B. Schematic

Refer to Figure 92-5 for G445-2 aux circuit breaker panel installation wiring diagram.

### C. Access

1. Turn battery & news equipment switches off.
2. Remove screws securing G445-2 aux circuit breaker panel to ledge. Carefully lift panel for access.
3. Verify circuit breaker security and inspect wiring condition. Position G445-2 aux circuit breaker panel on ledge and install screws. Verify security.

### D. Scheduled Inspections

Every 100-hour or annual inspection, access G445-2 aux circuit breaker panel interior per Part C and inspect panel per standard circuit breaker panel inspection in § 5-45.

### E. Special Inspections

Access G445-2 aux circuit breaker panel interior per Part C and inspect panel per standard circuit breaker panel inspection in § 5-45.

## 92-150 G448 Aft Monitors Installation

### A. Description

The aft monitor installation consists of one large main LCD monitor mounted to the cross tube between the front seatbacks and either one or two smaller LCD monitors mounted near the longitudinal tube running above the rear center equipment console.

The large, main LCD monitor is mounted on a pivoting arm. The pivoting arm allows the monitor to be rotated between the stowed position inboard and operating position directly in front of the camera operator. A spring-loaded pin beneath the pivot locks the monitor in the stowed position. Pulling the pin releases the monitor for use. The Velcro tether attached to the monitor should be wrapped around the seat back cross tube to hold the monitor in the operating position. Detaching the tether will cause the monitor to return to the stowed position. Verify monitor locks in position after detaching tether.

NOTE

Monitor must be stowed below 500 ft AGL. If not stowed, the monitor is a potential source of head injury in an accident.

The main rear LCD monitor may be switched between three input signals. Input A displays nose camera, micro camera, or video recorder images as selected by the video switcher. Input B bypasses the video switcher and displays nose-camera images directly. The accessory input bypasses the video switcher and displays annotated nose-camera images.

One or two smaller auxiliary monitors are installed near the longitudinal tube above the rear equipment console and display TV broadcasts as selected by the TV tuner(s).

### B. Schematic

Refer to Figure 92-6 for G448 aft monitors installation wiring diagram.

92-151 G448-1 10-inch Monitor

**A. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out 10″ MON (2 amp) circuit breaker at panel.
2. Disconnect G459 harness assembly from HD10CINEROB monitor at connectors. Supporting monitor, remove screws securing monitor to G477-1 arm assembly and remove monitor.

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out 10″ MON (2 amp) circuit breaker at panel.
2. Install screws securing HD10CINEROB monitor to G477-1 arm assembly. Verify security.
3. Connect G459 harness assembly to monitor; verify security.
4. Push in 10″ MON (2 amp) circuit breaker at panel. Turn battery & news equipment switches on.
5. Perform appropriate functional checks per Transvideo operator's guide. Turn battery & news equipment switches off.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect HD10CINEROB monitor for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 4 and 5.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove CHD10CINEROB monitor per Part A. Inspect condition of and verify no obvious damage to monitor, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install monitor per Part B if removed.

92-152 G448-1 Five-inch Left Hand Monitor

**A. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out 5″ MONS (2 amp) circuit breaker at panel.
2. Disconnect G459 harness assembly from VFM-056W monitor. Supporting monitor, remove hardware securing monitor to G474-5 bracket and remove monitor.

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out 5″ MONS (2 amp) circuit breaker at panel.
2. Install hardware securing VFM-056W monitor to G474-5 bracket. Verify security.
3. Connect G459 harness assembly to monitor; verify security.
4. Push in 5″ MONS (2 amp) circuit breaker at panel. Turn battery & news equipment switches on.
5. Perform appropriate functional checks per TVLogic VRM-056W Operation Manual. Turn battery & news equipment switches off.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect VFM-056W monitor for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 4 and 5.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove VFM-056W monitor per Part A. Inspect condition of and verify no obvious damage to monitor, G474-5 bracket, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install monitor per Part B if removed.

92-153 G448-2 Five-inch Right Hand Monitor

**A. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out 5″ MONS (2 amp) circuit breaker at panel.
2. Disconnect G459 harness assembly from VFM-056W monitor. Supporting monitor, loosen B630-14 mount handle to release mount ball and remove monitor with ball attached. Unscrew and remove ball as required.

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out 5″ MONS (2 amp) circuit breaker at panel.
2. Screw B630-14 mount ball in bottom of monitor if removed. Position VFM-056W monitor and attached ball in mount and tighten handle. Verify security.
3. Connect G459 harness assembly to monitor; verify security.
4. Push in 5″ MONS (2 amp) circuit breaker at panel. Turn battery & news equipment switches on.
5. Perform appropriate functional checks per TVLogic VRM-056W Operation Manual. Turn battery & news equipment switches off.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect VFM-056W monitor for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 4 and 5.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove VFM-056W monitor per Part A. Inspect condition of and verify no obvious damage to monitor, B630-14 mount, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install monitor per Part B if removed.

## 92-160 G449 Forward Monitors Installation

### A. Description

The forward monitor installation consists of two small LCD monitors mounted to the left and right of the instrument console. The right monitor displays nose camera, micro camera, or video tape recorder images as selected by the video switcher. The left monitor displays TV broadcasts as selected by the TV tuner.

### B. Schematic

Refer to Figure 92-7 for G449 forward monitors installation wiring diagram.

### C. Removal

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out 7" MONS (2 amp) circuit breaker at panel.
2. Disconnect G459 harness assembly from BVB07 monitor(s). Supporting monitor(s), remove screws securing monitor(s) to G474 bracket assembly and remove monitor(s).

### D. Installation

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out 7" MON (2 amp) circuit breaker at panel.
2. Install screws securing BVB07 monitor(s) to G474 bracket assembly. Verify security.
3. Connect G459 harness assembly to monitor; verify security.
4. Push in 7" MON (2 amp) circuit breaker at panel. Turn battery & news equipment switches on.
5. Perform appropriate functional checks per Boland Communications BVB07 User Manual. Turn battery & news equipment switches off.

### E. Scheduled Inspections

Every 100-hour or annual inspection, inspect BVB07 monitor(s) for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part D steps 4 and 5.

### F. Special Inspections

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove BVB07 monitor(s) per Part C. Inspect condition of and verify no obvious damage to monitor(s), G474 bracket assemblies, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install monitor(s) per Part D if removed.

## 92-170 G454-1 Camera System Installation

### A. Description

The nose-mounted camera system consists of a gyro-stabilized, gimbal-mounted video camera in the chin and a power junction box in the main baggage compartment. A fairing between the camera ball and chin minimizes the aerodynamic effects of the camera. The camera is operated from the left rear seat via a laptop controller.

When not in use, the laptop controller may be stowed and secured in the recess at the aft end of the rear equipment console.

Flight with gimbal assembly removed is permissible with D050-13 cover assembly installed. Refer to § 92-171 Part F for maintenance procedures.

### B. Schematic

Refer to Figure 92-8 for G454-1 camera system installation wiring diagram.

## 92-171 D050-14 Gimbal Installation

### A. Removal

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out GIMBAL CAMERA (10 amp) circuit breaker at panel.
2. Remove screws securing G427 fairings to chin and remove fairings.
3. Disconnect E195-2 and E204-6 cable assemblies from E801-1 gimbal assembly.
4. Have a second person support gimbal assembly. Remove screws securing D374-3 spacer and gimbal assembly to D385-4 mount assembly and remove spacer and gimbal.
5. Configure helicopter for flight with gimbal assembly removed per Part F as required.

### B. Installation

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out GIMBAL CAMERA (10 amp) circuit breaker at panel.
2. Configure helicopter for flight with gimbal assembly installed per Part F as required.
3. Have a second person support E801-1 gimbal assembly. Install hardware securing D374-3 spacer and gimbal assembly to D385-4 mount assembly. Verify security.
4. Connect E195-2 and E204-6 cable assemblies to gimbal assembly. Verify security.
5. Install screws securing G427 fairings to chin. Verify security.
6. Push in GIMBAL CAMERA (10 amp) circuit breaker at panel. Turn battery & news equipment switches on.
7. Perform appropriate function checks per Part C.

92-171 D050-14 Gimbal Installation (continued)

**C. Function Checks**

1. Power switch: (Locking Toggle)
   *'Off' LED is illuminated when system power is off. Moving the locking switch up powers up the camera, laptop controller, and gimbal.*

Wait 60 seconds after power is switched to on. The wait period ensures that gimbal finishes its initialization sequence. Keep system on for the remainder of the function test.

2. Pan/Tilt Mode Switch: (Momentary Toggle)
   *Changes modes by moving switch in the direction of the desired mode. Mode selected is illuminated.*
   A mode: Inertial Mode.
   *Gimbal Pan and Tilt are controlled via joystick X and Y motions.*
   B mode: Not used.
   C mode: Position Mode.
   *Gimbal position is referenced to user specified positions via Pan/Tilt knobs.*

3. Roll Mode Switch: (Momentary Toggle)
   *Changes modes by moving switch in direction of desired mode. Mode selected is illuminated.*
   A mode: Inertial Mode.
   *Gimbal Roll is controlled via joystick rotational motions about Z axis and ROLL TRIM knob.*
   B mode: Position Mode.
   *Gimbal position is controlled via ROLL POSITION knob.*

4. Panel Lights Dimmer Knob
   *Adjust the illumination level of the panel.*

5. Roll Position Knob:
   *Controls Roll position while ROLL Mode is in "B".*
   *Inactive when ROLL Mode is in "A".*

6. Tilt Position Knob (Mode C) / Fine AZ Drift (Mode A):
   *Controls Tilt Position while PAN/TILT Mode is in "C".*
   *Provides fine pan drift control when PAN/TILT Mode is in "A".*

7. Pan Position Knob
   *Controls Pan Position while PAN/TILT Mode is in "C".*
   *Inactive when PAN/TILT Mode is in "A".*

8. Roll Trim Knob:
   *Controls Roll Position while Roll Mode is in "A".*

9. Tilt Drift Knob:
   *Controls Tilt Drift while PAN/TILT Mode is in "A".*
   *Inactive when PAN/TILT Mode is in "C".*

92-171 D050-14 Gimbal Installation (continued)

**C. Function Checks (continued)**

10. Coarse Pan (AZ) Drift Knob:
*Controls Pan Drift while PAN/TILT Mode is in "A".*
*Inactive when PAN/TILT Mode is in "C".*

11. OPT EXT Lens Switch: (Two-position toggle)
*Controls position of lens extender. Position selected is illuminated.*
2x: Lens extender inserted
1x: Lens extender extracted

12. Roll Polarity Switch:
*Controls polarity of Roll joystick and Roll Trim Command. Position selected is illuminated. Bottom two positions are not used.*
"+": Joystick moves CW; Roll Axis moves CCW.
"—": Joystick moves CW; Roll Axis moves CW.

13. DIG EXT Switch: (Two-position toggle)
*Controls the digital zoom function. (Feature not active in some cameras)*
2x: Activate digital zoom
1x: Deactivate digital zoom

14. Zoom Rate Knob:
*Controls magnitude of the zoom rocker switch.*
CCW: Decrease zoom rocker response
CW: Increase zoom rocker response

15. Joystick Polarity Knob: (Four position)
*Controls polarity of joystick command. Position selected is illuminated.*
++: Positive Tilt / Positive Pan
+—: Positive Tilt / Negative Pan
—+: Negative Tilt / Positive Pan
——: Negative Tilt / Negative Pan

16. Joystick Rate Mode Switch: (Two-position toggle)
*Controls Joystick Rate Mode. Mode selected is illuminated.*
Man: Manual Mode – Rate is controlled using Joystick Rate knob only
Auto: Automatic Mode – Rate is proportionally scaled to field of view

92-171 D050-14 Gimbal Installation (continued)

**C. Function Checks (continued)**

17. Joystick Rate Knob:
*Controls Joystick Rate Scaling based on Joystick Rate Mode Switch.*
Manual Mode:
*CCW: Decrease Joystick Rate*
*CW: Increase Joystick Rate*
Automatic Mode:
*Zoom in picture to maximum (narrowest field of view) and set desired joystick rate using Joystick Rate Knob. As the zoom is reduced (increased field of view), the joystick rate will be increased automatically to compensate for the increased field of view.*

18. Focus Knob:
*Controls camera focus (CW – Infinity, CCW – Near).*

19. Focus Helper Button: (Momentary Toggle)
*Activates and Deactivates Transvideo Monitor "Focus Helper" function in the monitor. Only available in some models. Corresponding LED light on switch test box (WA5) should light up when activated.*

20. Zoom Rocker Switch:
*Controls Camera Zoom (T – Zoom in, W – Zoom Wide).*

21. Ikegami RM-11 Camera Controller:
*Test the following items:*
Mode:
*BARS: Display color bar on screen.*
*CAL: Display gray scale.*
Gain:
*up toggle (image appears brighter in each incremental toggle)*
*down toggle (image appears dimmer in each decrement toggle)*
AWB and ABB:
*On screen display will indicate activation of the selected adjustment.*
Camera shutter:
*On screen display will indicate selected value.*
Iris:
*CW open (brighter). CCW close (dimmer).*

22. Joystick Snap Zoom Button:
*Allows the operator to immediately zoom in picture to maximum.*
*Depressed (Fully zoomed in). Not depressed (Zoom rocker setting).*

23. Lower Joystick Button:
*Not used.*

92-171 D050-14 Gimbal Installation (continued)

**C. Function Checks (continued)**

24. Joystick:
*When Pan / Tilt mode is in "A", X and Y axes Joystick movements control Pan and Tilt Gimbal movements respectively. Inactive when Pan / Tilt mode is in "C". When Roll Mode is in "A", Joystick rotation in Z axis controls Roll position. Inactive when ROLL Mode is in "B".*

25. Camera Menu Button: (Momentary and Rotary)
*Click the Button to access camera menu. Rotate button to navigate through items in the menu. Click button to confirm selection.*

26. Neutral Density (ND) Filter Position Knob: (Four positions)
*Controls which ND filter is used.*
1: Clear
2: 1/8 ND (dark)
3: 1/16 ND (darker)
4: 1/64 ND (darkest)

27. Electronic Color Correction (ECC) Filter: (Two-position toggle)
*Toggles between two ECC filters.*
Top: 5600K (Warm orange shade color)
Bottom: 3200K (Cold blue shade color)

28. Remote Video Switcher Toggle: (Momentary toggle)
*Switches output of main video switcher between Gimbal camera and Micro camera. Corresponding LED light on switch test box (WA5) should light up when activated.*

29. VTR Start / Stop Toggle: (Two-position toggle)
*Toggle to start and stop recording of the video recorder. Operates on selected video recorders only. Corresponding LED light on switch test box (WA5) should light up when activated.*

30. Transmit (XMIT) Switch: (Momentary and Latched toggle)
*Toggle switch outward and hold switch to transmit via selected radio. Toggle switch inward to continuously transmit via selected radio. Corresponding LED light on switch test box (WA5) should light up when activated.*

31. Intercom (INTCM) Switch: (Momentary and Latched toggle)
*Toggle switch outward and hold switch to communicate via intercom. Toggle switch inward to continuously communicate via intercom. Corresponding LED light on switch test box (WA5) should light up when activated.*

92-171 D050-14 Gimbal Installation (continued)

**D. Scheduled Inspections**

Every 100-hour or annual inspection, inspect E801-1 gimbal assembly for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 5 and 6.

**E. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove E801-1 gimbal assembly per Part A. Inspect condition of and verify no obvious damage to gimbal, G427 fairings, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install gimbal per Part B if removed.

**F. Configurations for Flight**

1. Configuration for Flight with Gimbal Camera Removed
   a. Remove E801-1 gimbal assembly per Part A.
   b. Install clean, dry plastic bags individually over exposed E195-2 and E204-6 cable assembly connectors to prevent moisture or debris from contacting connector sockets/pins; secure with ty-raps. Stow and secure cables with ty-raps to surrounding structure. Verify security.
   c. Verify cable assembly clearance to tail rotor pedal controls thru full range of travel.
   d. Install screws securing D050-13 cover to chin. Verify security.
   e. Revise Weight and Balance Record in R66 Pilot's Operating Handbook (POH) Section 6 to incorporate the following data:

**Subtract:**

| Item | Weight | Long. Arm | Long. Moment | Lat. Arm | Lat. Moment |
|---|---|---|---|---|---|
| ENG Gimbal | 56.4 lb | 6.2 in. | 349.7 in.-lb | 0 in. | 0 in.-lb |

2. Configuration for Flight with Gimbal Camera Installed
   a. Remove screws securing D050-13 cover to chin and remove cover.
   b. Remove and discard ty-raps and plastic bags securing E195-2 and E204-6 cable assemblies to surrounding structure.
   c. Install E801-1 gimbal assembly per Part B.
   d. Revise Weight and Balance Record in R66 Pilot's Operating Handbook (POH) Section 6 to incorporate the following data:

**Add:**

| Item | Weight | Long. Arm | Long. Moment | Lat. Arm | Lat. Moment |
|---|---|---|---|---|---|
| ENG Gimbal | 56.4 lb | 6.2 in. | 349.7 in.-lb | 0 in. | 0 in.-lb |

92-172 E002-2 Laptop Assembly

**A. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out GIMBAL CAMERA (10 amp) circuit breaker at panel.
2. Disconnect G459 harness assembly from E002-2 laptop assembly and remove laptop.

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out GIMBAL CAMERA (10 amp) circuit breaker at panel.
2. Connect G459 harness assembly to E002-2 laptop assembly.
3. Push in GIMBAL CAMERA (10 amp) circuit breaker at panel. Turn battery & news equipment switches on.
4. Perform appropriate function checks per § 92-171 Part C.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect E002-2 laptop assembly for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 3 and 4.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove E002-2 laptop assembly per Part A. Inspect condition of and verify no obvious damage to laptop, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install laptop per Part B if removed.

92-173 E003-7 Aux Box Assembly

**A. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out GIMBAL CAMERA (10 amp) circuit breaker at panel.
2. Remove baggage compartment wall per § 92-130.
3. Disconnect G459 harness assembly and E195-2, E199-3, and E204-6 cable assemblies from E003-7 auxiliary box assembly.
4. Remove screws securing D429 brackets to D429-1 support assemblies and remove aux box.
5. As required, remove screws securing D429 brackets to aux box and remove brackets.

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out GIMBAL CAMERA (10 amp) circuit breaker at panel.
2. As required, install screws securing D429 brackets to E003-7 aux box assembly. Verify security.
3. Install screws securing brackets to D429-1 support assemblies. Verify security.
4. Connect G459 harness assembly and E195-2, E199-3, and E204-6 cable assemblies to aux box. Verify security.
5. Install baggage compartment wall per § 92-130.
6. Push in GIMBAL CAMERA (10 amp) circuit breaker at panel. Turn battery & news equipment switches on.
7. Perform appropriate function checks per § 92-171 Part C.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect E003-7 aux box assembly for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 6 and 7.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove E003-7 aux box assembly per Part A. Inspect condition of and verify no obvious damage to aux box, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install aux box per Part A if removed.

## 92-180 G456-1 Microwave System Installation

### A. Description

The microwave transmitting system consists of a microwave transmitter, power amplifier, control panels, and a directional antenna pod.

The microwave transmitter is located in the main baggage compartment. The control panel for the transmitter is located in the rear equipment console.

The directional antenna pod is located beneath the aircraft belly at approximately the center of the cabin, and the power amplifier is mounted on top of it. The directional antenna pod contains a GPS tracking system which keeps the antenna aimed at a ground-based receive site. The antenna has its own control panel located in the rear equipment panel.

Flight with pod antenna removed is permissible with mounting brackets removed and cables stowed. Refer to § 92-184 Part E for maintenance procedures.

### B. Schematic

Refer to Figure 92-9 for G456-1 microwave system installation wiring diagram.

## 92-181 D588-5 Controller Assembly

### A. Removal

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out MWAVE XMIT (5 amp) circuit breaker at panel.
2. Disconnect G459 harness assembly from D588-5 controller assembly.
3. Remove screws securing G472 face to G471 panels.
4. Remove screws securing controller to G472 face and remove controller.

### B. Installation

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out MWAVE XMIT (5 amp) circuit breaker at panel.
2. Install screws securing D588-5 controller assembly to G472 face. Verify security.
3. Install screws securing G472 face to G471 panels. Verify security.
4. Connect G459 harness assembly to controller. Verify security.
5. Push in MWAVE XMIT (5 amp) circuit breaker at panel. Turn battery & news equipment switches on.
6. Perform appropriate post-installation function checks. Turn battery switch off.

92-181 D588-5 Controller Assembly (continued)

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect D588-5 controller assembly for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 5 and 6.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove D588-5 controller assembly per Part A. Inspect condition of and verify no obvious damage to controller, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install controller per Part A if removed.

92-182 ARC-CM-TX-RX-CR-01 Controller

**A. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out MWAVE XMIT (5 amp) circuit breaker at panel.
2. Remove hardware securing ARC-CM-TX-RX-CR-01 controller to G472 face.
3. Lift controller from console; disconnect G459 harness assembly from controller.

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out MWAVE XMIT (5 amp) circuit breaker at panel.
2. Connect G459 harness assembly to ARC-CM-TX-RX-CR-01 controller. Verify security.
3. Position controller in aft console and install hardware securing controller to G472 face. Verify security.
4. Push in MWAVE XMIT (5 amp) circuit breaker at panel. Turn battery & news equipment switches on.
5. Perform appropriate post-installation function checks. Turn battery switch off.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect ARC-CM-TX-RX-CR-01 controller for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 4 and 5.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove ARC-CM-TX-RX-CR-01 controller per Part A. Inspect condition of and verify no obvious damage to controller, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install controller per Part A if removed.

92-183 CMTX7-LITE Transmitter

**A. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out MWAVE XMIT (5 amp) circuit breaker at panel.
2. Remove baggage compartment wall per § 92-130.
3. Disconnect G459 harness assembly from CMTX7-LITE transmitter.
4. Remove screws securing N-4-BK clamps to D429-12 angles.
5. Remove screws securing D429-12 angles to D429-16 support assembly and remove transmitter.
6. As required, remove screws securing D429-12 angles to transmitter & remove angles.

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out MWAVE XMIT (5 amp) circuit breaker at panel.
2. As required, install screws securing D429-12 angles to CMTX7-LITE transmitter. Verify security.
3. Install screws securing angles to D429-16 support assembly. Verify security.
4. Install screws securing N-4-BK clamps to angles. Verify security.
5. Connect G459 harness assembly to transmitter. Verify security.
6. Install baggage compartment wall per § 92-130.
7. Push in MWAVE XMIT (5 amp) circuit breaker at panel. Turn battery & news equipment switches on.
8. Perform appropriate post-installation function checks. Turn battery switch off.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect CMTX7-LITE transmitter for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 7 and 8.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove CMTX7-LITE transmitter per Part A. Inspect condition of and verify no obvious damage to transmitter, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install transmitter per Part A if removed.

92-184 PA16-series Pod Antenna

**A. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out MWAVE XMIT (5 amp) circuit breaker at panel.
2. Disconnect G459 harness assembly from PA16-series pod antenna and D618-1 amp assembly.
3. Have a second person support pod antenna. Remove screws and washers securing pod antenna to D586 brackets, and remove pod antenna.
4. As required, remove screws securing amp assembly to pod antenna, and remove amp and R5683 thermal pads.
5. Configure helicopter for flight with pod antenna removed per Part E as required.

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out MWAVE XMIT (5 amp) circuit breaker at panel.
2. Configure helicopter for flight with pod antenna installed per Part E as required.
3. If removed, position R5683 thermal pads and D618-1 amp assembly on PA16-series pod antenna and install screws. Verify security.
4. Have a second person support pod antenna. Install screws and washers securing pod antenna to D586 brackets. Verify security.
5. Connect G459 harness assembly to pod antenna and amp assembly. Verify security.
6. Push in MWAVE XMIT (5 amp) circuit breaker at panel. Turn battery & news equipment switches on.
7. Perform appropriate post-installation function checks. Turn battery switch off.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect PA16-series pod antenna for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 5 and 6.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove PA16-series pod antenna per Part A. Inspect condition of and verify no obvious damage to antenna, D586 brackets, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install antenna per Part A if removed.

92-184 PA16-series Pod Antenna (continued)

**E. Configurations for Flight**

1. Configuration for Flight with Pod Antenna Removed

   a. Remove PA16-series pod antenna per Part A.

   b. Remove hardware securing D586 brackets to F794-2 panel and remove brackets.

   c. Install clean, dry plastic bags individually over exposed cable assembly connectors to prevent moisture or debris from contacting connector sockets/pins; secure with ty-raps. Install clean, dry plastic bag over bagged cables/connectors; secure with ty-raps. Verify security.

   d. Revise Weight and Balance Record in R66 Pilot's Operating Handbook (POH) Section 6 to incorporate the following data:

   **Subtract:**

| Weight | Long. Arm | Long. Moment | Lat. Arm | Lat. Moment |
|---|---|---|---|---|
| 18.1 lb | 80.7 in. | 1460.7 in.-lb | 0 in. | 0 in.-lb |

2. Configuration for Flight with Pod Antenna Installed

   a. Remove and discard ty-raps and plastic bags securing cable assemblies together and ty-raps and bags protecting connectors.

   b. Install hardware securing D586 brackets to F794-2 panel. Verify security.

   c. Install PA16-series pod antenna per Part B.

   d. Revise Weight and Balance Record in R66 Pilot's Operating Handbook (POH) Section 6 to incorporate the following data:

   **Add:**

| Weight | Long. Arm | Long. Moment | Lat. Arm | Lat. Moment |
|---|---|---|---|---|
| 18.1 lb | 80.7 in. | 1460.7 in.-lb | 0 in. | 0 in.-lb |

Intentionally Blank

92-185 GPS-1270FW Antenna

**A. Removal**

1. Remove tailcone cowling per § 53-23.
2. Refer to Figure 92-1. Remove hardware securing GPS-1270FW antenna to F706-1 cowling assembly and remove antenna. Discard o-ring.

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out MWAVE XMIT (5 amp) circuit breaker at panel.
2. Install new o-ring and install hardware securing GPS-1270FW antenna to F706-1 cowling assembly. Verify security.
3. Install tailcone cowling per § 53-23.
4. Push in MWAVE XMIT (5 amp) circuit breaker at panel. Turn battery & news equipment switches on.
5. Perform appropriate post-installation function checks. Turn battery switch off.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect GPS-1270FW antenna for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 4 and 5.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove GPS-1270FW antenna per Part A. Inspect condition of and verify no obvious damage to antenna, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install antenna per Part A if removed.

## 92-190 Antenna Installations

### 92-191 G457-1 Antenna Installation (Transponder)

**A. Schematic**

Refer to Figure 98-15 for C804-22 transponder installation wiring diagram.

**B. Removal**

1. Refer to Figure 92-1. Turn battery & avionics switches off and pull out XPDR (3 amp) circuit breaker at panel.
2. Disconnect G457-2817 cable from engine cowling near right side access door. Remove engine cowling per § 53-21.
3. Using plastic scraper, remove B270-1 sealant from around CI 105-16 transponder antenna at where it attaches to aft cowling.
4. Disconnect antenna cable from antenna at connectors. Remove hardware securing B322-12 doubler and antenna to cowling and remove antenna.

**C. Installation**

1. Refer to Figure 92-1. Turn battery & avionics switches off and pull out XPDR (3 amp) circuit breaker at panel.
2. Remove paint & primer from between cabin skin and B322-12 plate, and between cabin skin and CI 105-16 transponder antenna to ensure electrical ground.
3. Install hardware securing B322-12 doubler and transponder antenna to mounting plate to aft cowling. Verify security.
4. Apply small bead of B270-1 sealant (0.1 inch max in height) around antenna (exterior only) where it attaches to aft cowling.
5. Connect antenna cable to antenna at connectors; verify security.
6. Install engine cowling per § 53-21.
7. Push in XPDR (3 amp) circuit breaker at panel. Turn battery & avionics switches on.
8. Perform appropriate functional checks per Garmin GTX 345 Pilot's Guide. Turn battery & avionics switches off.

**D. Scheduled Inspections**

Every 100-hour or annual inspection, inspect CI 105-16 transponder antenna for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part C steps 7 and 8.

92-191 G457-1 Antenna Installation (Transponder; continued)

**E. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove CI 105-16 transponder antenna per Part A. Inspect condition of and verify no obvious damage to antenna, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install antenna per Part A if removed.

92-192 G457-2 Antenna Installation (TV Tuner)

**A. Schematic**

Refer to Figure 92-13 for G491 TV receiver provision installation electrical schematic.

**B. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out TV TUNER (2 amp) circuit breaker at panel.
2. Using plastic scraper, remove B270-1 sealant from around CI 273 TV tuner antenna where it attaches to cabin skin.
3. Remove screws securing B322-11 plate to cabin skin and remove plate with antenna attached. Disconnect antenna cable from antenna at connectors.
4. Disassemble antenna from plate as required.

**C. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out TV TUNER (2 amp) circuit breaker at panel.
2. Remove paint & primer from between cabin skin and B322-11 plate to ensure electrical ground.
3. Assemble CI 273 TV tuner antenna on B322-11 plate as required. Verify security.
4. Connect antenna cable to antenna at connectors. Install screws securing plate to cabin skin. Verify security.
5. Apply small bead of B270-1 sealant around antenna (exterior only) where it attaches to cabin skin.
6. Push in TV TUNER (2 amp) circuit breaker at panel. Turn battery & news equipment switches on.
7. Perform appropriate functional checks per TV tuner manufacturer's instructions. Turn battery & news equipment switches off.

92-192 G457-2 Antenna Installation (TV Tuner; continued)

**D. Scheduled Inspections**

Every 100-hour or annual inspection, inspect CI 273 TV tuner antenna for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part C steps 6 and 7.

**E. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove CI 273 TV tuner antenna per Part A. Inspect condition of and verify no obvious damage to antenna, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install antenna per Part A if removed.

92-193 G457-3 Antenna Installation (Scanner)

**A. Schematic**

Refer to Figure 92-11 for G489 scanner installation wiring diagram.

**B. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out SCANNER (2 amp) circuit breaker at panel.
2. Remove G13000 audio system router per § 92-253.
3. Disconnect antenna cable from CI 285 antenna at connectors.
4. Supporting antenna and B322-14 plate, remove screws securing antenna and plate to cabin skin and remove antenna and plate.

**C. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out SCANNER (2 amp) circuit breaker at panel.
2. Remove paint & primer from between cabin skin and CI 285 antenna to ensure electrical ground.
3. Supporting antenna and B322-14 plate, install screws securing antenna and plate to cabin skin. Verify security.
4. Connect antenna cable to antenna at connectors.
5. Install G13000 audio system router per § 92-253.

92-193 G457-3 Antenna Installation (Scanner; continued)

**C. Installation (continued)**

6. Apply small bead of B270-1 sealant (0.1 inch max in height) around antenna (exterior only) where it attaches to cabin skin.

7. Push in SCANNER (2 amp) circuit breaker at panel. Turn battery & news equipment switches on.

8. Perform appropriate functional checks per Uniden Scanners User's Guide. Turn battery & news equipment switches off.

**D. Scheduled Inspections**

Every 100-hour or annual inspection, inspect CI 285 antenna for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part C steps 7 and 8.

**E. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.

2. As required, remove CI 285 antenna per Part A. Inspect condition of and verify no obvious damage to antenna, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.

3. Secure circuit breaker panel. Install antenna per Part A if removed.

92-200 G470-1 Aft Console Installation

The G470-1 aft console installation is a sheet metal console installed in place of the F931-1 (middle) aft seat assembly, reducing maximum number of occupants to 4. The aft console contains equipment and controls used by the camera operator.

92-210 G487-1 FM Transceivers Installation

**A. Description**

FM transceiver #1 is mounted in the lower instrument panel, and FM transceivers #2 and #3 are mounted in the rear equipment console. All 3 transceivers are selectable from any of the three main audio control panels.

**B. Schematic**

Refer to Figure 92-10 for G487-1 FM transceivers installation wiring diagram.

92-210 G487-1 FM Transceivers Installation (continued)

**C. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out FM2 (10 amp) and FM3 (10 amp) circuit breakers at panel.
2. Remove screws securing G472 face to G471 panels.
3. Disconnect G459 harness assembly from A824 transceiver(s).
4. Supporting transceiver(s), remove hardware securing B344-25 angle assemblies to face and transceiver(s). Remove angles and transceiver(s).

**D. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out FM2 (10 amp) and FM3 (10 amp) circuit breakers at panel.
2. Supporting A824 transceiver(s), install hardware securing B344-25 angle assemblies to face and transceiver(s). Verify security.
3. Install screws securing G472 face to G471 panels.
4. Connect G459 harness assembly to transceiver(s).
5. Push in FM2 (10 amp) and FM3 (10 amp) circuit breakers at panel. Turn battery & news equipment switches on.
6. Perform appropriate functional checks per Kenwood TK-7180/TK-8180 VHF FM / UHF FM Transceiver Instruction Manual. Turn battery & new equipment switches off.

**E. Scheduled Inspections**

Every 100-hour or annual inspection, inspect A824 transceiver(s) for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part D steps 5 and 6.

**F. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove A824 transceiver(s) per Part A. Inspect condition of and verify no obvious damage to transceiver(s), circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install transceiver(s) per Part A if removed.

## 92-220 G489-1 Scanner Installation

### A. Description

A multi-band scanner may be installed in place of the AM/FM receiver and is selectable from any of the three main audio control panels.

### B. Schematic

Refer to Figure 92-11 for G489 scanner installation wiring diagram.

### C. Removal

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out SCANNER (2 amp) circuit breaker at panel.
2. Remove screws securing G472 face to G471 panels.
3. Disconnect G459 harness assembly from scanner.
4. Supporting BCD996XT scanner, remove hardware securing D344-19 angle assemblies to face and scanner. Remove angles and scanner.

### D. Installation

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out SCANNER (2 amp) circuit breaker at panel.
2. Supporting BCD996XT scanner, install hardware securing D344-19 angle assemblies to face and scanner. Verify security.
3. Connect G459 harness assembly to scanner. Verify security.
4. Install screws securing G472 face to G471 panels.
5. Push in SCANNER (2 amp) circuit breaker at panel. Turn battery & news equipment switches on.
6. Perform appropriate functional checks per Uniden Scanners User's Guide. Turn battery & new equipment switches off.

### E. Scheduled Inspections

Every 100-hour or annual inspection, inspect BCD996XT scanner for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part D steps 5 and 6.

### F. Special Inspections

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove BCD996XT scanner per Part A. Inspect condition of and verify no obvious damage to scanner, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install scanner per Part A if removed.

## 92-230 G490-1 Talent Light Installation

### A. Description

The forward talent light is mounted on the left side of the instrument console and is used to illuminate the left front seat occupant (typically a reporter) during broadcasts in low-light conditions. Beam elevation is adjustable via a friction mount. The aft talent light is mounted on top of the center-cabin camera and is used to illuminate rear seat areas as desired. The forward light is controlled by a toggle switch on the rear equipment console, and the aft light is controlled by a switch on the light itself.

### B. Schematic

Refer to Figure 92-12 for G490-1 talent light installation wiring diagram.

## 92-231 D553-1 (Forward Talent) Light Assembly

### A. Lamp Replacement

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out TALENT LTS (3 amp) circuit breaker at panel.
2. Supporting D553-1 light assembly, remove hardware securing light assembly to D566-10 bracket.
3. Holding light assembly vertically, unscrew D553-3 housing from D566-9 cap and remove housing and D566-5 lens.
4. Unplug L517A lamp from H8841 holder. Replace lamp as required and reassemble (frosted side of D566-5 lens toward lamp). Verify security.
5. Push in TALENT LTS (3 amp) circuit breaker at panel. Turn battery & news equipment switches on. Verify talent light switches on and off using switch.

### B. Scheduled Inspections

Every 100-hour or annual inspection, inspect D553-1 light assembly for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part A step 5.

92-232 ILED-MA (Aft Talent) Light

**A. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out TALENT LTS (3 amp) circuit breaker at panel.
2. Unplug mini USB cable from ILED-MA light.
3. Using backup wrench on lower 91819A110 nut, loosen upper 91819A110 nut securing light to 90322A645 stud; unscrew light off of stud.

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out TALENT LTS (3 amp) circuit breaker at panel.
2. Using backup wrench on lower 91819A110 nut, screw ILED-MA light onto 90322A645 stud; tighten upper 91819A110 nut securing light to stud. Verify security.
3. Plug in mini USB cable to light.
4. Push in TALENT LTS (3 amp) circuit breaker at panel. Turn battery & news equipment switches on. Verify talent light switches on and off using switch.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect ILED-MA light for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B step 4.

92-240 G491 TV Receiver Provision Installation

**A. Description**

Refer to Figure 92-1. The TV tuner is mounted in the rear equipment console and is used to select television broadcasts to be displayed on the monitors. A second tuner is optional.

**B. Schematic**

Refer to Figure 92-13 for G491 TV receiver provision installation wiring diagram.

92-241 Distribution Amp

**A. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out TV TUNER (2 amp) circuit breaker at panel.
2. Remove screws securing G472 face to G471 panels.
3. Supporting 11-911-102 distribution amp(s), remove screws securing amp(s) to aft console assembly. Disconnect G459 harness assembly from amp(s).

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out TV TUNER (2 amp) circuit breaker at panel.
2. Connect G459 harness assembly to 11-911-102 distribution amp(s). Verify security.
3. Install screws securing amp(s) to aft console assembly. Verify security.
4. Install screws securing G472 face to G471 panels.
5. Push in TV TUNER (2 amp) circuit breaker at panel. Turn battery & news equipment switches on.
6. Perform appropriate functional checks per TV receiver manufacturer's instructions (manufacturer's may vary due to regional requirements). Turn battery & new equipment switches off.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect 11-911-102 distribution amp(s) for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 5 and 6.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove 11-911-102 distribution amp(s) per Part A. Inspect condition of and verify no obvious damage to distribution amp(s), circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install distribution amp(s) per Part A if removed.

92-242 Digital TV Receiver

**A. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out TV TUNER (2 amp) circuit breaker at panel.
2. Remove screws securing G472 face to G471 panels.
3. Disconnect G459 harness assembly from CTDVBT-288X digital TV receiver(s).
4. Remove screws securing receiver(s) to and remove receiver(s).

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out TV TUNER (2 amp) circuit breaker at panel.
2. Install screws securing CTDVBT-288X digital TV receiver(s) to F463-1 cover assembly. Verify security.
3. Connect G459 harness assembly to receiver(s). Verify security.
4. Install screws securing G472 face to G471 panels. Verify security.
5. Push in TV TUNER (2 amp) circuit breaker at panel. Turn battery & news equipment switches on.
6. Perform appropriate functional checks per TV receiver manufacturer's instructions (manufacturer's may vary due to regional requirements). Turn battery & new equipment switches off.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect CTDVBT-288X digital TV receiver(s) for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 5 and 6.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove CTDVBT-288X digital TV receiver(s) per Part A. Inspect condition of and verify no obvious damage to receiver(s), circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install receiver(s) per Part A if removed.

## 92-250 G492-1 Audio System Installation

### A. Description

The audio system consists of four audio control panels and an audio junction box. The audio junction box is located beneath the right rear seat. Power is supplied via a 5-amp circuit breaker in the main circuit breaker panel on the left hand side of the aircraft. Power to the audio system is not disconnected by the news equipment master switch.

The pilot's audio panel is located on the accessory bar in front of the pilot's seat. Push buttons are used to select a primary (transmit and monitor) audio component. Green LEDs indicate which audio component is currently selected as primary. Additional components may be monitored by selecting their toggle switches up. Sliders control volume level for each component being monitored.

Intercom control is at the far right of the audio panel. Toggle switch down isolates the pilot from the intercom. With the toggle switch up, the ICS slider controls volume, and the VOX slider (adjacent to the left) controls voice-activation threshold. VOX slider full down is maximum threshold (keyed intercom). Pushing the ICS push-button (illuminating the green LED) provides hot mic regardless of VOX slider position.

The first detent of the pilot's trigger switch is the intercom key. The second detent transmits on the #1 VHF communications radio regardless of audio panel configuration. The audio panel transmit thumb button transmits on the panel-selected audio component.

A toggle switch to the left of the pilot's audio panel may be used to bypass the audio system and connect the pilot directly to Com 1. This mode is automatically engaged in the event of an audio system power failure. (The transmit indicator on the radio display can be used to verify transmission.)

The left front seat audio panel operates in the same manner as the pilot's audio panel but is not connected to the bypass toggle switch. The first detent of the copilot's trigger switch is the intercom key, and the second detent transmits on the panel-selected audio component. A handheld transmit switch has been added for use when the left cyclic grip is removed.

The left front seat audio panel also controls the audio configuration for the right rear seat.

The left rear seat audio panel is connected to the left rear seat headset jack. The laptop camera controller contains intercom and transmit switches for the camera operator.

The microwave audio panel controls which signals are sent to the microwave transmitter and video recorder. Selecting the toggle switch up for a component sends its signal to the transmitter. Push buttons are not functional on this panel.

### B. Schematic

Refer to Figure 92-14 for G492-1 audio system installation wiring diagram.

92-251 Forward Audio Panels

**A. Removal**

1. Remove forward monitor(s) per § 92-160.
2. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out AUDIO PANEL (5 amp) circuit breaker at panel.
3. Remove hardware securing G11431-00102-1 audio panel(s) to G474 bracket assembly.
4. Disconnect G459 harness assembly from audio panel(s) and remove panel(s).

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out 7″ MONS (2 amp) and AUDIO PANEL (5 amp) circuit breakers at panel.
2. Connect G459 harness assembly to G11431-00102-1 audio panel(s). Verify security.
3. Install hardware securing audio panel(s) to G474 bracket assembly. Verify security.
4. Install forward (monitor(s) per § 92-160.
5. Push in 7″ MONS (2 amp) and AUDIO PANEL (5 amp) circuit breakers at panel.
6. Perform appropriate functional checks per Geneva Aviation user guide. Turn battery & news equipment switches off.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect G11431-00102-1 audio panel(s) for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 5 and 6.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove G11431-00102-1 audio panel(s) per Part A. Inspect condition of and verify no obvious damage to audio panel(s), G474 bracket assemblies, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install audio panel(s) per Part A if removed.

92-252 Aft Console Audio Panels

**A. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out AUDIO PANEL (5 amp) circuit breaker at panel.
2. Remove face screws securing G11431-00102 audio panel(s) to D344-4 angle assemblies and lift audio panel from console.
3. Disconnect G459 harness assembly from audio panel(s) and remove panel(s).
4. As required, remove hardware securing D557-4 cover assemblies from audio panels and remove covers.

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out AUDIO PANEL (5 amp) circuit breaker at panel.
2. If removed, install hardware securing D557-4 cover assemblies to G11431-00102-1 audio panel(s) and install covers.
3. Connect G459 harness assembly to audio panel(s). Verify security.
4. Position audio panel(s) in console and install face screws securing audio panel(s) to D344-4 angle assemblies. Verify security.
5. Push in AUDIO PANEL (5 amp) circuit breaker at panel.
6. Perform appropriate functional checks per Geneva Aviation user guide. Turn battery & news equipment switches off.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect G11431-00102-1 audio panel(s) for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 5 and 6.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove G11431-00102-1 audio panel(s) per Part A. Inspect condition of and verify no obvious damage to audio panel(s), circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install audio panel(s) per Part A if removed.

92-253 Digital Router

**A. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out AUDIO PANEL (5 amp) circuit breaker at panel.
2. Lift aft right seat forward. Remove or loosen screws securing G459 harness assembly to G13000 router.
3. Remove screws and C130-51 spacers securing router to F387-1 (belly) skin and remove router.

**B. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off, and pull out AUDIO PANEL (5 amp) circuit breaker at panel.
2. Lift aft right seat forward. Install screws and C130-51 spacers securing G13000 router to F387-1 (belly skin). Verify security.
3. Install or tighten screws securing G459 harness assembly to router. Verify security.
4. Push in AUDIO PANEL (5 amp) circuit breaker at panel.
5. Perform appropriate functional checks per Geneva Aviation user guide. Turn battery & news equipment switches off.

**C. Scheduled Inspections**

Every 100-hour or annual inspection, inspect G13000 router for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part B steps 4 and 5.

**D. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove G13000 router per Part A. Inspect condition of and verify no obvious damage to router, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install router per Part A if removed.

## 92-260 G493-1 Video Components Installation

### A. Description

The video switcher is located in the rear equipment console and is used to select the video signal source (nose camera, video recorder playback, or micro cameras). The signal is then routed to the monitors, microwave transmitter, and video recorder.

### B. Schematic

Refer to Figure 92-15 for G493-1 video components wiring diagram.

### C. Removal

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out VID SW (2 amp) circuit breaker at panel.
2. Remove screws securing G472 face to G471 panels and remove face.
3. Supporting component(s), remove screws securing BENXT430X video router or RH-AB video switch to G470-1 console assembly, as required.
4. Supporting component(s), disconnect G459 harness assembly from video router or video switch as required and remove component.

### D. Installation

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out VID SW (2 amp) circuit breaker at panel.
2. Connect G459 harness assembly to BENXT430X video router or RH-AB video switch, as required.
3. Install screws securing video router or video switch to G470-1 console assembly, as required. Verify security.
4. Install screws securing G472 face to G471 panels. Verify security.
5. Push in VID SW (2 amp) circuit breaker at panel. Turn battery & news equipment switches on.
6. Perform appropriate functional checks per Ensemble Designs BrightEye NXT Routers 430 Guide. Turn battery & news equipment switches off.

### E. Scheduled Inspections

Every 100-hour or annual inspection, inspect BENXT430X video router and RH-AB video switch for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part D steps 5 and 6.

92-260 G493-1 Video Components Installation (continued)

**F. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove BENXT430X video router and RH-AB video switch per Part A. Inspect condition of and verify no obvious damage to video router, video switch, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install video router and video switch per Part A if removed.

92-270 G496-1 DVR Installation

**A. Description**

The video recorder is located on the cross tube between the front seatbacks and has a built-in monitor and controls.

**B. Schematic**

Refer to Figure 92-16 for G496-1 DVR installation wiring diagram.

**C. Removal**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out DVR (2 amp) circuit breaker at panel.
2. Disconnect G459 harness assembly from ODYSSEY7Q or ODYSSEY7QPLUS monitor/recorder.
3. Supporting monitor/recorder, remove hardware securing monitor/recorder to G474-3 bar and remove monitor/recorder.

**D. Installation**

1. Refer to Figure 92-1. Turn battery & news equipment switches off and pull out DVR (2 amp) circuit breaker at panel.
2. Install hardware securing ODYSSEY7Q or ODYSSEY7QPLUS monitor/recorder to G474-3 bar. Verify security.
3. Connect G459 harness assembly to monitor/recorder. Verify security.
4. Push in DVR (2 amp) circuit breaker at panel. Turn battery & news equipment switches on.
5. Perform appropriate functional checks per Convergent Design Odyssey 7Q+ User Manual. Turn battery & news equipment switches off.

92-270 G496-1 DVR Installation (continued)

**E. Scheduled Inspections**

Every 100-hour or annual inspection, inspect ODYSSEY7Q or ODYSSEY7QPLUS monitor/recorder for proper installation (refer to R66 Illustrated Parts Catalog Chapter 92) & proper operation per Part D steps 4 and 5.

**F. Special Inspections**

1. Refer to Figure 92-1. Turn battery & news equipment switches off. Open circuit breaker panel.
2. As required, remove ODYSSEY7Q or ODYSSEY7QPLUS monitor/recorder per Part A. Inspect condition of and verify no obvious damage to monitor/recorder, circuit breaker, and wiring. Verify no loose, chafed, or broken wires or terminals. Verify no evidence of arcing. Verify equipment security.
3. Secure circuit breaker panel. Install monitor/recorder per Part A if removed.

92-280 Aux Electrical System Installation

An additional circuit breaker panel on the ledge just forward of the pilot's seat contains all circuit breakers for ENG equipment. The forward row of circuit breakers is a 28-volt bus and the aft row is a 14-volt bus. A 28 to 14-volt converter powers the 14-volt bus. The news equipment master switch on the left side of the panel controls power to all ENG equipment.

NOTE

ENG circuit breaker panel will not be powered by news equipment master switch unless avionics switch is also on.

92-285 D301 Ballast Installation

**CAUTION**

Altering fixed ballast can appreciably affect helicopter center of gravity (CG).

**CAUTION**

Maximum allowable empennage ballast is 21.00 lb on E.N.G Versions. One upper and one lower weight are required. Available combinations provide total weight of 3, 6, 9, 12, 15, & 21 lb.

Refer to Chapter 8-00 for weight and balance information.

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92-290 Wiring Diagrams

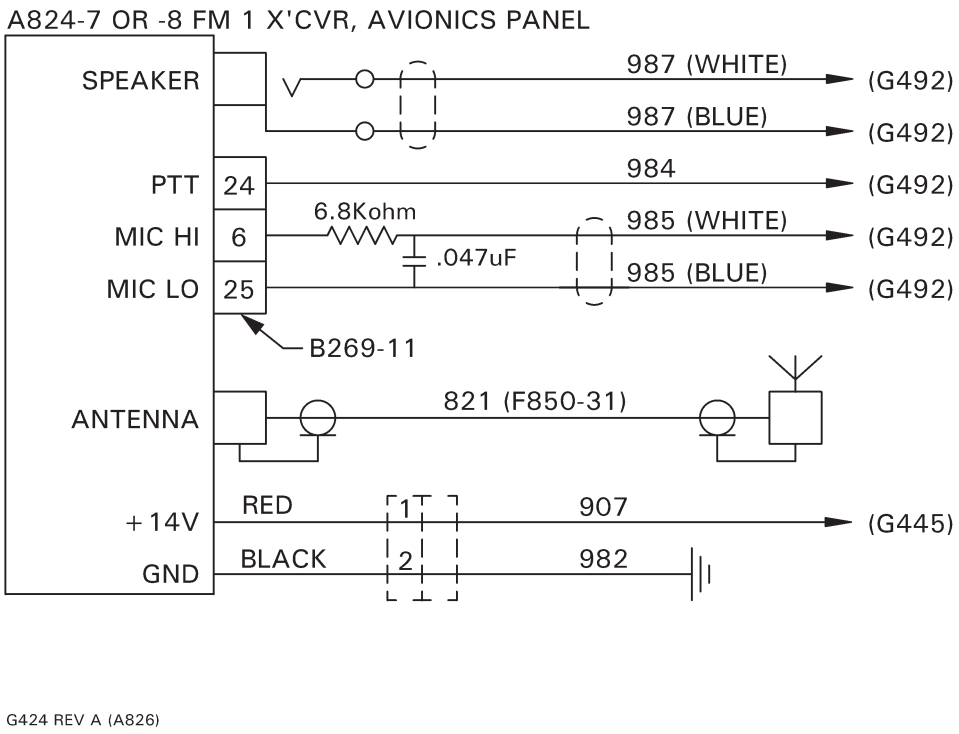
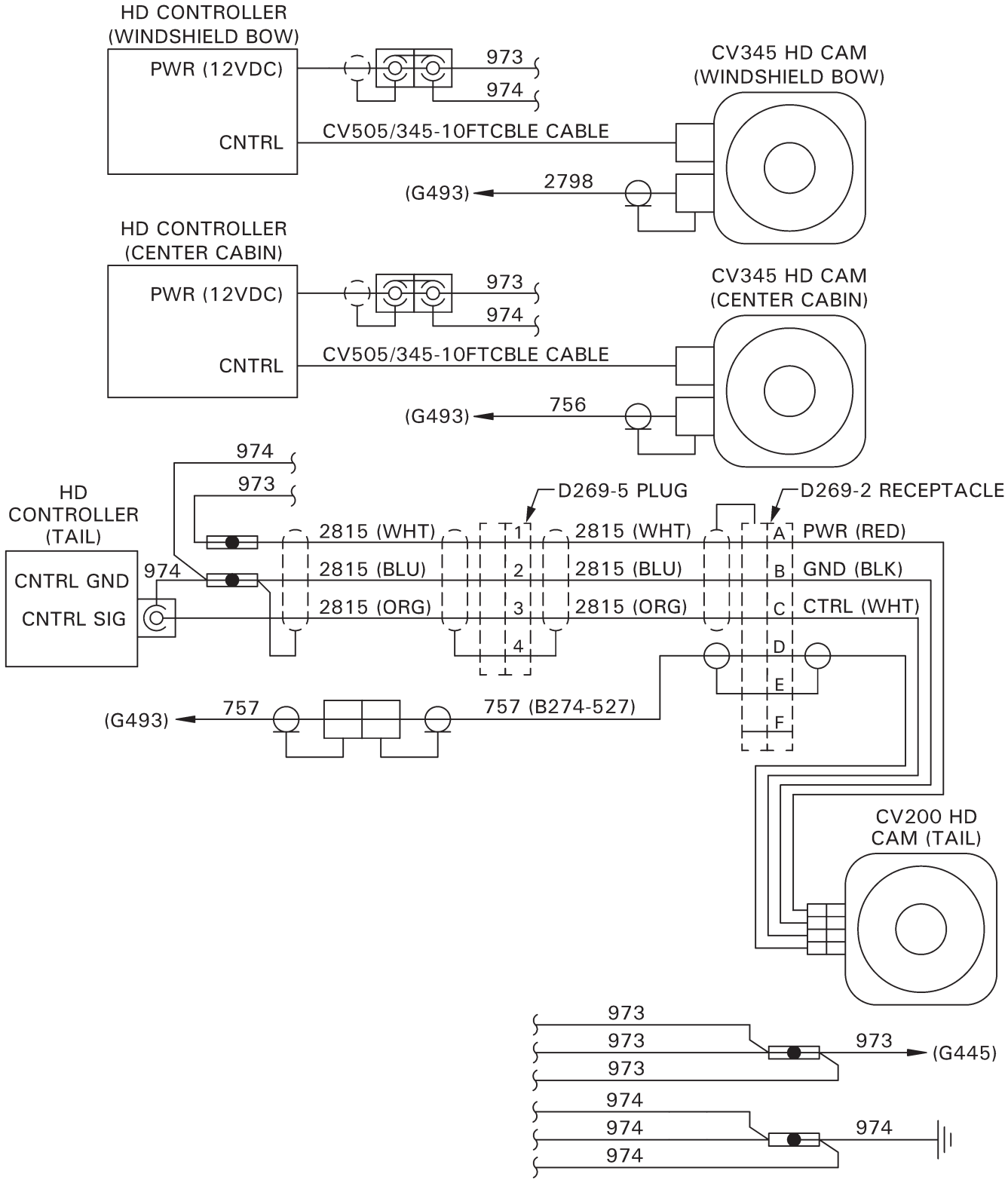



FIGURE 92-3 A826-18 TRANSCEIVER INSTALLATION (FM1) WIRING DIAGRAM

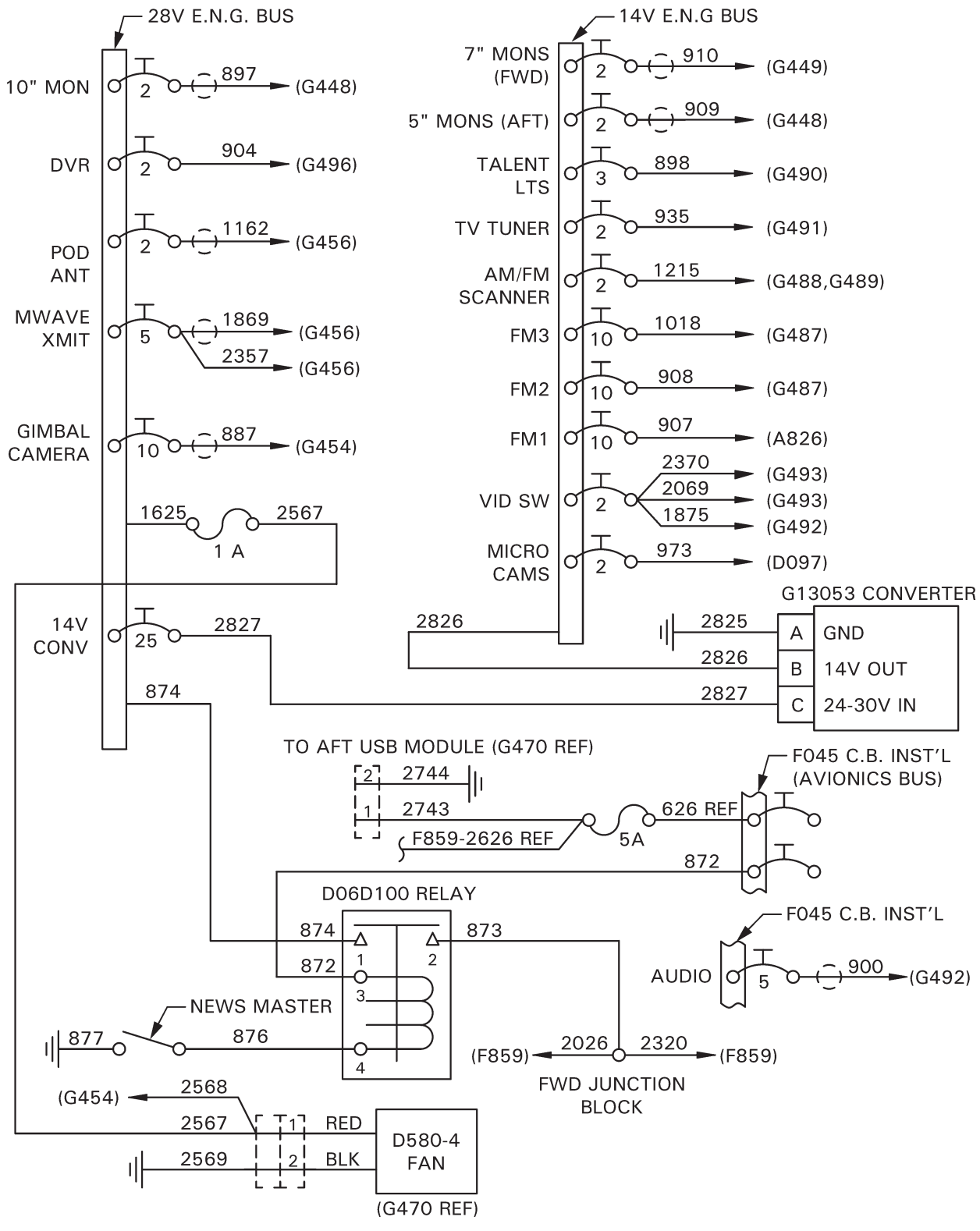
92-290 Wiring Diagrams (continued)




G424 REV A (D097)

FIGURE 92-4 D097 HD MICRO CAMERA INSTALLATION WIRING DIAGRAM

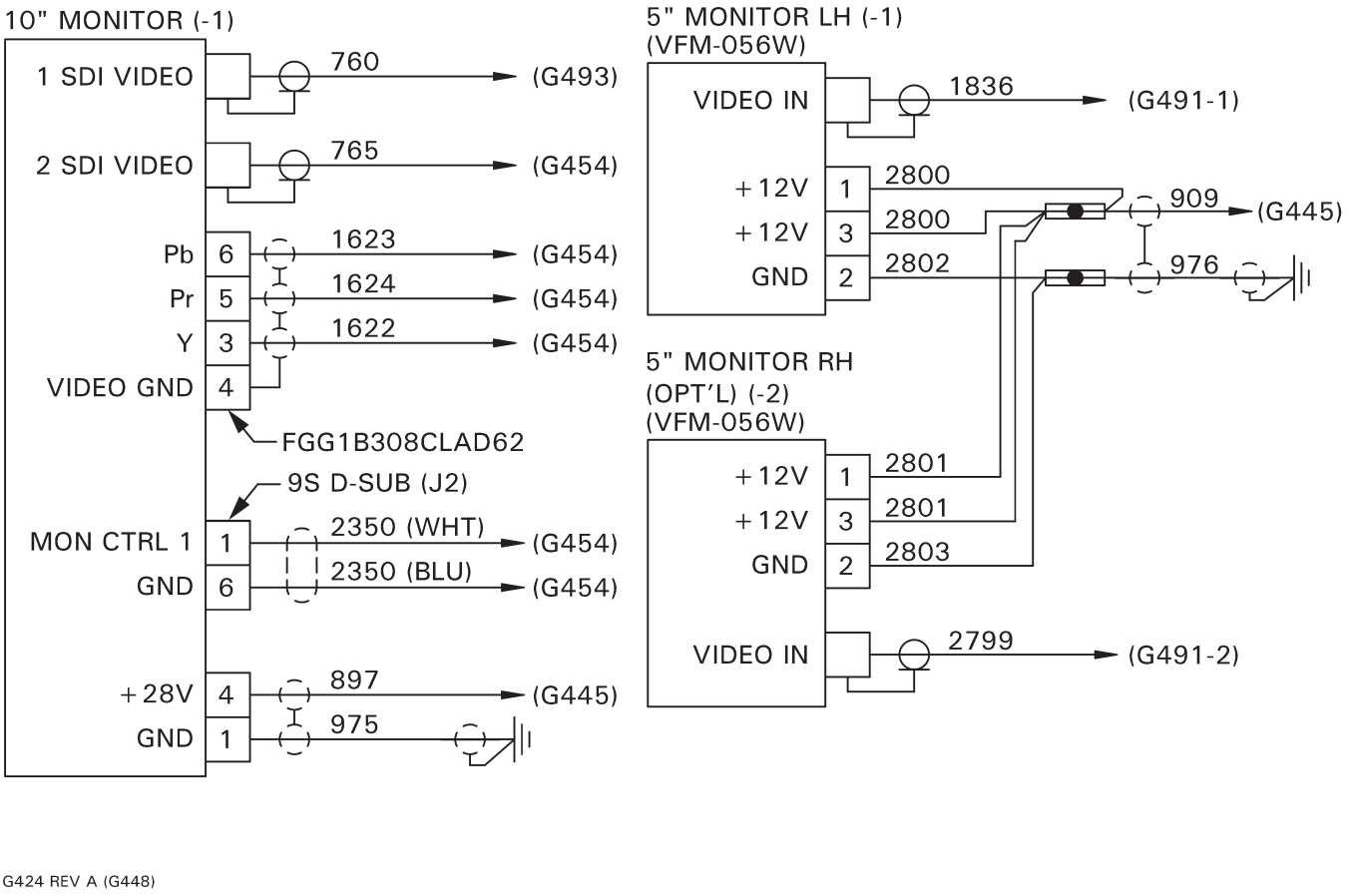
92-290 Wiring Diagrams (continued)




G424 REV A (G445)

FIGURE 92-5 G445-2 AUX CIRCUIT BREAKER PANEL INSTALLATION WIRING DIAGRAM

92-290 Wiring Diagrams (continued)




G424 REV A (G448)

FIGURE 92-6 G448 AFT MONITORS INSTALLATION WIRING DIAGRAM

92-290 Wiring Diagrams (continued)

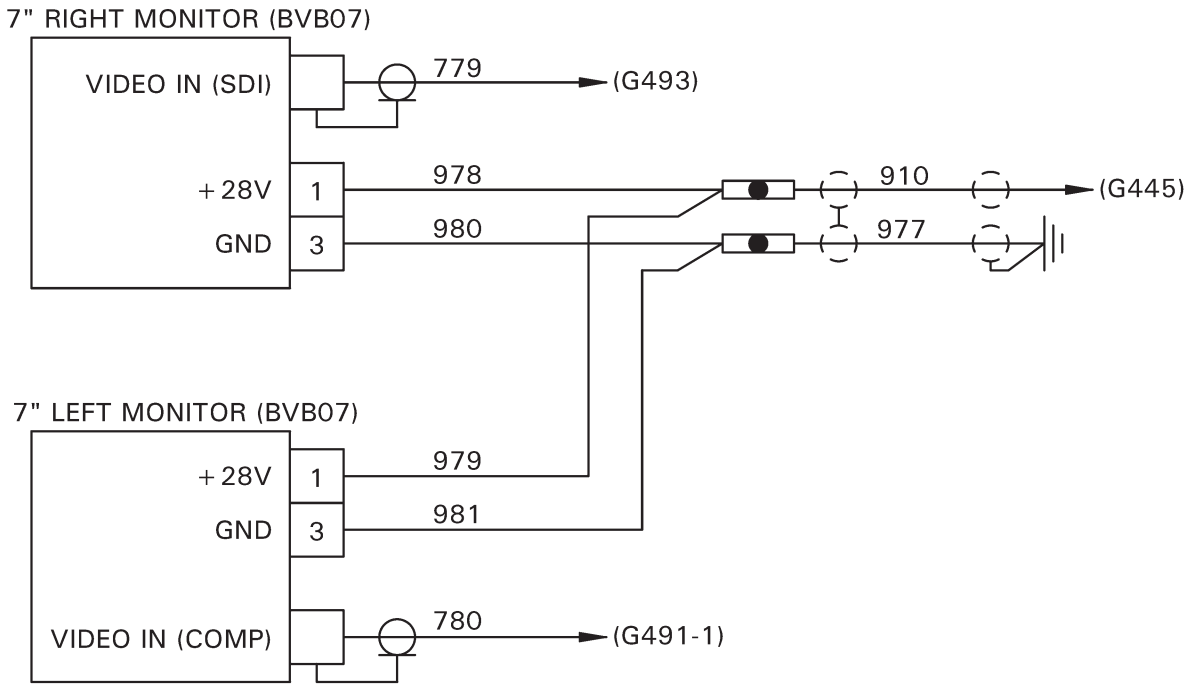



FIGURE 92-7 G449 FORWARD MONITORS INSTALLATION WIRING DIAGRAM

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92-280 Wiring Diagrams (continued)

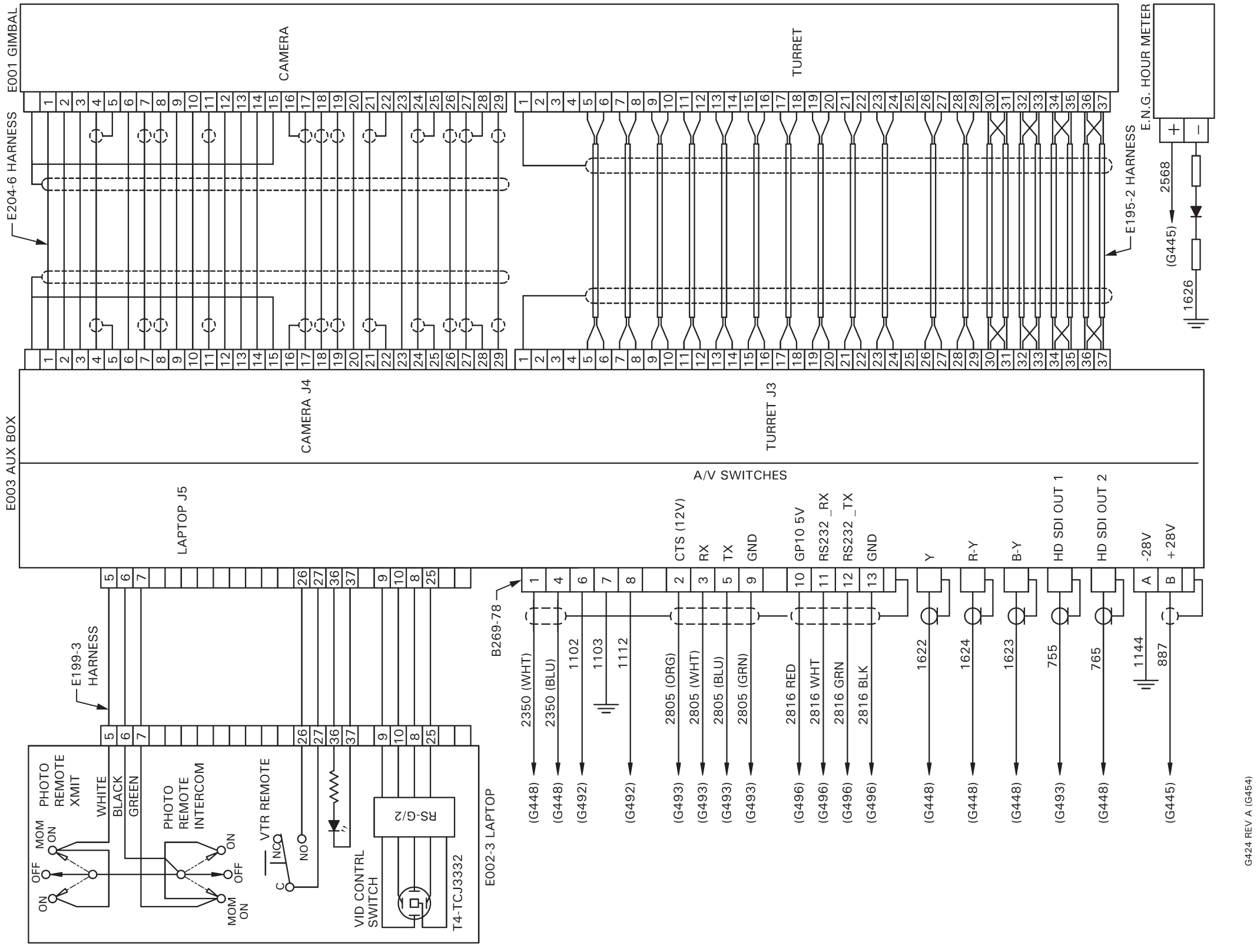



FIGURE 92-8 G454-1 CAMERA SYSTEM INSTALLATION WIRING DIAGRAM

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92-290 Wiring Diagrams (continued)

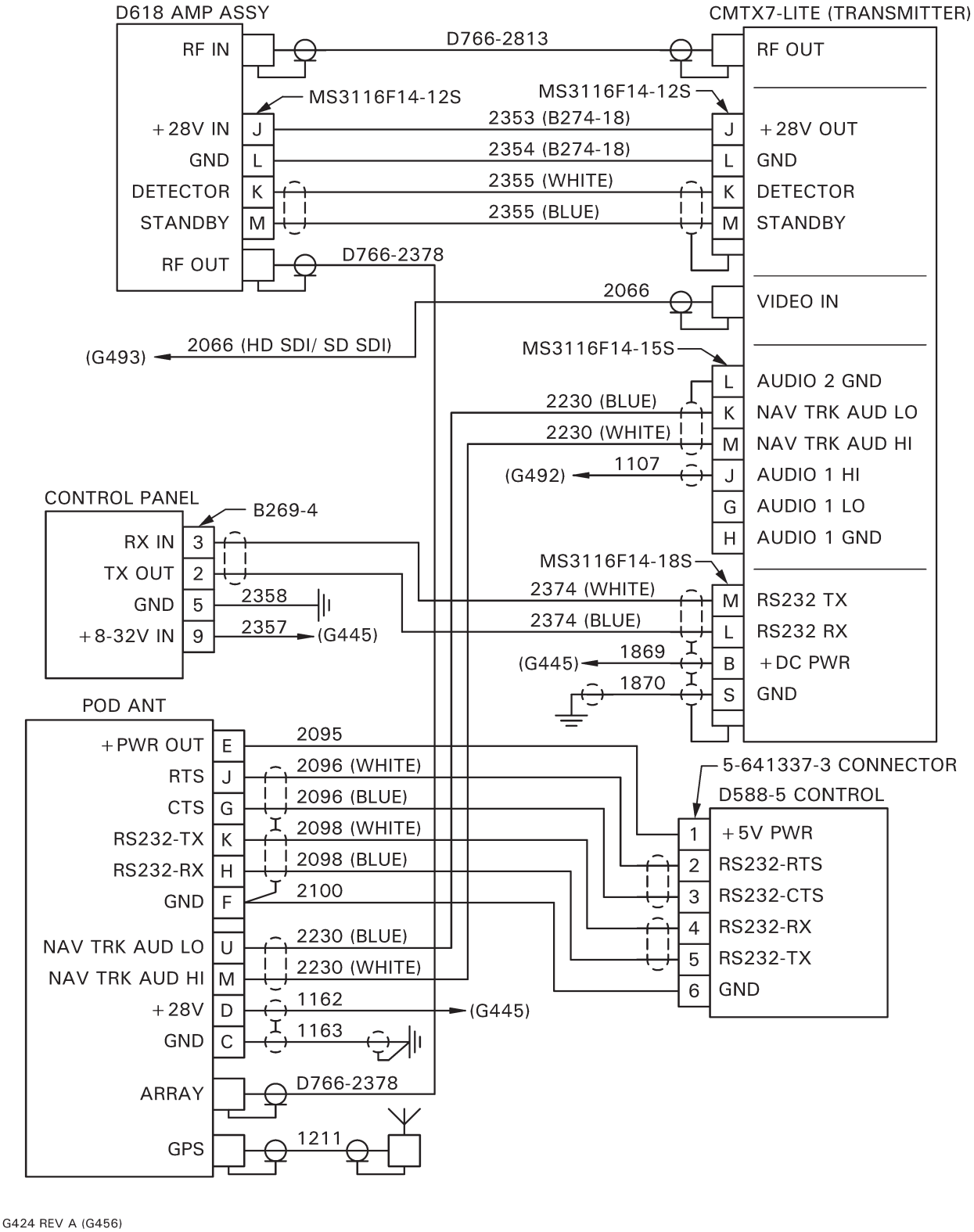
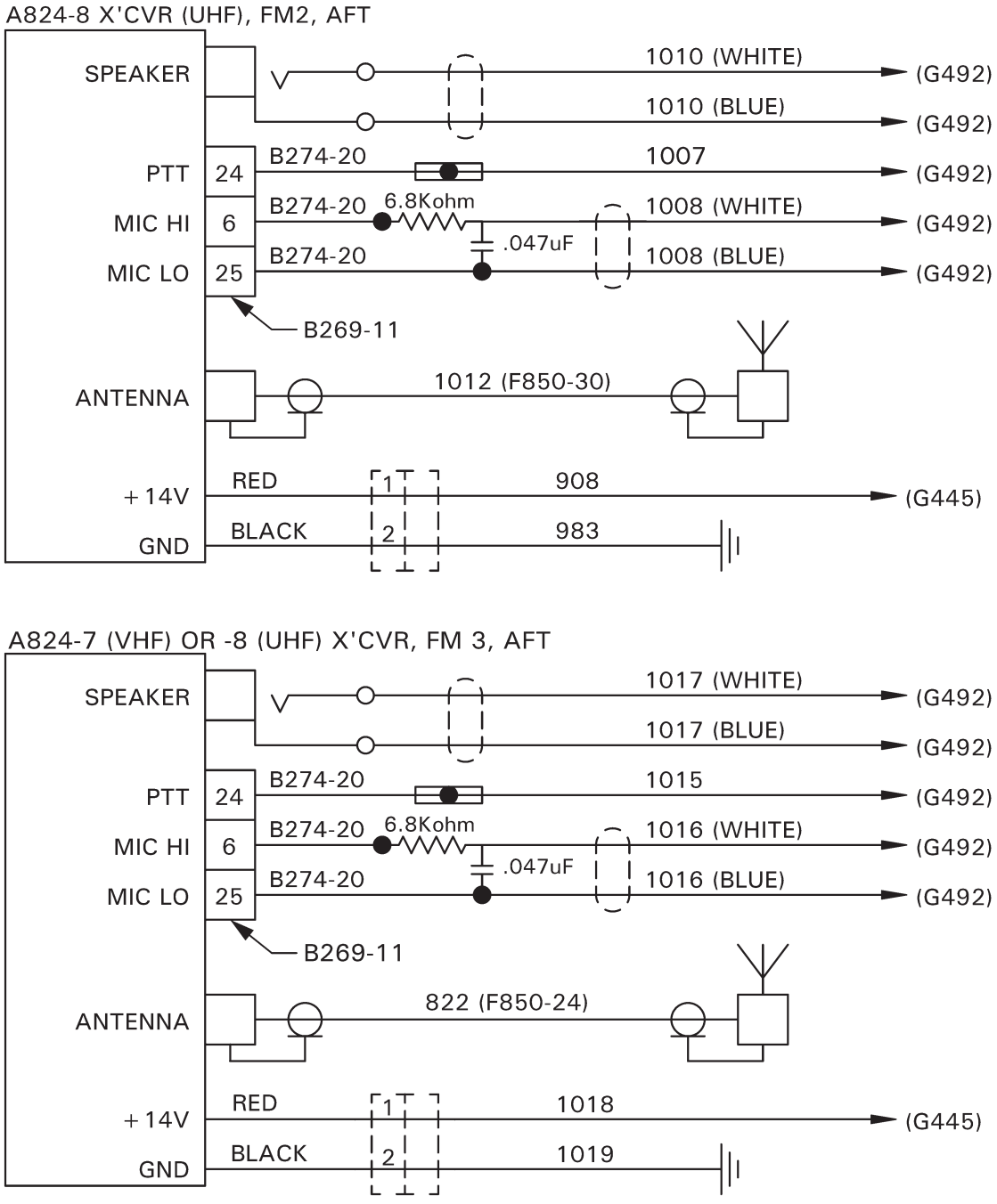



FIGURE 92-9 G456-1 MICROWAVE SYSTEM INSTALLATION WIRING DIAGRAM

92-290 Wiring Diagrams (continued)




G424 REV A (G487)

FIGURE 92-10 G487-1 FM TRANSCEIVERS INSTALLATION WIRING DIAGRAM

92-290 Wiring Diagrams (continued)

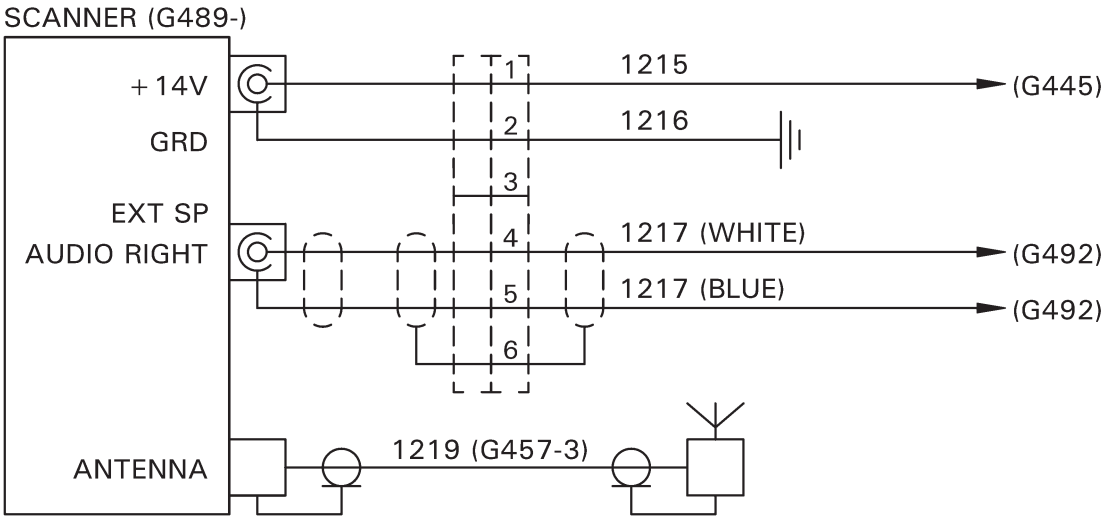



FIGURE 92-11 G489 SCANNER INSTALLATION WIRING DIAGRAM

92-290 Wiring Diagrams (continued)

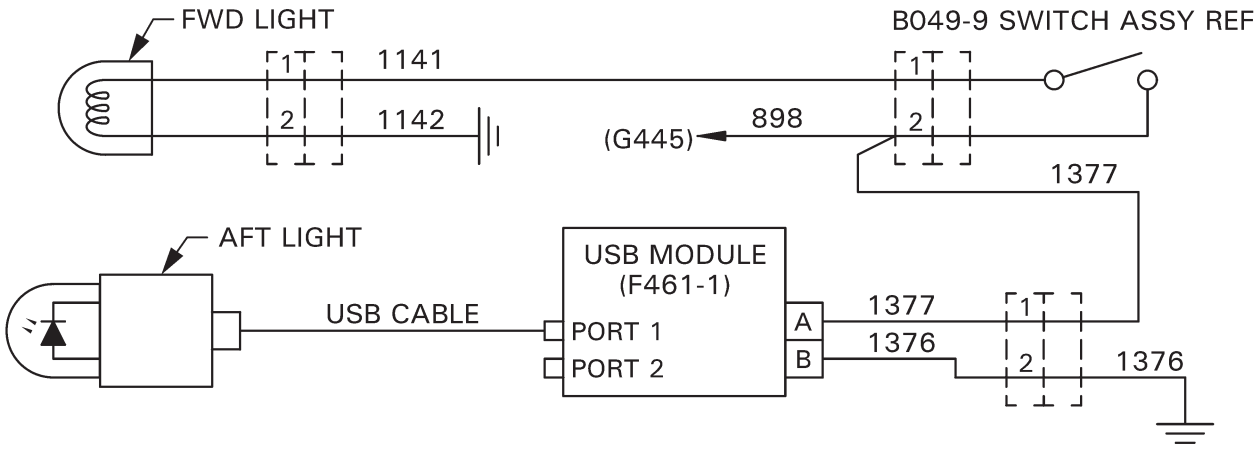



FIGURE 92-12 G490-1 TALENT LIGHT INSTALLATION WIRING DIAGRAM

92-290 Wiring Diagrams (continued)

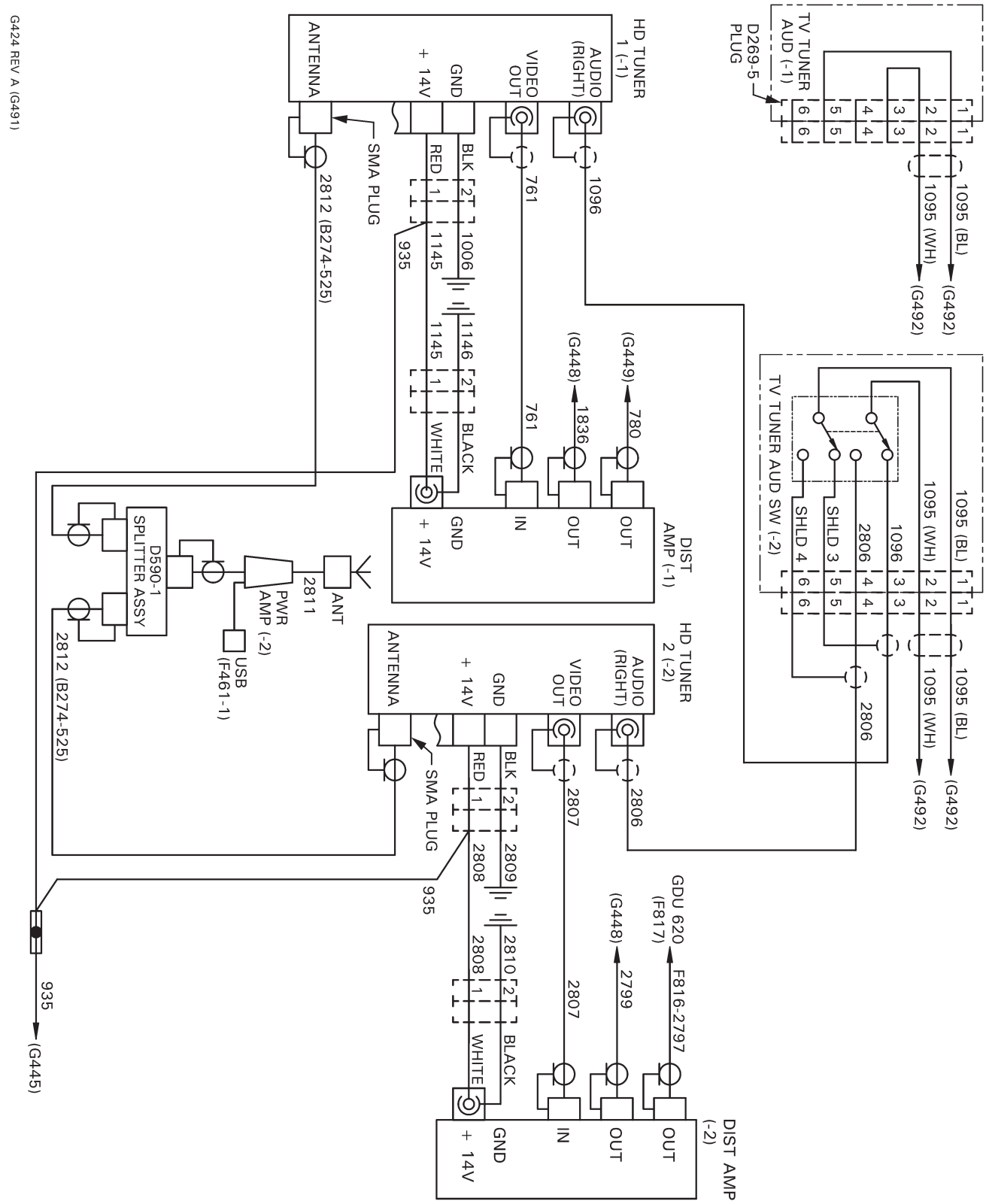



FIGURE 92-13 G491 TV RECEIVER PROVISION INSTALLATION WIRING DIAGRAM

Intentionally Blank

92-280 Wiring Diagrams (continued)

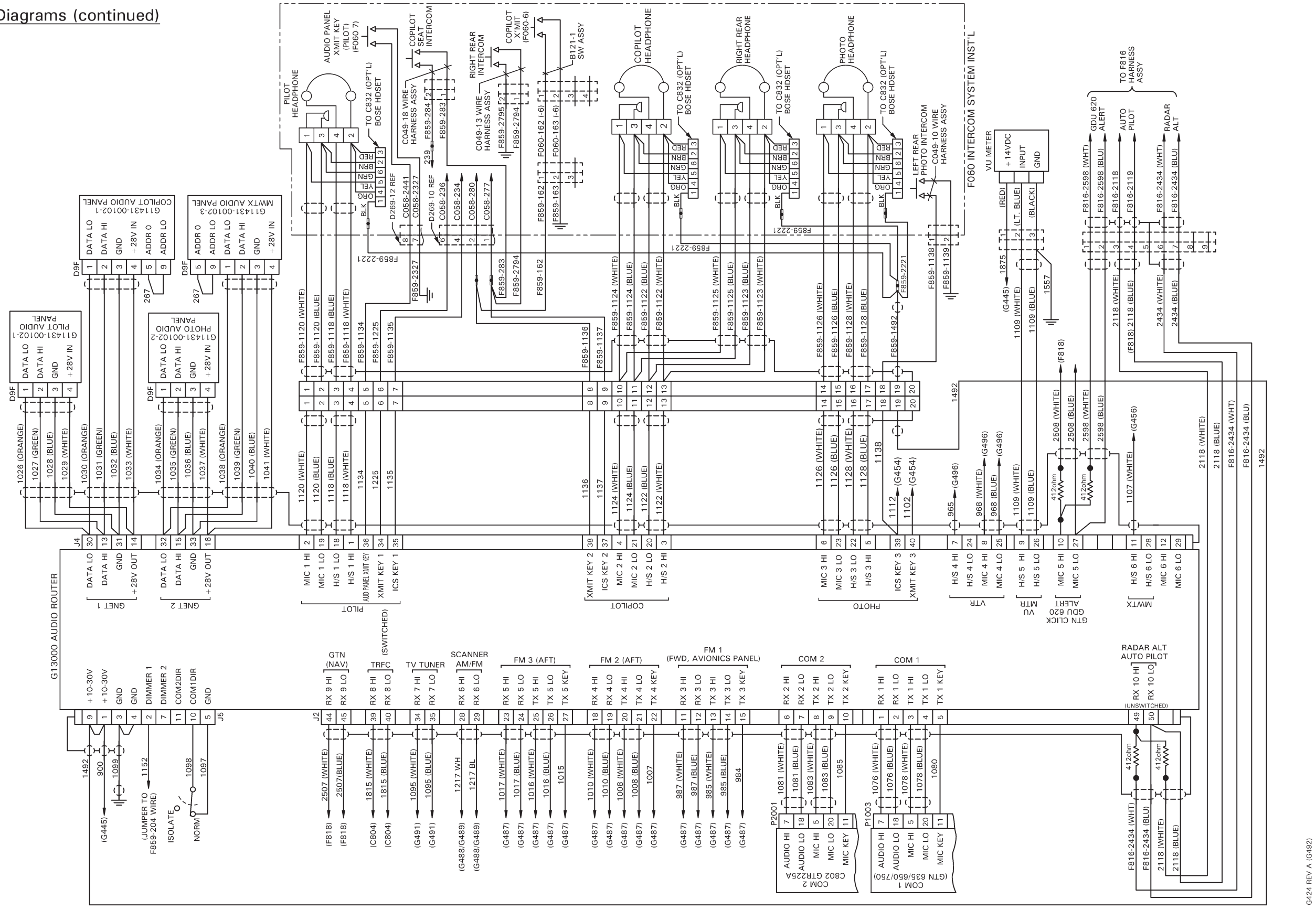



FIGURE 92-14 G492-1 AUDIO SYSTEM INSTALLATION WIRING DIAGRAM

Intentionally Blank

92-290 Wiring Diagrams (continued)

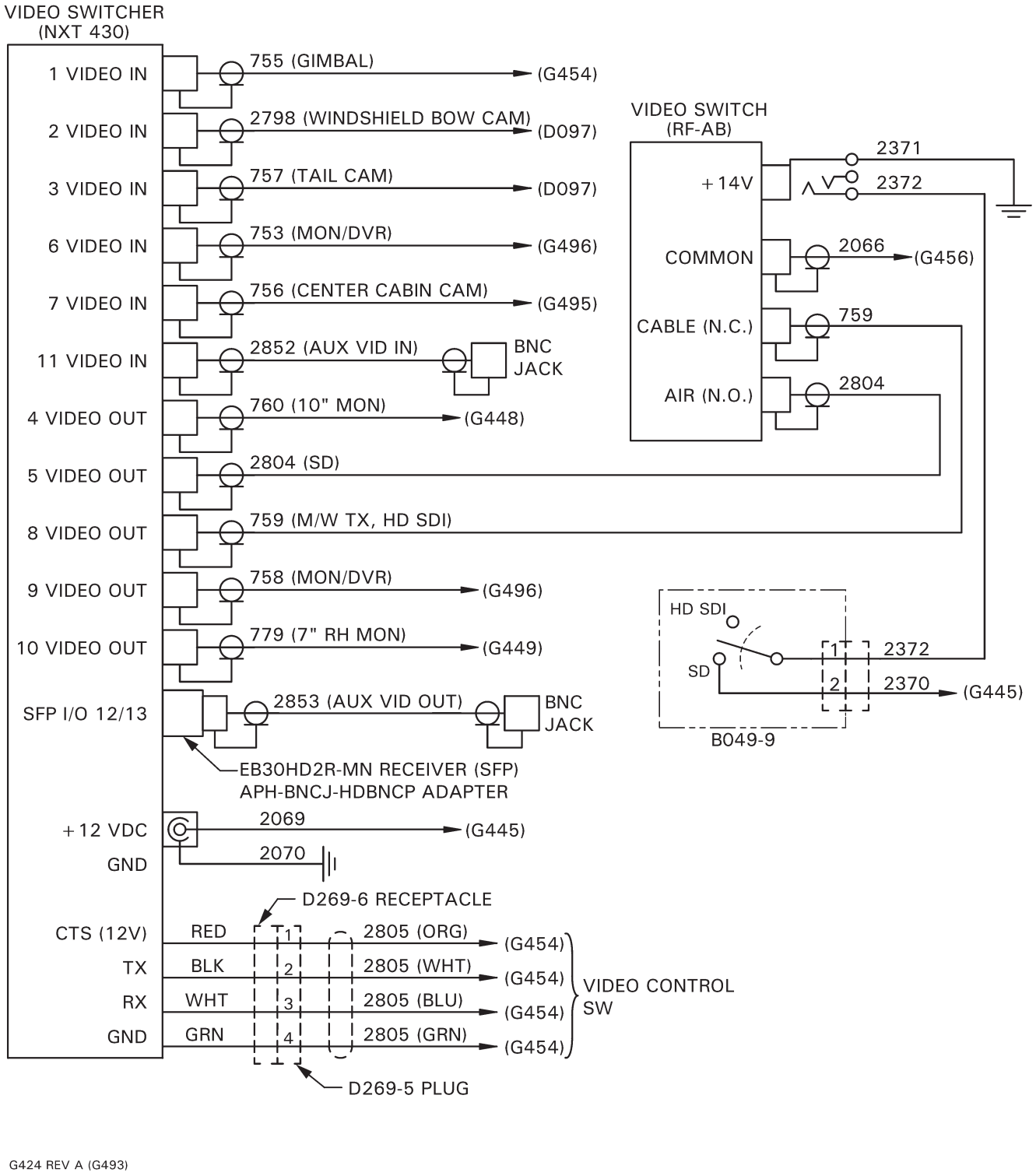



FIGURE 92-15 G493-1 VIDEO COMPONENTS INSTALLATION WIRING DIAGRAM

92-290 Wiring Diagrams (continued)

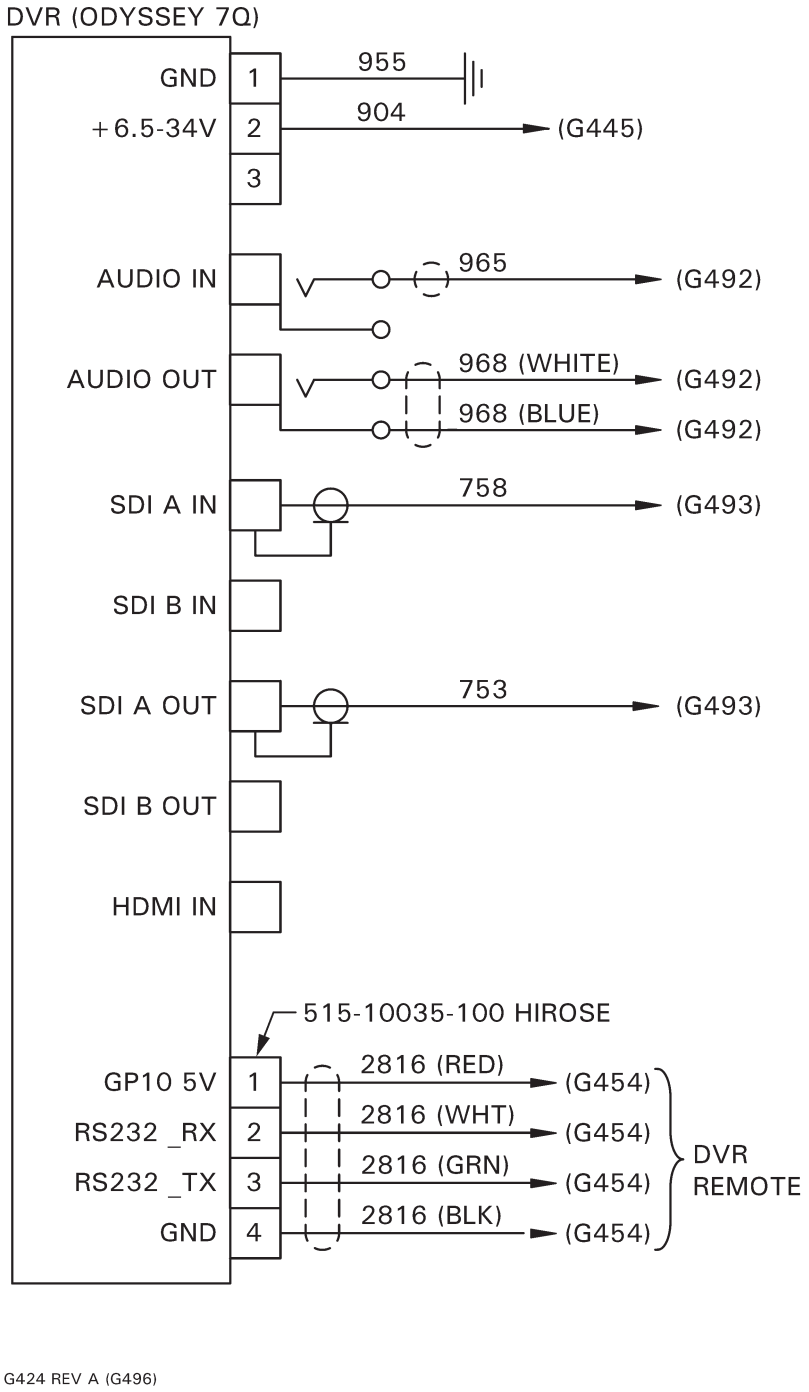



FIGURE 92-16 G496-1 DVR INSTALLATION WIRING DIAGRAM