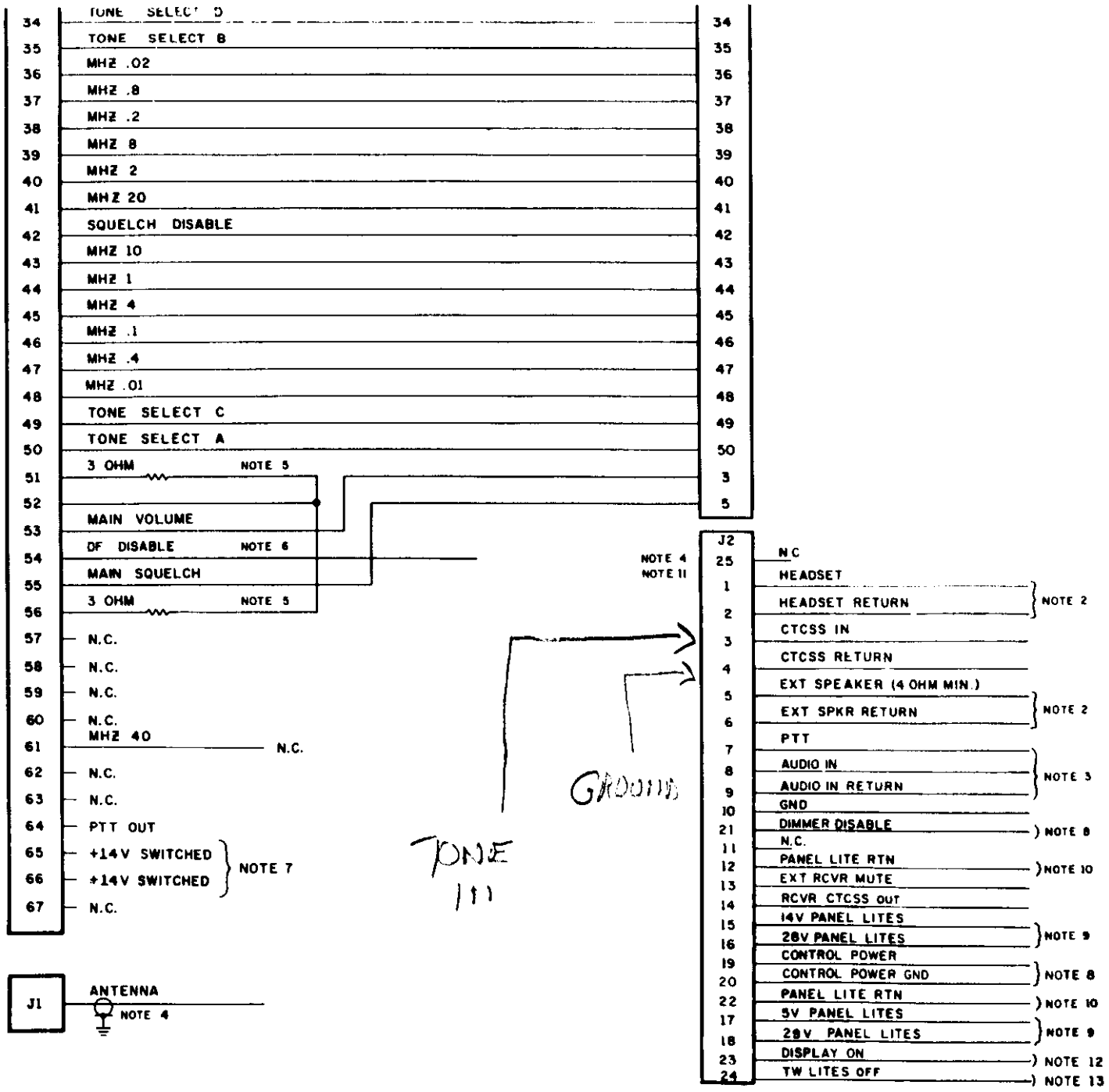



| REV | C O NUMBER | DATE |
|---|---|---|
| N | 2080 | 11-9-82 |
| M | 1925 | 1-16-82 |
| L | 1898 | 6-11-82 |
| K | 1743 | 12 22 81 |
| J | 1279 | 5-20-80 |
| H | 798 | 11-29-78 |
| G | 749 | 10-5-78 |
| F | 638 | 7-3-78 |
| E | 487 | 3-16-78 |
| D | 469 | 2-28-78 |
| C | 390 | 12-6-77 |
| B | 385 | 11-30-77 |
| A | ORIGINAL RELEASE | 8-29-77 |

WULFSBERG ELECTRONICS, INC.

TITLE: RT9600/C-961/C-920/C-962/ C-962A INTERCONNECT DIAGRAM

DESIGN: LJS

SHEET: 1 of 1

NUMBER: 147-0049-000

# SECTION 2

# INSTALLATION

## 2.1 GENERAL

This section contains instructions and considerations for the proper installation of the RT-7200 and RT-9600 Transceiver Systems.

The information presented herein is necessary for the proper operation and satisfactory performance of the equipment.

## 2.2 UNPACKING AND INSPECTING EQUIPMENT

Physically compare the presence of each item in the shipment with that shown on the packing list. Exercise care when unpacking each unit. Make a visual inspection of each unit for evidence of damage incurred during shipment. If a claim for damage is to be made, save the shipping container to substantiate the claim. When all equipment is unpacked, it is suggested the carton and packing material be saved for possible reshipment.

## 2.3 INSTALLATION - IN-96A/IN-97A RIGIDMOUNT AND MT-5178/ARC-513 (V) SHOCKMOUNT

The rigidmount captivates the transceiver and may be mounted in any convenient remote location. Allow sufficient room at the front for cable and connector entry.

Mounting dimensions for the rigidmount are shown in Figure 2.3-2 and for the Military Shockmount in Figure 2.3-1. The mount is secured to the mounting surface with Number 8 machine screws, or equivalant and appropriate lock nuts.

**NOTE**

**The system has been vibration, temperature and altitude tested to assure performance in any aircraft environment; however, controlled environments improve the system reliability. This factor should be considered when selecting a remote site.**

## 2.3 INSTALLATION - IN-96A/IN-97A RIGIDMOUNT AND MT-5178/ARC-513 (V) SHOCKMOUNT (cont.)

The rigidmount connector should be wired using the crimp sockets that accompany the rigidmount installation kit. The sockets should be attached to the aircraft wiring and installed into the connector using the following equipment schedule.

| | | |
|---|---|---|
| SOCKET | No. 16, WEI P/N 129-1017-000<br>ITT Cannon P/N 031-9084-001<br>(Accepts Wire No. 16, 18, 20) | No. 20 WEI P/N 129-1019-000<br>ITT Cannon P/N 031-9134-004<br>(Accepts Wire No. 20, 22, 24) |
| CRIMP TOOL | ITT Cannon P/N M22520/1-01<br>(with M225/1-02 head)<br>or<br>ITT Cannon P/N MS-3191-1<br>(with std. locator head)<br>or<br>Daniels P/N M22520/1-01<br>(with TH276 or TH25 head) | ITT Cannon P/N M22520/1-01<br>(with L-3198-20 HD head)<br>or<br>ITT Cannon P/N MS-3191-1<br>(with P20-2191-20 head)<br>or<br>Daniels P/N M22520/1-01<br>(with TH164 or TH25 head) |
| EXTRACTION TOOL | ITT Cannon P/N CET-16-9 | ITT Cannon P/N CIET-20HDL<br>or<br>ITT Cannon P/N CET-20-11 |

Crimp, Insertion and Extraction Tool Manufacturer Names and Addresses

Daniels Manufacturing
2260 Franklin Road
Bloomfield Hills, MI
48013
(313)338-9611

ITT Cannon
10550 Talbert Avenue
Fountain Valley, CA
92708
(714)964-7400

## 2.4 INSTALLATION - TRANSCEIVERS (See Figures 2.4-1 and 2.4-2)

Use the installation wiring diagram appropriate to the control unit to be used and refer to the wiring consideration notes in Section 2.7.

The MIC and SIDETONE adjustments on the front of the transceiver allow variation of the levels to accommodate differences in installations. They are multiple turn potentiometers.

MIC is factory set so that 0.25 VRMS at 1000 Hz will provide standard deviation. If the microphone to be used with the transceiver does not provide standard output, its output may be compensated for by adjustment of the MIC setting.

Internal to the transceiver are HIGH POWER and LOW POWER transmitter output power adjustments. These are adjusted at the factory for 10 watt/1 watt respectively. For use under FCC Parts 83 or 90, and DOC RSS-119 and RSS-182 no adjustment of these potentiometers should be made. For use under FCC Part 87, it is mandatory that the HIGH POWER setting be adjusted so that the RF power output shall not exceed 5 watts. See the appropriate section in the RT-7200 or RT-9600 Maintenance Manual for transmitter power adjustment procedures. (NOTE: Although not specifically type accepted under Part 87, the RT-7200 and RT-9600 comply with Part 87 requirements when adjusted as outlined above.)

SIDETONE should be adjusted to a level that will give the desired audio output without causing feedback squeal when used with a speaker. The sidetone level will not be changed by the volume control on the control unit.

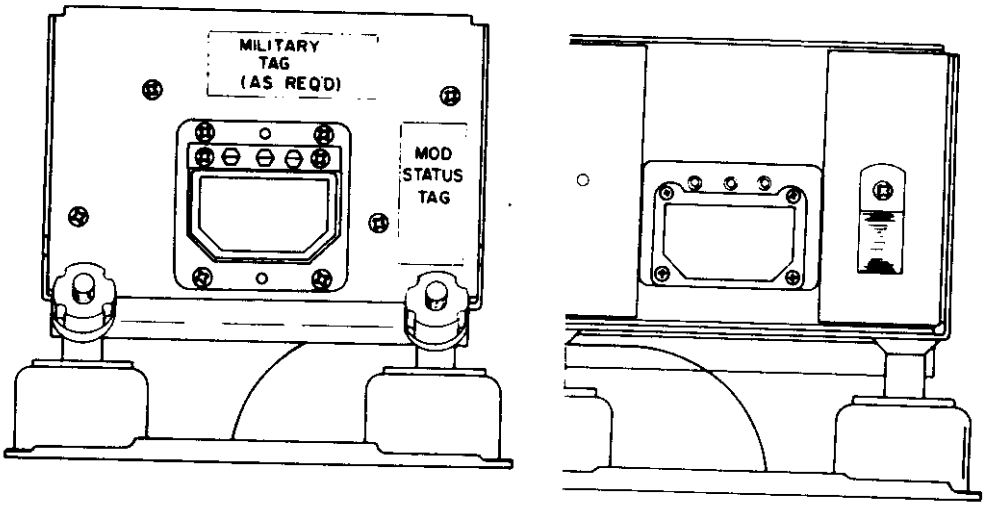
## 2.5 INSTALLATION - CONTROL UNITS

All control units are designed to mount on Dzus rails per MS-25213. The C-961 and C-920 are directly interchangeable except for depth. The following installation kits should be used with the indicated controls: C-960 with IN-960; C961 with IN-722/962; C-920 with IN-920; C-962/C-962A with IN-722/962; C-722/C-722A with IN-722/962 (See Section 1.6.7 and 1.6.8 for complete installation kit contents). Outline dimensions may be found in Figures 2.5-1 through 2.5-5. The C-722/C-722A Control Units must be used with the RT-7200.

## 2.6 INSTALLATION - ANTENNAS

The antennas should be mounted on the bottom of the aircraft if possible; however, top mounting is acceptable if the location is selected with consideration given to possible shadowing of the signal by aircraft structures.

Should pressure or moisture seal be required, a bead of sealant such as Dow Corning RTV-738 should be applied to the outside perimeter of the mounting surface. Mounting dimensions may be found in Figures 2.6-1, 2.6-2, 2.6-3 and 2.6-4.




NOTES:

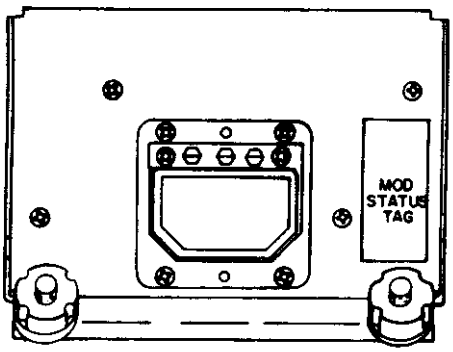
1 DIMENSIONS IN PARENTHESES MILLIMETERS.

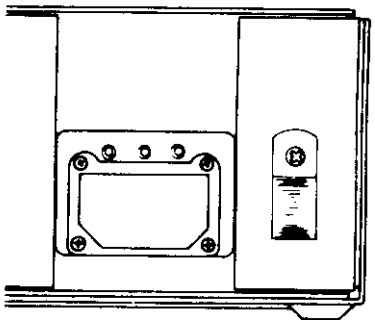
ARY NOMENCLATURE:
TING BASE, ELECTRICAL EQUIPMENT
178/ARC-513

WULFSBERG ELECTRONICS, INC.
SCALE
TOLERANCE UNLESS NOTED
FRACTIONS
ANGLES
TITLE
SHOCK MOUNT
OUTLINE DWG. RT-9600
DRAWN
SHEET
1 of 1
NUMBER
147-0069

MT-5178/ARC-513 (V) IN96/IN97 SHOCK

FIGURE 2.3-1



*NOTES*

1 DIMENSIONS IN PARENTHESES ARE MILLIMETERS.
2 PROTRUDING CONNECTOR DIMENSION A TO THE IN-97A MOUNT ONLY.

| | | | |
|---|---|---|---|
| C | 7928 | 7-22-82 | |
| B | 7892 | 6-1-82 | |
| A | ORIGINAL RELEASE | 4/23/82 | |
| REV | E.C.O. NUMBER | DATE | |

WULFSBERG ELECTRONICS, INC.

SCALE —/+— TOLERANCE UNLESS NOTED .XX ± .030 FRACTIONS ± 1/64 .XXX ± .010 ANGLES ± 1°

TITLE: IN-96A/IN-97A OUTLINE DRAWING

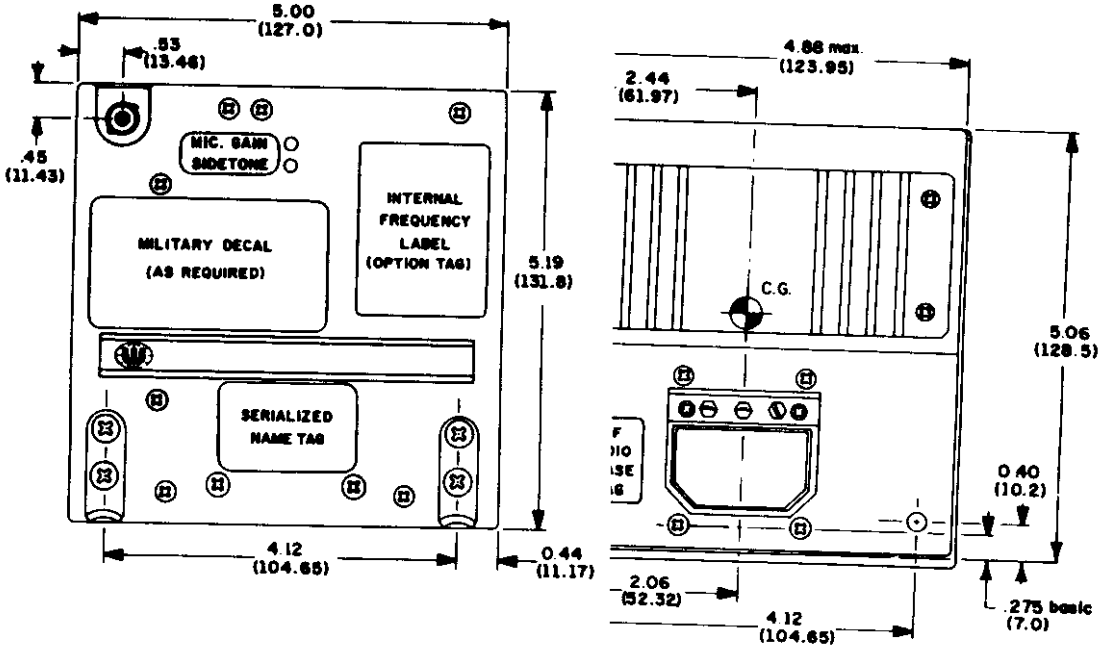
DRAWN BY HMR 4/82 | SHEET 1 of 1 | NUMBER D 147-0137-000

ENG APPROVAL

151-0016 REV B

IN96A/IN97A RIGIDMOUN
FIGURE 2

RT-7200, RT-9600-, AN/ARC-513(A)



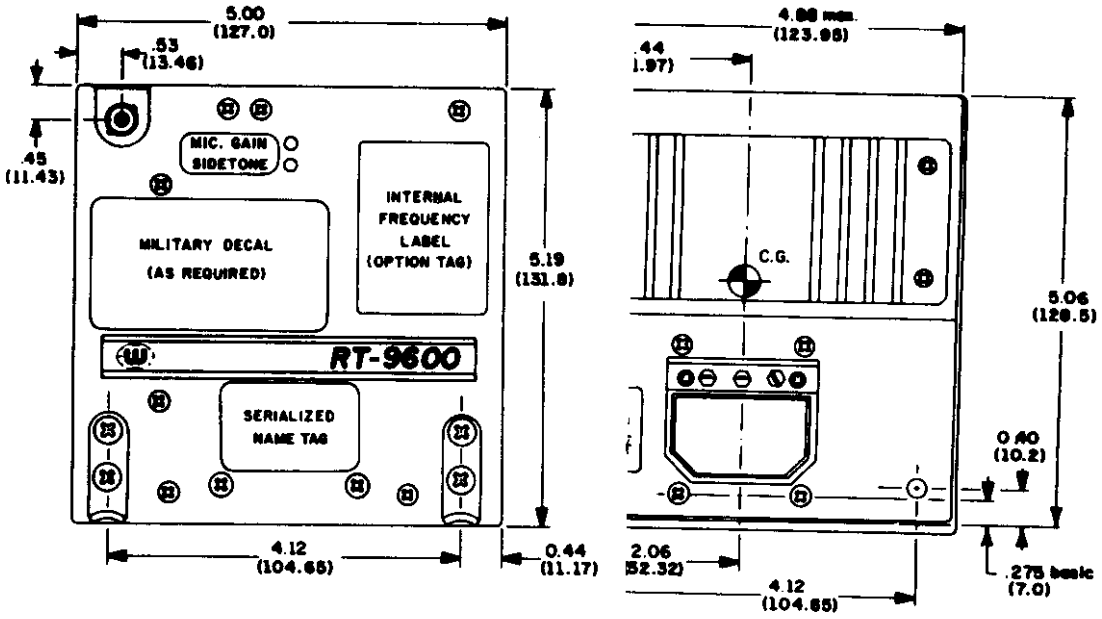

NOTES:

1. DIMENSIONS IN PAREN
2. UNIT CONNECTORS:
   ANTENNA: UG-10
   REAR: DPXB-

Y NOMENCLATURE:
R-TRANSMITTER, RADIO
2 / ARC-513 (V) OR
5 / ARC-513 (V)

| | | | | |
|---|---|---|---|---|
| | | | WULFSBERG ELECTRONICS, INC. | |
| | | | SCALE | TOLERANCE UNLESS NOTED .XX ± .03 FRACTIONS ±1/64 .XXX ± .010 ANGLES ±1/2° |
| | | | TITLE | OUTLINE DWG. VHF FM TRANSCEIVER |
| B | 318 | 9-23-77 | DRAWN RT LJS | SHEET 1 of 1 |
| A | ORIGINAL RELEASE | 8-29-77 | APPROVED CEC | NUMBER 147-0046-000 |
| REV | E.C.O. NUMBER | DATE | | |

RT-7200, RT-9600 (WITH
RT-5052/ARC-513 (V) AND RT-5065/
FIGURE




*NOTES:*

1. DIMENSIONS IN PARENTI
2. UNIT CONNECTORS:
   ANTENNA: UG-109
   REAR: DPXB-6

WULFSBERG ELECTRONICS, INC.

| | |
|---|---|
| SCALE | |
| TOLERANCE UNLESS NOTED | .XX ± .03, .XXX ± .010, FRACTIONS ± 1/64, ANGLES ± 1/2° |
| TITLE | OUTLINE DWG. RT-9600 (PROTRUDING CONNECTOR) |
| DRAWN | LJS |
| SHEET | 1 or 1 |
| NUMBER | 147-0060 |

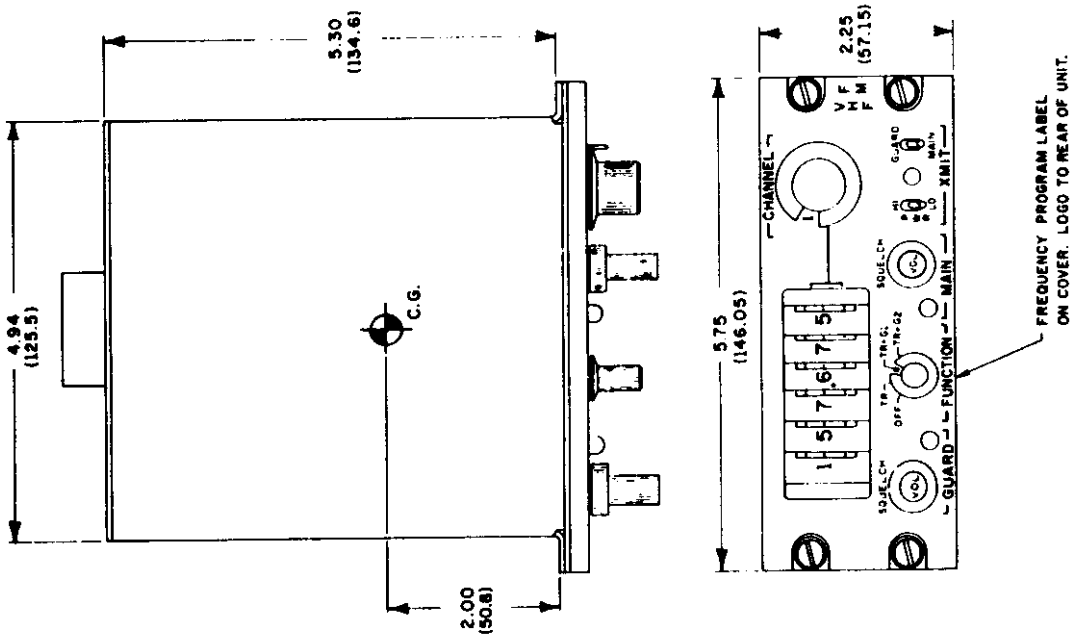
| REV | ORIGINAL RELEASE | ECO NUMBER | DATE |
|---|---|---|---|
| B | 686 | | 8-2-78 |
| A | | | 5-20-78 |

RT-9600 (WITH PROTRUDING CON

FIGURE

## RT-7200, RT-9600, AN/ARC-513 (V)

**NOTES:**
1. ALLOW 4.00 INCHES BEHIND UNIT FOR CONNECTOR COUPLING.
2. DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.




**MILITARY NOMENCLATURE:**
**CONTROL, RADIO SET**
**C-5333/ARC-513**

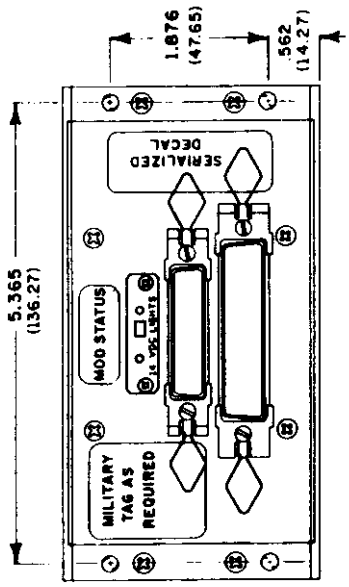
WULFSBERG ELECTRONICS, INC.
OUTLINE DWG. C-960 CONTROL UNIT
SIZE A | NUMBER 147-0048 | SHEET 1 of 1
DRAWN LJS | APPROVED

| LTR | ORIGINAL RELEASE | DATE |
|---|---|---|
| M | 686 | 8-2-78 |
| D | 362 | 11-9-77 |
| C | 328 | 9-30-77 |
| B | 318 | 9-23-77 |
| A | ORIGINAL RELEASE | 8-29-77 |

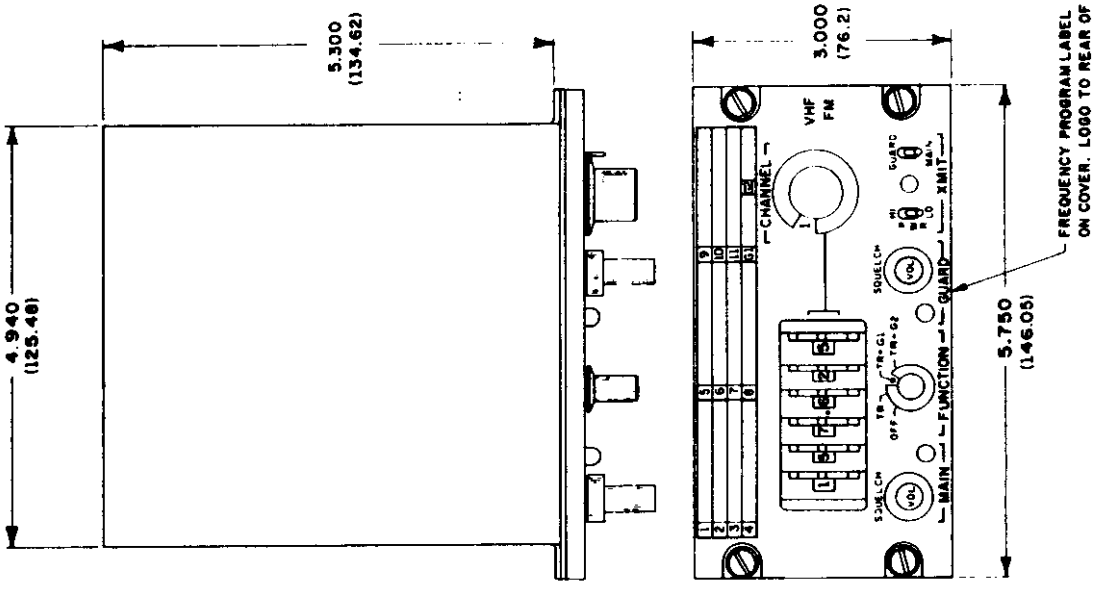
**C-960 AND ARC-513 (V): C-5333, C-5368, C-5413 OUTLINE DIMENSIONS**
FIGURE 2.5-1

## RT-7200, RT-9600, AN/ARC-513 (V)

NOTES:
1. ALLOW 4.00 INCHES BEHIND UNIT FOR CONNECTOR COUPLING.
2. DIMENSIONS IN PARENTHESES ARE MILLIMETERS.




WULFSBERG ELECTRONICS, INC.
OUTLINE DWG. C-961 CONTROL UNIT
147-0058



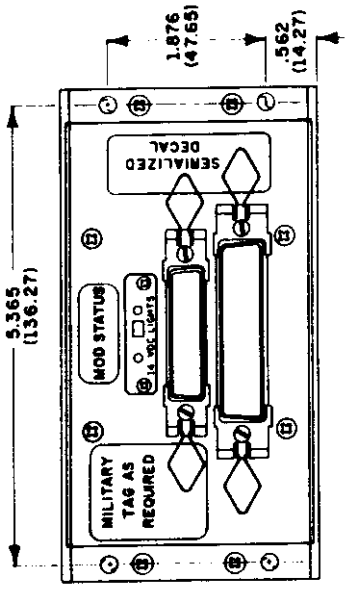

C-961 OUTLINE DIMENSIONS
FIGURE 2.5-2

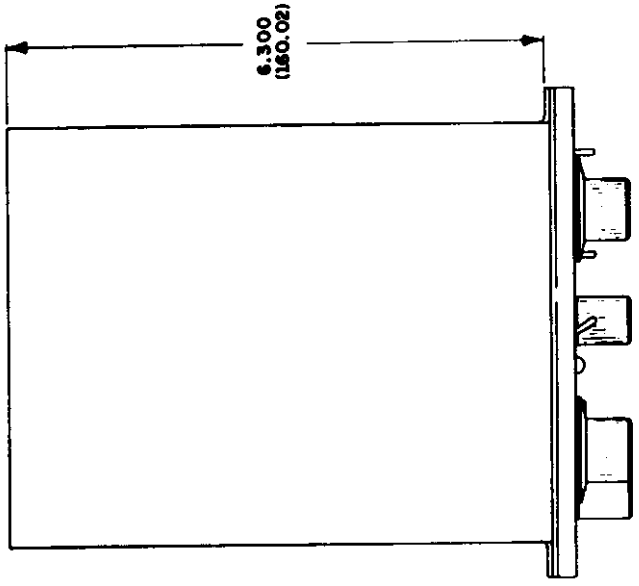
## RT-7200-RT-9600, AN/ARC-513 (V)

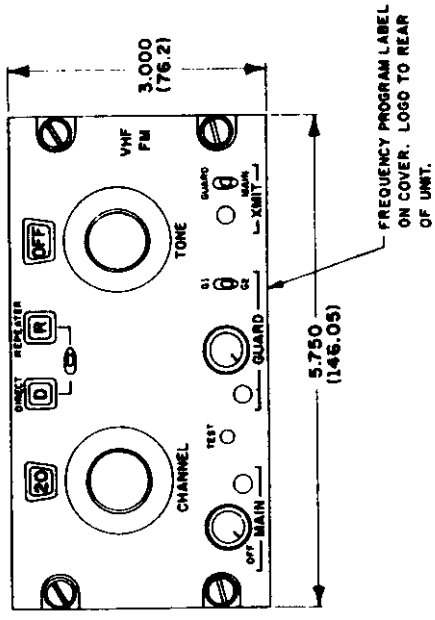
NOTES:
1. DIMENSIONS IN PARENTHESES ARE MILLIMETERS.

| WULFSBERG ELECTRONICS, INC. | | | |
|---|---|---|---|
| SCALE | TOLERANCE UNLESS NOTED FRACTIONS ±1/64 .XX±.01 .XXX±.005 ANGLES ±1/2° | TITLE: CONTROL UNIT C-920 OUTLINE DWG. | |
| | DRAWN LJS | SHEET 1 of 1 | NUMBER 147-0054 |
| | TRACED | | |
| | APPROVED | | |

| REV | ORIGINAL RELEASED | DATE | C O NUMBER |
|---|---|---|---|
| A | 6-2-78 | 6-2-78 | 686 |
| B | | 8-20-78 | |



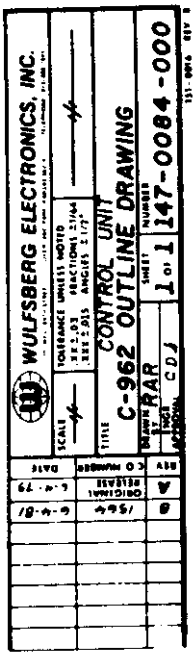



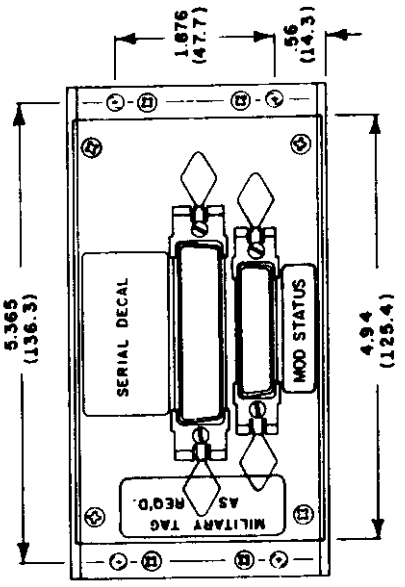



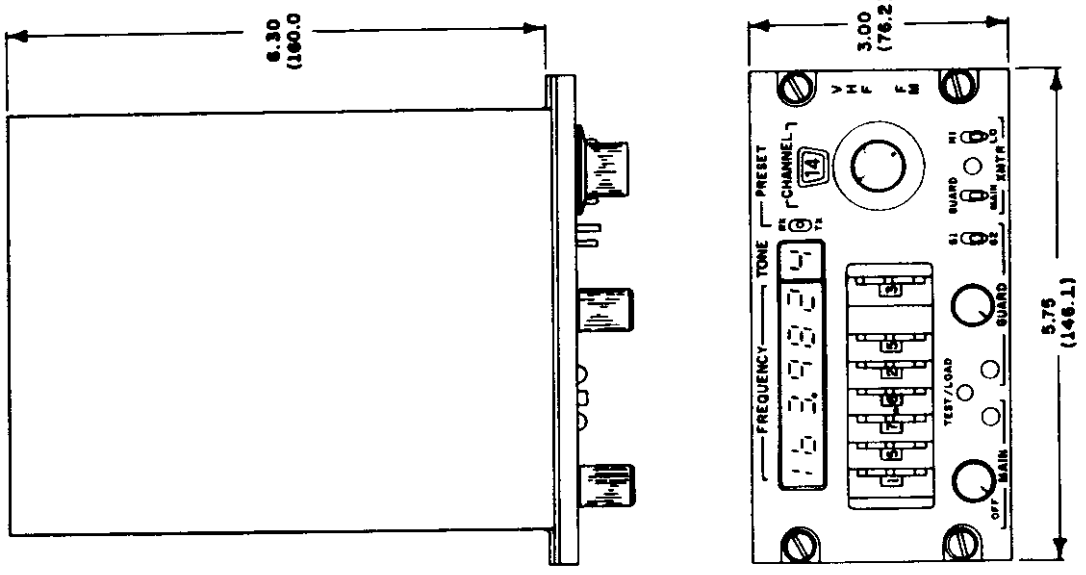

C-920 OUTLINE DIMENSIONS
FIGURE 2.5-3

## RT-7200, RT-9600, AN/ARC-513 (V)

NOTES:
1. DIMENSIONS IN PARENTHESES ARE MILLIMETERS.



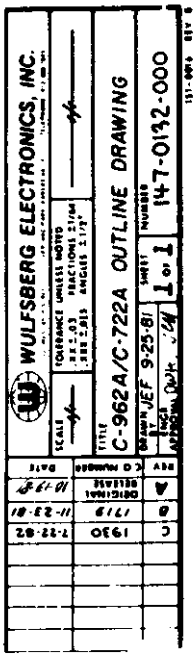



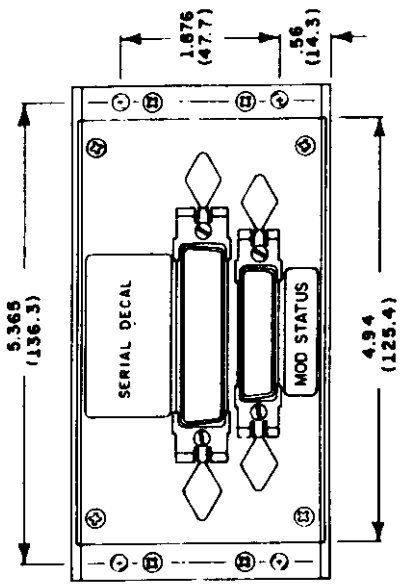



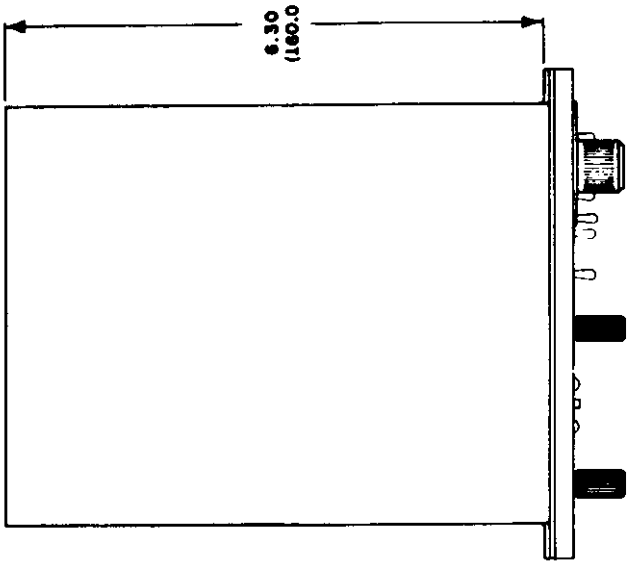

C-722, C-962 AND ARC-513 (V): C-5421, C-5422 OUTLINE DIMENSIONS
FIGURE 2.5-4

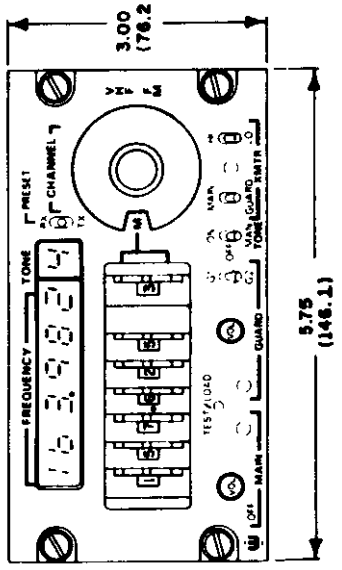
## RT-7200, RT-9600, AN/ARC-513 (V)

NOTES:
1. DIMENSIONS IN PARENTHESES ARE MILLIMETERS.



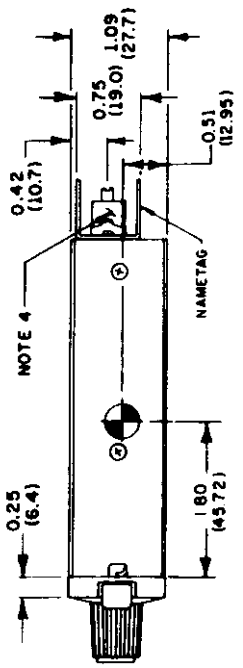



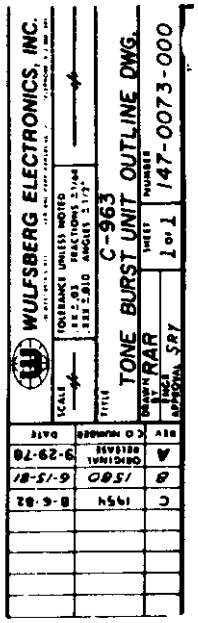

C-722A/C-962A OUTLINE DIMENSIONS
FIGURE 2.5-5

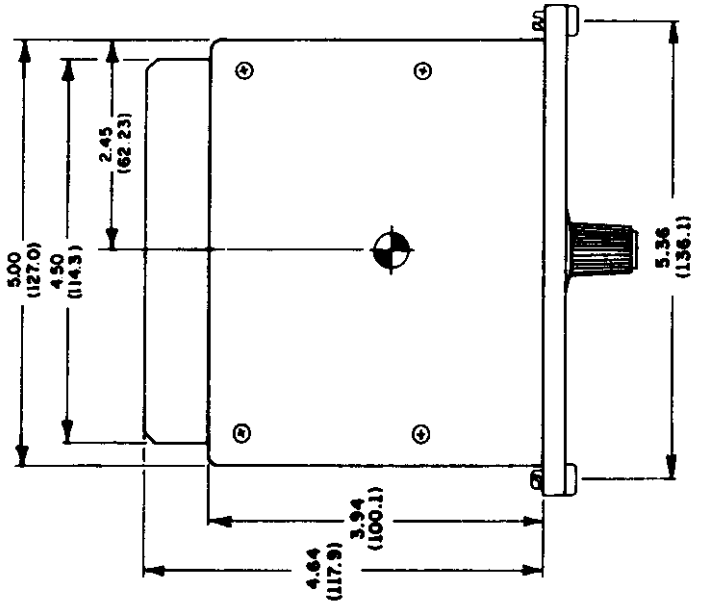
## RT-7200, RT-9600, AN/ARC-513 (V)

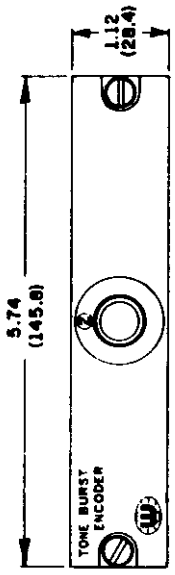
NOTES:

1. ALLOW 4 INCHES BEHIND UNIT FOR CONNECTOR COUPLING.
2. DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.
3. WEIGHT: 0.75 LBS (0.34KG).
4. MATING CONNECTOR: POSITRONICS GM9F-SCGJ-VL OR EQUIVALENT.



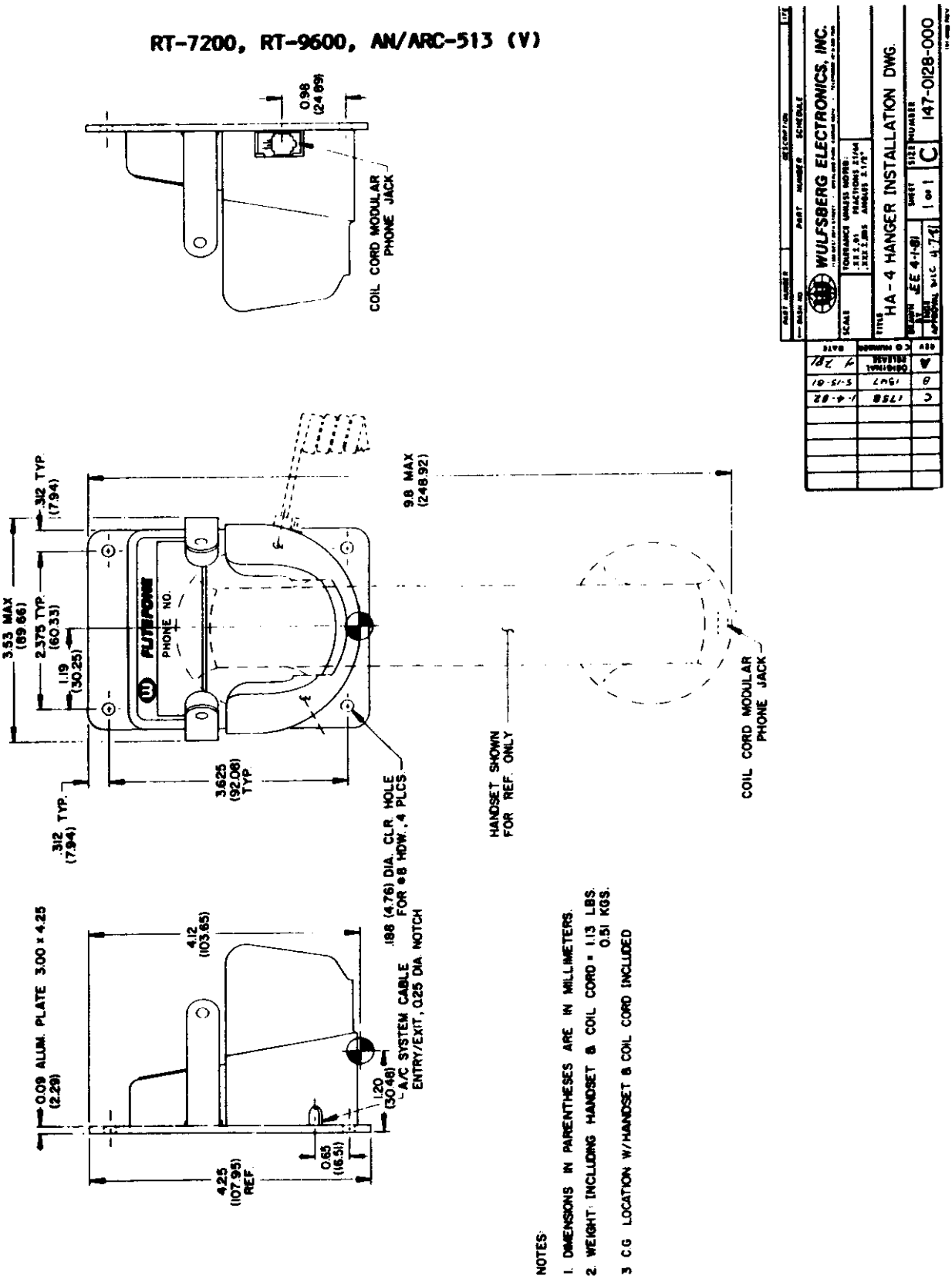




C-963 OUTLINE DIMENSIONS
FIGURE 2.5-6

## RT-7200, RT-9600, AN/ARC-513 (V)

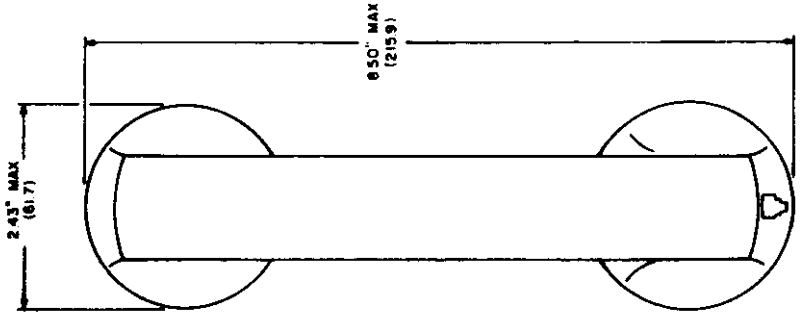


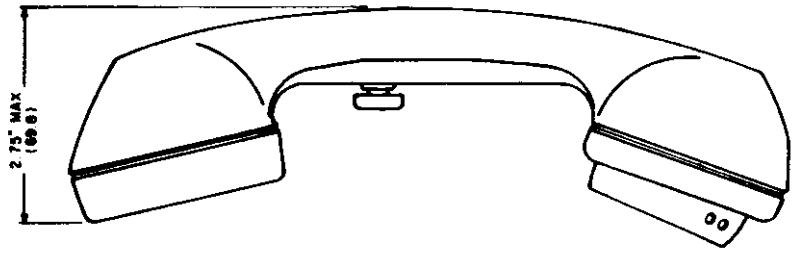

**HA-4 HANGER OUTLINE DIMENSIONS**
FIGURE 2.5-7

## RT-7200, RT-9600, AN/ARC-513 (V)

NOTES:
1. DIMENSIONS IN PARENTHESIS ARE IN MILLIMETERS
2. WEIGHT 0.56LBS MAX (0.25KGM)

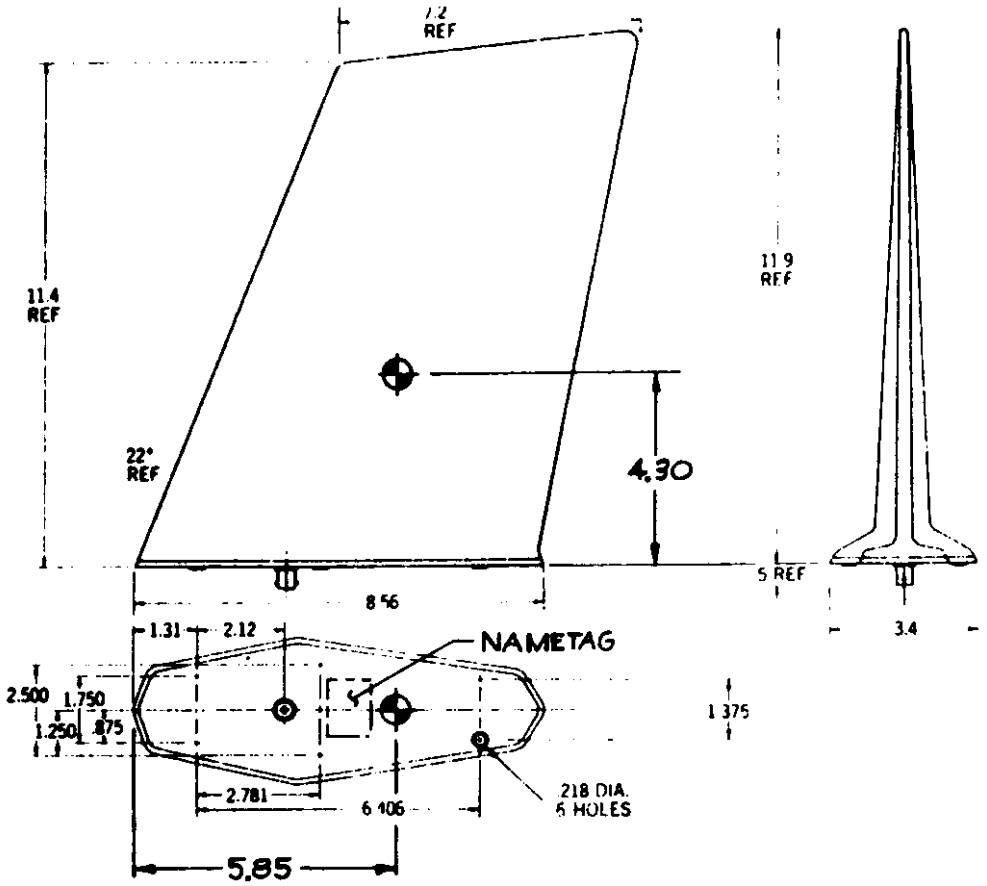
WULFSBERG ELECTRONICS, INC.
TITLE MODULAR HANDSET WITH PTT SWITCH OUTLINE DRAWING
SIZE C
NUMBER 147-0115-000
SHEET 1 OF 1
DRAWN HMR 10/6/80




HS-4 (PTT) MODULAR HANDSET OUTLINE
FIGURE 2.5-8

## RT-7200, RT-9600, AN/ARC-513 (V)

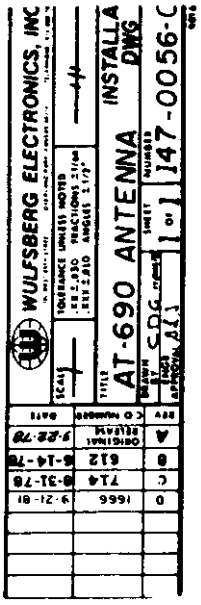


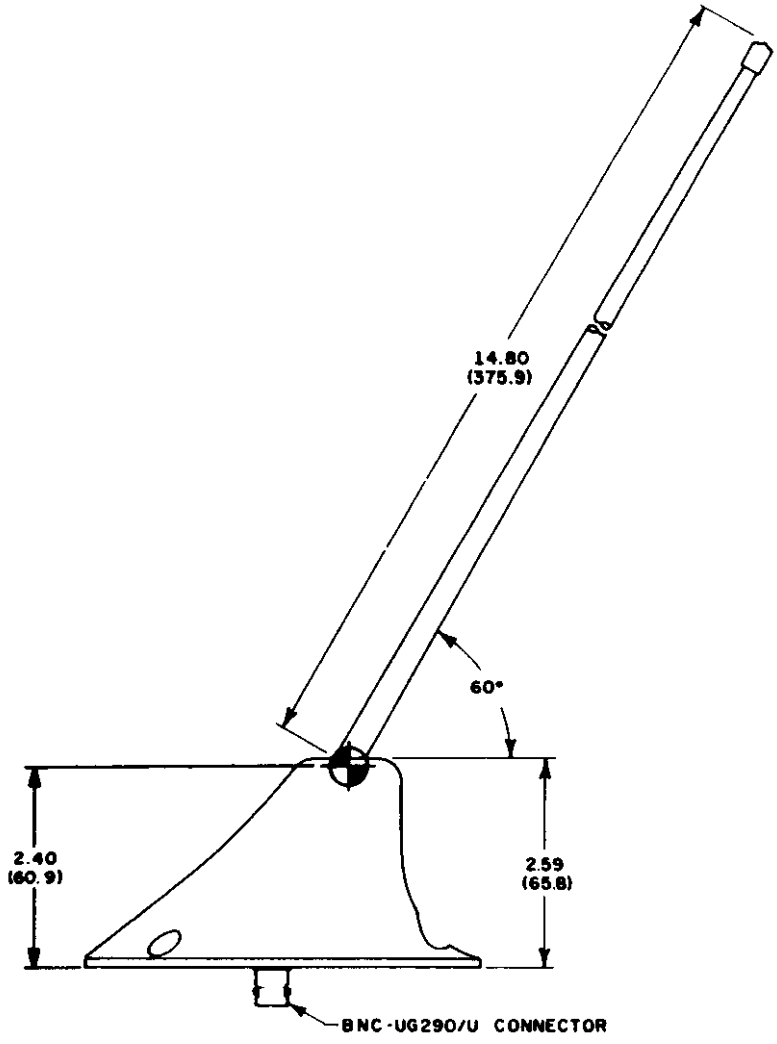

NOTES:

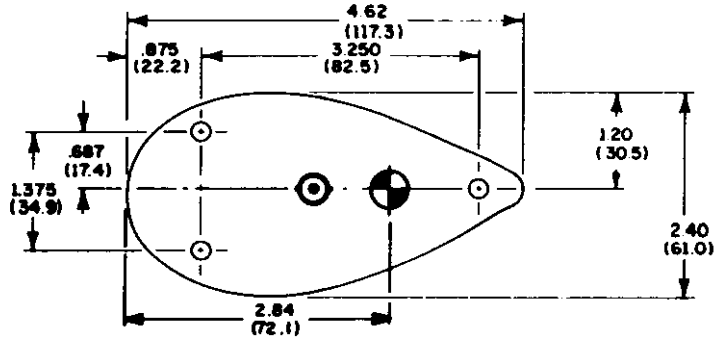
1. Weight-2.5lbs. (1.13Kg)

**AT-31 MOUNTING DIMENSIONS**
FIGURE 2.6-1

## RT-7200, RT-9600, AN/ARC-513 (V)



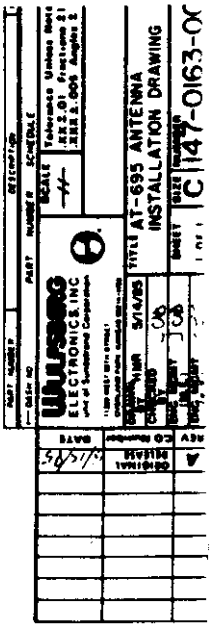



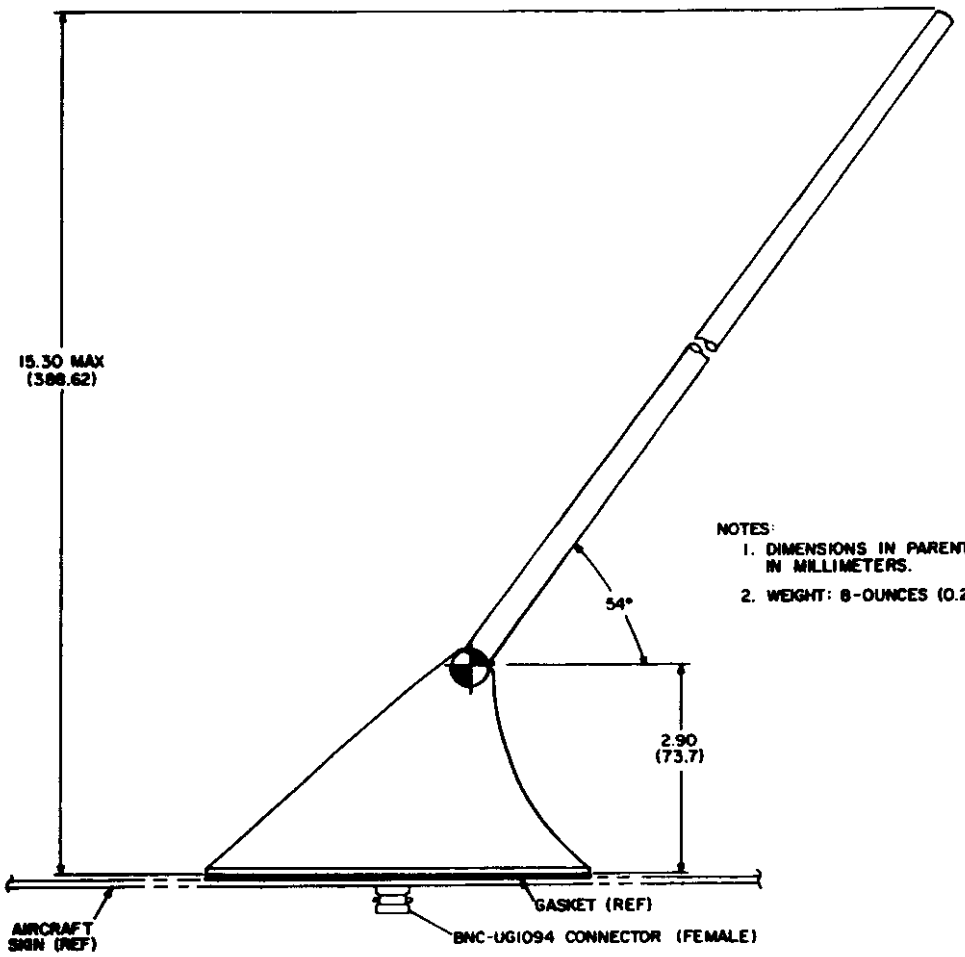




NOTES
1. DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.
2. WEIGHT: 8 OUNCES (0.23Kg) MAX.

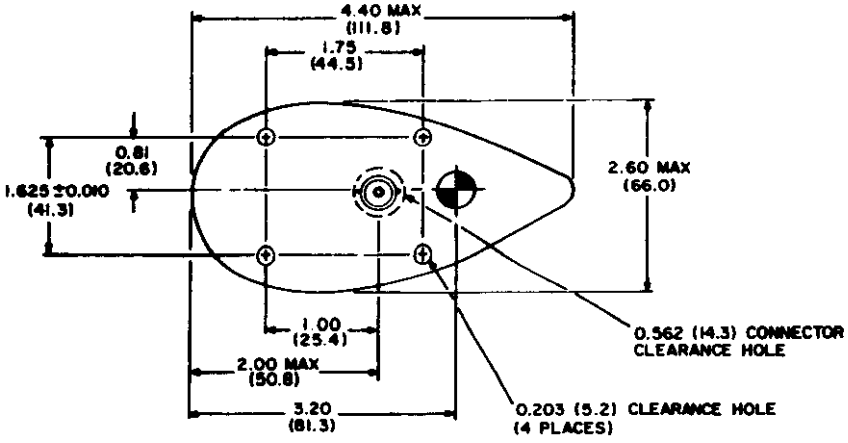
**AT-690 MOUNTING DIMENSIONS**
FIGURE 2.6-2

## RT-7200, RT-9600, AN/ARC-513 (V)




NOTES:
1. DIMENSIONS IN PARENTHESIS ARE IN MILLIMETERS.
2. WEIGHT: 8-OUNCES (0.23KG) MAXIMUM.




**AT-695 MOUNTING DIMENSIONS**
FIGURE 2.6-3

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## 2.7 AVIONICS INSTALLATION WIRING CONSIDERATIONS - TRANSCEIVER SIDE

(Refer to left side of Figures 2.7-1, 2.7-2, and 2.7-3)

### 2.7.1 AUDIO AND SIDETONE HI AND LO (pins 13, 14, 15, and 16)

These wires are provided separately for those systems that have separate transmitter sidetone circuits. They should be paralleled when driving a speaker directly. In the case of the 10 Watt audio rated transceivers, the audio and sidetone outputs (output impedance of 1 ohm or less) are capable of 6.3 VRMS into 4, or more, ohms. In the case of the 100 mW transceivers, the audio and sidetone outputs (output impedance of 600 ohms) are capable of 7.8 VRMS into 600, or more, ohms.

### 2.7.2 DF DISABLE (pin 54)

This line will disable the linear IF inside the unit and provide superior squelch action and sensitivity when connected to airframe ground. It should be permanently grounded at the mounting rack when DF equipment is not installed in the aircraft. If used with DF equipment, this line must be open during Direction Finding operations.

### 2.7.3 DF AUDIO (pin 19)

Provides an audio output for use with DF equipment requiring AM receiver response. With an output impedance of 500 ohms, the DF Audio output can supply 400 mVRMS open circuit with an RF signal modulated 50% at 1000Hz.

When the RT-7200 or RT-9600 is used in conjunction with the Collins DF301E Automatic Direction Finder, knowledge of the Transceiver modulation phase delay at 5.68 kHz is necessary for proper DF301E compensation. This phase information is found on a label on the rear panel of the RT-7200 or RT-9600.

For DF or ADF systems designed to be used in conjunction with FM receivers, use UNSQUELCHED MAIN AUDIO as the audio connection from the transceiver to the DF or ADF unit.

## 2.7 AVIONICS INSTALLATION WIRING CONSIDERATIONS - TRANSCEIVER SIDE (cont.)

### 2.7.4 UNSQUELCHED MAIN AUDIO (pin 12)

Buffered output of the main FM receiver, unaffected by squelch action. Provided for use with external audio decoders. Standard modulation produces 0.58 VRMS into 1 kohm or greater impedance. Do not load this output with less than 600 ohms.

### 2.7.5 UNSQUELCHED GUARD AUDIO (pin 30)

Buffered output for the guard receiver, unaffected by squelch action. Provided for use with external audio decoders. Standard modulation produces 0.58 VRMS into 1 kohm or greater impedance. Do not load this output with less than 600 ohms.

### 2.7.6 MAIN AUDIO INHIBIT (pin 26)

When grounded, will mute audio outputs from the main receiver.

### 2.7.7 EXTERNAL GUARD AUDIO INHIBIT (pin 25)

When grounded, will mute audio outputs for the guard receiver.

### 2.7.8 EXTERNAL CTCSS TONE IN (pin 18)

Provision for modulating the transmitter with audio outside the normal audio frequency range of 300 to 3000 Hz. Approximately 0.3 VRMS will give 5 kHz deviation.

### 2.7.9 TRANSMITTER POWER SELECT (pin 27)

When used with control units not providing transmitter power selector switches, grounding this line at the mounting rack will provide 10 watts of RF output power. The C-920 has this line grounded inside the control unit and will provide 10 watts when used.

### 2.7.10 14 V SWITCHED (pins 65 and 66)

Provision for switched 14 V power from the RT-7200/RT-9600. These pins will provide 14V DC. Exercise caution not to exceed a combined current drain of 500 mA from pins 65 and 66.

## 2.7 AVIONICS INSTALLATION WIRING CONSIDERATIONS - TRANSCEIVER SIDE (cont.)

### 2.7.11 PTT OUT (pin 64)

May be used to key external accessories such as Tone Encoders. This pin is grounded through the microphone PTT switch.

## 2.8 AVIONICS INSTALLATION WIRING CONSIDERATIONS - CONTROL UNIT SIDE

**(Refer to Lower Right Side of Figures 2.7-2 and 2.7-3)**

**NOTE: Pin numbers refer to pins of the control unit connector J2.**

### 2.8.1. EXT RCVR MUTE (pin 13)

This line will disable the main receiver audio output when connected to GND (pin 10). In most installations pin 13 will not be connected.

### 2.8.2 HEADSET AND EXT SPKR (pins 1, 2, 5, and 6)

The HEADSET and EXT SPKR outputs are internally connected together and, consequently, are the same output. They supply both the receiver audio and the sidetone outputs on the same lines.

### 2.8.3 CTCSS IN (pins 3 and 4)

This line is for use with systems requiring tone squelch operation from tone sources external to the transceiver. Input impedance for this line is 1 Kohm with approximately 35 mVRMS providing $\pm$ 500 Hz deviation.

### 2.8.4 RCVR CTCSS OUT TO DECODER (pins 4 and 14)

This line is for use with systems requiring tone squelch operation from tone detectors that are external to the transceiver. The output level is nominally 30 mVRMS in typical CTCSS environments.

## 2.8 AVIONICS INSTALLATION WIRING CONSIDERATIONS - CONTROL UNIT SIDE (cont.)

### 2.8.5 PANEL LIGHTS (pins 12, 15, 16, 17, 18, 22)

Connect pin 17 (used with 5V integral lights control units), pin 15 (used with 14V integral lights control units), or pin 16 (used with 28V integral lights control units) to the appropriate voltage aircraft dimmer circuit. Note that pin 18 is internally paralleled with pin 16 in some control units. Also note the C-920 or C-961 must have its light voltage selector switch in the appropriate position. Additionally note that the C-722 and C-962 DO NOT have integral (bezel) lights but still must have pin 15 or pin 16 (whichever is appropriate to the aircraft dimmer circuit) connected in order to provide the dual intensity feature of the LED frequency display. This feature, also found in the C-962A, provides a bright frequency display when aircraft panel lighting is dim and a dim display when panel lighting is bright.

Connect pin 12 to the aircraft dimmer return or LO circuit. Note that pin 22 is internally paralleled with pin 12 in some control units.

### 2.8.6 AUDIO IN AND PTT (pins 7, 8, and 9)

Connect to aircraft microphone system. To minimize ground current induced noise make sure that pin 9 is grounded to airframe ground as close as possible to the microphone jack ground. Further insure that the AUDIO IN RETURN line and the SHIELD line found on pin 10 of the transceiver connector are not grounded at any other location.

### 2.8.7 DIMMER DISABLE (pin 21)

This line is used when the C-722/C-722A/C-962/C-962A dimmer function is to be overridden. Ground the dimmer disable (pin 21) to hold the frequency display in bright mode.

### 2.8.8 CONTROL POWER (pins 19 and 20) (C-722/C-722A/C-962/C-962A)

Power is fed to the control unit through these lines. Any voltage from 9 to 33V DC will operate the C-722/C-722A/C-962/C-962A. The circuit must be capable of supplying at least 750 mA.

## 2.8 AVIONICS INSTALLATION WIRING CONSIDERATIONS - CONTROL UNIT SIDE (cont.)

### 2.8.9 (DISPLAY ON)' (pin 23) (C-722A/C-962A ONLY)

By grounding this line the LED frequency display will be lit whenever the unit is on. If this line is left open, the LED frequency display will be lit only when PRESET RX or TX is selected.

### 2.8.10 (TW LITES OFF)' (pin 24) (C-722A/C-962A ONLY)

The thumbwheel backlighting is normally lit whenever the unit is on. Grounding this pin will disable the backlighting of the thumbwheels.

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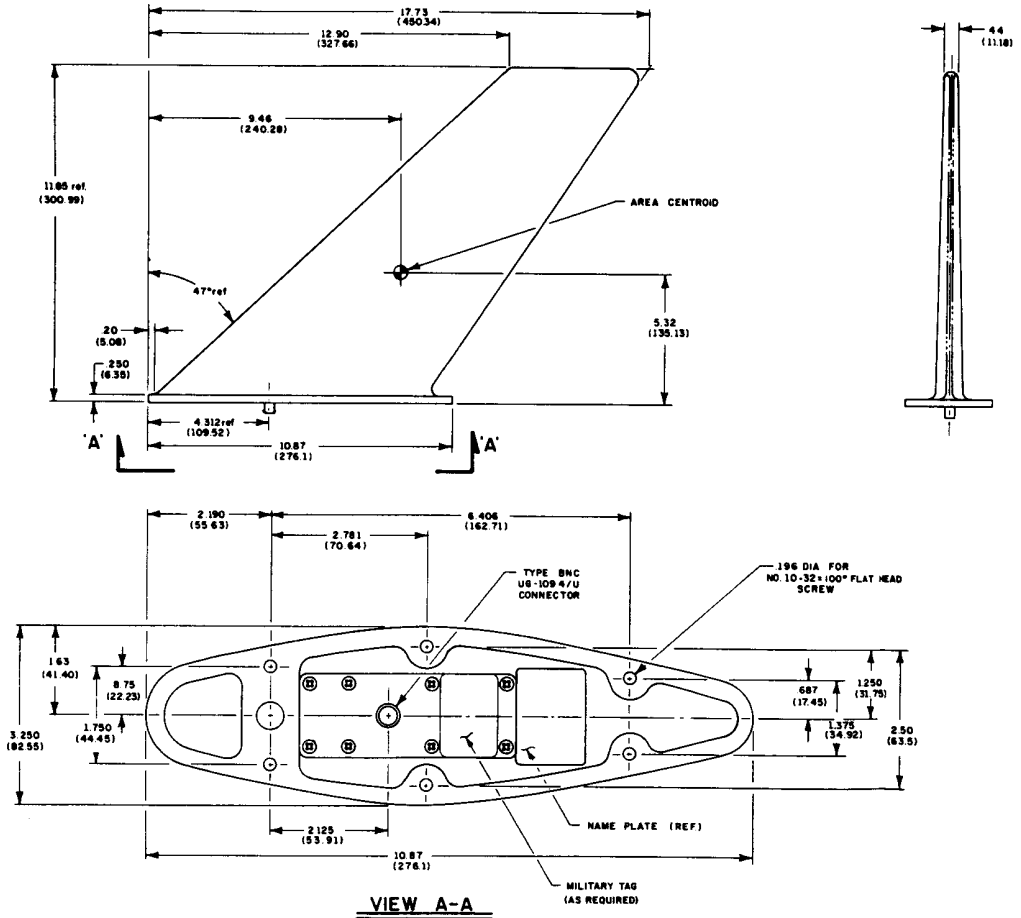



VIEW A-A

AS-5103/ARC-513 (V), AT-960 MOUNTING DIMENSIONS
FIGURE 2.6-4

2-25/26
REV.E

## SPECIFICATIONS

**ELECTRICAL**

| | |
|---|---|
| FREQUENCY | 140 TO 180 MHZ |
| VSWR | 2.0:1 MAX |
| RADIATION PATTERNS | OMNIDIRECTION IN AZIMUTH<br>COSINUSOIDAL IN ELEVATION |
| POLORIZATION | VERTICAL |
| IMPEDANCE | 50 OHMS |
| POWER | 250 WATTS |
| LIGHTNING PROTECTION | DC PATH TO GROUND / MIL-A-9094C |

**MECHANICAL**

| | |
|---|---|
| WEIGHT | 2.8 LBS (1.27Kg) |
| DIMENSIONS | HEIGHT 11.85 INCHES<br>LENGTH 10.87 INCHES<br>WIDTH 3.25 INCHES |
| MATERIAL | A356-T6 ALUMINUM ALLOY CASTING &<br>EPOXY FIBERGLASS |
| FINISH | SKYDROL RESISTANT EPOXY ENAMEL,<br>COLOR-GLOSS WHITE |
| CONNECTOR | TYPE BNC |
| DRAG | M-0.85 AT 35,000 FEET 1.6 LB |

**ENIVIRONMENTAL**

| | |
|---|---|
| TEMPERATURE | -100°F TO +300°F<br>-73°C TO +150°C |
| VIBRATION | 10G's |
| ALTITUDE | UP TO 60,000 FEET |
| SHOCK | 30 G's |
| SIDE LOAD | 12 PSI |

**DESIGNED TO**

MIL: MIL-E-5400H, MIL-E-5272H, MIL-A-7772B(ASG), MIL-A-6271A, MIL-A-9094C
TSO: C37b, C38b

**NOTES:**

1. MIL TYPE NUMBER: AS-5103/ARC-513
2. DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.
3. APPROVED VENDOR: SENSOR SYSTEMS P/N S65-8280-4

MILITARY NOMENCLATURE:
ANTENNA
AS-5103/ARC-513

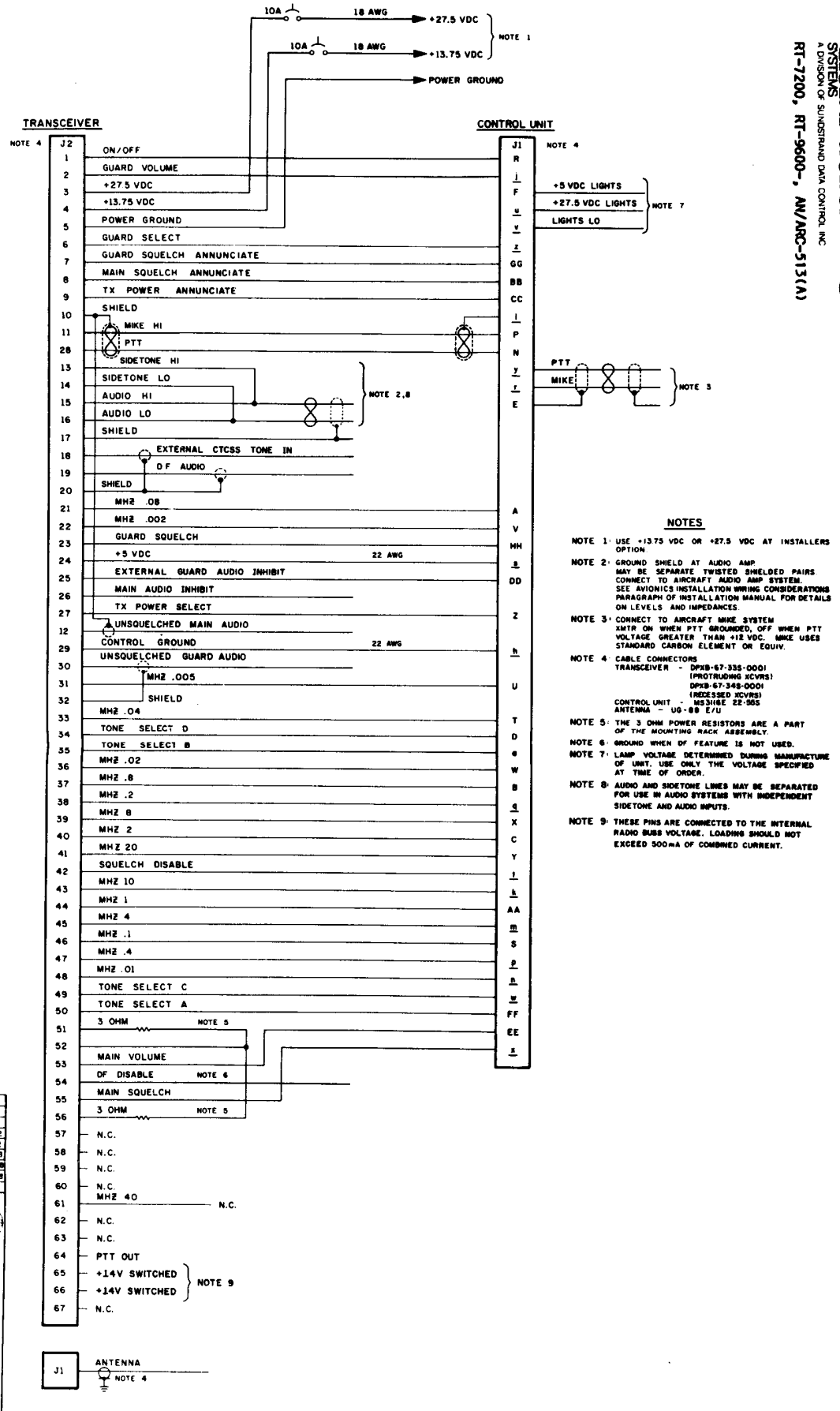
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| G | 1568 | 8-3-82 | | | | | | | |
| F | 1646 | 9-21-81 | | | | | | | |
| D | 1444 | 8-2-79 | | | | | | | |
| C | 362 | 11-9-77 | | | | | | | |
| B | 318 | 9-23-77 | | | | | | | |
| A | ORIGINAL RELEASE | 8-29-77 | | | | | | | |
| REV | | DATE | | | | | | | |

WULFSBERG ELECTRONICS, INC.

SCALE: —
TOLERANCE UNLESS NOTED: .XX ±.030 FRACTIONS ±1/64; .XXX ±.010 ANGLES ±1/2°
TITLE: AT-960 VHF (FM) ANTENNA (140-180 MHZ)
DRAWN BY: CDC
SHEET: 1 of 1
NUMBER: 121-0010-000

RT-9600 TO C-960 AND ARC-513 (V): RT-5052 TO C-5333,
RT-5052 TO C-5368, RT-5052 TO C-5413 INTERCONNECT DIAGRAM
FIGURE 2.7-1

2-33/34
REV.E




## NOTES

NOTE 1: USE +13.75 VDC OR +27.5 VDC AT INSTALLERS OPTION

NOTE 2: GROUND SHIELD AT AUDIO AMP. MAY BE SEPARATE TWISTED SHIELDED PAIRS CONNECT TO AIRCRAFT AUDIO AMP SYSTEM. SEE AVIONICS INSTALLATION WIRING CONSIDERATIONS PARAGRAPH OF INSTALLATION MANUAL FOR DETAILS ON LEVELS AND IMPEDANCES.

NOTE 3: CONNECT TO AIRCRAFT MIKE SYSTEM XMTR ON WHEN PTT GROUNDED, OFF WHEN PTT VOLTAGE GREATER THAN +12 VDC. MIKE USES STANDARD CARBON ELEMENT OR EQUIV.

NOTE 4: CABLE CONNECTORS
TRANSCEIVER - DPXB-67-335-0001 (PROTRUDING XCVRS)
DPXB-67-348-0001 (RECESSED XCVRS)
CONTROL UNIT - MS3116E 22-55S
ANTENNA - UG-88 E/U

NOTE 5: THE 3 OHM POWER RESISTORS ARE A PART OF THE MOUNTING RACK ASSEMBLY.

NOTE 6: GROUND WHEN DF FEATURE IS NOT USED.

NOTE 7: LAMP VOLTAGE DETERMINED DURING MANUFACTURE OF UNIT. USE ONLY THE VOLTAGE SPECIFIED AT TIME OF ORDER.

NOTE 8: AUDIO AND SIDETONE LINES MAY BE SEPARATED FOR USE IN AUDIO SYSTEMS WITH INDEPENDENT SIDETONE AND AUDIO INPUTS.

NOTE 9: THESE PINS ARE CONNECTED TO THE INTERNAL RADIO BUSS VOLTAGE. LOADING SHOULD NOT EXCEED 500mA OF COMBINED CURRENT.

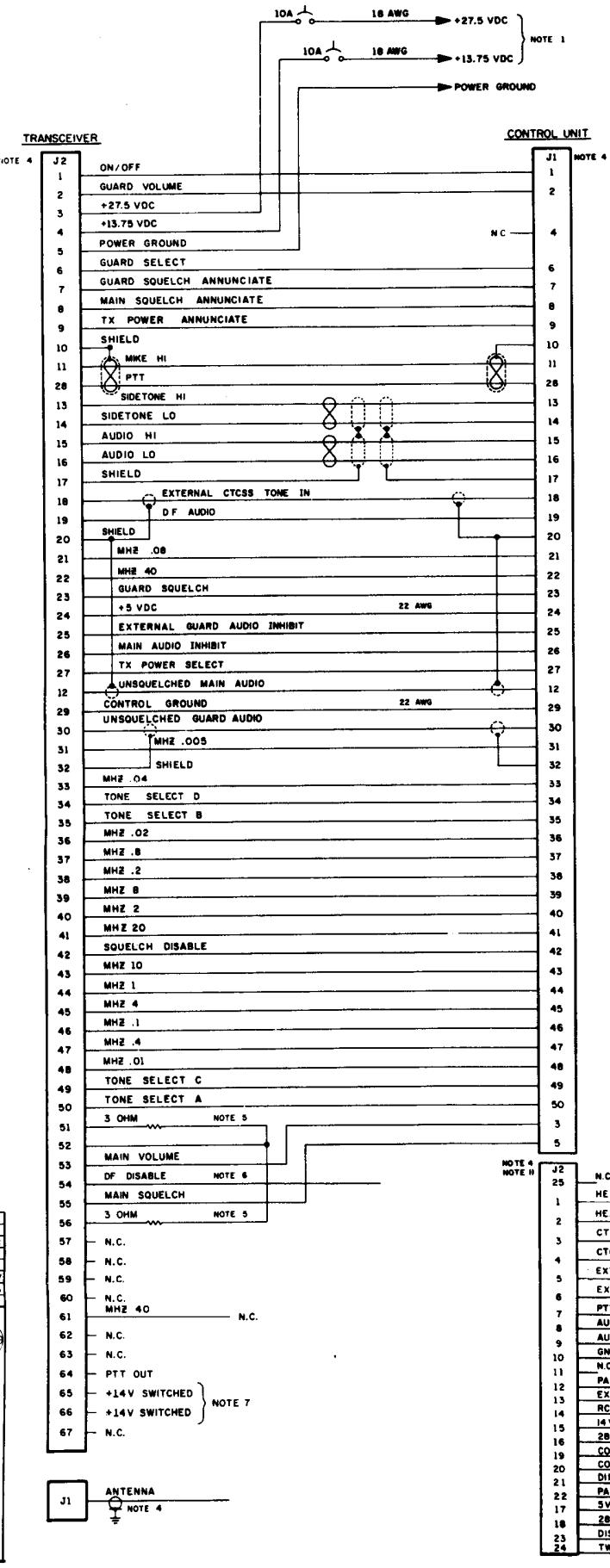
| REV | C.O. NUMBER | DATE |
|---|---|---|
| E | 1925 | 7-16-82 |
| D | 1898 | 6-11-82 |
| C | 749 | 10-5-78 |
| B | 745 | 10-4-78 |
| A | ORIGINAL RELEASE | 3-28-78 |

WULFSBERG ELECTRONICS, INC.
TITLE: RT-9600/C-960 INTERCONNECT DIAGRAM
DRAWN: LJS
SIZE: C
SHEET: 1 of 1
NUMBER: 147-0059-000

# RT-7200 TO C-722/C-722A AND ARC-513 (V): RT-5065 TO C-5422 INTERCONNECT DIAGRAM

FIGURE 2.7-3






NOTES:

1. USE +13.75 VDC OR +27.5 VDC AT INSTALLERS OPTION.
2. CONNECT TO AIRCRAFT AUDIO AMP SYSTEM. SEE AVIONICS INSTALLATION WIRING CONSIDERATIONS PARAGRAPH OF INSTALLATION MANUAL FOR DETAILS ON LEVELS AND IMPEDANCES.
3. CONNECT TO AIRCRAFT MIKE SYSTEM. XMTR ON WHEN PTT GROUNDED, OFF WHEN PTT VOLTAGE GREATER THAN +12 VDC. MIKE USES STANDARD CARBON ELEMENT OR EQUIV.
4. CABLE CONNECTORS
   TRANSCEIVER - DPXB-67-35S-0001 (WULFSBERG IN-97A-2) (PROTRUDING XCVRS)
   DPXB-67-34S-0001 (WULFSBERG IN-96A-2) (RECESSED XCVRS)
   CONTROL UNIT-J1: DD-50S (WULFSBERG IN-722/962-3 SOLDER, IN-722/962-5 CRIMP)
   J2: DB-25S (WULFSBERG IN-722/962-2 SOLDER IN-722/962-4 CRIMP)
   ANTENNA-UG-88 E/U (WULFSBERG P-96)
5. THE 3 OHM POWER RESISTORS ARE A PART OF THE MOUNTING RACK ASSEMBLY.
6. GROUND WHEN DF FEATURE IS NOT USED.
7. THESE PINS ARE CONNECTED TO THE INTERNAL RAIDO BUSS VOLTAGE. LOADING SHOULD NOT EXCEED 500mA OF COMBINED CURRENT.
8. THESE PINS USED ON C-722/C-722A. 9 TO 33 VDC REQUIRED FOR CONTROL POWER. GROUND THE DIMMER DISABLE TO HOLD THE FREQUENCY DISPLAY IN BRIGHT MODE.
9. CONNECT PIN 17 (USED WITH 5V INTEGRAL LIGHTS CONTROL UNITS), PIN 15 (USED WITH 14V INTEGRAL LIGHTS CONTROL UNITS), OR PIN 16 (USED WITH 28 V INTEGRAL LIGHTS CONTROL UNITS) TO THE APPROPRIATE VOLTAGE AIRCRAFT DIMMER CIRCUIT. NOTE THAT PIN 16 IS INTERNALLY PARALLELED WITH PIN 16 IN SOME CONTROL UNITS. ALSO NOTE THAT THE C-722 ONLY DOES NOT HAVE INTEGRAL BEZEL) LIGHTS BUT STILL MUST HAVE PIN 15 OR PIN 16 (WHICHEVER IS APPROPRIATE TO THE AIRCRAFT DIMMER CIRCUIT) CONNECTED IN ORDER TO PROVIDE THE DUAL INTENSITY FEATURE OF THE LED FREQUENCY DISPLAY. THIS FEATURE, ALSO FOUND IN THE C-722A, PROVIDES A BRIGHT FREQUENCY DISPLAY WHEN AIRCRAFT PANEL LIGHTING IS DIM AND A DIM DISPLAY WHEN PANEL LIGHTING IS BRIGHT.
10. CONNECT PIN 12 TO THE AIRCRAFT DIMMER RETURN OR LO CIRCUIT. NOTE THAT PIN 22 IS INTERNALLY PARALLELED WITH PIN 12 IN SOME CONTROL UNITS.
11. C-722 ONLY; PINS 17,18,22,23,24 AND 25 ARE NOT USED.
12. LEAVE THIS WIRE NOT CONNECTED IF ACTIVATION OF THE LED FREQUENCY DISPLAY IS DESIRED ONLY WHEN THE PRESET RX/TX SWITCH IS OPERATED. (THIS FEATURE IS NOT AVAILABLE IN THE C-722.) GROUND THIS WIRE IF C-722A CONTINUOUSLY ACTIVE FREQUENCY DISPLAY IS DESIRED.
13. GND THIS PIN TO SHUT OFF THUMBWHEEL BACKLIGHTING. (THIS FEATURE AVAILABLE IN THE C-722A ONLY.)

| REV | C.O. NUMBER | DATE |
|---|---|---|
| E | 8080 | 11-9-82 |
| D | 7925 | 7-16-82 |
| C | 7898 | 6-11-82 |
| B | 1743 | 12-22-81 |
| A | ORIGINAL RELEASE | 11/5/80 |

WULFSBERG ELECTRONICS, INC.

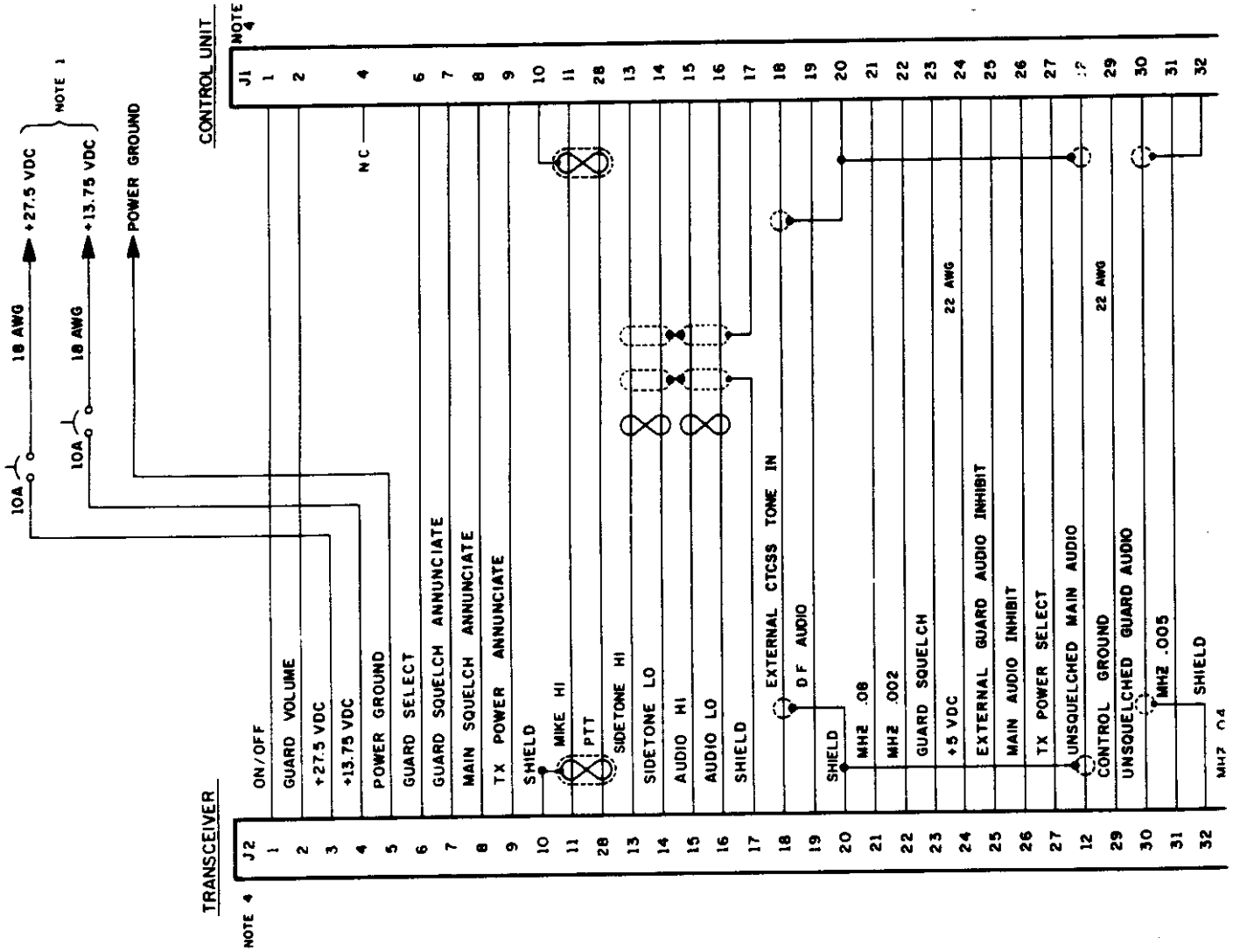
TITLE: RT-7200/C-722/C-722A INTERCONNECT DIAGRAM

SIZE: D | SHEET 1 OF 1 | DRAWING NO. 147-0108-000

# RT-7200, RT-9600-, AN/ARC-513(A)

NOTES:

1. USE +13.75 VDC OR +27.5 VDC AT INSTALLERS OPTION.
2. CONNECT TO AIRCRAFT AUDIO AMP SYSYTEM. SEE AVIONICS INSTALLATION WIRING CONSIDERATIONS PARAGRAPH OF INSTALLATION MANUAL FOR DETAILS ON LEVELS AND IMPEDANCES.
3. CONNECT TO AIRCRAFT MIKE SYSTEM. XMTR ON WHEN PTT GROUNDED, OFF WHEN PTT VOLTAGE GREATER THAN +12 VDC. MIKE USES STANDARD CARBON ELEMENT OR EQUIV.
4. CABLE CONNECTORS
   TRANSCEIVER - DPXB-67-333-0001 (WULFSBERG IN-97A, (PROTRUDING XCVRS)
   DPXB-67-343-0001 (WULFSBERG IN-96A? (RECESSED XCVRS)
   CONTROL UNIT-MDD-503 (WULFSBERG IN-722/962-3 SOLDER IN-722/962-5 CRIMP)
   J2:DB-25B (WULFSBERG IN-722/962-2 SOLDER, IN-722/962-4 CRIMP)
   ANTENNA-UG-88 E/U (WULFSBERG P-961)
5. THE 3 OHM POWER RESISTORS ARE A PART OF THE MOUNTING RACK ASSEMBLY.
6. GROUND WHEN DF FEATURE IS NOT USED.
7. THESE PINS ARE CONNECTED TO THE INTERNAL RADIO BUSS VOLTAGE. LOADING SHOULD NOT EXCEED 500mA OF COMBINED CURRENT.
8. THESE PINS USED ON C-962/C-962A ONLY 9 TO 33 VDC REQUIRED FOR CONTROL POWER. GROUND THE DIMMER DISABLE TO HOLD THE FREQUENCY DISPLAY IN BRIGHT MODE
9. CONNECT PIN 17 (USED WITH 5V INTEGRAL LIGHTS CONTROL UNITS). PIN 15 (USED WITH 14V INTEGRAL LIGHTS CONTROL UNITS), OR PIN 16 (USED WITH 28V INTEGRAL LIGHTS CONTROL UNITS) TO THE APPROPRIATE VOLTAGE AIRCRAFT DIMMER CIRCUIT. NOTE THAT PIN 18 IS INTERNALLY PARALLELED WITH PIN 16 IN SOME CONTROL UNITS. ALSO NOTE THAT THE C-920 OR C-961 MUST HAVE ITS LIGHT VOLTAGE SELECTOR SWITCH IN THE APPROPRIATE POSITION. ADDITIONALLY NOTE THAT THE C-962 ONLY DOES NOT HAVE INTEGRAL (BEZEL) LIGHTS BUT STILL MUST HAVE PIN 15 OR PIN 16 (WHICHEVER IS APPROPRIATE TO THE AIRCRAFT DIMMER CIRCUIT) CONNECTED IN ORDER TO PROVIDE THE DUAL INTENSITY FEATURE OF THE LED FREQUENCY DISPLAY. THIS FEATURE, ALSO FOUND IN THE C-962A, PROVIDES A BRIGHT FREQUENCY DISPLAY WHEN AIRCRAFT PANEL LIGHTING IS DIM AND A DIM DISPLAY WHEN PANEL LIGHTING IS BRIGHT.
10. CONNECT PIN 12 TO THE AIRCRAFT DIMMER RETURN OR LO CIRCUIT. NOTE THAT PIN 22 IS INTERNALLY PARALLELED WITH PIN 12 IN SOME CONTROL UNITS.
11. C-961/C-920/C-962 J2 PINS 17,18,22,23,24 & 25 ARE NOT USED.
12. LEAVE THIS WIRE NOT CONNECTED IF ACTIVATION OF THE LED FREQUENCY DISPLAY IS DESIRED ONLY WHEN THE PRESET RX/TX SWITCH IS OPERATED. (THIS FEATURE IS NOT AVAILABLE IN THE C-962.) GROUND THIS WIRE IF C-962A CONTINUOUSLY ACTIVE FREQUENCY DISPLAY IS DESIRED. THIS NOTE DOES NOT APPLY TO THE C-920 OR C-961.
13. GND THIS PIN TO SHUT OFF THUMBWHEEL BACKLIGHTING (THIS FEATURE AVAILABLE IN THE C-962A ONLY).




RT-9600 TO C-920, RT-9600 TO C-961, RT-9600 TO C-962/C-962A AND ARC-513 (V): RT-5052 TO C-5421 INTERCONNECT DIAGRAM
FIGURE 2.7-2

2-35/36
REV.E