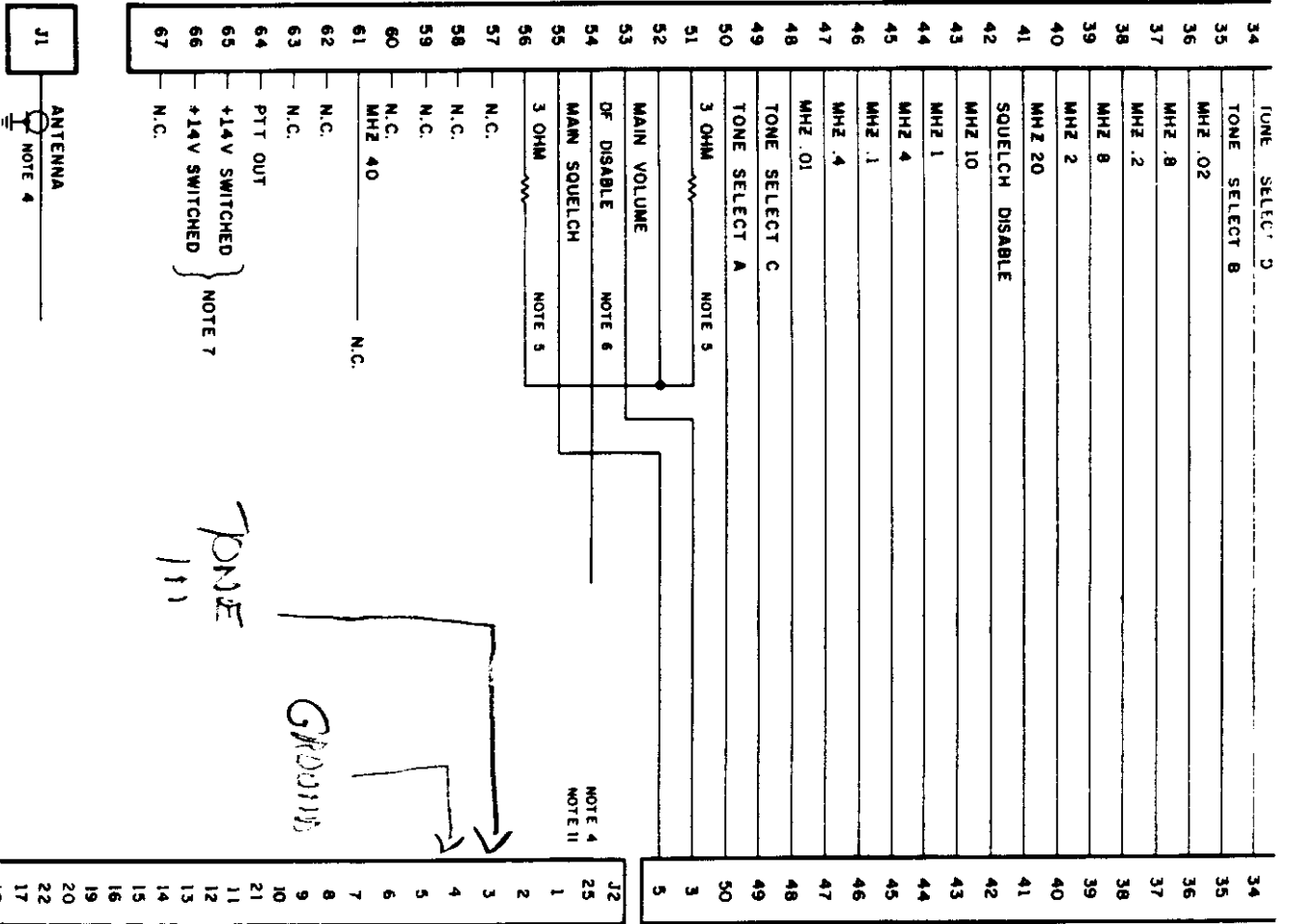


N	1000	11-9-82
M	1025	1-10-82
L	1050	6-11-82
K	1075	12-12-81
J	1100	5-20-80
I	1125	11-29-78
H	1150	10-9-78
G	1175	7-3-78
F	1200	3-16-78
E	1225	2-28-78
D	1250	12-6-77
C	1275	11-30-77
B	1300	8-29-77
A	1325	8-29-77
REV	CO NUMBER	DATE
SCALE		
WULFSBERG ELECTRONICS, INC.		
147-0049-000		
10-1		
147-0049-000		
147-0049-000		



34	TONE SELECT D
35	TONE SELECT B
36	MHZ .02
37	MHZ .8
38	MHZ .2
39	MHZ 8
40	MHZ 2
41	MHZ 20
42	SQUELCH DISABLE
43	MHZ 10
44	MHZ 1
45	MHZ 4
46	MHZ .1
47	MHZ .4
48	MHZ .01
49	TONE SELECT C
50	TONE SELECT A
51	3 OHM
52	MAIN VOLUME
53	OF DISABLE
54	MAIN SQUELCH
55	3 OHM
56	N.C.
57	N.C.
58	N.C.
59	N.C.
60	N.C.
61	MHZ 40
62	N.C.
63	N.C.
64	PTT OUT
65	+14V SWITCHED
66	+14V SWITCHED
67	N.C.

34	N.C.
35	HEADSET
36	HEADSET RETURN
37	CTCSS IN
38	CTCSS RETURN
39	EXT SPEAKER (4 OHM MIN.)
40	EXT SPKR RETURN
41	PTT
42	AUDIO IN
43	AUDIO IN RETURN
44	GND
45	DIMMER DISABLE
46	N.C.
47	PANEL LITE RTN
48	EXT RCVR MUTE
49	RCVR CTCSS OUT
50	14V PANEL LITES
51	28V PANEL LITES
52	CONTROL POWER
53	PANEL LITE RTN
54	5V PANEL LITES
55	28V PANEL LITES
56	DISPLAY ON
57	TW LITES OFF

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

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 rigdmount 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 rigdmount 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 equivalent 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.

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

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

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

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.

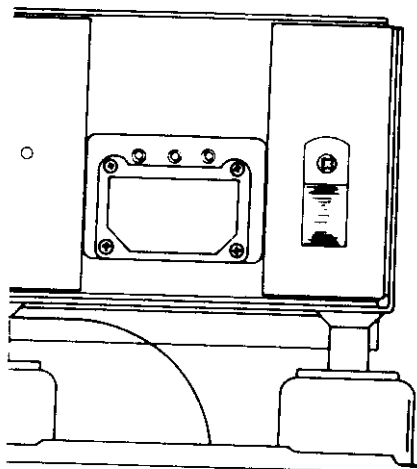
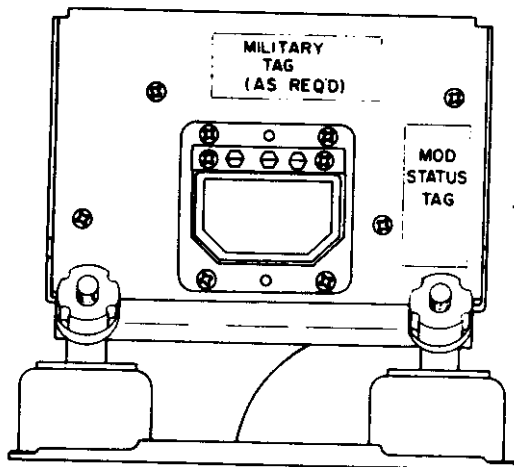
RT-7200, RT-9600, AN/ARC-513 (V)

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.

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



NOTES:

1. DIMENSIONS IN PARENTHESES
 MILLIMETERS.

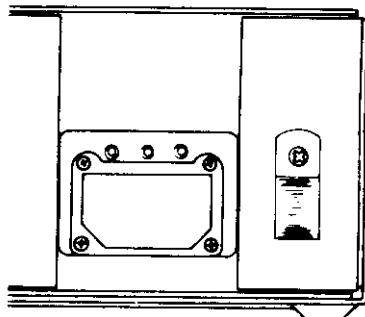
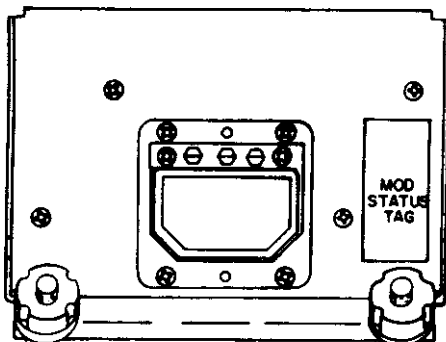
ARY NOMENCLATURE:
 TING BASE, ELECTRICAL EQUIPMENT
 178/ARC-513

MT-5178/ARC-513 (V) IN96/IN97 SHOCK
 FIGURE 2.3-1

 WULFSBERG ELECTRONICS, INC.		SCALE 		TOLERANCES UNLESS NOTED XX ± .030 FRACTIONS 3/16" XXX ± .010 ANGLES 3/16"	
		TITLE SHOCK MOUNT OUTLINE DWG. RT-9600			
DRAWN BY CDC	CHECKED BY CDC	SHEET 1 of 1	NUMBER 147-0069		

151-0016 REV

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



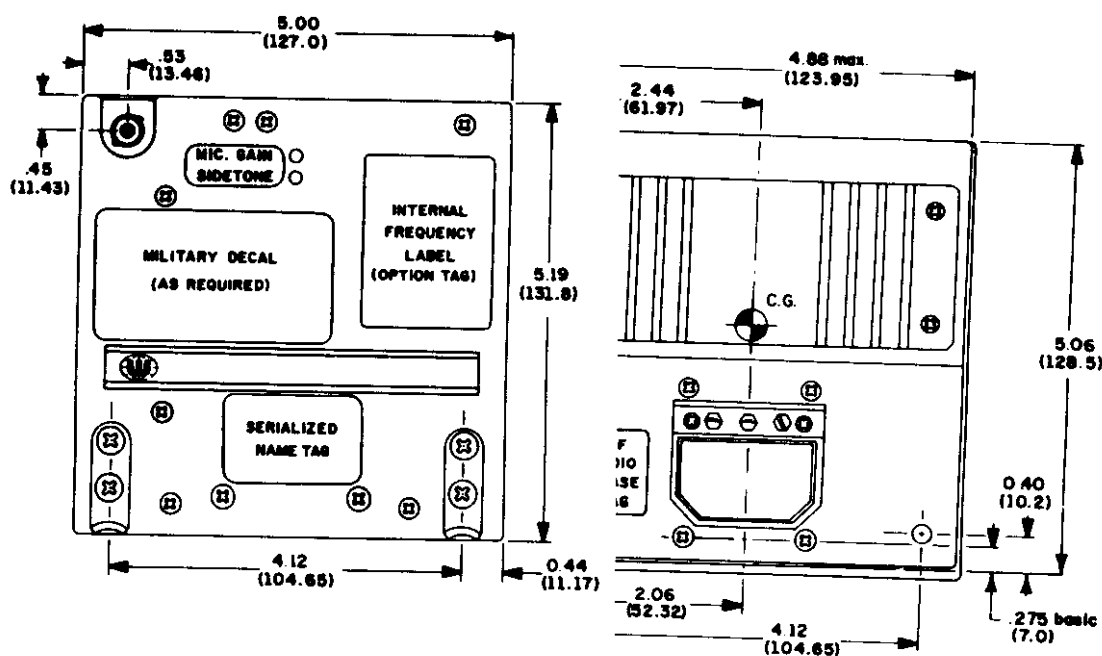
NOTES

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

**IN96A/IN97A RIGIDMOUNT
 FIGURE 2**

 WULFSBERG ELECTRONICS, INC.		SCALE: $\frac{1}{2}$		TOLERANCE UNLESS NOTED FRACTIONS 2/16 ANGLES 1-1/2°	
		TITLE IN-96A/IN-97A OUTLINE DRAWING			
C 1/28 B 1/82 A 4/23/82 ORIGINAL DATE	EIT CO NUMBER	DRAWN HMR BY APPROVAL	4/82 1 of 1	SHEET NUMBER D 147-0137-000	151-0010 REV 0

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



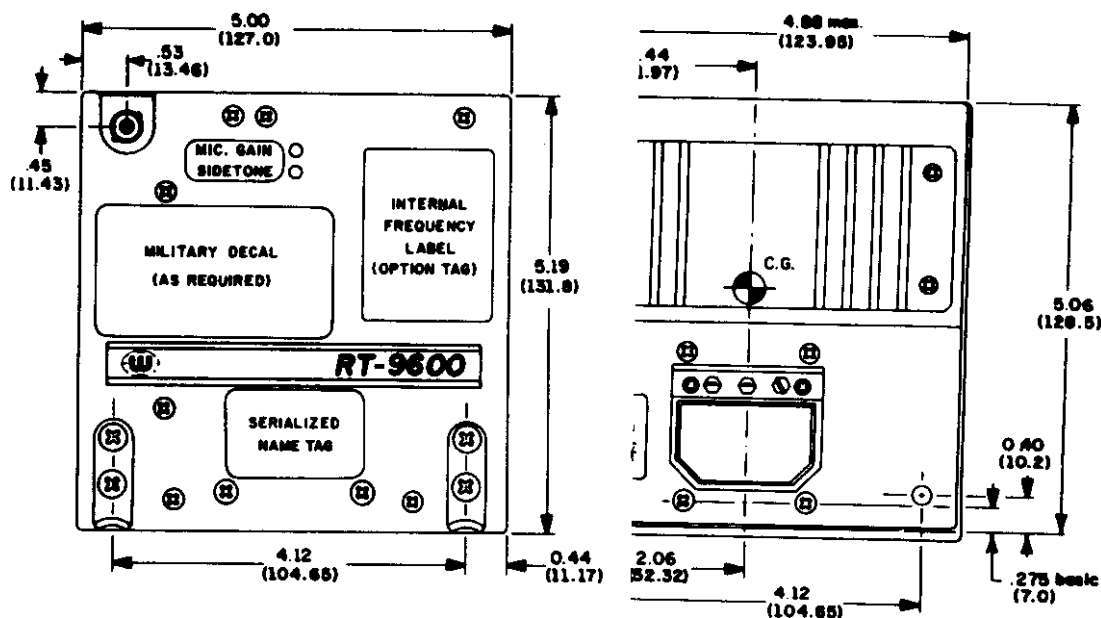
NOTES:

1. DIMENSIONS IN PARENT
2. UNIT CONNECTORS:
ANTENNA: UG-101
REAR: DPXB-

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

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

WULFSBERG ELECTRONICS, INC.	
SCALE	TOLERANCE UNLESS NOTED
1:1	FRACTIONS 2/64
1:1	ANGLES 1/8"
TITLE	
OUTLINE DWG.	
VHF FM TRANSCEIVER	
DRAWN BY	CHECKED BY
LJS	CCG
SHEET	NUMBER
1 OF 1	147-0046-000



NOTES:

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

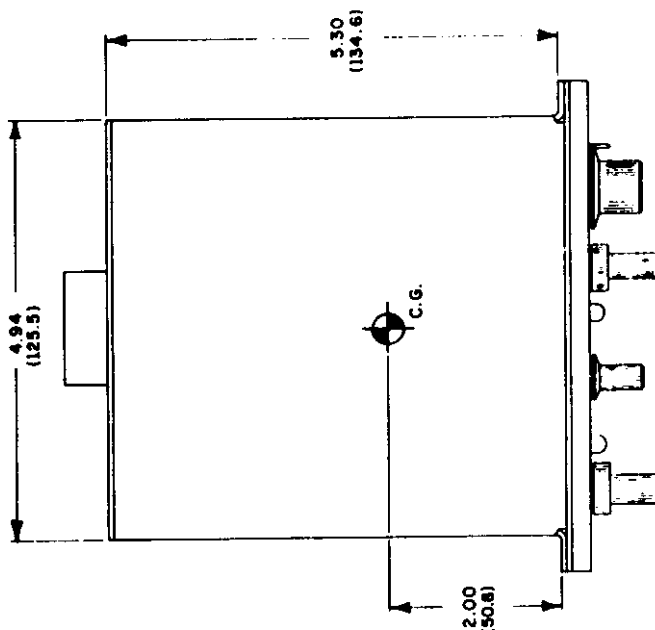
RT-9600 (WITH PROTRUDING CON)
FIGURE

604		8-2-78		DATE	
4		3-28-78		DATE	
REV		K.O. NUMBER		SCALE	
1		1		TOLERANCE UNLESS NOTED .25 ± .02 FRACTIONS 2/164 .005 ± .005 ANGLES ± 1/2°	
TITLE		OUTLINE DWG. RT-9600 (PROTRUDING CONNECTOR)			
DESIGN		LJS		SHEET NUMBER	
CHECK		1 of 1		147-0060	

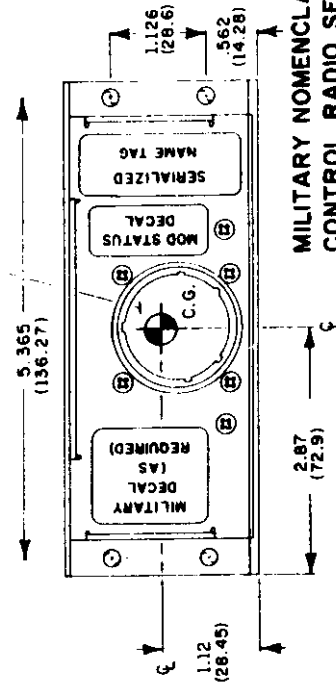
RT-7200, RT-9600, AN/ARC-513 (V)

NOTES:

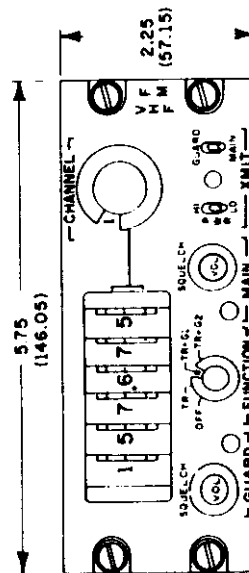
1. ALLOW 4.00 INCHES BEHIND UNIT FOR CONNECTOR COUPLING.
2. DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.



PTO 2E-22-55P OR EQUIV.



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



FREQUENCY PROGRAM LABEL
 ON COVER. LOGO TO REAR OF UNIT.

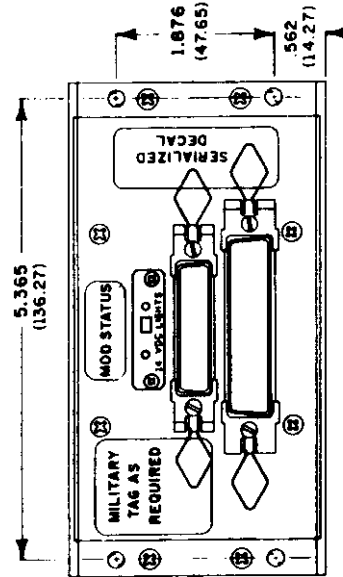
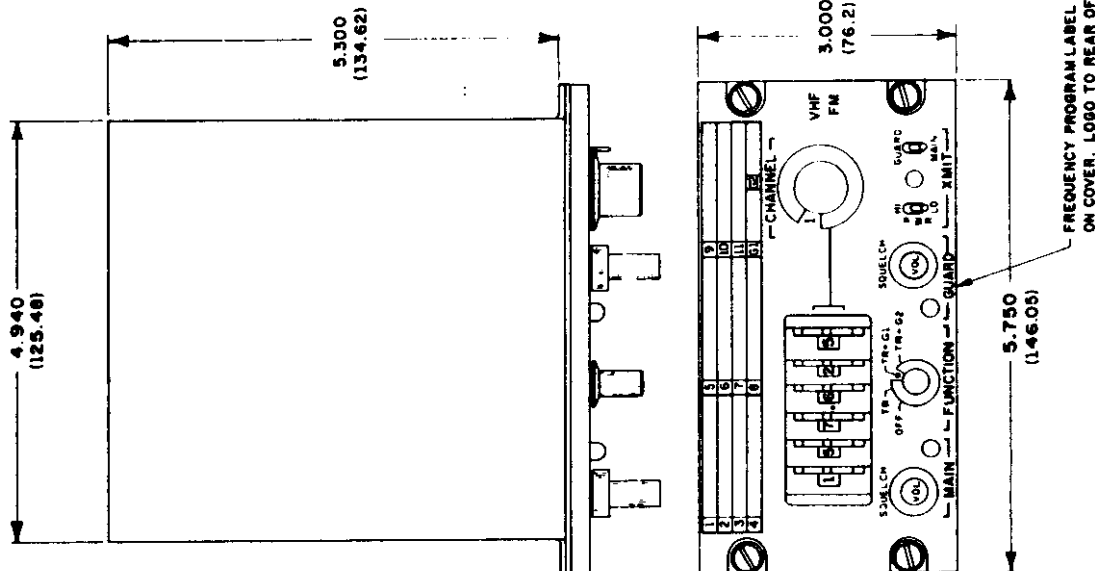
WULFSBERG ELECTRONICS, INC.	
SCALE	TOLERANCE UNLESS NOTED
1:1	FRACTIONS 2/100
1:1	DECIMALS 2/100
TITLE	
OUTLINE DWG. C-960	
CONTROL UNIT	
REV	DATE
1	147-0048
2	147-0048
3	147-0048
4	147-0048
5	147-0048
6	147-0048
7	147-0048
8	147-0048
9	147-0048
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91	147-0048
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96	147-0048
97	147-0048
98	147-0048
99	147-0048
100	147-0048

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

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.

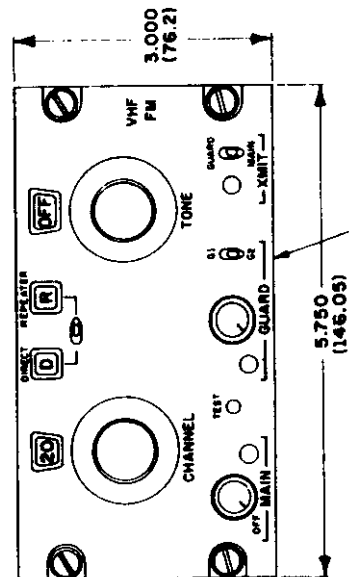
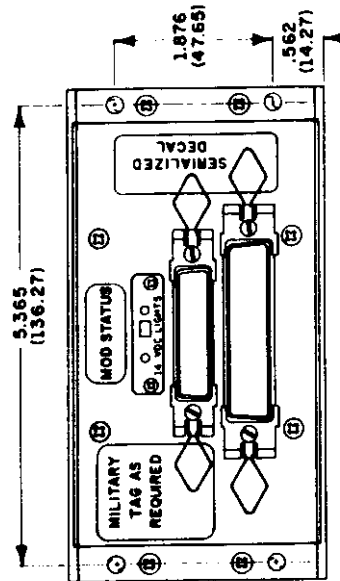
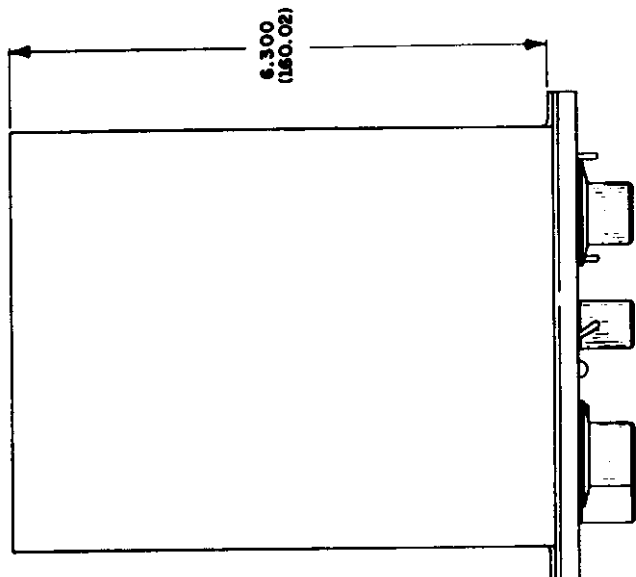


WULFSBERG ELECTRONICS, INC.	
SCALE	CONTRACT NUMBER
1:1	RT-7200
1:1	RT-9600
1:1	AN/ARC-513
TITLE	
OUTLINE DIMS. C-961	
DATE	REVISION
10/1/78	1
10/1/78	2
10/1/78	3
10/1/78	4
10/1/78	5
10/1/78	6
10/1/78	7
10/1/78	8
10/1/78	9
10/1/78	10
10/1/78	11
10/1/78	12
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10/1/78	19
10/1/78	20
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10/1/78	97
10/1/78	98
10/1/78	99
10/1/78	100

C-961 OUTLINE DIMENSIONS
FIGURE 2.5-2

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

NOTES:
 1. DIMENSIONS IN PARENTHESES ARE MILLIMETERS.



FREQUENCY PROGRAM LABEL
 ON COVER. LOGO TO REAR
 OF UNIT.

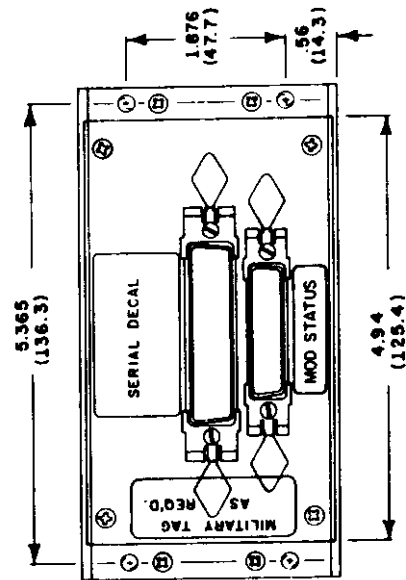
C-920 OUTLINE DIMENSIONS
FIGURE 2.5-3

2-15
REV.E

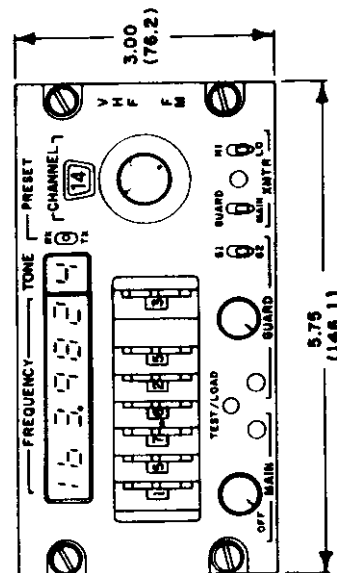
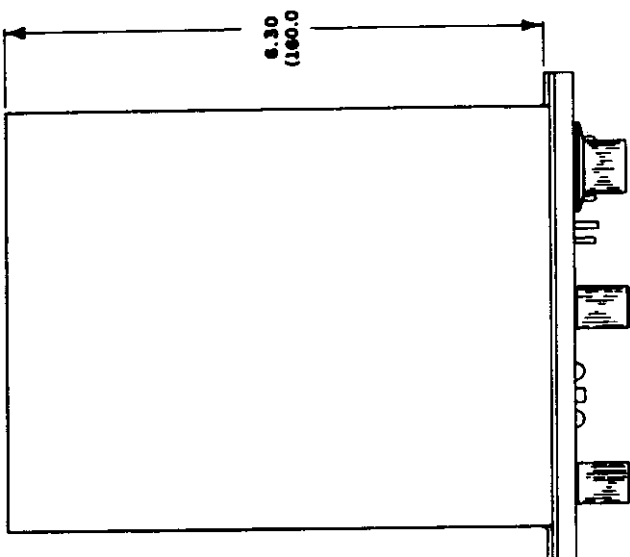
 WULFSBERG ELECTRONICS, INC.		SCALE	TOLERANCE UNLESS NOTED	DATE
			FRACTIONS 2/100	8-20-78
			DECIMALS 2/100	8-2-78
			ANGLES 1/10	
CONTROL UNIT		DESIGN	10.1	147-0054
C-920 OUTLINE DWG.		REVISION		
		APPROVAL		

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

NOTES:
 1. DIMENSIONS IN PARENTHESES ARE MILLIMETERS.



 WULFSBERG ELECTRONICS, INC.		TOLERANCE UNLESS NOTED FRACTIONS 3/16" DECIMALS .015 ANGLES 1/16"		DATE	
SCALE	1" = 1"	REVISION	1	DATE	10-79
TITLE		C-962 OUTLINE DRAWING			
DRAWN BY		C.D.J.			
CHECKED BY		1 of 1			
PART NUMBER		147-0084-000			
REV		0			



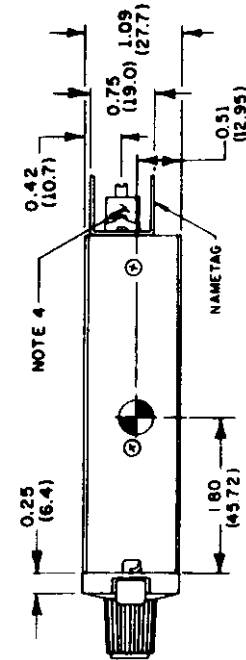
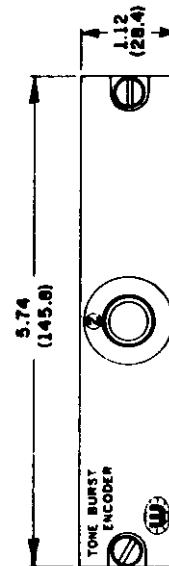
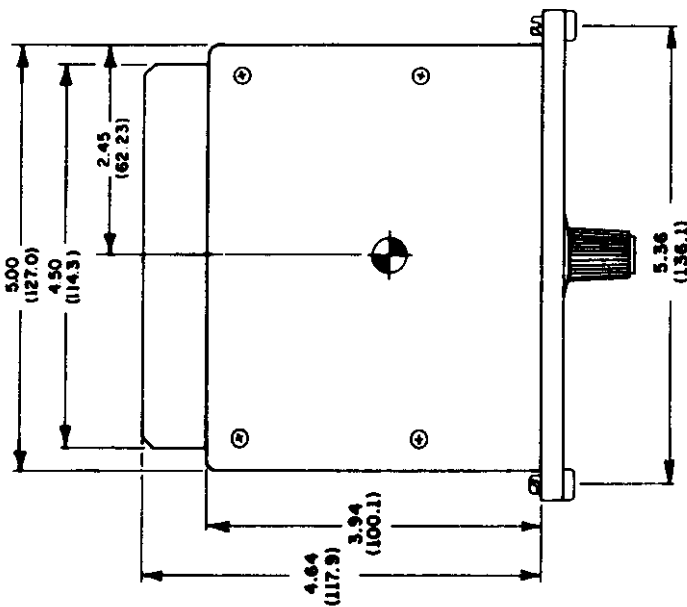
C-722, C-962 AND ARC-513 (V); C-5421, C-5422 OUTLINE DIMENSIONS
 FIGURE 2.5-4

[illegible]

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

NOTES:

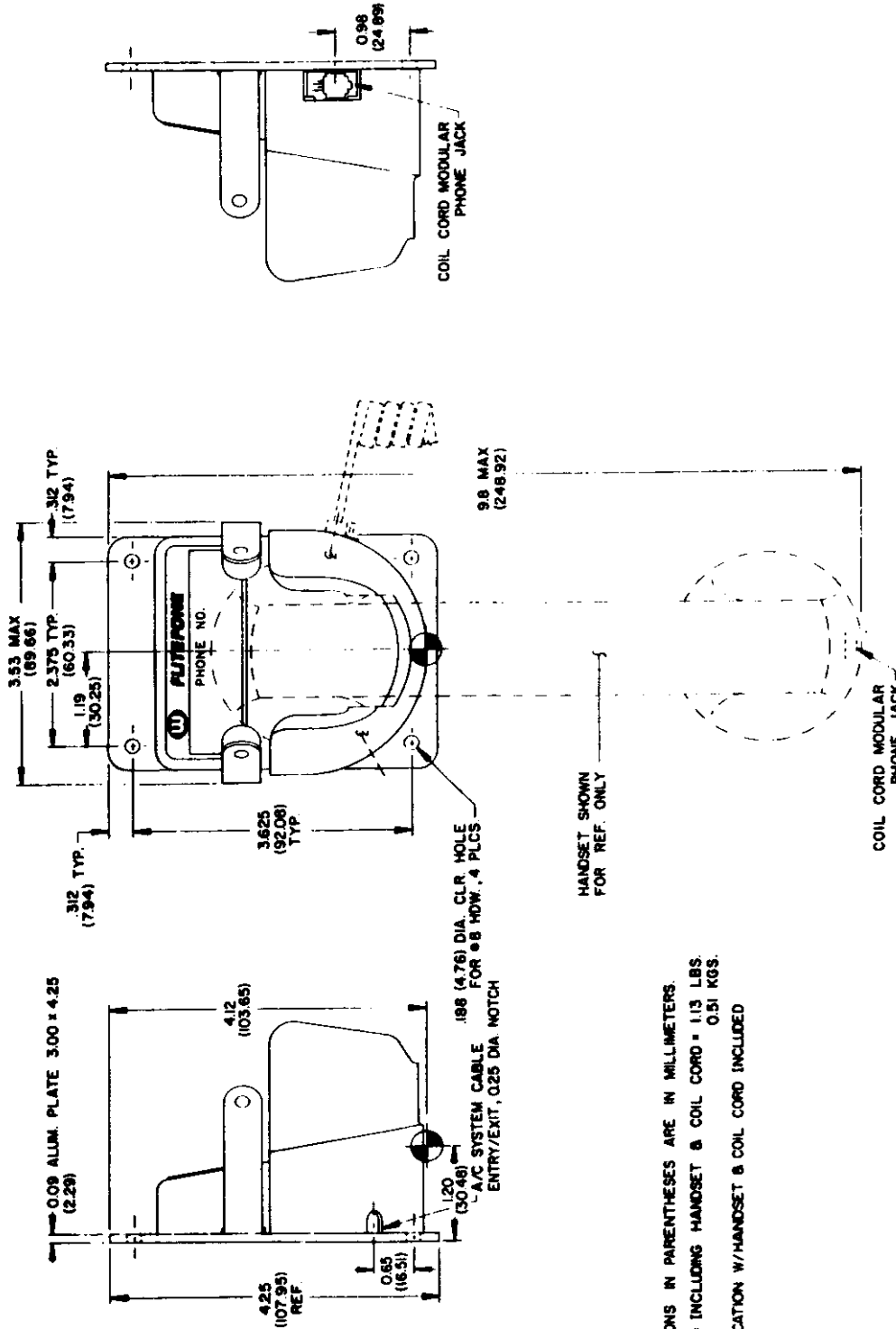
1. ALLOW 4 INCHES BEHIND UNIT FOR CONNECTOR COUPLING.
2. DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.
3. WEIGHT: 0.75 LBS (0.34 KG).
4. MATING CONNECTOR: POSITRONICS GM9F-SCGJ-VL OR EQUIVALENT.



WULFSBERG ELECTRONICS, INC.		C-963	
DATE	10-29-78	SCALE	1" = 1"
DESIGNED BY	18-57-18	FRACCTIONS	2 1/4"
DRAWN BY	18-57-18	ANGLES	3 1/2"
CHECKED BY	18-57-18		
APPROVED BY	18-57-18		
TONE BURST UNIT OUTLINE DWG.		147-0073-000	
1 of 1		147-0073-000	

C-963 OUTLINE DIMENSIONS
FIGURE 2.5-6

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



PART NUMBER		SCHEDULE	
147-0128-000		147-0128-000	
WULFSBERG ELECTRONICS, INC.		WULFSBERG ELECTRONICS, INC.	
TOLERANCE UNLESS NOTED: FRACTIONS ±.01 DECIMALS ±.005		TOLERANCE UNLESS NOTED: FRACTIONS ±.01 DECIMALS ±.005	
HA-4 HANGER INSTALLATION DWG.		HA-4 HANGER INSTALLATION DWG.	
SHEET 1 OF 1		SHEET 1 OF 1	
147-0128-000		147-0128-000	

HA-4 HANGER OUTLINE DIMENSIONS
FIGURE 2.5-7

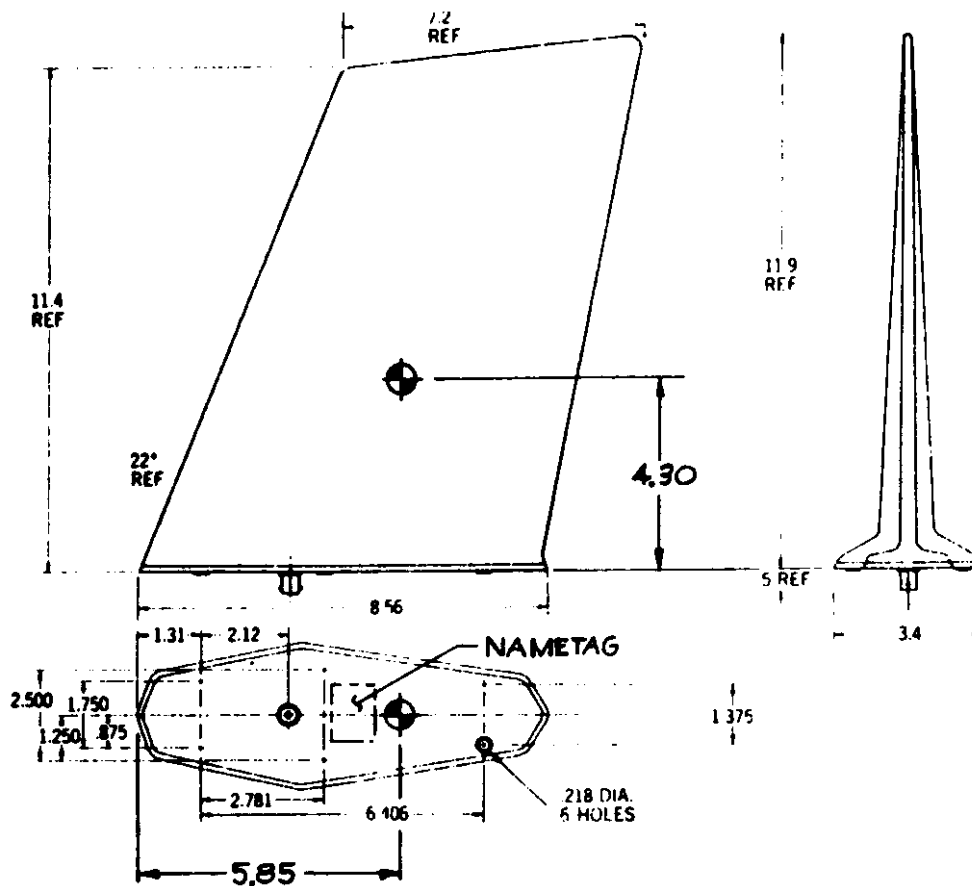
NOTES:

- 1 DIMENSIONS IN PARENTHESIS ARE IN MILLIMETERS
- 2 WEIGHT 0.56 LBS MAX (0.25KGM)



2-20
REV. E

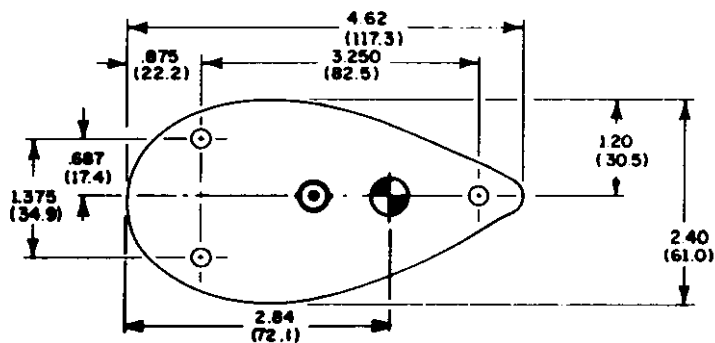
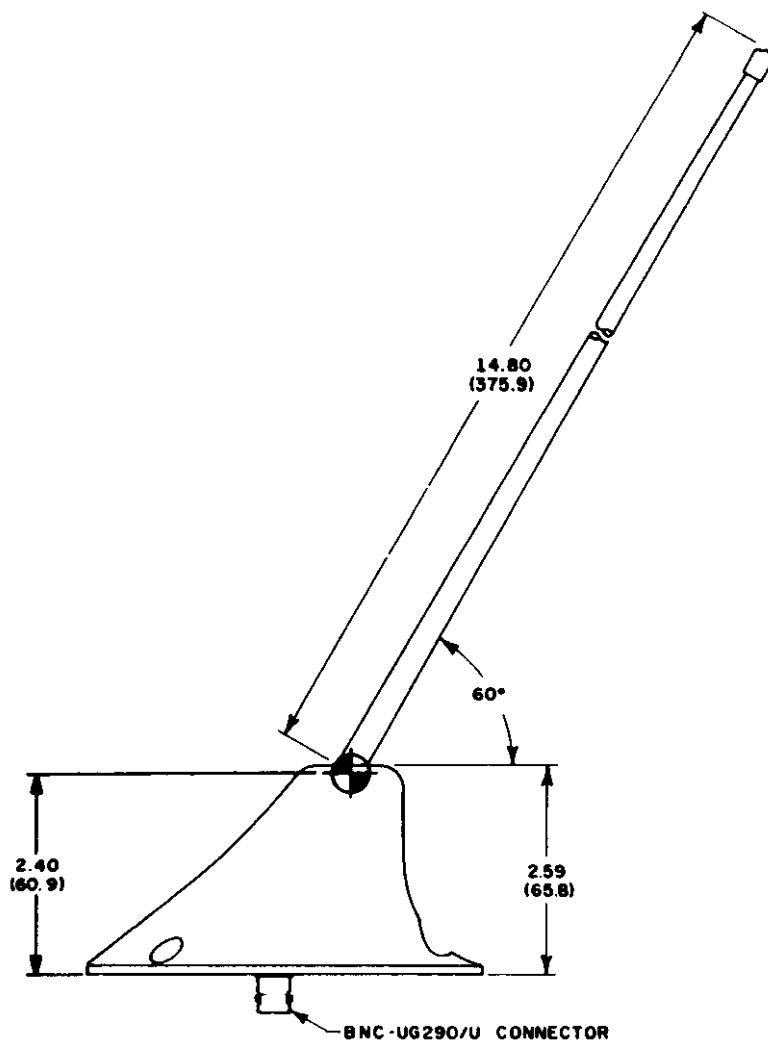
RT-7200, RT-9600, AN/ARC-513 (V)



NOTES:

1. Weight-2.5lbs. (1.13Kg)

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



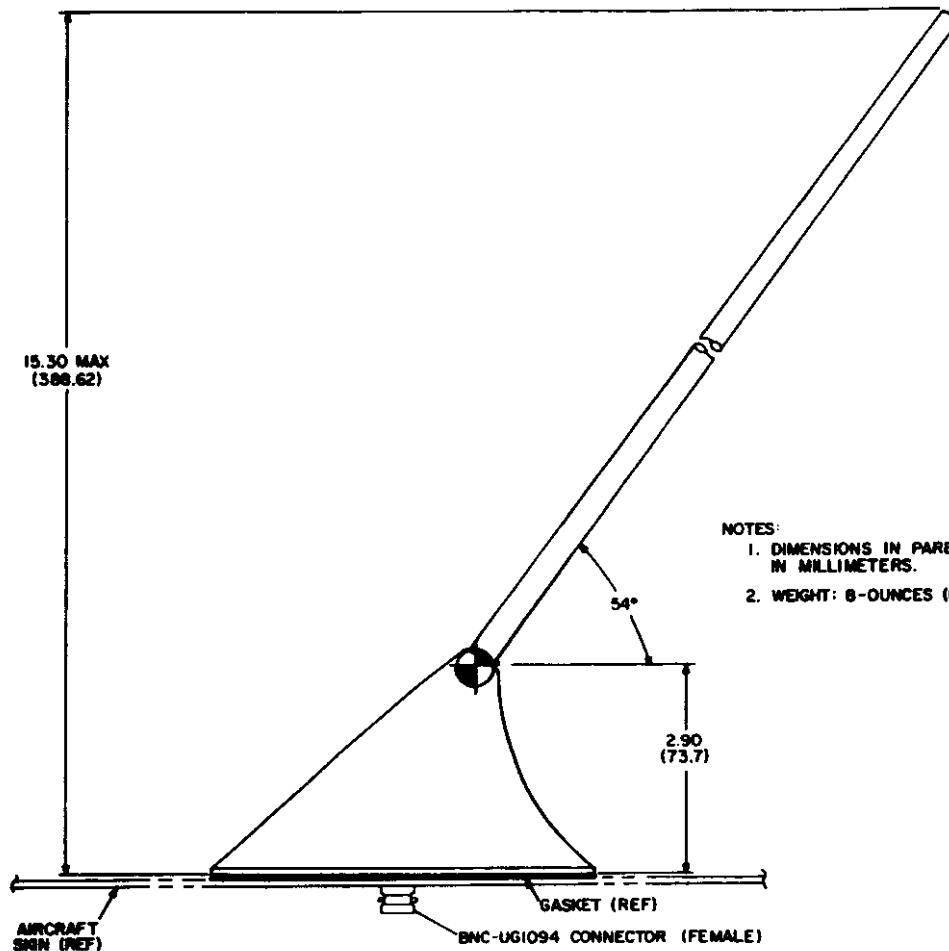
NOTES

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

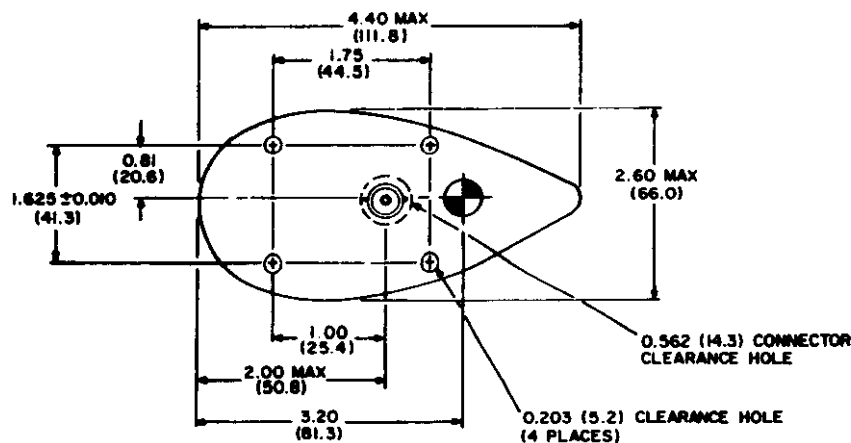
WULFSBERG ELECTRONICS, INC.		INSTALLATION	
CONTRACT NUMBER		PROJECT NUMBER	
DATE		DRAWING NUMBER	
SCALE		SHEET	
TITLE		1 of 1	
AT-690 ANTENNA		147-0056-C	
REV		DATE	
A		9-22-81	
B		8-14-78	
C		8-31-78	
D		9-21-81	

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

2-23
 REV.E

REV. NO.	REV. DATE	REV. DESCRIPTION
1	5/14/75	5/14/75
2	5/14/75	5/14/75
3	5/14/75	5/14/75
4	5/14/75	5/14/75
5	5/14/75	5/14/75
6	5/14/75	5/14/75
7	5/14/75	5/14/75
8	5/14/75	5/14/75
9	5/14/75	5/14/75
10	5/14/75	5/14/75
11	5/14/75	5/14/75
12	5/14/75	5/14/75
13	5/14/75	5/14/75
14	5/14/75	5/14/75
15	5/14/75	5/14/75
16	5/14/75	5/14/75
17	5/14/75	5/14/75
18	5/14/75	5/14/75
19	5/14/75	5/14/75
20	5/14/75	5/14/75
21	5/14/75	5/14/75
22	5/14/75	5/14/75
23	5/14/75	5/14/75
24	5/14/75	5/14/75
25	5/14/75	5/14/75
26	5/14/75	5/14/75
27	5/14/75	5/14/75
28	5/14/75	5/14/75
29	5/14/75	5/14/75
30	5/14/75	5/14/75
31	5/14/75	5/14/75
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34	5/14/75	5/14/75
35	5/14/75	5/14/75
36	5/14/75	5/14/75
37	5/14/75	5/14/75
38	5/14/75	5/14/75
39	5/14/75	5/14/75
40	5/14/75	5/14/75
41	5/14/75	5/14/75
42	5/14/75	5/14/75
43	5/14/75	5/14/75
44	5/14/75	5/14/75
45	5/14/75	5/14/75
46	5/14/75	5/14/75
47	5/14/75	5/14/75
48	5/14/75	5/14/75
49	5/14/75	5/14/75
50	5/14/75	5/14/75
51	5/14/75	5/14/75
52	5/14/75	5/14/75
53	5/14/75	5/14/75
54	5/14/75	5/14/75
55	5/14/75	5/14/75
56	5/14/75	5/14/75
57	5/14/75	5/14/75
58	5/14/75	5/14/75
59	5/14/75	5/14/75
60	5/14/75	5/14/75
61	5/14/75	5/14/75
62	5/14/75	5/14/75
63	5/14/75	5/14/75
64	5/14/75	5/14/75
65	5/14/75	5/14/75
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67	5/14/75	5/14/75
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69	5/14/75	5/14/75
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77	5/14/75	5/14/75
78	5/14/75	5/14/75
79	5/14/75	5/14/75
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82	5/14/75	5/14/75
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93	5/14/75	5/14/75
94	5/14/75	5/14/75
95	5/14/75	5/14/75
96	5/14/75	5/14/75
97	5/14/75	5/14/75
98	5/14/75	5/14/75
99	5/14/75	5/14/75
100	5/14/75	5/14/75

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

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

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 A1 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.

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

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 500 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.

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

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 ± 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.

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

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 L0 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.

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

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.

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

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2-25/26
REV.E



ELECTRICAL

ELECTRICAL

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

WEIGHT

WEIGHT	2.8 LBS (1.27kg)
DIMENSIONS	HEIGHT 11.65 INCHES
	LENGTH 10.87 INCHES
	WIDTH 3.25 INCHES
MATERIAL	A356-T6 ALUMINUM ALLOY
	EPOXY FIBERGLASS
FINISH	SPRINKLED RESISTANT EPOXY ENAMEL
CONNECTION	COLOR-GLOSS WHITE
IRVING	TYPE BNC
	M-0.85 AT 35,000 FEET 16 LB

TEMPERATURE

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

MIL : MIL-E

MIL-E-5400H, MIL-E-5272H, MIL-A-7772 B(ASG), MIL-A-6271A, MIL-A-909AC
TSO C37b, C38b

1.

1. MIL TYPE NUMBER: AS-5103/ARC-513
2. DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS
3. APPROVED VENDOR: SENSOR SYSTEMS P/N 565-8280-4

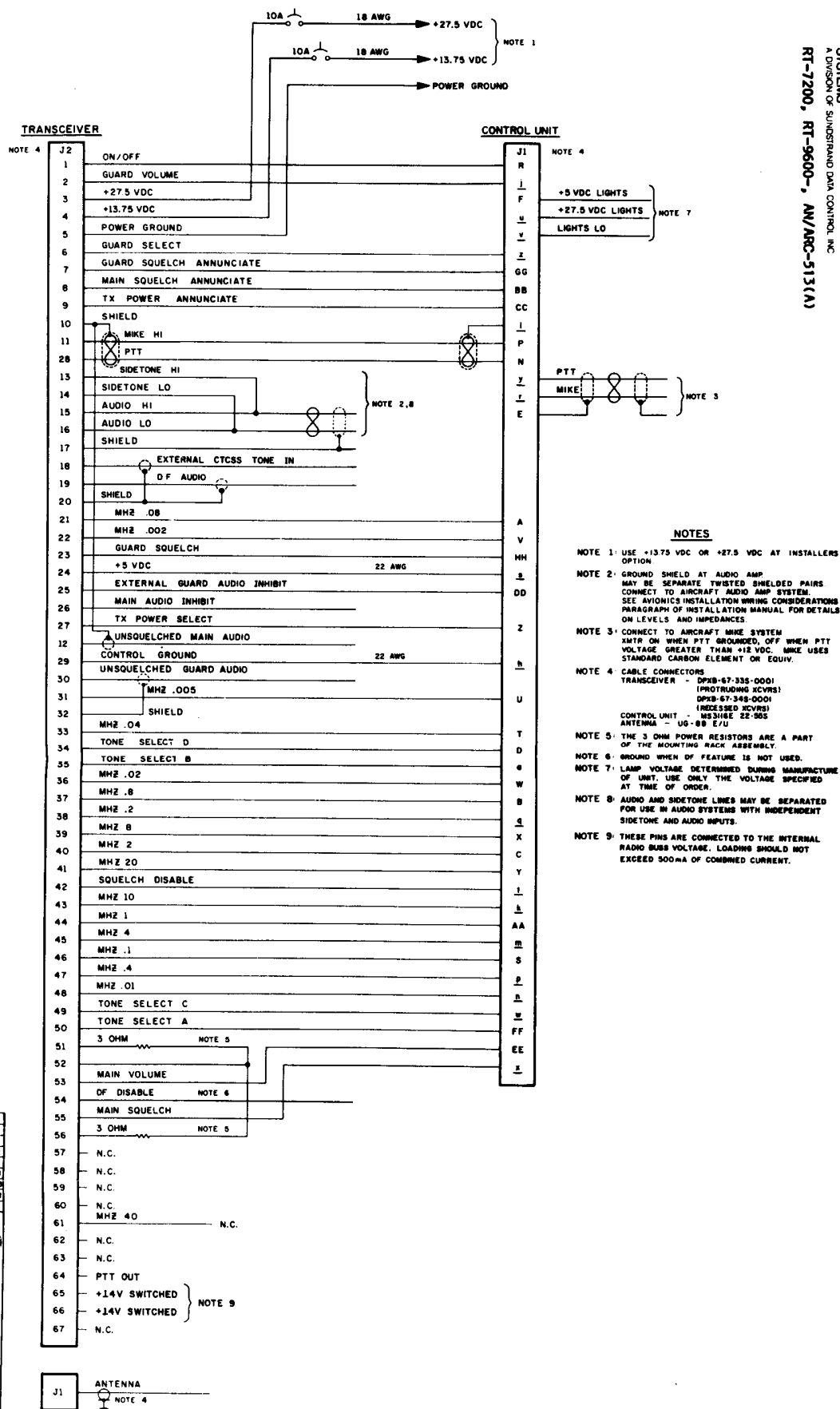
**MILITARY NOMENCLATURE:
ANTENNA
AS-5103/ARC-513**

C	1968	8-23-82
F	1666	0/21/81
E	1953	9-27-80
D	806	8-2-78
C	362	11-9-77
B	518	9-23-77
A	ORIGINAL RELEASE	6-29-77
REV	COUNT NUMBER	DATE

		WULFSBERG ELECTRONICS, INC. 10000 WILSON BLVD. VAN NUYS, CALIF. 91411	
MODEL +	ORDER NO. 211-000	QUANTITY 1	DATE 8/27/78
TITLE AT-960 VHF (FM) ANTENNA (140-180 MHz)			
ORDER NO. 121-0010-000	QUANTITY 1 ea	DATE 121-0010-000	COMMENTS 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

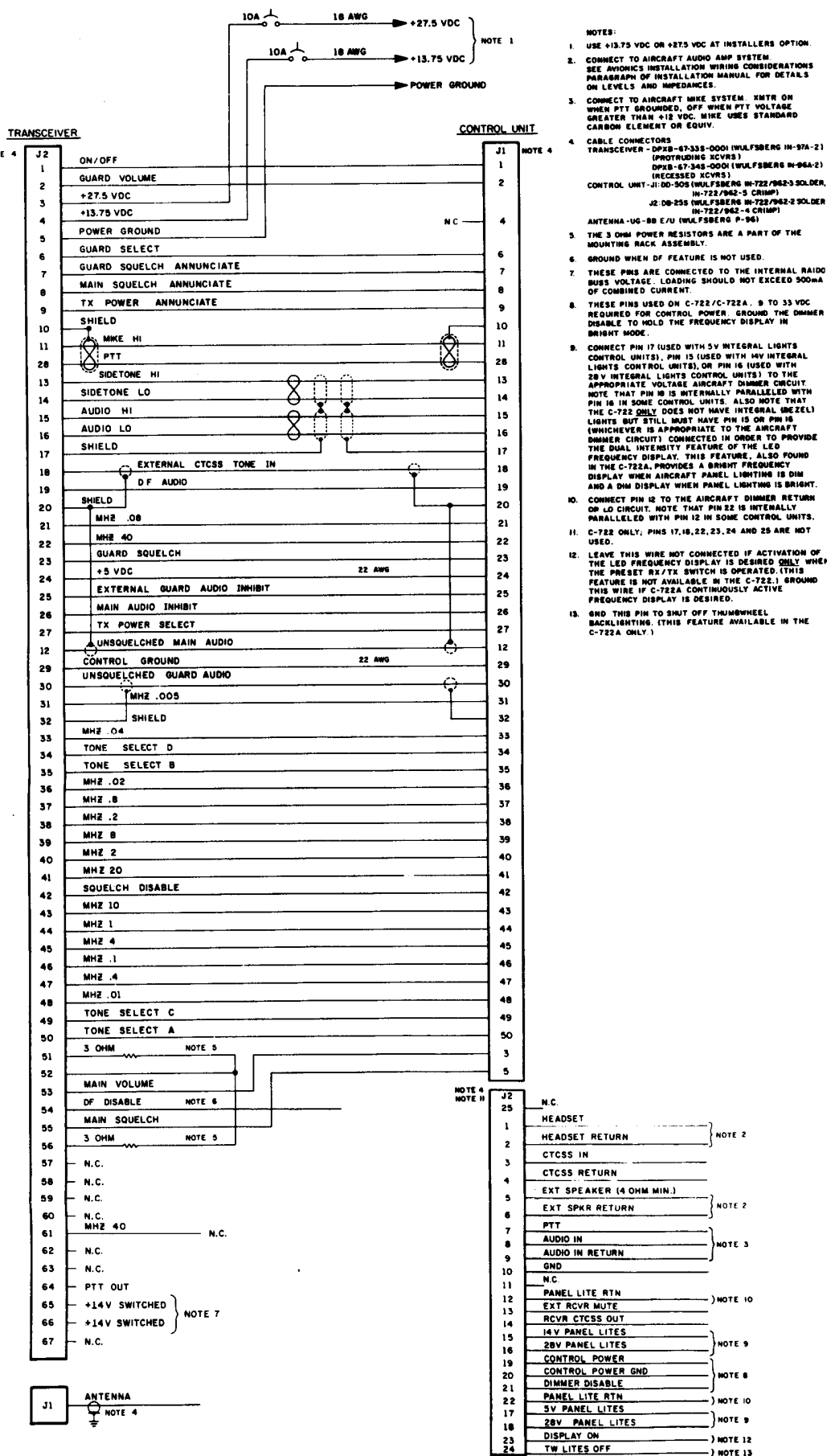
2-33/34
REV. E



E	1925	7-16-82
D	1898	6-1-82
C	749	10-5-78
B	745	10-4-78
A	5-28-78	
REV. C. D. NUMBER	DATE	
WULFSBERG ELECTRONICS, INC.		
RT-9600/C-960		
INTERCONNECT DIAGRAM		
147-0059-000		

ARC-513 (V): RT-5065 TO C-722/C-722A AND
RT-7200 TO C-722/C-722A AND
FIGURE 2.7-3

2-37/78
REV. E



REV	DATE	BY	CHKD	APP'D
1	8080	11-9-82		
2	1025	7-16-82		
3	1899	6-8-82		
4	1763	12-22-81		
5	ORIGINAL			
6	REV	DATE	BY	CHKD
7	1025	7-16-82		
8	1899	6-8-82		
9	1763	12-22-81		
10	ORIGINAL			
11	REV	DATE	BY	CHKD
12	1025	7-16-82		
13	1899	6-8-82		
14	1763	12-22-81		
15	ORIGINAL			
16	REV	DATE	BY	CHKD
17	1025	7-16-82		
18	1899	6-8-82		
19	1763	12-22-81		
20	ORIGINAL			



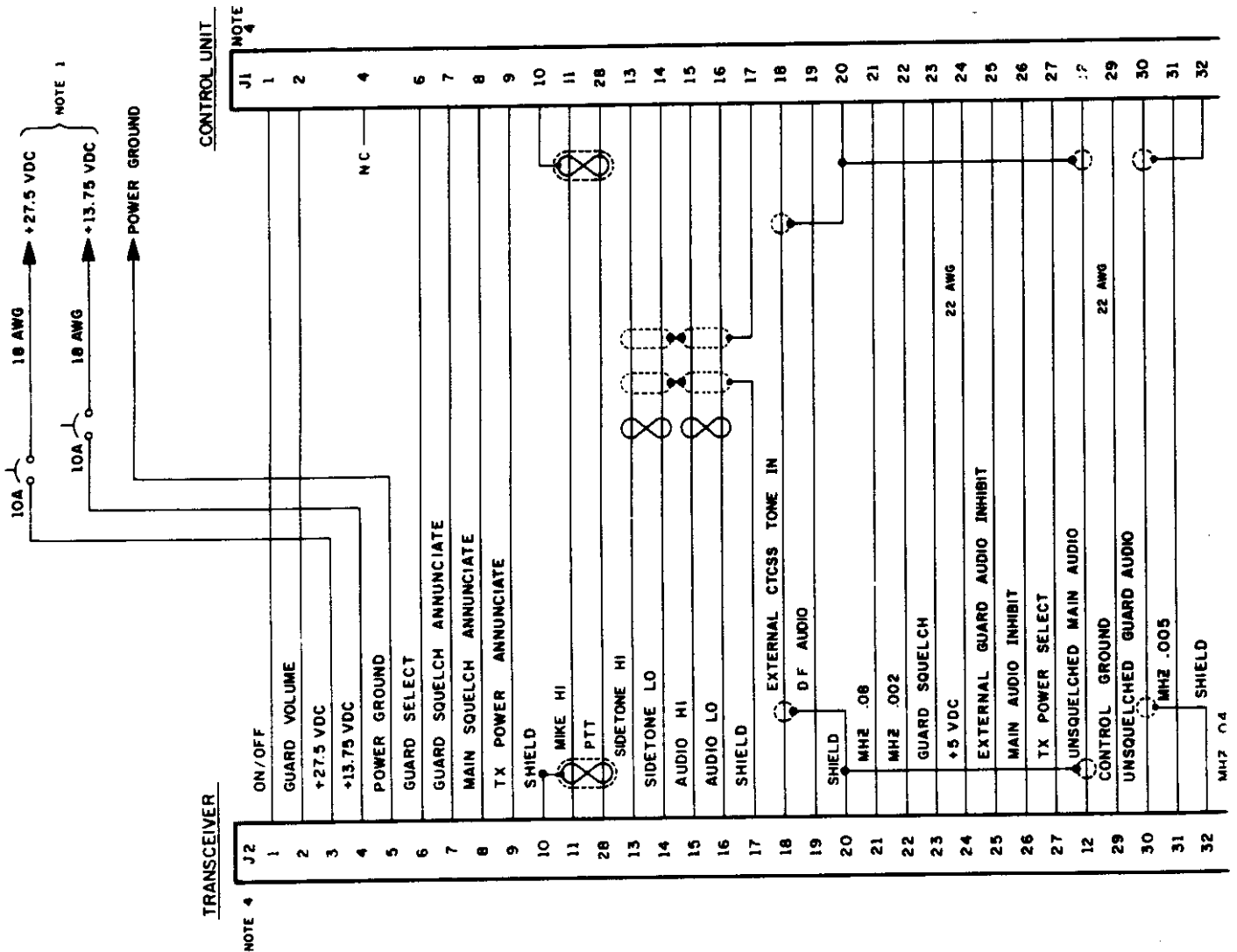
WULFSBERG ELECTRONICS, INC.

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 SYSTEM. SEE AVIONICS INSTALLATION WIRING CONSIDERATIONS PARAGRAPH OF INSTALLATION MANUAL FOR DETAILS ON LEVELS AND IMPEDANCES.
3. CONNECT TO AIRCRAFT MIKE SYSTEM. XMYR ON WHEN PTT GROUND, OFF WHEN PTT VOLTAGE GREATER THAN +12 VDC. MIKE USES STANDARD CARBON ELEMENT OR EQUIV.
4. CABLE CONNECTORS
TRANSCIVER - DPXB-87-335-0001 (WULFSBERG IN-37A) (PROTRUDING XCVRS)
DPXB-87-345-0001 (WULFSBERG IN-96A) (RECESSED XCVRS)
CONTROL UNIT- J100-905 (WULFSBERG IN-722/962-3 SOLDER IN-722/962-5 CRIMP)
J2 DB-258 (WULFSBERG IN-722/962-2 SOLDER IN-722/962-4 CRIMP)
ANTENNA-UG-88 E/U (WULFSBERG P-961)
THE 3 OHM POWER RESISTORS ARE A PART OF THE MOUNTING RACK ASSEMBLY.
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 BUS. 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 UNIT), PIN 15 (USED WITH 14V INTEGRAL LIGHTS CONTROL UNIT), OR PIN 16 (USED WITH 28V INTEGRAL LIGHTS CONTROL UNIT) TO THE APPROPRIATE VOLTAGE AIRCRAFT DIMMER CIRCUIT. NOTE THAT PIN 16 IS INTERNALLY PARALLELED WITH PIN 18 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**