

RESTRICTED

DIST: 4  
FILE: BG

T. O. NO. 08-10-133

★

*HANDBOOK OF INSTRUCTIONS  
FOR OPERATION*

SCR-595-A or SCR-595-AZ  
NAVY MODEL ABK or ABK-1

AIRCRAFT RADIO  
RECEIVING  
EQUIPMENT

*NOTICE: This document contains information affecting the National Defense of the United States within the meaning of the Espionage Act, 50 U. S. C., 31 and 32, as amended. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.*

**THIS PUBLICATION MAY BE USED BY PERSONNEL RENDERING  
SERVICE TO THE UNITED STATES OR ITS ALLIES**



Paragraph 5.d. of Army Regulation 380-5 relative to the handling of "restricted" printed matter is quoted below.

*"d. Dissemination of restricted matter.—The information contained in restricted documents and the essential characteristics of restricted material may be given to any person known to be in the service of the United States and to persons of undoubted loyalty and discretion who are cooperating in Government work, but will not be communicated to the public or to the press except by authorized military public relations agencies."*

This permits the issue of "restricted" publications to civilian contract and other accredited schools engaged in training personnel for Government work, to civilian concerns contracting for overhaul and repair of aircraft or aircraft accessories, and to similar commercial organizations.

**ADDITIONAL COPIES**

Additional copies of this Technical Order may be secured on Requisition, AAF Form 102, as prescribed in AAF Regulation 15-102. Submit requisitions to: Commanding General, Air Service Command, Patterson Field, Fairfield, Ohio. Also, see T. O. No. 00-25-3 for details on distribution of Technical Orders.

---

★

**Published by joint authority of  
The Commanding General,  
Army Air Forces, and The  
Chief, Signal Officer.**

---

★

**DON'T YOU  
BELIEVE  
IT!**

Do you want me  
to write up a  
**UR** on this job?

No, I reported it  
to the factory  
rep.—that's enuf.



**THAT'S NOT ENOUGH! A **UR****

**MUST BE WRITTEN, SO THAT THE AIR SERVICE  
COMMAND CAN TAKE NECESSARY ACTION ON  
THE REPORTED TROUBLE.**

In filling out a **UR** (AAF Form No. 54) personnel should follow the instructions given in AAF Regulation 15-54. Particular care should be taken to include the following information:

1. ORGANIZATION AND STATION
2. NAME PLATE DATA
3. DATE AND NATURE OF FAILURE
4. TYPE OF AIRPLANE IN WHICH INSTALLED
5. RECOMMENDATIONS

## **Destruction of Abandoned Materiel in the Combat Zones**

In case it should become necessary to prevent the capture of this equipment and when ordered to do so, DESTROY IT SO THAT NO PART OF IT CAN BE SALVAGED, RECOGNIZED OR USED BY THE ENEMY. BURN ALL PAPERS AND BOOKS.

### **Means:**

1. Explosives, when provided.
2. Hammers, axes, sledges or whatever heavy object is readily available.
3. Burning by means of incendiaries such as gasoline, oil, paper or wood.
- 4 Grenades and shots from available arms.
5. Wherever possible, and when time permits, bury all debris or dispose of it in streams or other bodies of water.

### **Procedure:**

1. Obliterate all identifying marks. Destroy nameplates and circuit labels.
2. Demolish all panels, castings, switch- and instrument-boards.
3. Destroy all controls, switches, relays, connections and meters.
4. Rip out all wiring in electrical equipment. Smash gas, oil and water cooling systems in gas-engine generators, etc.
5. Smash every electrical or mechanical part, whether rotating, moving or fixed.
6. Break up all operating instruments such as keys, phones, microphones, etc.
7. Destroy all classes of carrying cases, straps, containers, etc.

**TABLE OF CONTENTS**  
**SECTION I—DESCRIPTION**

<i>Paragraph</i>	<i>Page</i>
1. GENERAL .....	1
2. TABLE OF PRINCIPAL COMPONENTS .....	1
3. DESTRUCTOR EQUIPMENT .....	3
a. General	
b. Power Source	
c. Switchbox BC-765	
d. Indicator Box BC-727 or Indicator Box BC-767	
e. Plug PL-177	
4. SWITCH SW-187 (REMOTE CONTROL OFF-ON TOGGLE SWITCH) .....	4
5. RADIO CONTROL EQUIPMENT RC-225-A .....	4
6. ANTENNA CONNECTIONS .....	4
7. POWER SUPPLY .....	4
<b>SECTION II—PRE-FLIGHT CHECKS</b>	
8. GENERAL CHECK OF ALL MAIN PARTS.....	5
9. CHECK OF DESTRUCTOR UNIT .....	5
a. Switchbox BC 706-A	
b. Indicator Box BC-727 or Indicator Box BC-767	
10. MECHANICAL CHECKS .....	5
a. Antenna Installation	
b. Cables	
c. Miscellaneous Mechanical Checks	
11. ELECTRICAL TESTS .....	7
a. Antenna	

## TABLE OF CONTENTS (Continued)

<i>Paragraph</i>		<i>Page</i>
<b>SECTION II—PRE-FLIGHT CHECKS (Continued)</b>		
b.	Other Checks	
12.	RADIO-FREQUENCY TEST OF RADIO SET SCR-595-AZ OR RADIO SET SCR-595-A .....	7
a.	General	
b.	Equipment Needed	
c.	Procedure	
<b>SECTION III—OPERATION</b>		
13.	PROCEDURE FOR STARTING THE EQUIPMENT .....	9
14.	PROCEDURE FOR STOPPING THE EQUIPMENT.....	9
<b>SECTION IV—SERVICE ADJUSTMENTS</b>		
15.	CHECKS FOR SERVICEABILITY .....	9
16.	REPLACEMENT OF RADIO RECEIVER UNIT .....	9
a.	Removal of Receiver	
b.	Procedure for Installation of New Receiver	
17.	REPLACEMENT OF CONTROL AND SELECTOR UNITS.....	10
a.	General	
b.	Removal of the Combined Control and Selector Unit Assembly	
c.	Replacement of Assembly	

## LIST OF ILLUSTRATIONS

<i>Figure</i>	<i>Page</i>
1. RADIO CONTROL EQUIPMENT RC-255-A, (FRONT VIEW).....	1
2. RADIO RECEIVER BC-1066-A AND SIGNAL GENERATOR I-196-A, PART OF TEST EQUIPMENT IE-46-A .....	6
3. RADIO RECEIVER BC-1066-A (LEFT) AND SIGNAL GENERATOR I-196-A (RIGHT), PANEL VIEW.....	11
4. TYPICAL ARRANGEMENT OF TEST EQUIPMENT (SKETCH) .....	12
5. CORDING DIAGRAM FOR ARMY-TYPE INSTALLATION OF RADIO SET SCR-595-AZ OR RADIO SET SCR-595-A.....	13
5A. CORDING DIAGRAM FOR NAVY-TYPE INSTALLATION OF MODEL ABK OR MODEL ABK-1, AIRCRAFT RADIO RECEIVING EQUIP- MENT .....	13
6. OUTLINE DRAWING FOR IDENTIFYING THE ANTENNA AND AC- CESSORY SUPPLIES USED WITH RADIO SET SCR-595-AZ OR RADIO SET SCR-595-A .....	14



## **SAFETY NOTICE**

**BECAUSE THE DESTRUCTOR CONTAINS AN EXPLOSIVE, IT IS IMPORTANT FOR THE SAFETY OF PERSONNEL AND EQUIPMENT THAT ALL INSPECTION, OPERATING, AND MAINTENANCE ROUTINES BE CARRIED OUT IN STRICT ACCORDANCE WITH THE INSTRUCTIONS GIVEN IN THIS BOOK. ALL SERVICE REGULATIONS COVERING THE HANDLING AND TEMPORARY STORAGE OF THE DESTRUCTOR UNITS MUST ALSO BE OBSERVED.**

**THE "D" PLUG, PLUG PL-177, MUST BE REMOVED AT ALL TIMES EXCEPT WHEN THE PLANE IS ABOUT TO TAKE OFF OR IS ENGAGED IN ACTUAL FLIGHT OPERATION. THE PLUG MUST NEVER BE INSERTED IN THE DESTRUCTOR JACK UNTIL IT HAS BEEN DETERMINED THAT THERE IS NO VOLTAGE AT THE PLUG BY CONNECTING A TEST LAMP OR A BUZZER ACROSS THE PLUG TERMINALS.**

**NEVER HANDLE THE RECEIVER UNIT OR TRY TO REMOVE IT FROM ITS SHOCK MOUNTING, MOUNTING FT-247-A, UNTIL THE DESTRUCTOR UNIT HAS BEEN REMOVED AND CARED FOR IN THE MANNER PRESCRIBED BY THE REGULATIONS.**

**OPERATION**  
**of**  
**RADIO SET SCR-595-AZ OR RADIO SET SCR-595-A**  
**(Navy Model ABK or Navy Model ABK-1**  
**Aircraft Radio Receiving Equipment)**

**RESTRICTED**

**SECTION I**  
**DESCRIPTION**

**1. GENERAL**

Radio Set SCR-595-AZ or Radio Set SCR-595-A, correspond to the Navy Model ABK or the Navy Model ABK-1 Aircraft Radio Receiving Equipments.

The Army and Navy type installations differ chiefly in regard to the destructor and pilot's control box circuits. Slight differences also exist in the assembly of plugs and cables. These variations will be apparent from a study of the cording diagrams, Figures 5 and 5A.

Inspection and operating procedures for Radio Sets SCR-595-AZ and SCR-595-A and Navy Model ABK and Navy Model ABK-1 Aircraft Radio Receiving Equipments are identical. References in this book to Radio Sets SCR-595-AZ and SCR-595-A also are applicable to the corresponding Navy radio equipments.

It is assumed that the operator is familiar with the tactical employment of the equipment.

**2. TABLE OF PRINCIPAL COMPONENTS**

The principal components of Radio Set SCR-595-AZ and Radio Set SCR-595-A are Antenna AN-95-A, the radio receiver \*for the 12 or 24-volt operation, and Radio Control Equipment RC-255-A, the latter including Power Control Box BC-958-A and Selector Control Box BC-965-A.

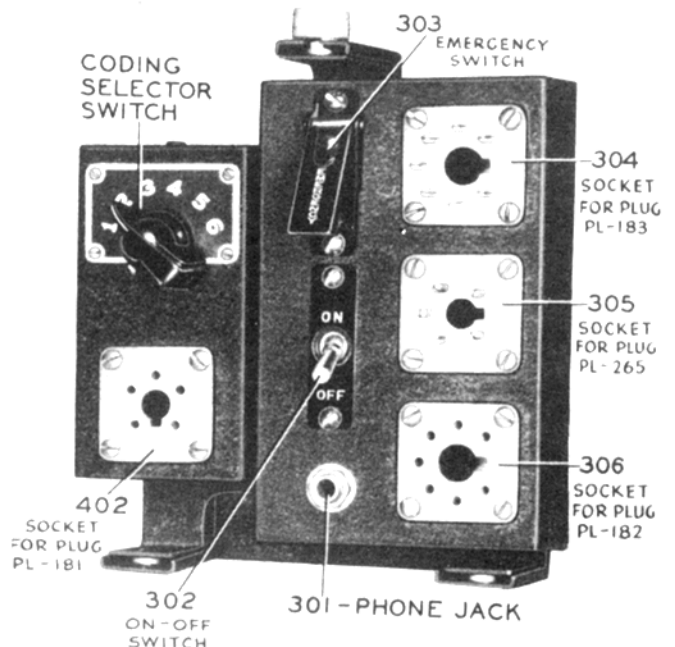


FIGURE 1—RADIO CONTROL EQUIPMENT RC-255-A,  
FRONT VIEW

All components of the sets with their dimensions and weights are given in the following table. Also given in the table is the Signal Corps nomenclature for each item, together with the corresponding Navy and British nomenclature and the contractor's number.

\*Signal Corps nomenclature has not been assigned to these items. Therefore either the 12 or 24-volt radio receiver is identified by the Navy number of the corresponding receiver.

## 2. TABLE OF PRINCIPAL COMPONENTS (Continued)

Nomenclature of Army Item	Comparable Navy Item	Comparable Type	British Item Reference No.	Manufacturer's Drawing No.	Weight (Lbs.)
Radio Receiver for Radio Set SCR-595-A (24 volts) including Mounting. FT-247-A. Dimensions: 12 31/32" x 9" x 12 5/16"	*-43AA Y or 46AA Q	39	10A/12222	MA-5000	32.5
Radio Receiver for Radio Set SCR-595-AZ (12 volts) including Mounting. FT-247-A. Dimensions: 12 31/32" x 9" x 12 5/16"	*-43AA X or 46AA P	39	10A/12222	MA-5000	32.5
Radio Control Equipment RC-255-A (dimensions: 6 1/4" x 3 1/2"), comprises:	*-23AB G *-23AB H	40	10A/12223	SA-5015	0.3
Mounting		90	10AB/949	SA-5016	0.4
FT-248-A		89	10LB/91		1.
Mounting			10LB/90		0.5
Plate FT-345-A					
Power Control					
Box BC-958-A					
Selector Control					
Box BC-965-A					
3 Antenna AN-95-A	*-66AA V or 66AA W	93	10BB/879		0.8
		133	10BB/1617		1.5
Fuse FU-42	Fuse		OB B	SA-5086	0.3
Fuse FU-59	Assembly		5C/445		
Fuse Post FU-39	NAF47861				
Cord CD-675-A (battery cable assembly), includes	No Navy Number		No British Number	SA 5063	
1 Plug PL-178					
1 Plug PL-183					
3 Plug PL-177 with shield (destructor plug)	NAF68969-2	185	10H/460	SA-5007 PP-5016 (Plug Shield)	0.09
3 Plug PL-178 (part of Cord CD-675-A)	NAF69041-1	176	10H/262		
3 Plug PL-181 with shield	NAF68925-3	172	10H/254	PL-5002 PP-5012 (Plug Shield)	0.09
3 Plug PL-182 with shield.	NAF68925-2	174	10H/258	PL-5003 PP-5015 (With Shield)	0.13
3 PL-183 with shield. (Two are used; one is part of Cord CD-675-A.)	NAF6825-1	105	10H/256	SO-5005 PP-5014 (With Shield)	0.13
3 Plug PL-265 with shield	NAF47908-1	395	10H/13079	SO-5004 PP-5015 (With Shield)	0.09
3 "D" plug holder (for Plug PL-177)	NAF214841-1			MS-5085 PP-5046	0.03
3 Coupling MC-277	NAF47848-1	213	10H/701	SA-5079 (Includes Cable Clamp M-297.)	0.1
3 Coupling MC-320. (Used only in conjunction with certain accessory equipment.)	NAF47848-2	187	10H/529	SA-5080	
3 Cable Clamp M-297. (Two are used; one with Coupling MC-277 and one Coupling MC-320)	NAF311145-1	.....	10H/1774	SA-5081	0.1
3 Socket SO-158	NAF68969-1 Phone Cord Adapter	108	10H/261	SA-5006 SA-5067	0.4 0.3

## 2. TABLE OF PRINCIPAL COMPONENTS (Continued)

Nomenclature of Army Item	Comparable Navy Item	Comparable Type	British Item Reference No.	Contractor's Drawing No.	(Lbs.) Weight
Switch SW-187. (Two are used; one as remote ON-OFF power switch; the other Switch SW-187 with Guard M-335 is used as ON-OFF switch for the emergency mechanism.)	Part of Pilot's Control Box —NAF47841-1		5D/543		
NOTE: Cables listed below are supplied in bulk to be used as required.					
Cable WC-549-A (antenna)	CASSF-50-1 (NAF47751-5)	PR-5M		CA-5011	0.12 per ft
Cable WC-560-A (supplied as part of other radio equipment where Coupling MC-320 is used.)	NAF62064	AS-48-M		CA 5012	
Cable, Air Corps standard single-conductor	NAF47024-802	(8-conductor)	5E/1256	CA-5010	0.19 per ft
	NAF47024-604	(6-conductor)	5E/1216	CA-5009	0.18 per ft
	NAF47024-302	(3-conductor)	5E/1368	CA-5008	0.9 per ft

NOTE 1: A three-letter prefix denoting the manufacturer is a part of the Navy type number. Manufacturers' prefix designations for this equipment are as follows: CHZ—Hazeltine Service Corp., New York, N. Y.; CWS—Stewart-Warner Corp., Chicago, Ill.; CCT—Stromberg-Carlson Telephone Mfg. Co., Rochester, N. Y.; CZR—Zenith Radio Corp., Chicago, Ill.; CSX—Selectar Mfg. Co., New York, N. Y.; CUF—Ucinite Mfg. Co., Newtonville, Mass.; CIC—Dootlittle Radio, Inc.; Chicago, Ill.

NOTE 2: Switching Equipment RC-135-A, not an integral part of Radio Sets SCR-595-A and SCR-595-AZ, must be included in order to make a complete airplane installation. See Figure 2.

NOTE 3: These items, with the nomenclature specified above, were supplied by the Navy and are identical with Signal Corps equipment; however, they are not so marked on the equipment.

## 3. DESTRUCTOR EQUIPMENT

## a. General

Radio Set SCR-595-AZ or Radio Set 595-A contains a destructor that may be brought into action by Switching Equipment RC-135-A. This equipment comprises Switchbox BC-706-A, Switchbox BC-765, Plug PL-190, Indicator Box BC-727 or Indicator Box BC-767, and Lamp LM-49 (28-volt) or Lamp LM-53 (14-volt), as applicable, for use with Radio Sets SCR-595-AZ and SCR-595-A.

The destructor unit is set off when a voltage of the required value, or higher, is placed across its terminals. This will occur if the inertia switch is operated or if the two buttons of Switchbox BC-765 are depressed simultaneously.

## b. Power Source

Power for the operation of the destructor circuit is obtained through Fuse FU-42 (20 amperes) from a separate battery connection. Plug PL-190 plugs into the inertia switch, Switchbox BC-706-A, thereby placing the inertia switch in series with

the power source.

## c. Switchbox BC-765

Switchbox BC-765 is located in the cockpit within easy reach of the pilot or co-pilot. It has a set of two push-buttons connected in series and is wired in parallel with the inertia switch at Plug PL-190. When the two push-buttons of Switchbox BC-765 are depressed simultaneously or when the inertia switch is operated, the destructor circuit is closed and voltage appears across Plug PL-177, the "D" destructor plug. Once set to operate, Switchbox BC-706-A, the inertia switch, will be tripped by a shock of sufficient force in the horizontal plane of the airplane. This closes the destructor circuit and sets off the destructor unit. **Take care that the inertia switch is not accidentally struck. This might trip the switch and fire the destructor unit, unless Plug PL-177 (Navy and British "D" plug) is removed from the destructor unit.**

## d. Indicator Box BC-727 or Indicator Box BC-767

Indicator Box BC-727 or Indicator Box BC-767, the voltage warning indicator, comprises a metal box with two lamps, Lamp LM-53 or Lamp LM-49. They are applicable, according to voltage, to either Radio Set SCR-595-AZ or Radio Set SCR-595-A, and are connected in parallel across Plug PL-177.

*e. Plug 177*

In the normal employment of the equipment during flight, Plug PL-177, the destructor plug, plugs into a destructor unit located in the radio receivers. Both switchbox circuits are open.

**NOTE: The destructor circuit in the Navy Model ABK and Navy Model ABK-1 Aircraft Radio Receiving Equipment consists of pilot's control box, impact switch, indicator mounting, junction box "D" and fuse box. The components are connected to the destructor "D" plug as shown in the cording diagram for Navy Model ABK and Navy Model ABK-1 Aircraft Radio Receiving Equipment. See Figure 5A.**

#### 4. SWITCH SW-187

*(Remote Control On-Off Toggle Switch)*

This switch is a remote control ON-OFF toggle switch, and with Guard M-335, is a remote emergency signal ON-OFF toggle switch. Together they are for the pilot's use in installations where Power Control Box BC-958-A is inaccessible to the pilot. Switch SW-187 will be identified by a plate marked "POWER" while Switch SW-187 with Guard M-335, will be identified by the guard marked EMERGENCY. These two switches are connected to one end of a cable, which terminates at the other end in a five-prong female connector plug, Plug PL-265. Plug PL-265 then connects to the center socket on Power Control Box BC-958-A. The remote power ON-OFF switch parallels the ON-OFF switch of the power control box, and the remote emergency signal switch parallels the emergency switch of Power Control Box BC-958-A.

#### 5. RADIO CONTROL EQUIPMENT RC-255-A

Two separate units, Selector Control Box BC-965-A and Power Control Box BC-958-A comprise this equipment. They are mounted together on Mounting Plate FT-345-A, and this assembly, in turn, is mounted on Mounting FT-248-A.

Selector Control Box BC-965-A has a six-position selector switch and a five-prong female socket mounted on its panel. Power Control Box BC-958-A has one five-prong male socket, and one seven-prong male socket mounted on its panel. A power ON-OFF switch, an ON-OFF emergency switch and a phone jack also are mounted on the panel of Power Control Box BC-958-A. See Figure 1.

#### 6. ANTENNA CONNECTIONS

Connections from the antenna to the radio receivers for either the 12 or 24-volt sets are by means of a single coaxial cable. The antenna is of the vertical rod type and projects from the lower surface of the airplane fuselage. The projecting element, about 14 inches long, is connected to the center wire of the coaxial cable. The outer conductor of the coaxial line is grounded to the airplane structure through a bracket on the antenna.

#### 7. POWER SUPPLY

Radio Set SCR-595-AZ operates from the power of a 12-volt airplane battery usually under charge by a 14.25-volt engine driven generator, while Radio Set SCR-595-A operates from the power of a 24-volt airplane battery usually under charge by a 28.5 engine driven generator.

The destructor circuit is protected by a 20 amp fuse, Fuse FU-42. The receiver for Radio Set SCR-595-AZ is fused by a 40 amp fuse, Fuse FU-59. The receiver for Radio Set SCR-595-A is fused by a 20 amp fuse, Fuse FU-42.

Power from Socket SO-158 is carried by Cord CD-675-A which has Plug PL-178 attached to one end and Plug PL-183, a seven-prong female connector, connected to the other end. Plug PL-183 fits into a socket on Power Control Box BC-958-A.

Refer to Figure 5, cording diagram, for details on power supply circuit.

## SECTION II

### PRE-FLIGHT CHECKS

**CAUTION: IMPROPER HANDLING OF THE DESTRUCTOR CIRCUIT MAY RESULT IN BODILY HARM. IF THE AIRPLANE IS ON THE GROUND FOR ANY LENGTH OF TIME, REMOVE PLUG-177 FROM THE DESTRUCTOR UNIT.**

#### 8. GENERAL CHECK OF ALL MAIN PARTS

Before the radio set is operated, check to see that the radio receiver, Power Control Box BC-958-A and Selector Control Box BC-965-A are in place and that all plugs except the destructor plug, Plug PL-177, are connected. If necessary, spread very slightly the "split" of the prongs of the male plugs or sockets, to assure good contact.

#### 9. CHECK OF DESTRUCTOR UNIT

**CAUTION: PLUG PL-177 MUST BE DISCONNECTED FROM THE DESTRUCTOR UNIT BEFORE TESTING THE INERTIA SWITCH.**

##### *a. Switchbox BC-706-A*

To trip the mechanism, unscrew and remove the transparent cap. Displace the pendulum arm until a sharp snap indicates that the switch is tripped (all contacts closed). To reset the switch, insert the blade of a screw driver in the slotted-head screw on the right-hand side of the switch casing. Rotate the screw driver counterclockwise as far as it will go and then allow the screw driver to be rotated slowly by the spring in a clockwise direction until it catches. The pendulum, which can be seen through the transparent cap, will then be approximately centered in the ring cast in the top of the cap. The switchbox should be in a vertical position with the transparent cap uppermost. Replace the cap.

##### *b. Indicator Box BC-727 or Indicator Box BC-767*

Indicator BC-727 or Indicator Box BC-767 is permanently connected in parallel with the destructor plug, Plug PL-177. With Plug PL-177 removed from the destructor unit and the inertia switch tripped, the indicator lamps should light. With the inertia switch reset, simultaneously, depress the two buttons marked DANGER on Switch-

box BC-765. Again the lamps should light. After testing, set the switches, including the inertia switch, for proper operating conditions, as indicated by absence of light from the lamps. The operator can familiarize himself with this procedure by repeating it a number of times. When the inertia switch has been finally reset in the above testing, rap the sides lightly with the knuckles. If correctly set, the switch should not be released. Before the plug is ever inserted into the destructor unit, the indicator should show no voltage at the plug.

The plug is inserted in the destructor unit when the airplane is ready to leave on a mission over enemy territory. As soon as the airplane returns to friendly territory, remove the destructor plug.

**DANGER: NEVER INSERT PLUG PL-177 INTO THE DESTRUCTOR UNIT WHEN VOLTAGE IS INDICATED AT THE RECEPTACLE CONTACTS. ALSO, NEVER INSERT THE DESTRUCTOR PLUG IN THE DESTRUCTOR UNIT UNLESS THE DESTRUCTOR UNIT IS PROPERLY INSTALLED IN THE RADIO RECEIVER.**

#### 10. MECHANICAL CHECKS

##### *a. Antenna Installation*

(1) Check for rigid attachment of antenna to fuselage and for possible damage from collision or other causes, also check for proper grounding of antenna bracket to fuselage through the bolts.

(2) Look for weak spots or breaks in the rubber like covering of the coaxial antenna transmission line.

##### *b. Cables*

(1) Look for places where cables may have worn against airplane structures due to vibration.

(2) Look for good contact between plugs and sockets. Wiping contact surfaces with carbon tetrachloride will improve the contact. Make sure that plugs are securely held in their sockets. Give special attention to the concentric fittings to be sure that the wire clamps which hold the plugs, Coupling MC-320 (if used) and Coupling MC-277, to

RADIO SET SCR-595-AZ OR RADIO SET SCR-595-A

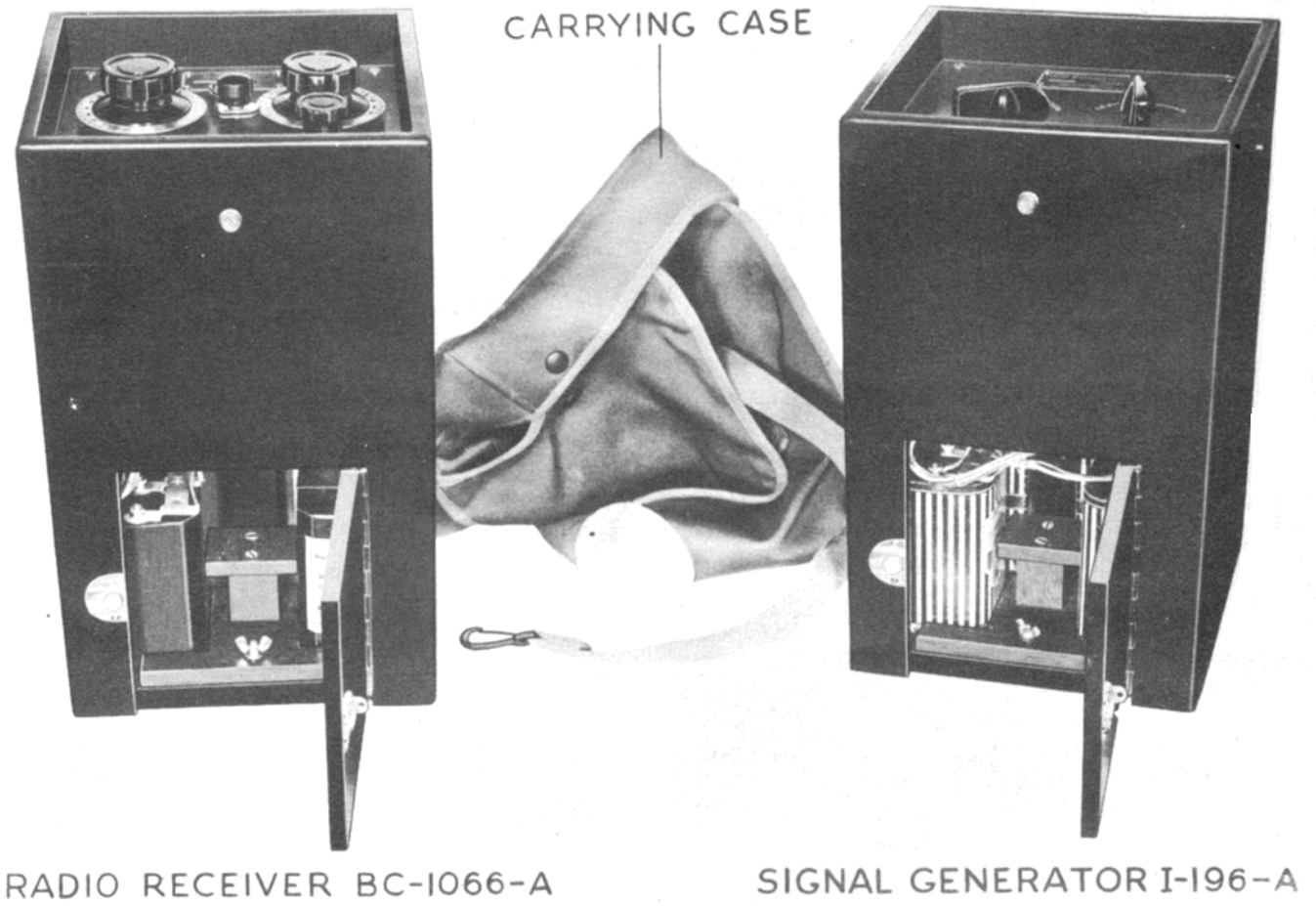


FIGURE 2—RADIO RECEIVER BC-1066-A AND SIGNAL GENERATOR I-196-A, PART OF TEST EQUIPMENT IE-46-A

the sockets, Terminals TM-201, are in their proper places and securely fastened.

*c. Miscellaneous Mechanical Checks*

(1) Make sure that Radio Control Equipment RC-255-A and the radio receiver for either Radio Set SCR-595-AZ or Radio Set SCR-595-A are securely fastened in their respective mountings.

(2) Check to see that the mountings for the control unit and the radio receiver are securely attached to the airplane structure. Check that the indicator box, the inertia switch (Switchbox BC-706-A), the remote ON-OFF switch (Switch SW-187) and the remote distress signal switch (Switch SW-187 with Guard M-335) are all securely attached to the airplane and suitably connected.

## 11. ELECTRICAL TESTS

*a. Antenna*

(1) Withdraw the antenna transmission line plug, Coupling MC-277, from the radio receiver and check for a possible short circuit or leakage between the inner and outer conductors at Coupling MC-277, using the highest resistance scale of the available ohmmeter. This test also will detect a short circuit between the stub antenna and the fuselage, since the outer conductor of the transmission line is grounded to the fuselage.

(2) Ground the stub antenna to the fuselage and check for continuity with the ohmmeter at Coupling MC-277. Finally, remove the ground from the antenna.

*b. Other Checks*

(1) Check for continuity of leads in cables and for short circuits between leads.

(2) Check for good connection of power socket to power lines.

## 12. RADIO-FREQUENCY TEST OF RADIO SET SCR-595-AZ OR RADIO SET SCR-595-A

*a. General.* The following procedure is intended to provide only a rough indication as to whether or not the equipment is functioning. Periodic tests should be made of band limits. Detailed procedure is covered in complete manual and in the test equipment manuals.

**NOTE:** For any tests involving band limits or other exact frequency measurements, use Frequency Meter BC-906-C as directed by the

**Communications Officer-in-Charge. Indications on dial of Signal Generator I-196-A are only approximate.**

*b. Equipment Needed*

- (1) Signal Generator I-196-A.
- (2) Radio Receiver BC-1066-A.

**NOTE:** For a detailed description of these equipments and for their operation procedure consult the separate instruction books provided for them.

*c. Procedure*

(1) Use the "I" band section of Signal Generator I-196-A and Radio Receiver BC-1066-A.

(2) Turn on the signal generator and adjust the tuning dial to the position midway between the indicated limits of the "I" band.

(3) Turn on Radio Receiver BC-1066-A and tune for the maximum signal from Signal Generator I-196-A.

(4) Place the signal generator on one side of the airplane at least 10 feet from the antenna of the airplane installation of Radio Set SCR-595-AZ or Radio Set SCR-595-A. On the other side of the airplane, place Radio Receiver BC-1066-A approximately 10 feet from the airplane antenna.

(5) During these tests, it is best that no one except the operator stand within 10 feet of the test equipment or the antenna of the airplane.

(6) With the headphones plugged into Radio Receiver BC-1066-A, the signal picked up from the signal generator should be heard faintly or not at all. If necessary, move the receiver still further from the airplane antenna and the signal generator.

(7) Turn on Radio Set SCR-595-AZ or Radio Set SCR-595-A and let the set warm up for five minutes.

(8) When the headphones are plugged into Radio Receiver BC-1066-A, a distinctly louder, even tone of short duration should be heard at regular intervals of time. This tone, or signal, which comes from the receiver is approximately the same as that of the signal generator, except that it has come through Radio Set SCR-595-AZ or Radio Set SCR-595-A.

A similar tone will be heard in the control box of the radio sets, providing that the equipment is



operating properly. Turn off the signal generator and make sure that the signal heard in Radio Receiver BC-1066-A is originating with the signal generator and is not caused by some defect in either

of the radio sets. It is also possible that there may be other sources in the neighborhood which emit signals similar to that emitted by the signal generator.

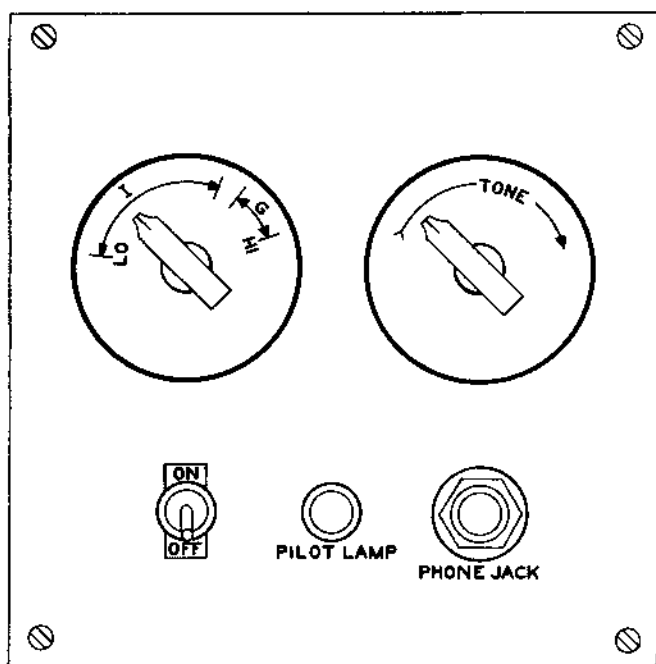
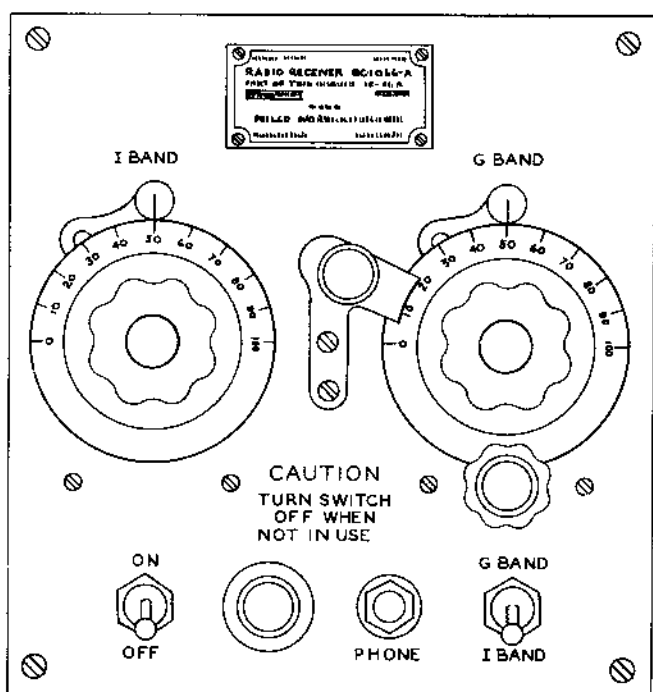


FIGURE 3—RADIO RECEIVER BC-1066-A, (LEFT) AND SIGNAL GENERATOR I-196-A (RIGHT),—PANEL VIEW

### SECTION III OPERATION

#### 13. PROCEDURE FOR STARTING THE EQUIPMENT

a. Throw the ON-OFF switch on Radio Control Equipment RC-255-A of Radio Set SCR-595-AZ or Radio Set SCR-595-A to the ON position. If the control unit is inaccessible during flight, use the remote ON-OFF switch, Switch SW-187, to start the equipment.

b. Set the six-position switch on Selector Control Box BC-965-A to the position specified by the Communications Officer-in-Charge. If there is no specific information, set the selector switch to position 1.

c. The emergency switch is used to operate a special signal in case of an emergency. Details concerning the use of this switch also can be obtained from the Communications Officer-in-Charge.

d. When the airplane is ready to leave on a mission over enemy territory, insert Plug PL-177 into the destructor unit. This should be done after the airplane leaves the ground, if practicable.

#### 14. PROCEDURE FOR STOPPING EQUIPMENT

a. Remove Plug PL-177 from the destructor unit. Do this before landing if practicable. If not, do so immediately after landing.

b. Throw all switches to the OFF position.

#### 15. CHECKS FOR SERVICEABILITY

Radio Set SCR-595-AZ or Radio Set SCR-595-A should be given a daily check for serviceability, a more detailed check after a week of average flying time and a check after each installation and change of equipment.

#### 16. REPLACEMENT OF RADIO RECEIVER UNIT

##### a. Removal of Receiver

(1) Remove the "D" plug, Plug PL-177, from the radio receiver and hang on the "D" plug holder, mounted nearby.

(2) Take out the destructor unit.

**CAUTION: THIS UNIT IS EXPLOSIVE. OBSERVE ALL SERVICE REGULATIONS FOR THE HANDLING AND TEMPORARY STORAGE OF SUCH MATERIAL.**

(3) Disconnect all bonding jumpers and release the SUP plug and ANT plug hold-down wires. Pull off all plugs. Do not disturb Coupling MC-320 unless a cable for it has been installed.

(4) Remove the tie wire from the two knurled clamping collars on the front edge of the receiver unit shock mounting and unscrew them for about half an inch until they can be disengaged from the hold-down lugs on the front of the receiver cabinet. The collars can then be allowed to drop downward out of the way.

(5) Pull the receiver unit an inch or so towards the front edge of the shock mounting. This disengages the tapered hold-down plungers at the rear. Either draw the receiver forward or lift clear from the mounting.

##### b. Procedure for Installation of New Receiver

(1) Place the receiver on the shock mounting and slide it toward the back until the two tapered hold-down plungers engage the holes in the angle members at the rear of the mounting.

(2) Clamp the receiver unit by raising the two knurled clamping collars and screwing them over the front hold down lugs on the receiver. Next, thread a piece of No. 16 A. W. G. steel tie-wire (0.051 inch, diameter) through one of the four holes in each clamping collar, draw it tight, and twist each end around the wire as though making a splice. Use fresh wire, if available, since a wire that has already been spliced several times is more likely to break during flight and allow vibration to loosen the clamping collars.

(3) Restore destructor unit to its socket. Leave the "D" plug in its holder.

**CAUTION: THIS UNIT IS EXPLOSIVE.**

(4) Put back all other plugs and reconnect all bonding jumpers. This completes the receiver replacement.

## 17. REPLACEMENT OF CONTROL AND SELECTOR UNITS

### *a. General*

Power Control Box BC-958-A and Selector Control Box BC-965-A, parts of Radio Control Equipment RC-255-A, are ordinarily handled as a single unit because both are screwed to Mounting FT-248-A.

### *b. Removal of the Combined Control and Selector Unit Assembly*

(1) Disconnect all four cable-bonding jumpers at the panels and pull out the plugs. Be sure that the battery-cable assembly is disconnected first.

(2) Loosen the knurled clamping nut by unscrewing it.

(3) Pull it forward and lift the assembly out of the mounting bracket. This combined pulling and lifting motion will disengage the two mount-

ing lugs on the bottom of the securing plate from the slots in the mounting bracket.

(4) Power Control Box BC-958-A can be taken off the securing plate by removing the three machine screws on the back. Selector Control Box BC-965-A can be taken off in a similar manner by removing two screws.

### *c. Replacement of Assembly*

(1) Unscrew knurled clamping nut at top of Mounting FT-345-A and insert two lugs at the bottom into the corresponding slots in the mounting bracket. Gently push the assembly back into the mounting bracket, guiding the screw carrying the clamping nut at the top into the slot.

(2) Check to see that both bottom lugs engage the slots properly; if they do, tighten the knurled clamping nut.

(3) Put back all four plugs and reconnect all bonding jumpers. Put the battery-cable assembly back last.

RADIO SET SCR-595-AZ OR RADIO SET SCR-595-A

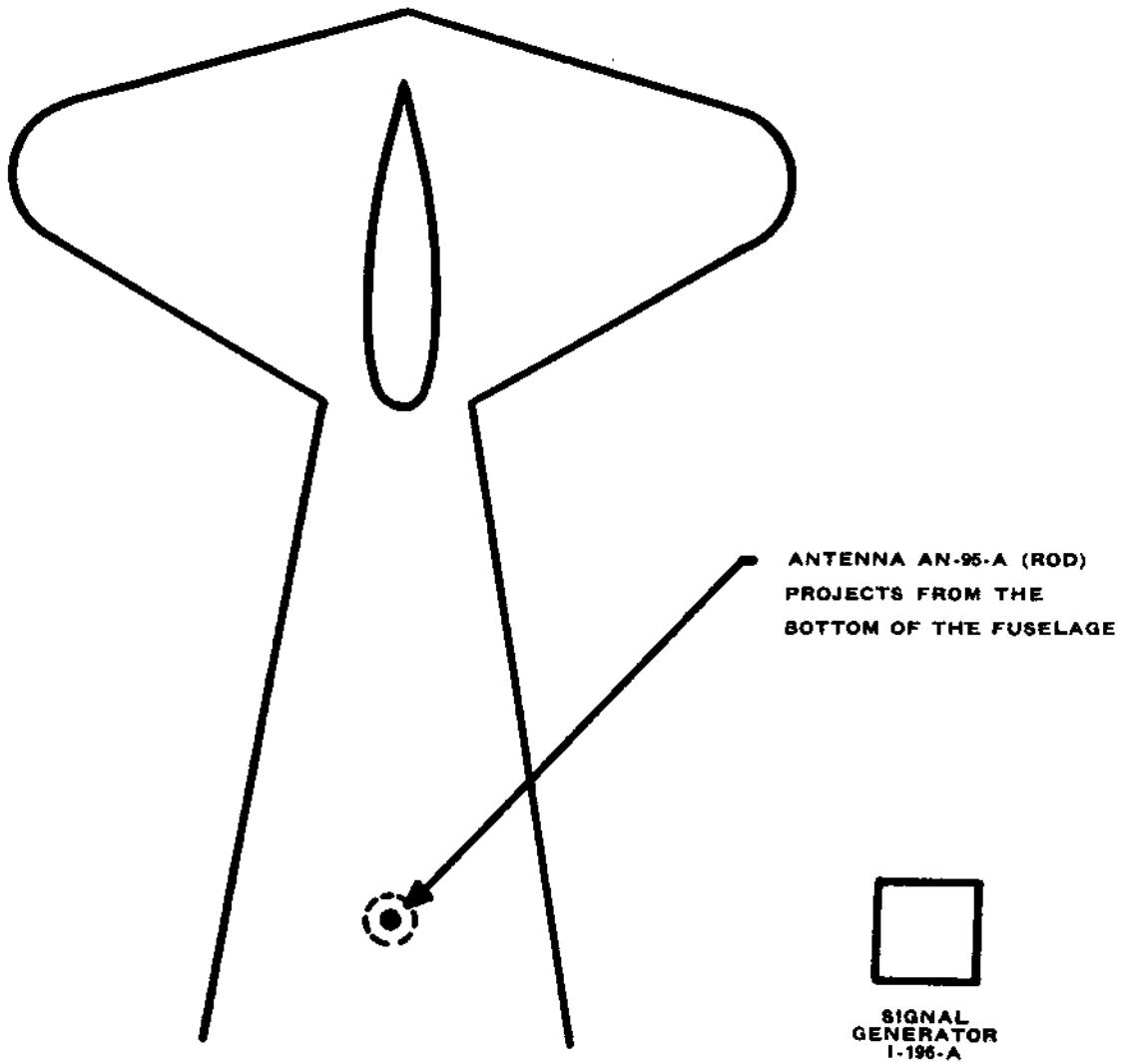


FIGURE 4—TYPICAL ARRANGEMENT OF TEST EQUIPMENT  
(SKETCH)

RADIO SET SCR-595-AZ OR RADIO SET SCR-595-A

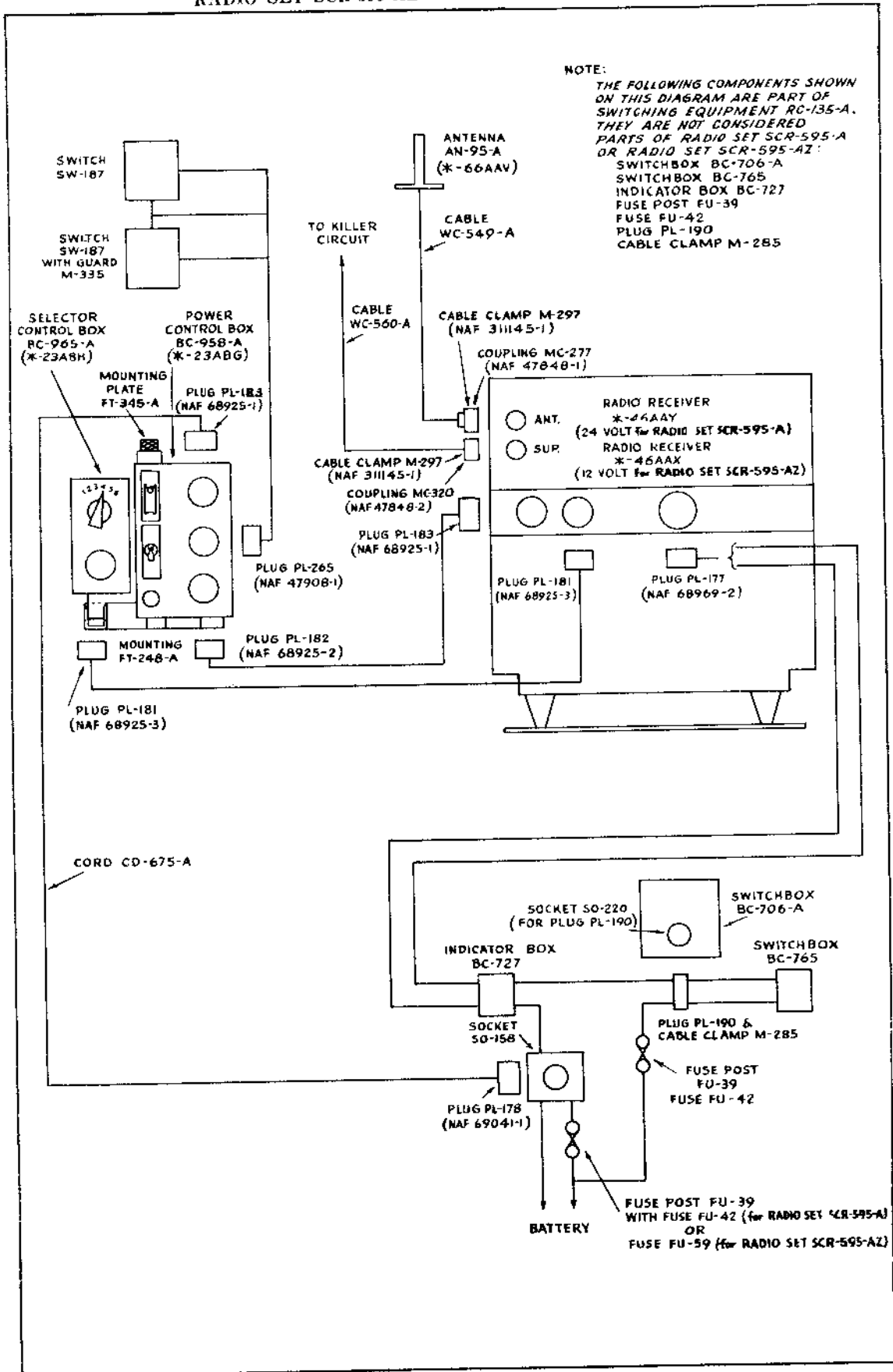


FIGURE 5—CORDING DIAGRAM FOR INSTALLATION OF RADIO SET SCR-595-AZ OR RADIO SET SCR-595-A

RADIO SET SCR-595-AZ OR RADIO SET SCR-595-A

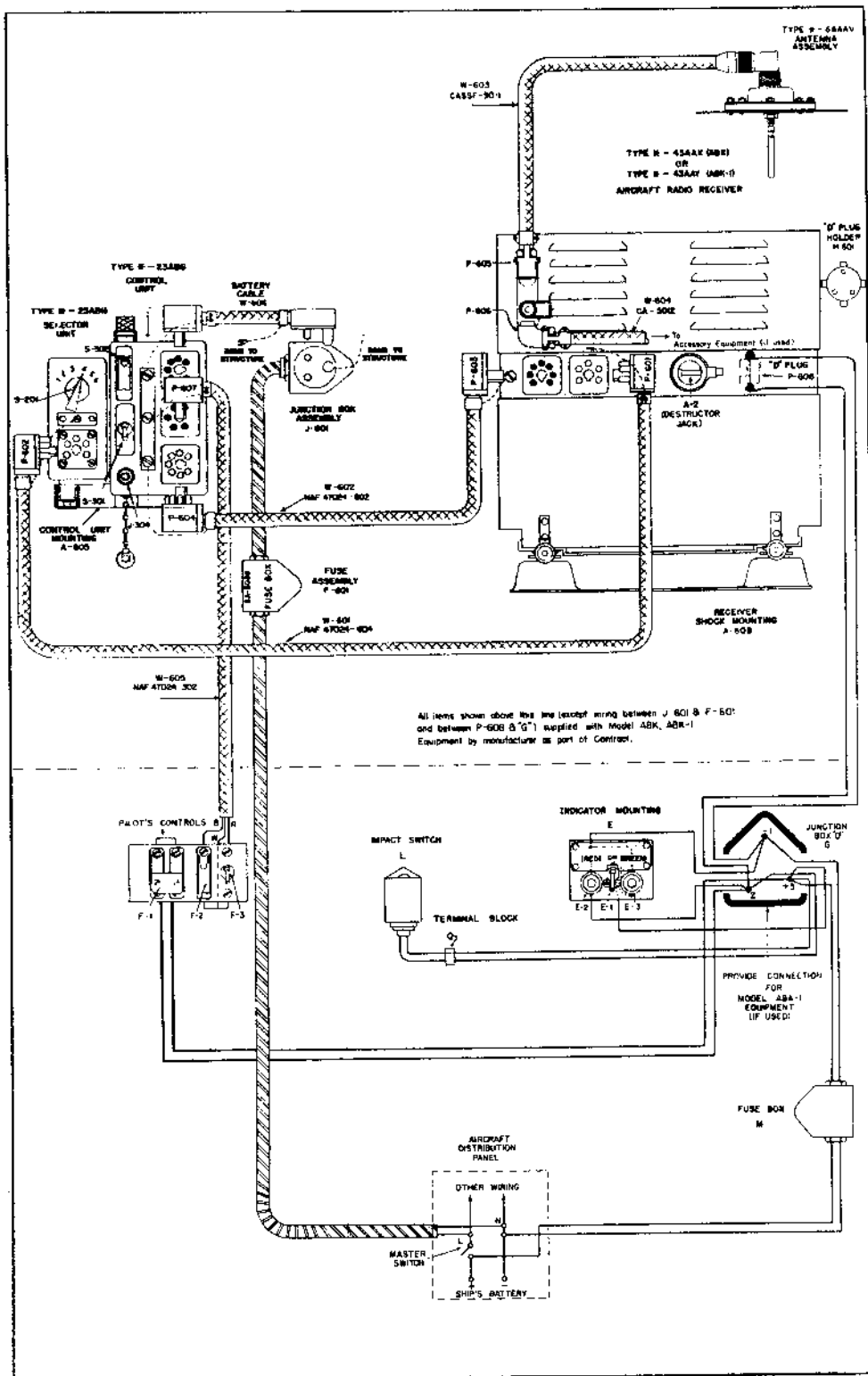


FIGURE 5A—CORDING DIAGRAM FOR NAVY-TYPE INSTALLATION OF MODEL ABK OR MODEL ABK-1 AIRCRAFT RADIO RECEIVING EQUIPMENT

RADIO SET SCR-595-AZ OR RADIO SET SCR-595-A

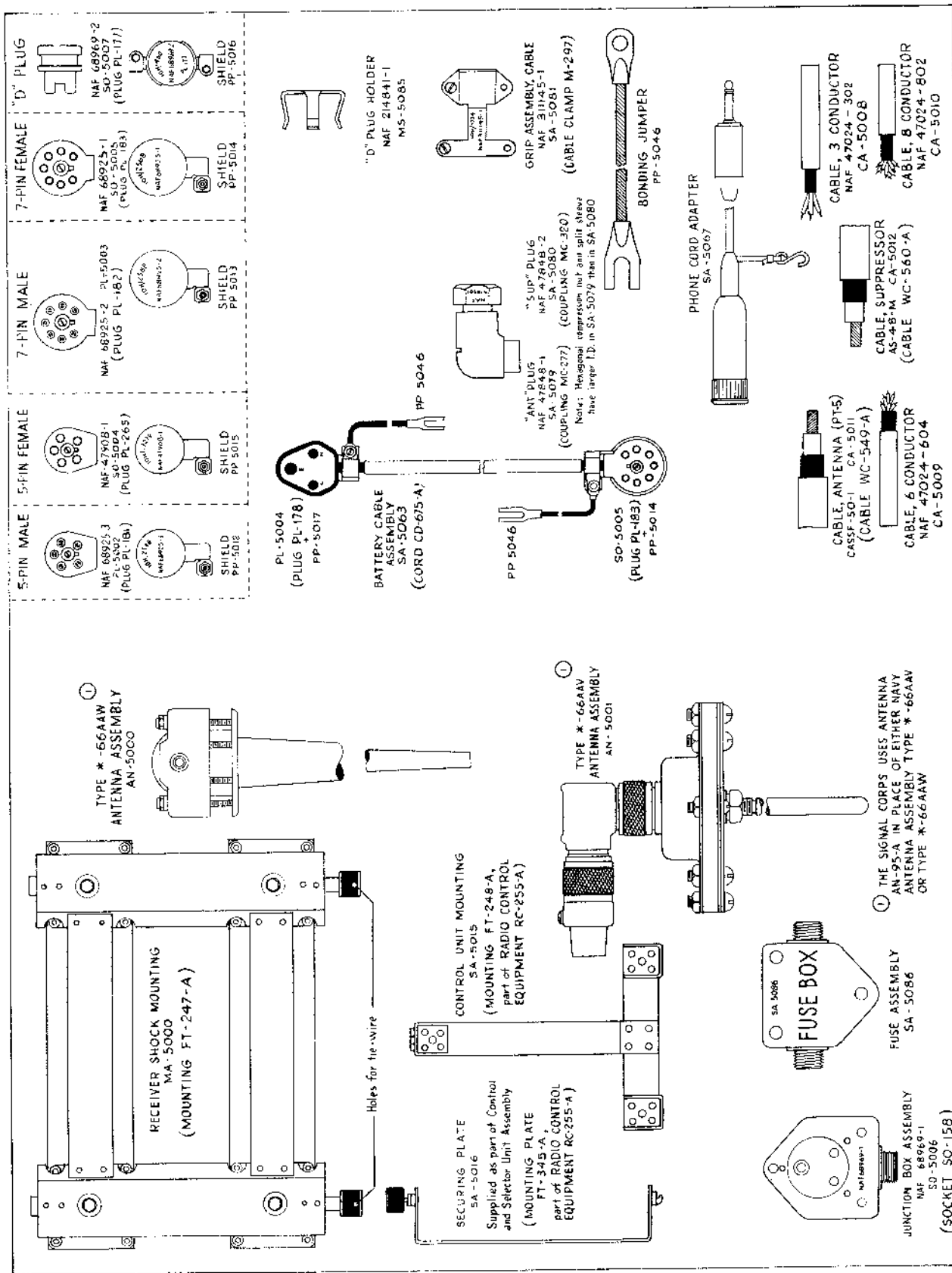


FIGURE 6---OUTLINE DRAWING FOR IDENTIFYING THE ANTENNA AND ACCESSORY SUPPLIES USED WITH RADIO SET SCR-595-AZ OR RADIO SET SCR-595-A