

MCS 2-104E

FIELD RADIO EQUIPMENT

(NAVMC—7108)



1955

Published For Instructional Purposes Only

**EXTENSION SCHOOL
MARINE CORPS EDUCATIONAL CENTER
MARINE CORPS SCHOOLS
QUANTICO, VIRGINIA**

**MARINE CORPS EDUCATIONAL CENTER
MARINE CORPS SCHOOLS
QUANTICO, VIRGINIA**

October 1955

This text, prepared by the Extension School, is approved for instructional purposes within the Marine Corps Schools.

H. R. PAIGE,
Brigadier General, U. S. Marine Corps,
Director.

ES(N)—1038

FIELD RADIO EQUIPMENT

TABLE OF CONTENTS

SECTION 1

RADIO SET AN/PRC-6

	Paragraph	Page
General	1	1
Technical Characteristics	2	1
General Operational Rules and Procedures	3	4
Receiving	4	7
Transmitting	5	7
Auxiliary Equipment	6	10

SECTION 2

RADIO SETS AN/PRC-8, -9, AND -10

General	7	11
Technical Characteristics	8	11
General Operating Rules and Procedures	9	11
Controls	10	14
Adjusting Frequency	11	16
Receiving	12	16
Transmitting	13	16
Types of Operation	14	16

SECTION 3

RADIO SET MAY

Purpose and Use	15	25
Technical Characteristics	16	26
Transmitter-Receiver CRP-43071	17	26
Discone Antenna AS-408/U	18	29
Auxiliary Battery Pack CRP-19062	19	37
Preparation for Operation	20	37
Operation	21	39

SECTION 4

RADIO SET AN/GRC-9

General	22	43
Technical Characteristics	23	44
Transmitter Section of Receiver-Transmitter RT-77/GRC-9	24	45
Receiver Section of Receiver-Transmitter RT-77/GRC-9	25	49

	Paragraph	Page
Vibrator Power Unit PE-237	26	53
Generator GN-58	27	53
Antenna Components	28	54
Selection of Antenna Equipment for Field Operation	29	56
Installation of Antennas	30	57
Connections for Operation	31	58
Receiver Operation With Vibrator Power Unit	32	58
Receiver Operation With Generator GN-58	33	60
Receiver Operation With Battery BA-48	34	60
Receiver Operation With Generator GN-58 and Battery BA-48	35	60
Receiver Calibration	36	61
Transmitter Operation	37	61

SECTION 5

RADIO SET AN/MRC-6

General	38	65
Technical Characteristics	39	65
Transmitter Section	40	66
Receiver Section	41	69
Dynamotor Power Unit	42	70
Antenna Loading Coil	43	70
Remote-Control Unit	44	72
Audio Accessories	45	73
Operation	46	74

SECTION 6

RADIO SETS AN/MRC-36, -37, AND -38

Purpose and Use	47	75
Technical Characteristics	48	77
General System Description	49	78
Set 1 Receiver-Transmitter	50	79
Set 1 Power Supply	51	83
Set 2 Receiver-Transmitter	52	83
Interphone Amplifier	53	86
Auxiliary Receiver	54	86
Mounting	55	90
Interphone Box	56	90
Retransmission Unit	57	96
Remote Control Group	58	97
Set 2 and Auxiliary Receiver Power Supply	59	97
Audio Accessories	60	97
Installation	61	97
Methods of Operation	62	97
Interference Charts	63	101
Modification Kit MX-898/GR	64	101

SECTION 7

RADIO SET AN/MRC-32

	Paragraph	Page
Purpose and Use	65	106
Simplified System Explanation	66	111
Technical Characteristics	67	111
Types of Operation	68	112
Types of Service	69	112
Types of Reception	70	114
Additional Normal Operating Facilities	71	114

APPENDICES

Joint Army-Navy (AN) Nomenclature	A	116
Frequency Spectrum	B	119

LIST OF ILLUSTRATIONS

	Figure	Page
Radio Set AN/PRC-6	1	2
Installation of antenna	2	3
Use of sling to support Radio Set AN/PRC-6 in operating position	3	5
Use of sling to carry Radio Set AN/PRC-6	4	6
Radio Set AN/PRC-6, controls	5	8
Antenna AT-249/GRD	6	9
Radio Set AN/PRC-8, -9, or -10, operating components...	7	12
Radio Set AN/PRC-8, -9, or -10, with carrying harness and suspender belt, rear view	8	13
Control panel, AN/PRC-8, -9, or -10	9	14
Relay operation, system application	10	18
Relay operation, connections	11	18
Control Group AN/GRA-6	12	20
Control Group AN/GRA-6, connections	13	22
Antenna Equipment RC-292	14	23
Packboard operation of Radio Set MAY	15	25
Transmitter-Receiver CRP-43071	16	27
Operating controls	17	28
Method of packing transmitter-receiver accessories ..	18	31
Assembly of Discone Antenna	19	33
Assembly of Discone Antenna, continued	20	35
Auxiliary Battery Pack CRP-19062	21	37
Auxiliary Battery Pack, covers removed	22	38
Transmitter-receiver battery compartment	23	39
Radio Set AN/GRC-9	24	43
Transmitter Section, RT-77/GRC-9	25	46
Receiver Section, RT-77/GRC-9	26	50
Vibrator Power Unit PE-237	27	54
Generator GN-58	28	55
Installation of long-wire Antennas AT-101/GRC-9 and AT-102/GRC-9	29	57
Radio Set AN/GRC-9 set up for vehicular operation ..	30	58
Radio Set AN/GRC-9, cording diagram	31	59
Transmitter dial readings	32	62
Radio Set AN/MRC-6	33	66
Transmitter Unit, front panel, AN/MRC-6	34	67
Receiver Unit, front panel, AN/MRC-6	35	71
Dynamotor Power Unit, AN/MRC-6	36	72
Antenna Loading Coil, AN/MRC-6	37	73
Remote Control Unit, AN/MRC-6	38	73
Radio Set AN/MRC-36, removed from vehicle	39	76
Table of Components, AN/MRC-36, -37, and -38	40	78
Receiver-Transmitter, RT-66/GRC	41	80
Power Supply PP-112/GR, front view	42	83
Receiver-Transmitter, RT-70/GRC	43	84
AF Amplifier AM-65/GRC	44	87

	Figure	Page
Radio Receiver R-108/GRC	45	88
Mounting MT-297/GR, front view	46	91
Control Box C-375/VRC	47	93
Control C-435/GRC	48	95
Power Supply PP-282/GRC, front view	49	96
System cordage diagram, AN/MRC-36, -37, and -38	50	98
Retransmission system, block diagram	51	99
Duplex operation, block diagram	52	100
Generator G-8/GRC	53	102
Case CY-590/GR, front view	54	103
Field operation of Set 1 with Generator G-8/GRC and Case CY-590/GR	55	104
Radio Set AN/MRC-32	56	106
Radio Set AN/MRC-32, receiving components	57	107
Radio Set AN/MRC-32, teletype operating com- ponents	58	108
Radio Set AN/MRC-32, transmitting components	59	109
Radio Set AN/MRC-32, simplified block diagram	60	110
Radio Set AN/MRC-32, doublet antenna set-up	61	113
Siting Radio Set AN/MRC-32, a possible antenna loca- tion	62	115

BIBLIOGRAPHY

- TM 11-263—Radio Set AN/GRC-9
- TM 11-264-A—Radio Set AN/GRC-26A
- TM 11-284—Radio Sets AN/GRC-3,-4,-5,-6,-7, and -8
- TM 11-296—Radio Set AN/PRC-6
- TM 11-612—Radio Sets AN/PRC-8, AN/PRC-9, and AN/PRC-10
- NAVSHIPS 91392—Instruction Book for Portable Radio Transmitting
and Receiving Equipment Navy Model MAY
- TCS Instruction Book
- COS Lectures

PREFACE

This text covers the characteristics of the principal radio equipment used by Marine Corps organizations (ground) and is not intended to replace the technical manuals covering each equipment. The appropriate technical manual for each equipment should be consulted for detailed information on the theory of operation or for maintenance instructions.

An explanation of the Joint Army-Navy system of nomenclature for communications equipment is given in Appendix A of this text and should be consulted if the reader is not already familiar with this system.