

October 1944

SECRET

AMERICAN ECM EQUIPMENT  
2464

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TYPE NUMBER	RCM CODE NAME	BRIEF DESCRIPTION	FREQUENCY COVERAGE IN MC/S	BANDWIDTH	INPUT WATTS**			OUTPUT POWER IN WATTS			TYPE OF MODULATION	ANTENNA STRUCTURE ***	REMARKS
					AC	DC	TOTAL	CARRIER	SIDEBANDS				
<b>AIRBORNE AND SHIPBORNE JAMMERS</b>													
AN/ART-2	Pad	Barrage Jammer Using Self-Quenched Oscillator	21-50	4 to 8 Mc.	600		50				Non-Coherent Pulses, 80/Sec At 80 Mc/s	Existing Communications Antenna	Designed for Jamming Communications Link of Enemy Ground-Controlled Interception Radar
AN/ART-3	High Power Jackal	High Powered Barrage Communications Jammer	27-57 With Five Tuning Units	7 Mc	2800	66	1000 Approx				F.N. By A Rotating Condenser	Not Definite; Three Wire Fan, Cone, Or Screen May Be Used	As Above
AN/ART-6 AN/ART-7 AN/ART-8 AN/ART-9 AN/ART-10 AN/ART-11	Jackal	Family of Barrage Communications Jammers Covering Band Without Tuning Adjustments	20-28 27-34 32-38 37-43 42-48 48-75		700	66	150 Approx				Mechanically Frequency Modulated	As Above	Differences between Various Models of Jackal Transmitters Largely in Frequency Coverage. AN/ART-11 Can Also Barrage a Selected 2.5 Mc. Portion of its total Frequency RG.
AN/ARQ-1	Sandy	Combination Receiver and Jamming Transmitter	14-50	40-150 Kc	400	14	50				Signal Constent Noise Amplification Up To 200 Kc Width	Communications Antennae	Operator Picks Input Signal Then Throws Switch From "Search" To "Jam". Noise Bandwidth Largely Constant Over Its Tuning Range
AN/ARQ-7	Spotkie	Receiver and Spot Jammer	38-48	30 Kc	450	112	50				Random Noise (Buzzers)	Three Wire Fan	"Receive-Transmit" Switch Controls Power To Either The Receiver Or Transmitter.
AN/APQ-2 AN/SPT-4	Rug CXIM	Radar Jammer Against Search	200-560	7 Mc	450	28		20-5.5 20-5.5	5-1.5 5-1.5		Noise-AM With Frequency Components From 100 Kc To 3.5 Mc.	Round Stub Cut To Length, Or Fixed Broadband Stub, Dipole and Reflector For Shipborne Use	Set Ordinarily Pre-Tuned Before Take Off And Requires No Further Adjustments During Flight.
AN/ARQ-8	Low Frequency Dina and Dinamate	Suppressed Carrier Communications Jammer and Search Receiver. Can Be Converted For Use Against German Guided Missiles.	25-106	XTR-100 Kc REC-75 Kc	Dina 276 Dinamate 75						AM Noise Transmitted Without A Carrier	Whip Or Fixed Wire AS-66/ART AS-67/ART	Designed To Be Used With Dinamate Receiver But Will Operate With Other Receivers. Control Set For Remote Operation Over The 5 Mc Freest Band.
AN/APT-1 AN/SPT-1	(CXDP) Dina II	Barrage and Spot Radar Jammer (Direct Noise Amplifier)	90-250	5 Mc	500	25		All Energy In Sidebands	20-8 (With 832 Tube)		Signal Is Direct Noise	Three Stub Masts Of 20" 832" And 164" Vertical Polarization	Has Remote-Control Box Which Includes Off-On Switch, Power Output Regulator, And Meter Indication Of Transmitter Output.
AN/APT-3 AN/SPT-3 (RC-183)	Mandrel (CXDQ)	Barrage and Spot Radar Jammer	65-136	9-5 Mc	280				12-9	3-2	AM With Random Noise Up To 4.5 Mc	Quarter wave Stub, Cut To Length, Vertical Polarization; Also Two Stub Dipole And Helix	Designed Primarily For Jamming German Frags. Modifications Can Extend Range To 125-150 Mc. New Model Will Have 70-250 Mc Range, 25-125 O/P, 4 Mc S/B, One Dial Tuning
AM-16/APT		Power Amplifier	65-168	1 - 3.5 Mc Band Set As Desired	700	14		180-90 Depends On R/T Setting					Same As That Used With Transmitters Amplifier For AM/APT-1 Or AM/APT-3 (Dina Or Mandrel) RF Driving Power 10 Watts
AM-16/APT		Power Amplifier	107-230	1-4 Mc Set As Desired	700	14		180-75 Depends On Freq And R/B	Depends On Driver Unit Used	Depends On Driver Unit Used			Designed To Work Into 40 Ohm Unbalanced Line Feeding Antenna Used With Dina Or Mandrel. RF Driving Power, 5 To 10 Watts
AN/APT-2 AN/SPT-2 (RC-184)	Carpet I (CXCD)	Radar Jamming Against Warburg	450-710	7 Mc	265	35			6-3	1.4-0.4 1.6-0.4	AM With Random Noise Up To 3.5 Mc	Five Stubs, Cut To Length, Per Vertical Polarization; Also Two Crossed Stub Dipole (Pins) For Circular Polarization.	Normally Used In Sufficient Number To Barrage A Band Of Frequencies.
AN/APQ-9 AN/SPT-5	Carpet III	Barrage Radar Jammer	475-565	7 Mc	450	50			25-15	5	Noise-AM Up To 3.5 Mc	Thin Stub For Vertical Polarization, Also Two Crossed Stub Dipole Circular Polarization	
AN/APT-5 AN/SPT-6	Web or Carpet IV	Barrage Jammer	350-1500 With ZF-528	1.5-3 Mc	585	58			30-8 28 W Up To 800 Mc		Noise-AM	Under Development Probably Two Crossed Stub Dipole For Circular Polarization	
AN/APT-4	Broadloom I	Medium Power Magnetron Jammer	150-400 With ZF-590 350-780 With ZF-579	6-10 Mc	1300	140			150		Noise-AM	Under Development Probable Use Of V-Slows & Split Can	
AN/APT-6	Broadloom II	Jammer Against Radar Communications	14-260	2-6 Mc Adjustable In Steps	1300	140			150		Noise-AM	Probable Use Of Fan, Whip And/Or Broadband Stub For Complete Frequency Coverage	
AN/APT-7	Broadloom III	Medium Power Magnetron Jammer	80-800 With ZF-589 and ZF-590	6-10 Mc	1300	140			150		Noise-AM	Under Development	
AN/APT-8	Broadloom IV	As Above	Above 800						150		Noise-AM	Under Development	

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\*\* Note: Unless Otherwise Indicated, Power Supplies For The Equipments Listed On This Page Are 80/115 V, 400-2800 CPS AC And/Or 28 V DC.  
\*\*\* Note: See Chart 8 For Details of Antennae

CHART 1

Special Projects School  
Radio Materiel School  
Naval Research Laboratory  
Washington 25, D.C.  
October, 1944

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## AMERICAN RCM EQUIPMENT

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TYPE NUMBERS	NCM CODE NAME	BRIEF DESCRIPTION	FREQUENCY COVERAGE IN MC/S	BANDWIDTH	DC INPUT WATTS		OUTPUT POWER IN WATTS			TYPE OF MODULATION	ANTENNA STRUCTURE ***	REMARKS
					AG	DC	TOTAL	CARRIER	SIDE-BANDS			
<b>AIRBORNE AND SHIPBORNE JAMMERS</b>												
AN/ARQ-9 (SCR-596 - T2)		Search Receiver And Spot Jammer	18-80 With Tuning Units	Variable 1, 3, 7, 10, 200 Kc	800		80 Variable Dependent On Freq.			Noise	Three Wire Fan	Second Model Calls For Three Transmitters, Modified Narrow Band Scanner, Additional Broad Band Scanner
TDY (Navy)		Barrage And Spot Radar Jammer	368-780	7 - 18 Mc	1800		180 Watts			Noise - AM	2 Broadband Dipole Or One Wideband Conical Antenna With A Conical Counterpoise	TDY-1 Uses 3 Changeable RF Sections To Cover The Frequency Range Of 80 To 1200 Mc.
CIGS (Navy)		Jammer Against Guided Missiles	18-86				1000 To 600			Tone Noise	Sleeve-type Antennas	Predecessor of HJ-6
MAS		Jammer Against Guided Missiles	41-81		1800 W at 118 V 60 cps		250			Tone	2 - TCS Type Whip	Jammer Given 250 W. (Ave.) of P.F. Power Modulated At Any One Of Four Audio Rates.
TEA (XJ-4 IXC)		Jammer Against Guided Missiles	18-86 40-188		8 KW at 440 V 3ø		2000 To 1000. 1100 To 800			Tone, Noise With "Cook Thru" Feature	4 - Sleeve Type  2 - Sleeve Type	TEA Consists Of 2 XJ-4's & IXC's Using Common Power Supply.
<b>GROUND JAMMERS</b>												
AS/PTT-1	Beaver	Jamming System Using AS/PTT-1 (Dime II)	98-210	8 Mc			100-80			Noise-AM	Two Dipole Radiators Fed In Phase, Each With Corner-Type Reflector.	Beaver Installation Consists Of Dime Transmitter With Power Amplifier (AS-14/PTT Or AS-14/APT)
AS/MPQ-1	Tube	High Powered Truck Mounted Barrage Jammer	480-800 430-810	10 Mc (8 For Tube)	78 KW (For Tube)		Above 25 Kw (For Tube) Total 80 Kw			Noise-AM	Tower With Paraboloid (Made In England)	Oscillator Uses Two Type 6X4's Beamstream Tubes Each Separately Modulated Over Half The Frequency Range
AS/MPQ-2 Modified SCR-399		Ground Communications Jammer, Mobile Mount	0.98-18 With Three Tuning Units				800 CW 300 Phone			Noise And Squeals	Two Half Rhombic Balloon Supported, Whip Antennas Above 10 Mc. Radiation Vertically Polarized	Four AS/MPQ-2 Transmitters Are Used With Radio Control Central AS/MPQ-1 Which Consists Of Eight Receivers To Cover 800 Kc To 100 Mc Per Search Of Enemy Signals And Rapid Tuning Of The Jammer.
A-3600	Ground Cigar (AM)	High Powered Ground Communications Jammer, Transportable	34-68				Above 60 KW			FM At A Rate Of About 800 CPS Over A Band Of 4 Mc	Cage Antenna Tower Mounted	Transmitter Consists Of Four Push Pull Oscillators Using Resonant Quarter Wave Lines In Both Cathode And Grid Circuits.
AN/ART-1	Cigar	As Above	30-80		30 KW 360 V, 50 cps or 440 V 60 cps		18 KW (Approx)			FM Ranging From 150-870 CPS Continuously Varying Rate, 0.5 To 8 Mc.	3-Mast, Broad-Band, Adjustable Pattern Vertical Rhombic Ant.	Specifications Given Are Tentative.
<b>EXPENDABLE JAMMERS</b>												
AS/CWT-2	Chick	Air Transportable Expendable Jammer Against CW And Speech Communications	1-7 Covered By Six Units	Order Of 1-1 Mc			Battery Operated 4-8 Hr. Life Up To 8			Spark Type Transmitter	Trailing Wire 100 To 150 Feet	Uses Spark Type Transmitter. Employs Delayed Parabolic Spreading And Pointing For Arriving Antenna During Descent.
AS/CPT-1	Chick	Air Transportable Expendable Jammer	540-880 (Pursburg Frequency)				Storage Battery 1 Hr. Life 80 Peak			PPF 60 KC Pulse Period 1/2 M/SEC	Self Contained Stub. Mast To Emit Horizontally And Vertically Polarized Waves	Will Radiate Energy Spread Over 90 Mc Band During Descent.
<b>DECEPTION JAMMERS</b>												
AN/APQ-8 And AN/APQ-15	Moonshine	Pulse Repeater For Probing Pulse Radar Search. Several Models Differing In Frequency, Transmitter Circuit And Delay Circuit	Most Models Operate In The Band 540-880 Also 100-186				100			Pulses And Pulsed AM	Depends On Frequency Band To Be Covered	Equipment Consists Of A Receiver And Transmitter Tuned To The Frequency Of The Incoming Signal. A Delay Circuit To Time The Transmitter And A Circuit To Block The Receiver For The Duration Of The Outgoing Signal.
	Peter	Pulse Repeater	470-718	Four Channels 3-6 Mc/Channel	800	180	8 Max.			20-30 CPS Square Wave		Pulse Repeater With Modulation As Synchronized With Laser. Switching Rate Of Heavy 6E Set As To Produce Pointing Error
** Note: Unless Otherwise Indicated, Power Supplies For The Equipments Listed On This Page Are 80/118 V, 400-2600 CPS AC And/Or 28 V DC						Submitted by JELA Revised by Radio Materiel School Naval Research Laboratory Washington 25, D.C. October, 1954						
** Note: See Chart 5 For Details Of Antennas						CHART 2						

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REL	ARMY	NAVY	DESCRIPTION	EQUIPMENT USED WITH	FREQUENCY (MC/S)	POLARIZATION	LENGTH OVERALL	LENGTH OUTSIDE PLANE		WEIGHT	ADJUSTMENT	CONNECTION	REMARKS
								LINE	OFF				
<b>ANTENNAS</b>													
	AS-89/ART		Whip Antenna	AN/ART-9 AN/ART-10 AN/ARQ-8	37-51	Vertical	72"						
	AS-97/ART		As Above	AN/ART-11 AN/ARQ-8	45-65	Vertical	54"						
A-2608	AS-44/APR	Same	Cone	AN/APR-5	1000 - 3100 Without Adjustment	Non-Directional Pattern Perpendicular To Axis Of The Cone. Can Be Mounted To Receive Either Horizontal Or Vertical Polarized Radiation.	8"	3"	8	0	Fixed	Type "B"	Has A 1000 Mc High Pass Filter Incorporated In The Transmission Line To Reduce Spurious Responses Below 1000 Mcgrayside.
A-8701	AS-45/APR	Same	Wave-Guide	AN/APR-6	3000-3600	Primarily Circular Field With Increased Directivity Obtained By Use Of Horn Termination.	Inside Diameter 7/8" X 1 31/32"				Fixed	Wave-Guide	Several Sizes Of Wave Guide Have Been Developed Which Operate Successfully With The AN/APR-6 Microvave Receiver, For Both Airborne And Shipborne Installation.
J-303	AS-33/APT	Same	Thick Stub	AN/APT-8 AN/APQ-1 AN/APQ-9	450-775 With SWR Of 2 To 1 Or Less	Vertical	18 3/8"	8 1/2"	8	1	Fixed		
H-313	AS-34/APT	Same	Thick Stub: Consists Of A Phenolic Impregnated Maple Mast Plated With A Thick Layer Of Copper.	AN/APT-1 AN/APT-3	180-840 With SWR Of 2 To 1 Or Less	Vertical	24 5/16"	17"			Fixed	Type "B"	The Antenna Is Supplied In A Number Of Lengths In Order To Obtain The Best Standing Wave Ratio For The Required Operating Frequencies. These Cuts Are Given Different A-1 /APT Numbers; Other Lengths Than Those Indicated Here May Be Used Operationally AS-61, -68, -43/APT Are 450 Mountings Of AS-36, -37, -38/APT. H-313 Replaces H-801 Stub (AS-28/APR) Used With Receiver AS/APR-5.
H-313	AS-37/APT	Same	As Above	AN/APT-1	114-150 With SWR Of 2 To 1 Or Less	Vertical	30 8/16"	23"			Fixed	Type "B"	
H-313	AS-38/APT	Same	As Above	AN/APT-1 AN/APT-3	70-400 With SWR Of 2 To 1 Or Less	Vertical	36 5/16"	29 1/2"			Fixed	Type "B"	
H-907	AS-65/ APQ-2	Same	Thin Round Stub	AN/APQ-2	800-700 With SWR Of 2 To 1 Or Less	Vertical	16 3/8"	16 3/4" Maximum	1	6	Cut To Length For Each Freq.	Type "B"	
H-1801		AS-37/ SPT-4	Dipole And Reflector	AN/SPT-4	340-436 With SWR Of 2 To 1 Or Less	Directional Array, Primarily Horizontally Polarized.	19 1/8"		16	0	Fixed	Type "B"	Shipborne Or Ground Use
H-1803	AS-67/ APQ-2		Thick Stub Mounted In Plastic Resinole.	AN/APQ-2	190-375 With SWR Of 2 To 1 Or Less	Vertical	13"	11 3/4"	7	0	Fixed	Type "B"	
H-2101	AT-49/ APR-4	AS-29/APR	90 Degree Cone Mounted In A Plastic Resinole Which Has A Cylindrical Wall With A Dome	SCR-887, ARC-1 AN/APR-1, -2 AN/APR-3 AN/APR-5	800-9000 With SWR Of 2 To 1 Or Less	Vertical	Overall Height 10 1/4" Max. Diameter 10 5/8"	7 3/4"	0	0	Fixed	Type "B"	Cone Is Supported By The Resinole Such That No Balis- trics Is Used In The Area In Which The Cone Tapers Into The Type "B" Fitting. H-2101 Replaces H-801 (AS-24/APR) Used With Receiver AN/APR-5.
H-2108	AS-69/APT	Same	"Fishhook" Two Crossed Dipole Mounted At An Angle Of 30° Toward The Ground Plane, Enclosed In A Resinole	AN/APT-2 AN/APT-5 AN/APQ-9	500-500 With SWR Of 2 To 1 Or Less	Radiates A Substantially Circularly Polarized Field.	8 1/8" With 1 Fresnel Lens, 11 5/8" With 2	6 1/2"	7	0	Fixed	Type "B"	Each Radiating Element Is Supported By One Conductor Of A Four-Conductor Quarter Wave Transmission Line. A Pair Of Transformer Sections Adapt The Antenna For Operation With Two Transmitters.
H-2408	LI	AS-34/SPT	Thick Dipole Consist Of Two Steel Tubes Connected By A Wooden Dowel With Center Clamp And Supported By A Brass Stand-Off.	AN/SPT-1	78-300 With SWR Of 2 To 1 Or Less	Can Be Mounted For Either Horizontal Or Vertical Polarization	Length: 66" Diameter: 6" Height Of Stand-Off: 19"		31	0	Fixed	Type "B"	For Shipborne Use. When Used With Unbalanced Equip- ment, Conversion Unit H-9408 Must Be Placed Between The Antenna And Equipment.
H-2408	LI	AS-34/SPT	Cone Dipole Antenna With 90 Degree Cone Within A Cylindrical Resinole The Assembly Being Supported By A Brass Stand-Off.	AN/SPT-1	300-1000 With SWR Of 2 To 1 Or Less	As Above	Length: 18" Height Of Stand-Off: 30 7/8"		27	0	Fixed	Type "B"	As Above Except Conversion Unit H-9410 Is Used
H-2508			Ground Based Antenna: Consists Of The Dipole Antenna Fed In Phase, Each Being A Corner Type Reflector.	AN/APT-1 AN/APT-3 AN/14/APT	90 - 180 With SWR Of 2 To 1 Or Less	As Above	Height: 8" Length: 11 1/2" Width: 4 1/2"		808	0	Dipole Require Adjustment To Cover The Band.	Type "B"	Uses H-8808 Conversion Unit For Connecting The Two Balanced Lead Dipole To The 90 Ohm Feedline. Power See Power Gain Ranging From 13.0 DB At 180 Mc To 4.0 DB At 90 Mc. Will Handle Approximately 100 Watts Input
H-2511			As Above	AN/APT-1 AN-18/APT	180 - 210 With SWR Of 2 To 1 Or Less	As Above	Height: 8 1/2" Length: 9 1/2" Width: 3 1/2"		106	0	As Above	Type "B"	As Above, Except Conversion Unit H-8809 Is Used. Gain Ranges From 12.5 DB At 180 Mc To 0.7 DB At 100 Mc. Both H-8808 And H-8811 Arrays Can Be Coupled In Series. With Suitable Transformer Ratio, For 2 DB Additional Gain.
H-2603	AS-69/APT		Two Stubs And Balun: (Balun: Balanced To Unbalanced Line Transformer, Also Known As "Socotol"). The Two Stubs Are Mounted One On Either Side Of The Plane And Bent At An Angle Toward The Axis, Fed 180° Out Of Phase.	AN/APT-1 AN/APT-3 AN-14/APT	98-180 With SWR Of 2 To 1 Or Less	Primarily Horizontal Polarization. With A Maximum Field At Angles Near The Horizon.	See H-213	See H-213			Fixed For Each H-213 Stub Length	Type "B"	H-2603 Consists Of The AT-37/APT Or Two AN-14/APT Stubs With H-8808 Balun And Small Lengths Of 50 Ohm Cable. H-2604 Uses Two AT-34/APT Stubs With H-8808 Balun And Similar Feeder Arrangement To The H-2603. Airborne, Primarily For H-8808.
H-2604			As Above	AN/APT-1 AN-18/APT	180 - 210 With SWR Of 2 To 1 Or Less		As Above	As Above	As Above			As Above	Type "B"
H-2901	LI	Cant-66 AMB	End Fed Dipole	TDY CSPR	848 - 700 With SWR Of 2 To 1 Or Less	Primarily Vertically Polarized	Height: 18 7/8" Width: 18"		17	10	Fixed	Same	For Shipborne Use
H-2908	LI	Cant-66 AMB	End Fed Dipole	TDY CSPR	848 - 800 With SWR Of 2 To 1 Or Less	As Above	Height: 11 1/2" Width: 14"		14	0	Fixed	Same	For Shipborne Use
F-8701	LI	AS-71/ SPT-8	Dipole Radiator With A Corner-Type Reflector, Directive Array For Use With Transmitters.	AN/SPT-8	480 - 780 With SWR Of 2 To 1 Or Less	Polarization Is In The Direction Of The Axis Of The Planar Angle And Is Adjustable By Rotating The Antenna Assembly.	18"		8	0	Variable, Covers Entire Band With Five Settings.	Type "B"	For Shipborne Or Ground Use. Will Handle Up To 25 Watts Input. Gain In The Maximum Direction Of Approximately 10 DB.
H-2300			V-Slotted And Split Can	AN/APT-4 AN/APT-8	360 - 1640	Horizontal					Variable	S 101	Two Antennas: One Fixed V-Slotted Dipole For The Range 360-600 Mc And Split Can With Variable Shunting Bar For Tuning Rest Of Range. Will Handle 100 Watts Input Power.

\* May Be Mounted In Inclined Or Horizontal Position To Give Other Polarization.

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CHART 5

Submitted By J21A  
Revised By Special Projects School  
Natick Materiel School  
Naval Research Laboratory  
Washington 25, D.C.

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AMERICAN R C M EQUIPMENT

SECRET

TYPE NUMBERS	RCM CODE NAME	BRIEF DESCRIPTION	COVERAGE IN MC/S	SENSITIVITY IN MICROVOLTS	BANDWIDTH IN MC/S	INPUT WATTS		PRESENTATION	TUNING	ANTENNA STRUCTURE ***	REMARKS
						AC	DC				
<b>AIRBORNE AND SHIPBORNE RECEIVERS</b>											
AN/ARQ-5	Nickelodeon	Broad-Band Panoramic Search Receiver For AM And FM Signals. Will Have AN/ARQ-12 Companion Unit.	18 - 80 And 48 - 80	85 (Approx)		188	10	Visual: 3 Inch CRT For Each Unit	Automatic Scanning	Not Critical; Single Or Two Antennas Can Be Used.	Presents Simultaneously The Entire Frequency Range.
AN/ARR-5 (Heliocaster S-27)		Communications Search Receiver For CW, AM And FM Signals.	26 - 143 In Three Bands	0.06 Watts For 20 Microvolts At Input		100	30	Outputs For Phone, Video And Panoramoscope.	Manual	Not Critical	Application In General Investigational Work. May Be Used With AN/APA-10 Or AN/APA-11.
AN/ARR-7 (Heliocaster SX-28)		Communications Search Receiver. Sensitive For CW Or FM Signals.	0.86 - 43	As Above		140	30	As Above	Manual And Optional Motor Driven Tuning Over Adjustable Portion Of Band.	Not Critical	Separate Power Supply 77-AN/AR Will Supply Either AN/ARR-5 Or AN/ARR-7 Receiver Together With AN/APA-10 Or AN/APA-11.
AN/APR-1 (Similar ARC-1) Redesigned SCR-567		Broad Band Rec For All Types Of Pulses And Other Signals	40 - 3400 With Four Tuning Units. (See "Remarks")	10	8	90		Headphones Or CRT Indicator	Manual Tuning; Three Units, Single Dial Control; One Unit, Two Dial Control.	Quarter Wave Stub For Low Frequencies, Cone Assembly Above 300 Megacycles.	Similar AN/APR-1 Shipborne Receiver. Tuning Unit Area TH-1(40-100 MC), TH-2(170-300 MC), TH-3(300-1000MC), TH-4(860-3400 MC)
AN/APR-2 CXC	Goldmark "Coffee Grinder"	Broad Band Receiver For All Types Of Pulses And Other Signals (Including CW-Automatic Tuning Only)	90 - 1000 In Two Bands 90 - 480 48 - 1000	0.5 To 3 Millivolts Insensitive		100	80	Visual, Aural And Tape Recording.	Manually Or Automatically. Two Butterfly Tuners Aligned For Continuous Coverage, Fed By Separate Antennas.	Same As Above	Scan Rate Set At 8 Or 6 KPS. Visual Panoramic Indication Of Signals And Tape Recording Of Their Approximate Frequency, Time Of Arrival, And Duration.
AN/APR-3 (Similar RC-164)	American Bookor	Improved Warning System For OCI, AI And OL.	AI Channel 480 - 850 OL,OCI Channel 830 - 600	Order Of 1 Millivolt At Detector.	AI Channel Adjustable 3-85		100	Yellow, Red Or Green Lights Respectively Where German AI, OL Or OCI Is Picked Up.	Tunable RF Filter For AI Channel; OL And OCI Has Fixed RF Section.	Each Channel Uses A Quarter Wave Stub Fed By A Cable Connector Containing Microwave Rejection Filter. 8 KV Sensitivity At Antennas	Provides For Simultaneous Reception In Three Channels, Two For German AI, And The Third For OL And OCI.
AN/APR-4 (Improved SCR-567 Army Version AN/APR-1)		Broadband Radar Search Receiver.	40 - 3300 With Four Tuning Units (See "Remarks")	50 To 100	Variable 4 Or 0.8	180	30	Headphones And Visual Indication.	Three Units: Motor Driven Sector Sweep, One Unit; Manual Tuning, Two Dials.	Quarter Wave Stub For Low Frequencies And Cone Assembly Above 300 Megacycles.	Unit Construction Receiver. Includes Variable IF Bandwidth And Manual IF Gain Control. TH-1(100-800MC), TH-2(170-300MC), TH-3(300-1000MC), TH-4(860-3400MC).
AN/APR-5A1 Using CV18/APR-5 Mixer (NAVY SPR-2A)		Microvave Search Rec. For CW, MCW And/Or Pulse Signals.	1000 - 3060	500 For MCW & CW	10	160	80	Visual For CW And Either Headphones Or Visual For All Modulated Signals	Single Dial Manual Tuning	Broadband Cone Mounted To Receive Either Horizontal Or Vertical Polarized Radiation.	Visual Indication Of CW Is By Means Of A Front Panel Meter. AN/APR-5A1 Is The Aircraft Version Of The AN/APR-5
AN/APR-5A1 Using CV18/APR-6 Mixer		Same As Above	3000 - 6130	50	10	180	85	Same As Above	Same As Above	Horn With Wave Guide Mounted To Receive Horizontal Or Vertical Polarized Radiation.	Covers The Tuning Range On The Second Harmonic Of The L/O Freq.
RDC		Motor Tuned Wide-Band Receiver For Wide-Band Panoramic Presentation	28.5 - 140 In 3 Bands			270 At 115 V. 60 CPS		Cathode Ray Oscilloscope With Sweep Rate Less Than 18 Per Sec.	Automatic	Fan Or Single Wire	Used With CXC In GRCX To Give Wide-Band Panoramic Radio Reception
AN/APA-6		Pulse Analyzer For AN/APR-4, AN/ARR-5, AN/ARR-6, AN/ARR-7, AN/APR-1 And AN/ARC-1		Requires About 100 Millivolts Signal Input		90		Cathode Ray Oscilloscope And Meter	Can Be Used With Any Receiver Capable Of Pulse Reception With 20/PS OF 100 Millivolts		Can Handle Pulses From 1/3 To 100 Microseconds Duration, With P/P From 5-5000 Pulses/Sec.
AN/APA-7		Photographic Adapter For Use With AN/APA-6 And AN/APA-11.				90		Monitor CRT Together With Photographic Tube.	Operator Adjusts Video Gain To Control Trace Intensity.		Derives Horizontal Sweep And Synchronizing Voltages From AN/APA-11. Uses 8 Sensitive CRT. Direct Exposure On 24 IN Film.
AN/APA-10		Panoramoscope For Use With AN/APR-1, -4, AN/ARR-5, -7, And Other Receivers Having Same IF Frequency.	± 80 KC With AN/APR-1, -4 ± 900 KC With AN/ARR-5			188		Signals Appear As Flips On CRT	Operator Can Vary Scan Width From 100 KC Down To Zero Scan.		Unit May Also Be Used As A General Purpose Scope.
AN/APA-11		Used With AN/APR-1, -4, Four Modes Of Operation Pulse Analyzer, P/P Oscilloscope, Searched Sweep Calibration.				190		Cathode Ray Oscilloscope	Mode Of Operation Controlled By A Single "Operation" Switch.		Connected To Video Output Of Search Receiver; Determines Pulse Shape, Duration And P/P Of The Selected Radar Signals.
AN/APA-23		Electro-Mechanical Tape Recorder Attachment For Search Recs, AN/APR-1, -4, AN/APR-5, -7	40 - 1000 With Three Tuning Units	About 0.88 Volt Input		198	50	Tape, Visible To Operator Through Window.	Slow Motor Sweep With Adjustable Tuning Range		Can Operate Unattended By Calibrating Frequency Scale And Marking Time At Beginning Of Operation.
(CDB-152) RDL	Blinker	Panoramic Search Rec. For Investigation Of Burglary Frequencies	265 - 455 Or 455 - 645	Under 500	0.6 MC		40	Headphones And Visual Indication By Dial Lights	Manual Or Automatic	Broadband Quarter Wave Stub Or Cone Assembly	

See Note: Unless Otherwise Indicated, Power Supplies For The Equipments Listed On This Page Are 80/115 V, 400-2600 Cycles AC And/Or 28 V DC.  
See Note: See Chart 8 For Details Of Antennas

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Similar to Navy RDC

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AMERICAN RCM EQUIPMENT

SECRET

TYPE NUMBERS	RCM CODE NAME	BRIEF DESCRIPTION	FREQUENCY COVERAGE IN MC/S	SENSITIVITY IN MICROVOLTS	IF BANDWIDTH IN MC/S	ISFOT		WATTS	METHOD OF PRESENTATION	TUNING	ANTENNA STRUCTURE	SIZE SEARCH	WEIGHT (LBS)	PROCUREMENT STATUS	REMARKS
						AC	DC								
<b>HOMING AND D.R. EQUIPMENT</b>															
AB/APA-17		Broadband Direction Finding System. Designed For Use With AB/APA-1, -4	300-1000				125	80	Video Pulses Are Viewed Directly On The Screen Of An Electrostatic Oscilloscope PFI	Remote Control Switch Used In Connecting Antenna Portions To Receiver (AB/APA-1, -4).	2 Antenna System; One Each For Vertical And Horizontal Polarized Signals. Mounted Back To Back On The Same Rotating Base Plate		75	Production Beginning	Polarization Determined By Switching Between The Vertical And Horizontal Antennas In The Rotating System.
AB/APA-24	Better	Direction Finding System Used With Any Receiver Having Proper Frequency Coverage	100-150 150-275 275-450 450-750				1 (Without Receiver)		Barophones Or Scope Connected To Receiver Output Used To Detect The Null	Remote Control Servo System Positions The Antenna, With Compass Direction Obtained By A Solenoid Indicator	2 Electrically Separate Antennas. One A Vertical Aerial And The Other A Horizontal Dipole; Retractable Mount		20-45 (Depends On Model)	Production Beginning	An Antenna And Receiver Attachment For Direction Finding By Minimum Indication. Provides Horizontal And Vertical Polarization. 6" Accuracy.
AB/APQ-14	Math	Homing Receiver For Glide Bombs	90-130	About 60	2			120 Battery Operated		See Remarks Operates On Radar Pulsed Signals Only	Systems Of Stubs For Horizontal Polarization	12" X 11 9/16" X 7"	23 Without Batteries	Models In Development	Equipment Controlled In Flight By A Low Switching Device And Differentiating Circuit To Provide Hor. And Vert. Definition

CONFUSION DEVICES

TYPE NUMBER	DESCRIPTION	FREQUENCY MC/S	LENGTH IN INCHES	WIDTH IN INCHES	STRIPS PER UNIT PACKAGE	TYPE NUMBER	DESCRIPTION	FREQUENCY MC/S	LENGTH IN INCHES	WIDTH IN INCHES	STRIPS PER UNIT PACKAGE	TYPE NUMBER	DESCRIPTION	FREQUENCY MC/S	LENGTH IN INCHES	WIDTH IN INCHES	STRIPS PER UNIT PACKAGE
CHA-2	Paper Backed Best Chaff	375	15	0.041	3600 ± 200	CHB-0	Paper Backed Flat Chaff	107	53	0.25	80 ± 5	CHA-1	Chaff Bags (Detuned)	70-300	400 ± 10 FT.	0.6	3
CHA-3	As Above	490-550	10	0.045	2000 ± 150	CHB-1	As Above	200	27	0.125	250 ± 10	CHA-2 (3)	Submerged Best Chaff	230-300	150	0.06	2800
CHA-4	As Above	700	7 7/8	0.045	30,000 ± 2000	CHB-0A	As Above Combination Package	80-200	68; 48; 36; 30	0.25	80; 100; 120; 150	CHA-3 (3)	As Above	250-300	15	0.045	2400 ± 200
CHA-5	As Above	3000	1 7/8	0.045	30,000 ± 2000	CHB-1A	As Above	210-330	27	0.125	300 ± 15	CHA-2A (3)	As Above	280-300	150; 10; 10	0.06	2700 Or Each
CHA-2B (3)	As Above Combination Package	280-300	150; 15; 10		2400 ± 200 Of Each							CHA-2B (3)	As Above	450-500	110; 10	0.045	2000 Or Each
CHA-2C	As Above	490-550	110; 10	0.045	1800 ± 150 Of Each												

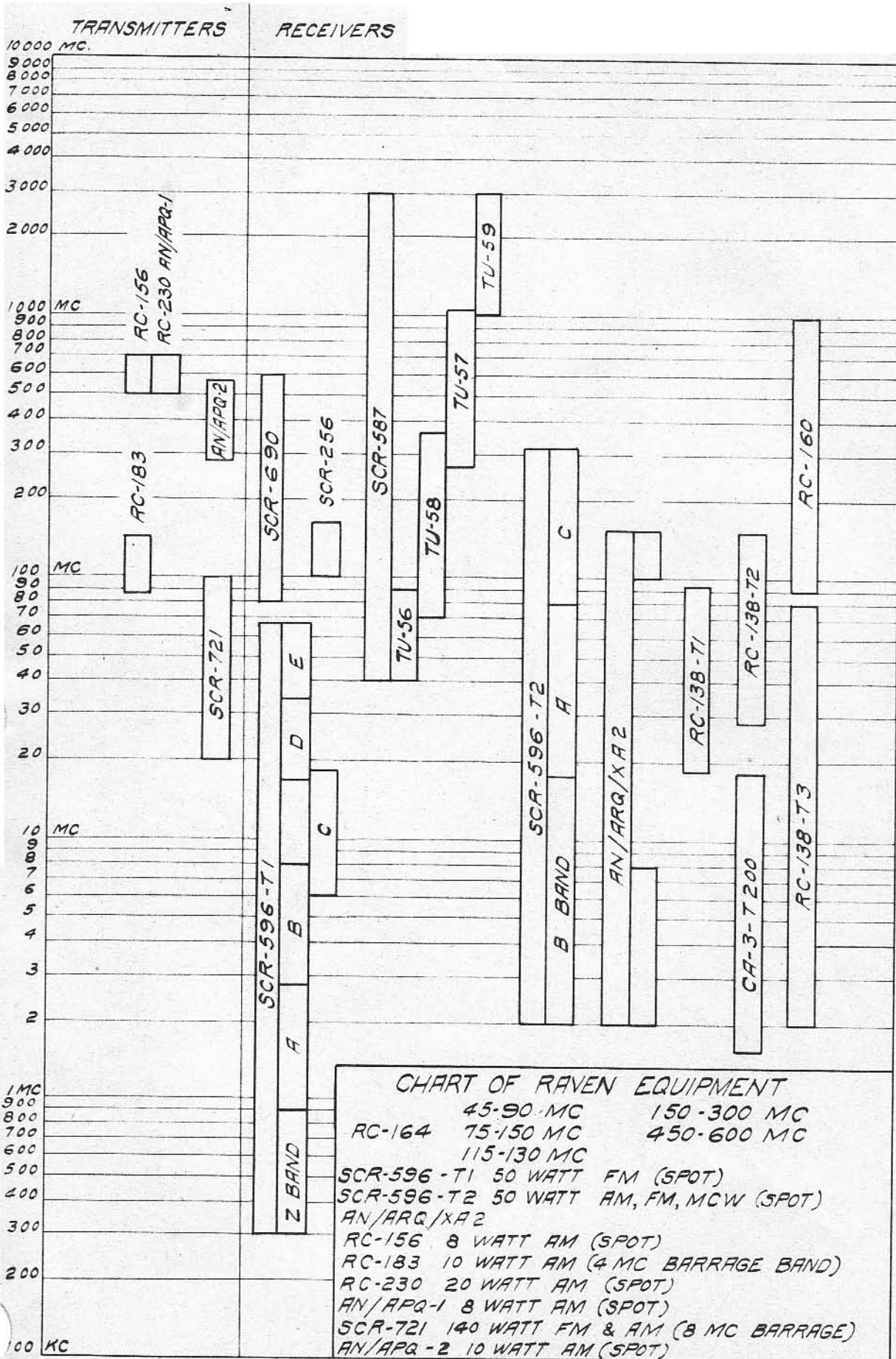
For data on "Window" (Ray Type Of Confusion Device) Refer To Associated Diagrammed Sheets.

MISCELLANEOUS TEST EQUIPMENTS

TYPE NUMBERS	USE	TUNING RANGE (MC)	POWER OUTPUT	POWER SUPPLY	SIZE	WEIGHT LBS.	REMARKS	TYPE NUMBERS	USE	TUNING RANGE (MC)	POWER OUTPUT	POWER SUPPLY	SIZE	WEIGHT LBS.	REMARKS
TS-47/AP	Test Oscillator For AB/APA-1, -4	40-200 Harmonics To 3000 Mc	100 MW	80/110/230 V 60-2800 CFS	6 3/8" X 8" X 15 7/8"	15	RF Output Can Be Sine Wave Modulated About 50% At 1000 CFS Or Pulse Modulated At FMP OF 500 With TD U/S Pulses. Has Adjustable Stub Antenna, Or Type "B" Antenna Connector	TS-87/AP	RF Wattmeter For Depot Use	60-220 Measures Range Of 2-25 Watts		No External Power Required	Carrying Case 1 Ft. Cube	25	Consists Of A PI Matching Section, Lampload, And Photoelectric Cell Indicator.
AS/WPT-71	Training Oscillator	450-750		3-8 W Carrier 1.5-9.5 Sideband	360 W AC	1-21D 1-21D	100% Modulation Using Either CV, Pulse, Sine Wave 50 And 200 Hz, Pulse And 150 CFS	TS-110/AP	RF Wattmeter For Depot Use	50-750 Measures Range Of 2-600 Watts		No External Power Required	20" X 12" X 12"	20	Thermocouple Type With Lossy Emissor Resistor To Dissipate The RF Power.
AS/TPQ-71 (Over)	Low Power Transmitter For Training Purposes	100-230 With 2 MC Maximum Bandwidth		75 W 110 V 60-200 CFS	1-21D	41	Plate Modulation At 25, 75, 125, 200, 300 And 1000 Hz. Antenna-Wire 10" Long. AB/TPQ-71 Covers 80-270 MC With 200 HV 0/F. And Mod Of AM Sine Wave, Pulse, Sine And 0.5MC Or 2MC FH AT 40-100 CFS	TS-90/AP	Coaxial Wattmeter	400-1000			6" X 6" X 22"	13	Variable Length Coaxial Resonating Cavity, Crystal Rectifier, And Microammeter
EC-1284A	Heterodyne Frequency Meter For AB/APA-3	70-145 Sensitivity From 0-50 U/S, High To Low		Batteries B1 2-48 V A1 1-18V	6" X 6" X 6"	24	Used By Zero Beating Signal Audibly With Phases Or By Tuning To Dip In Plate Current Reading Of 1-130-A.	TS-83/AP	Carrier Checker II Combination Mod Monitor, F/O Meter And Prog. Meter For APQ-1, -2	200-450 400-700	200 V 50 MA	80 W 80/110 V 60-2800 CFS	Same As 1 ATE Except 11" Deep	23	Absolute Error: 0.5% Sensitivity: Overall: 25 HV; Without Prog. Meter: 25 HV
TS-92/AP	Heterodyne Frequency Meter	60-225		25 W 80/110/230 V 60-2800 CFS	6" X 8" X 8"	15	Indication By Barophones Or Meter (1-130-A). Similar To EC-1284-A In Performance. Error: Less Than 0.2%	TS-84/AP	Parametric Spectrum Analyzer	Any RCM Band With Center Frequency Within Range Of 80-1010 MC		125 W 80/110 V 60/2800 CFS	6 3/4" X 8 5/16" X 10"	24	Dial Accuracy: 1% Sensitivity: 500 Micro Volts
TS-174/V	Heterodyne Frequency Meter	20-250 Also Works Up To 300		Battery Operated	16" X 12" X 13"	42	Heterodyne Oscillator-Mixer Amplifier Type With Crystal Check Points At Every 5 MC Interval.	TS-98/AP	Double Feeding Alignment Device For Cima	20-200 Bandwidth Approx. 100 MC		50-24 W 110 V 60-2800 CFS	16" X 6" X 6"	20	Adjustable Bandwidth 0.5 To 7 Mcgays. Sensitivity: 1 Micro Volt
TS-176/V	Heterodyne Frequency Meter For Field Use	25-1000		Battery Operated	Carrying Case 16" X 12" X 13"	42	Heterodyne Oscillator-Mixer Amplifier Type With Crystal Check Points At Every 5 MC Interval.	TS-151/AP	Pickup Assembly Consisting Of Rod Antenna RF Choke And Crystal Detector				24" X 1" X 4"	1	Used Between Jumper And Output Meter To Obtain More Precise Reading In Aligning Transmitter
TS-70/AP	RF Wattmeter For Depot Use	200-800		No External Power Required	24" X 24" X 18"	30	Consists Of A Parallel - Line Matching Section, Lamp Load And Photoelectric Cell Indicator	AS/URA-71	Training Generator Giving Three Types Of Interference: (1) Burps (2) Missing Notes (3) Random Keying			1 Volt (Fixed) To Feed 175 Micro Also 1.5 Watts.	Three Sources Available: 25 W At 60 MC 24 W At 11.5 MC 350 At 11.5 AC	24	Designed To Be Mounted In The Vehicle Containing The AS/URA-71 As Part Of This Equipment.

Submitted by JILA  
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 Radio Material School  
 Naval Research Laboratory  
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**CHART OF RAVEN EQUIPMENT**

	45-90 MC	150-300 MC
RC-164	75-150 MC	450-600 MC
	115-130 MC	
SCR-596-T1	50 WATT FM (SPOT)	
SCR-596-T2	50 WATT AM, FM, MCW (SPOT)	
AN/APQ/XA 2		
RC-156	8 WATT AM (SPOT)	
RC-183	10 WATT AM (4 MC BARRAGE BAND)	
RC-230	20 WATT AM (SPOT)	
AN/APQ-1	8 WATT AM (SPOT)	
SCR-721	140 WATT FM & AM (8 MC BARRAGE)	
AN/APQ-2	10 WATT AM (SPOT)	