

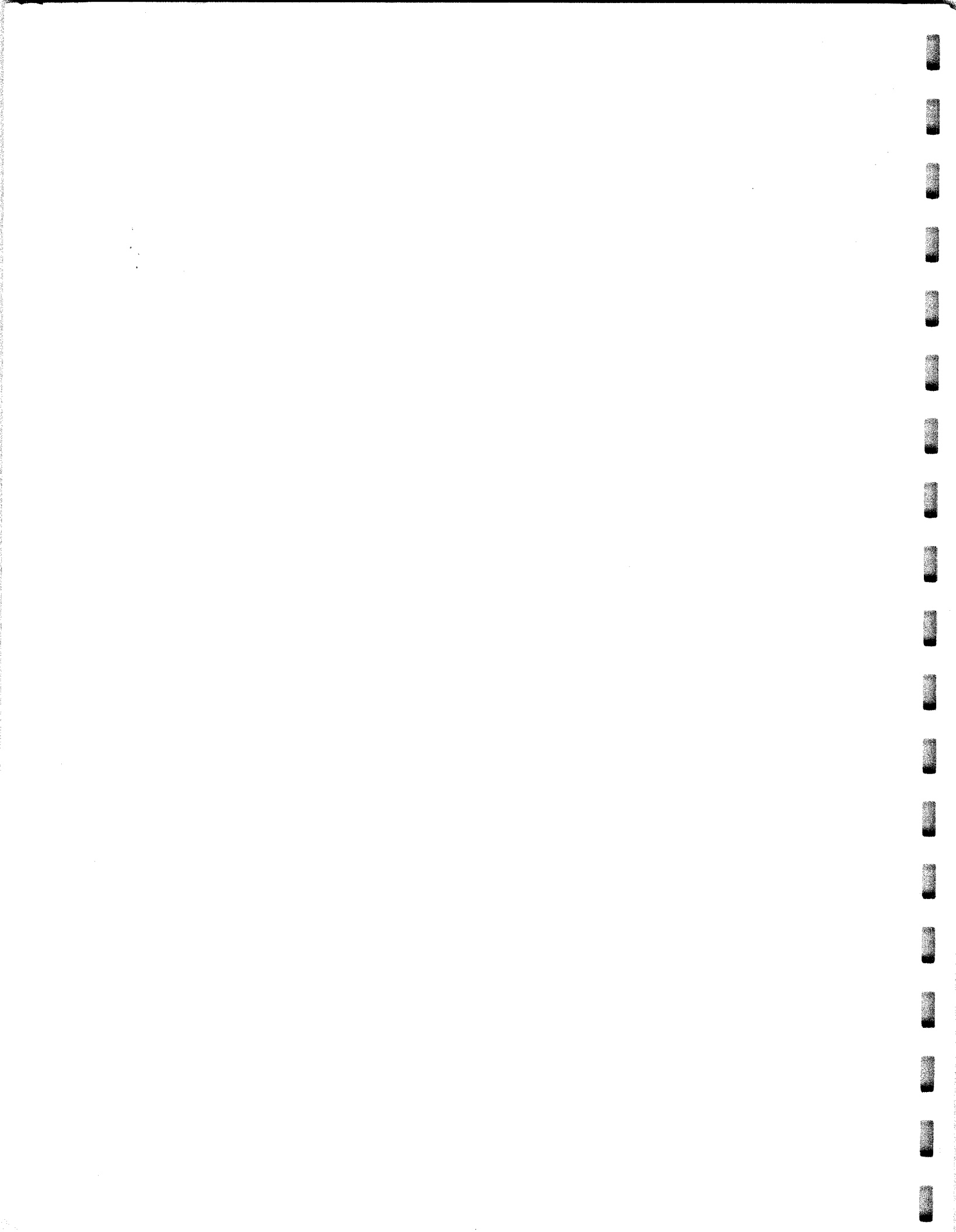
*Class 78—Miscellaneous Sonar*

**CLASS 78**

**MISCELLANEOUS UNDERWATER SOUND**

**CONFIDENTIAL**

**NAVSHIPS 900,109**



Class 78—Miscellaneous Sonar

3.78-1

NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION
78000 NC TRANSCIEVER ROCHELLE SALT		RW 79F 136	CBM 78008 QB PROJECTOR - VERTICAL ROCHELLE SALTS.			CBM 78014-A QCF HOISTING AND TRAINING MECHANISM (ELECTRIC). SAME AS CBM-78014 EXCEPT FOR NEW TRAINING MOTOR TYPE CBP- 21286. MEANS FOR ADAPTING TRAINING MOTOR, NEW COUPLINGS, NEW BEARING TRANS- MITTER TYPE CG-21285, NEW CHAIN WHEEL. (78014)		55RE78FTT67A
8/11/32 NOV. 41			2/1/34 NOV. 41			6/10/38 546 (IMP) NOV. 41		SK-4070
RW-78001 JK & JK-1 PICK-UP UNIT ROCHELLE SALT - DRUM TYPE.			CBM 78009 QB DRIVER - VACUUM TUBE RECLASSIFIED INTO -52100.		55RE78F1021A	CHAIN AND GUARD FOR MANUAL OPERATION.		78014-A
11/23/32 NOV. 41			2/1/34 NOV. 41					
RW-78002 JK & JK-1 PICK-UP UNIT ROCHELLE SALT - BEAM TYPE.			CBM 78010 QC PROJECTOR - HORIZONTAL MAGNETOSTRICTION.		55RE78F1010A	CBM 78014-B QCF-a HOIST TRAIN UNIT SAME AS -78014-A EXCEPT IS MODIFIED BY ADDING A 5 CT SYNCHRO CONTROL TRANS- FORMER. MAKING NECESSARY WIRING AND TER- MINAL BOX CHANGES TO ACCOMMODATE SYN- CHRO.		
11/23/32 NOV. 41			2/1/34 550A NOV. 41			12/1/43 DEC. 44		
78003 NC TRANSCIEVER, VERTICAL ROCHELLE SALT.		RW 78F 102	CBM 78011 NH PROJECTOR - VERTICAL - MAGNETOSTRICTION - 18 KC. ROUND; DC RES 8 OHMS; RESISTIVE COMPONENT OF IMPEDANCE AT RESONANCE - 100 OHMS.		55RE78F1008A	CVC 78015 QC & QC-1 VALVE 6" QUICK CLOSING GATE VALVE.		55RE78J1023A
4/27/33 NOV. 41			2/1/34 551 NOV. 41			2/19/34 6676A NOV. 41		
RW-78004 TRANSCIEVER MAGNETOSTRICTION.		RW 79F 145	CBM 78012 QC DRIVER - VACUUM TUBE		55RE78F1011A	CVC 78015-A QC-2 (HB) GATE VALVE IMPROVED 6" QUICK CLOSING GATE VALVE.		59RE78J1082A
5/17/33 NOV. 41			2/1/34 569 NOV. 41			7/1/35 NOV. 41		
RW-78005 QA - QB - QC REHOTE CONTROL HOISTING & LOWERING ASSEMBLY.		RW 79F 135	CBM 78013 NH DRIVER - VACUUM TUBE			CBM 78016 NH-1 PROJECTOR - VERTICAL - MAGNETOSTRICTION - 18 KC. ROUND; DC RES 8 OHMS; RESISTIVE COMPONENT OF IMPEDANCE AT RESONANCE 100 OHMS.		55RE78F1001A
6/15/33 NOV. 41			2/1/34 NOV. 41			3/21/34 551A NOV. 41		
RA-78006 NC-1 TRANSCIEVER RECTANGULAR AND VERTICAL.		RA 78F 202	CBM 78013-A NH-1 DRIVER - VACUUM TUBE SIMILAR TO 78013 EXCEPT TERMINAL MARKING AND CABLE ENTRANCES.			CBM 78016-A NH-1 & NH-2 PROJECTOR, VERTICAL FOR ECHO SOUNDING. SIMILAR TO 78016 EXCEPT DIFFERENT KIND OF BOLTS AND METHODS OF BOLTING.		
10/31/33 NOV. 41			3/21/34 NOV. 41			2/20/35 NOV. 41		
CBM 78007 QB PROJECTOR - HORIZONTAL ROCHELLE SALTS.			CBM 78014 QC HOISTING AND TRAINING UNIT (ELECTRIC). (MODERNIZED INTO CBM- 78014A).		55RE78F1012A	CBM 78017 QC-2 PROJECTOR		
2/1/34 NOV. 41			2/19/34 546 NOV. 41			7/7/34 550B NOV. 41		

DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER
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CBM 78018	QC-1, QC-2	55RE78F1055A	CBM 78023	QC-1		CBM 78028	JK-2 & QB-1	55RE78F1057A		
DRIVER - VACUUM TUBE (CANCELLED - UNITS RENUMBERED CBM-92085)			DRIVER - VACUUM TUBE (CHANGED TO CBM-52087).			PROJECTOR HORIZONTAL.				
7/7/34	569 C		8/1/34	569D		12/14/34				
NOV. 41			NOV. 41			NOV. 41				
CBM 78019	NM-2	55RE78F1052A	CBM 78024	QC-1	55RE78J1039A	CBM 78028-A	JK-4	55RE78J1195A		
DRIVER - VACUUM TUBE			HOISTING & TRAINING UNIT, ELECTRIC. (MODERNIZED INTO CBM-78072).			PROJECTOR - SPHERICAL HORIZONTAL, ROCHELLE SALT. 14 TO 32 KC.				
7/7/34			11/28/34	546G		7/26/38	591 A			
NOV. 41			NOV. 41			NOV. 41				
CBM 78020	NM-2		CBM 78024-A	QC-1	55RE78J1039A	CBM 78029	NM-1a, NM-5a	55RE78F1029A		
PROJECTOR			HOISTING AND TRAINING MECHANISM(ELECTRIC). SAME AS CBM-78024 EXCEPT FOR MINOR CHANGES IN PROFILE DIMENSIONS(MODERNIZED INTO CBM-78073).			PROJECTOR - VERTICAL - MAGNETOSTRICTION - 18 KC. RECTANGULAR; DC RESISTANCE 8 OHMS; RESISTIVE COMPO- NENT OF IMPEDANCE AT RESONANCE 100 OHMS.				
7/7/34			5/8/38	546E		12/20/34	602			
NOV. 41			NOV. 41			NOV. 41				
RA-78021	XQB	RA 78F 203	CBM 78024-B	QC-1	55RE78J1039A	CBM 78029-A	NM-4	55RE78F1101A		
TRANSMITTER			HOISTING AND TRAINING MECHANISM(ELECTRIC). SAME AS CBM-78024 EXCEPT FOR MINOR CHANGES IN PROFILE DIMENSIONS(MODERNIZED INTO CBM-78074).			PROJECTOR-MAGNETO STRIC- TION (18KC). ROUND; SAME AS CBM-78029 EXCEPT CABLE ENTRY MODIFIED FOR SUB- MARINES AND DC RESISTANCE EQUALS 32 OHMS AND RESISTIVE COMPONENT OF IMPEDANCE AT RESONANCE - 750 OHMS.				
7/17/34			12/10/35	546 J		3/2/35	602 A			
NOV. 41			NOV. 41			NOV. 41				
CBM 78022	HA-1	55RE78J1022A	CBM 78024-C	QC-1	55RE78J1039A	CBM 78029-B	NM-9	55RE78J1145A		
HOISTING & TRAINING UNIT WITH PUSH RODS FOR LOWER BEARINGS. (MODERNIZED INTO CBM-78022A).			HOISTING AND TRAINING MECHANISM(ELECTRIC). SAME AS CBM-78024 EXCEPT FOR MINOR CHANGES IN PROFILE DIMENSIONS(MODERNIZED INTO CBM-78075).			PROJECTOR-MAGNETO - STRICTION (18KC). ROUND; SAME AS CBM- 78029 EXCEPT FOR SLIGHT MODIFICATION. DC RESISTANCE - 32 OHMS; RESISTIVE COM- NENT OF IMPEDANCE AT RESONANCE - 750 OHMS.				
11/23/34	546B		12/21/37	546 L		12/21/37	602 C			
NOV. 41			NOV. 41			NOV. 41				
CBM 78022-A	QCB	55RE78J1182A	CBM 78025	NG-2	55RE78F1042A	CBM 78030	HA	CV5/S68/2		
HOISTING & ROTATING MECH- ANISM. SAME AS CBM-78022 EXCEPT IMPROVED TO USE A NEW TRAINING MOTOR TYPE CBP-21286, MEANS FOR ADAPTING TRAINING MOTOR, NEW COUPLINGS, NEW BEARING TRANSMITTER TYPE CG-21285, NEW (78022)			DRIVER			HOISTING & TRAINING MECHANISM. SAME AS 78022 EXCEPT LOWER BEARING IS FORCED DOWN BY SHAFT COLLAR INSTEAD OF PUSH RODS, AND LENGTH OF TRAVEL WHICH IS 3 FEET 6 INCHES(MODERN- IZED INTO CBM-78076).				
6/8/38	546B IMP		12/14/34	597		1/2/35	546A			
NOV. 41			NOV. 41			NOV. 41				
CHAIN WHEEL, CHAIN AND GUARD	78022-A		CBM 78026	QB-1	55RE78F1034A	CBM 78030-A	HA-2			
FOR MANUAL OPERATION.			DRIVER RECLASSIFIED INTO -52098.			HOISTING & TRAINING MECHANISM(ELECTRIC). SAME AS CBM-78030 EXCEPT FOR MINOR CHANGES IN PROFILE DIMENSIONS(MODERNIZED INTO 78077).				
12/1/43			12/14/34	598A		3/2/35	546 F			
DEC. 44			NOV. 41			NOV. 41				
CBM-78022-B	QCB-a		CBM 78027	NG-2	55RE78F1041A	CBM 78030-B	HA-3			
HOIST TRAIN UNIT SAME AS -78022-A EXCEPT IS MODIFIED BY ADDING A 5 CT SYNCHRO CONTROL TRANS- FORMER AND MAKING NECESSARY WIRING AND TERMINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.			PROJECTOR VERTICAL.			HOISTING AND TRAINING MECHANISM(ELECTRIC). SAME AS CBM-78030 EXCEPT FOR MINOR CHANGES IN PROFILE DIMENSIONS(MODERNIZED INTO -78078).				
12/1/43			12/14/34	592		3/2/35	546 E			
DEC. 44			NOV. 41			NOV. 41				
DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER

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CMT 78031	HB		CVI 78038	QC-1a	64RE78J1090A	CBM 78044-B	NH-4a	55RE78J1100A
HOISTING & TRAINING MECHANISM. (MODERNIZED INTO CBM-78079 TO 78084 INCI)			HOISTING & TRAINING MECHANISM - HYDRAULIC. FOR CA32-4-6-B. SIMILAR TO CVI-78014 EXCEPT SEVERAL DIMENSIONS ARE DIFFERENT.			RACK FOR HOUSING AMPLIFIER, DRIVER AND INDICATOR.		
3/1/35			7/12/35			12/28/36	583P	
NOV. 41			NOV. 41			NOV. 41		
CVC 78032	HB	59RE78J1028	CBM 78039	QC-4	55RE78F1098A	CBM 78045	NH-5 & QC-5b	55RE78J1084A
VALVE 6" QUICK CLOSING GATE VALVE.			RACK FOR HOUSING CBM-55019 INDICATOR, CBM-50057 AMPLIFIER, CBM-78040 DRIVER, CBM-78051 AMPLIFIER (FOR JK).			DRIVER (INCLUDES RECTIFIER) 18 KCS. (CHANGED TO CBM-52089).		
5/2/35			12/10/35	583-H		2/26/35	720	
NOV. 41			NOV. 41			NOV. 41		
CRV 78033	QC-3 & NH-3	10RE78J1070A	CBM 78040	QC-4	55RE78F1102A	CBM 78046	QC-5	55RE78J1084A
DRIVER			DRIVER FOR MAGNETOSTRICTION ECHO RANGING EQUIPMENT FOR SUBMARINES 179 TO 187. (RECLASSIFIED INTO -52106).			DRIVER (24 KCS) (INCLUDES RECTIFIER). (CHANGED TO CBM-52088).		
5/8/35		X-823550	12/10/35	610-E		2/26/35	720A	
NOV. 41			NOV. 41			NOV. 41		
CAC 78034	QC-3 & NH-3	52RE78F1072A	CBM 78041	QC-4	55RE78F1100A	CBM 78046-A	QC-5a	55RE78J1085A
PROJECTOR HORIZONTAL.			PROJECTOR, SPHERICAL, MAGNETOSTRICTION.			DRIVER (24 KCS) CANCELLED. RENUMBERED CBM-52146.		
5/8/35			12/10/35	550-D		2/25/37	720 C	
NOV. 41			NOV. 41			NOV. 41		
78035	QC-3 & NH-3	32RE78F1071A	CBM 78042	QB-1a	55RE78F1062A	CBM 78047	QC-5b	
PROJECTOR VERTICAL.			DRIVER FOR ROCHELLE SALT ECHO RANGING EQUIPMENT, SUBMARINES 176, 177, 178. (RECLASSIFIED TO TYPE -52099).			DRIVER (18 KCS) (INCLUDES RECTIFIER).		
5/8/35			12/10/35	598-B		2/26/35	720B	
NOV. 41			NOV. 41			NOV. 41		
78036	HC-2	55RE78J1027A	CBM 78043	NH-4	55RE78F1102A	CBM 78048	QC-5 & QC-5a	55RE78F1086A
CABINET FOR HOUSING CBM-78025 DRIVER, CBM-20025 RECTIFIER, CBM-50030 AMPLIFIER AND CBM-55014 DEPTH INDICATOR.			DRIVER FOR SUBMARINE TYPE ECHO SOUNDING EQUIPMENT, SS 176-187.			PROJECTOR (SPHERICAL) 24 KC; LOW IMPEDANCE TYPE; 8 OHMS DC; RESISTIVE COMPONENT OF IMPEDANCE 100 OHMS; SIMILAR TO 78017 EXCEPT FOR METHODS OF INSULATION.		
6/12/35	583B		12/10/35	610-B		2/26/35	550F	
NOV. 41			NOV. 41			NOV. 41		
78037	QB-1 & JK-2	55RE78J1032A	CBM 78044	NH-4	55RE78F1099A	CBM 78048-A	QC-6	55RE78F1147A
CABINET FOR HOUSING CBM-78025 DRIVER, CBM-20025 RECTIFIER, TWO CBM-50031 AMPLIFIERS AND CBM-55015 RANGE INDICATOR.			RACK FOR HOUSING 78043 DRIVER, 55020 DEPTH INDICATOR, 50038 AMPLIFIER, AND 53038 FILTER JUNCTION BOX.			PROJECTOR 24 KC. SIMILAR TO 78048.		
6/12/35	583A		12/10/35	583-G		11/17/37	550J	
NOV. 41			NOV. 41			NOV. 41		
CBM 78037-A	QB-1a	55RE78J1085A	CBM 78044-A	NH-4	55RE78F1099A	CBM 78048-B	QCJ	55RE78J1235A
RACK FOR HOUSING CBM-78042, CBM-20025A, CBM-55015, CBM-50031 AND CBM-50031A.			RACK SAME AS -78044 EXCEPT LEFT HAND ARRGT.			PROJECTOR SIMILAR TO CBM-78048A BUT HAS BEEN REDESIGNED BY CHANGE IN TUBE LENGTH OF MAGNETOSTRICTION TUBE TO RESONATE WITH CLOSER TOLERANCE TO 24 KC.		
12/10/35	583J		8/6/36	583H		11/1/38	550K	SK-3866 ALT 0
NOV. 41			NOV. 41			NOV. 41		

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CBM 78049	QC-5b	55RE78F1087A	CVI 78057	HC-1a	64RE78J1075A	CBM 78063	NH-4a	55RE78F1111A
PROJECTOR (SPHERICAL) 18 KC; LOW IMPEDANCE TYPE; 8 OHMS DC; RESISTIVE COMPONENT OF IMPEDANCE 100 OHMS.			HYDRAULIC - HOIST TRAIN UNIT. TRAVEL: 40"; SHAFT LENGTH: 105-1/4"; EXTENSION: 78-1/2" (BELOW SEA CHEST COVER). (DD394-DD396).			DRIVER RATHBURNE 24 KC.		
2/26/36	5500		4/24/36		CVI:E-19395	12/28/36	610 C	
NOV. 41			NOV. 41			NOV. 41		
CVI 78050	QC-5 & QC-5b	64RE78J1073A	CVI 78058	HC-1b	64RE78J1076A	RN-78064	QC-1a	RV 78F 115A
MOIST TRAIN UNIT HYDRAULIC.			HYDRAULIC - HOIST TRAIN UNIT. TRAVEL: 45"; SHAFT LENGTH: 110"; EXTENSION: 83". (CV7).			BEARING INDICATOR: TRUE RELATIVE.		
Ø CVI:RE 16818 TO RE 16878.								
2/28/36	ØSEE ABOVE		4/24/36		CVI:E-19394	3/19/37		
NOV. 41			NOV. 41			NOV. 41		
CBM 78051	NH-6	55RE78F1116A	CVI 78059	HC-2	64RE78J1077A	CBM 78065	NH-9	55RE78J146A
RACK FOR HOUSING INDICATOR, AMPLIFIER, DRIVER AND CONTROL UNIT.			HYDRAULIC - HOIST TRAIN UNIT. TRAVEL: 45"; SHAFT LENGTH: 90-11/16"; EXTENSION: 64. (CA32, 34, 36).			RACK FOR INDICATOR RECEIVER AMPLIFIER, DRIVER AND POWER CONTROL UNIT.		
4/23/36	583K		4/24/36		CVI:E-19392	10/28/37	583S	
NOV. 41			NOV. 41			NOV. 41		
CBM 78052	NH-7	55RE78F1119A	CVI 78060	HC-2a	64RE78J1078A	CBM 78066	QC-6 & QC-6a	55RE78J1153A
DRIVER 32 VOLTS.			HYDRAULIC HOIST-TRAIN UNIT. TRAVEL: 45"; SHAFT LENGTH: 104-7/16"; EXTENSION: 78". TUSCALOOSA.			RACK HOUSES: (1) RANGE INDICATOR, (2) REMOTE CONTROL UNIT, (3) RECEIVER AMPLIFIER.		
4/23/36	610 C		4/24/36		CVI:E-19393	11/17/37	583R	
NOV. 41			NOV. 41			NOV. 41		
CBM 78053	NH-6	55RE78F1119A	CBM 78061	QC-4, JK-2a	55RE78J1103A	CBM 78067	* SEE BELOW	55RE78J1158A
DRIVER 120 VOLTS, 240 VOLTS, *			PROJECTOR - 24 KC. COMBINED ROCHELLE SALT & HIGH IMPEDANCE (750 OHMS) 24 KC PROJECTOR RADIATING IN OPPOSITE DIRECTIONS AND HOUSED IN A SINGLE ELLIPTICAL CASE, DC RESISTANCE 34 OHMS.			PROJECTOR - VERTICAL - MAGNETOSTRICTION - 18 KC. RECTANGULAR; DC RESISTANCE 8 OHMS; RESISTIVE COMPO- NENT OF IMPEDANCE AT RESONANCE 100 OHMS.		
4/23/36	610 D		9/30/36	733		* NH-8, NH-10, NH-11.		
NOV. 41			NOV. 41			11/19/37	763	SK-3529A
NOV. 41						NOV. 41		
CBM 78054	NH-6, NH-6A	55RE78F1120A	CBM 78061-A	QC-7	55RE78J1154A	CBM 78068	JK-3	55RE78J1154A
PROJECTOR - VERTICAL - MAGNETOSTRICTION - 16.5 KC. ROUND; DC RESISTANCE - 32 OHMS; RESISTIVE COMPO- NENT OF IMPEDANCE AT RESONANCE - 750 OHMS			PROJECTOR - COMBINED MAGNETO STRICTION & ROCHELLE SALT. COMBINED ROCHELLE SALT & LOW IMPEDANCE (100 OHMS) 24 KC PROJECTOR RADIATING IN OPPOSITE DIRECTIONS. SIMILAR TO -78061 EXCEPT HOUSED IN A TRUE SPHERE CASE; DC RESISTANCE 8 OHMS. 11/22/37 733 A NOV. 41			PROJECTOR ROCHELLE SALT USES SAME CASE AS 78061A.		
4/23/36	551 E		11/22/37	733 A		11/22/37	733B	
NOV. 41			NOV. 41			NOV. 41		
CBM 78055	NH-7	55RE78F1121A	CBM 78061-B	QCM		CBM 78069	HD	55RE78J1149A
PROJECTOR-VERTICAL- MAGNETOSTRICTION - 16.5 KC. RECTANGULAR DC RESISTANCE - 32 OHMS; RESISTIVE COM- NENT OF IMPEDANCE - 750 OHMS. SIMILAR TO -78029.			PROJECTOR - COMBINED MAGNETO STRICTION & ROCHELLE SALT. SPHERICAL - 24 KC. SAME AS -78061 EXCEPT DIAPHRAGM FLANGE INCREASED FROM ".065 TO ".093.			HOIST TRAIN MECHANISM		
4/23/36	602 B		8/9/38	733 C	SK-3416	11/24/37	546R	
NOV. 41			NOV. 41			NOV. 41		
CVI 78056	HC-1	64RE78J1074A	CBM 78062	QC-1b	55RE78F1096A	CBM 78069-A	QCJ & QCK	55RE78J1236A
HYDRAULIC-HOISTTRAIN UNIT TRAVEL: 40"; SHAFT: LENGTH 113-3/4"; EXTENSION: 87". (DD397-DD408).			DRIVER (DES DIV 19) 18 KC.			HOIST-TRAIN MECHANISM SAME AS 78069 EXCEPT USES DIFFERENT TYPE OF LIMIT SWITCH FOR UP AND DOWN TRAVEL.		
4/24/36		CVI:E-19396	12/28/36	569 G		11/1/38	546Q	SK-3711C ALT 0
NOV. 41			NOV. 41			NOV. 41		

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CBM 78069-B QCJ-1, QCK-1	55RE78J129TA	HOIST-TRAIN MECHANISM SIMILAR TO NAVY TYPE -78069A EXCEPT LIGHT INDICATOR SWITCHES ARE COMBINED IN TRAVEL LIMIT SWITCHES.	CBM 78072 QCA	55RE78J1172A	HOISTING AND TRAINING MECHANISM (ELECTRIC). SAME AS CBM-78024 EXCEPT FOR NEW TRAINING MOTOR, TYPE CBP-21286, MEANS FOR ADAPTING TRAINING MOTOR, NEW COUPLINGS, NEW BEARING TRANSMITTER TYPE. CG-21285, NEW CHAIN WHEEL. (78024)	CBM-78075-A QCA-a, QCA-1a		HOIST TRAIN UNIT; SAME AS -78075 EXCEPT IS MODIFIED BY ADDING A 5CT SYNCHRO CONTROL TRANSFORMER AND MAKING NECESSARY WIRING AND TERMINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.		
1/19/40 NOV. 41	546T	6919 ALT 0	6/8/38 NOV. 41	546G (IMP)	SK-4069	12/1/43 OCT. 44				
CBM-78069-C QCJ-a, QCK-a		HOIST TRAIN UNIT; SAME AS -78069-A EXCEPT IS MODIFIED BY ADDING A 5CT SYNCHRO CONTROL TRANSFORMER AND MAKING NECESSARY WIRING AND TERMINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.	CHAIN AND GUARD FOR MANUAL OPERATION.	78072		CBM 78076 QCB	55RE78J1181A	HOISTING AND TRAINING MECHANISM (ELECTRIC). SAME AS CBM-78030 EXCEPT MODERNIZED AS PER -78072.		
12/1/43 OCT. 44						6/8/38 NOV. 41	546A (IMP)	SK-4069 (78030)		
CBM-78069-D QCJ-1a, QCK-1a		HOIST TRAIN UNIT; SAME AS 78069-B EXCEPT IS MODIFIED BY ADDING A 5CT SYNCHRO CONTROL TRANSFORMER AND MAKING NECESSARY WIRING AND TERMINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.	CBM-78072-A QCA-a		HOIST TRAIN UNIT; SAME AS -78072 EXCEPT IS MODIFIED BY ADDING A 5CT SYNCHRO CONTROL TRANSFORMER AND MAKING NECESSARY WIRING AND TERMINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.	CBM-78076-A QCB-a		HOIST TRAIN UNIT; SAME AS -78076 EXCEPT IS MODIFIED BY ADDING A 5CT SYNCHRO CONTROL TRANSFORMER AND MAKING NECESSARY WIRING AND TERMINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.		
12/1/43 OCT. 44			12/1/43 OCT. 44			12/1/43 OCT. 44				
CBM 78070 QCF	55RE78J1166A	INDICATOR AMPLIFIER CONTROL UNIT. CONSISTS OF A CBM TYPE 583Y RACK, A CBM-20062 AMPLIFIER POWER PACK, A CBM-23118A REMOTE CONTROL UNIT, A CBM-46061 RECEIVER AMPLIFIER AND A CBM-55029A INDICATOR.	CBM 78073 QCA		HOISTING AND TRAINING MECHANISM (ELECTRIC). SAME AS CBM-78024A EXCEPT MODERNIZED AS PER -78072.	CBM 78077 QCB	55RE78J1184A	HOISTING AND TRAINING MECHANISM (ELECTRIC). SAME AS CBM-78030A EXCEPT MODERNIZED AS PER -78072.		
6/8/38 NOV. 41	583Y, 760A, 722K, 757B & 755B		6/8/38 NOV. 41	546K (IMP)	SK-4069 (78024A)	6/8/38 NOV. 41	546F (IMP)	SK-4069 (78030A)		
CBM 78070-A * SEE BELOW	55RE78J1171A	INDICATOR, AMPLIFIER CONTROL UNIT. CONSISTS OF A 583Y RACK, A CBM-20062 REC. AMPLIFIER POWER PACK, A CBM-23118B REMOTE CONTROL UNIT, A CBM-46061 RECEIVER AMPLIFIER AND A CBM-55029A INDICATOR. * QCA, QCB & QCB-1.	CBM-78073-A QCA-a, QCA-1a		HOIST TRAIN UNIT; SAME AS -78073 EXCEPT IS MODIFIED BY ADDING A 5CT SYNCHRO CONTROL TRANSFORMER AND MAKING NECESSARY WIRING AND TERMINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.	CBM-78077-A QCB-a		HOIST TRAIN UNIT; SAME AS -78077 EXCEPT IS MODIFIED BY ADDING A 5CT SYNCHRO CONTROL TRANSFORMER AND MAKING NECESSARY WIRING AND TERMINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.		
6/10/38 NOV. 41	583Y, 760A, 722K, 757B, 755B		12/1/43 OCT. 44			12/1/43 OCT. 44				
CBM 78070-B QCJ & QCK	55RE78J1237A	INDICATOR-AMPLIFIER CONTROL UNIT. CONSISTS OF A 583U RACK, A CBM-20062 REC. AMPL. POWER SUPPLY, A CBM-23118B REMOTE CONTROL UNIT, A CBM-46061 RECEIVER AMPLIFIER, A CBM-55029B INDICATOR. OTHERWISE SIMILAR TO CBM 78070 EXCEPT FOR TERMINAL PANEL	CBM 78074 QCA		HOISTING AND TRAINING MECHANISM (ELECTRIC). SAME AS CBM-78024B EXCEPT MODERNIZED AS PER -78072.	CBM 78078 QCB	55RE78J1183A	HOISTING AND TRAINING MECHANISM (ELECTRIC). SAME AS CBM-78030B EXCEPT MODERNIZED AS PER -78072.		
11/1/38 NOV. 41	760A, 722J, 757A, 755B		6/6/38 NOV. 41	546J (IMP)	SK-4069 (78024B)	6/8/38 NOV. 41	546E (IMP)	SK-4069 (78030B)		
ENGRAVING AND CABLE ENTRANCES	78070-B		CBM-78074-A QCA-a, QCA-1a		HOIST TRAIN UNIT; SAME AS -78074 EXCEPT IS MODIFIED BY ADDING A 5CT SYNCHRO CONTROL TRANSFORMER AND MAKING NECESSARY WIRING AND TERMINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.	CBM-78078-A QCB-a		HOIST TRAIN UNIT; SAME AS -78078 EXCEPT IS MODIFIED BY ADDING A 5CT SYNCHRO CONTROL TRANSFORMER AND MAKING NECESSARY WIRING AND TERMINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.		
			12/1/43 OCT. 44			12/1/43 OCT. 44				
CBM 78071 QCE		INDICATOR AMPLIFIER CONTROL UNIT. CONSISTS OF A CBM TYPE 583X RACK, A CBM-20062 AMPLIFIER POWER PACK, A CBM-23130 REMOTE CONTROL UNIT, A CBM-46061 AMPLIFIER AND A CBM-55029A INDICATOR.	CBM 78075 QCA		HOISTING AND TRAINING MECHANISM (ELECTRIC). SAME AS CBM-78024C EXCEPT MODERNIZED AS PER -78072.	CBM 78079 QCB-1	55RE78J1188A	HOISTING AND TRAINING MECHANISM. SAME AS CMT-78031 FOR CL40, 41 & 48 & CA45 (CRUISERS) EXCEPT MODERNIZED AS PER -78072.		
6/8/38 NOV. 41		SK-3781C	6/8/38 NOV. 41	546L (IMP)	SK-4069 (78024C)	6/8/38 NOV. 41		SK-4069		
DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER

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NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION
CBM-78079-A	QCB-1a,WAB-1a		CBM-78083-A	QCB-1a		CBM 78089	NM-11	55RE78J1219A
HOIST TRAIN UNIT: SAME AS -78079 EXCEPT IS MODIFIED BY ADDING A SCT SYNCHRO CONTROL TRANSFORMER AND MAKING NECESSARY WIRING AND TERMINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.			HOIST TRAIN UNIT: SAME AS -78083 EXCEPT IS MODIFIED BY ADDING A SCT SYNCHRO CONTROL TRANSFORMER AND MAKING THE NECESSARY WIRING AND TER- MINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.			INDICATOR AMPLIFIER UNIT INCLUDES TYPE -20060A REC-AMP POWER UNIT, -46069 REC-AMP, AND -55035 DEPTH INDICATOR.		
12/1/43			12/1/43			9/16/38	767A	SK-3993B ALT 0
OCT. 44			OCT. 44			NOV. 41		
CBM 78080	QCB-1		CBM 78084	QCB-1	55RE 78J1188A	CBM 78090	NJ	
HOISTING AND TRAINING MECHANISM (ELECTRIC). SAME AS CMT-78031 FOR PG 50 & 51 (GUNBOATS) EXCEPT MODERN- IZED AS PER -78072.			HOISTING AND TRAINING MECHANISM (ELECTRIC) SAME AS CMT-78031 FOR DD384 AND 385 (DESTROYERS) EXCEPT MODERNIZED AS PER -78072.			PROJECTOR MAGNETOSTRICTION USING STACKS OF NICKEL LAMINATIONS ON WHICH IS WOUND A COIL OF WIRE.		
6/8/38	SK-4060		6/8/38	SK-4060		3-39	711B	
NOV. 41			NOV. 41			NOV. 41		
CBM-78080-A	QCB-1a		CBM-78084-A	QCB-1a		CRV 78091	* SEE BELOW	10RE78J1199A
HOIST TRAIN UNIT: SAME AS -78080 EXCEPT IS MODIFIED BY ADDING SCT SYNCHRO CONTROL TRANSFORMER AND MAKING THE NECESSARY WIRING AND TER- MINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.			HOIST TRAIN UNIT: SAME AS -78084 EXCEPT IS MODIFIED BY ADDING A SCT SYNCHRO CONTROL TRANSFORMER AND MAKING THE NECESSARY WIRING AND TER- MINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.			FREQUENCY SWEEP MODULATOR		
12/1/43			12/1/43			* ECHO RANGING GENERAL.		
OCT. 44			OCT. 44			6/1/39		NOV. 41
CBM 78081	QCB-1	55RE78J1188A	CBM 78085	QCE	55RE 78J1190A	CBM 78092	WAA	55RE 78J1304A
HOISTING AND TRAINING MECHANISM (ELECTRIC). SAME AS CMT-78031 FOR DD 370 TO 379 & 386 TO 393 (DESTROY- ERS) EXCEPT MODERNIZED AS PER -78072.			INDICATOR AMPLIFIER CONTROL UNIT. CONSISTS OF A 583X RACK A CBM-20062 REC AMPLIFIER POWER PACK, A CBM-23130 REMOTE CONTROL UNIT, A CBM- 46061 RECEIVER AMPLIFIER, AND A CBM- 55029A INDICATOR. Ø 583X. 760A. 722K. 757D AND 755B. 6/11/38 Ø SEE ABOVE SK-3781C			INDICATOR-AMPLIFIER CONSISTS OF A -20059B REC AMP POWER UNIT, A -46079 RECEIVER AMPLIFIER AND A -55039 INDICATOR.		
6/8/38	SK-4060		NOV. 41			8/9/39	767D	6921 ALT 0
NOV. 41						APR. 42		
CBM-78081-A	QCB-1a		CBM 78086	QCG	55RE 78J1179A	CBM 78093	WAA	55RE 78J1303A
HOIST TRAIN UNIT: SAME AS -78081 EXCEPT IS MODIFIED BY ADDING A SCT SYNCHRO CONTROL TRANSFORMER AND MAKING THE NECESSARY WIRING AND TERMINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.			BROAD BEAM PROJECTOR- (BRONZE HOUSING) 24 KC. FIVE PER EQUIP- MENT.			PROJECTOR - MAGNETO- STRICTION - VERTICAL. RECTANGULAR; 24 KC. LOW IMPEDANCE TYPE; 8 OHMS DC AND RESISTIVE COMPONENT OF IMPEDANCE 100 OHMS.		
12/1/43			6/13/38	768B	SK-3822A	8/9/39	763C	6920 ALT 0
OCT. 44			NOV. 41			APR. 42		
CBM 78082	QCB-1	55RE78J1188A	CBM 78087	NM-10	55RE 78J1223A	CBM 78094	WAA	55RE 78J1297A
HOISTING AND TRAINING MECHANISM (ELECTRIC). SAME AS CMT-78031 FOR DD 380 & 382 (DESTROYERS) EXCEPT MODERNIZED AS PER -78072.			INDICATOR AMPLIFIER UNIT. INCLUDES TYPE -20059A RECEIVER AMPLIFIER POWER UNIT -46069 RECEIVER AMPLIFIER UNIT AND -55033 DEPTH INDICATOR.			HOIST-TRAIN UNIT FOR SUBCHASERS PC-451 AND PC-452.		
6/8/38	SK-4060		8/9/38	767	SK-3993A	8/9/39	546U	SK-4383 ALT 0 & SK-4393 ALT 0
NOV. 41			NOV. 41			APR. 42		
CBM-78082-A	QCB-1a		CBM 78087-A	* SEE BELOW	55RE78J1254A	CBM-78094-A	WAA-a	
HOIST TRAIN UNIT: SAME AS -78082 EXCEPT IS MODIFIED BY ADDING A SCT SYNCHRO CONTROL TRANSFORMER AND MAKING THE NECESSARY WIRING AND TERMINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.			INDICATOR AMPLIFIER UNIT INCLUDES TYPES -20059A RECEIVER AMPLI- FIER POWER SUPPLY, -46069 RECEIVER- AMPLIFIER AND -55033A DEPTH INDICATOR.			HOIST TRAIN UNIT SAME AS 78094 EXCEPT IS MODIFIED BY ADD- ING A SCT SYNCHRO CONTROL TRANSFORMER & MAKING THE NECESSARY WIRING AND TERMI- NAL BOX CHANGES TO ACCOMMODATE THE SYN- CHROS.		
12/1/43			* NM-13 & NM-13a- 5/22/39 767B 6888 ALT 0 & NOV. 41 6889 ALT 0			12/1/43		DEC. 44
OCT. 44								
CBM 78083	QCB-1	55RE78J1188A	CBM 78088	NM-9a	55RE78J1162A	CBM 78095	WAA	55RE 78J1298A
HOISTING AND TRAINING MECHANISM (ELECTRIC). SAME AS CMT-78031 FOR DD 381 & 383 (DESTROYERS) EXCEPT MODERNIZED AS PER -78072.			PROJECTOR - VERTICAL - MAGNETOSTRICTION - 18 KC. RECTANGULAR; DC RESISTANCE 32 OHMS; RESISTIVE COMPO- NENT OF IMPEDANCE AT RESONANCE 750 OHMS. SAME AS -78067 EXCEPT FOR IMPEDANCE.			HOIST-TRAIN UNIT FOR SUBCHASERS PC-449 AND PC-450. SAME AS -78094 EXCEPT SHAFT LENGTHS.		
6/8/38	SK-4060		8/11/38	763B		8/9/39	546V	SK-4385 & SK-4386
NOV. 41			NOV. 41			APR. 42		

DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER
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Class 78—Miscellaneous Sonar

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NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION
CBM-78095-A WAA-a			CBM-78101-A	ASSE BELOW		CBM 78109	NJ-1 & NJ-2	
HOIST TRAIN UNIT; SAME AS -78095 EXCEPT IS MODIFIED BY ADDING A 5CT SYNCHRO CONTROL TRANSFORMER AND MAKING THE NECESSARY WIRING AND TERMINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.			HOIST TRAIN UNIT; SAME AS -78101 EXCEPT IS MODIFIED BY ADDING A 5CT SYNCHRO CONTROL TRANSFORMER AND MAKING THE NECESSARY WIRING AND TERMINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.			PROJECTOR - MAGNETO- STRICTION. MOST SIMILAR TO CBM-78090 EXCEPT THAT LARGER STACK OF LAMINATIONS ARE EMPLOYED AS THE PROJECTOR ELEMENT AND THE OVERALL PHYSICAL DIMENSIONS ARE GREATER. DC RESISTANCE IS 0.1 OHM. FREQUENCY RANGE 23 KC.		
12/1/43 OCT. 44			*QCJ-3a, QCL-1a, WAB-a			10/19/40 713E		6792 ALT 0
			12/1/43 OCT. 44			NOV. 41		
CBM 78096 QCH-1	55RE 78J1263A		CBM 78102 QCL-1	65RE78J1228A		CBM 78110	NK	
ALL-DIRECTIONAL PROJECTOR (MAGNETOSTRICTION 24 KCS). SIMILAR TO TYPE -78086 EXCEPT FOR CHANGES IN EXTERNAL SHAPE AND DIMENSIONS.			FREQUENCY SWEEP MODULATOR			OUTBOARD PROJECTOR - MAGNETOSTRICTION. THIS UNIT CONTAINS THE TRANSMITTING AND RECEIVING PROJEC- TORS HOUSED IN A STREAMLINED MAHOGANY BODY. TRANSMITTING AND RECEIVING UNITS ARE IDENTICAL WITH PROJECTOR ELEMENTS CBM-78109.		
8/26/39 768C	6897 ALT 0		1/24/40 787D			10/19/40 809		6926 ALT 0
APR. 42			NOV. 41			NOV. 41		
CBM 78097 QCH-2	55RE 78J1265A		CRV 78103	10RE 78J1347A		CBM 78110A	NK-1	
ALL-DIRECTIONAL PROJECTOR (MAGNETOSTRICTION 24 KCS). SIMILAR TO TYPE -78096 EXCEPT DESIGNED FOR HIGH IMPEDANCE OPERATION (750 OHMS) AT 24 KCS			PROJECTOR SPHERICAL (MAGNETOSTRICTION); 20 KC. LOW IMPED- ANCE TYPE, 8 OHMS DC, RESISTIVE COMPON- ENT OF IMPEDANCE 100 OHMS.			OUTBOARD PROJECTOR; MAG- NETOSTRICTION. UNIT CONTAINS TRANSMIT- TING AND RECEIVING PROJECTORS HOUSED IN A STREAMLINED MAHOGANY BODY. TRANSMIT- TING AND RECEIVING UNITS ARE IDENTICAL WITH PROJECTOR ELEMENTS CBM-78109. SAME AS BASIC NUMBER EXCEPT HAS LIFTING EYE.		
1/2/40 768D	6926 ALT 0		2/1/40 MI-8943-2	CRY:W-303036		5/16/41 809A		6926A
APR. 42			JUNE 42	SUB 12		NOV. 41		
CBM 78098 QCL-1, QCL-2	55RE78J1245A		CRV 78104 QCL-2	10RE 78J134A		CBM 78111	QCM-1, QCM-2	55RE78J1276
PROJECTOR - MAGNETO- STRICTION - 20 KC. LOW IMPEDANCE TYPE; DC RESISTANCE 8 OHMS; RESISTIVE COMPON- ENT OF IMPEDANCE AT RESONANCE 100 OHMS; HAS IMPROVED PATTERN OF SOUND EMISSION.			PROJECTOR SPHERICAL (MAGNETOSTRICTION); 24 KC. LOW IMPEDANCE TYPE, 8 OHMS DC, RESISTIVE COMPONENT OF IMPEDANCE 100 OHMS. SAME AS CRV-78103 EXCEPT FOR FREQUENCY CHARACTERISTICS.			PROJECTOR (ROCHELLE SALT & MAGNETOSTRICTION). SIMILAR TO CBM- 78061B EXCEPT THAT COIL WINDINGS CHANGED TO PROVIDE IMPROVED BEAM PATTERN CHARAC- TERISTICS HAVING REDUCED SIDE RADIATION. DC RESISTANCE OF WINDING IS 6 OHMS, RATHER THAN 8 OHMS IN THE 78061B.		
1/19/40 550H			2/1/40 MI-8943-3	CRY:W-303036		10/22/40 735D		6897 ALT 1;
NOV. 41			JUNE 42	SUB 12		NOV. 41		733D
CBM 78099 QCL-3	55RE78J1253A		CHT 78105 QCL-2 & QCL	58RE78J1234A		FREQUENCY RANGE 22.5 TO 25.5	78111	
PROJECTOR - MAGNETO- STRICTION - 24 KC. HAS IMPROVED BEAM PATTERN OF SOUND EMISSION. SIMILAR TO NAVY TYPE -78098 EXCEPT FOR FREQUENCY CHARACTERISTICS.			HOIST-TRAIN MECHANISM CONSISTS OF MOTOR PLATFORM ASSEMBLY; GUIDE AND SUPPORT RAILS, SEA CHEST COVER, BEARINGS, PROJECTOR SHAFT AND ACCESSORIES.			KC RANGING AND 14 TO 32 KC LISTENING.		
1/19/40 550L			2/1/40	CHT:A1055 ALT 0				
NOV. 41			JUNE 42					
CBM 78100 * SEE BELOW	55RE78J1246A		RA-78106 XAM	RE 13A 591A		CBM 78112	JKA-5; 5a	55RE78J1274
HOIST-TRAIN MECHANISM - ELECTRICAL. SIMILAR TO NAVY TYPE -78069B EXCEPT FOR USE ON SHIPS HAVING 42" SEA CHEST HEIGHT.			CONTROL AND INDICATOR UNIT INCLUDES CENTRALIZED CONTROL OF ENTIRE EQUIPMENT AS WELL AS THE RANGE INDI- CATOR WHICH IS CALIBRATED FOR 0 TO 1000 YARDS AND 0 TO 5000 YARDS WITH ALTERNATE KEYING FOR 0 TO 2000 YARDS.			PROJECTOR - ROCHELLE SALT SAME AS CBM-78111 EXCEPT THAT THE MAG- NETOSTRICTION ELEMENT HAS BEEN REMOVED AND REPLACED WITH A DUMMY DIAPHRAGM. FREQUENCY RANGE 14 TO 32 KCS.		
* QCJ-3, QCL-1 & QCL-2.			10/7/40			10/22/40 735E		6897 ALT 2;
1/19/40 546X			NOV. 41			NOV. 41		735E
NOV. 41			RA-78107 XAM	RE 13A 591A		CBM 78113	WBA	RE 78J 1362A
CBM-78100-A *SEE BELOW			HOIST-TRAIN MECHANISM PROVIDES PNEUMATIC HOIST AND MANUAL TRAIN.			SOUNDING PROJECTOR - ROCHELLE SALT. CONSTRUCTED TO AVOID USE OF COPPER ALLOY WITH THE ROCHELLE SALT ELEMENTS AND CASTOR OIL. AND, EXCEPT FOR OVERALL DIMENSIONS, SIMILAR TO CBM-78027 FREQUENCY 17 TO 19 KCS.		
HOIST TRAIN UNIT; SAME AS -78100 EXCEPT IS MODIFIED BY ADDING A 5CT SYNCHRO CONTROL TRANSFORMER AND MAKING THE NECESSARY WIRING AND TERMINAL BOX CHANGES TO ACCOMMODATE THE SYNCHRO.			10/7/40			10/29/40 592B		60017 ALT 0
*QCJ-3a, QCL-1a WAB-a			NOV. 41			MAR. 43		
12/1/43 OCT. 44			RA-78108 XAM	RE 13A 591A		CBM 78114	WBA	RE 78J 1361A
CBM 78101 * SEE BELOW	55RE78J1247A		PROJECTOR - ROCHELLE SALT FREQUENCY RANGE: 14 TO 32 KC.			ALL-DIRECTIONAL PROJECTOR, ROCHELLE SALT. FREQUENCY RANGE 14 TO 32 KCS.		
HOIST-TRAIN MECHANISM - ELECTRICAL. SIMILAR TO NAVY TYPES 78069B & 78100 EXCEPT FOR USE ON SHIPS HAVING 48" SEA CHEST HEIGHT.			10/7/40			10/29/40 802		60017 ALT 0
* QCJ-3, QCL-1 & QCL-2.			NOV. 41			MAR. 43		
1/19/40 546W			ASSIGNED ISSUED			ASSIGNED ISSUED		
NOV. 41			DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER

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NAVSHIPS 900,109

NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION
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**CBM 78115** QCN-1 55RE78J1327A  
 COMBINATION PROJECTOR:  
 COMBINED ROCHELLE SALT (14 TO 32KC) AND  
 LOW IMPEDANCE (100 OHMS) 24KC PROJECTOR,  
 8 OHMS DC; SIDE WINDINGS ARRANGED TO RE-  
 DUCE SIDE RADIATION. SAME CASE AS TYPE  
 -7806LA. SAME AS TYPES -78189, -78190  
 EXCEPT FREQUENCY.  
 11/20/40 CBM:753F CBM:60037 ALT 0  
 AUG. 43

**CBM 78116** QCO 55 RE 78J  
 COMBINATION PROJECTOR:20 KC1326 A  
 (ROCHELLE SALT AND MAGNETO - STRICTION).  
 COMBINED ROCHELLE SALT (14 TO 32 KC) AND  
 LOW IMPEDANCE (100 OHMS) 20 KC PRO-  
 JECTOR: 8 OHMS DC; SIDE WINDINGS AR-  
 RANGED TO REDUCE SIDE RADIATION. SAME  
 AS TYPE -78115 EXCEPT PEAKED AT 20 KC.  
 11/20/40 753G 60,037 ALT 0  
 MAR..432

**CBM 78117** QCJ-3, QCL-2 55 RE 78J  
 HOIST - TRAIN UNIT 1324 A  
 SIMILAR TO CBM-78100 EXCEPT FOR LENGTH  
 OF SHAFT, RAILS ETC. LENGTH OF TRAVEL  
 2 FEET 10".

11/20/40 546Y 60,033 ALT 1  
 MAR. 42

**CBM-78117-A** QCJ-3a,QCL-2a  
 HOIST TRAIN UNIT  
 SAME AS -78117 EXCEPT IS MODIFIED BY  
 ADDING A 5 CT SYNCHRO CONTROL TRANS-  
 FORMER AND MAKING NECESSARY WIRING AND  
 TERMINAL BOX CHANGES TO ACCOMMODATE THE  
 SYNCHRO.

12/1/43  
 DEC. 44

**CBM 78118** QCJ-3, QCL-2 55 RE 78J  
 HOIST - TRAIN UNIT 1330 A  
 SIMILAR TO CBM-78100 EXCEPT FOR LENGTH  
 OF SHAFT, RAILS, ETC. LENGTH OF TRAVEL  
 3 FEET 2".

11/20/40 546Z 60,034 ALT 1  
 MAR. 42

**CBM 78118-A** QCJ-3a,QCL-2a  
 HOIST TRAIN UNIT  
 SAME AS 78118 EXCEPT IS MODIFIED BY ADD-  
 ING A 5 CT SYNCHRO CONTROL TRANSFORMER &  
 MAKING THE NECESSARY WIRING AND TERMINAL  
 BOX CHANGES TO ACCOMMODATE THE SYNCHRO.

12/1/43  
 DEC. 44

**CBM 78119** QCN-1, QCO 55 RE 78J  
 HOIST - TRAIN UNIT 1321 A  
 SAME AS CBM -78100 EXCEPT FOR LENGTH OF  
 SHAFT, RAILS, ETC. LENGTH OF TRAVEL IS  
 3 FEET 5".

11/20/40 546 AA 60,036 ALT 1  
 MAR. 42

**CBM-78119-A** QCN-1a,QCO-a  
 HOIST TRAIN UNIT  
 SAME AS 78119 EXCEPT IS MODIFIED BY ADD-  
 ING A 5 CT SYNCHRO CONTROL TRANSFORMER &  
 MAKING THE NECESSARY WIRING AND TERMINAL  
 BOX CHANGES TO ACCOMMODATE THE SYNCHRO.

12/1/43  
 DEC. 44

**CBM 78120** QCJ-4, QCL-3 55 RE 78J  
 HOIST-TRAIN UNIT 1329 A  
 SAME AS CBM-78100 EXCEPT FOR 220/60/3  
 HOIST MOTOR, AND LENGTH OF TRAVEL IS  
 2' 10"

11/20/40 546AB 60033 ALT 1  
 MAR. 42

**CBM-78120-A** QCL-3a,QCJ-4a  
 HOIST TRAIN UNIT  
 SAME AS 78120 EXCEPT IS MODIFIED BY ADD-  
 ING A 5 CT SYNCHRO CONTROL TRANSFORMER &  
 MAKING THE NECESSARY WIRING AND TERMINAL  
 BOX CHANGES TO ACCOMMODATE THE SYNCHRO.

12/1/43  
 DEC. 44

**CBM 78121** QCJ-4, QCL-3 55 RE 78J  
 HOIST-TRAIN UNIT 1328 A  
 SAME AS CBM-78100 EXCEPT FOR 220/60/3  
 HOIST MOTOR, AND LENGTH OF TRAVEL IS  
 3' 5".

11/20/40 546AC 60036 ALT 1  
 MAR. 42

**CBM-78121-A** QCL-3a,QCJ-4a  
 HOIST TRAIN UNIT  
 SAME AS 78121 EXCEPT IS MODIFIED BY ADD-  
 ING A 5 CT SYNCHRO CONTROL TRANSFORMER &  
 MAKING THE NECESSARY WIRING AND TERMINAL  
 BOX CHANGES TO ACCOMMODATE THE SYNCHRO.

12/1/43  
 DEC. 44

**CBM 78122** MAC 55RE78J1402A  
 PROJECTOR - MAGNETO-  
 STRICTION - VERTICAL. RECTANGULAR - 20  
 KC. LOW IMPEDANCE TYPE; 8 OHMS DC RESIS-  
 TANCE. 100 OHMS IMPEDANCE AT RESONANCE.

12/12/40 7650 CBM:6920 ALT 0  
 MAR. 44

**CRV 78123** STOCK  
 PROJECTOR - MAGNETO-  
 STRICTION. SPHERICAL - 18 KC. LOW  
 IMPEDANCE, 8 OHMS DC; RESISTIVE COMPO-  
 NENT OF IMPEDANCE 100 OHMS AT 18 KCS.

12/16/40 M1-8943-3 RX-245032 REV 1  
 NOV. 41

**CRV 78124** CXAX  
 SCALE AND HANDWHEEL  
 CONSISTS OF A HANDWHEEL, GEAR TRAIN AND  
 PULLEY SYSTEM WHICH DRIVES THE TRAINING  
 CABLE. ILLUMINATED SCALE IS PROVIDED  
 WHICH INDICATES THE PROJECTOR BEARINGS.

12/19/40 244436 REV 0  
 NOV. 41

**CRV 78125** CXAX  
 HOIST-TRAIN UNIT  
 THIS IS INTENDED FOR TWO-MAN MANUAL  
 OPERATION.

12/19/40 PX-273614 REV 0  
 NOV. 41

**CRV 78126** CXAX  
 PROJECTOR - MAGNETO-  
 STRICTION. RESONANT FREQUENCY IS 25 KC.  
 IMPEDANCE 170 OHMS. MOUNTED IN STREAM-  
 LINED HOUSING.

12/19/40 RX-244437 REV 0  
 NOV. 41

**CBM 78127** QCN-2, QCO-1 55 RE 78J  
 HOIST-TRAIN UNIT 1331 A  
 RATE OF TRAVEL OF HOIST IS 1-1/2 INCHES  
 PER SECOND. TRAINING IS CONTROLLED BY  
 DYNAMO ELECTRIC AMPLIFIER METHOD; ROTA-  
 TION UP TO 4 RPM.

2/24/41 546AD 60039 ALT 1  
 MAR. 42

**78127-A** QCN-2a,QCO-1a  
 HOIST-TRAIN UNIT:  
 NAVY TYPE -78150 MODIFIED BY REPLACING  
 THE 5G SYNCHRO WITH A 50G, AND REPLACING  
 THE 8 TERMINAL STRIP WITH A 12 IN THE  
 JUNCTION BOX FOR MAINTENANCE OF TRUE  
 BEARING (MTB) ON A 36 SPEED GYRO SYSTEM.  
 SAME AS -78127-B EXCEPT DOES NOT INCLUDE  
 11/1/43  
 NOV. 43

GEAR BOX. 78127-A

**78127-B** QCN-2a,QCO-1a  
 HOIST-TRAIN UNIT:  
 NAVY TYPE -78127 MODIFIED BY REPLACING  
 THE 5G SYNCHRO WITH A 50G, THE 8 TERMINAL  
 STRIP WITH A 12 IN THE JUNCTION BOX AND  
 ADDING A 1/36 GEAR BOX FOR MAINTENANCE  
 OF TRUE BEARING (MTB) ON A ONE (1) SPEED  
 GYRO SYSTEM. SAME AS -78127-A EXCEPT  
 11/1/43  
 NOV. 43

INCLUDES A GEAR BOX. 78127-B

**CBM 78128** QCJ-5, QCL-4 55RE78J1369  
 HOIST-TRAIN UNIT  
 IDENTICAL WITH -78094 EXCEPT FOR SUBSTI-  
 TUTION OF A TRAIN MOTOR HAVING A 75 VOLT  
 DC FIELD WINDING FOR OPERATION IN THE  
 DYNAMO ELECTRIC AMPLIFIER UNIT AND THE  
 ADDITION OF A SYNCHRONOUS RECEIVING  
 MOTOR, A PART OF THE DYNAMO ELECTRIC  
 3/25/41 546AF 60056 ALT 0  
 AUG. 43

AMPLIFIER CONTROL CIRCUIT. 78128

DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER
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NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION		
CBM-78128-A	QCJ-5a, QCL-4a	HOIST-TRAIN UNIT: NAVY TYPE-78128 MODIFIED BY REPLACING THE 5G SYNCHRO WITH A 5DG, AND REPLACING THE 8 TERMINAL STRIP WITH A 12 IN THE JUNCTION BOX FOR MAINTENANCE OF TRUE BEARING (MTB) ON A 36-SPEED GYRO SYSTEM. SAME AS -78128-B EXCEPT DOES NOT INCLUDE 11/1/43 NOV. 43	CBM-78129-B	QCJ-5a, QCL-4a	HOIST-TRAIN UNIT: NAVY TYPE -78129 MODIFIED BY REPLACING THE 5G SYNCHRO WITH A 5DG, THE 8 TERMINAL STRIP WITH A 12 IN THE JUNCTION BOX AND ADDING A 1/36 GEAR BOX FOR MAINTENANCE OF TRUE BEARING (MTB) ON A ONE (1) SPEED GYRO SYSTEM. SAME AS -78129-A EXCEPT 11/1/43 NOV. 43	CBM 78131	CXAY	HOIST-TRAIN MECHANISM: CONSISTS OF A STREAMLINE HOUSING IN WHICH THE PROJECTOR (78132) IS ROTATED (TOTAL OF 240°) AND A SEA CHEST. STREAMLINE HOUSING IS RAISED AND LOWERED BY MEANS OF 3 PNEUMATIC CYLINDERS. TRAINING IS ACCOMPLISHED BY MANUAL MEANS (HANDWHEEL) 4/21/41 825 SK-4662A ALT 0 NOV. 41		
GEAR BOX.		CBM-78128 A	INCLUDES A GEAR BOX.		CBM-78129-B	CBM 78132	CXAY	PROJECTOR - MAGNETO-STRICITION. RESONANT AT 40 KC. CONSISTS OF A STACK OF NICKEL LAMINATIONS INTERWOUND WITH THE R.F. WINDING. RESONANT IMPEDANCE OF PROJECTOR (AT 40 KC) IS 100 OHMS. MOUNTS INSIDE HOUSING OF 78131. 4/21/41 824 SK-4881 ALT 0 NOV. 41		
CBM-78128-B	QCJ-5a, QCL-4a	HOIST-TRAIN UNIT: NAVY TYPE -78128 MODIFIED BY REPLACING THE 5G SYNCHRO WITH A 5DG, THE 8 TERMINAL STRIP WITH A 12 IN THE JUNCTION BOX AND ADDING 1/36 GEAR BOX FOR MAINTENANCE OF TRUE BEARING (MTB) ON A ONE (1) SPEED GYRO SYSTEM. SAME AS -78128-A EXCEPT 11/1/43 NOV. 43	CBM 78130	QCJ-5, QCL-4 55R78J1371	HOIST-TRAIN UNIT IDENTICAL WITH -78100 EXCEPT FOR SUBSTITUTION OF A TRAIN MOTOR HAVING A 75 VOLT DC FIELD WINDING FOR OPERATION IN THE DYNAMO ELECTRIC AMPLIFIER UNIT AND THE ADDITION OF A SYNCHRONOUS RECEIVING MOTOR, A PART OF THE DYNAMO ELECTRIC 3/25/41 546AH 60054 ALT 0 AUG. 43	CRY 78133	NMB-1	PROJECTOR - MAGNETO-STRICITION. RESONANT AT 18 KC. DC RES 9 OHMS. IMPEDANCE AT RESONANCE 50 + J 150 OHMS; WHEN USED IN CONNECTION WITH NAVY TYPE CRY-53081 FILTER JUNCTION BOX THE RESISTIVE COMPONENT OF IMPEDANCE AT RESONANCE WILL BE 100 OHMS. 4/25/41 W-303332-6 NOV. 41 SUB 0		
INCLUDES A GEAR BOX.		CBM-78128-B	AMPLIFIER CONTROL CIRCUIT. FOR 42" SEA CHEST HEIGHT.		78130	CBM 78134	NMB	PROJECTOR - MAGNETO-STRICITION. VERTICAL TYPE, 18 KC. DC RESISTANCE 8 OHMS. RESISTIVE COMPONENT OF IMPEDANCE AT RESONANCE IS 100 OHMS. ELECTRICALLY IDENTICAL WITH 78067, BUT IS MECHANICALLY ASSEMBLED TO ALLOW REMOVAL OF COILS FROM INSIDE OF VESSELS 4/28/41 763H 60073 ALT 0 NOV. 41		
CBM 78129	QCJ-5, QCL-4 55R78J1366	HOIST-TRAIN UNIT IDENTICAL WITH -78101 EXCEPT FOR SUBSTITUTION OF A TRAIN MOTOR HAVING A 75 VOLT DC FIELD WINDING FOR OPERATION IN THE DYNAMO ELECTRIC AMPLIFIER UNIT AND THE ADDITION OF A SYNCHRONOUS RECEIVING MOTOR, A PART OF THE DYNAMO ELECTRIC 3/25/41 546AG 60055 ALT 0 AUG. 43	CBM-78130-A	QCJ-5a, QCL-4a	HOIST-TRAIN UNIT: NAVY TYPE -78130 MODIFIED BY REPLACING 5G SYNCHRO WITH A 5DG, THE 8 TERMINAL WITH A 12 IN THE JUNCTION BOX THE STRIP FOR MAINTENANCE OF TRUE BEARING (MTB) ON A ONE (1) SPEED GYRO SYSTEM. SAME AS -78130-B EXCEPT INCLUDE 11/1/43 NOV. 43	FROM INSTALLED PROJECTOR.		78134		
AMPLIFIER CONTROL CIRCUIT. FOR 48" SEA CHEST HEIGHT.		78129	GEAR BOX.		CBM-78130-A	CRY 78135	WEA	MANUAL TRAIN UNIT ROTATES PROJECTORS (78137) AND INDICATES BEARING OF EITHER PROJECTOR. A 14" DIAMETER WHEEL IS MANUALLY OPERATED TO TRAIN. EACH PROJECTOR CAN BE TURNED ± 120° FROM FORE AND AFT CENTER LINE IN FORWARD DIRECTION. MAGNETOSTRICITION 4/29/41 MI-8968 W-303375-6 NOV. 41 SUB 1		
CBM-78129-A	QCJ-5a, QCL-4a	HOIST-TRAIN UNIT: NAVY TYPE -78129 MODIFIED BY REPLACING THE 5G SYNCHRO WITH A 5DG, AND REPLACING THE 8 TERMINAL STRIP WITH A 12 IN THE JUNCTION BOX FOR MAINTENANCE OF TRUE BEARING (MTB) ON A 36 SPEED GYRO SYSTEM. SAME AS -78129-B EXCEPT DOES NOT 11/1/43 NOV. 43	CBM 78130-B	QCJ-5a, QCL-4a	HOIST-TRAIN UNIT: NAVY TYPE -78129 MODIFIED BY REPLACING THE 5G SYNCHRO WITH A 5DG, THE 8 TERMINAL WITH A 12 IN THE JUNCTION BOX AND ADDING A 1/36 GEAR BOX FOR MAINTENANCE OF TRUE BEARING (MTB) ON A ONE (1) SPEED GYRO SYSTEM. SAME AS -78130-A EXCEPT 11/1/43 NOV. 43	PROJECTOR CAN BE DIRECTED AFT TO TAKE SOUNDINGS.		78135		
INCLUDE GEAR BOX.		CBM-78129-A	INCLUDES A GEAR BOX.		CBM-78130-B	CRY 78136	WEA	MANUAL HOIST-TRAIN MECHANISM. FOR HOISTING AND LOWERING PROJECTOR (78137) BY MEANS OF MANUALLY OPERATED CRANK.		
						4/29/41 MI-8970 W-303375-4 NOV. 41 SUB 1				
DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER

NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION
CRV 78137	WEA		CBM 78141	JK-9	55 RE 78J			
PROJECTOR & SEABOARD UNIT COMBINES A MAGNETOSTRICTION UNIT AND ROCHELLE SALT UNIT. EACH PROJECTOR CAN BE USED OVER ANY ANGLE OF ± 120° FROM FORE AND AFT CENTER LINE IN FORWARD DIRECTION. RESONANCE FREQUENCY IS 25 KC. DC RESISTANCE OF MAGNETOSTRICTION 4/29/41 MI-8967 W-303375-4 NOV. 41			MANUAL HOIST-TRAIN UNIT 1316 A INCLUDES A STREAMLINED PROJECTOR HOUSING. MAXIMUM HOIST IS 27", AND TRAINING RANGE IS APPROXIMATELY 180° EITHER SIDE OF AXIS PARALLEL TO THE SHIP'S CENTER LINE.			INCLUDES A GEAR BOX.		
		78137						CBM-78143-B
PROJECTOR IS 8 OHMS. IMPEDANCE AT RESONANCE IS 100 + J 181 OHMS. CAPACITIVE REACTANCE OF ROCHELLE SALT UNIT IS 7000 OHMS.			8/15/41 867 SK-5002 ALT 1 MAR. 42					
		78137	CBM 78142	JK-9	55 RE 78J			
PROJECTOR - ROCHELLE SALT HORIZONTAL TYPE. IMPEDANCE AT RESONANCE (24 KC) IS 100 OHMS. FREQUENCY RANGE: 16 TO 32 KC.			8/15/41 865 SK-5065 ALT 0 MAR. 42			CBM 78144 QCN-3 QCO-2 55RE78J1367 HOIST TRAIN UNIT SAME AS CBM-78128 EXCEPT FOR THE CABLE HEAD AND SANDWICH PACKING WHICH HAS BEEN CHANGED TO PERMIT USE OF COMBINATION RANGING-LISTENING HEAD. HAS FOUR LEADS BROUGHT OUT, TWO EACH FOR RANGING AND LISTENING SECTIONS OF PROJECTOR. 9/26/41 546 AK CBM:60056 ALT 1 AUG. 43		
		78138						
PROJECTOR-MAGNETOSTRICTION: TRANSMITTING FREQ 22 KC. SIMILAR TO CBM -78109 EXCEPT THAT CASE IS OF SMALLER SIZE AND ANGULAR ADJUSTMENT OF THE INTERNAL ASSEMBLY TO COMPENSATE FOR ANGLE OF MOUNTING IS PROVIDED ON THE AXIS 90° FROM -78109. NICKEL LAMINATED BLOCK 5/17/41 713C @ SEE PLATE 2 OCT. 42			CBM 78142-A QBE-2 PROJECTOR-ROCHELLE SALT SAME AS BASIC NUMBER EXCEPT INCLUDES SLIGHTLY LONGER BAFFLES TO PROVIDE MAXIMUM PROTECTION TO THE CRYSTALS AGAINST DAMAGE FROM EXTERNAL SHOCK.			CBM-78144-A QCN-3a,QCO-2a HOIST-TRAIN UNIT: NAVY TYPE -78144 MODIFIED BY REPLACING THE 5G SYNCHRO WITH A 5DG, AND REPLACING THE 8 TERMINAL STRIP WITH A 12 IN THE JUNCTION BOX FOR MAINTENANCE OF TRUE BEARING (MTB) ON A 36 SPEED GYRO SYSTEM. SAME AS -78144-B EXCEPT DOES NOT INCLUDE 11/1/43 NOV. 43		
		78138						CBM-78144-A
ASSEMBLY IS IDENTICAL WITH CBM -78109. WINDING DC RESISTANCE IS .10 OHMS. IMPEDANCE 10 OHMS AT RESONANCE (22 KC).			1/12/43 CBM:865A CBM:SK-5065 AUG. 44			GEAR BOX.		
		78139	CBM 78142B	QBE-4,QBE-5				
AT RESONANCE (22 KC) IS 200 OHMS.			7/28/44 969 SK:5903 ALT 0 DEC. 44					
		78139						CBM-78144-B
CBM:SK-4892 ALT 1; CIP:ID-1024 ISSUE 2			CBM 78143 QCN-3, QCO-2 55RE78J1368 HOIST-TRAIN UNIT SAME AS CBM-78129 EXCEPT FOR THE CABLE HEAD & SANDWICH PACKING WHICH HAVE BEEN CHANGED TO PERMIT USE OF COMBINATION RANGING-LISTENING HEAD. HAS FOUR LEADS BROUGHT OUT, TWO EACH FOR RANGING AND LISTENING SECTIONS OF PROJECTOR. 9/26/41 546AL CBM:60055 ALT 2 AUG. 43			CBM-78144-B QCN-3; QCO-2a HOIST-TRAIN UNIT: NAVY TYPE -78144 MODIFIED BY REPLACING THE 5G SYNCHRO WITH A 5DG, THE 8 TERMINAL STRIP WITH A 12 IN THE JUNCTION BOX AND ADDING A 1/36 GEAR BOX FOR MAINTENANCE OF TRUE BEARING (MTB) ON A ONE (1) SPEED GYRO SYSTEM. SAME AS -78144-A EXCEPT 11/1/43 NOV. 43		
		78140	CBM 78143-A	QCN-3a,QCO-2a				
PROJECTOR - MAGNETOSTRICTION. SPHERICAL TYPE FOR 18 KC OPERATION. LOW IMPEDANCE TYPE, 8 OHMS DC. RESISTIVE COMPONENT OF IMPEDANCE AT RESONANCE IS 100 OHMS. SAME AS CBM-78049 EXCEPT COILS ARE WOUND AND ARRANGED FOR REDUCED EAR BEAM PATTERN. 7/18/41 550Q (CBM) 550Q NOV. 41			NAVY TYPE -78143 MODIFIED BY REPLACING A 5G SYNCHRO WITH A 5DG, AND REPLACING THE 8 TERMINAL STRIP WITH A 12 IN THE JUNCTION BOX FOR MAINTENANCE OF TRUE BEARING (MTB) ON A 36 SPEED GYRO SYSTEM. SAME AS -78143-B EXCEPT DOES NOT INCLUDE 11/1/43 NOV. 43			INCLUDES GEAR BOX.		
		78140						CBM-78144-B
(BOUGHT UNDER LOT 5A OF CONTRACT NOS-79876).			CBM 78145 QCO-7 55RE78J1373 PROJECTOR, MAGNETOSTRICTION FREQUENCY 24 KC. COILS ARRANGED FOR REDUCED SIDE RADIATION. RESISTIVE COMPONENT AT RESONANCE IS 100 OHMS, DC RESISTANCE IS 8 OHMS.			12/6/41 880 CBM:SK-5096 ALT 0 AUG. 43		
		78140	CBM 78146	QCR	55RE78J1372			
PROJECTOR - MAGNETOSTRICTION. SPHERICAL TYPE FOR 18 KC OPERATION. LOW IMPEDANCE TYPE, 8 OHMS DC. RESISTIVE COMPONENT OF IMPEDANCE AT RESONANCE IS 100 OHMS. SAME AS CBM-78049 EXCEPT COILS ARE WOUND AND ARRANGED FOR REDUCED EAR BEAM PATTERN. 7/18/41 550Q (CBM) 550Q NOV. 41			NAVY TYPE -78143 MODIFIED BY REPLACING THE 5G SYNCHRO WITH A 5DG, THE 8 TERMINAL STRIP WITH A 12 IN THE JUNCTION BOX AND ADDING A 1/36 GEAR BOX FOR MAINTENANCE OF TRUE BEARING (MTB) ON A ONE (1) SPEED GYRO SYSTEM. SAME AS -78143-B EXCEPT 11/1/43 NOV. 43			PROJECTOR MAGNETO STRICTION FREQUENCY 20 KC.		
		78140						
PROJECTOR - MAGNETOSTRICTION. SPHERICAL TYPE FOR 18 KC OPERATION. LOW IMPEDANCE TYPE, 8 OHMS DC. RESISTIVE COMPONENT OF IMPEDANCE AT RESONANCE IS 100 OHMS. SAME AS CBM-78049 EXCEPT COILS ARE WOUND AND ARRANGED FOR REDUCED EAR BEAM PATTERN. 7/18/41 550Q (CBM) 550Q NOV. 41			12/6/41 880 A CBM:SK-5096 ALT 0 AUG. 43					

NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION
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**CBM 78146-A \*GER USE**  
PROJECTOR-MAGNETOSTRICT-  
TION; FREQ: 20KC. SAME AS BASIC NUMBER  
EXCEPT HAS SPLIT WINDING, 4 LEADS.

\*FIRST PURCHASE: NOS-78964, NOS-74446  
4/24/43 CBM:880E CBM:SK-5096  
AUG. 43 ALT. 1

**CBM 78147 QCQ, QCR**  
DOME AND RETRACTING GEAR  
UTILIZES STREAMLINED DOME. DISTANCE OF  
HOIST IS 3' 4-3/4".

12/6/41 873 CBM:60108 ALT 0  
JUNE 42

**CBM 78147-A QCQ-a, QCR-a**  
DOME & RETRACTING GEAR  
NAVY TYPE -78147 MODIFIED BY REPLACING  
THE 5G SYNCHRO WITH A 5DG, AND REPLACING  
THE 8 TERMINAL STRIP WITH A 12 IN THE  
JUNCTION BOX FOR MAINTENANCE OF TRUE  
BEARING (MTB) ON A 36 SPEED GYRO SYSTEM.  
SAME AS -78147-B EXCEPT DOES NOT INCLUDE  
11/1/43  
MAR. 44

CBM-78147-A

GEAR BOX.

**CBM 78147-B QCQ-a, QCR-a**  
HOIST-TRAIN UNIT  
NAVY TYPE-78147 MODIFIED BY REPLACING  
THE 5G SYNCHRO WITH A 5DG, THE 8 TERMINAL  
STRIP WITH A 12 IN THE JUNCTION BOX AND  
ADDING A 1/36 GEAR BOX FOR MAINTENANCE  
OF TRUE BEARING (MTB) ON A ONE (1) SPEED  
GYRO SYSTEM. SAME AS -78147-A EXCEPT  
11/1/43  
MAR. 44

CBM-78147-B

INCLUDES GEAR BOX.

**CBM 78148 QCQ, QCR** 55RE78J1374  
DOME AND RETRACTING GEAR  
SAME AS CBM-78147 EXCEPT THE DESIGN OF  
THE SUBITEMS HAS BEEN CHANGED FOR  
SIMPLER CONSTRUCTION AND MANUFACTURE.

12/6/41 873 A, 882A CBM:60108 ALT 0  
AUG. 43

**CBM 78148-A QCQ-a, QCR-a**  
DOME AND RETRACTING GEAR  
NAVY TYPE -78148 MODIFIED BY REPLACING  
THE 5G SYNCHRO WITH A 5DG AND REPLACING  
THE 8 TERMINAL STRIP WITH A 12 IN THE  
JUNCTION BOX FOR MAINTENANCE OF TRUE  
BEARING (MTB) ON A 36 SPEED GYRO SYSTEM.  
SAME AS -78150-B EXCEPT DOES NOT INCLUDE  
11/1/43  
MAR. 44

GEAR BOX.

**CBM 78148-B QCQ-a, QCR-a**  
HOIST-TRAIN UNIT  
NAVY TYPE -78148 MODIFIED BY REPLACING  
5G SYNCHRO WITH A 5DG, THE 8 TERMINAL  
STRIP WITH A 12 IN THE JUNCTION BOX AND  
ADDING A 1/36 GEAR BOX FOR MAINTENANCE  
OF TRUE BEARING (MTB) ON A ONE(1) SPEED  
GYRO SYSTEM. SAME AS -78148-A EXCEPT  
11/1/43  
MAR. 44

INCLUDES A GEAR BOX.

**CHT 78149 QCQ-B, QCL-7**  
HOIST TRAIN MECHANISM  
SIMILAR TO CMT-78105 EXCEPT USES DYNAMO  
ELECTRIC AMPLIFIER METHOD OF TRAINING.  
HAS IMPROVED TYPE OF BRAKE FOR HOIST  
MOTOR. USES A JUNCTION BLOCK TERMINATION  
FOR PROJECTOR CABLE AT TOP OF PROJECTOR  
SHAFT. HAS PULLEY TO SUPPORT PROJECTOR  
1/2/42 A-1055  
MAR. 42

CABLE, HAS PIPE PLUG FOR CMT 78149  
INSPECTION OF LEAKAGE OF OUTSIDE  
SEACHEST COVER PLATE.

**CHT-78149-A QCJ-8a, QCL-6a**  
HOIST-TRAIN UNIT.  
CANCELLED

MAR. 44

**CHT 78149-B QCJ-8a, QCL-6a**  
DOME AND RETRACTING GEAR  
NAVY TYPE -78149 MODIFIED BY ADDING A  
1/36 GEAR BOX AND SLIGHT WIRING CHANGES  
IN THE AMPLIDYNE AMPLIFIER, MODIFIED FOR  
USE IN EQUIPMENTS HAVING MAINTENANCE OF  
TRUE BEARING (MTB) FEATURE TIED IN ON A  
ONE (1) SPEED GYRO SYSTEM.  
11/1/43  
MAR. 44

**CBM 78150 QCQ-7, QCL-6** 55RE78J1370  
HOIST TRAIN UNIT  
SIMILAR IN DESIGN TO FORMER HOIST TRAIN  
UNIT OF THIS COMPANY'S DESIGN EXCEPT  
THAT THE SIX-INCH QUICK-CLOSING GATE  
VALVE IS OMITTED AND THE DIMENSIONS OF  
THE HOIST IS FIXED BY THE SEACHEST  
LOCATION.  
1/11/42 546 AJ CBM:60091 ALT 1  
AUG. 43

CBM-78148-A

**CBM-78150-A QCJ-9a, QCL-8a**  
HOIST-TRAIN UNIT:  
NAVY TYPE -78150 MODIFIED BY REPLACING  
THE 5G SYNCHRO WITH A 5DG AND REPLACING  
THE 8 TERMINAL STRIP WITH A 12 IN THE  
JUNCTION BOX FOR MAINTENANCE OF TRUE  
BEARING (MTB) ON A 36 SPEED GYRO SYSTEM.  
SAME AS -78150-B EXCEPT DOES NOT INCLUDE  
11/1/43  
NOV. 43

CBM-78150-A

GEAR BOX.

**CBM 78150-B QCJ-9a, QCL-8a**  
HOIST-TRAIN UNIT:  
NAVY TYPE -78150 MODIFIED BY REPLACING  
THE 5G SYNCHRO WITH A 5DG, THE 8 TERMINAL  
STRIP WITH A 12 IN THE JUNCTION BOX AND  
ADDING A 1/36 GEAR BOX FOR MAINTENANCE  
OF TRUE BEARING (MTB) ON A ONE (1) SPEED  
GYRO SYSTEM. SAME AS -78150-A EXCEPT  
11/1/43  
NOV. 43

CBM-78150-B

INCLUDES A GEAR BOX.

**CRY 78151 WEA-1**  
PROJECTOR SEABOARD UNIT:  
RESONANT FREQ 25 KC(APP). PROJECTOR IS  
OF 9-INCH PERMANENT MAGNET TYPE, DE-  
SIGNER FOR BOTH SHARP AND BROAD BEAMS  
BY MEANS OF THROWING A SWITCH ON THE  
DRIVER-AMPLIFIER UNIT. PROJECTOR IS  
MOUNTED IN STREAMLINED WOOD HOUSING AND  
2/3/42 MI-8992 W-305258-9  
APR. 42 SUB 0

CRY78151

CAN BE ROTATED THROUGH 420° WITHIN THE  
HOUSING. A REFLECTOR IS INCLUDED IN THE  
HOUSING TO PERMIT SOUNDING WHEN DESIRED.

**CRY 78152 WEA-1**  
MANUAL HOIST TRAIN  
MECHANISM; HOIST IS BY MEANS OF A  
MANUALLY OPERATED LEVER. A CHAIN HOIST  
RATCHET IS PROVIDED AT TOP OF THE  
STRUCTURE AS A SELECTIVE STOP FOR ANY  
POSITION OF TRAVEL OF THE SEABOARD UNIT.  
TRAINING IS BY ELECTRIC MOTOR. LENGTH OF  
2/3/42 MI-8993 W-305258-8  
DEC. 44 SUB 0

CRY78152

"TRAVEL IS 108".

DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER
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NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION
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**CBM 78153 MCA**  
**COMBINATION PROJECTOR:**  
 COMBINATION ROCHELLE SALT (14 TO 32 KC) AND MAGNETO-STRICTION (24 KC). RESISTIVE COMPONENT OF IMPEDANCE OF MAGNETOSTRICTION SIDE AT RESONANCE IS 100 OHMS. DC RESISTANCE IS 8 OHMS. IMPEDANCE OF ROCHELLE SALT SIDE AT RESONANCE IS 100  
 4/5/42 733H CBM:60149  
 MAR. 43 ALT 0

**CBM 78153**

OHMS. ROCHELLE SALT ELEMENT ARRANGED FOR REDUCED SIDE RADIATION.

**CBM 78154 MCA**  
**PROJECTOR ROCHELLE SALT:**  
 COMBINATION TYPE, BUT INCLUDES ONLY A ROCHELLE SALT (14 TO 32 KC) ELEMENT. IMPEDANCE OF ROCHELLE SALT SIDE AT RESONANCE IS 100 OHMS. OTHER SIDE INCLUDES SOUND ABSORBENT MATERIAL TO REDUCE BACK RADIATION. ROCHELLE SALT  
 4/5/42 733J CBM:60149  
 MAR. 43 ALT 0

**CBM 78154**

ELEMENT ARRANGED FOR REDUCED SIDE RADIATION.

**CBM 78155 MCA**  
**PROJECTOR MAGNETOSTRICTION:**  
 VERTICAL TYPE. USED FOR SOUNDING, 24 KC. DC RESISTANCE 8 OHMS. RESISTIVE COMPONENT OF IMPEDANCE AT RESONANCE IS 100 OHMS. MECHANICALLY ASSEMBLED TO ALLOW REMOVAL OF COILS FROM INSIDE OF VESSEL FROM INSTALLED PROJECTOR. SIMILAR TO  
 4/5/42 763J CBM:60149  
 APR. 42 ALT 0

**CBM 78155**

TYPE CBM 78134 EXCEPT FOR FREQUENCY AND AN EXHAUST TUBE IS PROVIDED TO DRY OUT THE PROJECTOR WHEN INSTALLED.

**CBM 78156 WEA-2**  
**PROJECTOR:**  
 COMBINATION TYPE CONSISTS OF BACK TO BACK MAGNETOSTRICTION AND ROCHELLE SALT ELEMENTS. MAGNETOSTRICTION ELEMENT IS RESONANT AT 24 KC. RESISTIVE COMPONENT OF IMPEDANCE AT RESONANCE IS 100 OHMS. ROCHELLE SALT ELEMENT HAS A RESPONSE  
 4/16/42 835 CBM:60,134  
 JUNE 42 ALT 0

RANGE OF 16 TO 30 KC. ITS **CBM 78156**  
 IMPEDANCE AT 24 KC IS 100 OHMS.

**CBM 78156-A \*GEN USE**  
**PROJECTOR-MAGNETOSTRIC-**  
 TION: SAME AS BASIC NUMBER EXCEPT MAGNETOSTRICTION PART HAS SPLIT WINDINGS, WITH 3 LEADS FOR MAGNETOSTRICTION PORTION.  
 \*FIRST PURCHASE: NOB-78964, NOB-74446  
 4/24/43 CBM:885A CBM:60134 ALT 0  
 AUG. 43

**CBM 78157 WEA-2**  
**MANUAL HOIST-TRAIN UNIT:**  
 INCLUDES A STREAMLINED PROJECTOR HOUSING WHICH HAS A REFLECTOR IN THE AFT END TO SERVE IN OBTAINING SOUNDING MEASUREMENTS MAXIMUM HOIST IS 27" AND TRAINING RANGE IS APPROXIMATELY 180° EITHER SIDE OF AXIS PARALLEL TO CENTER LINE OF SHIP.  
 4/16/42 CBM:867A CBM:60,133  
 AUG. 43 ALT 0

SIMILAR TO CBM-78141 EX- **CBM 78157**  
 CEPT FOR REFLECTOR, AND A GEAR BOX HAS BEEN ADDED TO PERMIT TRAINING FROM A TYPE CBM-23286 REMOTE CONTROL UNIT THROUGH A FLEXIBLE STEEL SHAFT. SIMILAR TO -78200.

**CRY 78158 QCP**  
**PROJECTOR:**  
 MAGNETOSTRICTION, 21 KC. USES PERMANENT MAGNET FOR POLARIZATION. CONNECTED FOR SHARP BEAM USE. DC RESISTANCE 3.6 OHMS. IMPEDANCE AT RESONANCE 25 + J95 OHMS.

4/23/42 CRY:MI-16700-1 CRY:W-303394  
 JUNE 42 SUB 0

**CRY 78159 QCP**  
**PROJECTOR:**  
 MAGNETOSTRICTION, 23 KC. USES PERMANENT MAGNET FOR POLARIZATION. CONNECTED FOR SHARP BEAM USE. DC RESISTANCE 3.6 OHMS. IMPEDANCE AT RESONANCE 25 + J95 OHMS.

4/23/42 CRY:MI-16700-2 CRY:W-303394  
 JUNE 42 SUB 0

**CRY 78160 QCP**  
**PROJECTOR:**  
 MAGNETOSTRICTION, 25 KC. USES PERMANENT MAGNET FOR POLARIZATION. CONNECTED FOR SHARP BEAM USE. DC RESISTANCE 3.6 OHMS. IMPEDANCE AT RESONANCE 25 + J95 OHMS.

4/23/42 CRY:MI-16700-3 CRY:W-303394  
 JUNE 42 SUB 0

**CRY 78161 QCP**  
**PROJECTOR:**  
 MAGNETOSTRICTION, 27 KC. USES PERMANENT MAGNET FOR POLARIZATION. CONNECTED FOR SHARP BEAM USE. DC RESISTANCE 3.6 OHMS. IMPEDANCE AT RESONANCE 25 + J95 OHMS.

4/23/42 CRY:MI-16700-4 CRY:W-303394  
 JUNE 42 SUB 0

**CBM 78162 QBE-1**  
**HOIST-TRAIN UNIT:**  
 INCLUDES A STREAMLINE PROJECTOR HOUSING. MAXIMUM HOIST IS 27" AND TRAINING RANGE IS APPROXIMATELY 180° EACH SIDE OF AXIS PARALLEL TO THE SHIP CENTER LINE. INTERCHANGEABLE AS A COMPLETE ASSEMBLY WITH CBM-78141, BUT NOT WITH RESPECT TO SOME  
 5/20/42 CBM:867B CBM:SK-5298  
 JUNE 42 ALT 0

PARTS. SAME AS CBM-78141 **CBM 78162**  
 EXCEPT FOR REDESIGN OF PROJECTOR HOUSING. CHANGE IN FAIRING CAP FROM RUBBER TO METAL, AND THE INCLUSION OF A LIGHT LIMIT SWITCH.

**CWT 78163 QBC**  
**WATER STATION UNIT:**  
 CONSISTS OF A HOUSING WHICH CONTAINS A ROCHELLE SALT PROJECTOR, SOUND REFLECTING MIRROR, TRAINING APPARATUS.

6/24/42  
 AUG. 42

**CBM 78164 QCS**  
**COMBINATION PROJECTOR:**  
 MAGNETOSTRICTION SIDE 24 KC, 100 OHMS IMPEDANCE AT 24 KC, DC RESISTANCE 8 OHMS. ROCHELLE SALT SIDE 14 TO 32 KC, 2000 OHMS IMPEDANCE. FOR USE IN A DOME AND RETRACTING GEAR. SAME AS TYPE -78188 EXCEPT FOR FREQUENCY.  
 8/31/42 CBM:900A CBM:60187 ALT 0  
 AUG. 43

**CBM 78164-A \*GEN USE**  
**PROJECTOR-COMBINATION:**  
 SAME AS BASIC NUMBER EXCEPT MAGNETOSTRICTION WINDING IS SPLIT AND HAS 3 LEADS BROUGHT OUT.

\*FIRST PURCHASE: NOB-78964, NOB-74446  
 4/24/43 CBM:900E CBM:60187 ALT 2  
 AUG. 43

**CBM 78165 QCT**  
**PROJECTOR-COMBINATION:**  
 MAGNETOSTRICTION SIDE 20 KC, 100 OHMS IMPEDANCE AT 20 KC, DC RESISTANCE 8 OHMS ROCHELLE SALT SIDE 14 TO 32 KC, 2000 OHMS IMPEDANCE. FOR USE IN A DOME AND RETRACTING GEAR.

8/31/42 CBM:900 CBM:60187  
 OCT. 42 ALT 0

**CBM 78165-A \*GEN USE**  
**PROJECTOR-COMBINATION:**  
 SAME AS BASIC NUMBER EXCEPT MAGNETOSTRICTION WINDING IS SPLIT AND HAS 3 LEADS BROUGHT OUT.

\*FIRST PURCHASE: NOB-78964, NOB-74446  
 4/24/43 CBM:900D CBM:60187 ALT 2  
 AUG. 43

**CBM 78166**  
**PROJECTOR COMBINATION:**  
 FREQ. 18 KC MAGNETOSTRICTION, 14 TO 32 KC ROCHELLE SALT.

8/31/42 CBM:902B CBM:902B  
 OCT. 42

**CET 78167 NJ-8**  
**MAGNETOSTRICTION PROJEC-**  
 TOR: FREQ. 14.25 KC. MAGNETOSTRICTION TYPE, USED IN SKIN OF SHIP FOR DEPTH MEASUREMENTS.

9/3/42 CIP:ES-1028 CIP:ID-1042  
 OCT. 42

DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER
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NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION
CIP 78168 NK-2			CBM-78171-B			CBM-78173-A	11/1/43	QCC-1a, QCR-1a
OUTBOARD PROJECTOR: 14.25 KC. MAGNETOSTRICTION TYPE, CON- SISTS OF A TRANSMITTING PROJECTOR AND A RECEIVING PROJECTOR INSTALLED IN A CAST ALUMINUM HOUSING, AND SUPPORTING PIPES WHICH SERVE AS CONDUIT FOR CABLES TO AND FROM PROJECTORS. 9/3/42 ES-1030 10-1010 MAR. 44 ISSUE 3			EXCEPT INCLUDES GEAR BOX.			DOME & RETRACTING GEAR NAVY TYPE -78173 MODIFIED BY REPLACING THE 5G SYNCHRO WITH A SDG, AND REPLACING THE 8 TERMINAL STRIP WITH A 12 IN THE JUNCTION BOX FOR MAINTENANCE OF TRUE BEARING (MTB) ON A 36 SPEED GYRO SYSTEM. SAME AS -78150-B EXCEPT DOES NOT 11/1/43 MAR. 44		
CRV 78169 NMC			CBM 78172	10/24/42	QCN-4, QCO-3 55RE78J1403A	CBM 78173-A	11/1/43	INCLUDE GEAR BOX.
PROJECTOR MAGNETOSTRICTION: FREQUENCY 18 ± .5 KC. FILLED WITH OIL, USED AS "SHALLOW" PROJECTOR. SAME AS CRV-78170 EXCEPT OIL FILLED. DC RESIST- ANCE 3.7 OHMS. IMPEDANCE AT RESONANCE 25 + J65 OHMS. 10/3/42 NI-16712A W-305824-5 MAR. 43 REV 1			HOIST TRAIN UNIT: LENGTH OF TRAVEL 43". SAME AS CBM-78144 BUT MODIFIED BY THE OMISSION OF THE 6" QUICK-CLOSING VALVE, RESULTING IN A RE- DUCTION OF 6 11/16" IN THE OVERALL HEIGHT. HAS FOUR LEADS BROUGHT OUT, TWO EACH FOR RANGING & LISTENING SECTION OF 10/24/42 CBM:546AN CBM:60147 MAR. 44 ALT 0					
CRV 78170 NMC			CBM 78172			CBM-78173-B	11/1/43	INCLUDES A GEAR BOX.
PROJECTOR MAGNETO- STRICTION: FREQUENCY 18 ± .5 KC. USED AS "DEEP" PROJECTOR. SAME AS CRV-78169 EX- CEPT HAS NO OIL. DC RESISTANCE 3.7 OHMS IMPEDANCE AT RESONANCE 25 + J650 OHMS. 10/3/42 NI-16712B W-305824-6 MAR. 43 REV 1			PROJECTOR.			HOIST-TRAIN UNIT NAVY TYPE -78173 MODIFIED BY REPLACING THE 5G SYNCHRO WITH A SDG, THE 8 TERMINAL STRIP WITH A 12 IN THE JUNCTION BOX AND ADDING A 1/36 GEAR BOX FOR MAINTENANCE OF TRUE BEARING (MTB) ON A ONE (1) SPEED GYRO SYSTEM. SAME AS -78173-A EXCEPT 11/1/43 MAR. 44		
CBM 78171 QCS, QCT			CBM-78172-A	11/1/43	QCN-4a, QCO-3a	CBM-78173-B	11/1/43	INCLUDES A GEAR BOX.
DOME AND RETRACTING GEAR: LENGTH OF TRAVEL 3 FEET 4 3/4 INCHES. SIMILAR TO CBM-78147 AND CBM-78148 EXCEPT FOR SLIGHT CHANGES IN DESIGN, SUBSTITUTION OF MALLEABLE IRON FOR CRIT- ICAL MATERIAL IN CERTAIN DETAILS, AND CHANGES IN TERMINAL ARRANGEMENT TO 10/8/42 CBM:873C CBM:60608, JULY 43 ALT. 2			HOIST-TRAIN UNIT: NAVY TYPE -78172 MODIFIED BY REPLACING THE 5G SYNCHRO WITH A SDG AND REPLACING THE 8 TERMINAL STRIP A 12 IN THE JUNCT- ION BOX FOR MAINTENANCE OF TRUE BEARING (MTB) ON A 36 SPEED GYRO SYSTEM. SAME AS -78172-B EXCEPT DOES NOT INCLUDE GEAR BOX 11/1/43 NOV. 43					
CBM 78171			CBM-78172-B	NOV. 43	QCN-4a, QCO-3a	CRV 78174	11/1/43	PROJECTOR-MAGNETOSTRIC- TION: RESONANT FREQUENCY: 25KC. PROJEC- TOR IS 9 INCH PERMANENT MAGNET TYPE DE- SIGNER FOR BOTH SHARP AND BROAD BEAMS BY THROWING A SWITCH ON THE DRIVER AMPLI- FIER UNIT. (SAME PROJECTOR AS IS USED IN TYPE CRV-78151) PROJECTOR-SEABOARD UNIT. 11/24/42 CRV:NI-3992-A CRV:W-306008-9 JULY 43 SUB 0
PROVIDE FOR FOUR LEADS FROM PROJECTOR. SIMILAR TO TYPE -78191. SAME AS -78173 EXCEPT IS FOR USE WITH A COMBINATION PROJECTOR.			HOIST-TRAIN UNIT: NAVY TYPE -78172 MODIFIED BY REPLACING THE 5G SYNCHRO WITH A SDG, THE 8 TERMINAL STRIP A 12 IN THE JUNCTION BOX AND ADD- ING A 1/36 GEAR BOX FOR MAINTENANCE OF TRUE BEARING (MTB) ON A ONE (1) SPEED GYRO SYSTEM. SAME AS -78172-A EXCEPT 11/1/43 NOV. 43					
CBM-78171-A QCS-a, QCT-a			CBM-78172-B			CRV 78174	11/1/43	DC RESISTANCE: 4 OHMS, IMPEDANCE AT RESONANCE: 30 + J85 OHMS.
DOME & RETRACTING GEAR NAVY TYPE-78171 MODIFIED BY REPLACING THE 5G SYNCHRO WITH A SDG AND REPLACING THE 8 TERMINAL STRIP WITH A 12 IN THE JUNCTION BOX FOR MAINTENANCE OF TRUE BEARING (MTB) ON A 36 SPEED GYRO SYSTEM. SAME AS -78171-B EXCEPT DOES NOT INCLUDE 11/1/43 MAR. 44			INCLUDES A GEAR BOX.					
CBM-78171-A			CBM 78173	10/24/42	QCC-1, QCR-1	CBM 78175	1/6/43	*SEE BELOW DOME AND RETRACTING GEAR: LENGTH OF TRAVEL 3 FEET 4 3/4 INCHES. IDENTICAL TO CBM-78171 EXCEPT THAT NO TRAINING MOTOR, TRAINING SYNCHRO GENERA- TOR OR BEARING REPEATER SYNCHRO GENERA- TOR ARE INCLUDED, AND UNIT IS DESIGNED *FOR USE WITH QCC-2 1/6/43 CBM:873F CBM:60108 JULY 43 ALT 3
GEAR BOX.			DOME & RETRACTING GEAR: LENGTH OF TRAVEL 3 FEET 4 3/4 INCHES. SIMILAR TO CBM-78147 AND CBM-78148 EXCEPT FOR SUBSTITUTION OF LESS SCARCE MATERIAL, AND CONSEQUENT MINOR MODIFICA- TIONS IN DESIGN. SAME AS -78171 EXCEPT AS FOR USE WITH A SINGLE-FACED 10/24/42 CBM:873B CBM:60108 JULY 43 ALT 2					
CBM-78171-B QCS-a, QCT-a			CBM 78173			CBM 78175	1/6/43	FOR INSTALLATION OF A SINGLE-FACED PROJECTOR.
DOME & RETRACTING GEAR NAVY TYPE-78171 MODIFIED BY REPLACING THE 5G SYNCHRO WITH A SDG, THE 8 TERMI- NAL STRIP WITH A 12 IN THE JUNCTION BOX AND ADDING A 1/36 GEAR BOX FOR MAIN- TENANCE OF TRUE BEARING (MTB) ON A ONE (1) SPEED GYRO SYSTEM. SAME AS -78171 -A 11/1/43 MAR. 44			MAGNETOSTRICTION PROJECTOR.					

DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER
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COB 78176 QBP			CBM 78181 *GEN USE			CBM 78188		
DOME: HAS SKIN OF STAINLESS STEEL WITH VERTICAL SIDES AND A STREAMLINED HORIZONTAL CROSS-SECTION WHICH PROJECTS INTO THE WATER. MADE IN TWO SECTIONS.			PROJECTOR: SIMILAR TO TYPE -78041 EXCEPT FOR INTERNAL CONNECTIONS AND TWO ADDITIONAL LEADS BROUGHT OUT FOR HORIZONTAL LOBING.			-78164 EXCEPT FOR FREQUENCY.		
1/8/43	CW:D-164451	CW:ESXX-641842	*FIRST PURCHASE: NXSS-9370					
NOV. 43		ISSUE 1	1/25/43	CBM:5500				
			JULY 43					
COB 78176-A QBF. QJA			CBM 78182 *GEN USE 55 RE78J1398A			CBM 78189 *GEN. USE		
DOME REDESIGN OF TYPE -78176 TO MAKE AS SINGLE SECTION. HAS REPLACABLE SOUND TRANSPARENT WINDOW FEATURE. ELIMINATES 4 TAPPED HOLES USED IN BASIC UNIT FOR REMOVING DOME.			PROJECTOR: SIMILAR TO TYPE -78098 EXCEPT FOR INTERNAL CONNECTIONS AND TWO ADDITIONAL LEADS BROUGHT OUT FOR HORIZONTAL LOBING.			PROJECTOR-COMBINATION: COMBINED ROCHELLE SALT (14 TO 32KC) AND LOW IMPEDANCE (100 OHMS) 22KC PROJECTION 8 OHMS DC. SIDE WINDING ARRANGED TO REDUCE SIDE RADIATION. SAME AS TYPES -78190, -78115 EXCEPT FOR FREQUENCY. *FIRST PURCHASE: NXSS-16698		
10/13/43	CW:	ES-652957	*FIRST PURCHASE: NXSS-9370			3/4/43	CBM:735P	CBM:60037
AUG. 44	CUB:D-167478	ES-652958	1/25/43	CBM:550V		JULY 43		ALT 1
		ISSUE	MAR. 44					
78176-B QBF			CBM 78183 GEN USE* 55 RE78J1399A			CBM 78190 *GEN USE		
DOME SAME AS -78176-A EXCEPT FOR INTERNAL BRACING OF DOME WINDOW TO PERMIT USE IN DEEPER DRAFT.			PROJECTOR: SIMILAR TO TYPE -78182 EXCEPT FOR FREQUENCY (24KC).			PROJECTOR-COMBINATION: COMBINED ROCHELLE SALT (14 TO 32 KC) AND LOW IMPEDANCE (100 OHM) 18KC PROJECTOR. 8 OHMS DC. SIDE WINDING ARRANGED TO REDUCE SIDE RADIATION. SAME AS TYPE -78189 EXCEPT FOR FREQUENCY. *FIRST PURCHASE: NXS-16698		
12/4/43	CW:		*FIRST PURCHASE: NXS-9370			3/4/43	CBM:735N	CBM:60037 ALT 1
NOV. 43	CUB:		1/25/43	CBM:550W		JULY 43		
			MAR. 44					
CCU 78177 QBP			CBM 78184 GEN. USE* 55 RE78J1401A			CBM 78191 *GEN. USE		
RETRACTING GEAR: INPUT: 440/3/60. THIS UNIT PROVIDES MEANS FOR RAISING AND LOWERING AND CHANGING THE AZIMUTHAL DIRECTION OF THE PROJECTOR.			PROJECTOR: SIMILAR TO TYPE -78115 EXCEPT FOR INTERNAL CONNECTIONS AND ONE ADDITIONAL LEAD BROUGHT OUT FOR HORIZONTAL LOBING.			DOME & RETRACTING GEAR: LENGTH OF TRAVEL 3 FEET 4 3/4 INCHES. SIMILAR TO TYPE -78171 EXCEPT THERE IS NO TRAINING SYNCHRONOUS GENERATOR AND TRAINING MOTOR IS 220 VOLTS DC.		
1/8/43	CW:D-163463	CW:ESXX-641842	*FIRST PURCHASE; NXS-9370			*FIRST PURCHASE: NOS-78964 LOT 2 7/8		
JULY 43		ISSUE 1	1/25/43	CBM:773K		3/8/43	CBM:873E	CBM:60108 ALT 4
			MAR. 44			JULY 43		
CW: 78178 QBF			CBM 78185 GEN. USE* 55 RE78J1400A			CBM 78192 *SEE BELOW		
PROJECTOR: FREQUENCY RANGE: TRANSMITTING IS 22 TO 28 KC, RECEIVING IS 10 TO 30 KC. ROCHELLE TYPE.			PROJECTOR: SIMILAR TO TYPE -78184 EXCEPT FREQUENCY (20KC).			DOME AND RETRACTING GEAR: LENGTH OF TRAVEL 3 FEET 4 3/4 INCHES. SAME AS TYPE -78191 EXCEPT EMPLOYS A 220/3/60 HOIST-LOWER MOTOR.		
			*FIRST PURCHASE; NXS-9370					
1/8/43	CW:D-163462	CW:ESX-643055	1/25/43	CBM:735L		3/8/43	CBM:873D	CBM:60108 ALT 4
AUG. 44		ISSUE 2*	MAR. 44			JULY 43		
CBM 78179 QBE-2			CBM 78186 GEN. USE*			CWT 78193 QBC-1		
TRAIN MECHANISM: SIMILAR TO CBM-78162 EXCEPT THAT NO FACILITIES FOR HOISTING ARE PROVIDED AND THE UNIT IS INVERTED, THE DOME BEING AT THE TOP OF THE UNLI.			PROJECTOR: SIMILAR TO TYPE -78145 EXCEPT FOR INTERNAL CONNECTIONS AND TWO ADDITIONAL LEADS BROUGHT OUT FOR HORIZONTAL LOBING.			PROJECTOR-ROCHELLE SALT: FREQ: 10 TO 50KC. SIMILAR TO TYPE -78194 EXCEPT FOR SIZE AND OTHER MINOR MECHANICAL DIFFERENCES.		
1/21/43	CBM:8670	CBM:60277	*FIRST PURCHASE; NXS-9370			3/12/43		
JULY 43		ALT 0	1/25/43	CBM:8600		JULY 43		
			JULY 43					
CBM-78179-A QBE-5			CFF 78187 QBG			CWT 78194 QBD		
TRAIN MECHANISM			PROJECTOR-ROCHELLE SALT: FREQ RANGE: 1500 TO 7500 CYCLES FOR LISTENING. RESONANT AT APPROXIMATELY 25KC (22 TO 27 KC).			PROJECTOR-ROCHELLE SALT: FREQ 10 TO 50KC. SIMILAR TO TYPE -78193 EXCEPT FOR SIZE AND OTHER MINOR MECHANICAL DIFFERENCES.		
CANCELLED								
7/28/44	867J	60.386	1/30/43		CFF:B-37	3/12/43		CWT:GU-857
JAN. 45		REV 0	JULY 43			JULY 43		
CBM 78180 GEN USE*			CBM 78188 GEN. USE			CWT 78194-A QBH		
PROJECTOR: SIMILAR TO TYPE -78140 EXCEPT FOR INTERNAL CONNECTIONS AND TWO ADDITIONAL LEADS BROUGHT OUT FOR HORIZONTAL LOBING.			PROJECTOR-COMBINATION: MAGNETO STRICTION SIDE: 22KC 100 OHMS IMPEDANCE AT 22KC. DC RESISTANCE IS 8.0 OHMS. ROCHELLE SALT SIDE: 14 TO 32KC. 100 OHMS IMPEDANCE. FOR USE IN DOME AND RETRACTING GEAR. SAME AS TYPE			PROJECTOR-ROCHELLE SALT FREQ RANGE: 10 TO 50 KC SAME AS TYPE -78194 EXCEPT HAS 10 LESS CRYSTALS MAKE UP BLOCKS ARE REPLACED BY FOUR CAST RESIN ARCS. BACKING PLATE IS 3/32" THICKER, AND AIR SPACE MACHINED LESS DEEPLY.		
*FIRST PURCHASE: NXS-9370			*FIRST PURCHASE: NXSS-16698			9/27/43	GU-1551	8216
1/25/43	CBM:550T		3/4/43	CBM:900C	CBM:60187	AUG. 44		
JULY 43			JULY 43		ALT 2			



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CBM 78195 QCP-1 PROJECTOR-MAGNETOSTRICTION: FREQ: 21KC. PERMANENT MAGNET TYPE WITH 468 OSCILLATING ELEMENTS. 55 OHMS IMPEDANCE AND 5.0 OHMS DC RESISTANCE.	3/27/43 JULY 43	CBM:917A SK-5495 ALT 0	CBN 78203 NMC-1 PROJECTOR: PERMANENT MAGNET TYPE MAGNETOSTRICTION PROJECTOR MOUNTED IN CASE SIMILAR TO CBN-78138. FREQ RANGE: 17 TO 19KC.	5/22/43 JULY 43	CBM:934 CK-5760 ALT 0	CRY 78208-A QGB-A PROJECTOR MAGNETOSTRICTION TYPE. FREQ. 20 KC ± 5%. INPUT RATING 400 WATTS. 19" PERMANENT MAGNET. SAME AS TYPE -78208 EXCEPT IS MODIFIED FOR MAINTENANCE OF DEEP CONTACT FEATURES BY ADDING COIL CIRCUIT TAPS AND USING 5 TERMINALS INSTEAD OF 3. USED 10/12/44 MF-16727-A1 DEC. 44		
CBM 78196 QCP-1 PROJECTOR-MAGNETOSTRICTION: FREQ: 23KC. PERMANENT MAGNET TYPE WITH 468 OSCILLATING ELEMENTS. 55 OHMS IMPEDANCE AND 5.0 OHMS DC RESISTANCE.	3/27/43 JULY 43	CBM:917B SK-5495 ALT 0	CBM-78203-A NMC-2 PROJECTOR PERMANENT MAGNET TYPE MAGNETOSTRICTION PROJECTOR. FREQUENCY RANGE 17 TO 19 KC. SIMILAR TO TYPE -78203 PROJECTOR EXCEPT IT USES A STEEL FORGING INSTEAD OF A BRONZE CASTING.	11/30/44 JAN. 45	945A SK-5760 ALT 1	CRY 78208-A WITH NAVY TYPE MCOS-7 CABLE WITH 2 SETS OF CONDUCTORS IN PARALLEL. MECHANICALLY AND ELECTRICALLY INTERCHANGEABLE WITH 78208.		
CBM 78197 QCP-1 PROJECTOR-MAGNETOSTRICTION: FREQ: 25KC. PERMANENT MAGNET TYPE WITH 468 OSCILLATING ELEMENTS. 55 OHMS IMPEDANCE AND 5.0 OHMS DC RESISTANCE.	3/27/43 JULY 43	CBM:917C SK-5495 ALT 0	78204 RE78J159A RE 78J159 RETRACTABLE DOME:			CRY 78209 QGB PROJECTOR: MAGNETOSTRICTION TYPE. FREQ: 22KC±5%. INPUT RATING IS 400 WATTS. 19" PERMANENT MAGNET.		
CBM 78198 QCP-1 PROJECTOR-MAGNETOSTRICTION: FREQ: 27KC. PERMANENT MAGNET TYPE WITH 468 OSCILLATING ELEMENTS. 55 OHMS IMPEDANCE AND 5.0 OHMS DC RESISTANCE.	3/27/43 JULY 43	CBM:917D SK-5495 ALT 0	(CUB) 6/1/43 CBN:882-C MAR. 44			7/1/43 MI-16727-1 SEPT 43		CRY:M-306329-13
CBM 78199 *SEE BELOW PROJECTOR-MAGNETOSTRICTION: FREQ: 25KC PERMANENT MAGNET TYPE WITH 80 OSCILLATING ELEMENTS. EMPLOYS HALF WAVE PASSIVE VIBRATORS ON THE DIAPHRAGMS. 55 OHMS IMPEDANCE AND 5.0 OHMS DC RESISTANCE. *QCP-1 (FOR EXPERIMENTAL PURPOSES)	3/27/43 JULY 43	CBM:933 SK-5684 ALT 0	CBM 78205 QAS PROJECTOR-ROCHELLE SALT: CYLINDRICAL IN SHAPE. NOMINAL IMPEDANCE 1250 OHMS. FREQUENCY RANGE 16 TO 26KC.	6/7/43 NOV. 43	CM:ASX-33873 CM:ASO-33882 ISSUE 1	CRY 78209-A QGB-A PROJECTOR MAGNETOSTRICTION TYPE. FREQ. 22 KC ± 5%. INPUT RATING 400 WATTS. 19" PERMANENT MAGNET. SAME AS TYPE -78209 EXCEPT IS MODIFIED FOR MAINTENANCE OF DEEP CONTACT FEATURES BY ADDING COIL CIRCUIT TAPS AND USING 5 TERMINALS INSTEAD OF 3. USED 10/12/44 MF-16727-A2 DEC. 44		
CBM 78200 WEA-2a HOIST-TRAIN MECHANISM: INCLUDES A STREAMLINED PROJECTOR HOUSING SAME AS TYPE -78157 EXCEPT INCLUDES A SYNCHRONOUS GENERATOR, A TRAINING LIMIT SWITCH, AND A TRAINING MOTOR & HAS NO REFLECTOR.	5/6/43 AUG. 44	CBM:867C CBN:60234 ALT 0	CCU* 78206 QJA RETRACTING GEAR INPUT: 440/3/60. PROVIDES MEANS FOR RAISING, LOWERING, AND CHANGING THE AZIMUTHAL DIRECTION OF THE PROJECTOR. SIMILAR TO TYPE -78177 EXCEPT FOR ADDITION OF ROTATING CONTACTS IN PRO-ALSO CMT	6/16/43 NOV. 43	CM:D-166952 CM:ESX-652680 ISSUE 1	CRY 78209-A WITH NAVY TYPE MCOS-7 CABLE WITH 2 SETS OF CONDUCTORS IN PARALLEL. MECHANICALLY AND ELECTRICALLY INTERCHANGEABLE WITH -78209.		
CUB 78201 GEN U.S. USE RE 78J 164 DOME: FIXED TYPE, 100" LONG, TMB FORM, EXPANDED METAL WINDOW, BAFFLES.	5/18/43 JULY 43		CCU78206 JECTOR CABLE CIRCUITS IN PLACE OF MECHANICAL AND MAGNETIC TRAINING STOPS AND TRAINING LIMIT SWITCH.			CRY 78210 QGB-2 QGB PROJECTOR: MAGNETOSTRICTION TYPE. FREQ: 24KC±5%. INPUT RATING IS 400 WATTS. 19" PERMANENT MAGNET.		
CUB 78202 GEN U.S. USE RE 78J 157 DOME: FIXED TYPE, APPROX 57" LONG, BRITISH FORM, EXPANDED METAL WINDOW, BAFFLES.	5/18/43 JULY 43		CV-78207 QJA PROJECTOR ROCHELLE SALT TYPE. FREQ RANGE: TRANSMITTING IS 20 TO 27 KC; RECEIVING IS 10 TO 30 KC. PERFORMANCE CHARACTERISTICS SIMILAR TO TYPE -78178 EXCEPT CRYSTALS HAVE INCREASED LOAD CARRYING CAPACITIES. USES ADP INSTEAD OF ROCHELLE SALTCRYSTAL	6/16/43 AUG. 44	D-167537 CM:ESX-658977 ISSUE 4	7/1/43 MI-16727-3 SEPT 43		CRY:M-306553-0 SUB 0
			CRY 78208 QGB PROJECTOR: MAGNETOSTRICTION TYPE. FREQ: 20KC±5%. INPUT RATING IS 400 WATTS. 19" PERMANENT MAGNET.	7/1/43 SEPT 43	MI-16727-4 CRY:M-306329-18	CRY-78210-A QGB-A PROJECTOR MAGNETOSTRICTION TYPE. FREQ. 24 KC ± 5%. INPUT RATING 400 WATTS. 19" PERMANENT MAGNET. SAME AS TYPE -78210 EXCEPT IS MODIFIED FOR MAINTENANCE OF DEEP CONTACT FEATURES BY ADDING COIL CIRCUIT TAPS AND USING 5 TERMINALS INSTEAD OF 3. USED 10/12/44 MF-16727-A3 DEC. 44		
						CRY 78210-A WITH NAVY TYPE MCOS-7 CABLE WITH 2 SETS OF CONDUCTORS IN PARALLEL. MECHANICALLY AND ELECTRICALLY INTERCHANGEABLE WITH -78210.		

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CRV 78211 QGB			CLV 78216-A QGB	RE 8F315C		CBM 78222		
PROJECTOR: MAGNETOSTRICTION TYPE. FREQ: 26KC±5%. INPUT RATING IS 400 WATTS. 19" PERMANENT MAGNET.			HOIST TRAIN MECHANISM TRAVEL 3 FT. 8 IN. SAME AS -78216 EXCEPT TILT FEATURE HAS BEEN REMOVED.			230V DC. 1/12 HP TILT MOTOR ALSO CONTAINS TWO 5G AND TWO 5 CT GENERATORS. SWITCHES, DIALS AND CONTROLS.		
7/1/43 MI-16727-2	CRV:M-306329-T4		NXsr-59120	7/7/44				
SEPT 43			SEPT. 44					
CRV-78211-A QGB-a			CIP 78217 MK-6			CBM-78222-A QGA-1		
PROJECTOR MAGNETOSTRICTION TYPE. FREQ. 26 KC ± 5%. INPUT RATING 400 WATTS. 19" PERMANENT MAGNET. SAME AS TYPE -78211 EXCEPT IS MODIFIED FOR MAINTENANCE OF DEEP CONTACT FEATURES BY ADDING COIL CIRCUIT TAPS AND USING 5 TERMINALS INSTEAD OF 3. USED 10/12/44 MF-16727-A3			OUTBOARD PROJECTOR: FREQUENCY: 25.0 KC. SIMILAR TO CIP-78168 EXCEPT IS SMALLER IN SIZE AND HAS DIFFERENT FREQUENCY RANGE.			HOIST-TRAIN-TILT MECHANISM: FOR MOUNTING -78220 AND -78221 PROJECTORS. LENGTH OF TRAVEL 3' 10". EMPLOYS SCREW LIFT AND 3 CONCENTRIC SHAFTS FOR TILTING AND TRAINING PROJECTORS. INCLUDES 440/3/60. 3/4 HP HOIST MOTOR, TWO 230V DC 1/4 HP TRAIN MOTORS AND ONE 230V DC 1/4 HP TRAIN MOTORS AND ONE 230V 12/7/44 957A 60307 MAY 45 ALT. 4		
			9/16/43 ES-1131	ID-1095				
			AUG. 44					
			CRV78211-A			CBM-78222-A		
WITH NAVY TYPE MCOS-7 CABLE WITH 2 SETS OF CONDUCTORS IN PARALLEL. MECHANICALLY AND ELECTRICALLY INTERCHANGEABLE WITH -78211.			PROJECTOR			DC 1/12 HP TILT MOTOR. ALSO CONTAINS TWO 5G AND TWO 5CT GENERATORS, SWITCHES, DIALS AND CONTROLS. SAME AS -78222 EXCEPT SLIP RINGS ARE SOLID INSTEAD OF BEING SPLIT.		
			CONSISTS OF ROCHELLE SALT CRYSTAL BANK ARRANGED SO THAT UNIT IS NON-DIRECTIONAL IN HORIZONTAL PLANE. SENDING AND RECEIVING SIGNALS RADIALLY. CAPABLE OF PRODUCING A SOUND PRESSURE OF 850 DYNES/SQ. CM AT 20KC AT A DISTANCE OF THREE FEET FROM 10/6/43 NOV. 43					
			CQA-78218 OAB					
			PROJECTOR WHEN DRIVEN BY A CURRENT OF 200 MA.					
			CBM 78212 WCA-2			CBM-78222-B QGA		
PROJECTOR-COMBINATION: COMBINATION ROCHELLE SALT (14 TO 32KC) AND PERMANENT MAGNET MAGNETOSTRICTION (24KC) TYPE. SAME AS TYPE-78153 EXCEPT MAGNETOSTRICTION ELEMENT IS PERMANENT MAGNETIC TYPE.			PROJECTOR WHEN DRIVEN BY A CURRENT OF 200 MA.			HOIST-TRAIN-TILT MECHANISM: FOR MOUNTING TYPES -78220 AND -78221 PROJECTORS. LENGTH OF TRAVEL 3' 10". EMPLOYS SERVO LEFT & 3 CONCENTRIC SHAFTS FOR TILTING & TRAINING THE PROJECTORS. INCLUDES 440/3/60. 3/4 HP HOIST MOTOR, TWO 230V DC 1/4 HP TRAIN MOTORS AND ONE 2/28/45 957B 60307 MAR. 45 ALT 1		
7/8/43 948	CBM:50149 ALT 0							
SEPT 43								
			CBV 78213 WCA-2			CBM-78222-B		
PROJECTOR ROCHELLE SALT: FREQ RANGE: 14 TO 32KC. IMPEDANCE AT RESONANCE IS 100 OHMS. SIMILAR TO -78154 EXCEPT BANJO CASTING IS IDENTICAL TO -78212			HOIST-TRAIN MECHANISM LENGTH OF TRAVEL: 2' 3". SAME DETAIL AS CLV-78216 EXCEPT FOR LENGTHS OF TUBING AND RISE.			230V DC 1/12 HP TILT MOTOR. ALSO CONTAINS TWO 5G AND TWO 5 CT GENERATOR SWITCHES, DIALS & CONTROLS. SAME AS TYPE -78222 EXCEPT THAT THE TRAVEL BEARING IS SPLIT.		
7/8/43 733R	CBM:SK-5507							
NOV. 43	ALT 1		10/19/43	RE 8F 564				
			NOV. 43					
			CBM 78214 WCA-2			CUB 78223 QCU		
PROJECTOR MAGNETOSTRICTION: PERMANENT MAGNET TYPE. FREQUENCY IS 24KC.			PROJECTOR-MAGNETOSTRICTION FREQUENCY: 14 KC. PERMANENT MAGNET TYPE. FOR TRANSMISSION IMPEDANCE IS 100 OHMS AND FOR RECEPTION IMPEDANCE IS 200 OHMS ON EACH SIDE. CONSTRUCTED SIMILAR TO -78195.			SEABOARD UNIT (DOME) STREAMLINED HOUSING FOR TYPE -78225 PROJECTOR. ATTACHES TO HOIST-TRAIN MECHANISM (EITHER -78226 OR -78224.)		
7/8/43 947	CBM60149 ALT 1							
NOV. 43			12/15/43 941	SK-5909		2/12/44 MI-16740	CRV:M-307012-9	
			FEB. 44	ALT 1		AUG. 44 SUB 0		
			CBV 78215 OAU					
PROJECTOR-ROCHELLE SALT: CYLINDRICAL IN SHAPE. NOMINAL IMPEDANCE IS 125 OHMS. FREQUENCY RANGE: 16 TO 26KC. SAME AS CM-78205 EXCEPT FOR TOP CAP, WHICH PROVIDES DIFFERENT MOUNTING PROVISIONS.			PROJECTOR-MAGNETOSTRICTION FREQUENCY: 30 KC. PERMANENT MAGNET TYPE. FOR TRANSMISSION IMPEDANCE IS 100 OHMS & FOR RECEPTION IMPEDANCE IS 200 OHMS ON EACH SIDE. SIMILAR TO -78220 EXCEPT IS SMALLER AND OPERATES ON DIFFERENT FREQUENCY.					
7/20/43	CANCELLED							
MAR. 44			12/15/43 942	SK-5910		CRV-78224 QCU		
			FEB. 44	ALT 1		HOIST - TRAIN MECHANISM MANUAL HOIST. ELECTRIC TRAIN. PHYSICALLY SIMILAR TO CRV-78152 BUT HAS NEW TYPE TRAINING MECHANISM WITH 50G SYNCHRO CONTROL AND 5G SYNCHRO REPEAT BACK. 2 PHASE AC TRAINING MOTOR, ELECTRONIC BRAKING. MTB BUILT IN. ADAPTABLE TO ASAP. LENGTH 2/12/44 MI-16742-2 W-307012-B DEC. 44		
			CLV 78216 QGB			OF TRAVEL 72".		
HOIST-TRAIN MECHANISM: TRAVEL: 3' 8"			HOIST-TRAIN-TILT MECHANISM FOR MOUNTING -78220 AND -78221 PROJECTORS. LENGTH OF TRAVEL 3 FT. 10". EMPLOYS SCREW LIFT AND 3 CONCENTRIC SHAFTS FOR TILTING AND TRAINING THE PROJECTORS. INCLUDES 440/3/60. 3/4 HP HOIST MOTOR TWO 230V DC. 1/4 HP TRAIN MOTORS & ONE 12/15/43 957 60307 FEB. 44 ALT 1					
			CBM 78222 QGA					
			HOIST-TRAIN-TILT MECHANISM FOR MOUNTING -78220 AND -78221 PROJECTORS. LENGTH OF TRAVEL 3 FT. 10". EMPLOYS SCREW LIFT AND 3 CONCENTRIC SHAFTS FOR TILTING AND TRAINING THE PROJECTORS. INCLUDES 440/3/60. 3/4 HP HOIST MOTOR TWO 230V DC. 1/4 HP TRAIN MOTORS & ONE 12/15/43 957 60307 FEB. 44 ALT 1					

DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER
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CRV 78225 QCM			CCU			CBM-78236 QGD		
PROJECTOR			CMT-78230 QJB-1			PROJECTOR-MAGNETOSTRICTION		
RESONANT FREQUENCY: 25 KC. PROJECTOR IS OF 14" O.D. PERMANENT MAGNET TYPE.			RETRACTING GEAR:			20 KC. USES PERMANENT MAGNET FOR POLARIZATION. SIMILAR TO -78235 EXCEPT FOR FREQUENCY.		
2/22/44 MI-16740		V-307012	PROVIDES MEANS FOR RAISING, LOWERING AND CHANGING AZIMUTHAL DIRECTION OF PROJECTOR. SAME AS -78229 EXCEPT POWER SEATING MECHANISM IS PROVIDED TO PRECISELY SEAT THE DOME AGAINST THE RAFT STOPS, AND			9/1/44 991A		60340
AUG. 44		SUB 1	6/5/44 CW:D-170112		CW:ESX-654660	OCT. 44		REV 0
			OCT. 44		ESX-654662			
CRV-78225-A QCU-1			CCU			CBM-78237 QGC, QCD		
PROJECTOR:			CMT-78230			DOME AND RETRACTING GEAR		
RESONANT FREQUENCY: 25 KC. PROJECTOR IS OF 14" O.D. PERMANENT MAGNET TYPE. SAME AS -78225 EXCEPT IT IS TO INCORPORATE MAINTENANCE-OF-DEEP-CONTACT FEATURES AND A 5-CONDUCTOR NAVY TYPE CABLE IS SUPPLIED IN LIEU OF A 3-CONDUCTOR CABLE.			DETAIL CHANGES TO ACCOMMODATE THE POWER-SEATING MECHANISM. NOT INTERCHANGEABLE WITH EITHER -78206 OR -78229. INPUT: 220 OR 440 VOLTS, 3 PHASE, 60 CYCLES, 10.74 OR 5.37 AMPS PER PHASE.			LENGTH OF TRAVEL 3' 4 3/4". SIMILAR TO -78171 EXCEPT EMPLOYS SLIP RINGS, A NEW TYPE OF STEADY BRACKET AND A STAINLESS STEEL SHAFT.		
10/20/44 MI-16740-A		CRV:M-307401-9				9/1/44 873G		60374
MAY 45		SUB. 1				OCT. 44		REV 0
CRV-78226 QCU			CUB 78231 WFA		72RE 78J1421A	CBM-78238 QBE-5		
HOIST - TRAIN MECHANISM			DOME:			TRAIN MECHANISM		
MANUAL HOIST, ELECTRIC TRAIN, PHYSICALLY SIMILAR TO CRV-78152 BUT HAS NEW TYPE TRAINING MECHANISM WITH 50G SYNCHRO CONTROL AND 5G SYNCHRO REPEAT BACK, 2 PHASE AC TRAINING MOTOR ELECTRONIC BRAKING, MTB BUILT IN, ADAPTABLE TO ASAP. LENGTH 2/24/44 MI-16742-1			50" DOME, EXPANDED METAL WINDOW, REINFORCED, USED ON SUBMARINE EQUIPMENTS. SIMILAR TO -78176-B BUT SHORTER IN HEIGHT; HOWEVER, NOT INTERCHANGEABLE.			SIMILAR TO CBM-78162 EXCEPT THAT NO FACILITIES FOR HOISTING ARE PROVIDED AND THE UNIT IS INVERTED, THE DOME BEING AT THE TOP OF THE UNIT; AND SIMILAR TO CBM-78179 EXCEPT IT HAS A DIFFERENT SHAFT LENGTH. TRAINING RANGE APPROXIMATE-		
DEC. 44			6/16/44		CUB:N-2761-001	9/11/44 867J		60386
			OCT. 44			OCT. 44		REV 0
			CRV 78226			CBM-78238 QBE-5		
OF TRAVEL 91". SAME AS -78224 EXCEPT FOR LENGTH OF TRAVEL.			HOIST-TRAIN MECHANISM:			LY 180° EACH SIDE OF AXIS PARALLEL TO THE SHIP CENTER LINE.		
			INCLUDES STREAMLINED PROJECTOR HOUSING. SIMILAR TO -78200 EXCEPT (1) ROTATING GEAR BOX IS MOUNTED BELOW HOISTING GEAR BOX INSTEAD OF ABOVE (2) LENGTH OF TRAVEL IS 45 5/8" INSTEAD OF 29" (3) TRAVELING BEARING IS INCLUDED (4) BUDD TYPE DOME			9/11/44 867J		60386
			7/28/44 867H		60370	OCT. 44		REV 0
			OCT. 44		ALT 0			
			CBM-78227 QBE-3A			CBM-78232 QBE-4		
HOIST TRAIN MECHANISM:			INCLUDES A STREAMLINED PROJECTOR HOUSING A SYNCHRONOUS GENERATOR A TRAINING LIMIT SWITCH AND A TRAINING MOTOR. SIMILAR TO -78200 EXCEPT TRAIN MOTOR HAS 115 VOLTS DC FIELD INSTEAD OF 75 VOLTS DC FIELD.			HOIST-TRAIN MECHANISM:		
4/15/44 867B		(CBM)60380				INCLUDES STREAMLINED PROJECTOR HOUSING. SIMILAR TO -78200 EXCEPT (1) ROTATING GEAR BOX IS MOUNTED BELOW HOISTING GEAR BOX INSTEAD OF ABOVE (2) LENGTH OF TRAVEL IS 45 5/8" INSTEAD OF 29" (3) TRAVELING BEARING IS INCLUDED (4) BUDD TYPE DOME		
AUG. 44 WITH 867-3048		ALT 0				7/28/44 867H		60370
						OCT. 44		ALT 0
			IS USED-			CBM-78232		
						HOIST TRAIN MECHANISM:		
						INCLUDES A STREAMLINED PROJECTOR HOUSING. SIMILAR TO -78200 EXCEPT THAT AN ADDITIONAL SYNCHRONOUS GENERATOR HAS BEEN ADDED TO REPEAT THE BEARING OF THE PROJECTOR TO A BEARING REPEATER UNIT.		
						9/25/44 867-3051		PARTIAL DRAWING
						OCT. 44		#867-3051 ALT 0
						CBM-78239 QBE-1a		
						HOIST TRAIN MECHANISM		
						INCLUDES A STREAMLINED PROJECTOR HOUSING A SYNCHRONOUS GENERATOR A TRAINING LIMIT SWITCH AND A TRAINING MOTOR. SIMILAR TO -78227 EXCEPT IT INCLUDES AN ADDITIONAL SELSYN FOR TRUE BEARING INDICATOR.		
						9/25/44 867-3051		PARTIAL DRAWING
						OCT. 44		#867-3051 ALT 0
						CBM-78233 QBE-3B, WEA-2B		
						HOIST TRAIN MECHANISM:		
						INCLUDES A STREAMLINED PROJECTOR HOUSING. SIMILAR TO -78200 EXCEPT THAT AN ADDITIONAL SYNCHRONOUS GENERATOR HAS BEEN ADDED TO REPEAT THE BEARING OF THE PROJECTOR TO A BEARING REPEATER UNIT.		
						8/30/44		SK-6151
						OCT. 44		REV 0
						CBM-78234 QBE-3b		
						HOIST TRAIN MECHANISM:		
						INCLUDES A STREAMLINED PROJECTOR HOUSING. SIMILAR TO -78227 EXCEPT THAT AN ADDITIONAL SYNCHRONOUS GENERATOR HAS BEEN ADDED TO REPEAT THE BEARING OF THE PROJECTOR TO A BEARING REPEATER UNIT.		
						8/30/44		SK-6152
						OCT. 44		REV 0
						CBM-78235 QGC		
						PROJECTOR-MAGNETOSTRICTION		
						24 KC. USES PERMANENT MAGNETS FOR POLARIZATION. SIMILAR TO -78186 EXCEPT FOR USE OF PERMANENT MAGNETS.		
						9/1/44 991		60340
						OCT. 44		REV 0
						CRV-78240 JT		
						POWER TRAIN MECHANISM		
						FOR TRAINING SUBMARINE TOPSIDE HYDROPHONE ASSEMBLY, TYPE -51075. INCLUDES TYPE -211299 TRAINING MOTOR. DESIGNED FOR USE ON CLASS 313 SUBMARINES AND THOSE SUBMARINES EQUIPPED WITH JP-1 HYDROPHONE SHAFT OF PORTSMOUTH DESIGN.		
						9/25/44		
						OCT. 44		
						CRV-78241 JT		
						POWER TRAIN MECHANISM		
						FOR TRAINING SUBMARINE TOPSIDE HYDROPHONE ASSEMBLY, TYPE -51075. INCLUDES TYPE -211299 TRAINING MOTOR. DESIGNED FOR USE ON SUBMARINES EQUIPPED WITH JP-1 HYDROPHONE SHAFT OF MARE ISLAND DESIGN. OTHERWISE SAME AS -78240.		
						9/25/44		
						OCT. 44		
						CRV-78242 QCU-1		
						HOIST-TRAIN MECHANISM		
						CONVERSION OF CRV-78152 BY INSTALLATION OF RCA TYPE MI-16729 PROJECTOR TRAINING MECHANISM AND ACCESSORIES FOR A 108" HOIST-TRAIN. SIMILAR TO CRV-78224/78226. EXCEPT THAT THE LENGTH OF TRAVEL MAY BE REDUCED FROM 103" FOR INDIVIDUAL IN-10/20/44 MI-16729		
						MAY 45		(CRV)W-307401-8
								SUB. 1

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**CRV- 78242**

STALLATIONS. USES FRAME OF CRV-78152 HOIST TRAIN MECHANISM. HAS 2 BUILT IN JUNCTION BOXES AND SLIP RINGS.

**CBM- 78247 WFA**

PROJECTOR DESIGNED FOR OPERATION AT 27 KC. CAN OPERATE OVER BAND OF FROM 22 TO 32 KC WHEN USED WITH PROPER POWER FACTOR CORRECTION COILS. AT A REDUCED EFFICIENCY. CAN BE USED AS A RECEIVER OVER THIS BAND WITHOUT POWER FACTOR CORRECTION COILS AT RE-117744 1006 60426 ALT 0 DEC. 44

**CBM- 78251 \*SEE BELOW**

PROJECTOR (ROCHELLE SALT) FREQUENCY RANGE: 14 TO 32 KC. IMPEDANCE OF RESONANCE IS 100 OHMS. SAME AS TYPE CBM-78213 EXCEPT THE CRYSTAL ELEMENTS ARE SPLIT FOR BDI OPERATION.

\*GEN. SONAR USE NX8r-48322 5/1/45 7335 MAY 45

**CBM- 78243 WFA**

SOUNDING PROJECTOR FREQUENCY 20 AND 60 KC. ACTIVE ELEMENT IS AMMONIUM DI-HYDROGEN PHOSPHATE. DESIGNED TO OPERATE AT FUNDAMENTAL FREQUENCY OF 20 KC AND AT THIRD HARMONIC. INPUT POWER 150 WATTS. DESIGNED FOR MOUNTING IN A SEA CHEST. 11/2/44 1004 60413 ALT 1 DEC. 44

**CBM- 78247**

REDUCED EFFICIENCY. ACTIVE ELEMENTS ARE ADP CRYSTALS.

**CBM- 78252 \*SEE BELOW**

PROJECTOR (COMBINATION) COMBINATION ROCHELLE SALT (14 TO 32 KC) AND PERMANENT MAGNET MAGNETOSTRICTION (24 KC) TYPE. SAME AS TYPE CBM-78212 EXCEPT THE CRYSTAL ELEMENTS ARE SPLIT FOR BDI OPERATION.

\*GEN. SONAR USE NX8r-48322 5/1/45 9488 MAY 45

**CBM- 78244 WFA**

TRAIN MECHANISM DESIGNED TO MOUNT A PROJECTOR ON TOP OF A SUB. CAN BE ROTATED BUT NOT RAISED OR LOWERED. SCALE ON TRAINING SHAFT SHOWS FACING OF PROJECTOR. GEARED TO SHAFT ARE TWO SELSYNS ONE TO OPERATE A BEARING REPEATER AND ONE TO CONTROL POWER TRAINING 11/6/44 995 60387 ALT 1 DEC. 44

**CBM- 78248 NGA**

SOUNDING PROJECTOR FREQUENCY 20 AND 60 KC. ACTIVE ELEMENT IS AMMONIUM DI-HYDROGEN PHOSPHATE. DESIGNED TO OPERATE AT FUNDAMENTAL FREQ. OF 20 KC AND AT THIRD HARMONIC. INPUT POWER, 150 WATTS. DESIGNED FOR MOUNTING IN A SEA CHEST. SAME AS TYPE CBM-78243 4/5/45 1004B 60487 MAY 45 ALT 0

**CUB- 78253 GEN. SONAR USE**

DOME 54" DOME (STAINLESS STEEL) WITH 57" SKIRT (CARBON STEEL).

5/4/45 N-3264-002 MAY 45

**CBM- 78244**

UNIT. DRIVING SHAFT DRIVEN BY A 1/4 HP MOTOR. MAY ALSO BE DRIVEN BY A HANDWHEEL.

**CBM- 78248**

EXCEPT HOUSING IS SMALLER & OUTPUT TRANSFORMER IS ELECTRICALLY IDENTICAL BUT NOT MECHANICALLY.

**CBM- 78254 \*SEE BELOW**

PROJECTOR (COMBINATION) MAGNETOSTRICTION SIDE: 20 KC. 100 OHMS IMPEDANCE 20KC, DC. RESISTANCE 8 OHMS. ROCHELLE SALT SIDE: 14 TO 32 KC. 2000 OHMS IMPEDANCE. FOR USE IN A DOME & RETRACTING GEAR. SAME AS TYPE -78165-A \*GEN. SONAR USE NX8r-46073 5/3/45 900F MAY 45

**CBM- 78245 WFA**

HOIST TRAIN MECHANISM PROVIDES MEANS FOR RAISING OR LOWERING, AND TRAINING A PROJECTOR AT TYPE CBP-211451 DC MOTOR RAISES AND LOWERS. INPUT OF 115 TO 345V DC. TRAINING UNIT IS DRIVEN BY A -20333 TRAINING POWER UNIT. CONTAINS TWO SELSYNS; ONE TO DRIVE 11/6/44 994 60414 ALT 1 MAY 45

**CCU- 78249 QDA**

CMT- 78249 HOIST-TILT MECHANISM CONSISTS OF A TRUNK, PISTON, LIFTING TUBE, TILTING TUBE, GEAR CASE MECHANISM, CABLE RACK, TILTING MOTOR AND CHAIN HOIST. USED TO SUPPORT TYPE CW-78250 PROJECTOR AND TILT IT IN FORE AND AFT 4/28/45 D-171064 CW:8XX-157743 MAY 45 ISSUE 1

**CBM- 78254**

EXCEPT THE CRYSTAL ELEMENTS ARE SPLIT FOR BEARING DEVIATION INDICATION OPERATION.

**CBM- 78245**

A BEARING REPEATER UNIT AND OTHER TO CONTROL -20333. SCALE IS ATTACHED TO TRAINING SHAFT TO SHOW FACING OF PROJECTOR. HAS FACILITIES FOR REPLACING PROJECTOR WHILE VESSEL IS AT SEA. HAS HANDWHEEL FOR MANUAL HOIST AND TRAIN. HAS A 40" TRAVEL.

**CCU-**

CMT- 78249 PLANE. WHEN TILTED TO 90° POSITION ATTACHED PROJECTOR IS HOUSED WITHIN NORMAL HULL CONTOUR. WHEN IN 0° POSITION, PROJECTOR MAY BE HOISTED INTO A CYLINDRICAL CHAMBER FOR PROTECTION AND SERVICING.

**CBM- 78255 \*SEE BELOW**

PROJECTOR (COMBINATION) MAGNETOSTRICTION: 24 KC. 100 OHMS IMPEDANCE AT 24 KC. DC. RESISTANCE 8 OHMS. ROCHELLE SALT SIDE: 14 TO 32 KC. 2000 OHMS IMPEDANCE. FOR USE IN DOME & RETRACTING GEAR. SAME AS TYPE -78164-A \*GEN. SONAR USE NX8r-46073 5/8/45 900G MAY 45

**CBM- 78246 WFA**

DECK PROJECTOR CONSISTS OF: (1) AN AUDIO LISTENING ASSEMBLY 100 CYCLES 15 KC (2) AN INTERMEDIATE FREQUENCY ASSEMBLY. LISTENING 17 TO 35 KC. TRANSMITTING 20 TO 28 KC. (3) A HIGH FREQUENCY ASSEMBLY. LISTENING 35 TO 100 KC. TRANSMITTING 40 TO 46 KC. ACTIVE 11/7/44 1021 60425 ALT 0 DEC. 44

**CW- 78250 QDA**

PROJECTOR A PROJECTOR OF THE ADP CRYSTAL TYPE. EFFICIENT OVER A FREQUENCY RANGE FROM APPROXIMATELY 50 TO 60 KC. HOUSED IN A STREAM-LINED CASING PLACED UNDER THE HULL OF THE SHIP. ATTACHED TO THE HOIST-TILT MECHANISM BY WHICH IT CAN BE TILTED 4/28/45 D-170941 BX-157891 MAY 45 ISSUE 1

**CBM- 78255**

EXCEPT THE CRYSTAL ELEMENTS ARE SPLIT FOR BEARING DEVIATION INDICATION OPERATION.

**CBM- 78246**

ELEMENTS ARE ADP CRYSTALS.

**CW- 78250**

FROM 25° FORWARD OF THE VERTICAL TO 90° AFT OF THE VERTICAL.

**CJJ- 78256 QLA**

TRANSDUCER: FREQ. RANGE: 36 TO 48 KC. CONSISTS OF CYLINDER 28" LONG AND 14 1/2" IN DIAMETER. PROVIDED WITH STANDARD 3/4" STUDS FOR MOUNTING & CONTAINING A PROJECTOR AND RECEIVING HYDROPHONE, BOTH OF WHICH ARE CONSTRUCTED FROM ADP CRYSTALS. CAN BE 5/24/45 JUN. 45

DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER	ASSIGNED ISSUED	DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER
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Class 78—Miscellaneous Sonar

3.78-19

NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION	NAVY TYPE DESIGNATION	FIRST ASSIGNED FOR	NAVY DRAWING OR SPECIFICATION
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CJJ-78256

MOUNTED TOP SIDE OR BOTTOM SIDE.

			ASSIGNED ISSUED				ASSIGNED ISSUED			
DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER		DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER		DATE	MANUFACTURER'S DESIGNATION	MANUFACTURER'S DRAWING NUMBER

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