

12 February 1963

Cog Service: USN FSN: F6665-643-3226

RADIAC CALIBRATOR SET AN/UDM-1
Functional Class: 9.2

USA

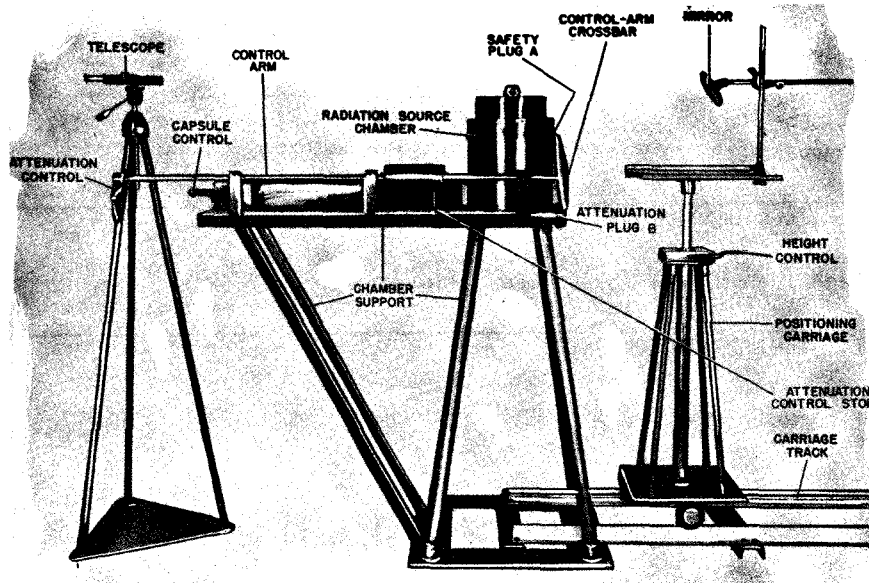
USN

USAF

TYPE CLASS:

S/Std

MANUFACTURER'S NAME/CODE NUMBER: National Electrical Machine Shops Inc., (42542).



Radiac Calibrator Set AN/UDM-1

FUNCTIONAL DESCRIPTION:

Radiac Calibrator Set AN/UDM-1 is used to house a specific quantity of radioactive material, its radiation being emitted as a controlled beam of known intensity which is used as a standard in checking and calibrating radiac instruments.

Data on this sheet reflects the following field changes: F.C. 1.

TECHNICAL CHARACTERISTICS:

RADIATION SOURCE: Radioactive isotope of cobalt 60.

TYPE RADIATION: Gamma rays.

INITIAL RATE OF RADIOACTIVITY: 9 curries (approx).

HALF LIFE: 5.3 years.

RELATION TO OTHER EQUIPMENT: None.

AN/UDM-1 RADIAC CALIBRATOR SET

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radiac Calibrator Set AN/UDM-1 includes:			
	Chamber Support		16 x 45 x 49	145
	Carriage Track		4 x 17-1/2 x 240	12
	Positioning Carriage		14-1/2 x 16-1/2 x 40	35
	Optical Viewing Stand		19 x 19 x 73	16
	Radiation Source Chamber		12-1/2 x 12-1/2 x 15-1/2	436
2	Technical Manual NAVSHIPS 91809			

REFERENCE DATA AND LITERATURE:

NAVSHIPS 91803: Technical Manual for Radiac Calibrator Set AN/UDM-1.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: None used.

CRYSTALS: None used.

SEMI-CONDUCTORS: None used.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1	12.96	195
1	9.81	175
1	6.53	63
1	3.84	46
1	15.62	546

PROCUREMENT DATA

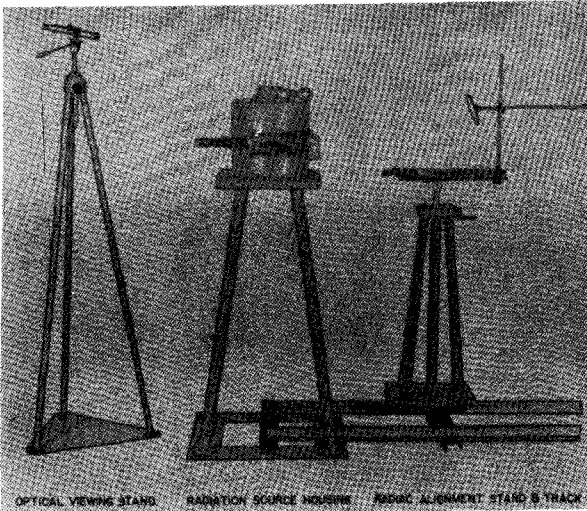
PROCURING SERVICE: USN
SPEC &/OR DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
National Electrical Machine Shops Inc.	Silver Springs, Md.	N0bsr-52466, 25 June 1951	

RADIAC CALIBRATOR SET

AN/UDM-1A



Radiac Calibrator Set AN/UDM-1A

FUNCTIONAL DESCRIPTION

Radiac Calibrator Set AN/UDM-1A is used to house a specific quantity of radioactive material, its radiation being emitted as a controlled beam of known intensity which is used as a standard in checking and calibrating radiac instruments.

No field changes in effect at time of preparation (27 March 1959).

ELECTRICAL AND MECHANICAL CHARACTERISTICS

RADIATION SOURCE: Radioactive Isotope of Cesium (Cs137).
 TYPE: Mainly gamma rays.
 INITIAL RATE OF RADIOACTIVITY: 120 curies.
 HALF LIFE: 30.4 years.

MANUFACTURER'S OR CONTRACTOR'S DATA

Nems-Clarke Co., Silver Spring, Md.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93204: Technical Manual for Radiac Calibrator Set AN/UDM-1A.

TYPE CLASSIFICATION
 DESIGN COGNIZANCE BUSHIPS
 PROCUREMENT COGNIZANCE SPEC MIL-R-16131A
 STOCK NO. (SHIPS)
 R.D.B. IDENT. NO. 9.2

SHIPPING DATA

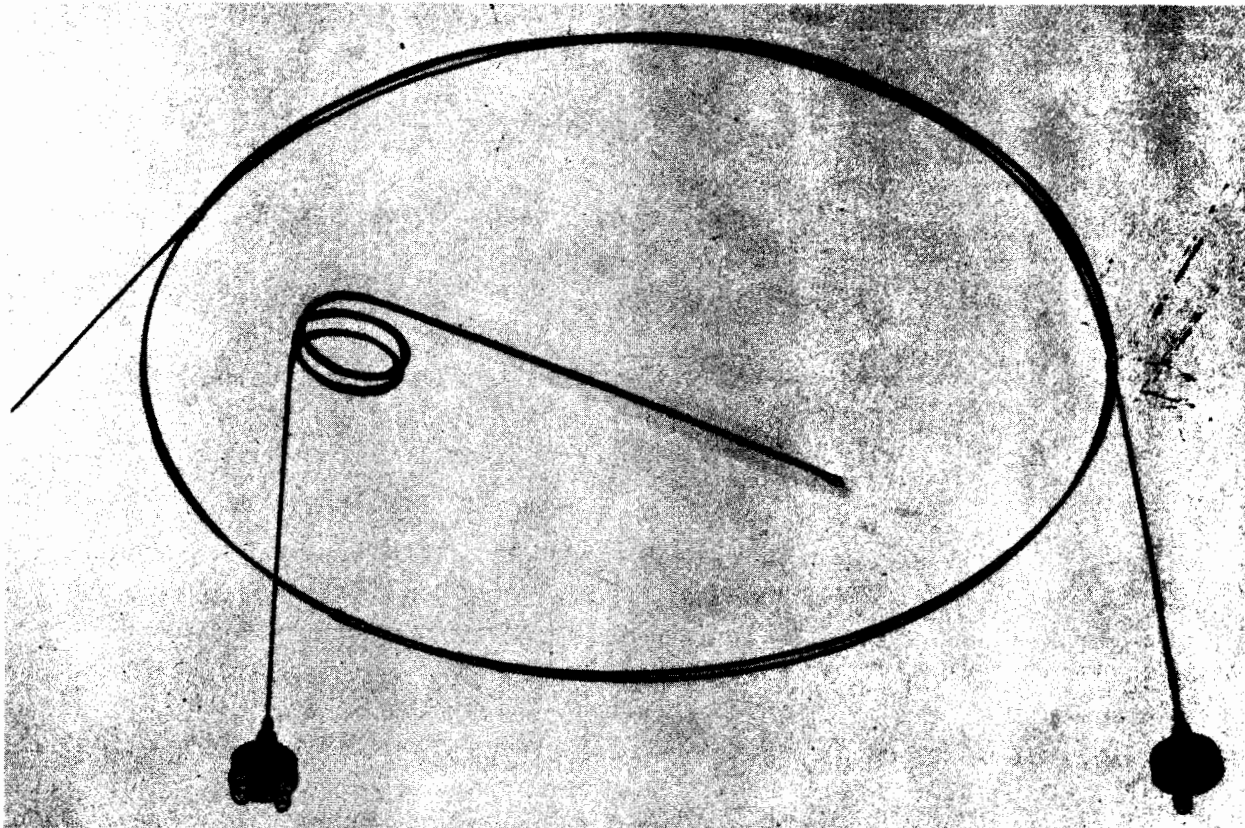
NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radiation Source Housing	16.2	30 X 30 X 31-5/8	800
1	Radiac Alignment Stand	7.2	16 X 19 X 41	100
1	Radiac Alignment Stand Tracks	9.8	12-1/2 X 20 X 68	200
1	Optical Viewing Stand, and Radiation-Source Housing Stand	5.2	5-3/4 X 27 X 58	152

EQUIPMENT SUPPLIED DATA

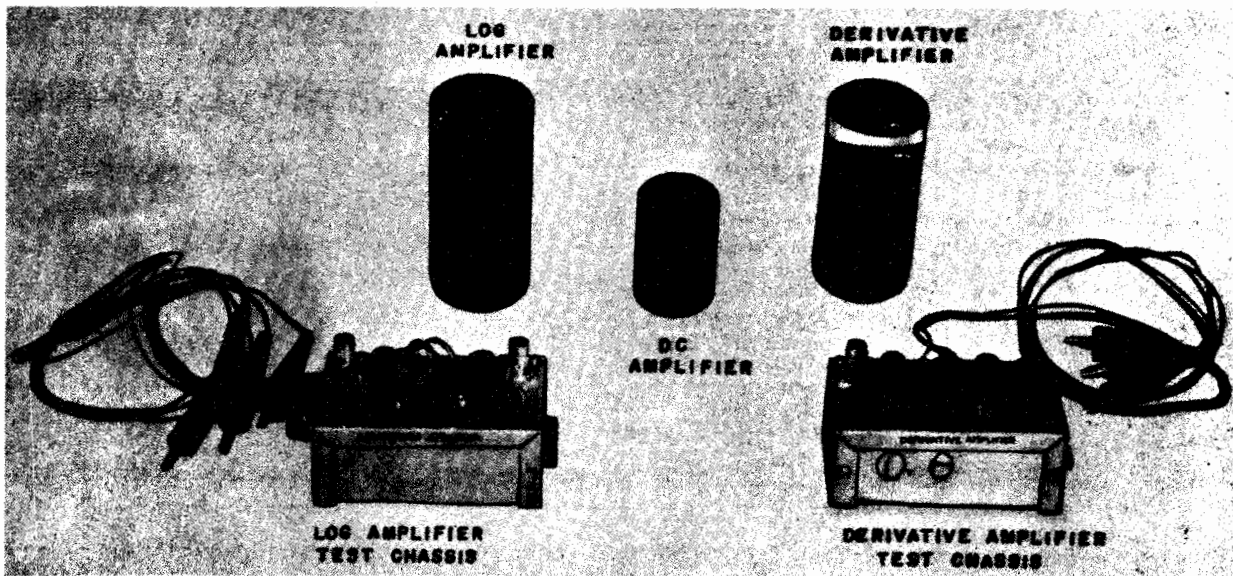
QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radiac Calibrator AN/UDM-1A Including:		
4	Radiac Alignment Stand Tracks	4 X 17-1/2 X 20	120
1	Radiac Alignment Stand	14-1/2 X 16-1/2 X 40	35
1	Optical Viewing Stand	19 X 19 X 73	16
1	Radiation Source Housing and Stand	25 X 25 X 56	600
2	Technical Manual		

NUPAC COMPUTER GROUP

E-5X



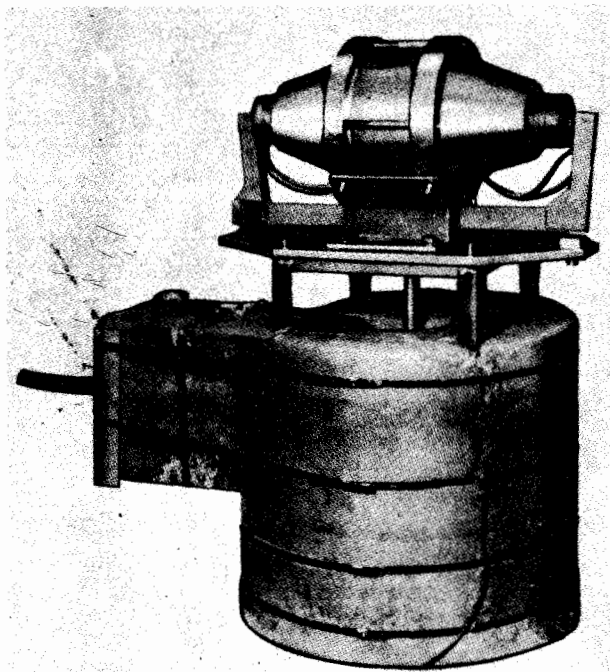
Nupac Computer Group E-5X (Unit 3)



Nupac Computer Group E-5X (Unit 2)

E-5X

NUPAC COMPUTER GROUP



Nupac Computer Group E-5X (Unit 1)

FUNCTIONAL DESCRIPTION

Unit 1 of the E-5X, the liquid pressure detector, is designed to monitor the pressure of liquid sodium or water in a nuclear reactor. A bridge network and an amplifier must be used with the liquid pressure detector in order to form a closed loop positioning servo system.

Unit 2 of the E-5X consists of a linear DC amplifier, a logarithmic amplifier, and a derivative amplifier. Each is an experimental model that demonstrates the feasibility of the basic circuits and shows the operational results to be expected from transistorized circuits.

Unit 3 of the E-5X is a liquid metal temperature measuring device and is a bi-metallic thermocouple, designed to be used in monitoring the temperature of liquid sodium in a nuclear reactor.

No field changes in effect at time of preparation (23 April 1957).

RELATION TO OTHER EQUIPMENT

Equipment Required but not Supplied: (1) Test Amplifier, (1) Bridge Circuit.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

LIQUID PRESSURE DETECTOR (UNIT 1)

4.9 E-5X: 2

PRESSURE RANGE DETECTABLE: 0 to 100 lbs.
 PERMISSIBLE AMBIENT TEMPERATURE: 175 deg F max.
 HEAT DISSIPATION: 175 W.
 POWER REQUIREMENTS: 115 v, 60 cps, 175 W.
AMPLIFIERS (UNIT 2)
 PERMISSIBLE AMBIENT TEMPERATURE: 50 deg C (122 deg F) max.
TYPICAL PERFORMANCE DATA

DC AMPLIFIER

TEMPERATURE: 0 to 50 deg C.
 OUTPUT: 10 ma in 150 ohm load.
 CURRENT AMPLIFICATION: 100.
 SENSITIVITY: 0.01 ua.
 DRIFT AMBIENT TEMPERATURE (25 DEG C ±1 DEG C): 0.05% full scale per 24 hrs.

LINEARITY: 0.5%.
 REGULATION OF SUPPLIED VOLTAGES REQUIRED: 3%.

LOGARITHMIC AMPLIFIER

TEMPERATURE: 20 to 30 deg C.
 LOGARITHMIC RANGE: 2 X 10⁻⁷ to 10⁻³ amps.

OUTPUT CURRENT: 250 ua per decade of input current.
 OUTPUT VOLTAGE: 400 mv per decade in a 10000 ohm load.

ACCURACY OF LOGARITHMIC INDICATION: 20% of the input current.
 REGULATION OF SUPPLIED VOLTAGES REQUIRED: 0.5%.

DRIFT (25 DEG C ±1 DEG C): 5% full scale per 24 hrs.

DERIVATIVE AMPLIFIER

TEMPERATURE RANGE: 20 to 30 deg C.
 PERIOD INDICATION: -30 to +10 sec.
 OUTPUT CURRENT: 0 to 1 ma.
 OUTPUT LOAD: 1 ma meter.
 ACCURACY: +10% full scale per 24 hrs.

DRIFT (25 DEG C ±1 DEG C): 5% full scale output current.

REGULATION OF SUPPLY: 0.5%.

TEMPERATURE MEASURING DEVICE (UNIT 3)

TEMPERATURE: 1000 deg F max.

MANUFACTURER'S OR CONTRACTOR'S DATA

General Electric Company, Syracuse, N.Y.
 Contract NObsr-57409, dated 4 June 1952.

TUBE AND/OR CRYSTAL COMPLEMENT

- | | |
|-----------------|--------------|
| (1) 5814A/12AU7 | (1) 6AQ5 |
| (3) 5751/12AX7 | (2) 5881/6L6 |
| (1) 5U4 | |

Total Tubes: (8)

467

UNCLASSIFIED

October 1957

Test-Nuclear Energy Measuring

NUPAC COMPUTER GROUP

E-5X

REFERENCE DATA AND LITERATURE

NAVSHIPS 92522: Technical Manual for Nupac
Computer Group E-5X.

TYPE CLASSIFICATION
DESIGN COGNIZANCE BUSHIPS
PROCUREMENT COGNIZANCE SHIPS-N-553
STOCK NO.
R.D.B. IDENT. NO.

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Nuclear Computer Group E-5X	5-5/8 X 10-1/4 X 16-3/16	34.7

UNCLASSIFIED

4.9 E-5X: 3

TEST CHAMBER, RADIAC DETECTOR

TS-1189/PD



Test Chamber Radiac Detector TS-1189/PD

TS-1189/PD TEST CHAMBER, RADIAC DETECTOR

FUNCTIONAL DESCRIPTION

Test Chamber, Radiac Detector TS-1189/PD is a portable test chamber, used to determine whether or not the IM-9C/PD, IM-9D/PD and IM-9E/PD dosimeters are within accuracy requirements.

No field changes in effect at time of preparation (20 July 1960).

Model No. 772.
Contract NObsr-75110.
Contract NObsr-75784.
Contract NObsr-75811.
Contract NObsr-81095.

TUBE AND/OR CRYSTAL COMPLEMENT

No Electron Tubes or Crystals used.

EQUIPMENT REQUIRED BUT NOT SUPPLIED

(1) Dosimeter IM-9C/PD, IM-9D/PD or IM-9E/PD.

REFERENCE DATA AND LITERATURE

NAVSHIPS 93290: Technical Manual for TEST CHAMBER, RADIAC DETECTOR TS-1189/PD.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

RADIOACTIVE SOURCE: 0.7 mc of Cesium 137 material sealed within a stainless steel cylinder.

TYPE CLASSIFICATION (NAVY)
DESIGN COGNIZANCE USN, BUSHIPS
PROCUREMENT COGNIZANCE SPEC: SHIPS-R-2890;
STOCK NO. MIL-T-22053 (SHIPS)
R.D.B. IDENT. NO. 9.2

MANUFACTURER'S OR CONTRACTOR'S DATA

Victoreen Instrument Co., Cleveland, Ohio.

SHIPPING DATA

NUMBER OF BOXES	CONTENTS AND IDENTIFICATION	VOLUME (Cu.Ft.)	OVERALL DIMENSIONS (inches)	WEIGHT PACKED (lbs.)
1	Radiac Detector, Test Chamber TS-1189/PD	0.33	6 x 8 x 12	11

EQUIPMENT SUPPLIED DATA

QUANTITY PER EQUIPT	NAME AND NOMENCLATURE	OVERALL DIMENSIONS (inches)	WEIGHT (lbs.)
1	Radiac Detector, Test Chamber TS-1189/PD	4 x 4 x 4-1/2	9
2	Technical Manual NAVSHIPS 93290	1/8 x 5-7/8 x 9-1/8	3 oz

5 April 1962

Cog Service: USN FSN:

RADIAC CALIBRATOR TS-1216/UD

Functional Class: 9.2

USA

USN

USAF

TYPE CLASS:

Std

MANUFACTURER'S NAME/CODE NUMBER: Anton Electronic Laboratories Inc., (91491).

(No Illustration Available)

FUNCTIONAL DESCRIPTION:

Radiac Calibrator TS-1216/UD provides a radiation source of known intensity for testing the accuracy of radiac instruments. The calibrator which may be used either on shore or ship is so designed that the position of the radioactive source relative to the instrument to be tested may be adjusted to produce a variety of field strengths which are used to calibrate radiac instruments over their sensing ranges.

No field changes in effect at time of preparation (19 February 1962).

TECHNICAL CHARACTERISTICS:

RADIATION SOURCE: Cesium 137.

TYPE OF RADIATION: Gamma radiation rays.

HALF-LIFE OF RADIATION SOURCE: 30 yrs.

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radiac Calibrator TS-1216/UD		21 x 42-1/4 x 46-3/16	
2	Technical Manuals			

REFERENCE DATA AND LITERATURE: None.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: None used.

CRYSTALS: None used.

SEMI-CONDUCTORS: None used.

TS-1216/UD RADIAC CALIBRATOR

SHIPPING DATA

PKGS VOLUME (CU FT) WEIGHT (LBS)

1

PROCUREMENT DATA

PROCURING SERVICE: USN DESIGN COG: USN, BuShips
SPEC &/OR DWG: SHIPS-R-2122, Amend 1

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Anton Electronic Laboratories Inc. Dwg no. 51D1028	Brooklyn, N. Y.	N0bsr-71203, 8 February 1956	\$8,362.58

5 April 1962

Cog Service: USN FSN:

RADIAC CALIBRATOR TS-1216A/UD

Functional Class: 9.2

USA

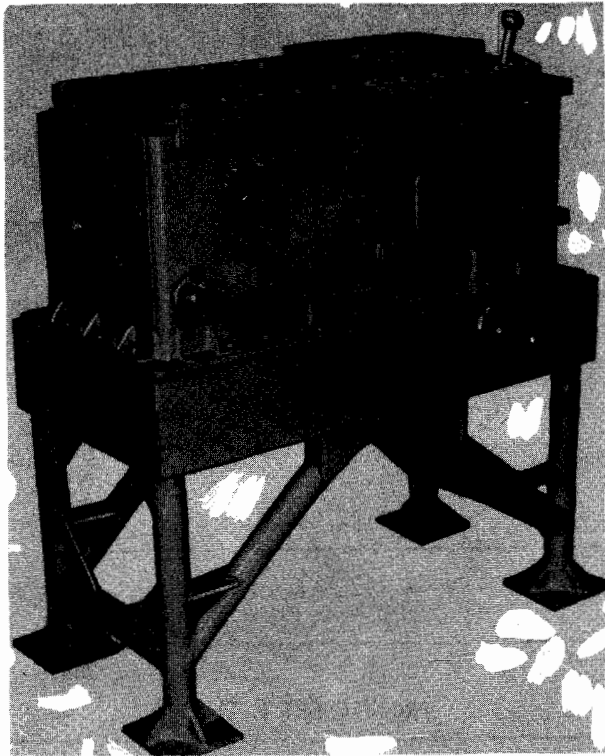
USN

USAF

TYPE CLASS:

Std

MANUFACTURER'S NAME/CODE NUMBER: American Machine and Foundry Co., Alexandria Div.



Radiac Calibrator TS-1216A/UD

FUNCTIONAL DESCRIPTION:

Radiac Calibrator TS-1216A/UD provides a radiation source of known intensity for testing the accuracy of radiac instruments. The calibrator which may be used either on shore or ship is so designed that the position of the radioactive source relative to the instrument to be tested may be adjusted to produce a variety of field strengths which are used to calibrate radiac instruments over their sensing ranges.

No field changes in effect at time of preparation (19 February 1962).

TECHNICAL CHARACTERISTICS:

RADIATION SOURCE: Cesium 137.

TYPE OF RADIATION: Gamma radiation rays.

HALF-LIFE OF RADIATION SOURCE: 30 yrs.

POWER REQUIREMENTS: 110 v, 60 cyc, single ph.

TS-1216A/UD RADIAC CALIBRATOR

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radiac Calibrator TS-1216A/UD		21 x 42-1/4 x 46-3/16	2,002
2	Technical Manual NAVSHIPS 93607			

REFERENCE DATA AND LITERATURE:

NAVSHIPS 93607: Technical Manual for Radiac Calibrator TS-1216A/UD.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: None used.

CRYSTALS: None used.

SEMI-CONDUCTORS: None used.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1		

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG: SHIPS-C-3458

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
American Machine and Foundry Co., Alexandria Div. Outline Dwg no. E-1444	Alexandria, Va.	NObsr-81036 (FBM), August 1959	\$13,432.13

25 May 1962

Cog Service: USN

FSN:

RADIAC CALIBRATOR TS-1216B/UD

Functional Class: 9.2

USA

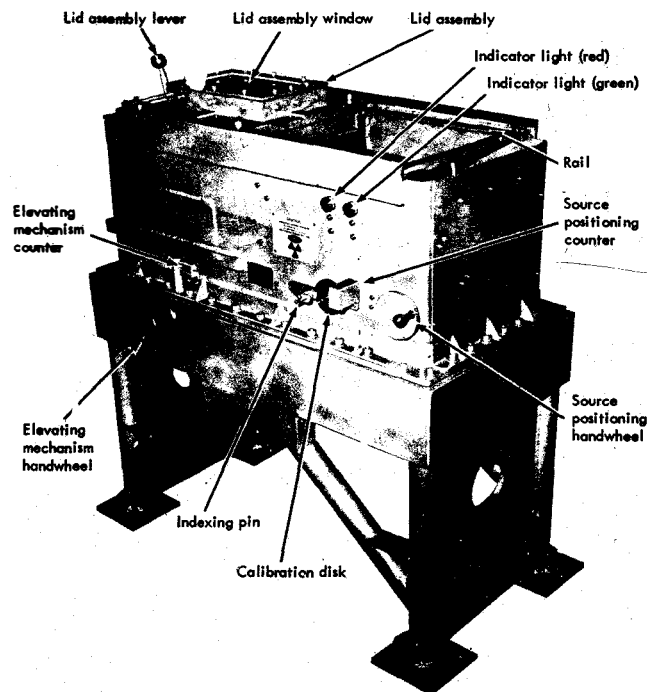
USN

USAF

TYPE CLASS:

Std

MANUFACTURER'S NAME/CODE NUMBER: American Machine and Foundry Co., Alexandria Div.



Radiac Calibrator TS-1216B/UD

FUNCTIONAL DESCRIPTION:

Radiac Calibrator TS-1216B/UD provides a radiation source of known intensity for testing the accuracy of radiac instruments. The calibrator which may be used either on shore or ship is so designed that the position of the radioactive source relative to the instrument to be tested may be adjusted to produce a variety of field strengths which are used to calibrate radiac instruments over their sensing ranges.

No field changes in effect at time of preparation (19 February 1962).

TECHNICAL CHARACTERISTICS:

RADIATION SOURCE: Cesium 137.

TYPE OF RADIATION: Gamma radiation rays.

HALF-LIFE OF RADIATION SOURCE: 30 yrs.

POWER REQUIREMENTS: 110 v, 60 cyc, single ph.

TS-1216B/UD RADIAC CALIBRATOR

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radiac Calibrator TS-1216B/UD		21 x 42-1/4 x 46-3/16	2,002
2	Technical Manual NAVSHIPS 94165			

REFERENCE DATA AND LITERATURE:

NAVSHIPS 94165: Technical Manual for Radiac Calibrator TS-1216B/UD.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: None used.

CRYSTALS: None used.

SEMI-CONDUCTORS: None used.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1		

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG: SHIPS-C-3458

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
American Machine and Foundry Company, Alexandria Division Outline Dwg no. E-1444-A	Alexandria, Virginia	N0bsr-85276(FBM), March 1961	\$13,852.91
