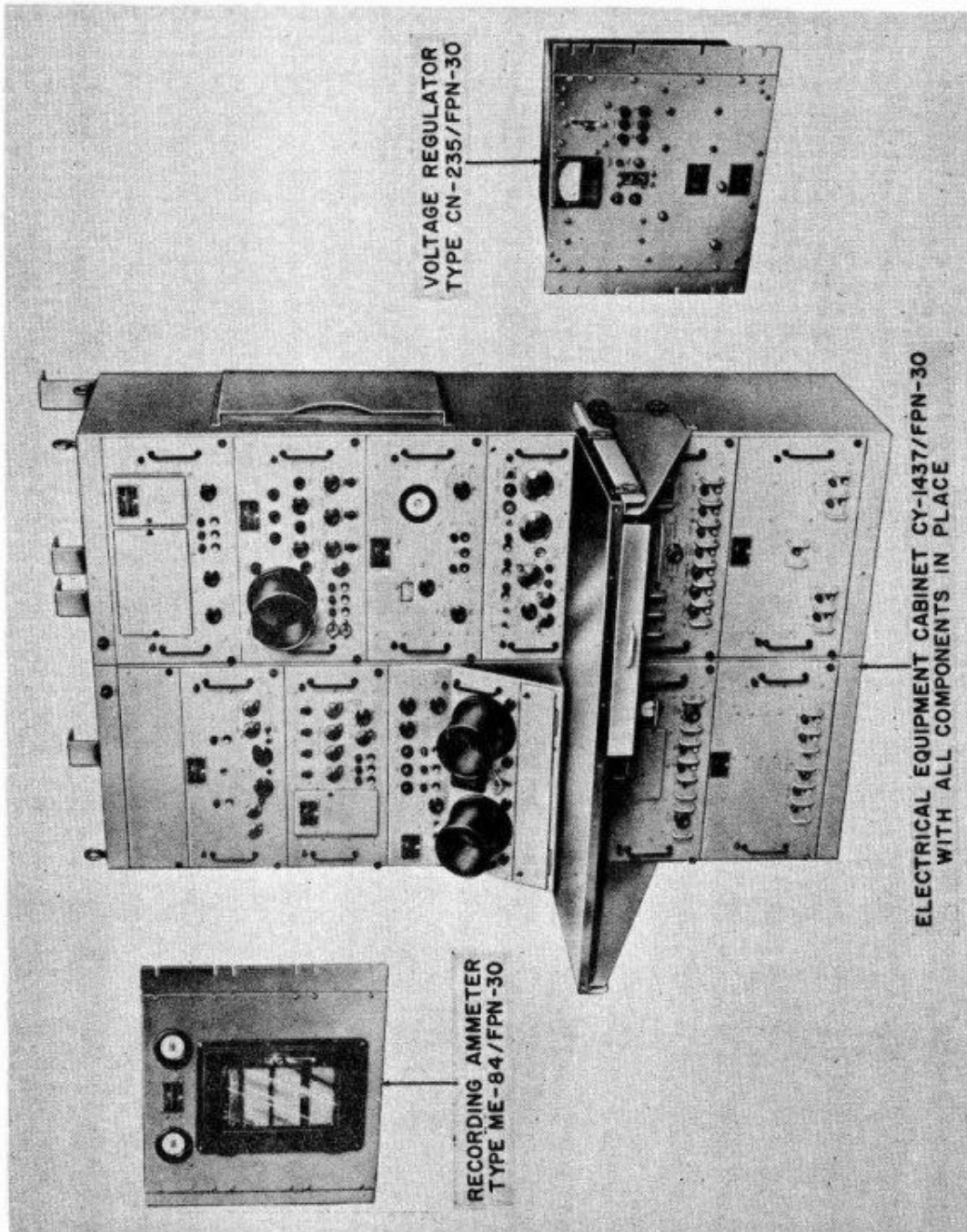


LORAN TIMER SET



Loran Timer Set AN/FPN-30, Front Oblique View Showing All Units Comprising an Equipment

AN/FPN-30

FUNCTIONAL DESCRIPTION

Controls (triggers) the pulses generated by the loran transmitter, spacing them with absolute uniformity and with precisely timed reference to the pulses received from a second transmitter located several hundred miles away.

RELATION TO OTHER EQUIPMENT

Replaces Navy Model UE-1 Loran Timer. Used with loran switching equipment (AN/FPA-2 or Navy Model UM) and a transmitter of the Model T-137 series or Model T-325/FPN series.

MECHANICAL AND ELECTRICAL CHARACTERISTICS

All but two of the 13 major units of Loran Timer Set AN/FPN-30 are housed in a single two-section cabinet (Electrical Equipment Cabinet CY-1437/FPN-30). The units are supported on slides so that removal, either partially or completely, is possible from the front. Several of the units incorporate a tilt mechanism to facilitate testing and adjusting while the timer is in operation.

In the left-hand section of the cabinet the uppermost chassis is Radio Receiver R-564/FPN-30, which picks up local and remote pulse signals at frequencies of 1750, 1800, 1850, 1900 or 1950 kc* and delivers them to other units in the timer. The receiver chassis is tilt and slide mounted. The second chassis from the top is Time Delay TD-92/FPN-30, which controls the A delay and B delay of the station. The delay unit is tilt and slide mounted. The third chassis from the top is Synchronization Indicator IP-238/FPN-30, which combines, in one unit, oscilloscopes required to monitor the signal and alarm indicators to indicate operational abnormalities. The chassis is slide mounted. The fourth chassis from the top is the Electrical Synchronizer SN-117/FPN-30, which operates with the synchronization control unit to provide an automatic means for maintaining synchronization at a slave station. The synchronizer chassis is slide and tilt mounted. The lowermost chassis in the left section of the cabinet is Power Supply PP-957/FPN-30, which is slide mounted.

In the right-hand section of the cabinet the uppermost chassis is Frequency Divider CV-274/FPN-30, which controls the station pulse recurrence rate and also develops the timing markers. The divider chassis is slide and tilt mounted. The second chassis from the top is Test Oscilloscope OS-39/FPN-30, which is used to perform adjustments and tests of the timer circuits. The test scope chassis is slide and tilt mounted. The third chassis from the top is Radio Frequency Oscillator O-202/FPN-30, which is the source of the 100-kc timing standard of the timer. The oscillator chassis is slide mounted. The fourth chassis from the top is Synchronization Control C-1238/FPN-30, which controls the phase and frequency of the 100-kc signal generated by the oscillator. The sync control chassis is slide and tilt mounted. The fifth chassis from the top is Power Supply PP-959/FPN-30, which contains the basic switches and circuitry for the control of timer power and meters for measuring power supply voltages. The chassis is slide mounted. The lowermost chassis is Power Supply PP-958/FPN-30, which is slide mounted.

* Using plug-in, pretuned transformers.

Recording Ammeter ME-84/FPN-30 is mounted in a separate rack or cabinet to be supplied by the government. The recorder is provided as a means for recording the monitoring action of the synchronizing system at a master station and for recording the correcting action of the synchronizing system at a slave station. Voltage Regulator CN-235/FPN-30 is mounted in a separate rack or cabinet to be supplied by the government. It is provided to maintain the a-c line voltage at a constant level.

MANUFACTURER'S (CONTRACTOR'S) DATA

Federal Telephone and Radio Company, a division of I.T. & T., Clifton, New Jersey; Contract Numbers Tcg-38701 (CG-20,181-A) dated 14 November 1951, Tcg-39263 (CG-27,298-A) dated 20 March 1953, and Tcg-40020 (CG-35,978-A) dated 14 September 1955.

TECHNICAL DATA

Tube complement.

Type	Quantity	Type	Quantity
OA2	1	6AS7G	7
OB2	1	6AU6	11
1N34A	2	6CL6	1
1N69	3	6V6GT/G	1
2D21W	6	6Y6/G	1
2X2A	2	12AT7	13
3RP1	1	5651	4
5CP1A	2	5654	3
5RP2A	1	5725	11
5R4WGY	6	5726	21
5Y3WGTA	1	5749	5
6AC7	4	5814	83
6AC7W	2	5933	1
6AG7	2	6005/6AQ5W	3

Total number of tubes — 199

Power Source. — 115 volts ± 15 percent, ac, single phase, 50 to 65 cps.

Power Required. — (1) Interlocked power off, space heaters on: 5 amps at 99 percent power factor. (2) Operating: 11 amps at 99 percent power factor. Total power consumed is 1,248 watts.

Pretuned transformers Z1201, Z1202, Z1203, Z1204, Z1205. — Two sets of r-f transformers pretuned to the assigned loran frequency are packed in a separate box.

Spare Parts. — Two chests of maintenance spare parts, one set of 300 percent tube spares for Loran Timer Set and accessory kit for Recording Ammeter are supplied by the contractor and packed in separate boxes.

REFERENCE DATA AND LITERATURE

(a) CG-273-15, Instruction Book for Loran Timer Set AN/FPN-30;

(b) CG-273-16, Instruction Book for Loran Switching Group AN/FPA-2;

(c) CG-273-11, Instruction Book for Radio Transmitter Type T-325B/FPN.

COAST GUARD ELECTRONIC EQUIPMENT

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Navigational Aid

AN/FPN-30

SHIPPING DATA

Shipping Box No.	Contents	Over-all Dimensions*			Volume*	Weight*
		Height	Width	Depth		
1	Electrical Equipment Cabinet with all drawer units, operator's table, installation hardware, instruction books.	90	56	30	87.5	2,100
2	Recording Ammeter	29	28	18	8.5	66
3	Voltage Regulator	32	28	26	13.5	225
4	Set of 300% tube spares and accessory kit for Recording Ammeter	39-1/8	31-5/8	29-1/2	21	125
5	Two sets of tuned r-f transformers	10-1/8	8-1/4	18-5/8	.9	25
6	Chest of Maintenance Spare Parts	17-1/8	46	18-3/4	8.5	175 (est)
7	Chest of Maintenance Spare Parts	17-1/8	46	18-3/4	8.5	186 (est)

* Dimensions are given in inches, volume in cubic feet, and weight in pounds.

EQUIPMENT SUPPLIED

Quantity	Unit	Dimensions in Inches			Volume in cu ft.	Weight in pounds
		Height	Width	Depth		
1*	Electrical Equipment Cabinet CY-1437/FPN-30	77-1/2*	48	26-1/4*	56	651.0*
1	Radio Frequency Oscillator O-202/FPN-30	10-15/16	22	19-5/8	2.7	86.5
1	Synchronization Control C-1238/FPN-30	10-15/16	22	19-5/8	2.7	51.0
1	Frequency Divider CV-274/FPN-30	11-15/16	22	19-5/8	3	42.5
1	Time Delay TD-92/FPN-30	9-15/16	22	19-5/8	2.5	37.0
1	Synchronization Indicator IP-238/FPN-30	19-15/16	22	23-5/16	5.8	80.5
1	Radio Receiver R-564/FPN-30	9-15/16	22	19-5/8	2.5	50.5
1	Electrical Synchronizer SN-117/FPN-30	11-15/16	22	19-5/8	3	46.5
1	Test Oscilloscope OS-39/FPN-30	11-15/16	22	19-5/8	3	47.0
1	Power Supply PP-959/FPN-30	11-15/16	22	19-5/8	3	84.0
1	Power Supply PP-958/FN-30	11-15/16	22	19-5/8	3	93.0
1	Power Supply PP-957/FPN-30	11-15/16	22	19-5/8	3	81.5
1	Recording Ammeter ME-84/FPN-30**	22-3/4	19	10-5/8	2.5	36
1	Voltage Regulator CN-235/FPN-30**	19-7/32	19	16-1/16	3.2	100
1	Chest of maintenance spare parts	15-3/4	43-3/4	16-1/2	6.4	125 (est)

For all footnotes, see page 4.

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AN/FPN-30

EQUIPMENT SUPPLIED (Cont'd)

Quantity	Unit	Dimensions in Inches			Volume in cu ft.	Weight in pounds
		Height	Width	Depth		
1	Chest of maintenapce spare parts	15-3/4	43-3/4	16-1/2	6.4	136 (est)
1	Set of 300% tube spares for Loran Timer Set and accessory kit for Recording Ammeter	36†	29†	27†	16†	50
2	Instruction Books CG-273-15	11-1/2	9	1-1/2	0.1	6††
2	Sets of plasticized schematic drawings	20	12	1-1/2	0.2	8††
2	Sets of installation drawings	10	13	1/2	—	3/4††
2	Sets of Tuned R-F Transformers	9	7	14	0.5	5

* Exclusive of top mounting brackets, operator's table and table supporting bracket, which increase cabinet height to 81-3/8 inches, depth to 41-1/4 inches, and weight to 688 lbs.

** These units are independent rack-mounting assemblies, not mounted in main cabinet; the 19-inch width may be extended to 24 inches by means of adapter plates.

† Approximate.

†† Per set.