



### Loran Transmitting Set AN/FPN-44

#### FUNCTIONAL DESCRIPTION

The Loran transmitting set is used with a timer-synchronizer set (AN/FPN-46) to form a Loran-C ground station which, in turn, is part of a Loran-C chain. A Loran-C chain consists of one master and two or three slaves operating on a single specific repetition rate; it supplies navigational information to ships and aircraft which are equipped with Loran-C receivers.

The Loran transmitting set generates high power, Loran-C pulses in response to signals received from its associated timer-synchronizer set. It contains two complete transmitter groups: one is selected as the operate group and the other is selected as the standby group. The output of the operate group is applied to an antenna and the output of the standby group is applied to a dummy load. The selection is accomplished by means of the transmitter control group.

#### RELATION TO OTHER EQUIPMENT

Loran Transmitting Set AN/FPN-44 is very similar to Loran Transmitting Set AN/FPN-45; it differs only in that it has a lower output power.

Loran Transmitting Set AN/FPN-44 is similar to, and performs the same functions as, Loran Transmitting Set AN/FPN-42.

#### EQUIPMENT REQUIRED BUT NOT SUPPLIED

Transmitting Antenna - 625 feet  
Primary Power Source

#### ELECTRICAL AND MECHANICAL CHARACTERISTICS

##### TYPE OF EMISSION:

Pulsed signals conforming to Loran-C patterns and repetition rates.

##### FREQUENCY:

100-kc carrier in the 90 to 110-kc band.

##### POWER OUTPUT:

400 kw (peak), 7.5 kw (average), depending on the pulse repetition rate.

#### DESCRIPTION OF COAST GUARD ELECTRONIC EQUIPMENT

PEAK POWER REQUIREMENTS:

Single pulse at a group repetition rate of 50,000 USEC.

- (1) 208 VAC, 50-60 CPS, 3 phase, 66 KVA.
- (1) 440 VAC, 50-60 CPS, 3 phase, 76 KVA.

PULSE SHAPE:

Similar to cosine-squared type wave shape with a much longer decay time.

FREQUENCY ACCURACY:

Determined by the timer-synchronizer set.

AMBIENT TEMPERATURE LIMITATIONS:

Operation: 0° to +50°C (+32° to +122°F).

Storage: -62° to +75°C (-69° to +167°F).

INSTALLATION DATA:

Each unit of the loran transmitting set comes with an enclosure. The various units are connected with wireways and conduits.

POWER SUPPLY OUTPUTS:

- +20 kv at 5 amp
- +10 kv at 1.5 amp
- 5 kv at 0.2 amp
- 500 v at 0.5 amp
- 700 to 1600 vdc, 700 ma (adjustable)

MANUFACTURER'S OR CONTRACTOR'S DATA

ITT Federal Laboratories, 500 Washington Avenue, Nutley, New Jersey.

Loran Transmitting Set AN/FPN-44, drawing number J1087426. Contract number Tcg 41848-A. Purchase Description number EEE-1-62

TUBE, DIODE, AND TRANSISTOR COMPLEMENT

Type	Quantity	Type	Quantity
F8C25A	4	1901-0034	3
F8045	8	2N1046	4
G203C	3	2N297A	10
G-31H-18H	3	2N301	3
G-84B	12	2N526	12
OA2WA	4	4-1000A	4
1N1199A	4	4JA10MX5(226)	14
1N1614	16	4JA10MX5(239)	16
1N2154	4	4JA411DB2AD1	2
1N275	4		
1N2976B	2	5642	6
1N3016B	2	5651	5
1N3018B	2	5651WA	2
1N3022B	2	5687WA	10
1N3037B	2	5751	4
1N457	21	5814A	4
1N459	4	6AQ5	3
1N483B	2	6AU6	3
1N540	4	6AU6WB	6
1N538	20	6C4	3
1N547	44	6CL6	10
1N746A	4	6CW4	3
1N753A	8	6DJ8	9
1N756A	4	6L6WGB	4
1087689	16	6RS21SA10D10	2
12AT7WA	8	6RS22PB1ABH1	2
12AU7	14	6U8	9
12B4A	6	6336A	14
1901-0023	3	6922	4
1901-0033	9	657B	24

REFERENCE DATA AND LITERATURE

Technical Manual for Loran Transmitting Sets AN/FPN-44 and AN/FPN-45. Publication number C J-273-103.

## EQUIPMENT SUPPLIED

LORAN TRANSMITTING SET AN/FPN-44								
QUANT. PER EQUIP.	NOMENCLATURE		UNIT NUMBER	*OVERALL DIMENSIONS			*VOLUME	*WEIGHT
	NAME	DESIGNATION		HEIGHT	WIDTH	DEPTH		
2	Transmitter Group (includes)	OA-4483/FPN-44	1					
1	Cabinet, Electrical Equipment	CY-3841/FPN-44	1A1	102.00	144.25	276.00	2350.00	2275
1	Electron Tube Liquid Cooler	HD-601/FPN	1A2	89.00	57.75	20.00	59.50	1150
1	Power Supply Set (includes)	OA-4783/FPN-44	1A3					
1	Switching Unit	SA-1069/FPN	1A3A1	15.00	39.00	16.00	5.42	78
1	Control-Indicator	C-4752/FPN-44	1A3A2	45.00	30.00	6.90	5.41	53
1	Relay Assembly	RE-744/FPN-44	1A3A3	76.00	82.50	38.00	137.80	1900
1	Instrument Shunt	MX-4827/FPN	1A3A4	26.90	13.00	16.375	2.08	3215
1	Power Supply	PP-3815/FPN	1A3A5 and 1A3A6	80.00	73.75	34.50	118.00	3500
1	Voltage Divider	CN-942/FPN	1A3A7	17.50	31.00	10.00	3.14	41
1	Voltage Regulator	CN-940/FPN	1A3A8	67.50	23.375	40.00	36.45	2000
1	Voltage Regulator	CN-941/FPN	1A3A9	18.00	22.00	19.00	4.35	270
1	Resistor Rack		1A3A19 and 1A3A20	3.00	22.00	4.42	1.67	31
1	Amplifier-Oscillator Group	OA-4482/FPN-44	1A4	72.00	66.00	30.00	82.30	1825
1	Radio Frequency Amplifier (includes)	AM-3774/FPN-44						
1	Power Amplifier Tank		1A5	65.875	41.75	33.375	5.32	525
1	Power Amplifier Tube Rack		1A6	78.15	79.50	41.95	148.70	2230
4	Resistor Rack		1A7- 1A10	9.00	9.00	72.00	3.38	112
1	Electrical Equipment Rack	MT-2929/FPN-44	1A11	82.60	21.50	15.00	15.50	110
1	Indicator Panel	SB-1894/FPN-44	1A12	10.50	30.0	11.5	2.10	21
1	Transmitter Control Group (includes)	OA-4481/FPN	2	72.00	21.50	26.25	23.50	487
1	Transmitter Control	C-4556/FPN	2A1	20.41	9.55	22.06	2.48	52
1	Oscilloscope	OS-147/FPN	2A2	8.54	17.74	20.00	1.75	35
1	Pulse Generator	O-1086/FPN	2A3	20.41	9.55	22.06	2.48	40
1	Pulse Generator	O-1087/FPN	2A4	20.41	9.55	22.06	2.48	40

\*Unless otherwise stated, dimensions are in inches, volume in cubic feet, and weight in pounds.

DESCRIPTION OF COAST GUARD ELECTRONIC EQUIPMENT

## EQUIPMENT SUPPLIED (Cont)

LORAN TRANSMITTING SET AN/FPN-44								
QUANT. PER EQUIP.	NOMENCLATURE		UNIT NUMBER	*OVERALL DIMENSIONS			*VOLUME	*WEIGHT
	NAME	DESIGNATION		HEIGHT	WIDTH	DEPTH		
1	Power Supply	PP-3658/FPN	2A5	20.41	9.55	22.06	2.48	115
1	Power Supply	PP-3659/FPN	2A6	20.41	9.55	22.06	2.48	115
1	Electrical Equip- ment Cabinet	CY-3840/FPN	2A7	72.00	21.66	24.00	21.66	90
1	Antenna Coupler	CU-1106/FPN-44	3	51.12	57.44	48.44	82.40	482
1	Dummy Load	DA-329/FPN-44	4	30.56	57.00	58.91	59.4	400

\*Unless otherwise stated, dimensions are in inches, volume in cubic feet, and weight in pounds.

## SHIPPING DATA

LORAN TRANSMITTING SET AN/FPN-44							
BOX NO.	NOMENCLATURE		*OVERALL DIMENSIONS			*VOLUME	*WEIGHT
	NAME	DESIGNATION	HEIGHT	WIDTH	DEPTH		
W1	Antenna Coupler, Dummy Load	CU-1106/FPN-44 DA-328/FPN-44	98	72	68	272	1400
W3	Installation Material		24	47	110	71	510
W4	Transmitter Con- trol Group	OA-4481/FPN	88	34	31	51	850
W5	Cables		19	38	51	19.5	486
W6	Ducts		24	22	63	19.3	380
NOTE							
Transmitter Group No. 1 is shipped in series X boxes, and Transmitter Group No. 2 in series Y boxes. Refer to Volume III for detailed list of materials contained in each box.							
X1, Y1	Fan and Louver		60	43	51	73	435
X2, Y2	Electron Tube Liquid Cooler	HD-601/FPN	35	67	97	130	1475
X3, Y3	Ceramic Coils		42	26	45	28	348
X4, Y4	Ceramic Coils		42	26	45	28	348
X5, Y5	Capacitors		41	25	37	19.5	524
X6, Y6	Capacitors		41	25	37	19.5	524
X7, Y7	Water Jackets		46	31	25	21	315
X8, Y8	PA Tube Rack (P/O R. F. Amplifier)	AM-3774/FPN- 44	97	55	94	290	1100
X9, Y9	Resistor Rack	P/O AM-3774/ FPN-44	28	29	56	26	224
X10, Y10	PA Tank		80	48	52	116	800
X11, Y11	Air Exhaust Housing		33	51	51	48	240
X12, Y12	Meter Light As- sembly Cable Ducts		18	32	72	24	200
X13, Y13	Indicator Panel, Voltage Divider, and Miscellaneous Parts	SB-1894/FPN- 44	42	38	55	50	435
X14, Y14	Relay Rack		24	27	93	35	350
X15, Y15	Enclosure Assem- bly, Partition		18	43	111	47	480
*Unless otherwise noted, dimensions are in inches, volume in cubic feet, and weight in pounds; equipment crated and ready for shipment.							

DESCRIPTION OF COAST GUARD ELECTRONIC EQUIPMENT

## SHIPPING DATA (CONT)

LORAN TRANSMITTING SET AN/FPN-44							
BOX NO.	NOMENCLATURE		*OVERALL DIMENSIONS			*VOLUME	*WEIGHT
	NAME	DESIGNATION	HEIGHT	WIDTH	DEPTH		
X16, Y16	Power Supply	PP-3815/FPN	93	53	82	278	5600
X17, Y17	Control Indicator	C-4752/FPN-44	24	40	59	33	233
X18, Y18	Voltage Regulator	CN-941/FPN	26	27	29	12.5	246
X19, Y19	Relay Assembly, Switching Unit	RE-744/FPN-44 SA-1069/FPN	92	48	93	238	2300
X20, Y20	Voltage Regulator	CN-940/FPN	79	32	49	66	2400
X21, Y21	Grounding Switch		38	33	58	41	298
X22, Y22	Miscellaneous Parts		18	27	100	29	330
X23, Y23	Tubes 857B		36	38	46	36	192
X24, Y24	Tubes 857B		36	38	46	36	192
X25, Y25	Tube 8045		55	27	34	29.3	129
X26, Y26	Tube 8045		55	27	34	29.3	129
X27, Y27	Tube 8045		55	27	34	29.3	129
X28, Y28	Tube 8045		55	27	34	29.3	129
X29, Y29	Capacitor		15	24	28	5.4	122
X30, Y30	Amplifier-Os- cillator Group	OA-4482/FPN- 44	87	39	76	149	2000
X31, Y31	Tubes and Chimney		45	29	57	42	245
X32, Y32	Cables and Interconnections		19	38	51	19.5	486
X33, Y33	Floor Assembly		10	20	75	8.7	188
X34, Y34	Floor Assembly		16	50	94	43.5	430
X35, Y35	Enclosure Assembly		16	39	99	35.8	760
X36, Y36	Enclosure Assembly		26	51	96	74	820
X37, Y37	Enclosure Assembly		20	31	75	27.8	468
X38, Y38	Enclosure Assembly		8	29	77	10	330

\*Unless otherwise noted dimensions are in inches, volume in cubic feet, and weight in pounds; equipment crated and ready for shipment.