



Timer-Synchronizer Set Double Pulse Modification Kit,
Relationship of Equipment

FUNCTIONAL DESCRIPTION

The Timer-Synchronizer Set, Double Pulse Modification Kit contains parts and equipment to modify the timer-synchronizer sections of Loran Ground Stations for double pulse operation.

Six separate modification kits are installed in each of two Timer Synchronizer Sets AN/FPN-46. These modifications, in addition to a completely new unit supplied as part of the overall kit, provide the basic requirements for double pulse operation. The new unit, Electrical Synchronizer SN-364/FPN-46 (commonly called the double pulse unit) blanks out the high rate timer signal whenever that signal would interfere with low rate signal outputs. The percentage of high rate signals lost in this manner is small so that, functionally, the operation of the high rate loran chain is not adversely affected by this method of time-sharing signal outputs. The time-shared high and low rate pulse groups are applied to either Loran Transmitting Set AN/FPN-44 (low power) or Loran Transmitting Set AN/FPN-45 (high power) to produce the loran signal output. The selected transmitter must be modified for double pulse operation by means of a kit. This modification kit is described in supplementary manual CG-273-103-1.

RELATION TO OTHER EQUIPMENT

This modification kit is integrally related to two transmitter modification kits: one for modifying the AN/FPN-44 transmitter, and one for modifying

the AN/FPN-45 transmitter. With the timer synchronizer kit and one of the transmitter kits, a single pulse station may be entirely converted to a double pulse station.

EQUIPMENT REQUIRED BUT NOT SUPPLIED

The following equipment is required to enable a single pulse station to function as a double pulse station:

- Loran Transmitting Set, AN/FPN-44 or AN/FPN-45 (Modified for Double Pulse Operation)
- Timer-Synchronizer Set, AN/FPN-46 (2 required)

ELECTRICAL AND MECHANICAL CHARACTERISTICS

PEAK POWER REQUIREMENTS:

108 to 132 VAC @ 44 to 66 cps, 100 watts, single phase (for the electrical synchronizer)

AMBIENT TEMPERATURE LIMITATIONS:

Operation: 0° to 50°C (30° to 123°F)
Storage: -62° to 75°C (-69° to 167°F)

INSTALLATION DATA:

The Electrical Synchronizer cabinet is installed in a screened room (approximately 20 X 24 feet) with two Modified AN/FPN-46 Timer-Synchronizer Sets.

DESCRIPTION OF COAST GUARD ELECTRONIC EQUIPMENT

DOUBLE PULSE KIT
FOR AN/FPN-46

UNCLASSIFIED

MANUFACTURER'S OR CONTRACTOR'S DATA

ITT Federal Laboratories, 500 Washington
Avenue, Nutley, New Jersey, Contract Tcg-41848,
Purchase Description Number EEE-1-62.

Timer-Synchronizer Set AN/FPN-46 double
pulse modification kit drawing number is B2314302G1.

Type	Quantity	Type	Quantity
1N973B	20	2N1120	6
1N1614	4	2N2945	2
2N526	6		

DIODE AND TRANSISTOR COMPLEMENT

Type	Quantity	Type	Quantity
1N457	4	1N735A	4
1N538	4	1N914	24

REFERENCE DATA AND LITERATURE

Technical Manual for Timer-Synchronizer Set
AN/FPN-46, Modified for Double Pulse Operation.
Publications number CG-273-104-1

SHIPPING DATA

TIMER SYNCHRONIZER SET DOUBLE PULSE MODIFICATION KIT

BOX NO.	EQUIPMENT	*OVERALL DIMENSIONS			*VOLUME	*WEIGHT
		HEIGHT	WIDTH	DEPTH		
J9	Electrical Synchronizer SN-364/FPN-46	88	31	34	51	850
J12	Ducts, Busbars, Wireways and Mod. Kits for Frequency Divider; Switched Attenuator; Operate, Standby, Blink Alarm; Cabinet and AC Power Distribution; and Phase Code Generator.	38	104	43	100	610

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

EQUIPMENT SUPPLIED

TIMER-SYNCHRONIZER SET DOUBLE PULSE MODIFICATION KIT							
QUANT. PER EQUIP.	NOMENCLATURE		OVERALL DIMENSIONS (inches)			VOLUME (cu. ft.)	WEIGHT (pounds)
	NAME	DESIGNATION	HEIGHT	WIDTH	DEPTH		
1	Electrical Synchronizer	SN-364/FPN-46	72	21.7	24.0	21.6	630
4	Frequency Divider Modification Kit, consisting of:	B2313865G1	}	NOT APPLICABLE			
1	Dual Emitter Follower TE-307 (1A5A6)	A2312263					
4	Switched Attenuator Modification Kit, consisting of:	B2313861G1					
1	Capacitor, Fixed, CQ05A1PB153G(C1)	C2311392G15					
1	Capacitor, Fixed, CQ05A1PB333G(C2)	C2311392G5					
1	Capacitor, Fixed, CQ05A1PB104G(C3)	C2311392G7					
2	Operate Standby Blink and Alarm Mod. Kit, consisting of:	B2390576G1					
0.3 ft.	Wire, Elect. Bus No. 22	910000H22					
0.3 ft.	Sleeving, Teflon, Black No. 22	945680/220					
4.5 ft.	Wire, Elect. Insul., Nylon Jacket Type B22	902032H907					
4.5 ft.	Wire, Elect. Insul., Nylon Jacket Type B22	902032H908					
2.0 ft.	Tape, Lacing and Tying, (Black)	A2132388-3					
2	Cabinet and AC Power Distr. Mod. Kit, consisting of:	B2390577G1					
1	Wire Assembly	B2390578G1					
1	Wire Assembly	B2390578G2					
0.2 ft.	Sleeving, Teflon No. 11 (Black)	943680A110					
4.0 ft.	Tape, Lacing and Tying, (Black)	A2132588-3					
4	Phase Code Generator Mod. Kit	D2391472G1					
1	Ducts, Busbars, Wireways Mod. Kit	H2314281G1					

DESCRIPTION OF COAST GUARD ELECTRONIC EQUIPMENT