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-46 (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:

100 to 125 VAC @ 44 to 66 cps, 100 watts, single phase (for the electrical synchronizer)

AMBIENT TEMPERATURE LIMITATIONS:

Operation: 0°C to 50°C (30°F to 122°F)
Storage: -62°C to 75°C (-69°F 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
OR AN/FPN-46

MANUFACTURER'S OR CONTRACTOR'S DATA

Timer-Synchronizer Set AN/FPN-46 double pulse modification kit drawing number is E2314302G1.

REFERENCE DATA AND LITERATURE
Publications number CG-273-104-1

MODE AND TRANSISTOR COMPLEMENT

<table>
<thead>
<tr>
<th>Type</th>
<th>Quantity</th>
<th>Type</th>
<th>Quantity</th>
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<tr>
<td>1N457</td>
<td>4</td>
<td>1N735A</td>
<td>4</td>
</tr>
<tr>
<td>1N538</td>
<td>4</td>
<td>1N914</td>
<td>24</td>
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SHIPPING DATA

<table>
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<tr>
<th>BOX NO.</th>
<th>EQUIPMENT</th>
<th>*OVERALL DIMENSIONS</th>
<th>*VOLUME</th>
<th>*WEIGHT</th>
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<tbody>
<tr>
<td>J9</td>
<td>Electrical Synchronizer SN-364/FPN-46</td>
<td>88</td>
<td>100</td>
<td>850</td>
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<tr>
<td>J12</td>
<td>Ducts, Bushars, Wireways and Mod. Kits for Frequency Divider; Switched Attenuator: Operate, Standby, Blink Alarm; Cabinet and AC Power Distribution; and Phase Code Generator.</td>
<td>38</td>
<td>38</td>
<td>610</td>
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</table>

*Dimensions are in inches, volume in cubic feet, and weight in pounds.
## Double Pulse Kit

### Equipment Supplied

**Timer-Synchronizer Set Double Pulse Modification Kit**

<p>| QUANT. PER | NOMENCLATURE | DESIGNATION |</p>
<table>
<thead>
<tr>
<th>PER EQUIP.</th>
<th>NAME</th>
<th>HEIGHT</th>
<th>WIDTH</th>
<th>DEPTH</th>
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<tbody>
<tr>
<td>1</td>
<td>Electrical Synchronizer</td>
<td>SN-384/FPN-46</td>
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<td>4</td>
<td>Frequency Divider Modification Kit, consisting of:</td>
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<tr>
<td>1</td>
<td>Dual Emitter Follower: TE-307 (1A5A6)</td>
<td>A2312263</td>
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<td>4</td>
<td>Switched Attenuator Modification Kit, consisting of:</td>
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<tr>
<td>1</td>
<td>Capacitor, Fixed, CQ0A1PBD050G(C1)</td>
<td>B2313361G1</td>
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<tr>
<td>1</td>
<td>Capacitor, Fixed, CQ0A1PBD0330G(C2)</td>
<td>C2311192G3</td>
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<tr>
<td>1</td>
<td>Capacitor, Fixed, CQ0A1PBD010G(C3)</td>
<td>C2311192G7</td>
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<td>2</td>
<td>Operate Standby Blink and Alarm Mod. Kit, consisting of:</td>
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<tr>
<td>0.3 ft.</td>
<td>Wire, Elect. Bus No. 22</td>
<td>91000H22</td>
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<td>0.3 ft.</td>
<td>Sleeving, Teflon, Black No. 22</td>
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<td>4.5 ft.</td>
<td>Wire, Elect. Insul., Nylon Jacket Type B22</td>
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<td>4.5 ft.</td>
<td>Wire, Elect. Insul., Nylon Jacket Type B22</td>
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<td>2.0 ft.</td>
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<tr>
<td>2</td>
<td>Cabinet and AC Power Distr. Mod. Kit, consisting of:</td>
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<tr>
<td>1</td>
<td>Wire Assembly</td>
<td>B2390578G1</td>
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<tr>
<td>1</td>
<td>Wire Assembly</td>
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<td>0.2 ft.</td>
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<tr>
<td>4.0 ft.</td>
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<tr>
<td>4</td>
<td>Phase Code Generator Mod. Kit</td>
<td>B2391472G1</td>
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<td>Ducts, Busbars, Wireways Mod. Kit</td>
<td>H2314281G1</td>
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### Description of Coast Guard Electronic Equipment