



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

MAILING ADDRESS:
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3262
11 February 1976

From: Commanding Officer, USCG LORAN A/C Station Nantucket
To: Commander, First Coast Guard District (oan)

Subj: LORAN-A Operations with LARE; comments concerning

Ref: (a) CCGDONE (oan) ltr 3262 dtd 30 Dec 75
(b) COMDT (G-WAN) ltr 3262 dtd 17 Dec 75

1. The following comments concerning LORAN-A operations with LARE are submitted in accordance with references (a) and (b). It should be noted that this unit does not have a complete LARE installation. Comments are therefore limited to the operation of the FPN-53 timers and FPN-56 receivers.

2. Operating instructions and procedures for equipment installed are considered satisfactory. Operating instructions and procedures for chain synchronization and control have proved to be less than satisfactory. The POCO instructions promulgated by message in December 1974 have been the source of confusion and some unnecessary bad time. The "blind" master station on rate 3H5 (Sandy Hook) is considered a liability to reliable operations. The secondary on rate LH3 (Baccaro, N.S.) cannot effectively function as POCO for the following reasons:

- a) The Canadian government prohibits long distance telephone calls which are the only means of communication between LORAN-A stations.
- b) Baccaro is equipped with UE-1 timers which cannot match the stability and reliability of the FPN-53.

This unit currently monitors LH3 (using an FPN-30 timer) and initiates corrections and adjustments as necessary. This would not be possible under the proposed LARE configuration at this station.

3. The LARE status alarm units are not yet installed but the alarms on the FPN-53's and FPN-56's have been satisfactory.

4. The LARE package was apparently designed for a maximum of two rates. The blanking equipment provided was not adequate for use at this station. A four-rate blanking system was devised by station personnel to facilitate the installation and use of the FPN-56 receivers. Apparently EECEN, Wildwood is designing a similar system but had not advised CCGDONE (eee) or this unit.

5. An additional modification was devised by station personnel to boost the trigger output from the FPN-53 timers to the AM 1700/FPN

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amplifiers for use on the high powered rates.

6. The FPN-56 receivers do not track together. They are consistently at least 0.5 microseconds apart. (System tolerance is 2.0 microseconds). One receiver is presently inoperative due to a faulty circuit board and the lack of a full set of spares.

7. The FPN-56 installation is of limited usefulness since both receivers must be locked on one rate. Since this command is POCO for rate 3H5 both receivers must always be locked on this rate. Rates 3H4, 1H3, and 1H7 are currently monitored by FPN-30 timers. The final LARE configuration would normally eliminate this capability.

8. It is doubtful that the battery backup unit (BB-306/U) will be able to maintain the time references in four FPN-53 sets during any power outage exceeding 5 minutes. The backup unit normally is required to support only two FPN-53 sets.

9. It is recommended that:

- a) An additional set of FPN-56 receivers be provided at this unit or at a remote monitor site to allow the deinstallation of the aging FPN-30 timers yet continue to monitor the 3H4, 1H3, 1H7 rates.
- b) An additional multi-coupler (CY-7412/FPN-56) be provided to allow independent operation of each receiver of the FPN-56 set.
- c) An additional battery backup unit (BB-306/U) be provided to insure that the time reference is maintained on all rates during power outages.
- d) The POCO instructions be modified for rate 1H3 by designating this command as POCO.
- e) The POCO instructions be incorporated in CG-222-4 or cancelled. An operational change this important should not remain in message form only, fourteen months after its promulgation.



W. D. KLINE