

(~~EE~~-n)
CG-516

7 January, 1948

From: Commandant
To: Department of State
Communications Division

Subj: Northeast Atlantic Loran Chain; request for information from the Danish Government concerning reduction of interference caused by the Skuvanes (Faroes) Loran Station

1. During the International Telecommunications Conference in Atlantic City in the summer of 1947 certain objections were raised by the Danish Government to the continuance of Loran in the northeast Atlantic chain (Iceland, Faroes, Hebrides). These objections were based principally on the interference which certain of the Loran stations were reported to have caused to Danish communication services in adjacent frequency bands. The United States offered assistance to reduce this interference.

2. It is now considered desirable to contact the Danish Government through appropriate channels to make records of the following described actions, taken to date by the United States to render assistance to the Danish Government, and to ascertain what use the Danish Government has made of the assistance rendered and whether additional assistance is required. The following matters are suggested to be covered in the inquiry:

- (A) In the discussions at Atlantic City during the International Telecommunications Conference the Danish representatives stated certain objections to the continuance of the northeast Atlantic Loran chain (Iceland, Faroes and Hebrides) because of the interference being caused to other services by these Loran transmissions. Previously, similar comments were received during the New York - New London IMM-RAN meeting in April & May, 1947. A temporary frequency authorization was approved by ITU, for continuance of this northeast Loran chain, provided that steps be taken to reduce the interference being experienced. The United States delegation, in order to assist in reducing this interference, furnished the Danish Delegation with the U.S.C.G. "Electronics Engineering Report No. L-11" describing simple and practical methods of improving radio reception on frequencies adjacent to and within the sidebands of Loran transmissions. In addition, the chairman of the U.S. Delegation offered, on behalf of the U.S. Government, to furnish the Danish Government with later and more stable type Loran transmitting equipment and, if desired, engineering assistance for installation of such equipment. Likewise engineering assistance was offered in the matter of interference elimination by modifications to their radio receiving equipment. The Danish representatives at Atlantic City and at New London described their Loran interference as being experienced at their shore receiving stations,

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Lyngby Radio and Skagen Radio on 1848 Kcs and 1938 Kcs respectively. They further stated that super-heterodyne receivers without limiters were used at these stations. The U.S. representatives explained how interference of this type could be readily mitigated or eliminated by the use of noise limiters and demonstrated at Atlantic City the effectiveness of a simple limiter in a standard commercial type communication receiver. Also, suggestions were made for use of simple directional receiving antennas at Lyngby and Skagen.

- (B) The Danish Government subsequently accepted the offer of the transmitting equipment for the Skuvanæs Head Loran Station and the equipment was finally shipped from New York on 9 December, 1947. (It should be explained at this point that the new transmitting equipment furnished at this time was for the specific purpose of reducing interference being radiated by the original transmitters. Some other equipment, both transmitter and timers, had been furnished through ICAO at an earlier date for the purpose of reducing maintenance costs and labor, at the Station. The two groups of equipment for the same station were furnished for entirely different purposes.) The Danish Government is understood to have stated that acceptance of the offer for engineering assistance would be held in abeyance for the time being.
- (C) In order that it may be possible to provide future assistance, if desired, it is requested that the Danish Government be asked to communicate to the U.S. State Department ~~as soon as possible to their results~~ accomplished through the use of the information and equipment already furnished. (Similar equipment, information and technical assistance was furnished the Icelandic Government subsequent to the Atlantic City Meeting and latest reports from that Government indicate that a very considerable reduction in interference has resulted.)
- (D) The United States would particularly like to know:
- (1) What actions were taken to reduce the received interference at receiving stations Lyngby Radio and Skagen Radio by use of directional receiving antennas, limiters, etc.

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- (2) What action has been taken at Skuvanæs Head to reduce radiated interference by (a) installing new transmitters furnished by U.S., (b) installing transmitting filters described by USCG Report No. 11.
- (3) What interference problems remain to be solved and what further technical assistance, if any, is desired from U.S. to fulfill the obligations undertaken at Atlantic City.

3. If some further information can be obtained at an early date from the Danish Government on this matter it will not only enable the United States to clearly fulfill its' obligations with respect to technical advice and assistance, but it will also inform us whether such assistance and material as have been given are being used effectively to correct the interference.

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