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SN/Circ.158
14 January 1993

Ref. T2/6.01

INFORMATION ON THE OMEGA RADIONAVIGATION SYSTEM

At the request of the Government of the United States, the attached information on OMEGA is brought to the attention of Member Governments for action, as appropriate.

OMEGA, AN INTERNATIONAL RADIONAVIGATION SYSTEM

Overview of Omega

Omega is a continuous, world-wide, internationally-operated, ground-based radionavigation system. It is also the only operational world-wide radionavigation system. It operates in the very low frequency (VLF) band between 10 and 14 kilohertz (kHz). The nominal fix accuracy of Omega is two to four nautical miles (nm). The Omega system consists of eight widely separated transmitting stations in seven different countries. The stations are located in Norway, Liberia, La Reunion Island (Fr), Argentina, Australia, Japan and the United States (Hawaii and North Dakota).

Current Status of Omega

The Liberian Omega Station, one of 8 stations around the world that operate together to provide world-wide navigation for ships and aircraft, has been temporarily shut down. Without the Liberian signal, there are areas of degraded radionavigation coverage in parts of the Indian Ocean and Asia. Normally, though, the system is robust enough to operate with only seven stations for limited periods of time to allow for station maintenance. If the off-air continues for an indefinite period of time, with only seven remaining stations, a problem at one of the other stations could result in further reduced radionavigation coverage in additional parts of the world and may affect commercial oceanic air travel and meteorological analyses. With the Liberia signal off-air, no other station may go off-air for routine or emergency maintenance without adversely affecting the coverage of the Omega system. There are several major items of maintenance that are pending for other stations. Of major concern are the insulator replacement project at La Reunion and the tower painting in Argentina. These items are now on hold, to minimize the disruption and maintain the navigational coverage for users of the Omega System.

International Ownership of Omega

The system is operated as an international partnership between Argentina, Australia, France, Japan, Liberia, Norway and the United States. Each station is owned and operated by the nation in which it is located. Omega is unique in this regard, as there has never been another world-wide radionavigation system established in this manner. Its sole purpose is to provide users with a radionavigation system to ensure safety of navigation world-wide. Co-ordination of Omega System operational policy is based on an agreement signed by the seven partner nations. The United States Coast Guard Omega Navigation System Center (ONSCEN) in Alexandria, VA, has the responsibility for operational control, maintenance, and scheduling off-air maintenance periods for the eight transmitting stations. The timing and synchronization of the Omega signals is controlled by the Japanese Maritime Safety Administration (JMSA) in Tokyo, Japan.

Because the system is operated through an international partnership, an organization known as the International Omega Technical Commission (IOTC) was formed of representatives from each partner nation's Omega Operating Agencies. Its purpose is to achieve effective harmonization among Operating Agencies, users, and manufacturers, and to promote continued Operation and improvement of Omega. The role of Commissioner of the IOTC is rotated biennially among the members. In August 1992, the role was transferred from Norway to Argentina.

Omega Users

Users of the Omega System can generally be divided into three categories: marine, aviation, and scientific.

The Omega system is used for marine navigation by commercial shipping companies, fishing vessels, and military vessels. Military use includes submarines, because Omega's VLF signals can penetrate water and ice.

Commercial and private planes, as well as some individual and general aviators, use the Omega system for open ocean en route navigation, as well as a supplemental navigation aid across land. A dual Omega receiver installation is an approved sole source for oceanic en route navigation.

The largest scientific use of the Omega system is for meteorological purposes. Omega signals are used to track weather balloons by almost 500 weather research systems operating in about 50 countries. It is estimated that measurements obtained through the use of Omega provide 35% of the world's weather forecast observations. (Data extracted from Omega Users Survey conducted by the International Omega Association, 1990). Other scientific uses of Omega include time transfer, seismic studies, and atmospheric research.