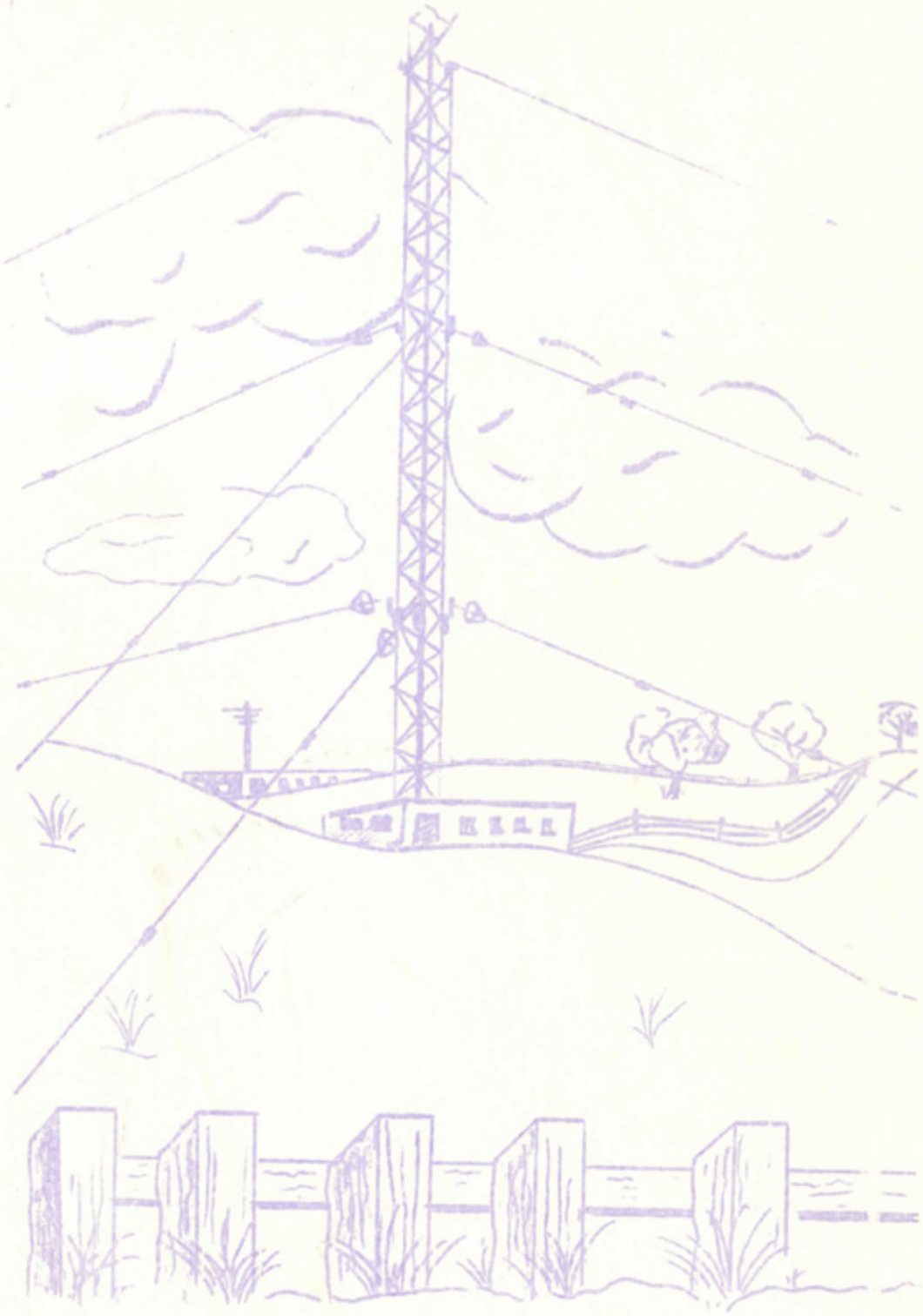

UNITED STATES COAST GUARD
LORAN TTRANSMITTING STATION
NANTUCKET ISLAND, SIASCONSET, MASSACHUSETTS

COMMANDING OFFICER: LTJG DWIGHT W. SHORES, USCG

W E L C O M E

You are now on board one of the largest and most complex LORAN Stations operated by the United States Coast Guard.

We the officers and men of this station, are charged with the responsibility of transmitting a continuous LORAN signal on three LORAN "A" rates and one LORAN "C" rate.

The information in this booklet will provide you with a brief history of the developement of this navigation system and the duties of personnel assigned.

Again, Welcome aboard and may you enjoy your visit.

Dwl Shores

D. W. SHORES
COMMANDING OFFICER

LORAN AND IT'S HISTORY

LORAN is an acronym for Long Range Aid to Navigation. LORAN first came into being as a result of the need for an accurate long distance means of navigation independent of weather conditions. This need was established in the early days of World War II. First testing and evaluation of LORAN was accomplished by the establishing of two stations one at Montauk Point, L.I. and one at Fenwick Island Delaware.

The responsibility for development was delegated to the Radiation Laboratory, Massachusetts Institute of Technology. Several frequencies were investigated but the accepted frequency of operation is what we are transmitting on today.

On January 1, 1943, the Coast Guard assumed the responsibility for the operation of the established East Coast Stations. This consisted of Stations at Montauk Point, L.I., Fenwick Island, Delaware, and two Canadian Stations at Deming and Baccaro. The Fenwick Station was first moved to Bodie Island, North Carolina and later to Cape Hatteras, North Carolina. The Montauk Point Station was moved to Nantucket Island, Massachusetts.

The first version of LORAN which operated in the channels 1800 to 2000 kilocycle band was originally called Standard LORAN to distinguish it from other forms of this type on other frequencies. This Standard LORAN is what is known today as LORAN "A". Although developed as a Wartime means of navigation, LORAN to day has found an application in the commercial transportation of the world. LORAN is now widely used by pleasure craft, commercial vessels, trans-oceanic airlines and United States Government Agencies.

With the advent of faster air travel and distances covered by commercial shipping after World War II, a new system was needed to provide more accurate navigation with longer ranges. This resulted in the developement of LORAN "C". This system in principle is identical to LORAN "A" with the exception of transmitting frequency. This lower frequency results in the added range that is needed and allows for the plotting of a course by computers.

This is in essence the history and developement of LORAN over the past twenty-five years and at the present time there are more than sixty LORAN stations of both types operated by the United States Coast Guard. In addition to these, there are a number of LORAN Stations operated by other Governments. All of these stations form a world wide navigational net.

RESPONSIBILITIES OF A LORAN STATION

The responsibility to operate the LORAN System, given to the Coast Guard in 1943, has been carried forward to include the present system. LORAN has now become one of the many duties and responsibilities of the Coast Guard in its never ending battle for the safety of life at sea. Although each station is only part of a LORAN pair, it is necessary that each station perform at its maximum capability to fulfill the primary mission of providing accurate navigational information.

ORGANIZATION AND DUTIES AT NANTUCKET LORAN STATION

This particular station has an assigned complement of two officers and twenty-six enlisted men. The majority of personnel assigned are either Electronics Technicians or have had previous training in this field. In addition, there are other specialities assigned to provide logistical support. Although the primary mission of this station is to provide a LORAN signal for navigation, it is necessary that each man do his assigned job in order to accomplish this.

Nantucket LORAN Station is a combined LORAN "A" and LORAN "C" station. Incorporated within one operation are three LORAN "A" rates and one LORAN "C" rate. One LORAN "A" rate 1H3 is paired with a Canadian Station at Baccaro. LORAN "A" rates 1H4 and 1H5 are paired with Cape Hatteras, North Carolina and Sandy Hook, New Jersey respectively in a double pulsed operation. This means that two LORAN signals are transmitted from one transmitter and one antenna simultaneously. The tree LORAN "A" rates are semi-automatic, allowing the watchstander to move about quite freely to accomplish any number of tasks during his watch period.

In addition to the LORAN "A" rates, this unit is also a single LORAN "C" station operating in the East Coast LORAN "C" Chain. This system has stations at Nantucket, Massachusetts, Carolina Beach, North Carolina and Jupiter, Florida. A new station has been added, transmitting from Newfoundland Canada and since the distance from this station to the Master Station at Carolina Beach is so great Nantucket Station has become the psuedo-master for this this station. To control all of this, so that maximum accuracy may be obtained, a systems area monitor is located at Bermuda.

The present operation of this station requires the utilization of eight people to maintain the necessary twenty-four hour watch (i.e. four two-man watches). Since LORAN "C" requires a "LIVE" watch, the junior man of each pair functions as the LORAN "C" watchstander. The senior man supervises the overall operations, acts as the watchstander for the three LORAN "A" rates and performs preventive maintainance and repairs of a minor nature. In addition to the watchstanders, there are three senior technicians who handle all major repairs, installations of new equipment and major preventive maintainance. One of these three is on call at all times to assist the watch supervisor for major repairs during the night watches. A Warrant Radio-Electrician and two Chief Electronics Technicians control the overall operation and to assist the technicians in emergencies. The varied responsibilities assigned each man are numerous enough that the infividual must be constantly alert and attentive to his duties.

This, then, is the complex operation of transmitting a navigational signal so that we may uphold the responsibility with which we are charged.