

LORAN STATION SITE SURVEY

YAKUTAT, ALASKA – JUNE 5 TO 19, 1950

ANTENNA LOCATION:

(a) Locality: On the coast of the Gulf of Alaska, about 3.3 nautical miles southeast of Ocean Cape and about 2.5 nautical miles southwest of the Village of Yakutat, Alaska.

(b) Geographic Position of Antenna: Latitude $59^{\circ}-30'-40.96''$ N., longitude $139^{\circ}-46'-24.2''$ W. This position is based on the grid coordinates of U. S. Geological Survey local control stations "FLAG 15" and "FLAG 17" on Yakutat Landing Field. Using the line FLAG 15 and FLAG 17 as base line, grid positions were carried from the landing field to the Loran site by triangulation and precise traverse. In both triangulation and the traverse, all angles were observed as accurately as possible by the method of repetition from observation towers and instrument towers erected over the points. The precise traverse was run from a triangulation point set on the edge of the landing field, about one-quarter mile through the Spruce forest to a signal erected on the beach, then northwest along the wide flat beach about 2.2 miles to a second signal, then several hundred yards into the forest to the Loran site. All distances were measured twice in cloudy and overcast weather, with air temperatures taken continually, and necessary slope and temperature corrections applied. It is believed that the accuracy of the traverse is about one part in 20,000. However, due to possible errors of greater magnitude in the position and azimuth of stations FLAG 15 and FLAG 17, it is possible that the position of LORAN-1950 is correct only to the nearest tenth of a second of latitude and longitude. The origin of the grid system is C&GS station CENTER RADIO TOWER. Comparison of the grid azimuth and geodetic azimuth of the line CENTER RADIO TOWER – U. S. LAND MONUMENT 179, for which both grid and geographic coordinates are known, indicate that grid north was $0^{\circ}-09'$ west of geodetic north. The geographic position of Loran-1950 was computed by use of the grid distance and azimuth between CENTER RADIO TOWER and LORAN-1950 with the $0^{\circ}-09'$ correction applied to the grid azimuth to obtain the geodetic azimuth. In order to determine the position of LORAN-1950 with greater accuracy, it will be necessary to verify the positions of FLAG 15 and FLAG 17, or to erect an observation tower and signal at the Loran site tall enough to be seen over the trees, and to determine its position by triangulation from other adjacent C&GS stations. Such determination should be requested of the Coast and Geodetic Survey, if required. The enclosed reproduction of C&GS Topographic Map T-8451 shows the relative locations of triangulation stations, the traverse, and general site location survey scheme.

(c) Antenna Location Marker and References: The antenna location is marked by a 3-1/2" diameter brass disk stamped, "Survey Marker, U. S. Coast Guard, LORAN-1950". The disk is set in a 1-1/2" pipe set in concrete and projecting about 12" above ground. LORAN-1950 is 599.2 feet, $117^{\circ}-35'$ from PAS, and 670.0 feet, $164^{\circ}-33'$ from MOR. PAS is a 3-1/2" brass disk at the top of a 1-1/4" pipe set in concrete extending about 8" above ground. MOR is also a brass disk set in concrete flush with the ground. The relative locations of LORAN-1950, PAS and MOR are shown on Drawing No. 607, enclosed.