

~~SECRET~~

10553/88

SANDUR

UNCLASSIFIED

1

Classification cancelled or changed to

COMDT OAN 0049

authority of 1963
EON 21 19c

(Signature)

G. W. MIZEL

LT USEG
Ship or Station

HQ

S I T E S U R V E Y
R E P O R T

S U P P L E M E N T A L T O O R I G I N A L
S I T E S U R V E Y R E P O R T
(R A I L 3 A L T E R N A T E)

~~SECRET~~

COPY 8

Sandur (Iceland)

INDEX

<u>Title</u>	<u>Pages</u>
General	1-4
Site, Antenna Location & Monuments	5-6
Boundry Description	6
Conditions Affecting Movement Gear to Site	7-8
Site Conditions, Earthwork	9
Foundations	9-10
Features required for Station Modification	10
Utilities	10-12
Fuel Storage	12
Station Complement	13
Antenna 1350' & 625'	13-14
Signal Power Building Modification	14
Climatology & Oceanographic	14-15
Construction Force Conditions	15
Recommendations	15-16

SECRET

General

The site survey party arrived at Copenhagen, Denmark 3 August, 1962. The senior member of the party was briefed by Commander C. Olson regarding political, construction and general aspects relative to the project. Instructions were received regarding required courtesy calls in Reykjavik and Keflavik. The party arrived in Reykjavik, Iceland 5 August 1962.

Mrs. Briggs of the U. S. Embassy was contacted in order to arrange courtesy calls with interested Embassy personnel. Since 6 August was an unofficial business-man's holiday in Iceland, the Embassy was not open for business, therefore arrangements were made for Embassy courtesy calls on Tuesday, 7 August 1962.

Major Baden, USAF of the Icelandic Defense Force (IDF) at Keflavik was contacted and conferences were arranged with interested U. S. Armed Forces personnel on Monday 6 August 1962. Commander Anderson, the regular liason officer of the Icelandic Defense Force Council was on leave at the time.

The initial conference on 6 August consisted of a briefing by IDF staff personnel regarding project aspects under cognizance of IDF. Additional IDF staff personnel were briefed relative to the mission of the site survey party. Major Baden stated emphatically that all construction would have to be effected through the facilities of the Icelandic Prime Contractor (IPC). Subsequent conferences with Icelandic Postal-Telephone-Telegraph (PTT) personnel indicated a strong desire on the part of that Government Agency to effect construction, however PTT officials stated that construction as per their understanding was to be accomplished by IPC. Defense treaty agreements between the governments of the United States and Iceland require all defense construction on "agreed treaty areas" to be by IPC. That treaty clause according to IDF is mandatory.

The area of the existing Sandur Loran Station is one of the "agreed areas", although the property, including the property required for new construction is under the direct control of PTT.

Major Baden after the briefing, arranged for an afternoon meeting with Captain Brown USN & Commander J. A. Arn, USN of the ROICC office. During the process of the conference Rear Admiral W. C. G. Church, DIRLANTDOCKS and CDR Bensei, Chief Design Section, DIRLANTDOCKS, NORFOLK, who were on an inspection trip in the area arrived to attend the conference.

General aspects relative to the proposed station changes were outlined and conference personnel briefed as to anticipated accomplishments of the site survey party. Lantdocks personnel were of the belief that the station was to be designed by their agency. Conference personnel were advised that the Coast Guard would design the station and procure the tower. Additionally it was requested that contract administration be effected through local channels in Iceland.

Since construction by IPC appears mandatory contract administration would be effected through the Resident Officer in Charge Construction (ROICC) office, since they are the only contracting agency with IPC. Conference personnel requested a briefing upon completion of the site survey.

A meeting scheduled with the Naval Comptroller Shipping officer in Reykjavik for 6 August was rescheduled for 7 August because of the extensive time required with Keflavik officials.

On 7 August at the request of the Ambassador, the Honorable Mr. Penfield, LCDR L. M. Greig briefed the Ambassador relative to aims and objectives of the site survey. The Ambassador was advised of courtesy calls to be made to Mr. Briem, Director General of PTT and Mr. S. Thorkellson Assistant Director and Chief Engineer of PTT. The Ambassador specifically requested that the discussions and briefing be conducted in a frank manner.

The subsequent briefing for PTT officials was conducted in the manner requested by the Ambassador but within bounds of security classification. Both the Ambassador and PTT officials requested a return briefing upon completion of the survey.

The party then proceeded to Sandur arriving 8 August 1962 and completed the survey on August 17, 1962, returning to Keflavik that date.

A return briefing conference was held with IDF personnel and ROICC personnel. A plot plan of the proposed construction less topography was furnished IDF officials. Commander Anderson telephoned the Icelandic Minister of Defense advising him of the survey status and was advised by the Minister that approval of the project was anticipated at a Defense Council Meeting to be held on about 28 August 1962. Further discussions with ROICC staff revealed that their office will act as contracting agency.

ROICC personnel desire information relative to project funding for inclusion in the IPC budget presently being formulated for next year.

Unfortunately, the Ambassador was not in Reykjavik upon return of the survey party, however, Mr. Denis, the acting DCM was advised of the arrival of the party. He stated that a written memorandum of the survey party's work would be most acceptable to the Ambassador.

Mr. Thorkellson of PTT was briefed on August 18, 1962 and a copy of the plot plan delivered to him. In addition, various drawings were furnished his office for general information. These are as follows:

- (a) ITT 1087489
- (b) ITT 107653
- (c) ITT 1087782 (Loran C Typical Station)
- (d) CG 1074
- (e) Stainless Inc. drawings showing 1350 foot tower elevation & plan view

Personnel contacted in Iceland who are cognizant of the project are as follows:

U. S. Civilian Personnel

Ambassador Penfield, U. S. Embassy, Reykjavik
Mr. Val Johnson, DCM, U. S. Embassy, Reykjavik (Not contacted but cognizant of project)

Icelandic Government Officials

Mr. G. Briem, Director General PTT
Mr. S. Thorkellson, Assistant Director & Chief Engineer PTT

Military

Rear Admiral W. C. G. Church, DIRLANIDOCKS
Captain Brown, USN, ROICC office
Lt. Colonel Reed, USAF, J5, IDF
Commander J. A. Arn, USN, CEC, ROICC office
Major Baden, USAF, IDF
Major Tolbert, USAF, IDF
Lt. Bookout, USCG, SANDUR STATION
Lt. Balding, Naval Comptroller Shipping Office, Reykjavik

It is recommended that declassification of the project be considered. All Personnel questioned relative to declassification were in favor, including PTT officials. Commander Anderson (IDF) was asked to determine the feelings of the Defense Ministry of Iceland relative to declassification. IDF officials are to advise the Commandant USCG via CGLONE.

SECRET

A. Site and Antenna Location

1. Local Site Name Existing Loran C Station at Sandur, Iceland. The proposed new 1350 foot tower location is as shown on U. S. C. G. drawing 107633.

2. Geographic Coordinates of 1350 foot tower.

a. Exact geographic coordinates have not been computed, however the coordinates of the existing 625 foot tower are known and the proposed tower located on drawing 107633.

b. The proposed tower location "Point A" was oriented to the existing tower by measurement of lines (A-Base line Extension BE) and (BE-Loran C). Measurements were obtained by subtense bar and T-2e Theodolite. Estimated error in measurement is calculated to be as follows:

Line A-BE (1.37")

Line BE-Lor C (3.34")

Angle A-BE-Lor C (error less than 3 seconds)

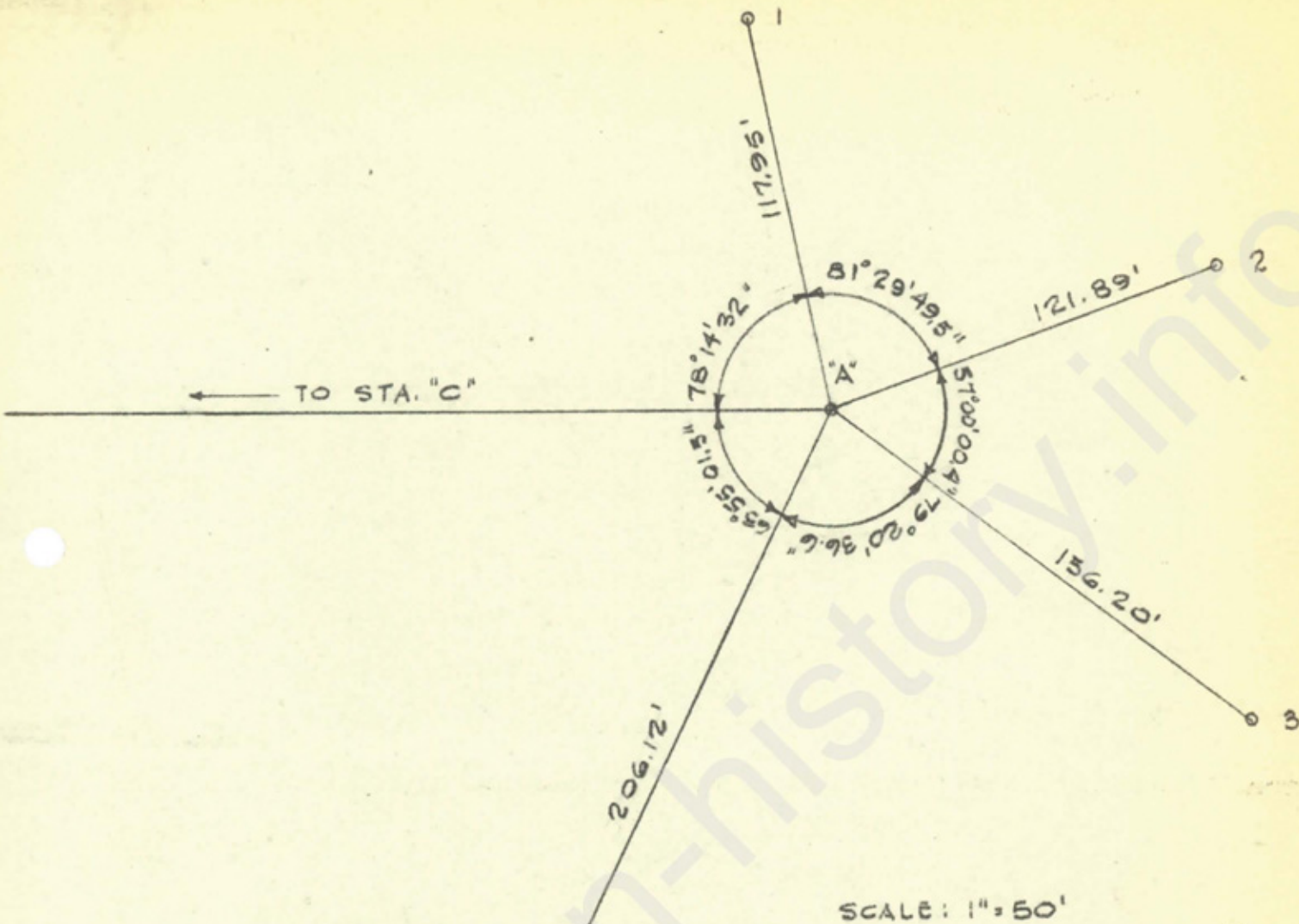
c. Exact positioning of the new tower by the U. S. Hydrographic office is recommended since their measurements by use of theodolite provide errors of 3 parts per million.

d. The Icelandic equivalent of FAA proposed no objection to location of the 1350 foot antenna in the approach zone to the alternate runway (See drawing 107634).

3. Location Monuments

a. The control traverse for development of guy orientation & topographic features consists of ten (10) traverse stations (A-J inclusive). Stations are oriented on guy lines \pm 6 inches error transversely to guy lines.

b. The proposed antenna site is witnessed by four monuments consisting of two foot pipe sections imbedded in concrete bases. Orientation of monuments is as shown below.



4. Boundry Description 4

The area required for the proposed tower is as shown on drawing 107633. Approximate boundry markers have been positioned to define the extent of the ground system. The markers are shown as M₁, M_{1'}, M₂, M₃, M₄.

The Icelandic Defense Force Council, has been advised that required property for new construction would require all that land with a circle of 1600 foot radius from traverse station "Point A", from the northern point of the circle intersection with the shore line thence circumferentially around to that point to the southwest where the circle intersects the existing fence.

Since all the surrounding land is under the jurisdiction of the Ministère of Communications (Direction Générale Des Postes Et Des Télégraphes D'Islande) (PTT), IDF officials, have indicated that the above property description should suffice.

5. Photographs (Refer to Appendix A)

a. Panoramic

1. View from Antenna site
2. View from Station J
3. View from Station H

b. Aerial

No aerial photographs were taken

c. Surface

1. General Views along lines of guy orientation
2. General Views of signal power building interior

B. Conditions affecting Gear Movement to Site

1. Harbors

A harbor suitable for coastal Icelandic logistics vessels exists at the town of Sandur, about eight (8) kilometers from the site.

2. Beaches

A gentle sloping beach in Sandur could accommodate landing craft of LSM type if required.

3. Mobile Equipment Requirements

All mobile equipment required for construction and moving gear from Sandur to the site will be provided by the Icelandic Prime Contractor (IPC).

4. Transportation of equipment to site

a. Shipping from U. S.

1. Shipment of gear from the U. S. can be effected through MSTS, who has contractual arrangements with Moore McCormack. All equipment will be shipped from a water terminal point in the U. S. presumably Brooklyn, N. Y. to the U. S. Navy Water Terminal Branch, Reykjavik, Iceland. All equipment must be marked for transshipment to Sandur Loran Station.

2. An alternative suggestion proposed by Commander J. A. ARN, CEC, USN, ROICC office, was to deliver all equipment FAS to Brooklyn, N. Y. for shipment by Icelandic Prime Contractor.

3. Representatives of the Naval Comptroller Shipping Office (NCSO) in Reykjavik have indicated that they should be notified at least one month in advance of the shipment date. Cubic measure, weights & critical lengths should be furnished.

b. Transshipment from Reykjavik

1. Two **alternatives** are available namely coastal vessel shipment or trucking to the site. The preferred method appears to be coastal vessel transshipment, since overland transportation would entail considerable local trucking facilities over volcanic rock surfaced roads.

2. The **transshipment** problem should be resolved at a later date, when the ROICC office, IPC and NCSO can be furnished cubic measurements and weights of gear involved. At the present time **transshipment** by coastal vessel with offloading by IPC at Sandur appears to be the solution. IPC would also transport the equipment to the site from Sandur. The road from Sandur to the site is suitable for vehicular transportation of equipment.

3. The U. S. Navy has a contract with the Iceland Steamship Company, which firm will provide stevedoring and terminal storage services. Two weeks storage is available in warehouses at no additional cost.

4. Coastal shipping would be effected through a **transshipper Gudmundur H. Oddson** through use of the M/S Icefish. In addition a LCT or LSM type craft operates from AKRANES, Iceland, and is owned by the PORT of AKRANES. Suitable arrangements could be made to utilize that vessel. The vessel however, handles cement from the cement plant at AKRANES and presumably is scheduled heavily.

5. The NCSO recommended that a Coast Guard representative be made available in Reykjavik to supervise offloading and checking of equipment.

c. Vehicles and Boats for Station

Since Sandur is an existing Loran C station no supplemental vehicles are required because of the proposed construction.

d. Air Transportation

Although an existing volcanic gravel surfaced air strip is near the site, the use of air transportation for equipment is not recommended. All flights are VFR with a runway length of about 3000 feet.

E. Site Conditions

1. Topography (Refer to drawing 107635.)

Topographically the selected site is the most suitable for construction. Location of the antenna to southward of the road would have presented major construction difficulties because of the volcanic nature of terrain irregularities.

Vehicular traffic can traverse the entire extent of the area to the northward of the road without grading.

2. Vegetation and Cover

No vegetation of note exists on the new antenna site except scattered grassy plots. Cover consists of sand varying in depth from a few inches to several feet. The rock formation in the area is indicative of volcanic origin with surface outcropping of porous volcanic rock. Underlying rock is igneous presumably basalt and of dense composition. Throughout the site volcanic rocks protrude above the sand five to ten feet in height.

3. Earthwork required

A depression exists forty feet to the SW of the antenna site of dimensions about 200' X 150'. Another depression exists to the westward of the antenna site in the general area of the proposed transmitter building. Estimated quantities of fill required for these depressions are as follows:

Depression to SW of Antenna 7800 Cubic Yards

Depression around transmitter building 1600 Cubic Yards

4. Foundations for Structures

a. Tower pier and transmitter building

Bearing capacity tests should be made at the proposed antenna & transmitter building site this construction season. Borings to a depth of 20 feet under the proposed antenna pad should be sufficient to determine depth of unconsolidated layer and whether voids exist in proposed area. Assuming underlying rock to be of basalt, bearing capacity is estimated to be a minimum of 20-60 tons per square foot.

Foundations for the existing station were designed for a subgrade bearing value of 3000 psf. Bottom of footings were carried 3'-0" below finished grade except where sound rock existed less than 2'-0" below grade, in which case the bottom of the footing was carried 2'-0" below finished grade. If sound rock was not encountered 3'-0" below grade the footing was carried to a maximum depth of 6'-0".

The above criteria for the foundations of the transmitter building is acceptable except that bearing value may be increased.

The pad for the tower pier should be carried to sound rock.

Guy anchors should be gravity type although top loading anchors could be rock anchor type as individual anchor sites dictate. The top loading anchoring positions through stations I & J are located in an topographically irregular area and could be suitable for rock type anchors.

5. Local Sources of Construction Materials

Since IPC will construct the station's additional features, materials required for construction will be obtained by them. A cement factory is located at AKRANES, ICELAND; therefore, importation of that material will not be required. Other materials can be procured from U. S. sources, this phase to be a function of the ROICC office. Sand & gravel are available in Iceland.

F. Features required for Station Modification (Refer to following paragraphs for discussion)

- a. 1350-foot tower, guys, tower pier and anchors
- b. 1500-foot ground system
- c. Transmitter building (approximately 82' x 31')
- d. Road to transmitter building & to anchors
- e. Quarters building (maximum 6 unit apartment)
- f. Additional generator capacity
- g. Electronics Equipment

1. Piers or Wharfs

No such facilities are required.

2. Utilities

a. Potable water

The existing station obtains potable water from a well source located about one mile from the station. The water is piped to a reservoir tank for storage

and subsequent distribution to the station. No additional potable water supply will be required; however, potable water to a proposed apartment building will be required. No requirement exists for potable water piping to the proposed transmitter building.

b. Sewage

System is adequate for the existing station. The proposed quarters addition will be tied to the system. No sewage disposal system is required for the transmitter building.

c. Garbage Disposal

No additional features required.

d. Power

1. Existing generators

Three (3) Caterpillar, Diesel Generators furnish power for the existing station. Generator specifications are as follows:

Model - D397D, 120/208 Volts, AC, Three (3) phase, 1200 RPM,
60 cycle, four (4) wire, 375 KVA, 300 KW, .8 PF, 1040
amps.
Exciter 2400 RPM, 125 Volts, 40 amps.

2. Station loads

a. Meter readings were taken indicating station loads as follows:

0700 - Total Load 140 KW
0100 - Load 120 KW predominately electronics load

b. Station History indicates that the average winter load is 190 KW and that the maximum load encountered has been 200 KW.

c. Theoretical analysis of existing electronics loads is estimated to be:

LORAN C - 95 KW
LORAN A - 33 KW (normal)
Communications - 1 KW
Total Electronics 128 KW

Comparison of station records and estimated electronics loads indicates that the domestic load can be assumed to be a maximum of 80 KW.

d. Since Sandur is to be an A/C Station with C aspect double pulsed, the anticipated normal station load is estimated as follows:

LORAN C (Double Pulsed)	- 766 KVA
LORAN A	- 35 KVA
Communications (Max.)	- 1.5 KVA
Domestic (Max. including new 6 unit apartment)	- 115 KVA
TOTAL	<u>917.5 KVA</u>
	or 826 KW

3. It is recommended that the existing diesel generators be utilized, supplemented by two (2) new Caterpillar units rated at 350 KW. The rating of the existing plants can be increased by rack setting changes to 350 KW. Therefore, five 350 KW units would be available, three plants operated continuously in parallel. Preliminary inquiries indicate this to be an economical and acceptable solution. In case of failure of one generator the remaining two generators in parallel would adequately handle the required electronics load.

Required electronics load	- 720 KW
Capacity two generators	- 700 KW

4. New generators to be installed should provide 120/208 volts output for compatibility with existing plants. Transformers will provide voltages required at the transmitter building.

5. Adequate space is available in the generator room for installation of one 350 KW generator. The other generator would have to be installed in the adjoining vehicle maintenance area. Since the station has a double garage, vehicles can be repaired in the garage. Refer to Appendix A for arrangement.

3. Fuel Storage

Six (6), 30,000 gallons fuel oil tanks are installed at the station. Fuel consumption with recommended generators is estimated to be about 65 gallons per hour for three units. Since fuel delivery can be anticipated at least twice annually, fuel storage should be increased to provide at least 220 days supply. This would require five (5) additional 30,000 gallon tanks for a storage capacity of 330,000. Prior to committing such additional tank capacity, additional contacts should be made in Iceland to determine whether fuel delivery could be assured more than twice annually.

4. Six (6) unit apartment

a. Existing complement

Station Master	- 1 (Icelandic)
Electronics Technicians	- 9 (Icelandic)
Diesel Mechanics	- 2 (Icelandic)
Laborers	- 4 (Icelandic)
CG Liason Officer	- 1
ETC, USCG	- 1

b. Complement increase

Four additional Electronics type employees plus one additional diesel mechanic with electrical background are recommended.

c. The Increased complement would therefore require the construction of one five (5) unit apartment. Host representatives have informally indicated they anticipate a six unit dwelling.

5. 1350-foot Antenna

a. Orientation is as shown on drawing 107633. Guy profile drawings are enclosed in Appendix A. The tower is located about 1980 feet from the proposed feed through entrance in the signal-power building for control cables. Structural guy orientation was effected to provide minimum interference to the existing 625-foot tower during erection and also minimum interference to the erected 1350-foot tower during disassembly of the existing tower. The proposed location will permit erection of the 1350-foot tower and disassembly of the 625-foot tower with minimum off air time.

b. The guy system of the 1350-foot tower also required orientation in order to provide clearance over an existing road, and adequate length towards the shore to position top loading guy anchors.

c. The ground system for the antenna can extend 1500 feet as required. Radials will cross the road; therefore, burying of the copper wire under the road is advisable. The road is surfaced with volcanic gravel. At the shoreline side of the ground system, radials will have to extend beyond the cliff line to attain 1500 feet. About 150 feet of additional space is available between the cliff line and the waters edge.

6. Existing 625-foot Antenna

Discreet inquiries were made to determine whether PTT officials had a need for the existing 625-foot antenna. If legal considerations permit, it is recommended that the tower be turned over to PTT for their use. A suitable financial agreement for transfer of custody of the tower should be effected.

7. Signal Power Building (Electronics)

An addition to the timer building area of 33' x 35' is recommended to house the new timer room. Since change over from existing equipment to new ITT equipment is desired so as to provide minimum off air time, the additional area is deemed necessary. Refer to Appendix A for arrangement.

8. A road from the signal power building is required. Topography for construction is good. A circumferential road to anchors may be desired for inspection & maintenance.

G. Climatology & Oceanographic Considerations

1. Precipitation, Temperatures

See following pages numbers: 14a, 14b, 14c, 14d

2. Winds

Refer to page 14e.

a. Additional data relative to winds is contained in Army Ballistic Missile Agency Report No. RR-TR-61-8. A review of that report indicates maximum winds as follows for Keflavik, Iceland.

Surface - 34 meters/sec or about 80 mph.
500 meter level - 40 meters/sec or about 90 mph.

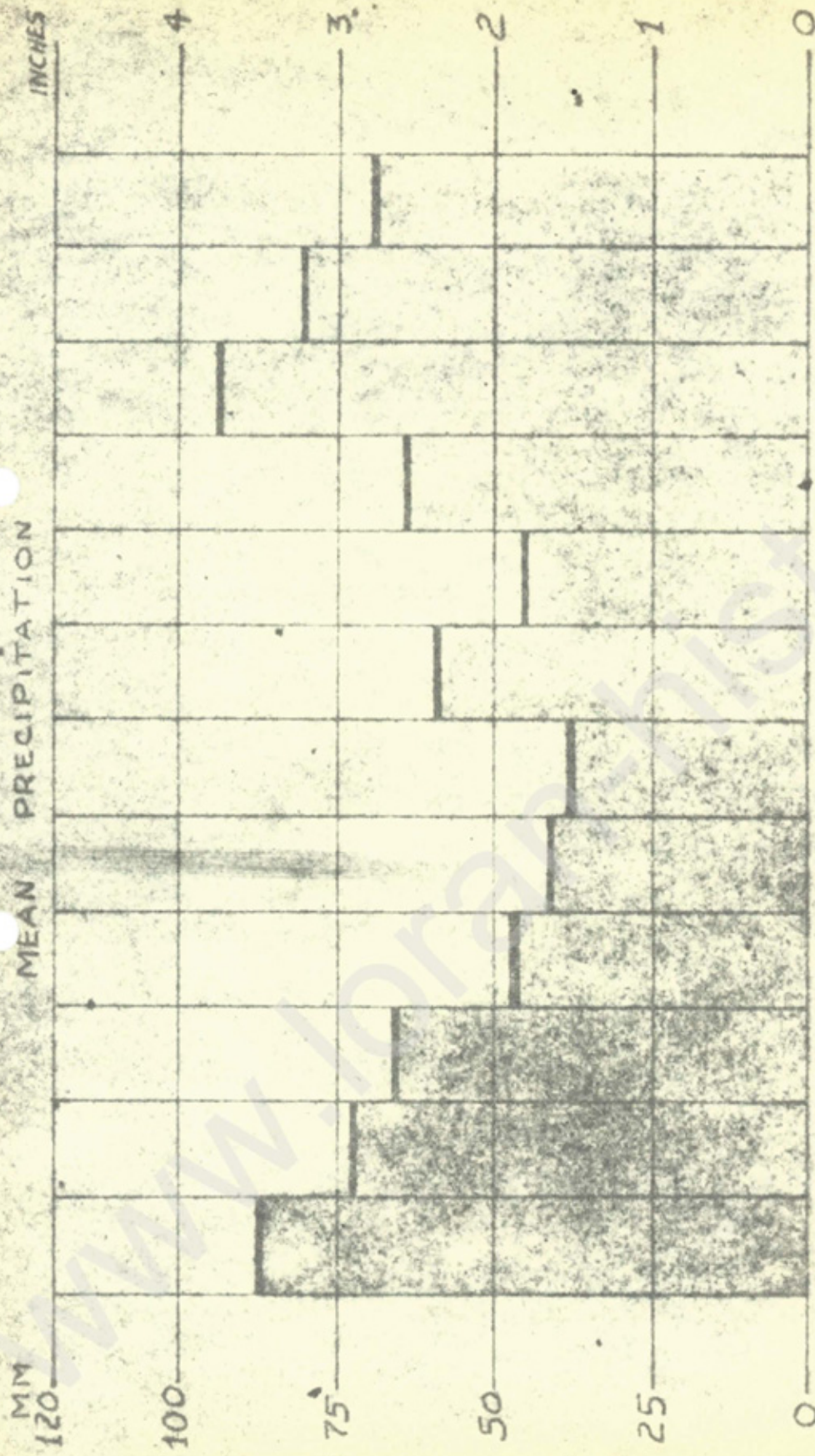
b. The previous site survey report indicated maximum winds as follows:

Operations Sections
Peak Gusts - 60 knots
Civil Engineering Section
Design force of 140 mph.

c. It is recommended that the tower be designed for a maximum wind of 120 mph.

3. Icing

Specific icing information is not available as of this date. Estimates range from zero to one inch radial. Further information is forthcoming via CGLONE on this subject.



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
MIN	47.0	119	5.0	13.6	14.4	18.7	23.6	4.5	3.0	29.6	19.1	23.8
MAX	165.3	136.1	189.6	98.2	83.0	70.7	148.3	97.1	178.0	171.3	225.3	146.9

SANDUR { POS. 64° 55' N - 23° 53' W
 HEIGHT ABOVE M.S.L. 39 FT.
 DATA JAN 1947 THROUGH DEC. 1956

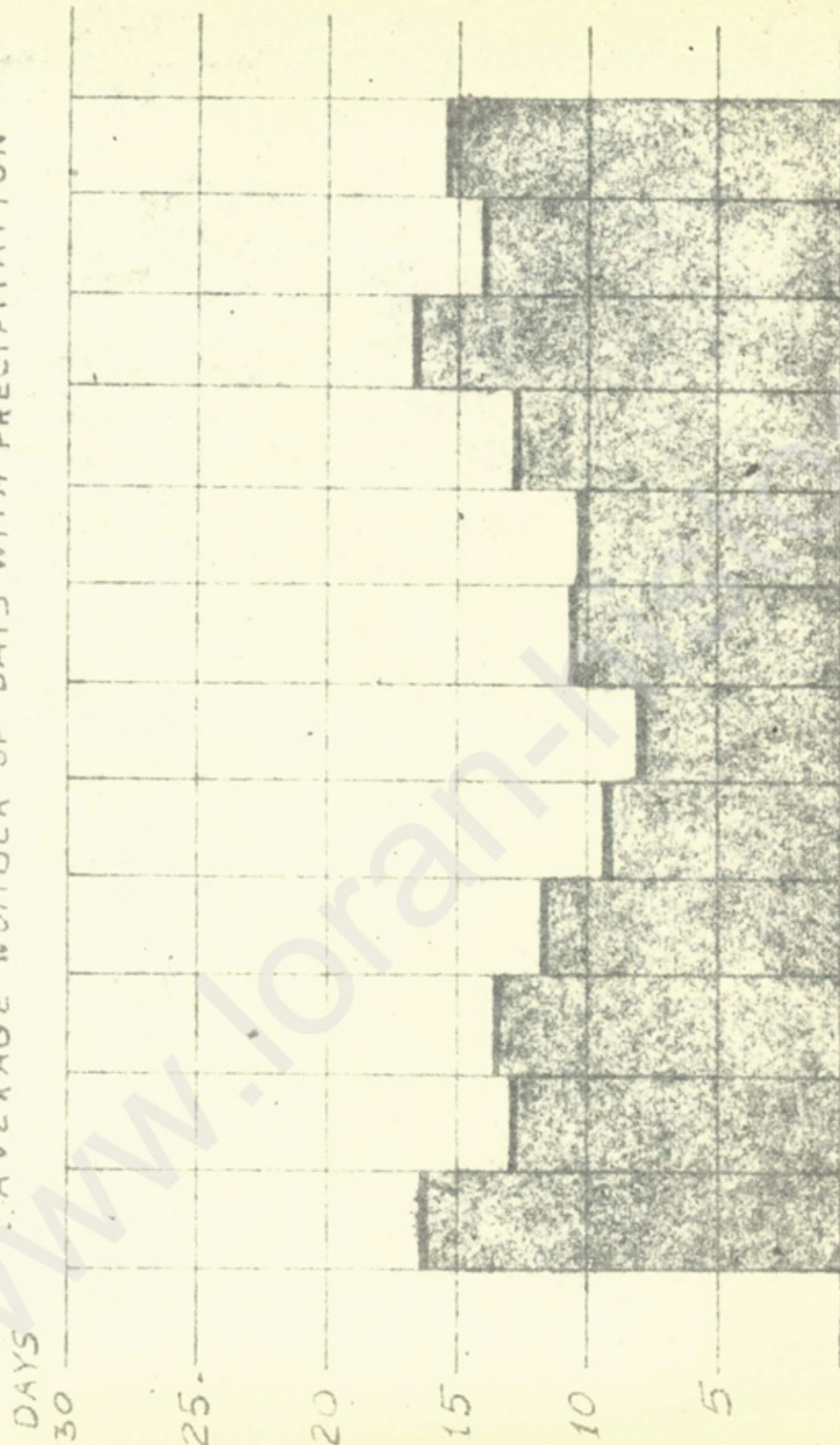
MAX PRECIPITATION
PER DAY

YEAR	DATE	MM
1947	7/18	39.0
1948	2/26	28.0
1949	6/30	28.8
1950	11/6	21.0
1951	10/8	20.3
1952	5/18	26.0
1953	9/27	21.1
1954	2/15	18.9
1955	1/2	15.6

S A N D U R

Position: 64°55'N - 23°53'W
 Altitude: 39' Ft. above M.S.L.
 Data: Jan. 1947 through Dec. 1956

AVERAGE NUMBER OF DAYS WITH PRECIPITATION



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
MIN	9	2	1	6	4	5	3	4	2	10	4	7
MAX	23	19	27	22	14	12	24	21	21	26	25	26

SANDUR

Position: 64°55'N - 23°53'W
 Altitude: 39' Ft. above K.S.L.
 Data: Jan. 1947 through Dec. 1956

SANDUR

LOCATION 64°55'N-23°05'W

ALTITUDE 19 FT. MSL

DATA: 1951 THROUGH 1960

MONTH	% Frequency of wind Direction										Mean wind speed Beaufort Scale	No. of days Wind Speed ≥ Force 9
	N	NE	E	SE	S	SW	W	NW	CALM			
JANUARY	1.8	20.5	23.8	12.3	10.3	21.6	5.7	2.4	1.9		3.8	1.7
FEBRUARY	2.1	23.0	25.3	7.8	8.4	24.3	7.5	2.9	1.2		3.9	1.4
MARCH	3.2	18.3	31.7	12.5	10.0	19.0	2.8	1.3	0.8		3.6	1.1
APRIL	2.7	19.5	27.7	8.9	5.8	20.4	6.7	2.1	2.9		3.1	0.3
MAY	3.6	21.3	29.2	9.5	6.8	18.8	3.2	1.4	6.1		2.5	0.1
JUNE	7.9	17.9	29.4	5.7	4.6	18.3	3.5	3.7	9.8		2.1	0.1
JULY	6.2	21.1	27.3	4.0	3.3	22.3	5.0	4.2	7.1		1.8	0.0
AUGUST	5.0	27.0	31.4	3.9	3.7	17.4	4.3	2.3	5.1		2.5	0.2
SEPTEMBER	3.3	16.7	21.9	10.7	5.9	22.1	4.4	2.1	2.4		3.0	0.1
OCTOBER	1.8	16.5	23.4	14.1	9.9	25.1	5.5	1.7	1.8		3.2	0.3
NOVEMBER	3.2	17.4	28.0	12.2	8.9	22.5	9.2	2.4	0.9		3.9	0.9
DECEMBER	1.9	20.1	29.2	13.3	8.1	19.5	5.5	2.1	0.4		3.7	1.9
ANNUAL	3.4	20.0	27.4	9.6	7.2	21.0	5.3	2.4	3.3		3.1	

NOTE: All wind speeds are given in
Beaufort Scale of wind force.

PREPARED BY:

U.S. Fleet Weather Facility
Keflavik, Iceland

SECRET

4. Earthquakes

A check with Icelandic experts on earthquake tremors indicates that Sandur is outside of the earthquake area.

5. Dust Conditions

The general area around the proposed site for the transmitter building consists of sand covered volcanic rock. All air intakes should provide for filtration of wind blown sand.

6. Oceanographic Considerations

None prevalent.

H. Conditions Affecting Construction Force

1. Construction Season from April through October.

2. Construction Camp

a. A construction camp exists to the southward of the station along the roadway. This camp is the property of IPC and will be available for the construction force. Any additional facilities required will be provided by IPC.

b. Arrangements have been made by PTT with IPC to have the camp removed after completion of the station construction.

c. An overhead power line exists along the southern side of the road solely to provide power to the IPC construction camp. This transmission line will be removed after completion of the station construction.

I. Miscellaneous

1. Telephone facilities

A buried telephone line exists to the northward of the roadway. The line will be below the ground system, therefore no adverse effects to the telephone line are anticipated.

J. Recommendations

1. That the project be declassified.

2. That the Commandant (ECV) officially advise the Bureau of Yards and Docks that the Coast Guard will design the facility, and obtain authority for the ROICC in Keflavik to act as contract administrator.

3. That the ROICC office be assigned the design responsibility for the apartment unit. The actual unit should be basically similar to the existing apartments. Drawings for these units are available in Iceland.

4. Furnish the ROICC office with funding data relative to construction for IPC budgetary purposes.

5. After arrangements have been completed with BU Y&D that further liason with the ROICC office, IDF and Icelandic officials be maintained to insure continuity of the project and transfer of applicable information.

6. That IPC be authorized to make exploratory borings and bearing tests this construction season.

7. That a copy of this report be furnished Ambassador Penfield for his information.

8. That CG Lone be advised to arrange for the training schedule for electronics technicians.

SECRET



PANORAMA FROM J.

APP. . . . A



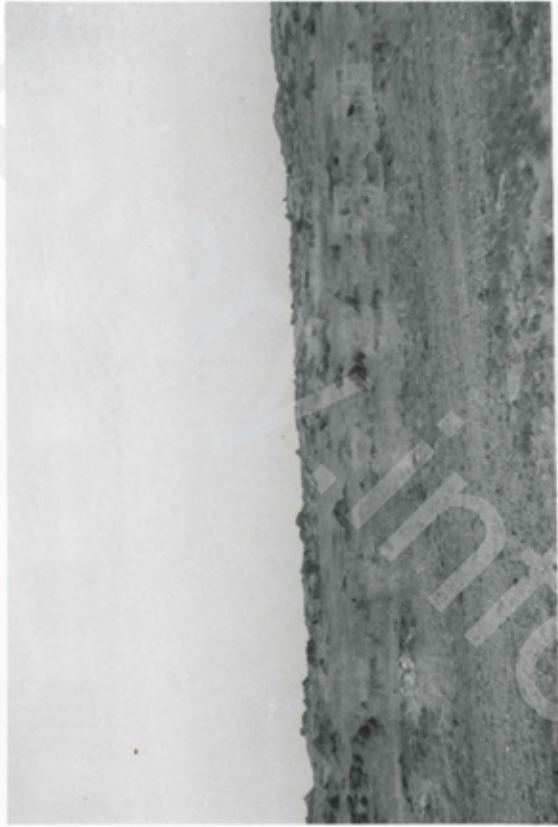
PANORAMA FROM ANTENNA



AT "B" TOWARD ANTENNA



AT "B" 180° FROM ANTENNA



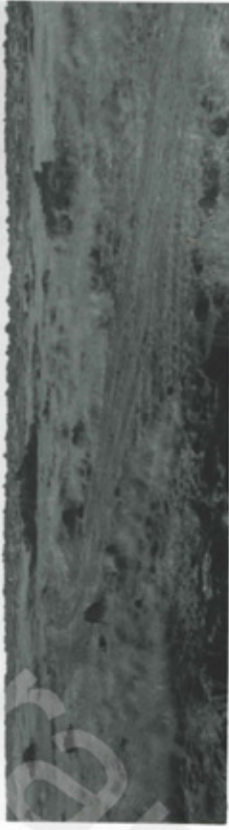
AT "C" TOWARD ANTENNA



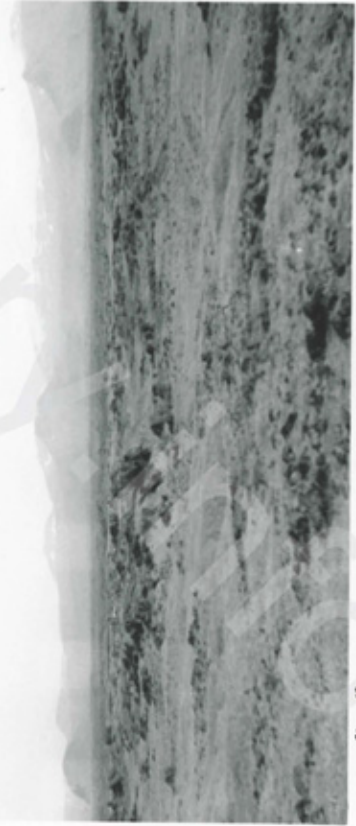
AT "C" 180° FROM ANTENNA



AT "D" TOWARD ANTENNA



AT "D" 180° FROM ANTENNA



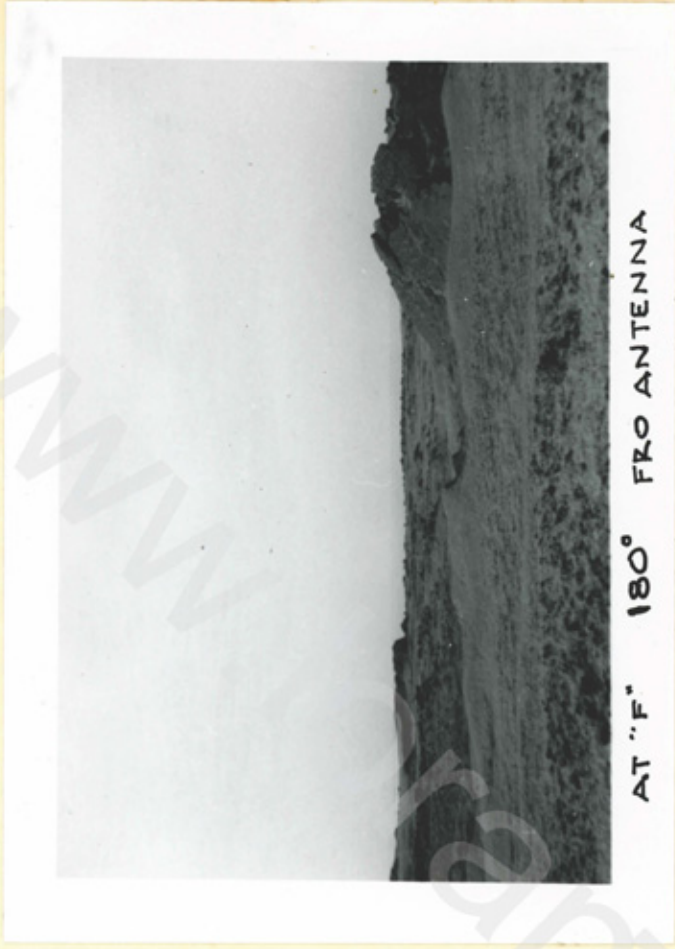
AT "E" TOWARD ANTENNA



AT "E" 180° FROM ANTENNA



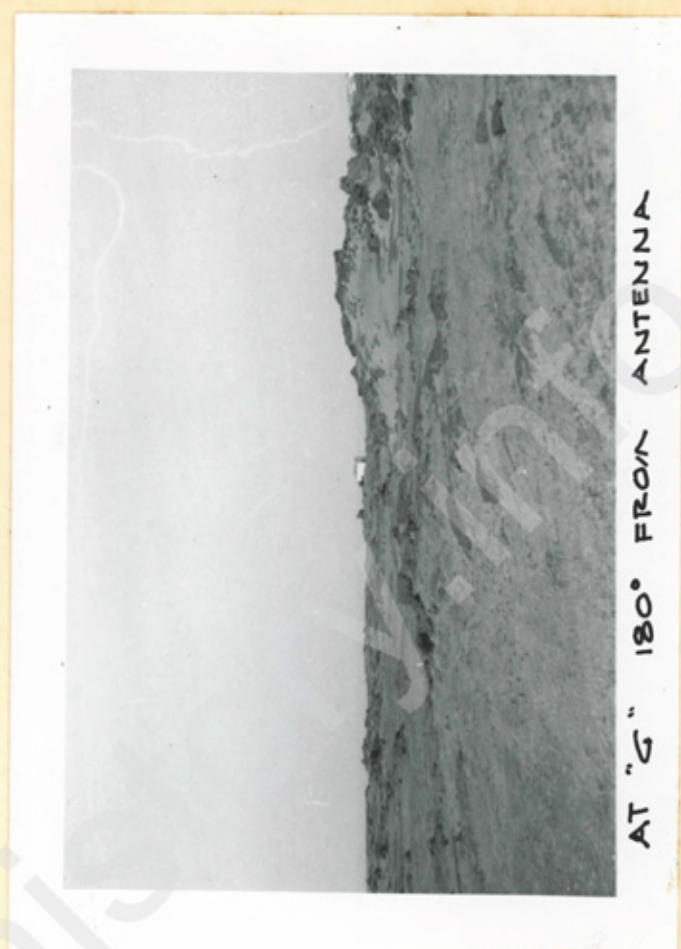
AT "F" TOWARD ANTENNA



AT "F" 180° FROM ANTENNA



AT "G" TOWARD ANTENNA



AT "G" 180° FROM ANTENNA



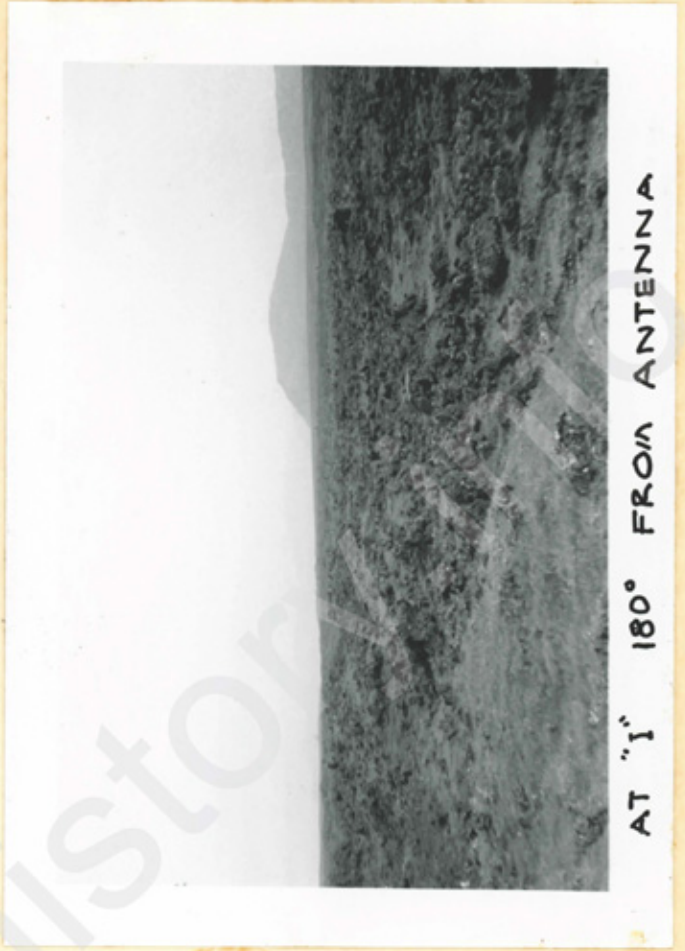
AT "H" TOWARD ANTENNA



AT "H" 180° FROM ANTENNA



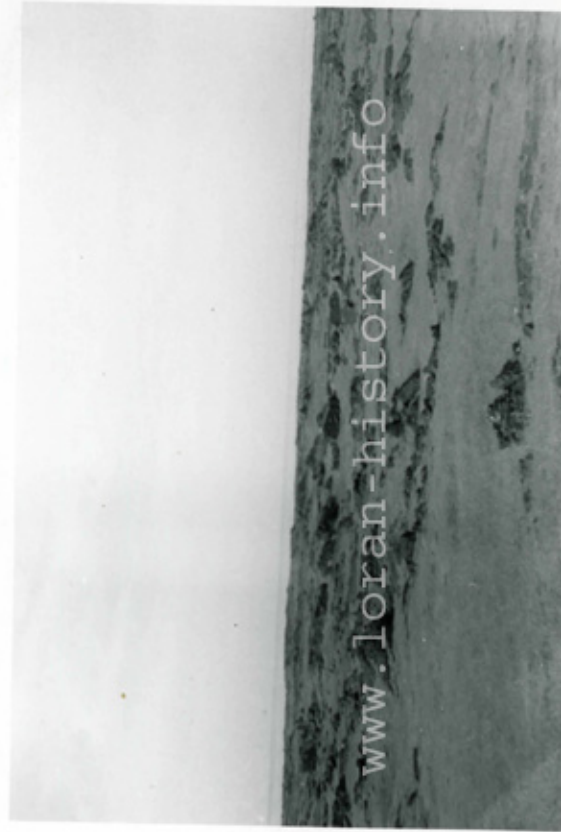
AT "I" TOWARD ANTENNA A



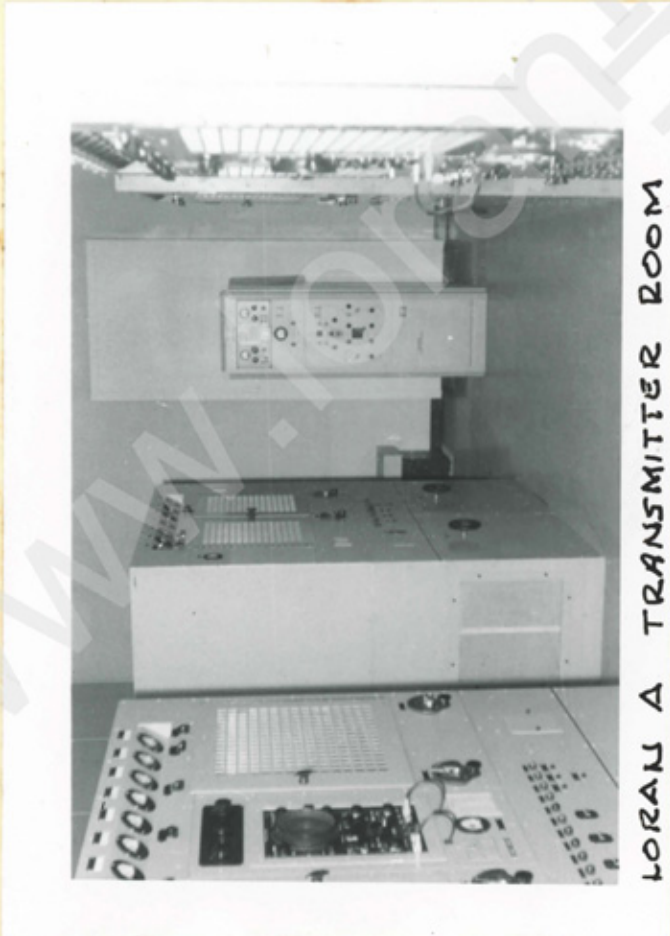
AT "I" 180° FROM ANTENNA



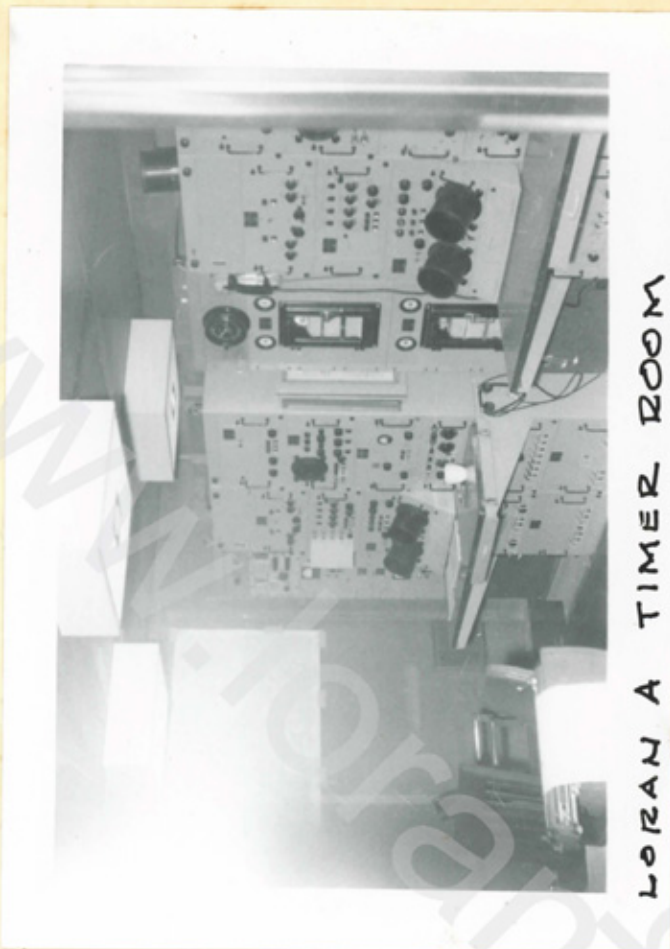
AT "J" TOWARD ANTENNA



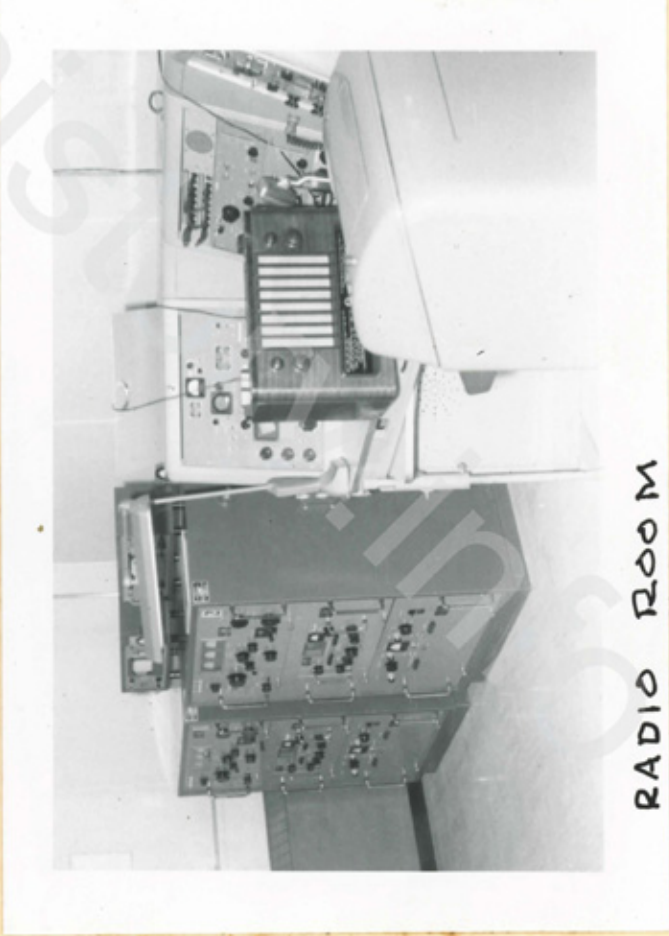
AT "J" 180° FROM ANTENNA



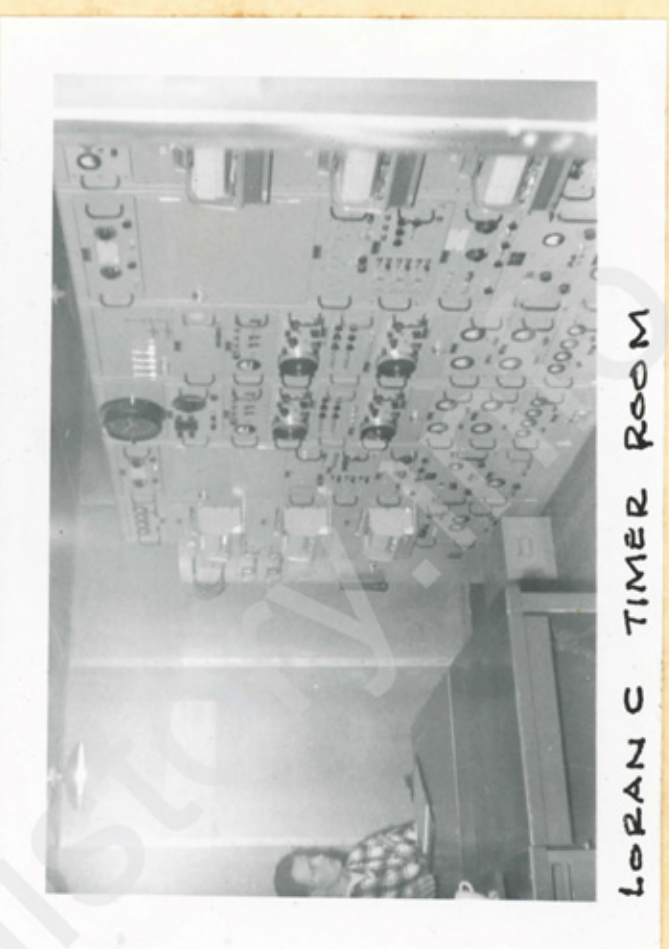
LORAN A TRANSMITTER ROOM



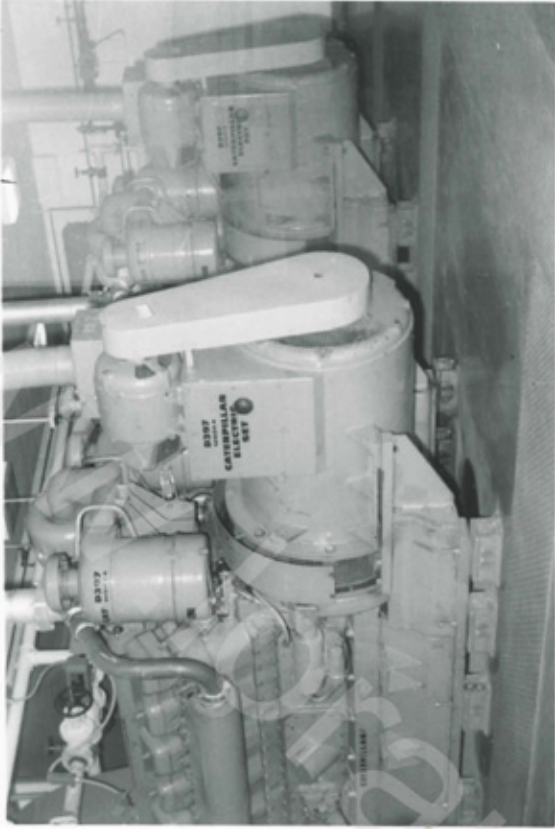
LORAN A TIMER ROOM



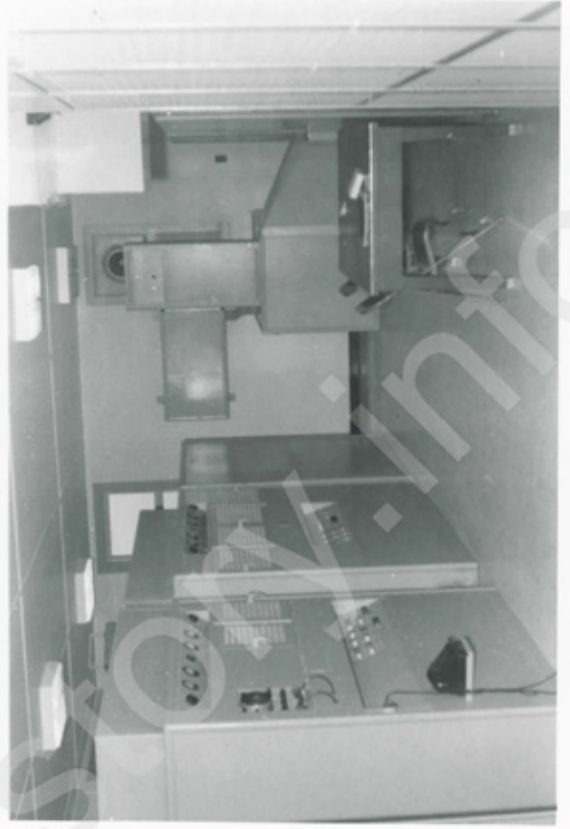
RADIO ROOM



LORAN C TIMER ROOM



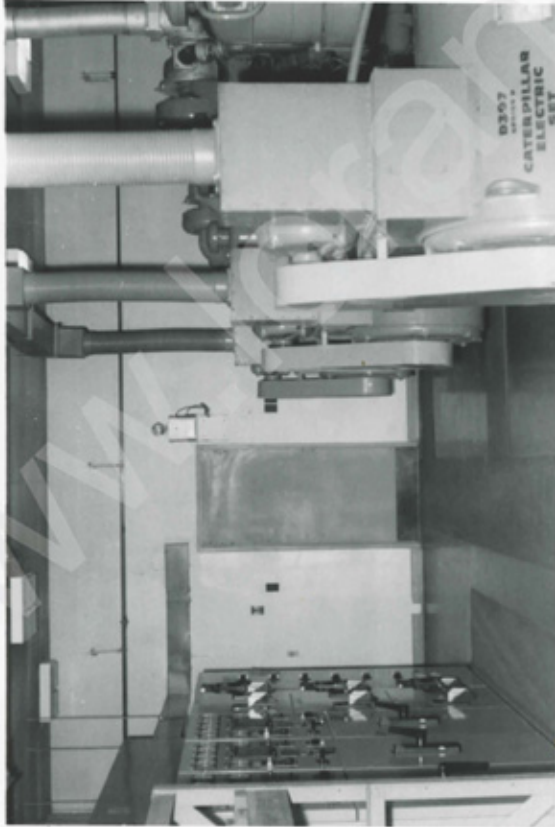
GENERATOR ROOM



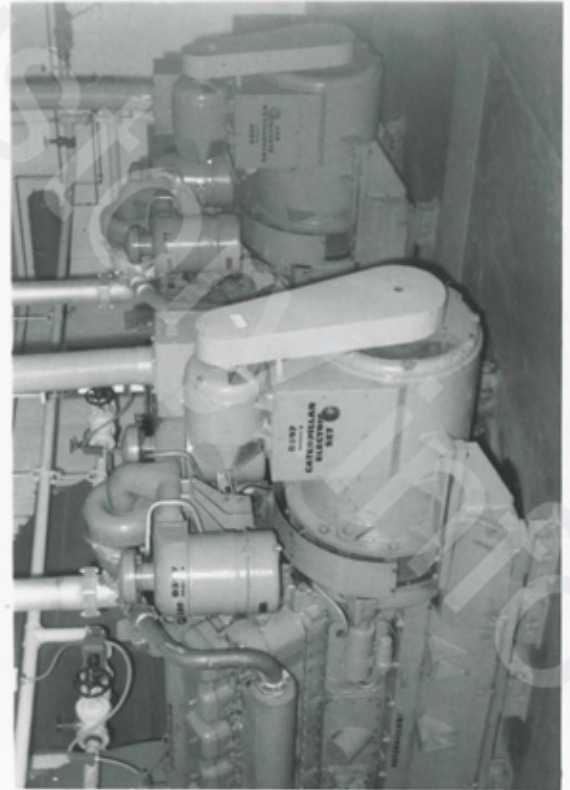
SIGNAL POWER BLDG.

XMTR BLDG

APP. A

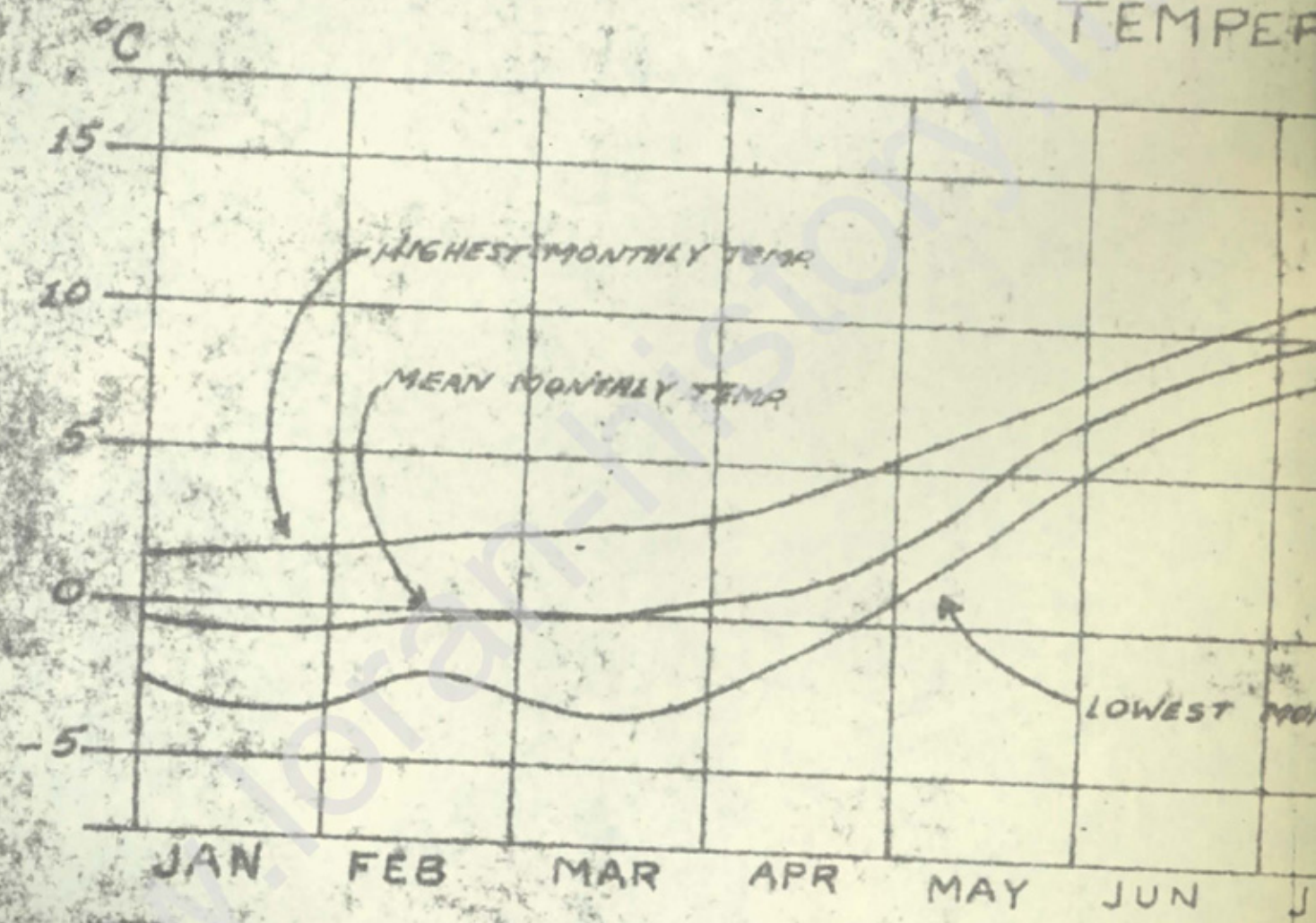


GENERATOR ROOM



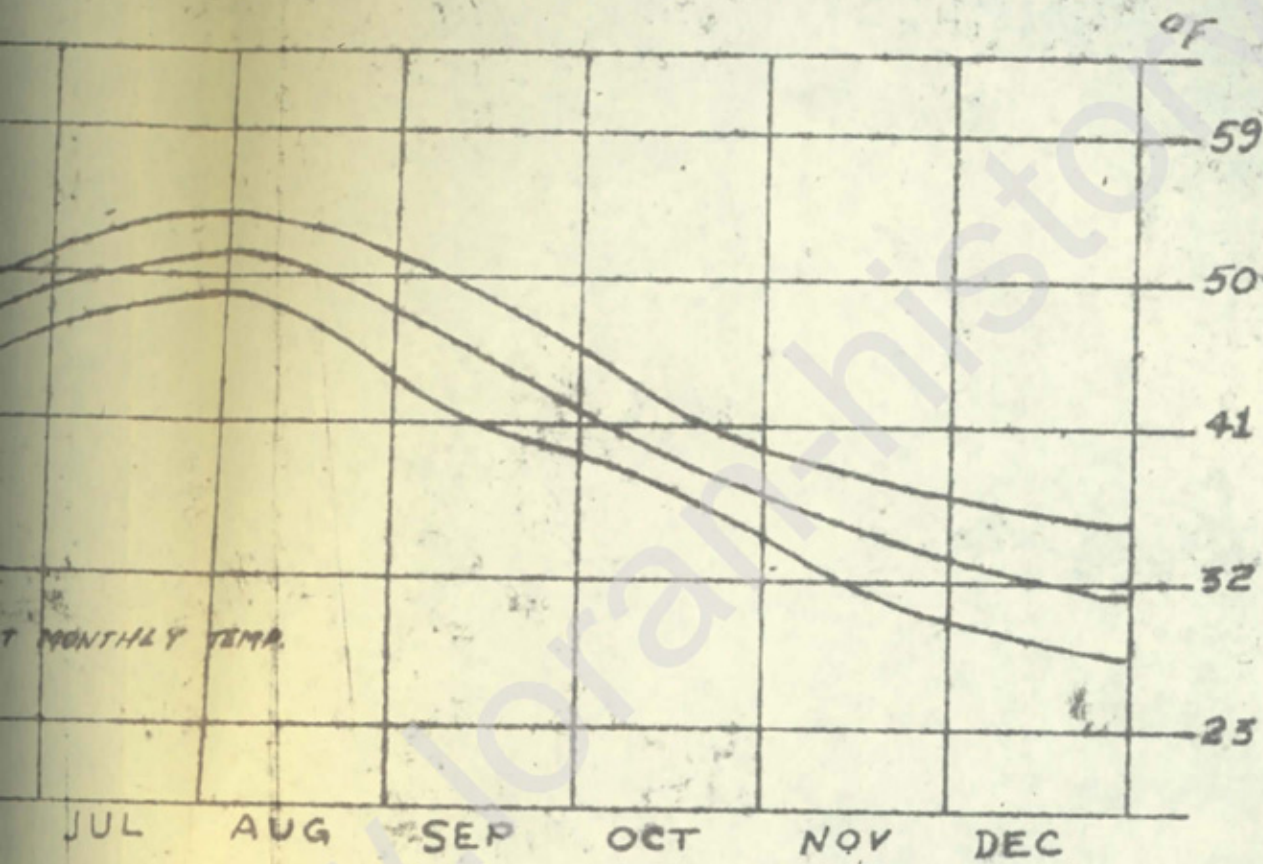
GENERATOR ROOM

TEMPERATURE



- NOTES:
1. Mean monthly temperature is the mean temperature for period of records.
 2. Highest monthly mean temperature is mean temperature of warmest month for period of records.
 3. Lowest monthly mean temperature is mean temperature of coldest month for period of records.

TEMPERATURE



SANDUR

Position: 64°55'N - 23°53'W

Altitude: 39 FT. above M.S.L.

Data: Jan 1947 through Dec. 1956

SECRET