GENERAL INFORMATION

RELATING TO THE

LORAN TRANSMITTING STATION

CAPE CHRISTIAN

BAFFIN ISLAND NWT CANADA

COMMANDER
FIRST COAST GUARD DISTRICT
BOSTON, MASSACHUSETTS

U. S. COAST GUARD
TREASURY DEPARTMENT

UNITED STATES COAST GUARD

ADDRESS REPLY TO:
Commander,
First Coast Guard District
1400 Custom House
Boston 9, Massachusetts

1 June 1957

LETTER OF PROMULGATION

1. Since the establishment of Cape Christian Loran Transmitting Station, Baffin Island, NWT, Canada, there has existed a need for published information concerning the station by the Commander, First Coast Guard District, certain Coast Guard units and other military commands, relative to the operation, administration, logistic support and other matters related to the station.

2. The attached publication entitled GENERAL INFORMATION RELATING TO CAPE CHRISTIAN LORAN TRANSMITTING STATION was prepared by LTJG Edwin H. Daniels, USCG., Commanding Officer of the station from August 1956 to August 1957. The publication contains much general information concerning the station, and provides for continuity of knowledge relating thereto, which often becomes obscured because of extreme isolation and frequent transfer of personnel.

3. GENERAL INFORMATION RELATING TO CAPE CHRISTIAN LORAN TRANSMITTING STATION has been reproduced for distribution to those commands having an interest in the station, and is herewith promulgated as a First Coast Guard District publication.

4. It is requested that errors and omissions noted, as well as suggestions for improvement, be addressed to Commander, First Coast Guard District, 1400 Custom House, Boston 9, Massachusetts

E. J. Roland

E. J. ROLAND
REAR ADMIRAL, U. S. COAST GUARD
COMMANDER, FIRST COAST GUARD DISTRICT

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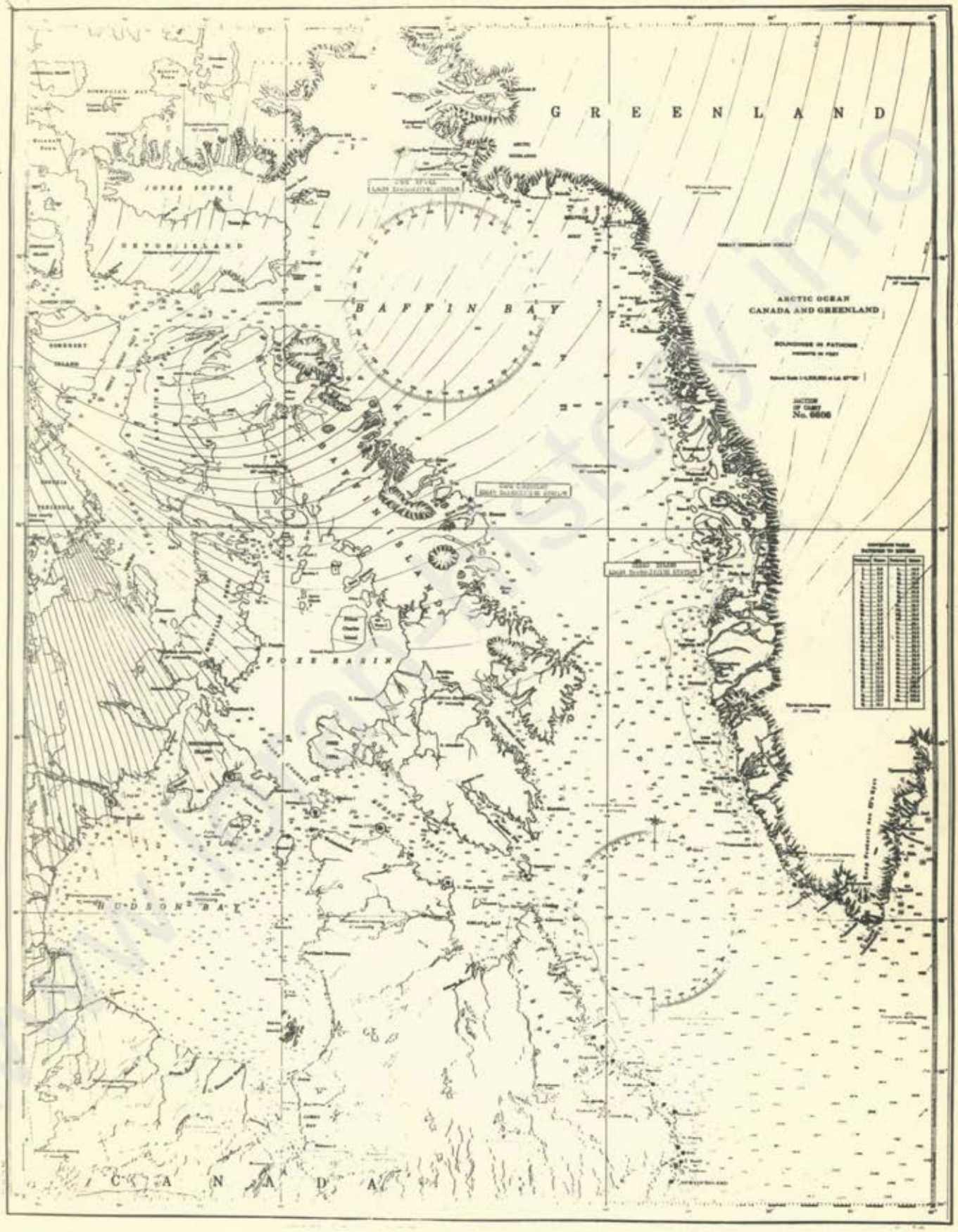
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ARCTIC OCEAN
CANADA AND GREENLAND
No. 6606
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HUDSON BAY
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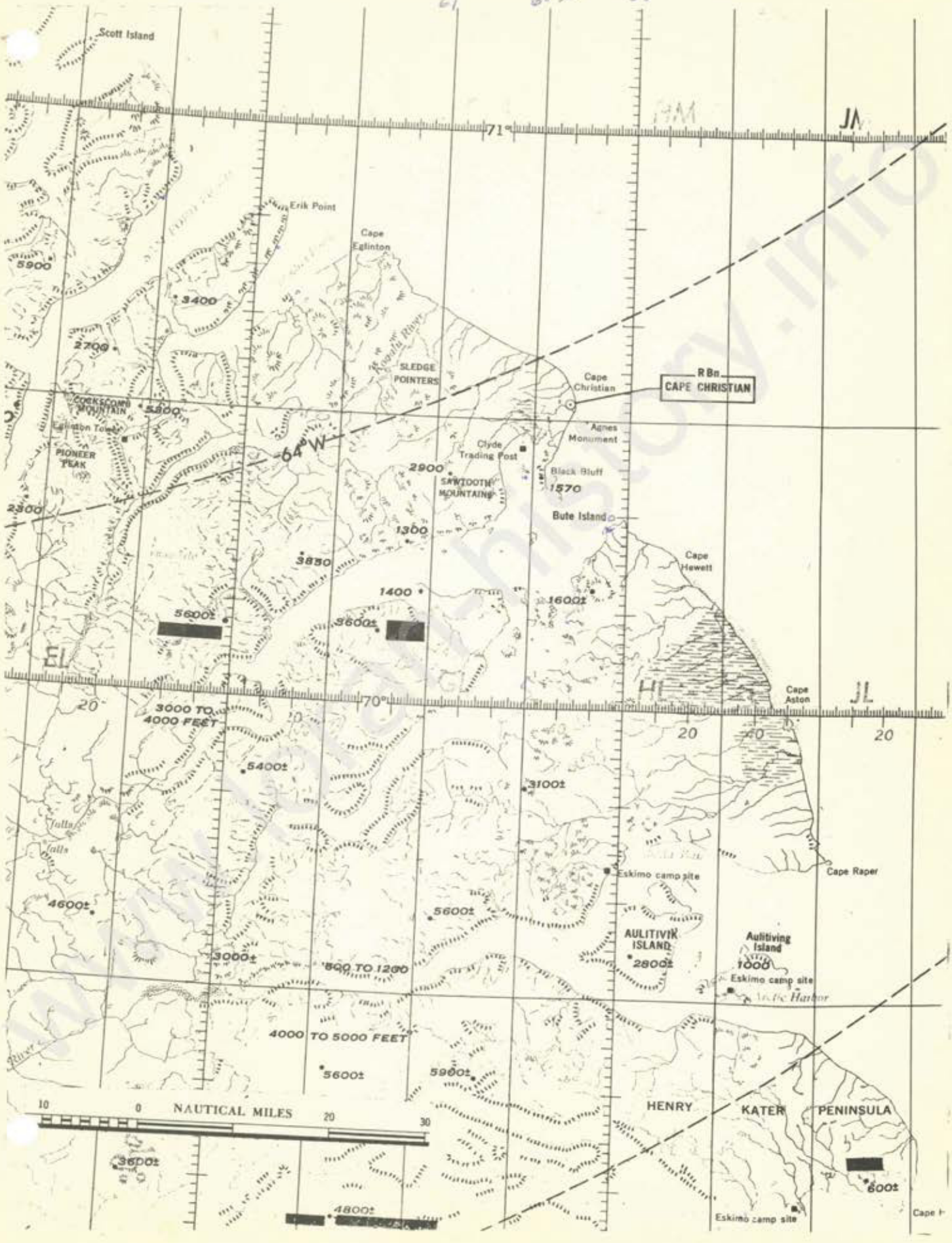
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71°
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Cape Eglinton
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SLEDGE POINTERS
Cape Christian
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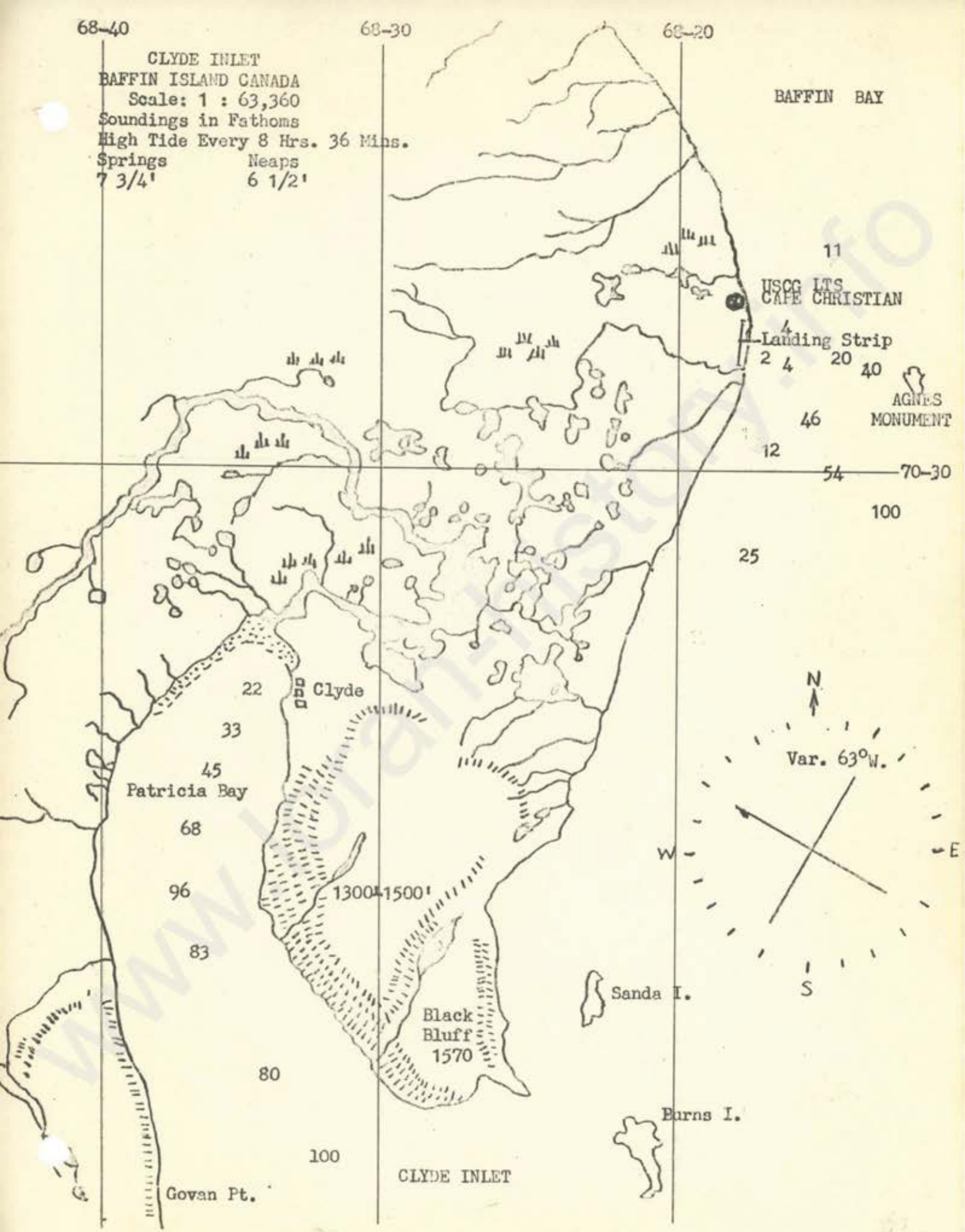
CAPE CHRISTIAN
CORKSCOMB MOUNTAIN
5800
Eglinton Tower
PIONEER PEAK
64° W
Agnes Monument
Clyde Trading Post
2900
SAWTOOTH MOUNTAINS
Black Bluff
1570
2300
1300
Bute Island
3850
Cape Hewett
1400
1600±
5600±
3600±
70°
20
3000 TO 4000 FEET
Cape Aston
5400±
3100±
Falls
Eskimo camp site
Cape Raper
4600±
5600±
AULITIVIK ISLAND
2800±
Aulitivinq Island
1000
Eskimo camp site
3000±
800 TO 1200
4000 TO 5000 FEET
5600±
5900±
HENRY KATER PENINSULA
10 0 NAUTICAL MILES 20 30
3600±
4800±
800±
Eskimo camp site


68-40
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CLYDE INLET
BAFFIN ISLAND CANADA
Scale: 1 : 63,360
Soundings in Fathoms
High Tide Every 8 Hrs. 36 Mins.
Springs
7 3/4'
Neaps
6 1/2'
BAFFIN BAY
11
USCG LTS
CAPE CHRISTIAN
4
Landing Strip
2 4 20 40
AGNES
MONUMENT
46
12
54
70-30
100
25
22
Clyde
33
45
Patricia Bay
68
96
1300-1500'
83
80
100
Govan Pt.
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Black
Bluff
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Sanda I.
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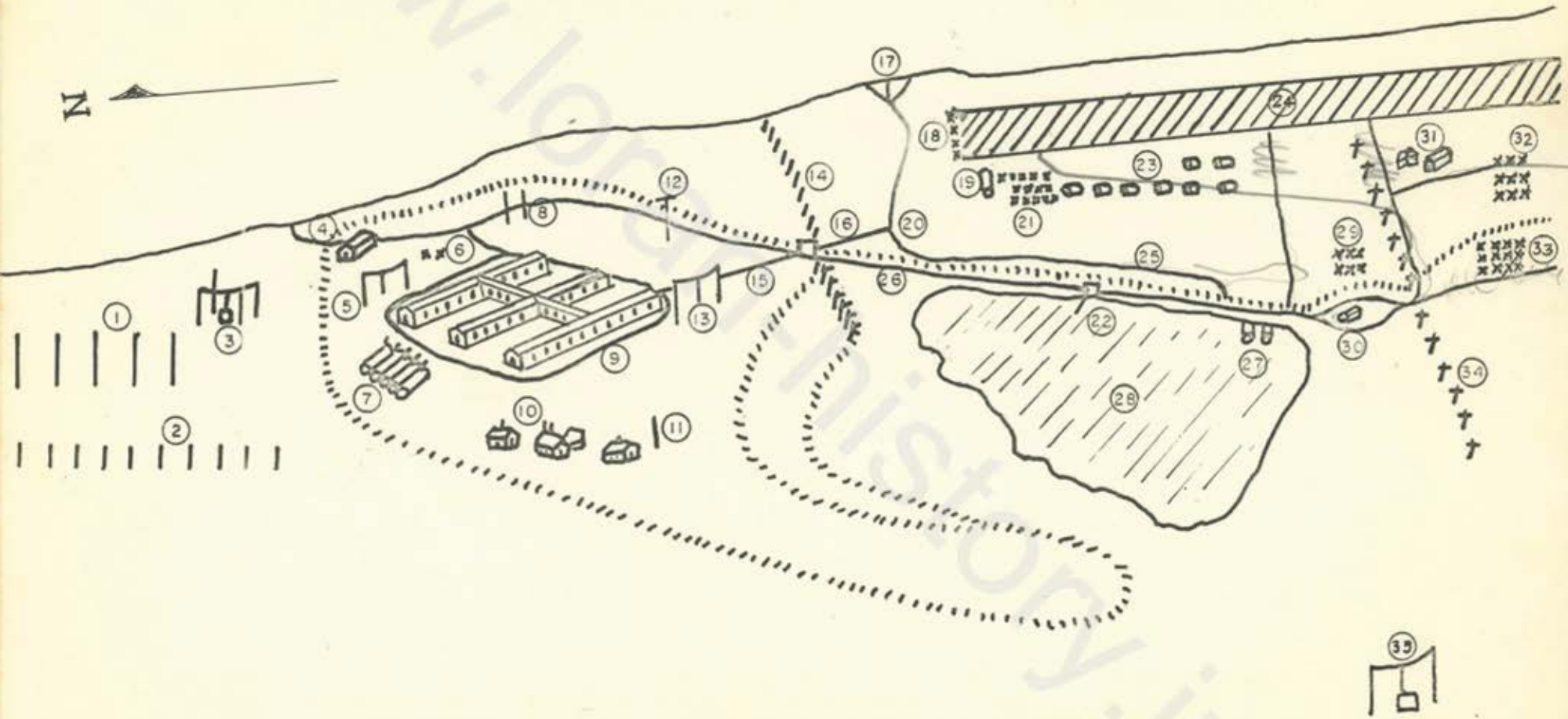
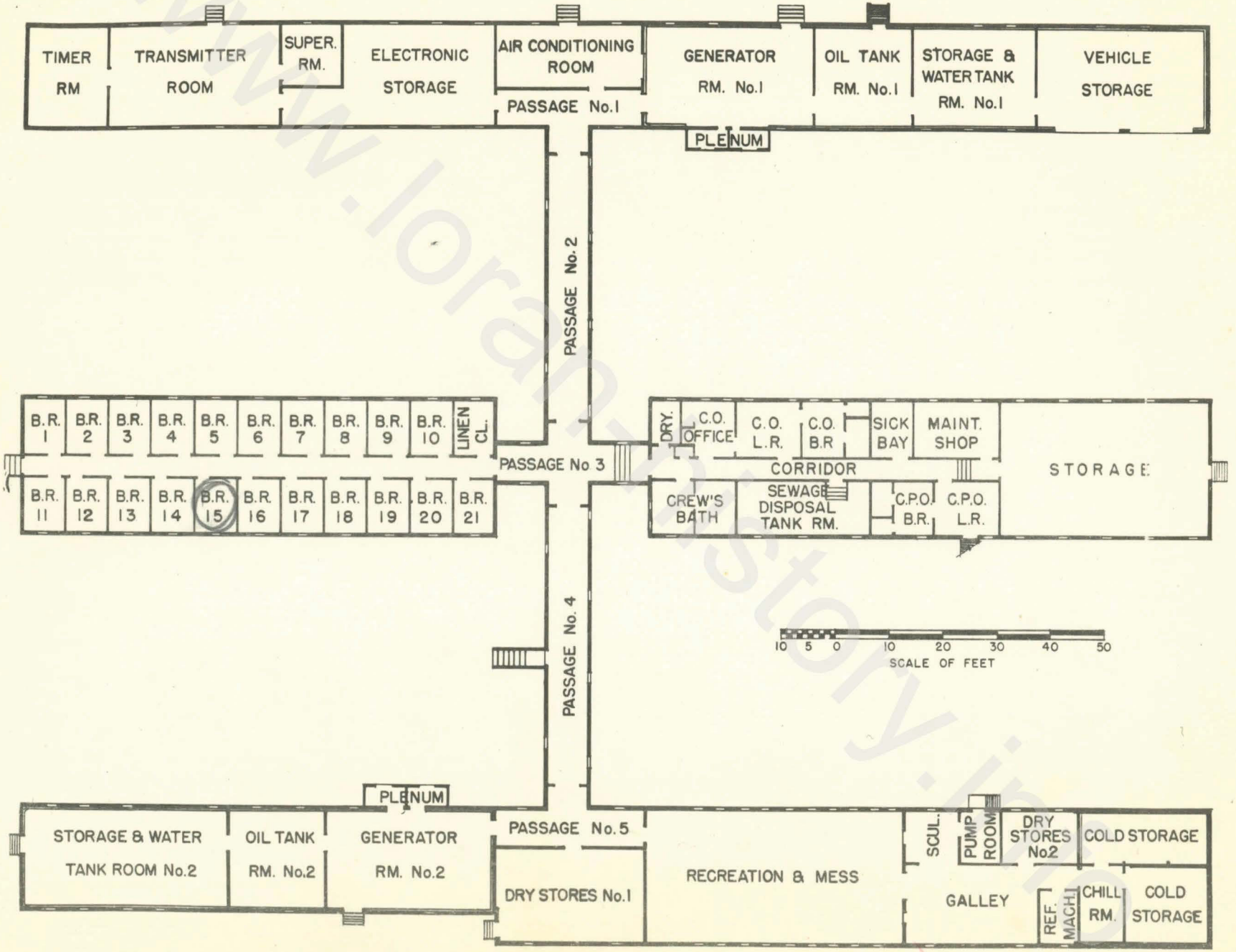


ISOMETRIC AIR VIEW OF CAPE CHRISTIAN LORAN TRANSMITTING STATION

1 February 1957

Reference to Isometric Air View Sketch
(Cape Christian Loran Transmitting Station)

1.--Comb Receiving Antenna for rate (1LØ) (Cape Atholl)
2.--Beverage Receiving Antenna for rate (1LØ) (Cape Atholl)
3.--Loran Transmitting Antenna
4.--Disaster Hut
5.--Radio Transmitting Antenna
6.--Lumber Stowage
7.--Fuel Oil Stowage
8.--Flag Poles
9.--Recreation Mess Room
10.--Royal Canadian Mounted Police Detachment
11.--Flag Poles
12.--Receiving Antenna Loran Vertical
13.--Radio Receiving Antenna
14.--Beverage Antenna for rate (1L1) (Nipisat)
15.--Utiliduct
16.--First Pump House
17.--Reservoir Overflow carrying sewage out
18.--Redlights
19.--Beach fuel tank
20.--Sewage drop
21.--Fuel Oil Drums
22.--2nd Pump House
23.--Atwell Huts
24.--Landing Strip
25.--Stream
26.--Road
27.--Culverts
28.--Potable Water Supply
29.--Outside Electrical Stowage
30.--Butler Storage Building
31.--Abandoned Buildings
32.--Dump
33.--Northeast Air Command Fuel Drums
34.--Comb Receiving Antenna for rate (1L1) (Nipisat)
35.--Radio Beacon Transmitting Antenna



Typical Arctic loran station building layout.

Chapter I General Information

A. Geographic location

Cape Christian (formerly known as Dope II), a double slave loran station, is one of a three-station chain serving the Arctic on rates 1LO (formerly 1L7 and still listed on most charts and tables as 1L7) and 1L1. Cape Christian is located on Baffin Island, Northwest Territories, Canada.

The Northwest Territories comprise the mainland portion of Canada lying north of the 60th parallel of north latitude between Hudson Bay on the east and the Yukon Territory on the west, together with the islands lying between the mainland of Canada and the North Pole, including some islands in Hudsons Bay, James Bay and Ungava Bay. The total area of the Northwest Territories is 1,304,903 square miles, or more than one-third of the total area of Canada. For administrative purposes the Northwest Territories are divided into three districts: Mackensie, Keewatin and Franklin. Cape Christian lies in the district of Franklin.

According to the decennial census of 1951, the population of the Territories was 16,004, including: 5,344 whites, 3,803 Indians and 6,857 Eskimos.

The coordinates of Cape Christian are 70-31-09N 68-19-00W. Enclosed chart excerpts will better illustrate the geographic location of Cape Christian.

B. Topography

Until construction destroyed the top soil the station grounds were covered by an abundance of sphagnum moss or muskeg which seems to thrive in a cool wet environment. In unmolested areas, in addition to muskeg, approximately sixty varieties of plant life may be found, none of which seem to grow more than six inches above the ground. Many of the plants bloom in the summer but the blossoms are very small and cannot be seen at any distance, with the exception of the yellow Arctic poppy which grows profusely in the vicinity of Cape Christian.

Animals living in the vicinity of Cape Christian include: polar bears; wolves; white, blue, red and silver foxes; lemming; hare; ermine; seals; walrus; narwhales; Greenland whales; caribou. Birds seen in the vicinity, some of which are migratory, include: gulls, ravens, sandpipers, ptarmigan, auks, blue heron, snow owls, snow birds, and several species of geese and ducks.

In the summer the permafrost (permanently frozen ground), which is located from 18 to 24 inches below the earth's surface, prevents adequate absorption of melting snow and frequent summer rains which results in a sea of mud about the station thereby increasing the "housekeeping" work load. Insufficient absorption and drainage also results in many fresh water lakes in the vicinity of Cape Christian, the largest of which contain Arctic char, an edible fish similar to the salmon, while the smaller ones offer refuge to mosquito wigglers. The lake water is crystal clear and potable. As winter approaches the lakes, as well as the station's man-made water reservoir, freeze and make good ice skating rinks until eventually covered by snow.

In winter the entire area including the sea ice is covered by snow which varies in thickness and hardness with temperature and wind. The annual snow fall is only approximately three feet but the snow remains all winter and when impeded will drift as high as twenty feet.

Time did not permit proper policing of station grounds by the construction crew and the station work load has prevented Coast Guard personnel from adequately clearing construction debris which has made the external appearance of the station poor. This situation should be largely rectified this summer; however, several thousand fuel oil drums which are necessarily stacked on the beach will continue to present a poor appearance even though systematically stacked and will continue to increase in number since it has been deemed uneconomical to have them returned to the United States.

The station beach is sandy and smooth with a slight gradient which permits small landing craft (LCVP's and LCM's) to land after the sea ice thaws which is usually in July. In late August and early September a surf frequently develops along the beach making landing by small craft hazardous. Approximately two miles south of the station the slope of the beach will permit the landing of larger landing craft such as LST's. Icebergs are visible throughout the year. Approximately two miles ESE of the station is a small island named Agnes Monument; the CGC WESTWIND and supply ships usually anchor between the beach and the island. The beach is flat and firm enough to permit C-47 type aircraft to land after the snow melts in summer or on the snow in winter.

Earth roads were constructed on the station grounds which have proved adequate during the first three years of operation. They are high enough in general to remain free of snow drifts. The spring thaw presents the hazard of erosion. A road built by the original construction crews to the south beach, at which the original materials and equipment were landed by LST's, was washed out even though large culverts were installed to permit the passage of melting snow.

C. Weather

Temperatures at Cape Christian are cool even in the summer months (June, July and August) rarely rising above fifty degrees F. In November the temperature usually drops below zero and fluctuates from zero to minus 45 degrees F. until April. In the Arctic the wind chill factor cannot be disregarded. Below zero degrees, for example, a rise in wind velocity of one knot above ten knots has the equivalent effect of lowering the air temperature by one degree. This is not a straight line relationship however and will only apply at the indicated temperature. Wind chill factors have been empirically determined and plotted in various publications, temperature versus wind. When strong winds are experienced temperatures in station buildings noticeably drop and additional heat is required. Winds are generally light, but usually at least two times a year force 12 winds are recorded. Prevailing winds are from the northwest.

Precipitation: Frequent rains are experienced from June to September. Fog is common in June, July and August, frequently developing suddenly and unexpectedly. Snow, for the most part, falls from April to October; even during July and August snow flurries are not uncommon.

Skies are mostly overcast during the period from June to September. Fortunately during the winter and especially during the "dark period" of no sunrise skies are generally clear. Visibility is generally good except in snowfalls and fog.

The sun rises at Cape Christian on May 16th and does not set again until 27 July. On 26 November the sun sets until 19 January, a period of 54 days. During this period without sun there are at least three and one-half hours of civil twilight per day; the snow reflects light making twilight bright enough for an aircraft to land if necessary. The moon also seems to offer more light in the Arctic due to the reflection of light from the snow.

Intermediate cold weather and type N-1 clothing presently being used at Cape Christian are not commensurate to weather conditions when long periods of outside work are required in mid-winter; however, the necessity of working outside during the winter months decreases each year with improved methods and equipment so that present clothing for the most part is adequate. Some heavier extreme cold weather type clothing is being requisitioned to supplement the other types.

D. Nearby civilian civilization

The Royal Canadian Mounted Police detachment at Cape Christian owns three buildings located less than one hundred yards from the main Coast Guard station building. The present complement: one RCMP Corporal, one RCMP Constable and an Eskimo family of six, who owns a dog team. The proximity of this detachment has proven to be advantageous in many ways. Their friendship and help have been an asset to morale and have helped to solve many problems characteristic to this locality. Since the RCMP Corporal is the official Canadian representative at Cape Christian his close proximity facilitates many necessary transactions such as the purchasing of necessary Canadian licenses, paying of export taxes on furs purchased by personnel, arranging transportation by dog sled to Clyde, and any service involving the native Eskimos. The RCMP representative has arranged hunting and fishing trips with the Eskimos so that Coast Guard personnel can take pictures.

CAPE CHRISTIAN AVERAGE DAILY WEATHER AND AVERAGE DAILY TEMPERATURE, FEB. '56 - JAN. '57

DATE	FEB.		MAR.		APR.		MAY		JUN.		JUL.		AUG.		SEP.		OCT.		NOV.		DEC.		JAN.	
1	c	-25	bc	-8	c	4	c	21	c	28	b	46	r,s	33	o,d	36	o	25	o,s	19	o	-8	c	-13
2	c	-26	c	-20	c	-3	c,z	21	o,s	30	o	39	r,s	40	o,s	36	bc	22	bc	12	o	-9	bc	-19
3	o	-20	c	-20	c	-2	bc	12	o	30	b	38	o	33	o,d	34	o	29	o	15	bc	-11	bc	-29
4	o	-12	c	-22	c	-2	c	12	bc	30	bc	34	bc	38	o	38	c	28	o	18	o	-3	bc	-32
5	o,z	-7	bc	-22	c	0	bc	8	bc	29	o,z	36	o	34	o,r	34	o	26	o	16	o	-5	bc	-35
6	o	-11	c	-27	bc	-2	c	10	c	27	bc	35	o,z	40	o,r	35	o,s	30	o	12	o	-5	bc	-27
7	c	-22	c	-27	bc	6	c	10	bc	35	o	36	b	42	c	40	o	28	o	10	o	-5	o	-21
8	c	-26	c	-26	bc	11	c	11	c	32	bc	36	o	39	o	35	o,s	25	bc	7	bc	-12	c	-22
9	o	-17	c	-25	bc,z	9	c	3	bc	34	b	35	bc	38	c	35	o,s	26	o	5	c	-20	b	-25
10	o	-12	c	-26	c	2	o,s	6	o,z	33	b	34	o,f	33	c	35	c	18	o	5	bc	-22	o	-22
11	bc	-12	bc	-17	c	0	o,s	13	o,z	31	b	33	o,f	31	o	39	bc	14	o,s	2	bc	-17	c	-19
12	c	-15	c	-25	c	8	c	10	o	33	o,r	33	o	33	o	44	o	27	o,s	7	c	-19	o	-13
13	c	-21	c	-26	bc	6	c	15	o	32	bc	39	o,r	36	o	32	o,s	30	o	4	bc	-23	o	-5
14	bc	-22	c	-25	c	10	c	20	bc	38	o,r	35	o,f	34	o	34	o,s	25	bc	-3	bc	-22	c	-20
15	c	-16	c	-22	bc	15	o,f	13	bc	31	b	39	o,f	37	c	31	o,s	29	bc	-11	o	-15	c	-20
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17	bc	0	c	-16	c	24	bc	20	b	35	bc	35	c	34	bc	33	c	10	o	-3	bc	-14	c	-21
18	c	-6	bc	-16	o,s	25	o	22	b	38	o	39	c	45	c	31	bc	2	bc	-16	c	-10	c	-28
19	c	-7	c	-19	bc	--	o,s	24	bc	37	b	36	o,r	41	c	28	o	11	bc	-15	o	-15	o	-26
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23	o,s	-14	c	-11	c	8	o	27	b	35	o,s	30	c	52	bc	25	o,s	17	bc	-15	bc	-22	b	-29
24	o,s	-6	c	-9	bc,z	15	o,s	27	o,f	33	bc	35	bc	43	c	38	bc	2	bc	-15	bc	-25	b	-35
25	o	0	c	-11	bc,s	28	bc	26	b	38	o,r	33	bc	45	c	39	bc	1	o	-7	bc	-25	o	-25
26	o	2	c	-9	bc	20	o	26	b	47	o,s	31	o	40	o	33	c	15	o	-7	b	-24	o	-16
27	bc	0	bc	-4	c,z	16	o,z	27	o,f	35	o,z	31	c	36	o,s	28	o,s	22	bc	-12	bc	-23	o	-13
28	bc	2	c	-6	c	12	bc	27	f	35	o	29	bc	36	bc	28	o	13	o	-14	b	-18	o	-9
29	o	0	c	-7	c	21	bc	29	b	41	bc	39	c	43	o	30	bc	8	o	-13	b	-19	c	-10
30			c	-17	c	21	o	31	b	39	o,z	31	o,r	43	o,s	31	bc	10	bc	-10	b	-23	o,f	-7
31			c	-11			c	23			bc	31	o	38			o	17			bc	-15	o	-11
AVG.		-13		-17		10		19		34		36		38		34		18		-3		-17		-22

The detachment receives electrical power, fresh water and communications service from Coast Guard facilities.

Clyde, a settlement of eight white men and nineteen Eskimo adults and children, located on the northern shore of Patricia Bay and surrounded on three sides by mountains, is approximately seven miles southwest of Cape Christian. At Clyde, also called River Clyde or Clyde River, the Canadian Department of Transport has a weather station which is manned by four weather observers, two radiomen, and a cook. The manager of the Hudson's Bay Company Trading Post accounts for the eighth white man at Clyde. Many of the Eskimos at Clyde work for the weather station and Hudson's Bay Company Post when they are not hunting and trapping. Visits to Clyde as well as visits of personnel from Clyde are looked forward to by Coast Guard personnel. New "faces" are welcome sights in the sparsely populated areas of the Arctic which probably accounts for the name "Friendly Arctic." Personnel at Clyde are eager for opportunities to be of assistance to personnel at Cape Christian and their cooperation has been helpful.

Approximately 250 air miles northwest of Cape Christian is the Canadian settlement of Pond Inlet. In addition to an RCMP detachment, Pond Inlet has a Catholic Priest and a Protestant Minister all of whom try to visit Cape Christian and Clyde for at least a week each year when the sea ice freezes sufficiently to permit the two to three week trip by dog team. All hands appreciate their visits and are eager for this opportunity for additional religious activity.

Approximately 125 air miles (200 miles by dog team) south of Cape Christian on Baffin Island is the Canadian settlement of Home Bay. There is a Canadian air strip at Home Bay which is important to Cape Christian because it offers an opportunity for outgoing mail during the winter when the RCMP makes his routine trip to Home Bay.

In addition to the six Eskimos at Cape Christian and nineteen at Clyde one hundred and fifty-eight Eskimos live nomadically between Home Bay and Scott Inlet, which is about fifty miles northwest of Cape Christian. In view of the Eskimos' lack of immunity to disease and the toll that such common diseases as measles, whooping-cough and influenza have taken of the native population as a result of contact with whites during recent years, all visiting parties are requested to restrict their contacts with the natives as much as possible. It is an offense to give liquor or intoxicants of any kind to Eskimos. Each Christmas it has been the practice for Coast Guard personnel to have a Christmas party for the Eskimo children; 35 children and 27 adults, some of whom came from as far as four days by dog sled were present at the party in 1956. The effervescence of the enthralled Eskimos reverberates in the hearts of Coast Guard personnel and inspires a necessary Christmas spirit. This is the only association of CG personnel with the Eskimos during the year.

E. Nearby military civilization

The master of 1LO, manned by CG personnel, is located at Cape Atholl, Greenland (formerly known as Dope I), which is 350 miles north of Cape Christian across Baffin Bay and approximately twenty miles by road from Thule Air Force Base.

The master of 1L1 (formerly known as Dope III), manned by Danish personnel, is located at Nipisat, Greenland, which is 300 miles EXS from Cape Christian across the northern portion of the Davis Straits.

Thule Air Force Base as previously stated is approximately 370 miles north of Cape Christian. Personnel coming to or leaving Cape Christian usually are transported by one of the Coast Guard Icebreakers to or from Thule where they have arrived or will depart by plane. Although located in the barrens of the Arctic, Thule offers many forms of recreation, including radio and television; the base exchange offers many desirable items at unusually low prices. During the summer when the ice in Baffin Bay begins to break up U.S.N.Ice Reconnaissance planes operate out of Thule. Naval personnel assigned to this duty have made purchases in Thule and made air drops for the personnel of Cape Christian. The hospital at Thule will answer MEDICOS when necessary. There is a search and rescue unit at Thule.

Frobisher Air Force Base located approximately 420 miles south of Cape Christian on Baffin Island is primarily a Royal Canadian Air Force station but the U.S. Air Force has a tenant detachment permanently assigned there which is responsible to Commander, Goose AFB. Cape Christian lies on the air route from Frobisher to Thule; aircraft frequently fly over Cape Christian.

Goose Air Force Base which lies approximately 1050 miles south of Cape Christian is responsible to the Northeast Air Command (NEAC) for the logistic support of Cape Christian. The present Commander of Goose Air Force Base has shown a personal interest in the loran station at Cape Christian. In December 1956 he personally made the Christmas drop flight to Cape Christian; he returned again on 1 February 1957 by a C-47 type aircraft, landed on the beach at Cape Christian, picked up the mail and inspected the station. The General has set up a policy whereby all traffic from Cape Christian to Goose Bay will come to his personal attention to insure timely action. He has arranged to have a book kit of fifty new pocket books, the variety and quality of which are excellent, dropped to this unit each month in addition to some of the latest magazines and newspapers. The commissary at Goose Bay supplies Cape Christian with fresh vegetables, upon request (usually each month) by paradrop.

F. Epitome of United States - Canadian agreement concerning USCG Loran Station, Cape Christian

Canada retains title to all the lands required for the loran station at Cape Christian. The Canadian Government has granted and assured the U.S. Government, without charge such rights of access, use and occupancy as may be required for the operation of the station subject to certain provisions. The Canadian Government maintains the right, on one year's notice, to take over complete responsibility for the operating and manning of the station.

Any geological, topographical, hydrographical or other scientific data obtained in the course of operations at Cape Christian must be made available to the Canadian Government.

No game or wildlife can be taken or molested on Baffin Island by station personnel. No objects of archeological interest or historic significance on Baffin Island can be disturbed or removed therefrom.

Canadian customs and immigration are administered by the local Royal Canadian Mounted Police. The usual arrangements have been made for the exemption from Canadian customs, duties and taxes, of U.S. Government property which is brought to Baffin Island for the operation of the station. Personal belongings of personnel assigned to Cape Christian are also exempt from customs.

G. Canadian Government and Administration of Northwest Territories

Among the ordinances of the Territories and Federal Acts of special interest to travellers in the Northwest Territories are the following:

The GAME ORDINANCE regulates the land wildlife and non-migratory birds and establishes game preserves and sanctuaries in the interest of conservation. Closed seasons are established for game and fur bearing animals and no one may trade or traffic in fur without a license. The entire Arctic Archipelago is a game preserve in which only the Eskimos or those of mixed Eskimo blood living the life of the Eskimos, may hunt or trap without a license. Scientific licenses may be granted for the taking or removal of a limited number of specimens for scientific purposes.

The FUR EXPORT ORDINANCE provides that no furs may be exported from the Territories without a permit and the payment of prescribed royalties. Temporary residents or visitors, may purchase up to $200.00 worth of furs for their own use but not for barter or sale. Both prices of furs and prescribed royalties frequently change. Present export taxes per pelt are listed below for animals caught in the vicinity of Cape Christian and sold at the Hudson's Bay Company at Clyde.

Blue Fox Pelt	0.50	Polar Bear Pelt	5.00
White Fox Pelt	0.50	Ermine Pelt	.10

The MIGRATORY BIRDS ACT provides that no migratory birds may be taken or their eggs or nest disturbed, except under permit.

Under THE N.W.T. ACT AND THE LIQUOR ORDINANCE, no one may have liquor in his possesion without a permit. In the eastern Arctic, or other points not accessible to Territorial Liquor Stores, permits may be obtained from the Administration at Ottawa, to import liquor into the Territories when it is purchased from a Provincial Liquor Store. Under the Importation of Intoxicating Liquors Act, 1928, it is illegal to import liquor into Canada unless consigned to a Government Agency with the right to sell intoxicating liquor, or to a licensed distiller or brewer when authorized under a special permit. The Commanding Officer, Cape Christian must purchase a liquor licence in March of each year through the local RCMP to import, possess, use and sell beer in the exchange at Cape Christian. License fee, $1.00.

THE SCIENTISTS AND EXPLORERS ORDINANCE provides that no one may conduct scientific and exploratory work in the Northwest Territories without a license.

UNDER THE ORDINANCE RESPECTING THE PROTECTION AND CARE OF ARCHAEOLOGICAL SITES, no one without a permit may carry on archaeological or ethnological work or destroy or remove any Eskimo or other ruins or relics. This includes removal of documents or historical records and relics left by early explorers.

THE FISHERIES ACT - The regulations made under this Act control the taking of walrus, whale and seal. These mammals may not be hunted or taken except under permit for specific purposes. No unworked walrus ivory may be exported, except under permit. For ordinary fishing, personnel at Cape Christian may purchase a fishing license from the local RCMP. During the first six months of one's stay at Cape Christian the license costs $2.00; after six months the license may be purchased for $1.00.

H. Excerpts from the North Atlantic Treaty, Status of Forces, Article VII

1. Subject to the provisions of this Article:

(a) the military authorities of the sending State shall have the right to exercise within the receiving State all criminal and disciplinary jurisdiction conferred on them by the law of the sending State over all persons subject to the military law of that State.

(b) The authorities of the receiving State shall have jurisdiction over the members of a force or civilian component and their dependents with respect to offenses committed within the territory of the receiving State and punishable by the law of that State.

2. (a) The military authorities of the sending State shall have the right to exercise exclusive jurisdiction over persons subject to the military law of that State with respect to offenses, including offenses relating to its security, punishable by the law of the sending State, but not by the law of the receiving State.

(b) The authorities of the receiving State shall have the right to exercise exclusive jurisdiction over members of a force or civilian component and their dependents with respect to offenses, including offenses relating to the security of that State, punishable by its law but not by the law of the sending State.

(c) For the purposes of this paragraph and of paragraph 3 of this Article, a security offense against a State shall include:

(i) treason against the State;

(ii) sabotage, espionage or violation of any law relating to official secrets of that State, or secrets relating to the national defense of that State.

3. In cases where the right to exercise jurisdiction is concurrent the following rules shall apply:

(a) The military authorities of the sending State shall have the primary right to exercise jurisdiction over the member of a force or civilian component in relation to

(i) Offenses solely against the property or security of that State, or offenses solely against the person or property of another member of the force or civilian component of that State or of a dependent;

(ii) Offenses arising out of any act or omission done in the performance of official duty.

(b) In the case of any other offense the authorities of the receiving State shall have the primary right to exercise jurisdiction.

(c) If the State having the primary right decides not to exercise jurisdiction, it shall notify the authorities of the other State as soon as practicable. The authorities of the State having the primary right shall give sympathetic consideration to a request from the authorities of the other State for a waiver of its right in cases where that other State considers such waiver to be of particular importance.

10. (a) Regularly constituted military units or formations of a force shall have the right to police any camps, establishments or other premises which they occupy as a result of an agreement with the receiving State. The military police of the force may take all appropriate measures to ensure the maintenance of order and security on such premises.

Chapter II Operations

A. Aids to Navigation

1. Loran

Cape Christian transmits loran signals on Channel 1 (1950 kilocycles) on basic rate L (25 pps), and specific rates 0 and 1, and using a coding delay of 1000 microseconds maintains synchronization with Cape Atholl, Greenland, on rate 1L0 (formerly 1L7) and with Nipisat, Greenland on rate 1L1. This double-slave station may utilize automatic synchronization features of loran timers when atmospheric conditions permit to maintain the authorized tolerance of plus or minus 2 microseconds. In general the Loran Station Operating and Maintenance Instructions (CG-155) apply at this unit; however, due to operational experience and unusual conditions believed to be the result of a combination of interrelated factors which are described in Chapter IV of this pamphlet under "Electronics Engineering", have led to departures from CG-155, such as the use of a blink code and an interchange of roles at master and slave stations on rate 1L0, to increase the amount of usable time during periods of adverse atmospheric conditions which are usually experienced from December to May and cause many hours of unusable time. The value of the use of the blink code can be exemplified by the fact that during the month of January, 1957 eighty-one percent of total time was saved by the blink code when the signal to noise ratio dropped to an unusable magnitude either at the master or slave. At the writing of this pamphlet the interchange of roles, that is, "Master-Sync" and "Slave-Monitor" operation, has not been tested due to adverse atmospheric conditions. These departures from normal Loran Station Operating Instructions are described below.

(a) Loran Blink Code:

(1) When all signals are usable Cape Christian maintains synchronization, Cape Atholl monitors, and normal blink procedure is used.

(2) When one station does not receive a usable ground wave signal from the other, the first station shall notify the second by the blink code below.

(3) As long as one station receives a usable signal from the other and synchronization is maintained neither station will blink except as specified in the blink code. The station not receiving the other's ground wave will keep oscillator at 100 kilocycles and run free.

(4) When Cape Christian receives a usable ground wave from Cape Atholl and is ready to maintain synchronization again Cape Christian will signal same to Atholl by the blink code and resume maintenance of synchronization.

(5) First blink code signal: Fifteen seconds blink then fifteen seconds no blink repeated for three minutes means no usable ground wave signal is being received. The other station acknowledges by blinking during the fifteen second no blink periods. If Cape Christian initiates blink, Cape Atholl will take over maintenance of synchronization. If Cape Atholl initiates blink then Cape Christian continues to sync without monitoring by Cape Atholl. This fifteen second blink signal shall be initiated at the beginning of each watch by the station not receiving a usable signal and run for one minute in lieu of three minutes after the other station acknowledges as above.

(6) Second blink code signal: Thirty seconds blink then thirty seconds no blink repeated for five minutes means a usable signal is now being received. The other station acknowledges by blinking during the no blink periods. If Cape Christian initiates this code then Cape Christian will take over synchronization. If Cape Atholl initiates this code then normal monitoring will be resumed by Cape Atholl.

(7) If neither station receives a favorable ground wave signal then both stations will blink continuously. When one signal becomes usable the station receiving it shall take over synchronization after signalling the thirty second blink code and the other station will acknowledge and stop continuous blinking.

(8) A stop watch is used to time blink and no blink periods. Radio communications supplement the blink code frequently.

(b) Interchange of roles at Master and Slave Station or "Master-Sync" and "Slave-Monitor" operations:

The interchange of roles is contemplated in order to retain the maximum use of the automatic features of the timers, when conditions will not permit normal operations. The interchange of roles requires connection changes to terminal boards and coaxial fittings which would require a time delay to interchange roles; therefore, one timer at Cape Christian has been set for "slave-sync" and the other for "slave-monitor" operation. Similarly the timers at Cape Atholl are set for "master-monitor" and "master-sync" operation. Such an arrangement was designed to permit maximum utilization of automatic features of on-air equipment and allow for the rapid interchange of roles; however, in the event of failure of the on-air timer, standby equipment would require manual operation during the changeover period.

(1) Normal operating conditions at Cape Christian(Slave-Monitor):

a. Blinker Selector switch in the AUTO position.

b. Master Sync Error switch set for + or - 3 Microseconds.

c. For any timer adjustments required the instruction book procedure for a MASTER station is followed.

(2) Normal operating conditions at Cape Atholl (Master-Sync):

a. Blinker Selector switch in the OFF position. This does not mean that the "Master-Sync" station never blinks. The blink shall be initiated manually whenever the signals are out of sync and the "Slave-Monitor" station is not blinking.

b. For any timer adjustments required the instruction book procedure for a SLAVE station is followed.

(3) A system check is to be performed daily. Cape Atholl (Master-Sync) checks the automatic monitoring of Cape Christian (Slave-Monitor) by introducing a deliberate error of 4 microseconds into the system; both stations then observe equipment for correct blinker, alarm and recorder operation. Each station then individually checks the OFF SYNC alarm by throwing the Remote Signal switch to out and observes the equipment for correct alarm and recorder response and at Cape Christian for correct auto-blink.

2. Radio Beacon

In 1954 a 400 watt AN/URN-5 radio beacon, which was formerly located at Clyde, was installed in the loran timer room by the Air Force with Coast Guard assistance. The beacon keys "CC" on 350 kilocycles with a recently reported effective range of 100 miles. A standby unit was also installed but due to an inadequate supply of spare parts, which were to be supplied by Goose Air Force Base, it was necessary to cannibalize the standby equipment and even improvise parts to keep the beacon in operation. In addition the antenna coupling unit house was inadequate, necessitating frequent retuning until a new house was built.

At present the radio beacon equipment requires very little maintenance and operates satisfactorily; however, there are very few spare parts available and the standby equipment is little more than a skeleton. It is proposed to replace the present Air Force type beacon with an 800 watt Coast Guard type radio beacon (AN/URA-11) in the summer of 1957; Commander, First Coast Guard District will be responsible for the logistical support of the new equipment. In order to improve the effective range of the new radio beacon a 180 foot steel antenna tower is to be erected also.

3. TACAN

TACAN is a short range omni-bearing distance air navigation system which is designed to operate continuously unattended but which requires close monitoring and careful maintenance. The installation of TACAN at Cape Christian is contemplated for the summer of 1957, which will necessitate many alterations and additions which will be referred to elsewhere in this pamphlet under their appropriate categories.

B. Communications

During periods of atmospheric disturbances, such as magnetic storms and excessive sun spot activity. communications in the vicinity of Cape Christian become difficult and erratic; at times Cape Christian cannot contact anyone. These periods, however, are relatively short and have not presented any serious problems to date. In a few instances aircraft from Goose Bay have flown to Cape Christian made an air drop or landed without having gained radio contact even though both the aircraft and Cape Christian attempted to contact each other many times.

A continuous listening watch is maintained by the loran watchstander for voice traffic on 2716 kcs, 4724.5 kcs and 126.18 mcs (and on 255.4 mcs after 1 October, 1957). Of these the most used is 4724.5 kcs which is the frequency used by most aircraft flying to or from Thule. Cape Christian frequently relays traffic for aircraft in the vicinity to Thule or Frobisher when conditions are such that they cannot get direct contact.

Authorized frequencies which are frequently used include: 2605, 2694, 2716, 4575, 4724.5, 5320, 12889.5 kcs and 126.18 mcs. The present daily radio schedule:

0800R Danish Loran Station Nipisat (1L1) on 5320 kcs
0840R CG LORSTA Cape Atholl (1LO) on 5320 kcs
0900R CG RADSTA Washington, D.C. on 12889.5 kcs
1315R Canadian Dept of Transport Weather Station CLYDE on 2605 and 2694 kcs

An agreement has been made between Cape Atholl and Cape Christian to enable either station to contact the other at any time if necessary. Cape Atholl calls Cape Christian on 4724.5 kcs then shifts to 5320 for traffic; Cape Christian calls Cape Atholl on 4575 kcs then shifts to 5320 for traffic. A similar agreement has been made with Nipisat for rate 111. When necessary Nipisat calls Cape Christian on 4724.5 kcs then shifts to 5320 for traffic; since Nipisat maintains a continuous listening watch on 5320, Cape Christian calls Nipisat on 5320 kcs and uses the same frequency for traffic.

When conditions are such that Cape Christian cannot contact Radio Washington (NMH), but can contact the CG Air Detachment in Argentia, Newfoundland, the Air Detachment relays traffic. The communications plan does not permit direct contact with Goose AFB. Traffic to Goose must be relayed by Cape Atholl for relay via Thule or must be sent to Radio Washington to be relayed. This system has proven to be the weakest link in the communications plan. Due to the fact that Goose Bay is responsible for the logistic support of Cape Christian a relatively large quantity of traffic to that base is necessary. Due to the various required relays, messages are frequently delayed and/or badly garbled.

Due to the excellent message service offered through the facilities of the Amateur Radio Station at this unit, the use of Class E messages has not been necessary. Amateur radio contact between Cape Atholl and Cape Christian has been extremely poor, however, which has necessitated the use of Class D traffic to some extent.

Present communications equipment for one operators position:

3 R-596/URR Radio Receivers
1 R-100 Radio Receiver
1 URR-27 Radio Receiver(UHF Frequency)
1 T-298/URC-7 Radio Receiver
1 T-298/URC-7 Radio Transmitter
1 T-336/URT-7 Radio Transmitter
1 TDE-1 Radio Transmitter
1 AN/FRT-23 Radio Transmitter

Antennas:
- Broad band receiving antenna
- Vertical transmitting antenna
- Dipole antenna for URT-7

Installation of another radio operator's position (CG Type) which includes two R-596/URR receivers and transmitter controls is planned for the summer of 1957 to provide a ground to air channel and a point to point channel to Thule in an effort to further flight safety in the remote Arctic by providing aircraft with weather data and flight advisory information and pass position reports for the aircraft to Thule or Frobisher.

C. Law Enforcement and Intelligence

Since Cape Christian is located on Canadian soil the Royal Canadian Mounted Police enforce all Canadian laws subject to the provisions of the North Atlantic Treaty which has been quoted, in part, in Chapter I of this pamphlet. The only law enforcement duties required at Cape Christian other than military and U.S. law enforcement for CG personnel are the promulgation and enforcement of orders by the commanding officer to insure that Canadian laws are not violated by CG personnel.

D. Search and Rescue

The Operations Plan CGDONE states, in part, that "all units will, regardless of primary task, render assistance to persons, vessels, and aircraft in distress, to the fullest extent possible, without delay." At Cape Christian here again the RCMP has jurisdiction over all search and rescue operations; however, aid has been offered to the RCMP when the need has arisen.

The listening watch on 4724.5 kilocycles has occasionally heard aircraft reporting difficulties enroute between Frobisher Bay and Thule. Although the landing strip improvised on the beach at Cape Christian is probably too short for most types of aircraft flying to or from Frobisher and Thule to make a landing without damage and then be able to take off again, it does offer in a ditching situation the advantage of landing at a place in the remote Arctic approximately halfway between Frobisher and Thule, which has a communication system, food, shelter, medical facilities and a lighted landing strip.

E. Vehicles and Boats

There are two TD-18A International Harvester tractors at Cape Christian. One, however, is a "Modified TD-18A" which prevents complete utilization of the same type of spare parts for both tractors. The modified tractor was received in September 1956; the other tractor was used by the original construction crews, left out two winters in the weather and has many badly worn parts. An identical tractor which was used in the same manner was surveyed last year and is being cannibalized for spare parts. There are two Athey tracked trailers which can be pulled by either tractor for hauling purposes. There are two Heil type road scrapers which can be pulled by the tractors. A third Athey trailer is equipped with a 1500 gallon water tank.

At present there are no boats at this unit except a small dory which belongs to the RCMP detachment. When the bay is free of ice the dory is frequently used by Eskimos; some Eskimos at Clyde and other Eskimo camps own their own open motor whaleboats. A 16 foot dinghy has been requisitioned to be used to sound the continually silting water reservoir, to pick up mail drops which fall in the water and for recreational purposes.

Chapter III Personnel

A. Complement

The authorized complement for Cape Christian which has proven adequate is listed below. An increase in complement commensurate to the increase in equipment and mission is contemplated for the summer of 1957.

1 LT	2 ET3	1 EM1	1 CS1
1 ETC	1 ENC	1 FN	1 DC2
1 ET1	1 EN1	1 BM1	1 RM2
1 ET2	1 EN2	1 HM1	6 SN

B. Administration of Personnel Records

Service Records are maintained at the District Personnel Office. Cape Christian personnel are picked up on the "Staff Diary." Prior to departure for Cape Christian all personnel will be interviewed by the Enlisted Record Section of the First District and a check of each man's service record will be made to insure that it is complete. At this time, the following forms should be checked to see that they are up-to-date:

a. DD-93, Record of Emergency Data
b. CG-3291, Enlisted Personnel Data Card
c. Preference for next assignment

Pay Records are maintained at the District Finance Office. All allotments should be registered prior to departure for Cape Christian. Those who anticipate an increase in BAQ should sign blank forms NAV S and A 545, Allotment Authorization and NAVPERS-668, Application For Dependents Allowance. A blank form NAV S and A 545 should be signed for anticipated Allotment stoppages also. Pay accrues while at Cape Christian and is collected upon return to Boston. Checks from accrued pay can be drawn only in the name of the serviceman himself. At the end of the year's stay, if requested, a check is drawn and mailed to personnel at Cape Christian to defray expenses enroute to the CONUS. This request is made by the commanding officer for all men at one time. If time permits personnel should collect for travel, per diem, and dislocation allowance to keep pay records current and provide funds to defray expenses enroute to Cape Christian. If an increase in pay for longevity is anticipated form CG-3312 should be filled out and left with pay record.

Geneva Convention Identification Card, DD-528 must be applied for and drawn from the District Intelligence and Law Enforcement Section prior to departure by all personnel.

Health Records are maintained at Cape Christian and must be carried enroute to Cape Christian. Queries concerning privileges and limitations of the Dependent's Medical Care Bill and application for Identification Cards for dependents for medical care should be made to the Medical Section of District Personnel prior to departure if necessary.

Quarterly Marks are assigned by the commanding officer and transmitted by message to the district approximately 15 days prior to the end of each quarter. Adaptability for Warrant marks are assigned to CPO's for quarters ending 31 March and 30 September. A transcript of marks of personnel received for the preceding year should be obtained by the new commanding officer from service records prior to departure.

Advancement In Rating examination marks are transmitted by message to District Personnel Office. Notification of advancement in rating is received at Cape Christian by message. Practical factor marks for advancement should be obtained from service records by the new commanding officer prior to departure.

C. Medical Facilities

There is either a first class or chief hospital corpsman assigned to Cape Christian. There is an adequate supply of medicines and equipment in the sick bay. First aid kits are located in the disaster hut, galley, passageways, sick bay and on each tractor. Since each man is given a thorough "overseas" physical examination prior to departure for Cape Christian and the Arctic is relatively free of disease germs it is likely that everyone will be able to enjoy good health for the entire year. However, in the contingency that someone were to need the services of a doctor there are several methods to alleviate the situation. As is done aboard ship the transmission of a MEDICO will usually ascertain if the patient should be removed to a hospital. The air strip recently improvised on the station beach is adequate for a C-47 type aircraft to land in winter even during the "dark period" of no sun rise and could be used after the snow melts in the spring to bring a doctor or to take the patient to a hospital. During the summer and late spring aircraft can land on Patricia Bay at Clyde when necessary. Planes could come from Thule, Frobisher or Goose Bay depending on the circumstances. Expert first aid could be rendered by the hospital corpsman in the meantime.

D. Training and Education

There are two RCA Technician Training Devices, Model 161 and 121 at Cape Christian to be used for electronics training. Model 161 is an excellent device for demonstration purposes because components of electronic equipment, for example an amplifier, are placed on top of the component's symbol on a large circuit diagram of the equipment. Model 121 consists of small mock equipment that can be dismantled and laboratory project books to be used by individual students to reconstruct specific equipment following a demonstration period on the Model 161 Device.

Personnel assigned to Cape Christian have the advantage of having virtually a CG Institute at Cape Christian. The below listed Institute courses complete with lesson keys, examinations and examination keys are permanently kept at Cape Christian due to the fact that there are no scheduled mail pick-ups during the year. Upon request to the Institute by the commanding officer other courses could be obtained if desired. Answer sheets can be graded the same day that they are submitted which permits rapid completion of courses by ambitious personnel and stimulates interest. Proper security of keys and examinations is the responsibility of the commanding officer. Upon completion of courses grades are submitted by message or mail to the CG Institute and certificates are mailed to the individuals completing the courses.

MRN-2	Military Requirements(Non-Rated)	CS3-1	Commissaryman, Third
BM3-4	Boatswain's Mate Third	CS2-1	Commissaryman, Second
BM2-2	Boatswain's Mate Second	HM3-3	Hospital Corpsman, Third
BM1-1	Boatswain's Mate First	HM1-2	Hospital Corpsman, First
BMC-1A	Chief Boatswain's Mate	HMC-1A	Chief Hospital Corpsman
QM3-3	Quartermaster, Third	FN-2	Fireman
RD3-3	Radarman, Third	EN3-3	Engineman, Third
RD2-4	Radarman, Second	EN2-2A	Engineman, Second
GM3-2	Gunner's Mate, Third	EN1-2	Engineman, First
ET3-1A	Electronics Technician, Third	ENC-1	Chief Engineman
ET2-1A	Electronics Technician, Second	EM3-4	Electrician's Mate, Third
ET1-1	Electronics Technician, First	EM2-5	Electrician's Mate, Second
ETC	Chief Electronics Technician	EM1-1	Electrician's Mate, First
RM3-2A	Radioman, Third	EMC-1	Chief Electrician's Mate
RM1-2A	Radioman, First	DC3-2A	Damage Controlman, Third
RMC-1	Chief Radioman	DC1-1	Damage Controlman, First
YN3-5	Yeoman, Third	PILNAV	Piloting (NAV I)
SK3-3	Storekeeper, Third	COMOFF-1B	Communications Officer
SK2-2	Storekeeper, Second	EREFER-1	Elementary Refrigeration

USAFI courses are handled in the same manner as they are at any other Coast Guard unit. There are many technical books at Cape Christian which can be used as reference books to supplement correspondence course material. Many good educational library books are available for ambitious personnel to enhance their liberal education.

E. Morale and Welfare

The District Morale Section has made every effort to maintain high morale at Cape Christian by initially providing a liberal amount of recreational facilities, providing a "Special Cash Morale Fund" to be used as a working fund as necessary at Cape Christian, replinishing the supply of consumable morale items upon request and handling unforeseeable personal personnel problems expeditiously when the need has arisen. Cape Christian has as much, if not more, morale and recreational gear as any other Coast Guard unit.

1. Outdoor Recreational Facilities

For the first two and last three months of the tour at Cape Christian outside sports and recreation can be enjoyed in comfort. These include:

Hiking and Photography.... Personnel having cameras should be sure to bring them. There are many typically Arctic scenes to be captured for scrapbooks and the folks back home.

Skeet Shooting.... Two 12 gauge Remington pump shotguns and a skeet hand thrower are available for shooting skeet.

Target Practice.... There are four Springfield .30 caliber rifles, one .22 caliber rifle and three .45 caliber pistols available for training and recreation. Personnel enjoy firing with RCMP personnel at improvised targets to improve their skill.

Hunting Trips As Observers.... Occasionally the RCMP have arranged for CG personnel to go on short seal hunting trips to observe and take pictures.

Fishing.... A fishing license must be purchased from the RCMP. Fishing gear consists of fresh and salt water rods and reels, hand lines, assorted lures, hooks, leads, leaders, etc.

Football, Baseball, Softball, Volleyball.... Sufficient equipment is available to enjoy these sports on the beach.

Skiing.... The terrain near the station is too flat for good skiing; however, there are several pairs of skis and ski boots available. These could be enjoyed on the mountain slopes near Clyde.

Snowshoes.... Several pairs of snowshoes are available; they are needed in soft deep snow.

Ice Skating.... Heretofore there have been no ice skates at Cape Christian due to the fact that there are several places to skate after the lakes and reservoir freeze in October until snow covers the ice, six pairs of skates have been ordered for this unit.

Dog Sled Trips.... Trips to Clyde via dog sled are an interesting Arctic experience.

Horseshoes.... Horseshoes are available.

Archery.... At present there are no bow or arrows; however, a bow and some arrows have been requisitioned. A member of the present crew has his own bow and arrows.

2. Indoor Recreational Facilities

During the colder periods when personnel are more or less confined indoors there are many games and hobbies available for all types of interest. These include:

Movies.... There are two Bell and Howell movie projectors. Approximately 150 full length "Sea Print" films and 200 TV films, some of which are one hour programs and the other thirty minute programs, are received by annual resupply each summer. In general the selection received is good. There are no training films at Cape Christian. The Canadian weather station at Clyde has approximately 100 thirty minute films which are designed to be both educational and interesting; personnel have enjoyed seeing these films. Movies are the best liked entertainment at Cape Christian. The best movies are shown several times during the year.

Pool, Ping Pong, Shuffleboard.... Tables for these interesting indoor sports are set up in the Recreation-Mess room. Tournaments are held and enjoyed; tournament winners receive prizes purchased from the Hudson's Bay Post.

Phonographs and Records.... A Webcor phonograph is located in the CO's Quarters; Columbia 360 phonographs are located in the Recreation Room, CPO's Quarters and Senior First Class PO's Room. There is a good selection of records; many of the records are old and scratched but each year a few additional records are received to replinish the supply. The selection of classical records is especially good. The most popular records, in keeping with the latest teen-age fad, are "Rock 'n Roll" and "Hill Billy"; thirty of the latest records of this type were received for Christmas 1956.

Radio Receivers.... Receivers are located in the Recreation room, CPO's Quarters and CO's Quarters. Parallel and series tuned electronic wave traps must be used on the antennas, tuned to 1950 kilocycles, to block and by-pass to ground the undesireable loran signals so that the weaker broadcast signals can be received. Reception is erratic due to atmospheric disturbances but at times Boston's station WBZ, station WWVA in Wheeling, West Virginia and several stations in Ohio and New York are received. Frequently station KOLD in Thule can be heard loudly and clearly; many of the best programs originating in the United States are rebroadcast from Thule, especially news and sports broadcasts, which keep interested personnel up-to-date on current events and world news. Radio reception is best at night. Stateside stations, Armed Forces Radio, and stations in England, Switzerland, Sweden, Canada and Moscow can be received on short wave frequencies.

Gymnasium Room.... A section of the boatswain hold has been set aside for use as a gymnasium. Equipment available: wrestling mat, heavy punching bag, speed bag, striking bag gloves, boxing gloves, boxing head gear, medicine ball and weight lifting gear (improvised, but a bar-bell set has been requisitioned). During the coldest months when personnel must stay inside, for the most part, this equipment is invaluable.

Photo Lab.... Darkroom equipment includes: an Omega Type B-2 enlarger, a 5 x 7 contact printer, safe lights, trays, film tanks, paper cutter, timer, etc. A limited amount of photographic paper, chemicals, film and flash bulbs is available. Photographic enthusiasts should bring their own paper, film and flash bulbs in addition to their cameras if they intend to do a large amount of their own processing. The station camera is a Kodak Chevron with Extar lens and flash attachment which uses 620 film. This camera is to be used primarily for official purposes but may also be used for morale purposes by qualified persons. Photography is an interesting educational hobby and should be encouraged.

Woodworking.... There is usually a good supply of several types of lumber to be used for morale purposes, such as plywood, mahogany, sugar pine, oak, maple and ash. The spacious carpenter shop is well equipped with hand tools and the following power tools: wood lathe, circular saw, jointer, sander, drill press, skill saw, electric drills and bench grinder.

Games....'Bingo is by far the most popular game; well over half of the complement usually play twice per week. Cards (regular and pinochle) and Monopoly are the next most popular games. Other games available are: Indoor Horseshoes, Chess, Checkers, Cribbage, Backgammon, Parcheesi, Rook, Stock Market, Scrabble, Jigsaw Puzzles, Thimk, Clue, Teeko, Dominoes, and the Robert Q. Lewis Game Chest.

Hobby Kits.... Hobby kits usually available with which to while away the hours, include: model airplanes, automobiles, boats, ships and guns; leathercraft, such as, cosmetic bags, cigarette cases, bill folds, key cases and plain sheet leather to be used with an Xacto leathercraft kit; electronic Heathkits, such as receivers, amplifiers, signal generators, transmitters, etc.; paint sets (by the numbers).

Plants.... During most of the year the treeless ground is covered with snow. Some personnel enjoy growing potted plants to produce a"touch of green." Seeds and bulbs are received from home by some, but dried peas, carrot tops and potato eyes also seem to grow well in the fluorescent light.

Magazines.... Subscriptions to the below listed magazines have been been made by the District Morale Section for Cape Christian. Unfortunately the majority of these magazines are lost in the mail and are never received at Cape Christian. Sometimes magazines and newspapers are received from the library at Goose Bay with mail drops.

Life	Electronics	Popular Science
Saga	Esquire	Baseball
Look	Navy Times	Sporting News
Collier's	Popular Mechanic	Reader's Digest
QST	U.S. Camera	Outdoor Life
Radio TV	Newsweek	Saturday Evening Post
Ring	True	Coast Guard Magazine
Argosy	American	Coronet

Library Books.... At present the collection of library books (mostly pocket books) at Cape Christian numbers over 1500. As mentioned in Chapter I, the library at Goose AFB sends fifty new pocket books each month; the Coast Guard Wives Club at Groton Training Station sends books at Christmas; of course the District Morale Section has furnished a large number of the books present. The types of books are of sufficient variety to appeal to almost anyone's interests. In almost each mail drop this year a philanthropist from Minnesota, Miss Margaret Oldenburg, has sent Arctic Books, as well as snapshots taken on her travels in the Arctic and pictures to be framed for the station. The present collection of Arctic books includes:

LAND OF THE LONG DAY
FORTY YEARS FOR LABRADOR
ARCTIC ADVENTURE
TO THE ARCTIC
THE FRIENDLY ARCTIC
ARCTIC MANUAL
TOWARD THE POLES
KABLOONA
FROM THE DEEP OF THE SEA
BASIC ARCTIC MANUAL
OPERATIONS IN THE ARCTIC
SKIING AND SNOWSHOEING
NORTHWARD OVER THE GREAT ICE, VOL I
NORTHWARD OVER THE GREAT ICE, VOL II
ICE IS WHERE YOU FIND IT
THE LAST KINGS OF THULE
THE WORLDS GREAT ADVENTURE
AMERICAN EXPLORATIONS IN THE ICE ZONES
IN ARCTIC SEAS, THE VOYAGE OF THE KITE
WITH PEARY EXPEDITIONS TO NORTH GREENLAND
ADMINISTRATION IN THE ARCTIC
ARCTIC CONSTRUCTION
ARCTIC ENCYCLOPEIDA, TWO VOLUMES,
COLD WEATHER ENGINEERING, USN

Private Rooms.... Each man has his own room at Cape Christian. Prizes have been awarded for the man having the best looking room at Saturday's inspection three different times. Personnel take pride in fixing up their rooms and have improvised curtains, rugs and whatnots. Rooms are furnished with bed, lockers, desks, two chairs, fluorescent overhead light and desk lamp. The Commanding Officer has a living room, bedroom with closet and bathroom.

Arctic Certificates.... Upon crossing the Arctic Circle enroute to Cape Christian personnel become eligible to receive an Arctic Certificate which can be purchased for $4.00. The certificate states, in part, "To all Sailors wherever ye may be: and to all Polar bears, walrus, seals, whales, huskies, martens, foxes, reindeer, wolves, musk oxen, caribou and all other living denizens of the frozen northern wastes, know ye that (NAME AND RATE) with my royal consent passed the gateway to the top of the world by crossing the Arctic Circle. It is further understood: That he entered the Land of Icicles, Blizzards, Williwaws, and Myriad Snowflakes in July 195_* and manned the U.S.C.G. Loran Station at Cape Christian at Longitude 70-31 N Latitude 68-19 W for one year. I Boreas Rex, Ruler of the North Wind and Sovereign of all the Frozen Reaches it touches do hereby declare this warm blooded newcomer to my Royal Domain to be a True and Trusty Brine Encrusted BLUENOSE. Be It Known: That by virtue of the power invested in me I do hereby command all my subjects to show due honor and respect to him wherever he may be. Disobey This Order Under Penalty of Our Royal Displeasure." The 16" x 20" colorful certificates are very attractive and worthy of being framed. There is also a billfold version. The Morale Section has paid for certificates in the past and added the cost to the individual's exchange bill. A letter request must be written by the commanding officer for those men desiring certificates.

Eskimo Children Christmas Party.... This party as mentioned in Chapter I has had the desirable effect of stimulating a Christmas spirit at a time when personnel tend to become homesick and feel sorry for themselves.

Amateur Radio.... The most valuable morale equipment at Cape Christian has been Amateur Radio which has made it possible to maintain frequent contact with friends and families at home. As can be exemplified below an amateur radio operator in each crew is essential. Since the commissioning of Cape Christian in 1954, Mr. J. Stan Surber, Box 227, Peru, Indiana, has conscientiously provided the personnel of this unit, in addition to many other isolated Arctic stations, with rapid reliable communication services with their friends and families in the United States. The extent of Mr. Surber's efforts is shown by the fact that he received and mailed at least 3100 messages for and transmitted 2550 letters averaging approximately 100 words in length to Cape Christian during the calendar year 1956. Mr. Surber maintained a morning and afternoon schedule daily including Sundays and holidays, donating from two to two and one-half hours per day, for carrier-wave traffic for Cape Christian. He neither limited the services which he provided to his convenient spare time nor to the times when atmospheric conditions were favorable. If communications were at all possible, no matter how difficult, Mr. Surber maintained his schedules faithfully every day. When the need arose, such as an announcement of birth, report of serious illness or of death, Mr. Surber maintained continuous communication for the interested parties as long as desired. It is no longer possible for Mr. Surber to provide his outstanding services; however, other amateur radio operators also are willing to pass messages and make phone patches though probably to a lesser extent than Mr. Surber.

The present amateur radio operator made 72 phone patches (7 of which were station to station contacts) for personnel with families in the United States during the period from August 1956 to January 1957. He has contacted 35 states, Alaska, Hawaii, Guam, all Canadian districts except VE1, 21 foreign countries, including the United States' group in the Antarctic and the northern Arctic station of Alert.

Amateur Radio equipment available:

Transmitters:

Barker and Williamson Model 5100:

Frequency Coverage:

3.5	- 4.0 mcs	80 meters
7.0	- 7.3 mcs	40 meters
14.0	-14.35 mcs	20 meters
21.0	-21.45 mcs	15 meters
26.96	-27.23 mcs	11 meters
28.0	-29.7 mcs	10 meters

VFO or crystal operation on AM or CW.

Barker and Williamson 51SB Sideband Generator permits SSB operation on all phone frequencies covered by Model 5100 transmitter.

Power input:

135 watts AM
150 watts CW
120 watts SSB

Military Model MI-8167-H

Frequency coverage:

2 to 20 mc

VFO or crystal operation on AM or CW

Power input:

760 watts CW
450 watts AM

Receivers:

R596/URR (HRO 60)

Frequency coverage:

1.7 mc to 30 mcs, with band spread for all amateur bands.

Antennas:

2 element Telerex "Minibeam" for 20 meters
Vertical antenna for 20 meters
Folded dipole for 15 meters

Operator Licensing Requirements.... (Reference: Federal Communications Commission, Part 12 - Rules Governing Amateur Radio Service (Revised to 20 November 1953), Appendix 4) Any person holding an Amateur Radio License issued by the U.S. Federal Communications Commission may be authorized to operate an amateur radio station in Canada by applying to: The Department of Transport, Air Services, Telecommunications Division, Ottawa, Canada. A letter should be written as soon as possible to the Department of Transport requesting an application form for Amateur Radio Station operation in Canada by an Amateur Radio Station Licensee of the United States. When the application form is received by the Department of Transport, Certificate of Registeration of Radio Station Licensee of the United States of America and Authority for Operation in Canada will be returned to the requestor. A copy of rules and regulations governing amateur radio station operation in Canada, by which all amateur station operations in Canada will be conducted will also be enclosed.

3. Mail

Mail drops are usually received within the first ten days of each month depending on weather conditions and mechanical condition of aircraft at Goose Bay. All types of mail, Air Mail, First Class or Parcel Post, arrive by air drop. The only advantage of sending mail or parcels by Air Mail in lieu of First Class or Parcel Post would be in the shorter time required for it to reach New York, New York. From New York all mail seems to be transported by air to Cape Christian and conversely.

4. Exchange

Due to the isolation of Cape Christian which presents unusual supply and operational characteristics, special operating instructions have been issued for the exchange which cover authorized deviations from the Exchange Manual. Commander, First Coast Guard District has alternate jurisdiction over and is responsible for the operation of the exchange and has authority to transact all business. Marking up of merchandise for resale to a point where profit will be sufficient to liquidate a Headquarters Trust Fund loan which was advanced to the exchange in 1954 is necessary. (from 15 to 20% profit). All sales are made on a credit basis and require extremely accurate accounting by the Exchange operator and Exchange Officer (Commanding Officer). The purchaser is required to sign for merchandise received each time a purchase is made. Bills are totaled monthly and submitted to Commander, First Coast Guard District (p). Personnel must pay their bills in full upon return to the CONUS. The amount of credit granted the purchaser should be held to a reasonable limit in order to alleviate any hardship in settling final charges. The new commanding officer should obtain a list of the amounts of pay being accrued monthly by all personnel for this purpose. The Exchange Financial Report, CG-2984, must be completed and submitted each quarter.

Items sold in the exchange include:

- Cigarettes
  - Chesterfield
  - Camel
  - Lucky Strike
  - Old Gold
  - Pall Mall
  - Phillip Morris
- Cigars
  - Headline, Vacuum Pack
  - Cigarillos, Robert Burns
  - Muriel, Vacuum Pack
  - Panatella, Robert Burns
- Tobacco
  - Edgeworth
  - Model
  - Half and Half
  - Briggs
  - Dill's Best
  - Mixture 79
- Smoking Accessories
  - Pipes
  - Pipe Cleaners
  - Pipe Reamer Tool
  - Matches
  - Lighters, Stormking
  - Lighter Flints, Wicks and Fluid
  - Pipe Sweetner and Filters
  - Tobacco Pouch
- Drinks
  - Beer, Ballentine
  - Coca Cola
- Candy and Nuts
  - Mixed Nuts
  - Peanuts
  - Lifesavers, Assorted
  - Three Musketeers
  - Hershey, Plain
  - Hershey, with Almonds
  - Clark Bars
- Toilet Articles
  - Soap: Dial, Cashmere Bouquet, Palmolive
  - Toothpaste: Ipana, Pepsodent, Colgate, Ammident
  - Shampoo: Halo, Fitch
  - Colgate Shaving Lather, Palmolive Rapid Shave
  - Shower Clogs
  - Soap Dishes
  - Tooth Brushes
  - Hair Tonic: Vaseline, Vitalis
  - After Shave Lotion: Palmolive, Mennen's Skin Bracer
  - Hand Lotion: Cashmere Bouquet, Ayer Cleanser Cream
  - Deodorant: Veto Spray
  - YES Tissues
  - Nail Clippers and Nail Files
  - Razors: Gillette, Schick
  - Razor Blades: Gillette Thin and Blue, Schick, Gem
  - Electric Preshave Lotion
  - Combs
  - Shaving Brushes
- Miscellaneous Articles
  - Lead Scripto, Black
  - Ball Point Pen Refills
  - Ink: Schaeffer, Parker
  - Padlocks, Slaymaker
  - Writing Portfolio
  - Shoe Polish, Kiwi: Brown, Black
  - Shoe Laces, Black
  - Stencil Pencil, Black
  - Thread and Sewing Needles
- Candy
  - Snickers
  - Walnettos
  - Kraft Caramels
  - Necco Wafers

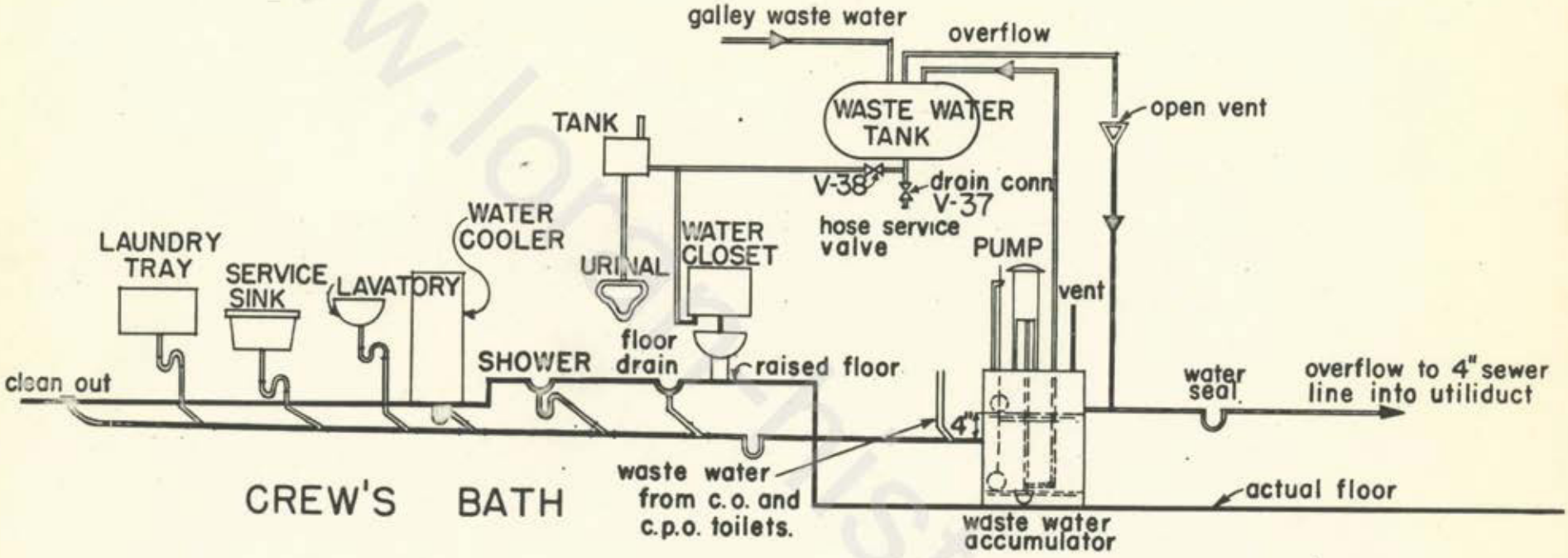
F. Health And Sanitation

1. The potable water supply at this unit is an open unfenced dammed reservoir fed by natural runoff. A source of contamination that cannot be disregarded and must be guarded against are excretions from dogs and animals in the area and of course trash that may wash into the reservoir. Neither bacteriological laboratory services nor equipment for testing samples of potable water are available at or in the vicinity of Cape Christian. A potable water testing kit has been requested by letter.

The reservoir water unlike the lake water is clouded with minute particles that remain in suspension; filters are not installed in the fresh water supply. To insure that potable water is safe, chlorination is practiced by the batch method; an effort is made to maintain a chlorine residual of from 0.6 to 0.8 parts per million which should purify water even if it were tainted.

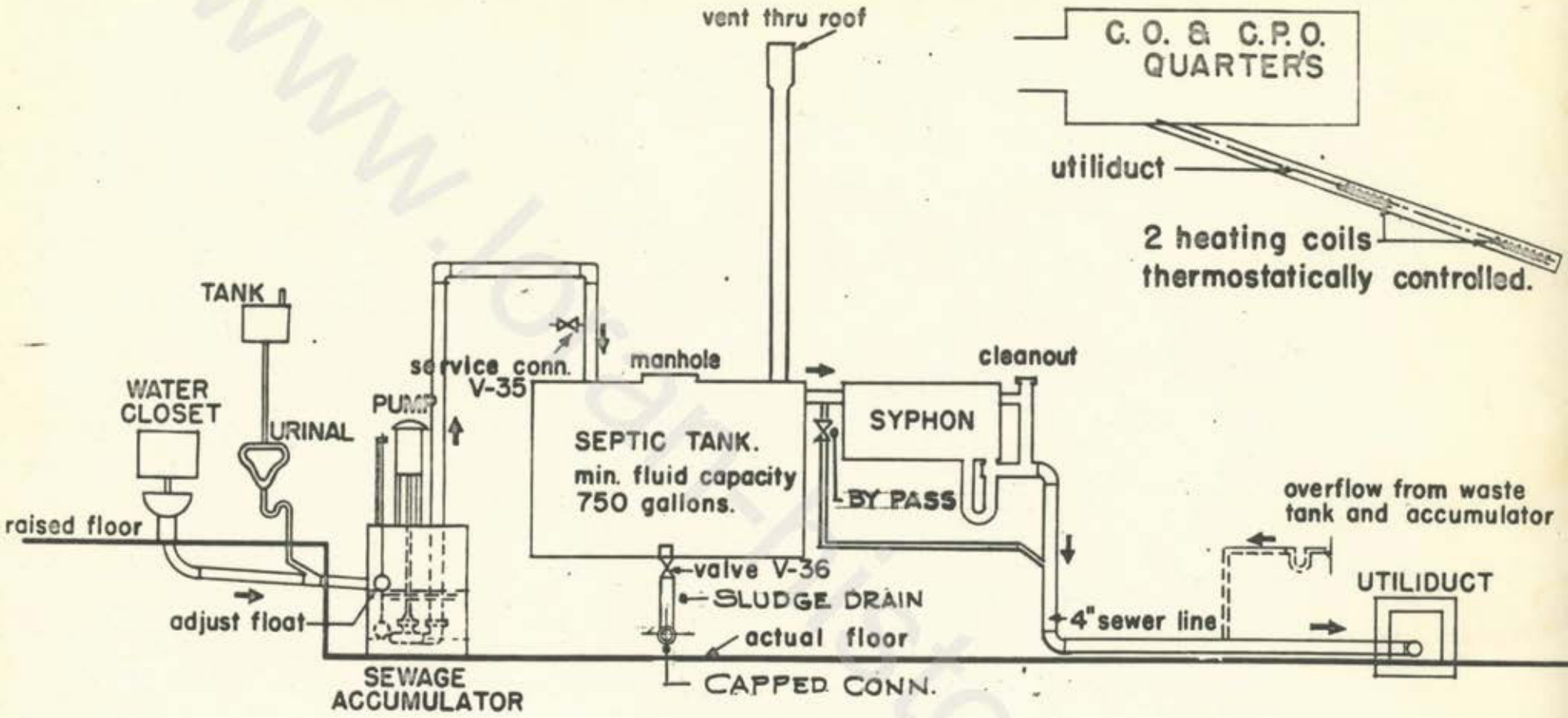
Although the supply of water available for use was limited the first two years, there is plenty of water now available to be used for all purposes both in summer and winter if it is used judiciously and not wasted. This year it has not been necessary to limit the number of "At Sea" showers or to use the waste water system to flush toilets because of the new improved system of obtaining water from the reservoir in winter, which is described in detail in Chapter V. Water is available for the laundry, general cleaning, dish washing, showers, and toilets.

2. The Sewage system has worked very well this past winter and the "out house" which had to be built the first year of operation and used the second year also has not been needed. A close check is kept at the end of the heated utiliduct where the sewage discharges and freezes; it is washed out to sea in the spring and summer. Cape Christian is privileged to have practically the only flushing toilets in the Arctic with the exception of Cape Atholl and perhaps Nipisat. The sewage is collected in the septic tank located in the sewage tank room where it remains and decomposes. The solids fall to the bottom and the liquids flow down the pipe in the utiliduct to discharge. The utiliduct is heated by waste heat discharging from the Administration wing which is given additional heat when it passes a hot water unit heater and two electric heaters under the mouth of the blower fan duct. The temperature of the air in mid-winter enters the utiliduct at the tank room around 90 degrees F. and after travelling 352 feet to the first pump house falls to approximately 50 degrees F. The air is heated somewhat in the first pump house by two small electric heaters and is forced down the rest of the 100 feet of utiliduct where it discharges at a temperature of approximately 40 degrees F. There is an electric heating tape wrapped around the sewage pipe near the end of the utiliduct to insure that the pipe remains above freezing at the end. It has been determined that as long as strong winds are kept from blowing in the end of the utiliduct during extreme cold weather the sewage will not freeze in the pipe, as it did during the first two years of operation. An icicle will form daily in extreme cold weather, however, which necessitates someone's breaking it off to permit unimpeded flow.



WASTE WATER SYSTEM

(Toilet area)



TANK ROOM

SEWAGE SYSTEM

A system was installed, called the waste water system, which was designed to collect the water from the showers, wash basins and sinks to be used to flush toilets. This system works satisfactorily but it has not been used this year because it produces an offensive odor and fresh water has been plentiful. Since toilets use at least 5 gallons of water when they are flushed, present personnel prefer to flush toilets with a gallon can of water; this method has proved satisfactory and has not posed a sanitary problem.

G. Disaster Hut

The disaster hut is a small 20' x 48' building located approximately two hundred yards NE of the main station building. The disaster hut contains a Hercules 18.75 KVA 120/240 VAC diesel generator with four new starting batteries and a crate of spare parts. The batteries have never been activated since they would freeze in winter, but there is a box of bottled battery acid in the disaster hut with which to activate them if necessary. An oil space heater is installed at each end of the hut. The hut also contains CO2 fire extinguishers, damage control tools, and the spare loran transmitting antenna to be used in event of antenna casualty.

Survival equipment in the disaster hut includes:

Emergency Clothing:

20 Tops Underwear	22 Bot Mukluks 41	Face Masks 24	
24 Pr. Gloves	Mukluk Sock Sets 17	Sweaters —	
20 Socks	Parkas 24	Trousers, Winter N-1 15	

Commissary Supplies:

Pots, Pans and Dishes	Flour
Coleman Camp Stoves (2), Gasoline	Bread, Brown, Canned
Safety Matches	Corn Flakes
Candles	Potatoes, Dehydrated
Soap	Cabbage, Dehydrated
Spices	Onions, Dehydrated
Baking Powder	Carrot Flakes, Dehydrated
Baking Soda	Eggs, Dehydrated
Yeast	Milk, Dehydrated
Peanut Butter	Butter, Canned
Cocoa	Cheese, Canned
Molasses	Salad Oil, Canned
Soup, Dehydrated	Shortening
Macaroni	Prunes, Canned
Rice	Plum Pudding
Sugar	Salmon
Tea Bags	Ham, Canned
Coffee	Cod Fish Flakes
Egg Noodles	
MAPLE SYRUP	

Miscellaneous Items:

- Emergency Radio Set TR-141
- Gasoline Battery Charger
- Lanterns, Gasoline
- Folding Cots 15
- 8 Sleeping Bags (Arctic)
- Pillows, Sheets and Blankets
- Stretchers
- 2 Chemical Toilet
- Chemicals and Toilet Paper
- Paper Towels and Soap Powder
- Shovels
- Buckets and Tubs
- Garbage Cans 1
- 4 Gasoline Cans
- Swabs, Brooms and Dust Pans
- Pick Axe and Fire Axe
- Tarpaulin
- Tool Box
- Bale Rags
- 15 Snowshoes
- Marlin and Manila Line
- First Aid Kit

Gasoline and diesel oil are stored in drums approximately 50 yards from the disaster hut.

Chapter IV Engineering

A. General Engineering

1. Power Plant

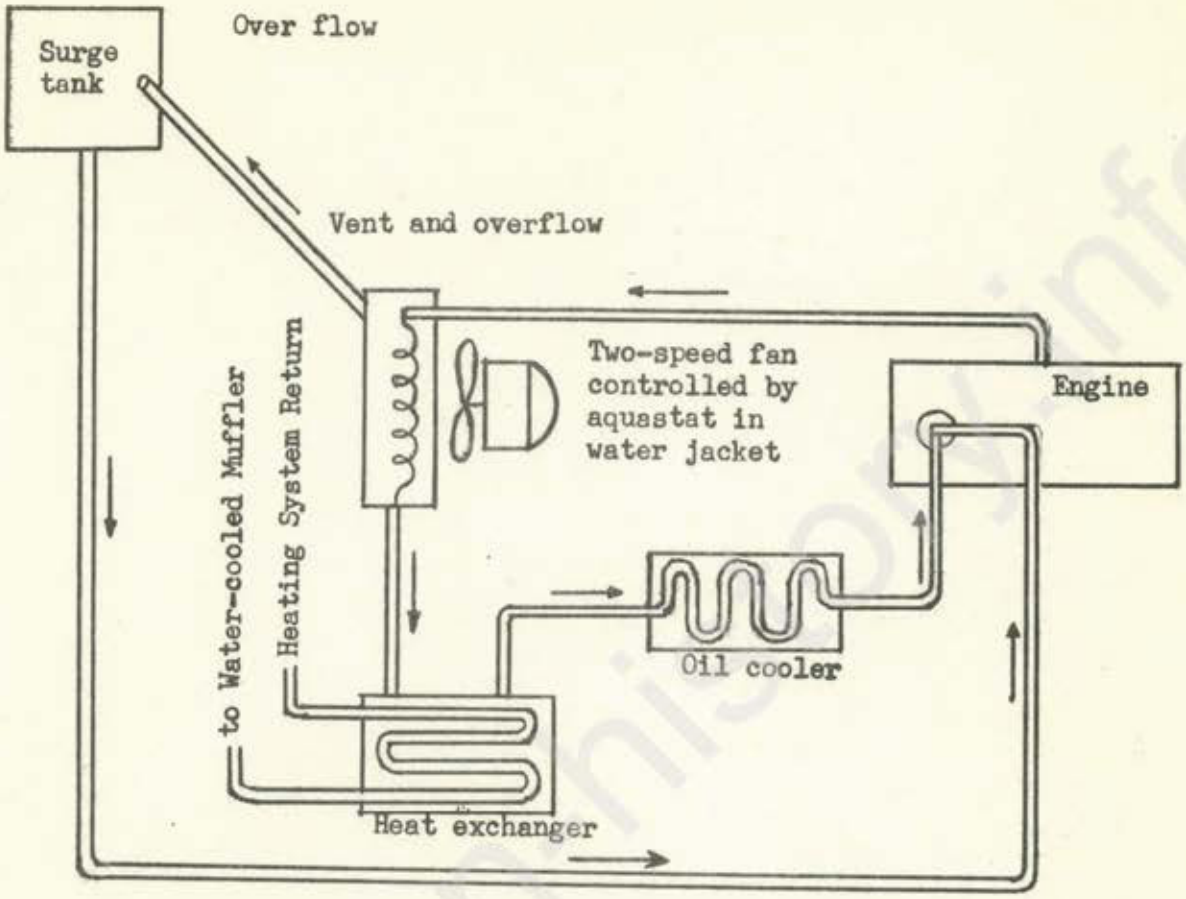
At present station power (120/240 AC) is generated by four 75 KW single phase Caterpillar diesel generator sets. There is a new spare diesel in the engineering storeroom to replace one of the others if necessary. Two generator sets are located in Power Building #1 and two in #2. There are two buses, main and auxiliary, with accompanying twin cable wiring. The main bus furnishes the station load and the auxiliary the electric load; buses can be used separately or connected in parallel. Any combination of the four generators can be run at the same time in synchronism due to the flexibility afforded by the two-bus distribution system in combination with double-throw switches; however, none of the diesel generators can be run unless the main bus is energized due to the fact that all cooling fans are wired only to receive power from the main bus. Two engines are run independently, one in each engineroom; one supplies power to the station load which varies from 40 KW to 70 KW and the other supplies power to the electronics load which is about 40 KW. Advantages offered by this method include: minimum time delay in restoring power after a power failure; heating the station adequately using only waste heat; preventing voltage fluctuations caused by automatic equipment cutting in and out from interfering with loran equipment; preventing engineerooms from becoming overheated.

The individual electronic leads are fed from a two-bus power distribution panelboard located in the loran transmitting room. This panelboard can be supplied either by the main or auxiliary bus feeders.

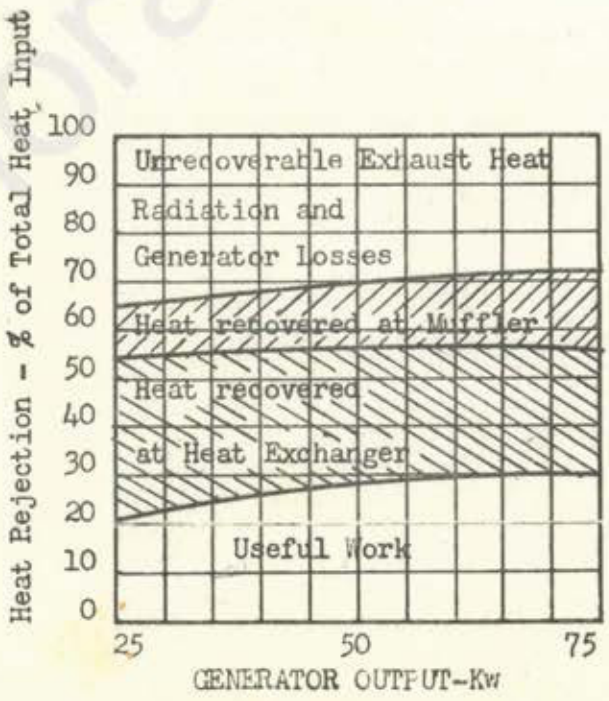
Diesel generators are started by a 32 volt DC battery bank. This source of DC power is used also to actuate the over-speed shutdown mechanisms. A safety switch wired into the DC circuit permits remote emergency shutdown of the diesel from the passageway outside the engineroom. Engine.safety alarms are provided for overheating, low lube oil pressure and power failure. If power is lost to the main bus the main automatic fire alarm is actuated.

The engine-cooling system, consisting of an engine-driven circulating pump, a water-cooled lube oil cooler, a remote radiator and fan controlled by an aquastat, a shell-and-tube-type heat exchanger, a surge-tank and piping, is an open system designed to operate at a constant temperature of 185 degrees F. A two-speed pusher-type fan mounted behind the radiator must be run at slow speed all of the time to prevent the engine from overheating; it cuts in at a high speed at a preset temperature.

The heat exchangers cool the engine by collecting waste engine heat and transferring it to the station heating system water which enters the heat exchanger at approximately 140 degrees F. and discharges at approximately 170 degrees F.



Engine-cooling System (Diagram taken from Engineer's Digest)



Engine Heat Recovery Diagram

Removal of the present power plants and installation of four 155 KW three phase, 120/240 VAC, diesel generator sets with necessary accompanying wiring is contemplated in the summer of 1957. It is not known how much additional power will be required for TACAN and other new equipment but single generator operation will probably be possible after re-engining. Single engine operation will probably result in a noticeable drop in temperature in the idle power building and surrounding passageways.

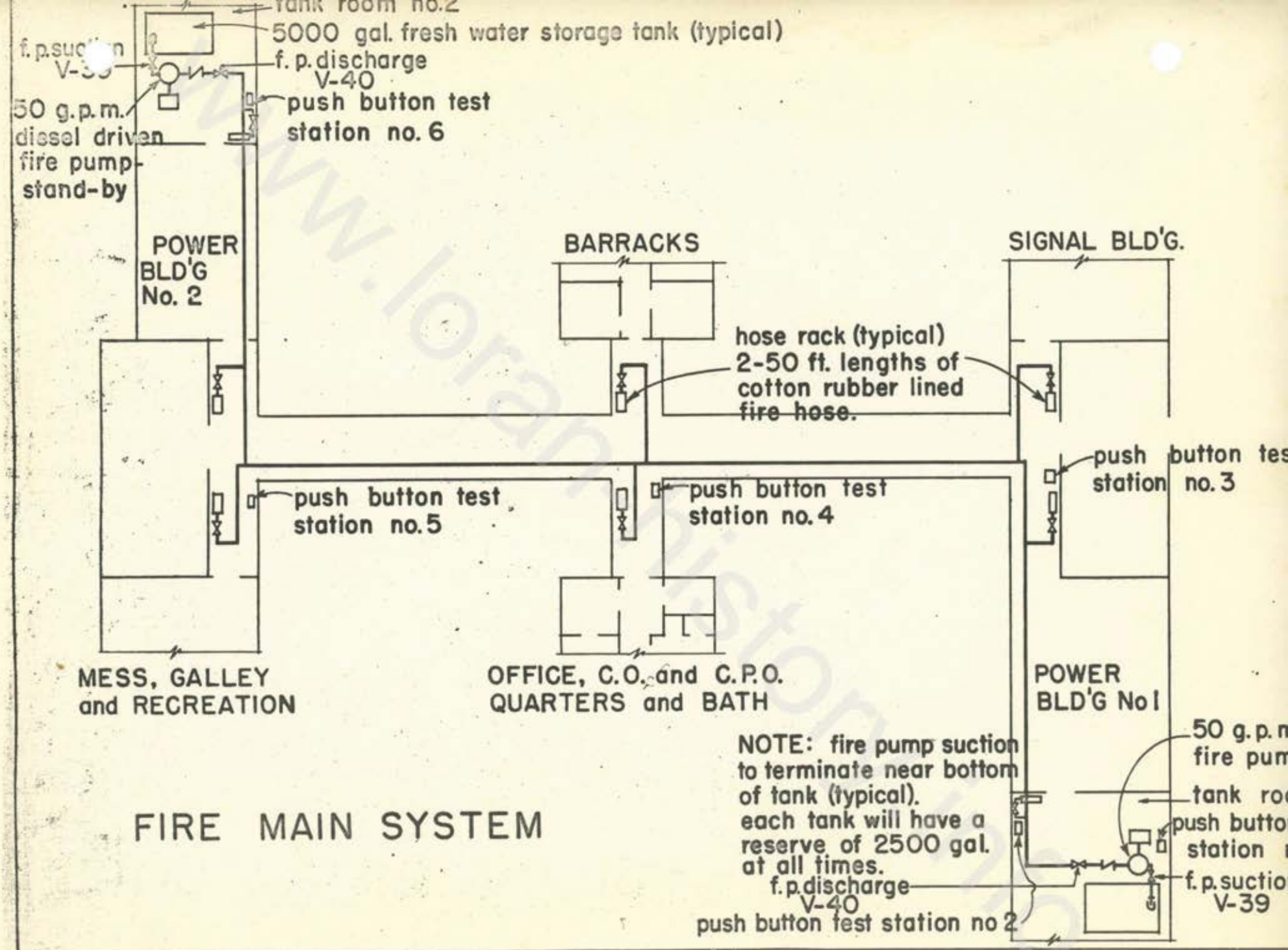
2. Damage Control

The necessity for adequate fire protection cannot be over emphasized in the Arctic. To insure early detection and timely action in addition to the half-hourly routine checks made by the security watch there are automatic detection systems and automatic fire fighting features at Cape Christian.

The Kidde-Atmo Automatic Fire Alarm System utilizes the principle of the expansion of air under heat contained in a circuit of capillary copper tubing running through each room in the station which ends in Detector Units. A slow gradual rise, or a sudden momentary rise, in temperature will not actuate the Detector Unit; however, an abnormal, continued rise in temperature, such as a fire would produce, will cause an electrical circuit in the Detector Unit to be closed thereby actuating alarm bells and zone indicating lights on annunciator panels distributed throughout the station. The power to operate the system is obtained from wet-cell batteries which are constantly maintained in a fully charged condition by 115 VAC power being converted to DC by a rectifier within the unit; a trouble alarm bell near the battery is actuated in event of AC power failure. "Break-glass" stations located in the passageways permit the sounding of the alarm system manually. The alarm system also is automatically actuated in event of power failure.

The system trouble bell will be sounded if there is a break in the break-glass station lines, auxiliary tripping lines, AC power lines, and DC power lines. Parallel bell lines are provided to prevent complete failure of alarm bells in the event of a break in a bell line. Single ground faults will not affect the system inasmuch as the power supply is ungrounded.

Both engine rooms and oil tank rooms are equipped with their own rate-of-rise detection fire alarm system and automatic CO2 extinguishing system. When the CO2 is released fire doors close and blowers cut off automatically. In the summer of 1956 this system was connected to the main automatic fire alarm system to sound the alarm in all parts of the station. Pull boxes are provided outside engine rooms and tank rooms to permit manual release of installed CO2. Paint and inflammables are kept in the protected tank rooms. To permit adequate cooling with minimum expenditure of water and eliminate the necessity of entering the tank room which would permit the escape of CO2, sprinklers fed by a 3/4" water line have been installed over the paint stowage and fuel oil tanks with manual control valves located outside in the storerooms.



FIRE MAIN SYSTEM

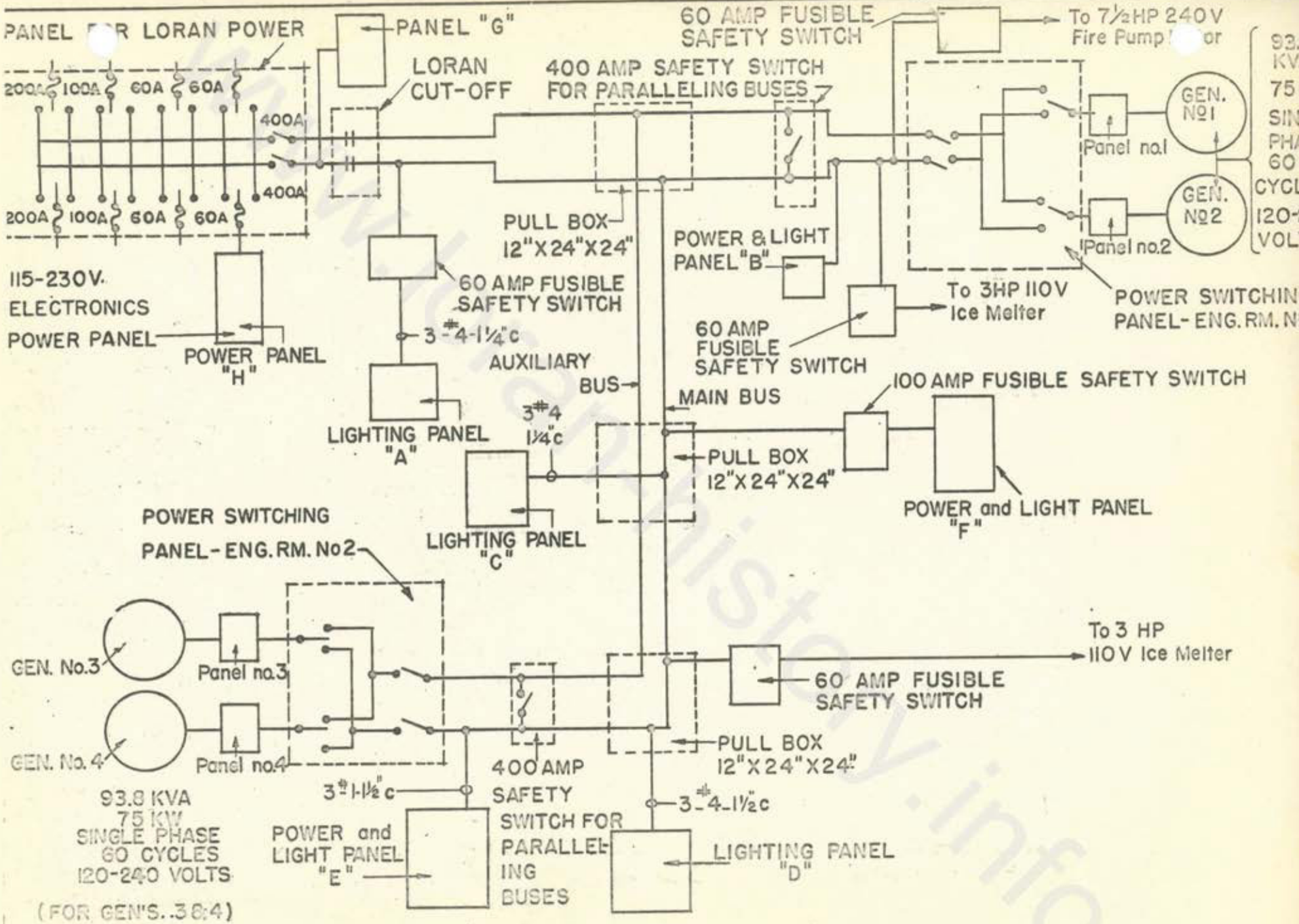
A shipboard type electric siren alarm has been installed outside to be controlled manually by a member of the fire bill to recall personnel. With no wind this siren can be heard from a distance of three miles.

A piece of plastic covered twisted pair telephone wire has been connected to the end of the station telephone call bell line and fastened to the inner walls of each pump house near the bottom and top to act as an automatic fire alarm, utilizing the principle that a fire would melt the insulation and complete the circuit thereby causing the bell at the main building to ring continuously.

Portable 15 pound CO2 and 2½ gallon foam fire extinguishers are distributed throughout the station. Since these types of extinguishers are of little value in extinguishing Class A fires some water type extinguishers have been requisitioned. A few back-type water extinguishers have been requisitioned in anticipation of fire in the pump houses, atwell huts or disaster hut. Since the greatest percentage of oil at this unit is kept in the tank rooms or outside in the fuel tanks any Class B fire would probably be of such magnitude that present 2½ gallon foam extinguishers would be rendered useless. Canned mechanical foam and two mechanical foam nozzles have been requisitioned.

Half of the water in the 5000 gallon water tanks in each power building is reserved for fire fighting. Fire hydrants are located so that two hoses can reach to any part of the building; for the loran wing the second hose must be run from the center of the main passageway. Due to the limited supply of water available for fire fighting, the use of applicators whenever possible to obtain maximum cooling with minimum expenditure of water has been stressed. Two fire pumps, electric and diesel driven, both delivering 50 gpm at 100 psi are installed. The diesel fire pump can take suction only from the water in tank room #2; the electric pump can take suction only from tank room #1. Since the electric fire pump at present is only wired to receive power from the main bus, an emergency power cable must be rigged in case of power failure to the main bus, if the water in tank room #1 is needed. Under normal conditions the electric fire pump can be started from remote push buttons located throughout the station. The water level in each fresh water tank is presently maintained at a minimum of 4000 gallons to insure an adequate fire fighting supply; water is pumped from the reservoir at least once per week to insure this minimum. Piping from the electric water pump installed in the pump house is kept open to both water tanks and a man is designated by the fire bill to start the pump to supplement the water supply available. This pump delivers approximately 35 gallons per minute at the tanks. Using the new water piping system installed by the present crew water can be delivered to the tanks within eight minutes from the time the fire alarm sounds, even in mid-winter with temperatures of minus 42 degrees F. when it must be pumped from beneath 6 to 8 feet of ice in the reservoir.

Other damage control equipment located in damage control lockers and mounted throughout the station includes: two OBA's, two gas masks, fire axes, applicators, all purpose nozzles, DC tools, electrical repair kit, rubber gloves, portable flood lights, flashlights, and firemen's coats. Other equipment ordered for resupply 1957 includes: asbestos gloves, flame safety lamp, wheeled CO2 fire extinguisher, oxyacetylene back-pack emergency cutting outfit, asbestos suit, hard helmets, fire blanket and a fire hose jacket.



POWER, ONE-LINE WIRING DIAGRAM

3. Electrical System

The main and auxiliary bus feeders of the present single phase system are made up of three single-conductor 500,000 circular-mil AVA asbestos-covered, varnished cambric insulated cables which can be paralleled or tied together by the 400 amp bus-tie switches. Electrical wiring is run in conduit with all loads either fused or connected through circuit breakers or both. As mentioned above a three phase system is to be installed in the summer of 1957.

4. Heating System

The forced hot water heating system is operated in combination with the building ventilation system. Waste heat alone from the engines and loran equipment has provided sufficient heat this winter even with temperatures as low as minus forty-two degrees F.; the two oil-fired heating boilers which were designed to supplement the waste heat when temperatures dropped below minus 10 degrees have not been needed. The waste heat given up to the water in the heating system by the engine and muffler heat exchangers is distributed throughout the station to unit heaters in the ventilation system and to the hot water supply for the galley and bath rooms. The distribution system is essentially a single-pipe monoflow system laid out in the form of a loop that extends from power building #1 to power building #2. Hot water is circulated in the system under a pressure of 15 psi. Motor-driven blowers which operate continuously for ventilation purposes deliver heat given up by the unit heaters to all parts of the station. The ventilation system removes hot air from above the electronic equipment in the transmitter room, conditions and distributes it throughout the station. The heat that remains is adequate to keep the electronic wing warm. With the present method of operating one engine in each engineroom the waste heat given off to the surrounding air supplemented by the ventilation-heating system is adequate to keep both power buildings comfortable in mid-winter. The Mess-Recreation Wing is kept warm by the ventilation-heating system supplemented by the waste heat given off by the stoves in the galley and to some extent by the refrigerator compressors in the compressor room. The Barracks and Administration Wings have been cold on the extreme ends probably because there is no heat to supplement the ventilation system. A booster heater was added to the barracks wing in the summer of 1956 but it evidently was installed too far from the end of the wing to be adequate and electric heaters must be used to supplement the system. Using the heating boilers will not help this situation since the rooms near the central passageway are already very warm and would become too hot if the boilers were used. If additional unit heaters were installed near the end of these wings the electric heaters would probably not be needed.

The outside of the building is covered with aluminum to reduce the amount of heat that is lost by radiation. The station would probably be easier to heat if the heated air from the ventilation system entered each room near the floor; actually the heated air enters through ventilators which are installed 8 feet above the floor. Another factor which makes the station difficult to heat is that other than the roof there are no ceilings. The roof is from 9 to 10 feet or more above the floor. Hot air enters 8 feet above the floor and for the most part rises and collects on the overhead and leaves the air near the floor cold.

When placed in operation the oil-fired boilers are controlled by aquastats; they cut in or out automatically at preset temperatures.

5. Ventilation Systems

1. Ventilation System For All Wings Except Power Buildings

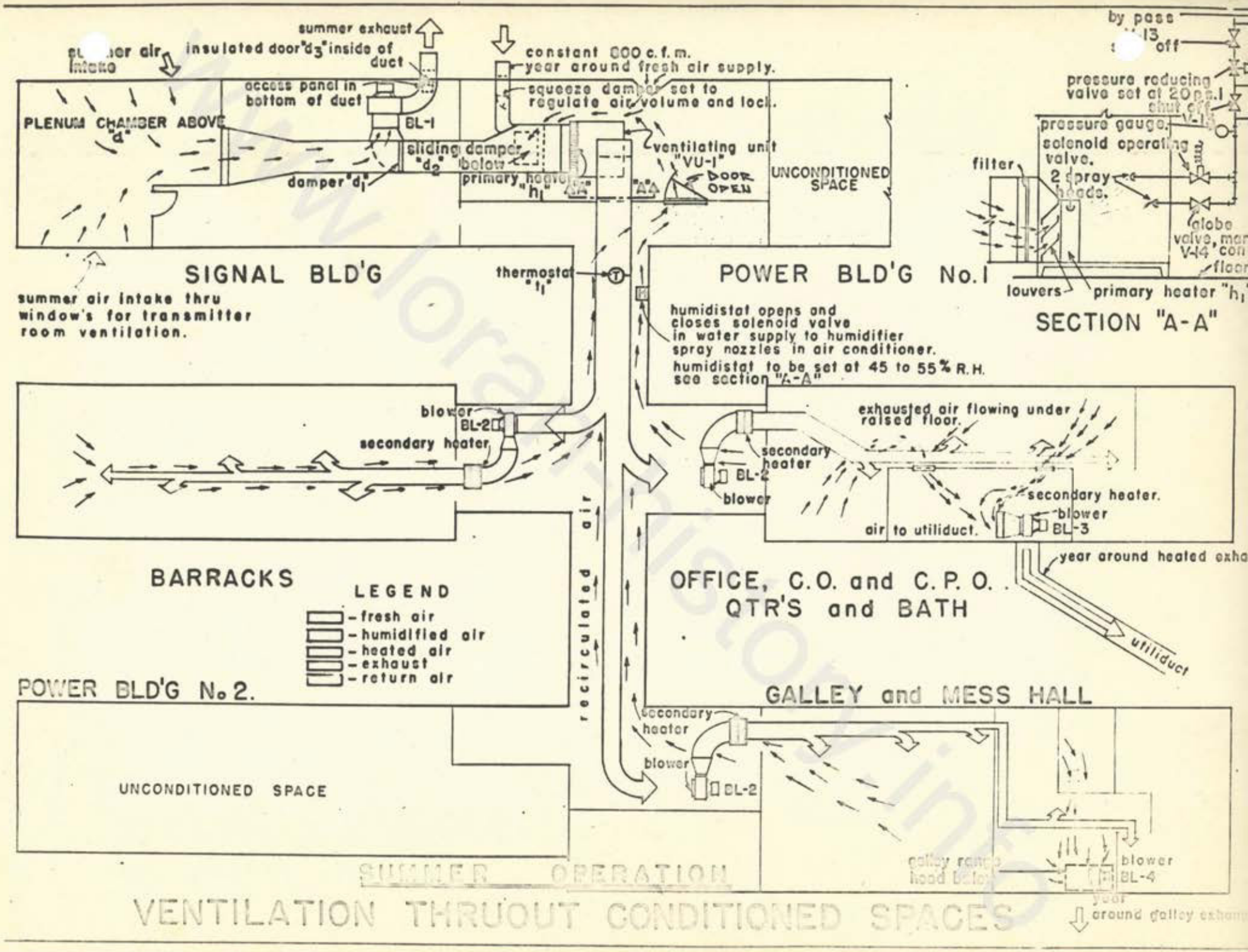
The forced-air year-round ventilation system consists of a ventilation unit, blowers, distribution ducts, grilles, dampers, humidistat, thermostat, unit heaters, valves and controls. The self-contained ventilation unit made up of air filters, volume dampers, heating coils, and humidifiers must supply fresh air to the building as well as recirculate, filter, preheat, and humidify the air before delivery to the wings of the building.

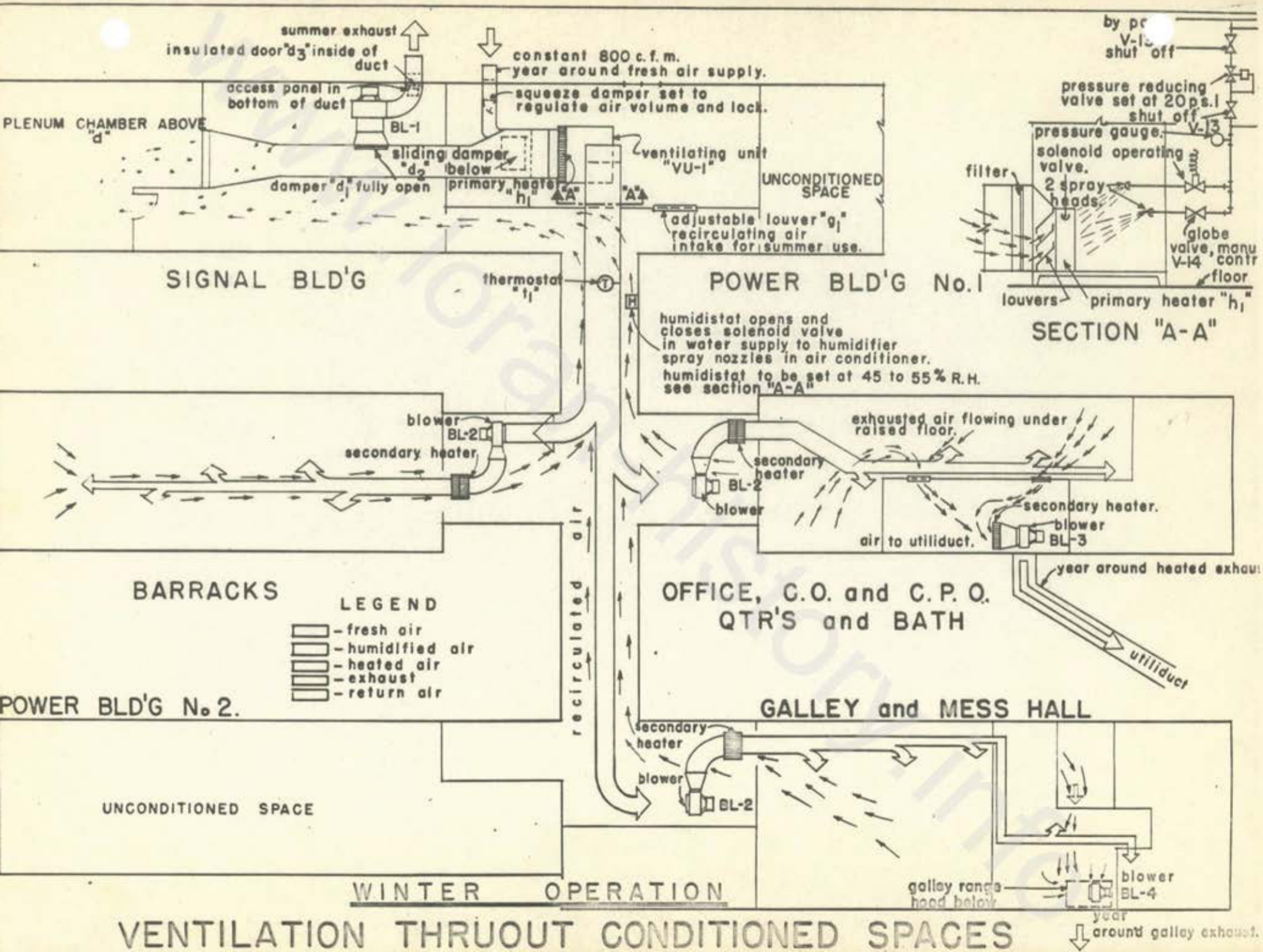
In winter four-fifths of the air entering the ventilation unit is drawn from above the electronics equipment in the transmitter room and one-fifth is drawn from the outside. In the ventilation unit the air is filtered by a bank of filters, heated by the primary heater which is controlled by a thermostat and humidified by the self-operated humidifier system which is controlled by a humidistat. After leaving the ventilation unit air is distributed through the main supply duct located in the passageway to secondary blowers with heating units and then delivered to rooms in all wings except power buildings. Approximately 35% of the air supplied to the toilet areas in the administration wing is removed through floor grilles, heated in the tank room by a unit heater and electric heaters and exhausted down the utiliduct by a blower to the first pump house where it is reheated and exhausted to the end of the sewage utiliduct to prevent the sewer and fresh water lines from freezing. Approximately 20% of the air furnished to the galley and garbage room are exhausted to the outside by an exhaust blower in the galley range hood. Approximately 80% of the air supplied to ventilated areas throughout the station is recirculated through the passageways back to the electronics transmitter room where the entire cycle is repeated.

The self-operated humidifying system consists of a reservoir with float valve, circulating pump, pressure gage, globe valves and eight atomizing spray heads, four of which are operated automatically and four manually. A circulating pump controlled automatically by a humidistat delivers water at a high pressure to the atomizing nozzles to obtain fine atomization. "Make-up" water is admitted to the system reservoir when required by a float valve. The humidistat is set to produce from 45% to 55% relative humidity.

2. Ventilation In Power Buildings

The engine room ventilation system consists of a blower, motor-operated shutter, damper, air intake and distribution ducts, mixing chamber and grilles. The system draws and mixes outside air with recirculated warm air from the engine room and supplies the necessary air required by the engine for combustion and to ventilate the engine room through a duct near the ceiling. Excess air is exhausted through the plenum chamber doors by the radiator fan. Large quantities of air are required to prevent the engine room from becoming overheated.


summer air intake
insulated door "d3" inside of duct
summer exhaust
constant 800 c.f.m. year around fresh air supply.
squeeze damper set to regulate air volume and lock.
access panel in bottom of duct
BL-1
PLENUM CHAMBER ABOVE
"d"
sliding damper "d2" below primary heater "h1"
damper "d1"
ventilating unit "VU-1"
DOOR OPEN
UNCONDITIONED SPACE
SIGNAL BLD'G
summer air intake thru window's for transmitter room ventilation.
thermostat "t1"
POWER BLD'G No.1
humidistat opens and closes solenoid valve in water supply to humidifier spray nozzles in air conditioner.
humidistat to be set at 45 to 55% R.H. see section "A-A"
by pass
off
pressure reducing valve set at 20 p.s.i
shut off
pressure gauge.
solenoid operating valve.
2 spray heads.
filter
globe valve, man
V-14 con
floor
louvers
primary heater "h1"
SECTION "A-A"
blower BL-2
secondary heater
BARRACKS
exhausted air flowing under raised floor.
secondary heater
BL-2
blower
secondary heater.
blower
air to utiliduct.
BL-3
year around heated exha
OFFICE, C.O. and C.P.O. QTR'S and BATH
utiliduct
LEGEND
- fresh air
- humidified air
- heated air
- exhaust
- return air
recirculated air
POWER BLD'G No.2.
GALLEY and MESS HALL
secondary heater
blower
BL-2
UNCONDITIONED SPACE
galley range hood
blower
BL-4
year around galley exhaus
SUMMER OPERATION
VENTILATION THRUOUT CONDITIONED SPACES



VENTILATION THRUOUT CONDITIONED SPACES

6. Fuel Oil System

As aforementioned fuel is delivered to Cape Christian in 55 gallon drums. The fuel is pumped from the drums into a 25,000 gallon fuel tank on the beach. By means of a fuel oil transfer pump the fuel is pumped to the five 26,000 gallon storage tanks which are located just behind the station. Fuel is pumped from the outside tanks by a transfer pump located in power building #1 and delivered to two 2500 gallon tanks in the power buildings. An emergency hand pump is provided near this pump to transfer oil from outside if necessary. The inside tanks are divided into two compartments: the upper half stores cold oil pumped from the outside tanks so that it is heated by the surrounding room air before dropping to the lower half; the lower half which is already warm supplies oil to the engines and equipment. The connection providing the engines and other equipment with fuel oil is provided with an automatic shut-off valve that will close off the supply of fuel in the event of fire. This valve contains a thermal element that is preset to a predetermined temperature and will close the valve in the event the room temperature reaches the set temperature. Fuel oil tanks contain a number of other connections, such as, fuel oil return connections from the engines and other equipment, drain connections provided in the upper and lower compartment for stripping of the tanks of water and an emergency drain extending through the floor for draining the entire tank. Another transfer pump is provided near tank #2 to transfer oil from tank room #2 to tank #1 if necessary. A two and one-half year supply of fuel oil is stored at Cape Christian.

7. Refrigeration System

The original refrigeration units were too small and temperatures could not be maintained at zero or below as required by the Comptroller Manual even though the units ran continuously. Since two diffuser units were connected in tandem and the system was adjusted and operated in accordance with the Manufacturer's Instructions in August 1956 required temperatures have been maintained. Brunner air-cooled themostatically controlled refrigeration compressors installed at this unit are driven by a 1 H.P. motor. Freon 12 refrigerant and Larkin diffusers are used. Defrosting is accomplished by reversing the refrigeration cycle. Doors have been fabricated to be installed in the freeze boxes to permit natural refrigeration in winter.

The chill box has no cooling unit of its own; it is cooled when heat is lost to the adjacent freeze boxes. Temperatures averaging approximately 35 degrees F. are maintained in the chill box. Vegetables and dairy products have kept extremely well in the chill box. In winter the chill box must be heated by a thermostatically controlled electric heater to prevent the vegetables from freezing. Vegetables requiring storage temperatures higher than 35 degrees such as potatoes are kept with the dry stores, which also should be kept at temperatures around 40 degrees since long periods of storage are necessary. The two large freeze boxes have ample storage capacity for 2½ year's supply of frozen foods. It should be emphasized that present refrigeration units must be operated at peak efficiency to be able to maintain required temperatures during the short summer period.

In addition to the installed equipment there are: a large 32 cubic foot reach-in Herrick refrigerator; a small apartment type 4 cubic foot Westinghouse refrigerator; a Taylor 10 quart ice cream freezer which has its own freeze box storage space of 4 cubic feet.

8. Fresh Water System

In an effort to alleviate the problems experienced at this unit during the first two years of operation while taking on fresh water during the winter months, an insulated system of concentric pipes heated by an electric heating tape was designed and fabricated in August and September of 1956 to be installed in the reservoir approximately 34 feet from the water pump in 9 feet of water and connected to the pump by suction hose which runs through an utiliduct from the ice to the pump house. Since installation on 2 November 1956 the system has emitted hot water at the pump, the temperature of which varies from 130 degrees to 150 degrees F., each week when water is pumped even during long periods of extreme cold weather with temperatures as low as minus forty-two degrees. The temperature of this initial water is still above 50 degrees when it reaches the station tank room.

The water pump is kept warm by a 500 watt strip heater attached to its base. The piping between pump houses has been wrapped with five 400 watt heating tapes approximately 60 feet apart which cover almost the entire distance between pump houses. These tapes were covered with 1" of corrugated asbestos insulation wrapped with aluminum foil insulating paper. Snow has covered the reservoir and utiliducts which reduces the effect of outside air temperature changes.

The advantages offered by this new piping system include:

a. Throughout the year water can be delivered at the station tanks at the rate of approximately 35 gpm within 8 minutes from the time the fire alarm is sounded to supplement fire fighting water. Heretofore only 5000 gallons of water could be assured for fire fighting and additional water could not be pumped to supplement the supply. One man is assigned by the fire bill to start the pump.

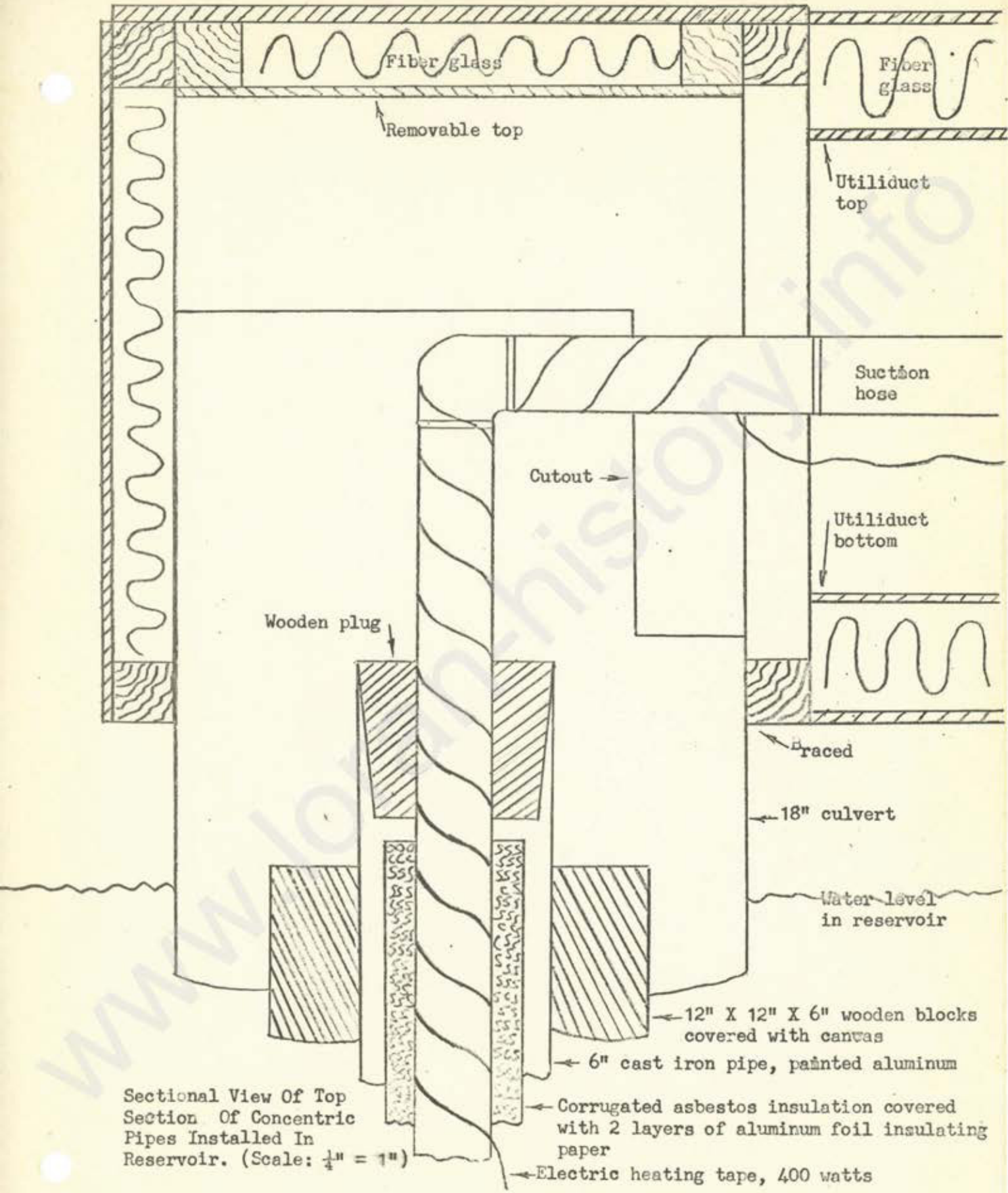
b. Water can be pumped weekly by one man who can do all necessary work in a few minutes in comfort from inside the heated pump house. Tanks are usually topped off in less than two hours. This job used to take several men several hours outside to chop a hole in the ice, burn fuel oil in a trough to keep pipe thawed while pumping and usually resulted in a solidly frozen suction hose before topping-off tanks.

c. Small electric heaters have provided adequate heat in pump houses. Oil space heaters are no longer needed which saves fuel and reduces the hazard of fire. The 312' utiliduct between pump houses does not have to be heated even while pumping. Heating tapes between pump houses are turned on the day before pumping and for a day after pumping to insure that no water will remain to freeze in the pipes.

d. Water does not have to be rationed in winter; however, "At Sea" showers and judicious use of water is stressed since the quantity of water available under the ice is unknown.

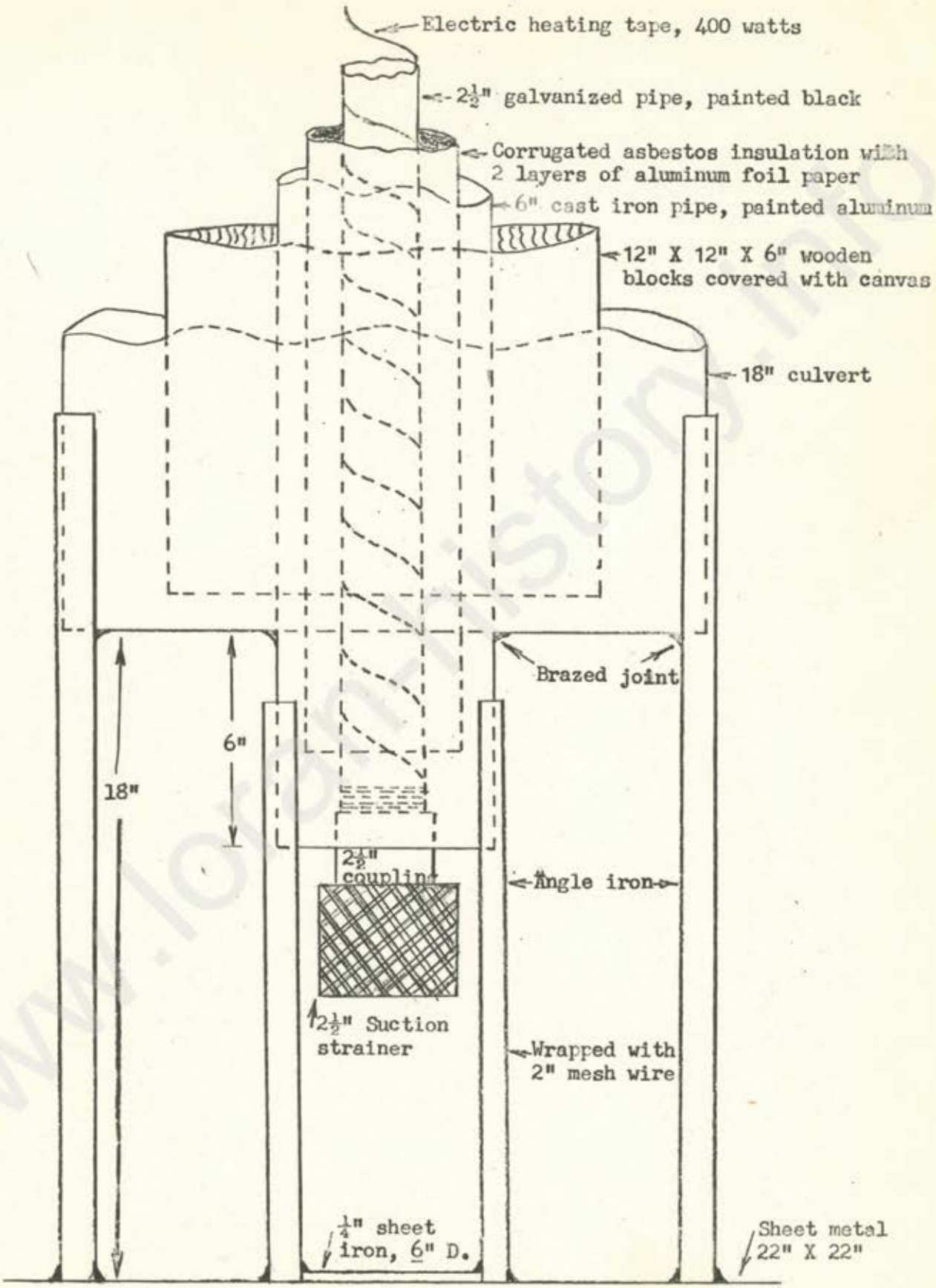
The secondary method of obtaining fresh water is by the use of two 1300 gallon ice melters. Ice is cut from the reservoir, put into the melter and melted by an oil-fired unit beneath the tank. The melters have not been needed since this unit was commissioned.

An Athey trailer equipped with a 1500 gallon water tank with an installed gasoline driven water pump is available to haul water if necessary.



Sectional View Of Top Section Of Concentric Pipes Installed In Reservoir. (Scale: $\frac{1}{4}$" = 1")

Partial View Of Lower Section Of Concentric Pipes Installed In Reservoir To Permit Immediate Water Suction In Winter As Well As In Summer.(Scale: $\frac{1}{4}$" = 1")



Water is stored in two 5000 gallon tanks and the 1300 gallon ice melters located in the tank rooms of the power buildings which makes a total capacity of 12,600 gallons. As aforementioned 5000 gallons of this water is reserved for fire fighting. At present winter water consumption is approximately 450 gallons per day. Since water is pumped weekly there is usually over 9,000 gallons available for fire fighting; water stored in the ice melters is consumed first because fire pumps can take suction only from its adjacent water tank.

All water is treated with Calcium Hypochlorite (CaHClO). Scuttlebutts are located in the crew's head and in the mess room. Three shower stalls are located in the crew's bath room; the CO's bathroom and CPO's bathroom have one shower stall each. The domestic water system operates under a pressure of 35-40 psi which is delivered by one of two pumps, one located in each power building; each is equipped with a pressure tank, an automatic air volume control, and an automatic switch. The domestic hot water system is served by a 120-gallon storage tank located in the sewage tank room. A 40-gallon hot water storage tank provided with an electric booster heater to maintain a water temperature of 180 degrees for sanitary purposes is installed in the galley.

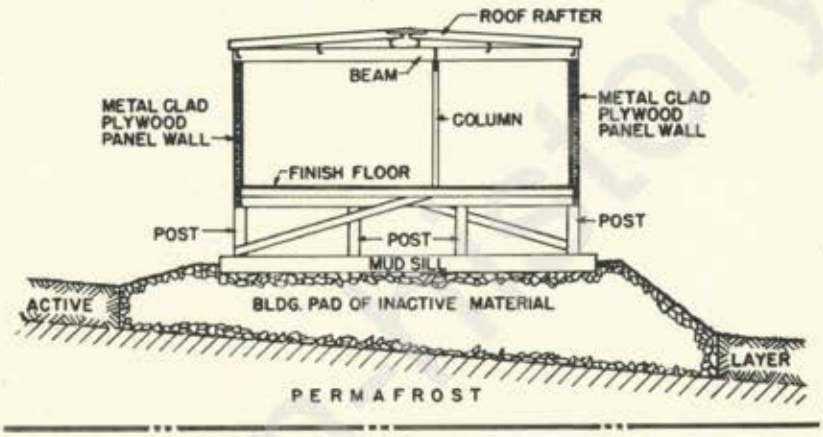
9. Buildings

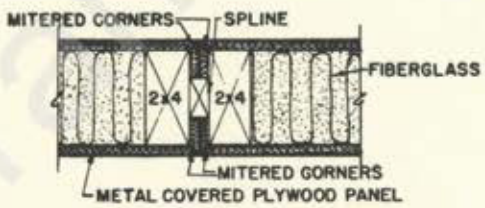
On the original site for the main buildings the ground was excavated and a gravel pad foundation laid. The sub-structures made up of wood piers on mud sills were built on the gravel pad so that air would circulate under the building and prevent the heat of the building from melting the permafrost thereby causing the building to settle. Most of the floors are made of insulated panels covered with red asphalt tile. The floors in the engine rooms, tank rooms and garage are made of precast concrete floor panels finished off with a wire-meshed reinforced concrete surface. Outside walls are made of 24" x 4" fiber glass insulated panels; the shell of the panels is made up of aluminum-covered-plywood on the exterior and stainless steel-covered-plywood on the interior. The roof panels were also of the insulated type with a corrugated Galbestos exterior. Although the roof has a slight pitch it evidently is not pitched enough for there have been several leaks where snow has accumulated on the roof and was melted by the heat of the building.

Other buildings include: the disaster hut made of similar materials to the main buildings; Butler building made of corrugated sheet metal and lined inside with fiber glass; pump houses made of materials similar to the station building; Atwell huts, which were left by the original construction crews, which are made of canvas with fiber glass insulation and plywood floors.

An extension of the administration wing is contemplated in the summer of 1957 to provide six additional bed rooms for the contemplated increase in complement of six men. Wiri g, ventilation and heating systems will have to be altered to provide for the extension.

TYPICAL SECTION THRU BUILDING WING





SECTION THRU EXTERIOR WALL PANEL

[TWO (2) FOOT MODULAR]

B. Electronic Engineering

The following loran equipment is installed at Cape Christian: AN/FPN-30 timers; AN/FPA-2 timer switch gear; T-325 B/FPN transmitters; T-138A amplifiers; "T" wire cage transmitting antenna; vertical, comb and beverage type receiving antennas.

Signals are very good on both rates 1LO and 1L1 from the time the ice breaks up on Baffin Bay in the summer until the bay freezes again in late November or December. Normally the noise level at both Cape Atholl and Cape Christian is very low, however, from December until June conditions are erratic; the percentage of usable time sometimes drops below 50% for several days at a time on rate 1LO even when using the aforementioned "blink code." During the first two winters of operation Cape Atholl could frequently receive a usable signal from Cape Christian when Cape Christian found Cape Atholl's signal unreadable. This winter the converse has been true. Adverse atmospheric conditions generally seem to be directional; when rate 1LO is receiving a poor signal rate 1L1 is receiving a good signal and conversely. In general except for the sky wave overriding the ground wave occasionally rate 1L1 has given good year-round performance. The cause of the difficulties on rate 1LO has been attributed to a number of interrelated factors:

1. The primary factor is deemed to be low ground wave field strength at both Cape Atholl and Cape Christian which is due to attenuation of the signal caused by ice and snow on the base line. During the first year of operation field strength measurements taken at Cape Christian when Baffin Bay was relatively free of ice indicated that Cape Atholl's signal strength was 1230 microvolts per meter; when the ice formed near the latter part of November the field strength dropped sharply to about 40 microvolts per meter; as the ice grew thicker and was covered by snow the field strength continued to decrease until in February it was less than 1 microvolt per meter and could no longer be measured.

2. The lack of field strength alone is not sufficient to result in the poor performance experienced on rate 1LO. During one period reports indicate that the ground wave was apparently being received via two or more paths which resulted in a splitting of the ground wave pulse. This effect was only noticed when Baffin Bay contained a mixture of ice and water; it was therefore determined that if the signal is travelling over mixed water, multipath propagation and interference between wave fronts results.

3. Since both stations are relatively near the North Magnetic Pole auroral zone effects are deemed to exert strong influence on radio (loran) propagation and to be a contributing factor to winter difficulties. Within 30 degrees of the North Magnetic Pole, the ionosphere is said to be greatly affected by corpuscular bombardment from the sun, magnetic storms and has a greater incidence of sporadic E-layer formation. Low ground wave signal intensity necessitates the maintaining of a high timer receiver gain which accentuates the height and length of the sky wave train. High angle radiation reflected back and forth from the earth to the ionosphere numerous times may cause exceptionally long sky wave trains during some periods.

Sky wave interference accentuated by frequent cross-over of both the Slave 1L1 and Master 1L1 signals on many occasions has saturated the scope and rendered rate 1L0 unusable. Since the sky waves exceed the ground wave by magnitudes of the order of 40 db and since sky wave trains of from 30 to 40 thousand microseconds in length are experienced it is apparent that there will be periods when the ground wave will be masked completely. Another difficulty experienced has been the 1 hop E sky waves overriding the ground wave thereby making accurate synchronization impossible.

4. Sun spot activity has been deemed a contributing cause of difficulties experienced. This is reasonable to assume since the amount of difficulties experienced have increased each year in direct proportion to the increase in sun spot activity.

In addition to developing a "blink code" and "master-sync" "slave-monitor" procedures to improve operations, in November 1956 rate 1L7 was changed to rate 1L0 to reduce the frequency of cross-over. To further improve operations the following recommendations have been made:

a. Installation of a 5/8 wave transmitting antenna tower at all three stations in the chain should decrease adverse high angle radiation and increase ground wave signal strength by an estimated 7 db.

b. Shift the loran frequency from 1950 kcs to 1850 kcs to take advantage of somewhat better propagation usually experienced on that frequency.

Three types of receiving antennas available at Cape Christian:

1. The beverage antenna is a straight horizontal wire directional antenna running parallel to the base line of the rate for which it was installed. It was designed to utilize the horizontal component of the transmitted wave which should not be distorted due to ice conditions. These antennas are not connected in the timer room and have not been used this year.

2. The vertical straight wire antenna is a standard loran receiving antenna. During the summer this antenna is adequate but in winter it is very poor.

3. The comb antenna is a directional antenna consisting of eighteen 60 ft vertical wires which are connected in phase so that each wire adds to the strength of the incoming signal. The comb antenna also strongly discriminates against sky waves. The strength of the incoming signal is only about 75% of that of the signal obtained on the vertical antenna but the signal to noise ratio is increased by asmuchas six times. The comb antenna is presently used on rate 1L1 in winter.

It has been found this winter that the signal to noise ratio at Cape Christian can be improved by using an amplifier, installed outside, in conjunction with the comb receiving antenna. The comb antenna-amplifier combination increases the signal strength of the incoming signal and in addition increases the signal to noise ratio by at least two times over the comb antenna alone. This is by far the best antenna combination and has made possible a much higher percentage of usable time on rate 1L0. The vertical antenna is being used to receive the local signal and the comb antenna-amplifier combination the remote signal on rate 1L0.

Chapter V Comptroller

A. Commissary

The two year's supply of commissary items available at Cape Christian presents a storage problem and makes the taking of the monthly inventory difficult. Dry stores are stored in the station commissary storeroom and in an atwell hut near the beach; when dry stores are broken-out they are put in the issue room. If stored at the proper temperatures and if the oldest stocks are consumed first there should be little spoilage and food should be reasonably palatable. Unfortunately improper freeze box temperatures in the past have not only resulted in a large amount of spoilage but a large percentage of the meat became either rancid or insipid. This old stock of frozen food should be consumed by the summer of 1957; however, there is an oversupply of some types of dry stores that will require several years to consume.

Upon request the Commissary at Goose AFB will have fresh fruits and vegetables paradropped to Cape Christian with monthly mail drops. Eggs can be requested when aircraft are due to land. Since August 1956 only short periods have elapsed when these items have not been available. The large variety of foods available make delectable nutritious menus comparable to any other Coast Guard unit possible. The present cook has frequently baked a large variety of bakery items comparable in every respect with those found in bakeries in the United States. Good food inspires high morale.

Commissary provisions:

Fruits and Veg.,fresh
- Apples
- Cabbage
- Carrots
- Celery
- Lemons
- Lettuce
- Oranges
- Potatoes, Irish
- Tomatoes

Fruits and Veg.,frozen
- Asparagus
- Beans, lima, snap
- Broccoli
- Brussel sprouts
- Cauliflower
- Kale
- Mixed vegetables
- Peas
- Spinach
- Peaches
- Raspberries
- Strawberries
- Peppers, green

Dairy products
- Butter
- Cheese; ched.,proc.
- Eggs; frozen, fresh

Meats & fish, frozen
- Beef; diced, dry heat, ground, moist, tenderloin, liver
- Chicken; roasters,fryers
- Ham; fresh, canned
- Lamb, carcass
- Pork, loins
- Turkey
- Veal; stew, roast, chops
- Bacon;Canadian, slab
- Sausage, bologna, franks
- Salami
- Fish; cod, flounder,haddock
- Shrimp; raw, breaded
- Oysters

Vegetables, canned
- Asparagus
- Beans; with pork, wax, sprouts
- Beets
- Corn; creamed, whole kernel
- Mushrooms
- Olives, stuffed
- Pickles, sweet
- Pimientoes, whole
- Peas
- Potatoes, sweet
- Pumpkin
- Sauerkraut
- Spinach
- Tomatoes
- Catsup
- Tomato; paste, puree
- Relish

Fruit juice, canned
- Grapefruit
- Orange
- Pineapple
- Tomato

Fruit, canned
- Apples
- Applesauce
- Apricots
- Blueberries
- Cranberry sauce
- Cherries: sour,unpitted
- Figs
- Fruit cocktail
- Grapefruit
- Peaches
- Pears
- Pineapple
- Plums
- Prunes, dry
- Mincemeat
- Raisins
- Apple butter
- Peanut butter

Preserves & jams
- Jam; blackberry, grape, strawberry
- Marmalade

Beverages
- Cocoa
- Coffee
- Tea:bags, bulk

Sugar; granulated, brown, powdered

Milks and cream
- Milk; evaporated,Formost, powdered
- Cream, dry
- Ice cream; paste,powder

Soups
- Beef; bouillion cubes, noodle
- Chicken; bouillion cubes, noodle, cream of, rice
- Pea, cream of
- Onion, dehydrated
- Vegetable

Flour & dried beans
- Barley
- Beans: kidney, lima, white
- Peas; black-eye, green, split
- Rice
- Flour: wheat,soft, buckwheat, whole wheat, wheat, hard, rye, self-rising

Meats & fish, canned
- Bacon
- Beef; corned, roast, roast with gravy
- Chicken,boned
- Chili Con Carne
- Codfish flakes
- Ham; deviled, whole
- Luncheon meat
- Salmon
- Shrimp
- Stew meat & vegetables
- Tuna
- Turkey, boned

Dehydrated items
- Eggs, powdered
- Potatoes
- Onions, sliced
- Carrots
- Cabbage

Spices & condiments
- Allspice
- Cinnamon
- Chili powder
- Curry
- Mace
- Nutmeg
- Pepper; black,red
- Sage
- Thyme
- Salt; celery, garlic, onion, table

Miscellaneous
- Bread, brown
- Buffay, gravy master
- Cereals, dry, asst.
- Chocolate syrup, topping
- Cheese, grated
- Cocoanut,shredded
- Cornmeal
- Cornstarch
- Crackers, soda
- Noodles; egg, chow mein
- Flavor: almond,banana, black walnut,orange, pineapple, lemon, maple, tablets
- Food coloring,asst.
- Fruit cake mix
- Jello, strawberry
- Gingerbread mix
- Honey
- Macaroni
- Syrup, maple
- Mayonnaise
- Mustard; prepared,dry
- Nuts, salted
- Oil, salad
- Pancake mix
- Popcorn
- Powder, baking
- Pudding, plum
- Sauce; soy, hot
- Shortening
- Spaghetti
- Vinegar
- Yeast

This unit has a Commuted Ration Mess. The ration value is 150% of the district ration value; this amount averaging approximately 1.89 permits the liberal use of all types of food on hand, the keeping of an "open galley" and prevents any losses due to spoilage from causing a deficit in the mess. Cape Christian is advised monthly by message of the ration value for the succeeding month. C1CGD(f) should be advised when it is believed by the commanding officer that the ration value should be decreased or increased stating the amount of change recommended and reasons therefore. The commanding officer's mess bill averages approximately 58 dollars per month.

Checkage may be made in the pay record of officers for subsistence furnished by the mess provided that the officers concerned request in writing that checkage be made. Checkage will be made each month on the basis of money value reported by message. Officers not requesting checkage must pay their mess bill immediately upon return to CONUS.

A line report of the monthly Commissary Report (Form CG-2576) must be submitted by message to the district in time to arrive no later than the 8th day of the following month. In the same manner as other CG units the complete report together with documents required by the Comptroller Manual to support entries thereon for accounting and auditing purposes must be submitted by mail as soon as possible after the end of each month. Complete records must be maintained at this unit.

When invoices are not received with supplies in time to be submitted with the Commissary Report, it is necessary to submit an itemized list of supplies received during the month with assigned estimated cost. Any necessary adjustment to reflect an actual cost should be made in a subsequent report in the manner prescribed by the Comptroller Manual. When new commissary provisions are received which have different prices than those of the same types in stock, the new price is used for the entire stock and a price-gain or price-loss is indicated in the stock ledger.

B. Supply

1. Requisitions

C1CGD(f) will advise the date (usually 15 Jan) annual resupply requisitions should be submitted. If mail service is not available at the time of the requisitioning replenishment of equipment and supplies, requisitions should be submitted by message, using the commissioning outfitting list as a basis. Items required will be identified by section and seven digit code number. The first three digits identify the item number of the section of the list and the last four digits identify the quantity required. Every item in each section should be referred to as being deleted or required to avoid errors. Equipment parts not listed in the commissioning outfitting list should be requested by referring to the manufacturer's parts list by name, effective date, page number, item number (if any) and part number required. Electronic items should be requested by equipment type and stock number. All other items required should be requested by stock number and nomenclature.

Quantities requisitioned should be such that a two year supply of each item will be on hand at the time the resupply operation is completed. This will require estimating the usage of supplies and parts between the time of requisitioning and the arrival of the logistics vessel.

Sample message requisition:

From: Cape Christian To: C1CGD

RESUPPLY RQN NR --- X REF OUTFITTING LIST X SECT 34 DELETE ITEMS 1, 6 THRU 10 FURNISH 0020012 0030050 0040250 0050100 X SECTION 35 etc. X PARTS CATALOG FOR ENGINE TCG-39509 CATERPILLAR TRACTOR PAGE 4 2H4896 IMPELLER 1 EA PAGE 23 3B8995 FITTING 1 EA ETC X 53-B-2155 BAND RUBBER 3 EX etc.

2. Resupply

Annual resupplies are received by ship usually in the latter part of August or early part of Sepetember depending on ice conditions not only at Cape Christian but at other stops on the supply ship's itinery. Refrigerated supplies are delivered by one ship and other supplies by another. Both ships sometimes arrive at the same time. It usually takes 3 or 4 days to receive supplies, check them against invoices and requisitions and stow them. It takes two men approximately three weeks to pump the year's supply of fuel from drums into the beach tank from which it is then pumped to the storage tanks by the installed transfer pump.

Emergency supplies are requested by message and shipped with an emergency priority to be air dropped as soon as possible. Other supplies needed prior to resupply but not of an emergent nature are requested by message to be packed for air drop and shipped by regular mail or parcel post to be delivered with regular mail drops.

3. Boards of Survey

Boards of survey should be prepared in accordance with the Comptroller Manual Vol. 7 and Supply Manual, First CG District and forwarded via the first available mail to C1CGD(f). Surveyed items must not be disposed of prior to approval of C1CGD(f) except as provided in Comptroller Manual, Paragraph 7A03131. In any case where the recommendation is to return the items surveyed to CONUS for repair or disposal, authority for return should be requested by message prior to arrival of the logistics vessel. Full particulars should be given in the message regarding condition of the items.

Special Arctic clothing

All personnel assigned to Cape Christian are issued special clothing on custody receipt prior to departure from CONUS. All items issued will be returned to CONUS with the individual and delivered in person to CG Supply Depot, Boston, Mass. Any item not returned must be covered by a Board of Survey prepared by the commanding officer prior to the individual's departure from Cape Christian. The Board of Survey must accompany the member and be presented to CO, CG Supply Depot, Boston, Mass. with the remainder of the clothing. Upon return of clothing and/or Board of Survey to the CO, CG Supply Depot, Boston the custody receipt will be returned to the individual.

C. Pay

Enlisted personnel assigned to Cape Christian receive an extra allowance for being stationed overseas, in the same amount as "sea pay". Pay records are maintained by C1CGD(f) and all pay, except that which is alloted, accrues until personnel return to Boston. Checks against accrued pay can be drawn only in the name of the serviceman himself. Although all allotments and dependent claims should be anticipated and made prior to departure, it is possible to handle emergent allotments and alleviate unforeseen circumstances via messages followed by letters and/or necessary forms if such an occasion arises.

D. Fuel and Lube Oil

Arctic diesel fuel is used at this unit in the following equipment:

Main engines	Ice melters
Auxilliary engines	Space heaters
Tractors	Diesel driven pumps
Heating boilers	

Present annual consumption of diesel fuel oil is approximately 74,400 gallons. This amount will probably be increased after re-engining.

Gasoline is used at this unit in the following equipment:

Tractors	Coleman emergency cook stove
Emergency battery chargers	Gasoline lanterns
Air compressor	Blow torches

Present annual consumption of gasoline is estimated at 250 gallons. Gasoline is stored in drums well away from buildings.

Lube oil, Symbol 9250, delivered in 55 gallon drums is used in all types of equipment at this unit. Annual consumption is estimated at 1650 gallons. Lube oil tests materially cut down on lube oil consumption.

E. Transportation

Cape Christian is accessible during most of the year by aircraft and during the short summer by ship. Methods of transportation at Cape Christian include: dog sleds, snowshoes, skis and small boat.

A landing strip was improvised on the station beach by the station crew primarily to provide a means of evacuating personnel for medical attention if necessary; secondarily, to provide a place for aircraft to ditch in the vicinity of Cape Christian; thirdly, to offer a means by which items which cannot be paradropped can be delivered and mail picked-up during the winter.

The landing strip is 2596 feet long and 151 feet wide. It is marked by: red flags on both sides and across the ends; half-fuel drums filled with diesel oil, two on each corner and six others equally spaced on each side; the north end is marked by four 60 watt red aircraft warning lights 50 foot apart, 3 feet high, and one 1000 watt flood light trained vertically on the west end of the line of red lights. An improvised wind sock is mounted on a small building left by the construction workers located 310 feet west of the approximate mid-point of the strip. The first of eighteen 90 feet unlighted comb antenna poles running east-west is located 724 feet west of the approximate mid-point of the strip. A northern approach is somewhat impeded by three 20 foot beverage antenna poles running east-west located 302 feet north of the strip; for night landings it is intended to light these poles by flashlights. North of the strip the eastern or bay side is clear but the weatern side is hazardous due to unlighted antenna poles around the station building which are approximately 200 feet higher than the strip. One of the highest of these poles has been lighted by a 100 watt white light. The area south of the strip is flat and clear permitting an unlimited approach and touch-down on the very end of the strip. The strip can be lengthened in winter to the south when ice on a small river just beyond the south end freezes to 2 feet. The station building and hill offer some protection to the strip from prevailing NW winds. The ground is relatively hard even in summer which may permit use of the strip in summer. Since fuel oil is kept in the drums at all times the strip could be lighted within thirty minutes for emergency landings but twenty-four hours notice has been requested for planned landings. Twenty ground obstruction flare markers have been ordered to mark the strip. A portable wheeled CO2 fire extinguisher and a back-pack type emergency cutting outfit have been ordered to be used for crash and rescue equipment.

There are no facilities for heating aircraft engines or for refueling aircraft; therefore, in winter aircraft engines must be run continuously while at Cape Christian. There are 900 gallons of 100 octane Canadian owned fuel at Clyde which could be used in an emergency.

Chapter VI Administration

A. Reports And Logs

In addition to routine check-off lists and required records the following reports and logs are required:

Daily Reports
- Stock Record - CG 2577, Commissary
- Issue/Sales Slip - CG 2581, Commissary
- Daily Ration Cost Record - CG 3471, Commissary
- Provision Inventory Control - CG 3469, Commissary
- Individual Mess Account - CG 3476
- Night Order Book
- Plan Of The Day
- Station Log - 2612
- Exchange Account Ledger
- Exchange Stock Ledger
- Machinery Log
- Loran Log
- Radio Beacon Log
- Residual Chlorine Log
- Medical Log
- Lube Oil Test For Operating Machinery

Weekly Report
- Lube Oil Tests

Monthly Reports
- Report Of Medical Relief - CG 2526 (mail to C1CGD(pm))
- Weigh 15 lb Fire Extingishers And Tag (15th of each month)
- Issue/Sales Slips - CG 2581 (kept in station records)
- Summary Of Radio Logs - CG 2614 (mail to C1CGD(o))
- Report Of Loran Station Operation - CG 2899 (mail to C1CGD)
- Monthly Summary Loran Station Operation (by message to C1CGD)
- Letter Narcotics Inventory And Report (kept in station records)
- Commissary Report - CG 2576 (submit by mail & message to C1CGD)
- Inventory of Ration Supplies - CG 2576A (kept in station records)
- Analysis of Provisions - CG 3474 (kept in station records)
- Exchange Inventory (kept in station records)
- Exchange Individual Accounts Receivable (by ltr to C1CGD(p)

Quarterly Reports
- Inventory Of Ration Supplies - CG 2576A (submit with Commissary Report by mail)
- Registered Publications Inventory Report - CG 2873
- Quarterly Marks (message to C1CGD 15 days before end of quarter)
- Exchange Financial Report - CG 2986 (submit by mail & message to C1CGD)
- Bacteriological Test Of Water (no test equipment available)
- Exchange Inventory (submit with Exchange Report)

Semi-Annual Reports

Inventory Plant Property Record (ltr to C1CGD)
Weigh 50# and 75# CO2 Bottles and Tag
Certificate of Dependency - DD 137
Inventory Of Uninstalled Electronic Equipment - CG 2889
Adaptability For Warrant For C.P.O.'s (31 Mar & 30 Sep to C1CGD(p) by msg)

Annual Reports Due 1 JAN

Annual Resupply Requisitions Prior to 15 Jan (by mail or msg)
Station Logs - CG 2612 (submit to HQ by parcel post)
Small Arms Training Report - CG 3031
Non Registered Publications Inventory Report - CG 2873
Mobile Equipment Record - CG 2630
Report of Annual Fire Inspection (ltr to C1CGD)
Preference For Duty And Leave Desired Enroute For All Hands (ltr or msg to C1CGD(p))
Officers Assignment Card - CG 3121
Officers Personnel Data Car - CG 3292
Electronics Installation Report - CGHQ 3134 (ref: CG-223)

Annual Reports Due 1 JUL

Accounting Of Special Cash Morale Fund (ltr to C1CGD(p))
Inventory of Penalty Indicia Envelopes and Stamps (ltr to C1CGD(f))
Report Of Small Arms - CG 2925
Report Of Small Arms Ammunition - CG 2924
Promotion Exams Request 90 Days Prior To Exam (ltr or msg)
Pyrotechnics Report - CG 2923

Annual Reports

Small Boats And Vehicles Which Attached - CG 2975 (Dec 15)
Recharge 2½ Gallon Foam Extinguishers And Tag (Oct)
Request For Checks Drawn On Accrued Pay For All Hands (ltr to C1CGD(f)

B. Official Correspondence

The District Commander has recognized a need for special provision to cope with unique problems at Cape Atholl and Cape Christian. He has charged the Aids To Navigation Section for the Chief of Staff with monitoring of all correspondence between the district office and these stations to insure prompt reply or action if indicated. Accordingly all correspondence addressed to the Commander, First Coast Guard District must be marked "Attn: Chief, Aids to Navigation Section." Liberal use of deferred messages in lieu of mail has been encouraged when deemed necessary to insure timely action.

C. Delegation Of Authority

Insofar as regulations will permit authority should be delegated to the best qualified personnel to insure proper and efficient administration. It should be pointed out that this delegation of authority does not relieve the commanding officer from his responsibilities as outlined in current regulations and instructions not only as commanding officer but as the only officer present.

Designated station duties at present:

Lieutenant (junior grade)

- Commanding Officer
- Crypto-security Officer
- Classified Material Control Officer
- Custodian Of Registered Publications
- Custodian Of Narcotics
- Custodian Of Morale Fund
- Commissary Officer
- Head Of Classified Publications Inventory Board
- Station Censor
- Pre-trial Investigator
- Summary Court Martial
- Exchange Officer
- Medical Officer

Chief Electronic's Technician

- Executive Officer-In-Charge
- Personnel Officer-In-Charge
- In-Charge Electronics Department
- In-Charge Communications
- In-Charge Safety
- Head Of Safety Board
- Head Of Narcotics Board
- Alternate Custodian Of Registered Publications
- Member Of Classified Publications Board
- In-Charge Internal Security For Electronics And Communications Department

Chief Engineman

- Engineer Officer-In-Charge
- In-Charge Damage Control
- In-Charge Electrical Repair
- In-Charge Transportation
- In-Charge Fire Prevention
- In-Charge Radiological Defense
- In-Charge Chemical Defense
- Member Of Safety Board
- Member Of Planning Board For Training
- Member Of Narcotics Board
- Assistant In-Charge Safety
- In-Charge Of Fresh Water Procurement
- In-Charge Internal Security For Engineering Department

Chief Hospital Corpsman

- In-Charge Operations
- In-Charge Medical
- In-Charge Supply
- In-Charge Property
- In-Charge Training
- Head Of Planning Board For Training
- In-Charge Education
- In-Charge Public Information
- In-Charge Photography
- In-Charge Library
- In-Charge Motion Picture
- In-Charge Search And Rescue
- In-Charge Of Mail Handling
- Commissary Auditor
- Exchange Auditor
- In-Charge Accident Reporting
- Member Narcotics Board
- In-Charge Civil Readjustment
- In-Charge Reenlistment
- In-Charge Savings Bond Allotments
- In-Charge Voting Information
- In-Charge Life Insurance
- In-Charge Internal Security For Operations, Supply Department And Medical Department

Boatswain's Mate, First Class
- In-Charge Deck Department
- In-Charge Gunnery
- Exchange Operator
- Master At Arms
- In-Charge Cargo Handling
- Member Of Planning Board For Training
- Member Of Safety Board
- Assistant In-Charge Of Training
- In-Charge Of Controlling Use Of Fresh Water
- In-Charge Internal Security For Deck And Gunnery Department
- In-Charge Laundry
- In-Charge Lucky Bag

Engineman, First Class
- Assistant Engineer Officer-In-Charge

Commissaryman, First Class
- In-Charge Commissary

Damage Controlman, Second Class
- Assistant In-Charge Damage Control
- Assistant In-Charge Fire Prevention
- Assistant In-Charge Radiological Defense
- Assistant In-Charge Chemical Defense

Electrician's Mate, First Class
- Assistant In-Charge Of Electrical Repair

Radioman, Second Class
- Assistant In-Charge Of Communications

Electronic's Technician, First Class
- Assistant In-Charge Of Electronics Department

D. Station Bills

Watch, Quarter & Station	Power Failure	Fire
Emergency Evacuation	Antenna Casualty	Destruction
Berthing & Messing	Aircraft Landing	Cleaning

E. Safety

Safety is of prime importance in the Arctic due to the fact that a doctor is not immediately available and equipment damage may be irreparable. Safety pointers which may prove beneficial:

1. Personnel should not wander away from the station alone and unarmed because:

a. Fog develops suddenly and unexpectedly. There are few good landmarks other than the beach and it is easy for the newcomer to become lost.

b. Polar bears in the vicinity are dangerous.

c. Early in the winter when there is snow on the ground and only a thin film of ice over snow covered lakes, it is easy to fall through and difficult to get out alone.

d. Other than a "numb" feeling it is not easy to tell when one's skin such as cheeks and ears are frostbitten or frozen. Another person can see the skin turning white and give warning.

e. A person injured outdoors in winter would quickly freeze to death unless help were summoned.

2. Roads, antenna ground systems, cables and danger areas such as edges of streams or holes in the area of the station should be marked in summer so that:

a. The tractors will not get stuck or damaged when snow hides these hazards.

b. Cables and wires will not be run over and cut.

3. Except in an extreme emergency tractors should never be run over the reservoir, lakes, streams or sea ice. One can never be sure how much ice is beneath the snow covered surface and the tractor may be stuck or lost. An Air Force snowmobile was lost in January 1957 when it fell through the sea ice enroute from Thule to Cape Atholl with mail and supplies even though the ice at that time of year ordinarily is thick enough to easily support the vehicle's weight. Personnel were fortunate to get out alive.

4. Small arms safety precautions should be stressed since men are frequently required to carry weapons outdoors.

5. Personnel should not wander out on the sea ice especially in the spring when it is breaking-up. In the past Eskimos have been stranded for several days when an ice floe on which they were seal hunting drifted out to sea.

6. All hands should be thoroughly instructed in the potential hazards of servicing electronic and electrical equipment and well versed in the latest methods of artificial respiration.

7. Personnel working in tank rooms or engine rooms should be instructed to leave the room immediately if the installed CO_2 system is actuated. Doors closing automatically is an indication that one of the systems has been actuated.

8. Tractors should not be run in the garage unless doors are open or the exhaust pipe extension to the outside is being used. Carbon monoxide is deadly!

9. Other safety precautions normally observed at any other Coast Guard unit will apply.

F. Displayed Flags

In view of the fact that Cape Christian is located on Canadian soil, both National ensigns are flown from separate poles at the same height. The RCMP detachment flies the British Commonwealth Union Jack. The Coast Guard ensign is flown from one of the antenna poles near the station building.

Chapter VII Hints For New CO'S and Crews

A. The official mailing address for Cape Christian:

Name, Rate, USCG
USCG Loran Station, Cape Christian
A.P.O. 677
c/o Postmaster, New York, New York

Upon arrival the new commanding officer should send a list of personnel assigned and the forwarding addresses of the relieved personnel to APO 677. Monthly air drops are scheduled for the above address.

Mail can also be received via the Canadian postal system using the following address.

Name, Rate, USCG
USCG Loran Station, Cape Christian
Baffin Island, Canada
c/o Eastern Arctic Patrol, R.M.S., Ottawa, Canada

The Canadian system has not been utilized to any great extent. Some mail improperly addressed "Baffin Island, Canada" has been received with the Canadian mail drops; advertisements from companies not having the proper address account for the majority of this mail. Canadian mail drops are scheduled quarterly; however, if the U.S.A.F. enroute to make an air drop at Cape Christian stops at Frobisher they will pick up Canadian mail and drop it at Cape Christian for Clyde.

Telegrams can be sent in an emergency to personnel at Cape Christian using either of the following addresses; the first is probably the more expeditious:

Name, Rate, USCG
USCG LORSTA, Cape Christian
c/o USCG Radio Station (NMH)
P.O. Box 751
Alexandria, Virginia

Name, Rate, USCG
USCG LORSTA, Cape Christian
c/o Commander, First Coast Guard District
1400 Custom House
Boston, Massachusetts

B. Other than official stamps there are no United States postage stamps at Cape Christian. Canadian stamps may be purchased from the Canadian branch post office at Clyde for use when there is a Canadian mail pick-up. New crews are advised to bring a good supply of stamps and/or stamped envelopes; even though there are no scheduled mail pick-ups opportunities are usually afforded for outgoing mail on an average of every second month. Mail usually arrives in the United States within a week after leaving Cape Christian.

Paragraph 131.5 of the Postal Manual, U.S. Post Office Department, states, in part, "letters sent by Sailors in the United States Military Service located where U.S. domestic mail service operates, addressed to places in the United States, may be dispatched for collection on delivery, under the following conditions:

(a) The address of the letters must be marked "Sailors Letter".

(b) Under the marking the letter must bear the signature and official designation, either with facsimile handstamp or in writing of a commissioned officer to whose command the sailor belongs.

(c) Postage, at single rate, is collected on delivery."

To date it has only been necessary to utilize this "Sailors Mail" clause for outgoing packages.

C. Due to the isolation of Cape Christian there are no facilities for families. Married personnel receiving orders to Cape Christian should locate their families advantageously and instruct their wives in the proper course of action in various situations and emergencies.

D. As soon as possible after receiving orders to Cape Christian and prior to departure all personnel should:

1. Ascertain that all debts and taxes have been paid or arrangements made to pay them.
2. Insure that all types of insurance are paid in advance or arrangements have been made to pay them; for example, house, car, own life, dependent's life, hospitalization, etc.
3. Ascertain that all life insurance policies list the desired beneficiaries.
4. Ascertain that wives or parents know the location of all important papers, such as insurance policies, deeds, bills, bills of sale, car registration, mortgages, will, power of attorney, receipts for income tax and driver's license.
5. Have a power of attorney, limited or general, written and notarized for wives or parents if desired.
6. Ascertain that "Last Will and Testament" is correct or if none is written one probably should be written.
7. Check with the local Department of Internal Revenue Representative to ascertain where to file and the correct procedure for filing their Federal income tax return that will become due the year that they will be stationed at Cape Christian, when and how their wives should file her return if she has worked and how to file a joint return. The present crew was told that income tax must be paid within one month after returning to CONUS. Wives who have worked must file a separate return on time; when the serviceman returns they file a joint return and her money is refunded.
8. Ascertain that dependents have the necessary identification card for medical care under the new Dependent's Medical Care Bill and that they thoroughly understand the privileges and limitations of the bill. It should be pointed out that wives and children who are not residing with their sponsors, which is true in the case of families of personnel assigned to Cape Christian, have free choice between uniformed services medical facilities and civilian medical facilities. If the wives and children leave the area of their household on a trip, they still have free choice between civilian and uniformed services medical facilities during the period of such absence. Dependents other than wives or children do not have the privilege of utilizing civiliam medical facilities however.
9. Instruct wives or parents as to where, how and when to renew driver's license, purchase automobile license plates and have the car serviced.

10. Register in state in which his domicile is located and find out the proper procedure for voting absentee ballot.

11. Ascertain that all desired allotments or allotment changes have been registered. Find out how much pay will be accrued each month in their pay accounts.

12. Fill out Form CG-3312 to be attached to their pay record if they will become entitled to an increase in pay for completing a period of creditable service while at Cape Christian.

13. Bring their camera and a year's supply of film. Film is not sold in the exchange.

14. If they anticipate an increase in the number of their dependents, sign blank Forms NAV S&A 545, Allotment Authorization and NAVPERS 668, Application For Dependent's Allowance. The individual's wife should then be advised to notify the District Personnel Office of such change and to forward a copy of the birth certificate or adoption papers, etc. to the Morale and Welfare Section, First Coast Guard District. Upon receipt of the required documents the above forms will be completed. If an allotment stoppage is anticipated a blank S&A 545 should be signed. These forms should be left with the District Personnel Office.

15. Ascertain that Form DD-93, Record of Emergency Data, and Form CG-3291, Enlisted Personnel Data Card, are complete and current.

16. Apply for new identification card if necessary and ascertain that dependents have necessary identification cards.

17. Apply for a Geneva Convention Identification Card (DD-528) at the District Intelligence and Law Enforcement Section.

18. Submit three choices of preference for the next assignment of duty.

19. Draw an Arctic sea bag and ascertain that all clothes and shoes fit properly, keeping in mind that ordinary clothing and shoe sizes will not apply due to the bulkiness of Arctic clothing and heavy socks that must be worn with shoes and that wool socks, shirts and pants shrink if washed in hot water.

20. Ascertain that their regular sea bag is complete with regulation clothing except dress whites and/or any other exceptions authorized by the new commanding officer. Underwear and dungarees should be relatively new or these clothes probably will wear out within the year; there are no small stores at Cape Christian. Arctic clothing is seldom worn inside due to the fact that comfortable temperatures are maintained.

21. If possible, collect for travel, dislocation allowance and per diem prior to leaving the CONUS.

22. Bring enough cash to defray expenses enroute to Cape Christian and to make any desired purchases at the exchange in Goose Bay or Thule or at the Hudson's Bay Post at Clyde. Checks and money orders can seldom be cashed at the Hudson's Bay Post since a limited amount of cash is available there.

23. Bring musical instruments and any other hobbies desired that are not too bulky and are not listed under morale items.

24. If possible do all Christmas and special occasion shopping before departing and arrange to have Christmas cards mailed. Purchase a year's supply of birthday and special greeting cards since these items are not available in the exchange.

25. Amateur radio operators should apply as soon as possible to the Department of Transport, Air Services, Telecommunications Division, Ottawa, Canada for an application form for amateur radio station operation in Canada by an amateur radio station licensee of the United States, as outlined under Amateur Radio in Chapter III.

E. The new commanding officer in addition to the above probably should:

1. Request an interview with officers in various sections of the First Coast Guard District, such as Aids to Navigation, Personnel, Electronics Engineering, Civil Engineering, Operations, Finance, Morale and Communications, to become well acquainted with current problems and intended action at Cape Christian at the District and/or Headquarters level and to learn current District policies and complaints.

2. Study carefully the service records of the new crew, which will be kept in the district, and take liberal excerpts therefrom; for example, personal data; emergency data; battery of tests scores; practical factor sheets for advancement in rating; commendations; court martial convictions; etc.

3. Make a list of the amount of money being accrued each month to each man's pay account.

4. Fill out and sign Fitness Reports, NAVPERS-310 for the full year's tour and submit to the Operations Office.

5. Fill out and submit a new Officer's Personnel Data Card, CG-3292.

6. Fill out and submit a new Officer's Assignment Card, CG-3121.

7. Fill out and sign Form DD-137, "Dependency Certificate Wife or Child Under 21 Years" which is to be submitted on 1 January and 1 July by all officer personnel entitled to increased allowances for dependents. Both copies of this form should then be attached to your pay record.

8. Draw additional cash from the District Morale Fund for the "Special Working Morale Fund" at Cape Christian. The present commanding officer will recommend the amount required to the District in July.

9. Bring a large supply of cotton khakis and wear Service Dress Blues enroute to Cape Christian. Dress Blues will probably only be needed two or three times while at Cape Christian. Each summer there is an Eastern Area Inspection which requires a personnel inspection. Each summer the Canadian Department of Transport Ship CD HOWE stops at Cape Christian and a member of the Canadian Department of Northern Affairs and the Royal Canadian Mounted Police Superintendent, In-Charge of Arctic RCMP Units, visit Cape Christian.

10. If time permits while at Goose Bay make an official courtesy call on the Commander of Goose Air Force Base. This may result in a better understanding of existing problems, conditions, and intentions, aid in solving future logistical support problems at Cape Christian and in continuing present excellent interservice cooperativeness.

11. Not have to bring text and reference books due to the large variety available, except perhaps the Marine Engineer's Handbook; a slide rule would also be advantageous.

F. The baggage allowance for personnel travelling to and from Cape Christian is 200 lbs. Health records are carried with orders to be kept at Cape Christian. Personnel usually travel to Cape Christian in two separate groups approximately two weeks apart to permit overlap of relieving personnel. Both groups travel by train from Boston to Trenton, New Jersey. At Trenton The Transportation Officer at McQuire Air Force Base must be called for transportation to the base. At McQuire there are barracks, messing facilities, BOQ, exchange and clubs to be utilized until a flight is available to Goose Air Force Base. From Goose the flight is usually made direct to Thule. Upon arrival at Thule both groups go directly to the WESTWIND (or EASTWIND) if she is in for transportation to Cape Christian. Personnel may remain on the WESTWIND or EASTWIND from two to three weeks until operational commitments and ice conditions will permit the two day trip to Cape Christian. Relieved personnel depart on the WESTWIND in two groups to return to the CONUS in the reverse procedure.

Supplement No. 1

STATION PHOTOGRAPHS

Photos by
Station Crew 1956-57

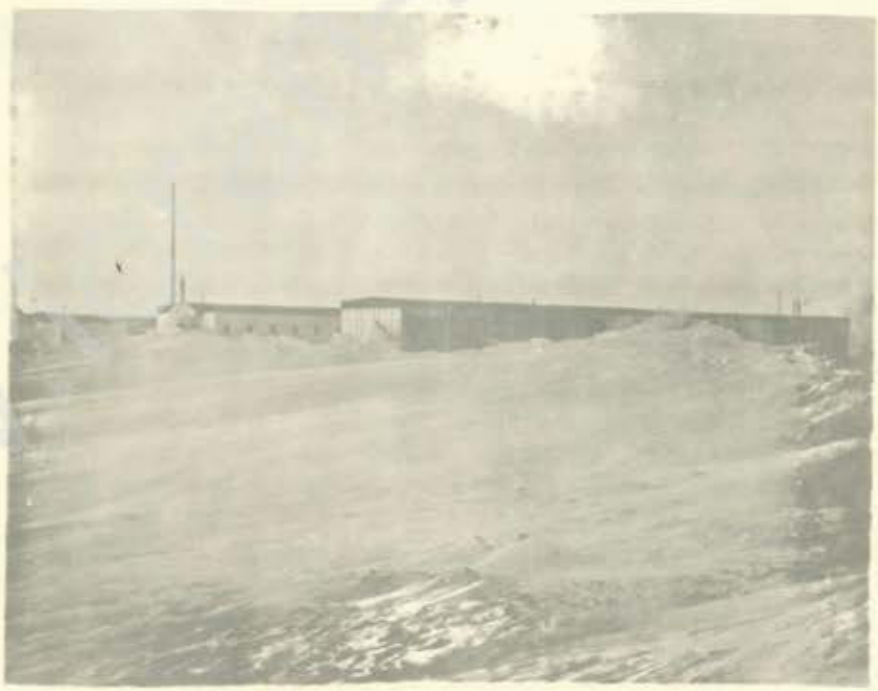
Looking Toward The South
Front to rear...First pump house, second pump house, Butler building, Comp antenna to Nipisat, Black Bluff mountain. Clyde lies behind mountains in right hand corner of picture. Road runs along face of dam.

Looking Toward the Southeast From Just above Road To Station
Note beach fuel tank, empty fuel oil drums, Atwell huts and abandoned buildings in back ground. Landing strip runs from behind fuel tank parallel to the beach to the South.

Reservoir and Utiliduct As Seen From The Second Pump House
Road at right runs along the face of the dam. First pump house lies 128' from the water's edge.

Atwell Huts As Seen Looking Toward The North
Note station building on hill in left background. This picture was taken in 1954 before some of the Atwell huts were given to the Canadian government for the use of Eskimos.

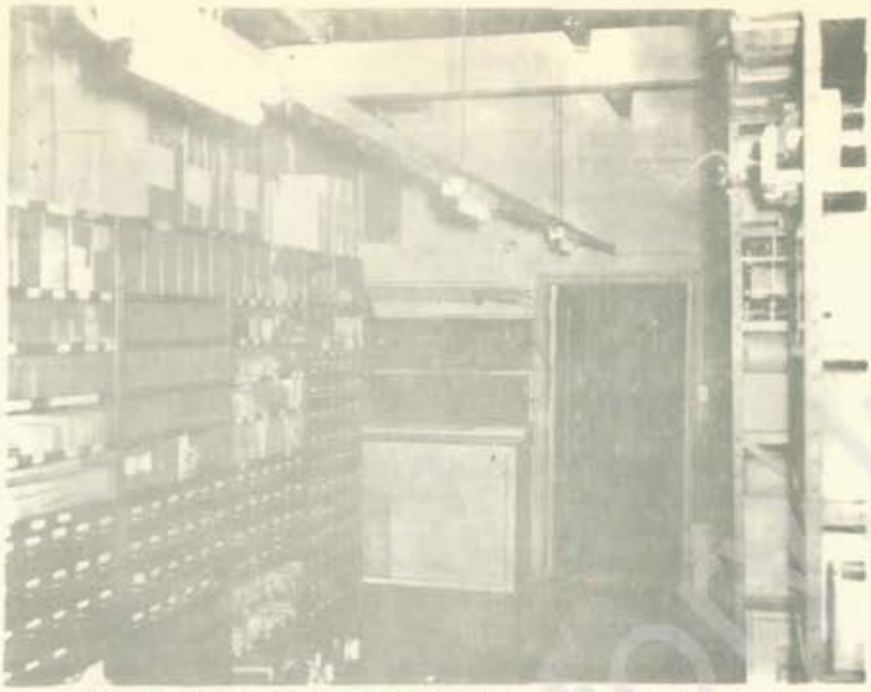
Station Building As Seen From The First Pump House
Note utiliduct and Huskie in foreground



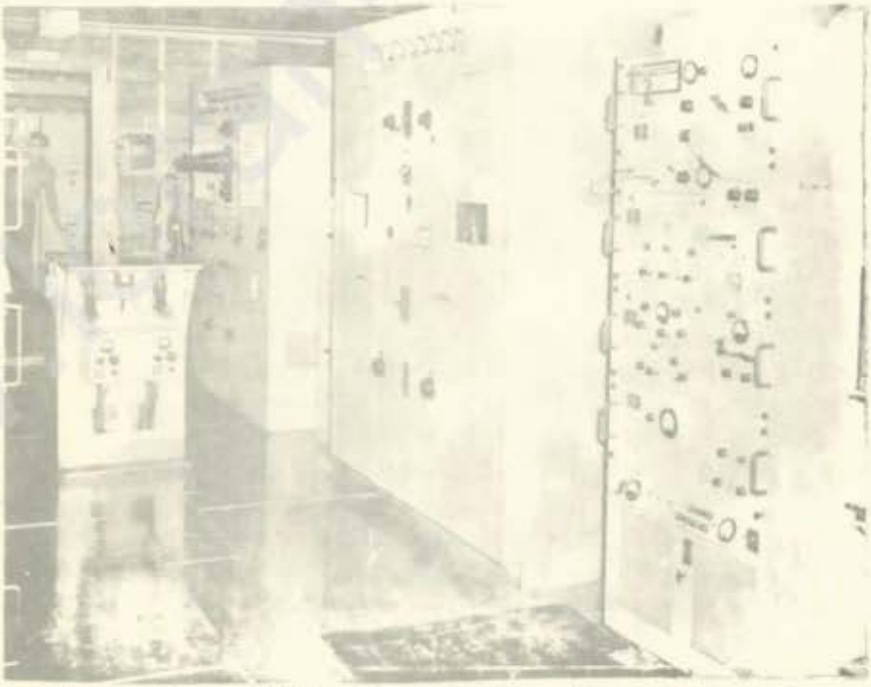
Station As Seen From Edge Of Hill Toward Beach

Royal Canadian Mounted Police Detachment Buildings
One of five fuel oil storage tanks is pictured at right.
Note Huskie in foreground.

Old TD-18A International Harvester Tractor As Pictured In 1955

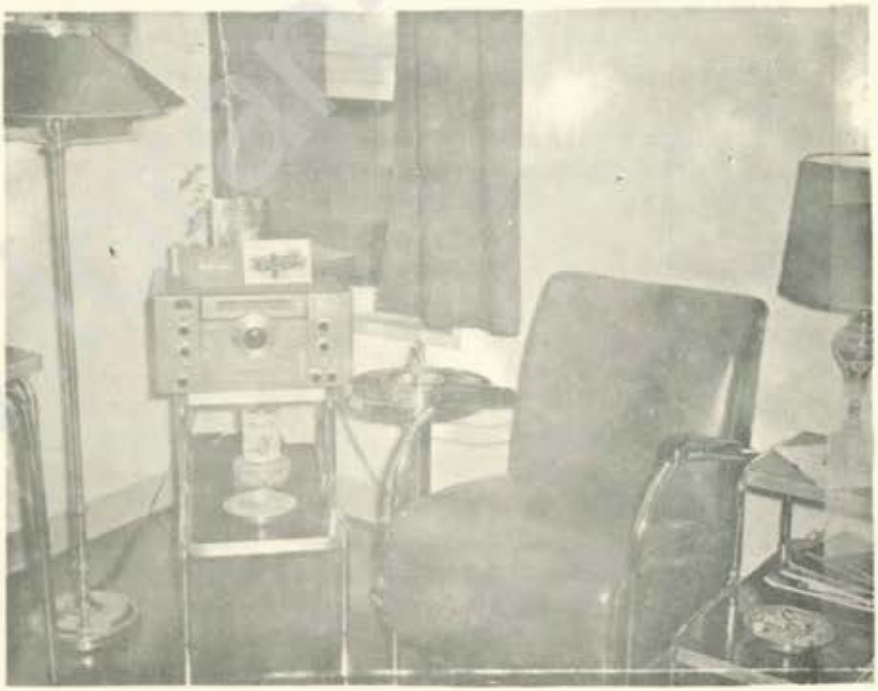


Electronics Storeroom Looking Toward Passageway
RCA electronics training aid can be seen in background.

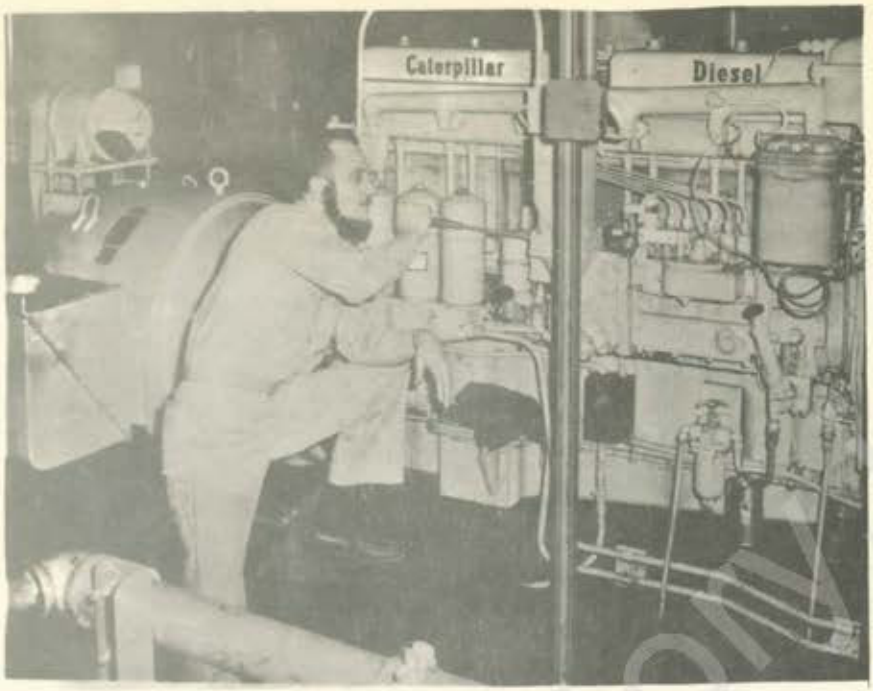


Loran Transmitting Room Looking Toward Timer Room.

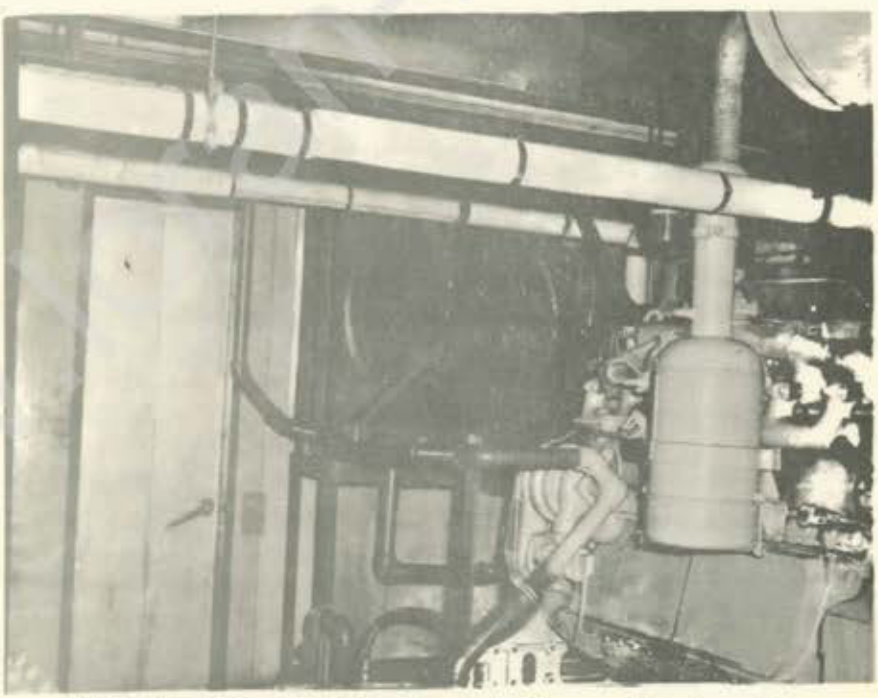
Central Passageway Showing Fire Fighting Equipment



Commanding Officer's Living Room



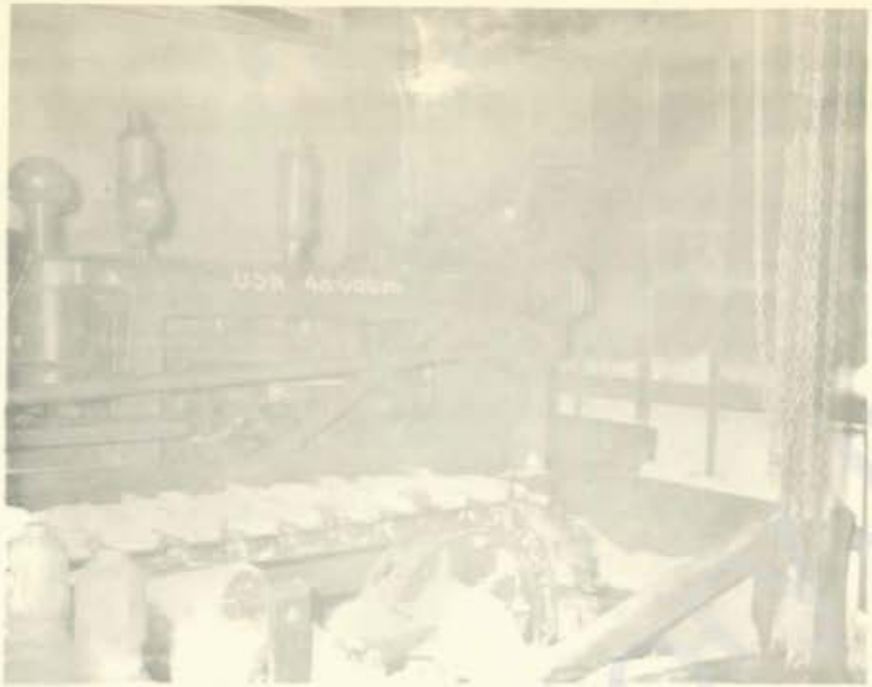
Main Engines -- 75 KW



Main Engines Looking Toward Plenum Chamber Door
Note starting battery bank and two-speed cooling fan

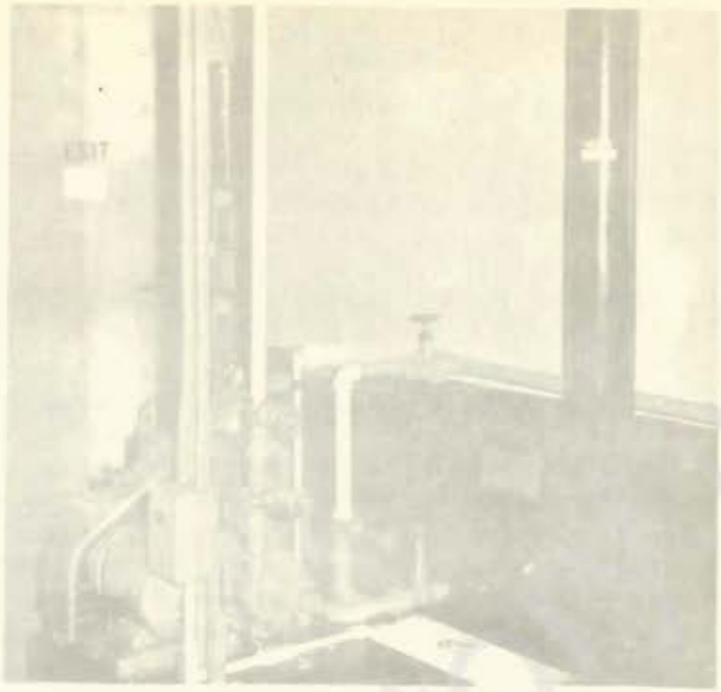
Main Switchboards..Engineroom #2

Heat Pak Hot Water Heating Boiler
Engineroom #1



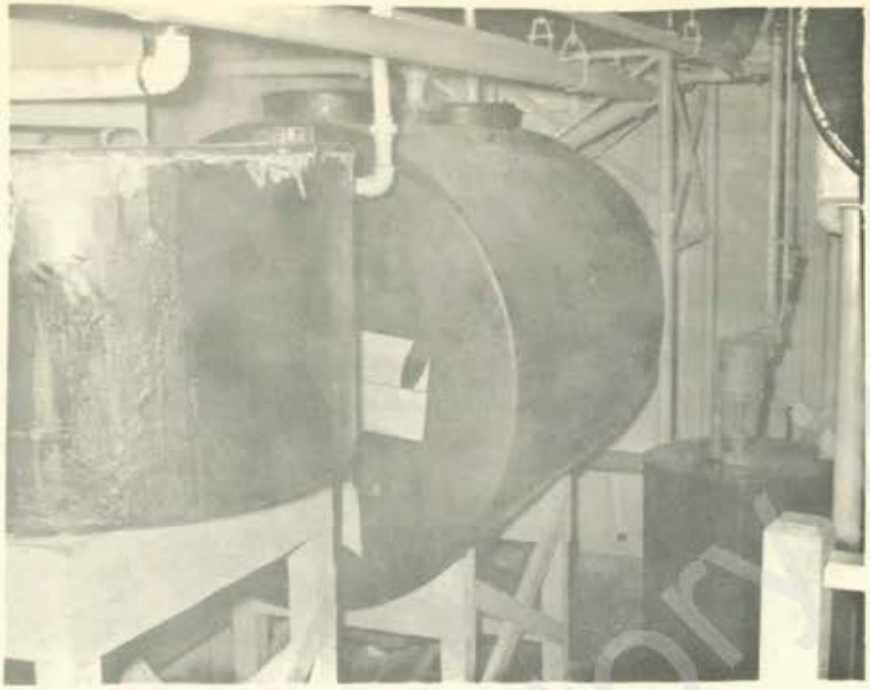
Garage Showing New Modified TD-18A International Harvester Tractor. Looking Toward Storeroom #1.

Sick Bay

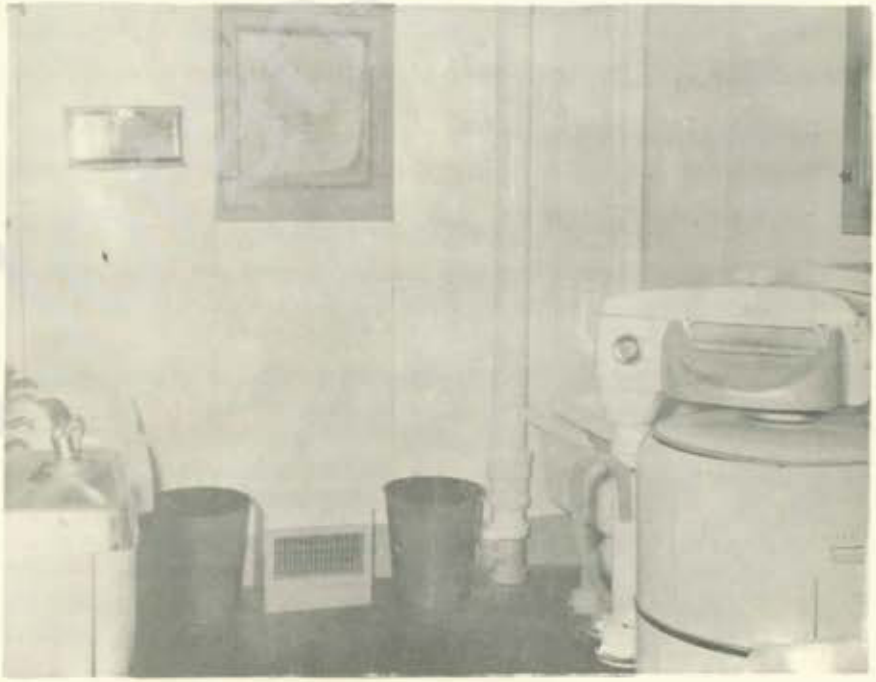


Tank Room #2 Showing Ice Melter Burner Equipment
Note diesel fuel tank at extreme left and paint stowage in background.

Office
Note automatic fire alarm system zone indicating panel on wall



Sewage Tank Room...Tanks: (l. to r.) Syphon, Septic And Waste Water Accumulator. Looking toward Crew's Bath Room.



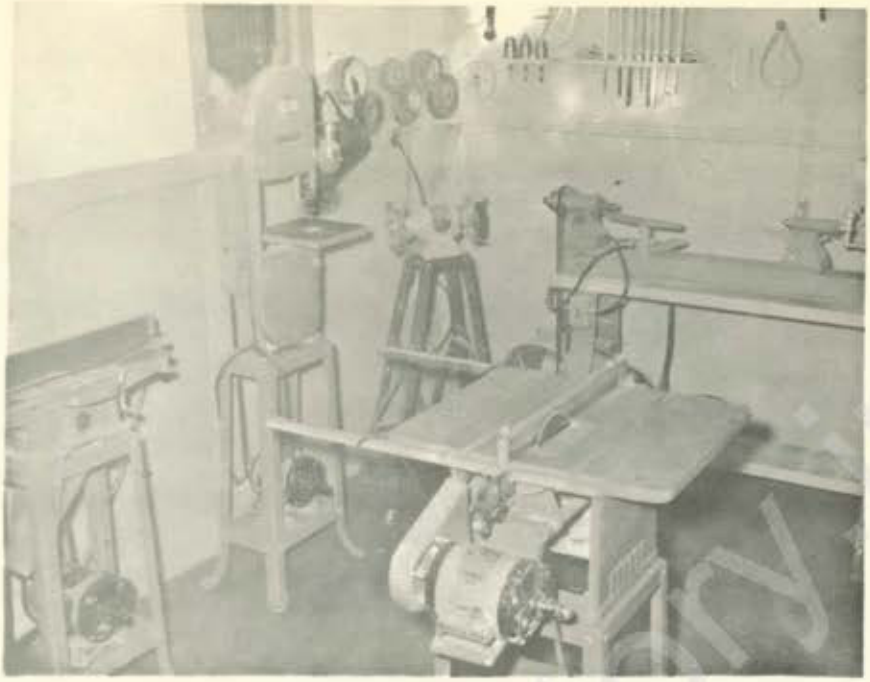
Crew's Bath Room -- Laundry Combination
Scuttlebutt can be seen lower left corner.

Radio Operator's Position in Radio Room

Loran Timer Room ..... Watchstander

Engineer's Storeroom In Power Building #2
The #2 fresh water tank and #2 domestic fresh water pump can be seen. Looking toward tank room #2.

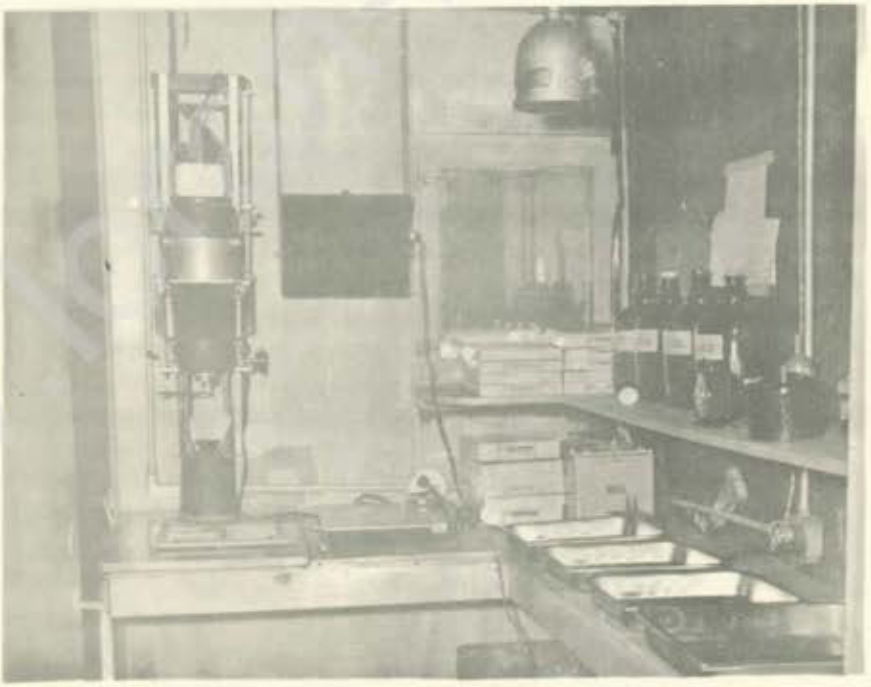
Boatswain's Storeroom At End Of Administration Wing



Carpenter Shop

Amateur Radio Room

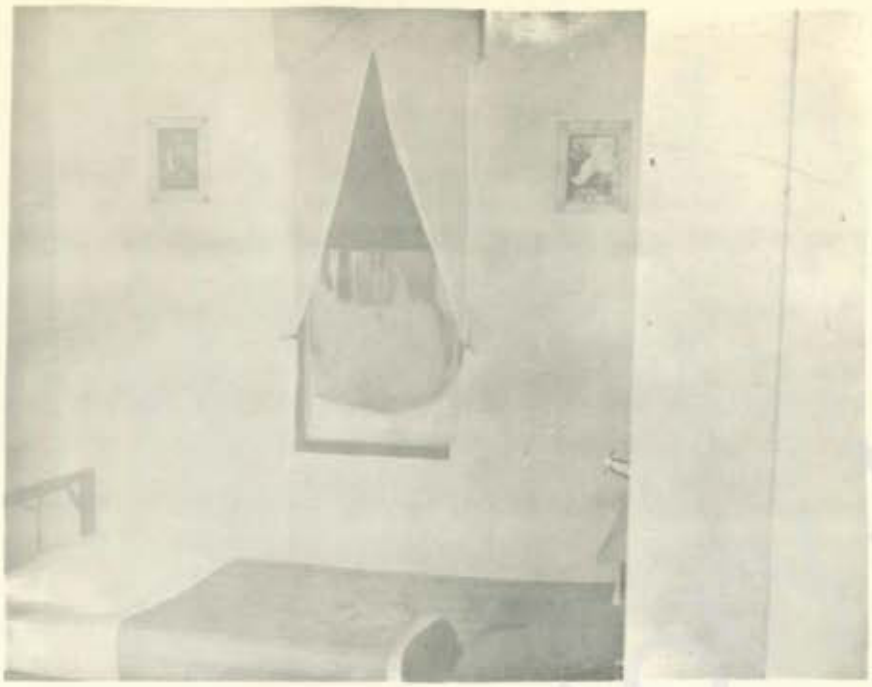
Athletic Room



Photographic Dark Room

Commissary Storeroom Dry Stores

Exchange



Crew's Bed Room

Crew's Bed Room

Crew's Bed Room

Crew's Bed Room

Ping Pong Tournment Winner
Note recreation deck radio and record player

Pool Tournament Winners
Note dart board and library in background

Preparing For Eskimo Christmas Party In Galley
Note Hotpoint electric ranges.

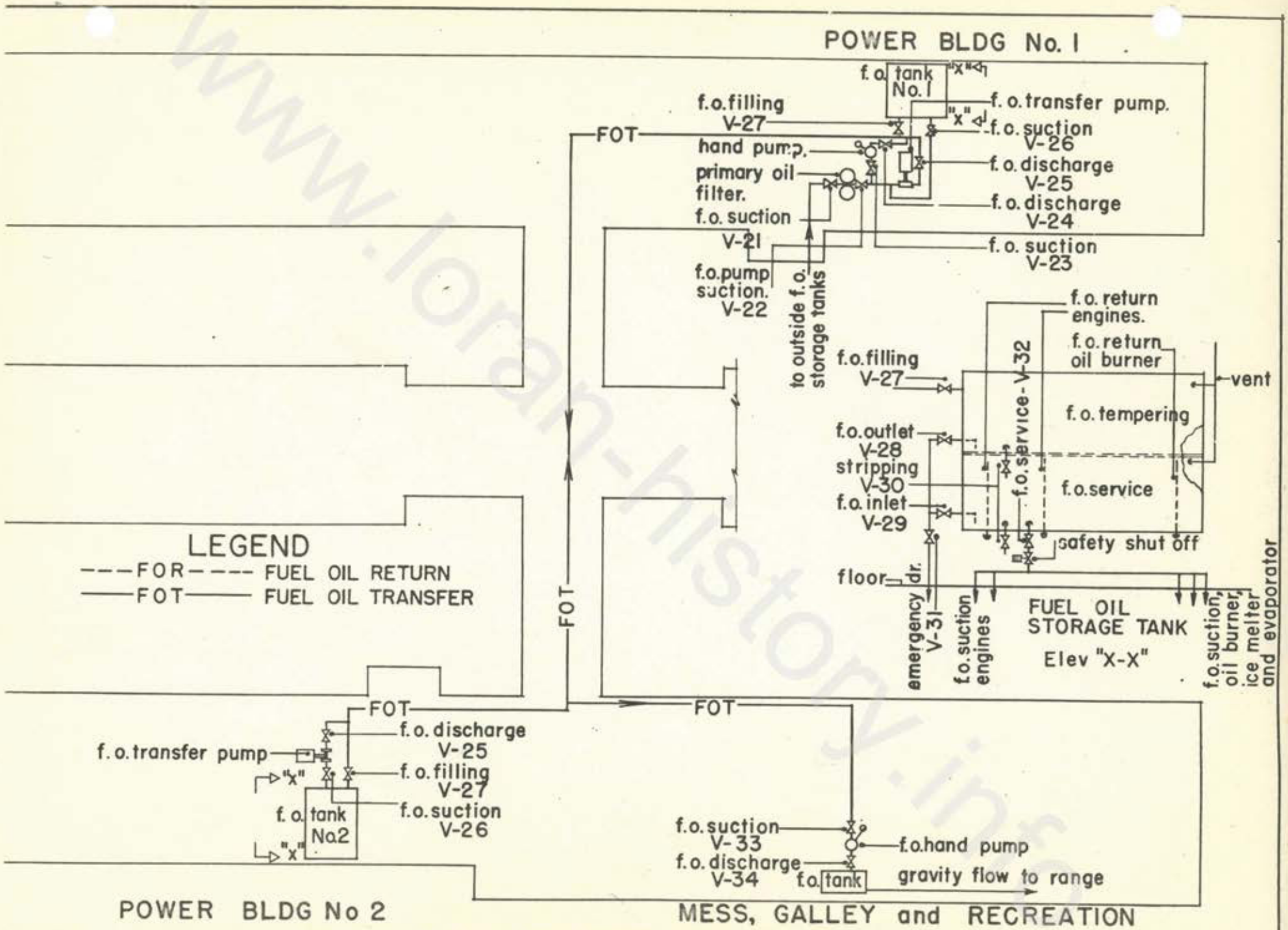
Christmas Tree Dropped By The Air Force In Christmas Drop. Looking toward galley. Toys are put under tree for Eskimo children.

Eskimos Watch Movies At Christmas Party 1956

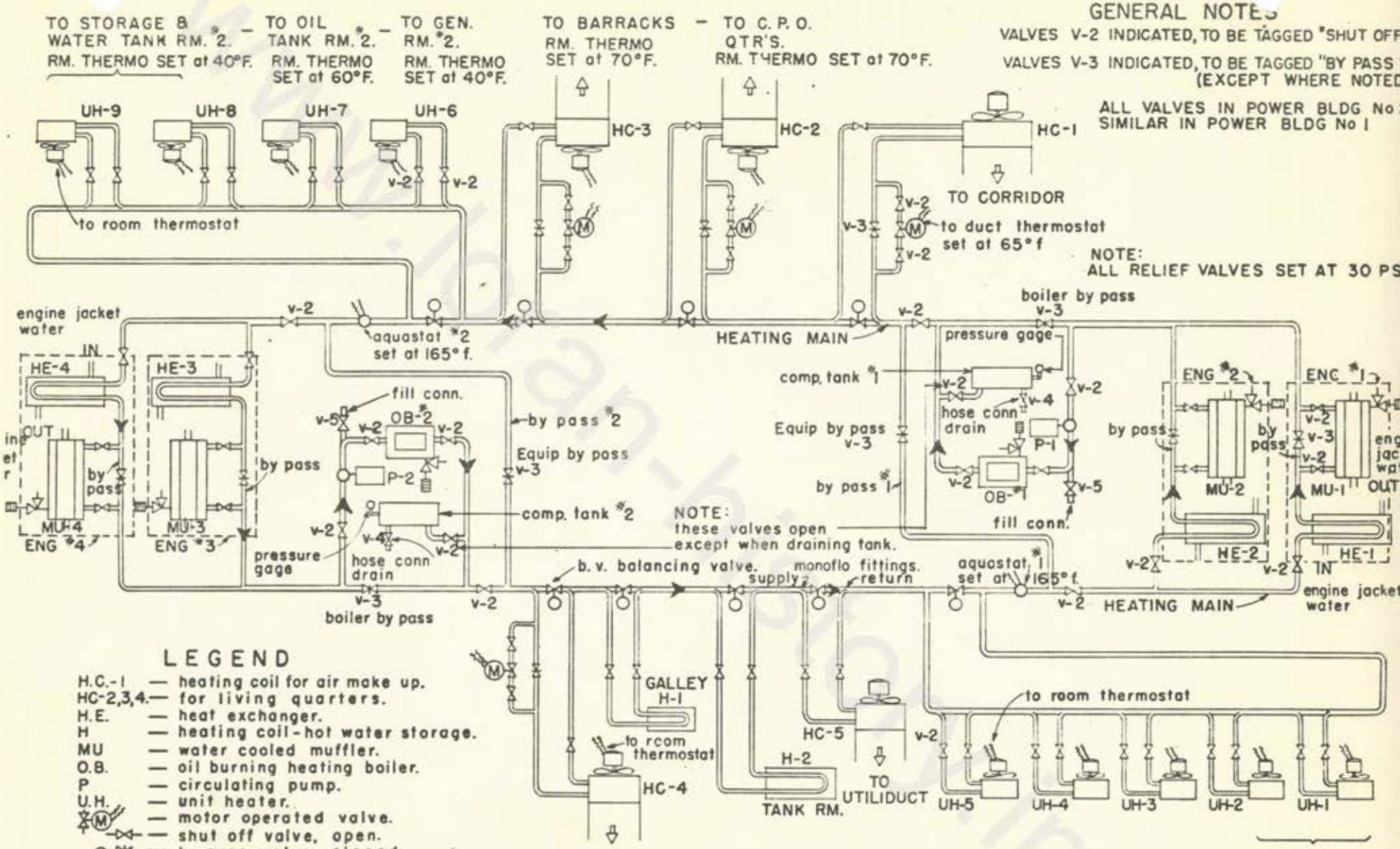
Santa Claus Distributes Toys To The Patient Eskimo Children.

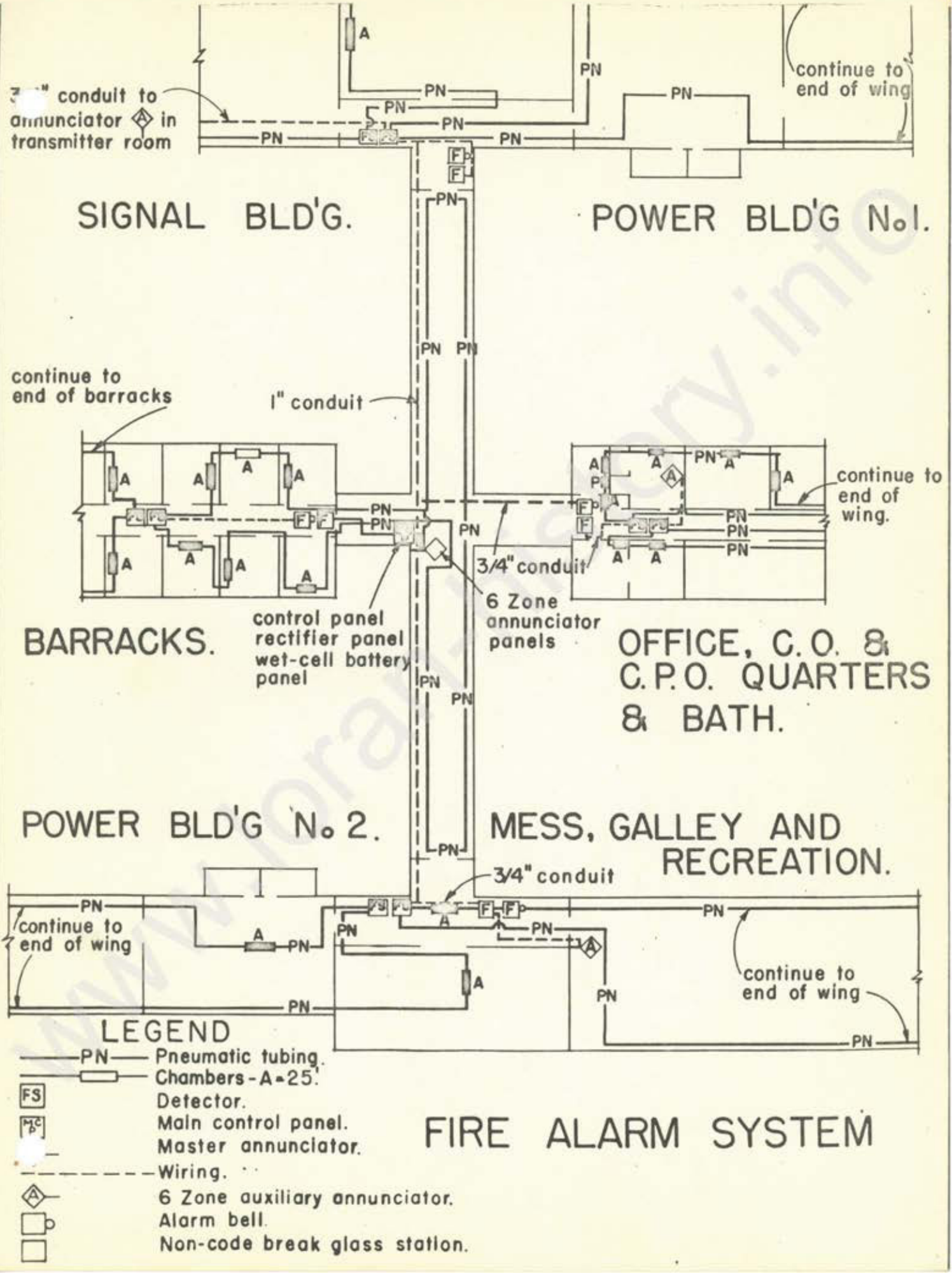
Supplement No. 2

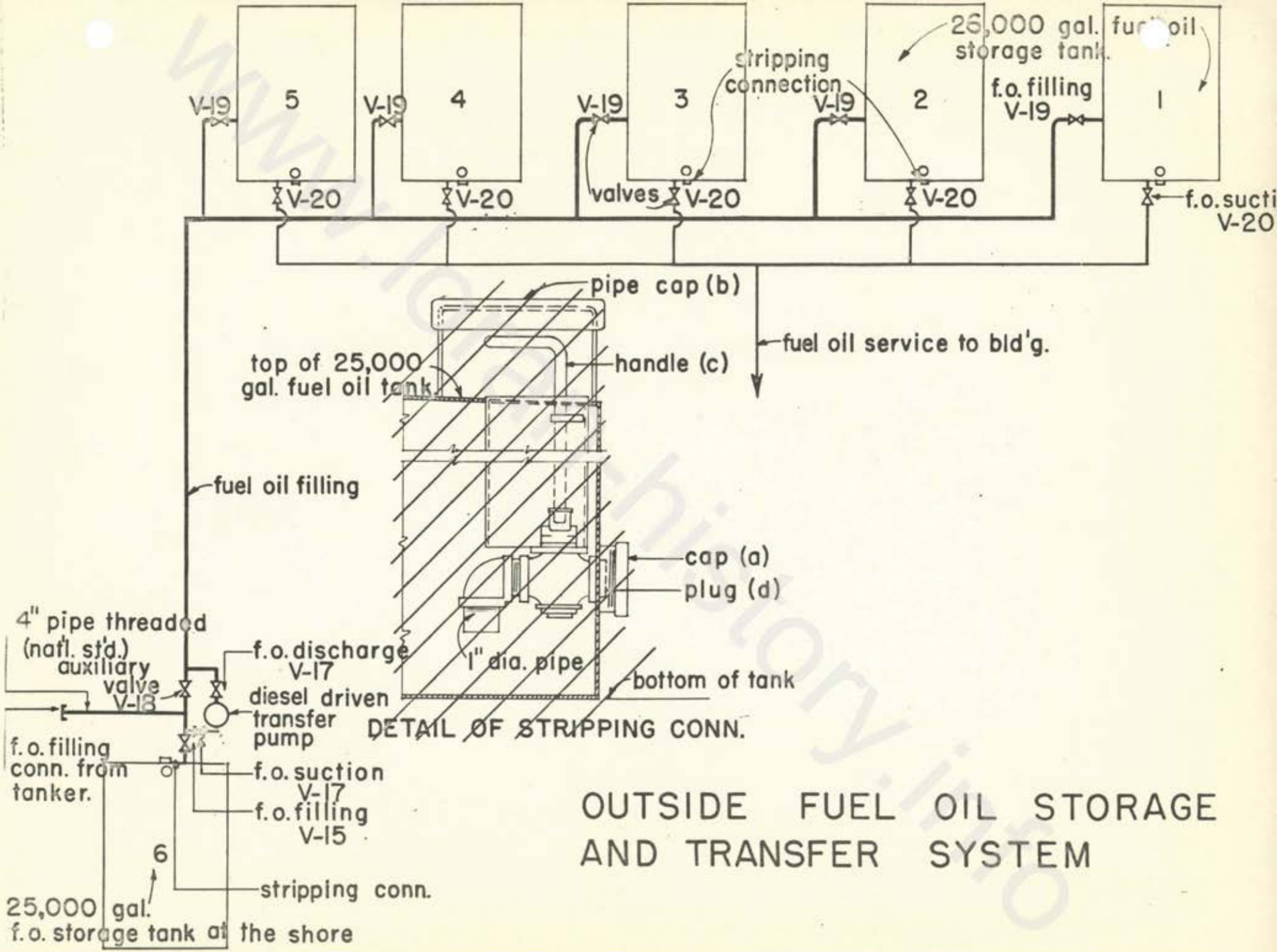
ADDITIONAL ENGINEERING DIAGRAMS



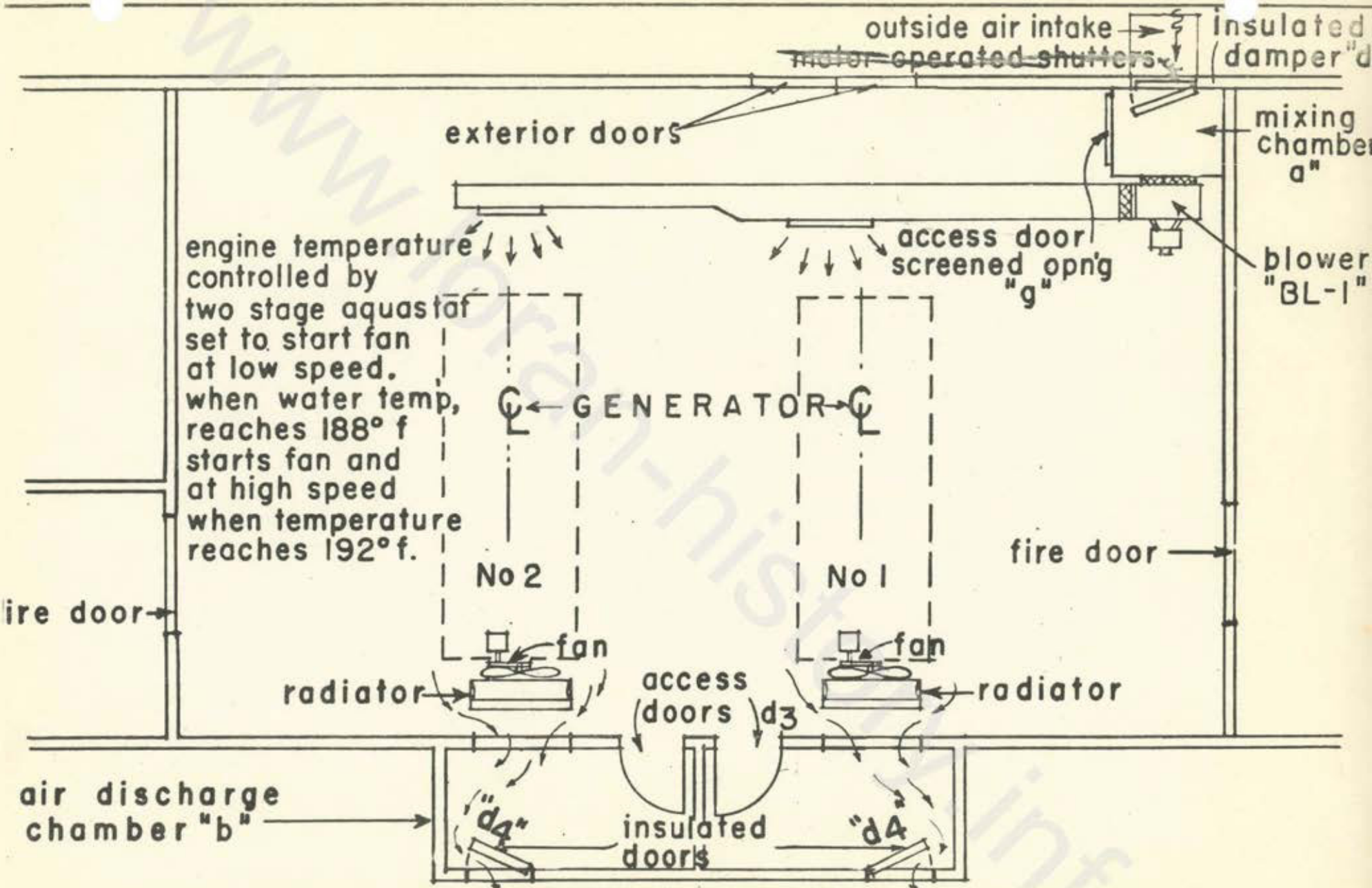
INTERIOR FUEL OIL SERVICE SYSTEM


TO STORAGE WATER TANK RM. *2. RM. THERMO SET at 40°F.
TO OIL TANK RM. *2. RM. THERMO SET at 60°F.
TO GEN. RM. *2. RM. THERMO SET at 40°F.
TO BARRACKS RM. THERMO SET at 70°F.
TO C. P. O. QTR'S. RM. THERMO SET at 70°F.
GENERAL NOTES
VALVES V-2 INDICATED, TO BE TAGGED "SHUT OFF
VALVES V-3 INDICATED, TO BE TAGGED "BY PASS
(EXCEPT WHERE NOTED
ALL VALVES IN POWER BLDG No
SIMILAR IN POWER BLDG No 1
UH-9
UH-8
UH-7
UH-6
HC-3
HC-2
HC-1
TO CORRIDOR
to room thermostat
to duct thermostat set at 65° f
NOTE:
ALL RELIEF VALVES SET AT 30 PS
engine jacket water
IN
OUT
HE-4
HE-3
MU-4
MU-3
ENG *4
ENG *3
aquastat *2 set at 165° f.
HEATING MAIN
boiler by pass
pressure gage
comp. tank *1
hose conn drain
P-1
OB-*1
fill conn.
Equip by pass
by pass *1
by pass
ENG *2
ENC *1
MU-2
MU-1
HE-2
HE-1
fill conn.
OB-2
P-2
by pass *2
comp. tank *2
NOTE:
these valves open except when draining tank.
pressure gage
hose conn drain
boiler by pass
b. v. balancing valve.
monoflo fittings.
supply
return
aquastat *1 set at 165° f.
HEATING MAIN
engine jacket water
GALLEY H-1
to room thermostat
HC-4
HC-5
H-2
TANK RM.
TO UTILIDUCT
UH-5
UH-4
UH-3
UH-2
UH-1
to room thermostat
LEGEND
H.C.-1 — heating coil for air make up.
HC-2,3,4. — for living quarters.
H.E. — heat exchanger.
H — heating coil-hot water storage.
MU — water cooled muffler.
O.B. — oil burning heating boiler.
P — circulating pump.
U.H. — unit heater.
— motor operated valve.
— shut off valve, open.
— by pass valve, closed.
— b.v. balancing valve.
— suppy-monoflo fitting.
— return-monoflo fitting.
— relief valve.
TO MESS HALL.
RM. THERMO SET at 70°F.
TO GEN RM.*1 — TO OIL TANK RM.*1 — TO STORAGE RM.*1 — TO VEHICLE STORAGE
RM. THERMO SET at 40°F. — RM. THERMO SET at 60°F. — RM. THERMO SET at 40°F. — RM. THERM SET at 40°
STAGE
HEAT RECOVERY SYSTEM
POWER BLD'G No.2
POWER BLD'G No.1


" conduit to annunciator in transmitter room
continue to end of wing
SIGNAL BLD'G.
POWER BLD'G No.1.
continue to end of barracks
1" conduit
continue to end of wing.
3/4" conduit
6 Zone annunciator panels
control panel
rectifier panel
wet-cell battery panel
BARRACKS.
OFFICE, C.O. & C.P.O. QUARTERS & BATH.
POWER BLD'G No. 2.
MESS, GALLEY AND RECREATION.
3/4" conduit
continue to end of wing
continue to end of wing
LEGEND
PN Pneumatic tubing.
Chambers - A - 25'
FS Detector.
MC P Main control panel.
Master annunciator.
Wiring.
6 Zone auxiliary annunciator.
Alarm bell.
Non-code break glass station.
FIRE ALARM SYSTEM

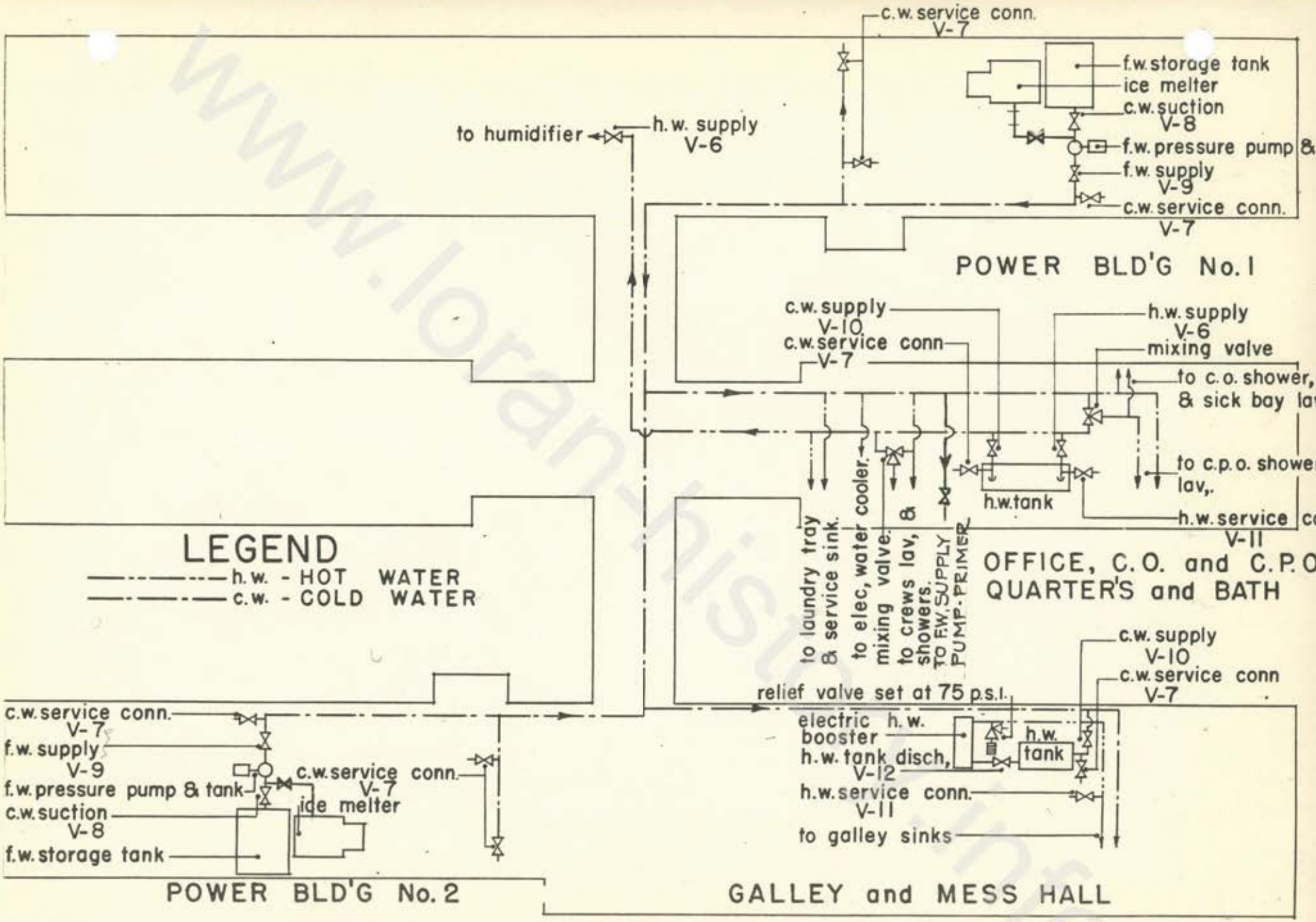


OUTSIDE FUEL OIL STORAGE AND TRANSFER SYSTEM

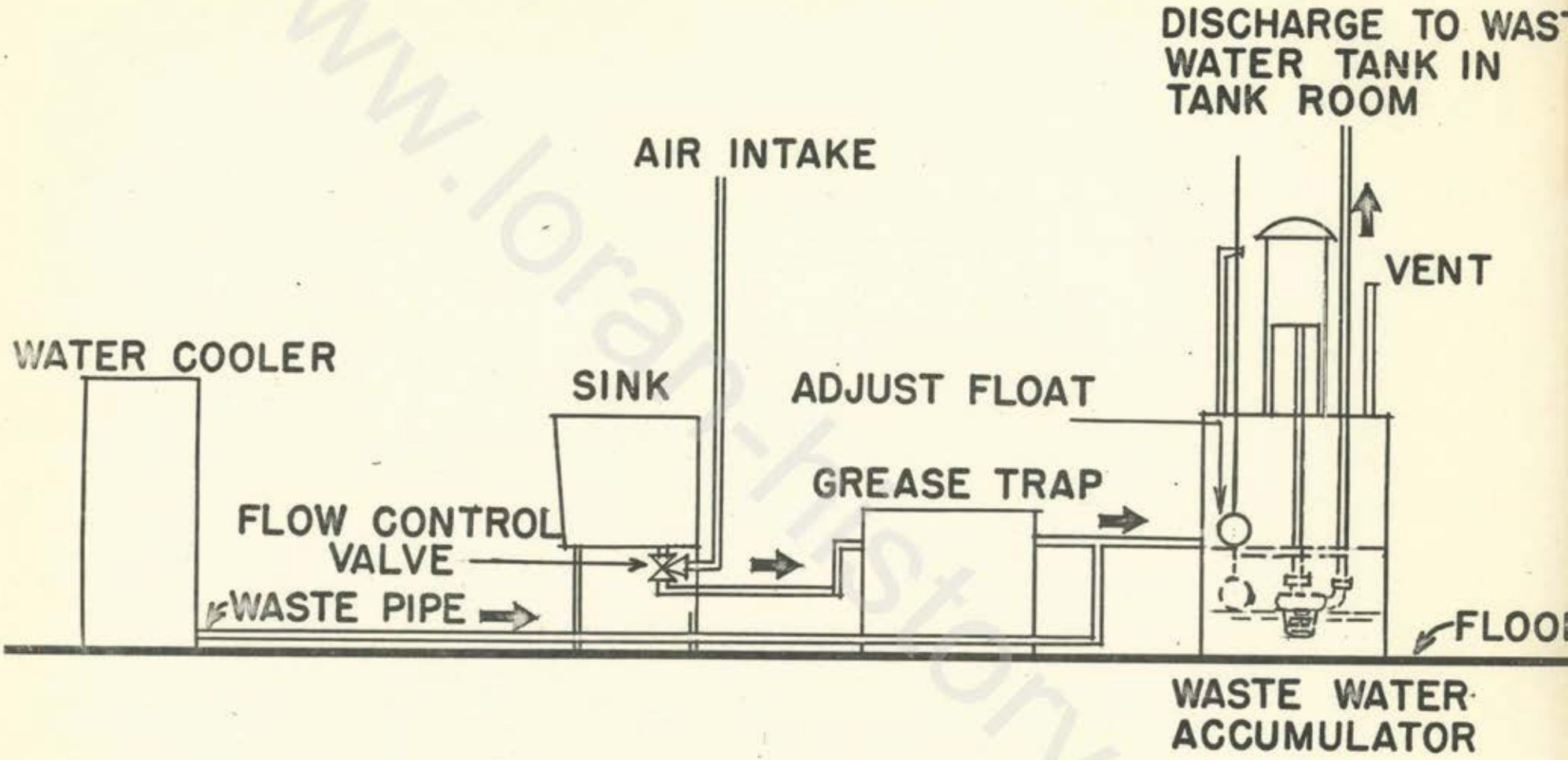


ENGINE ROOM VENTILATION SYSTEM

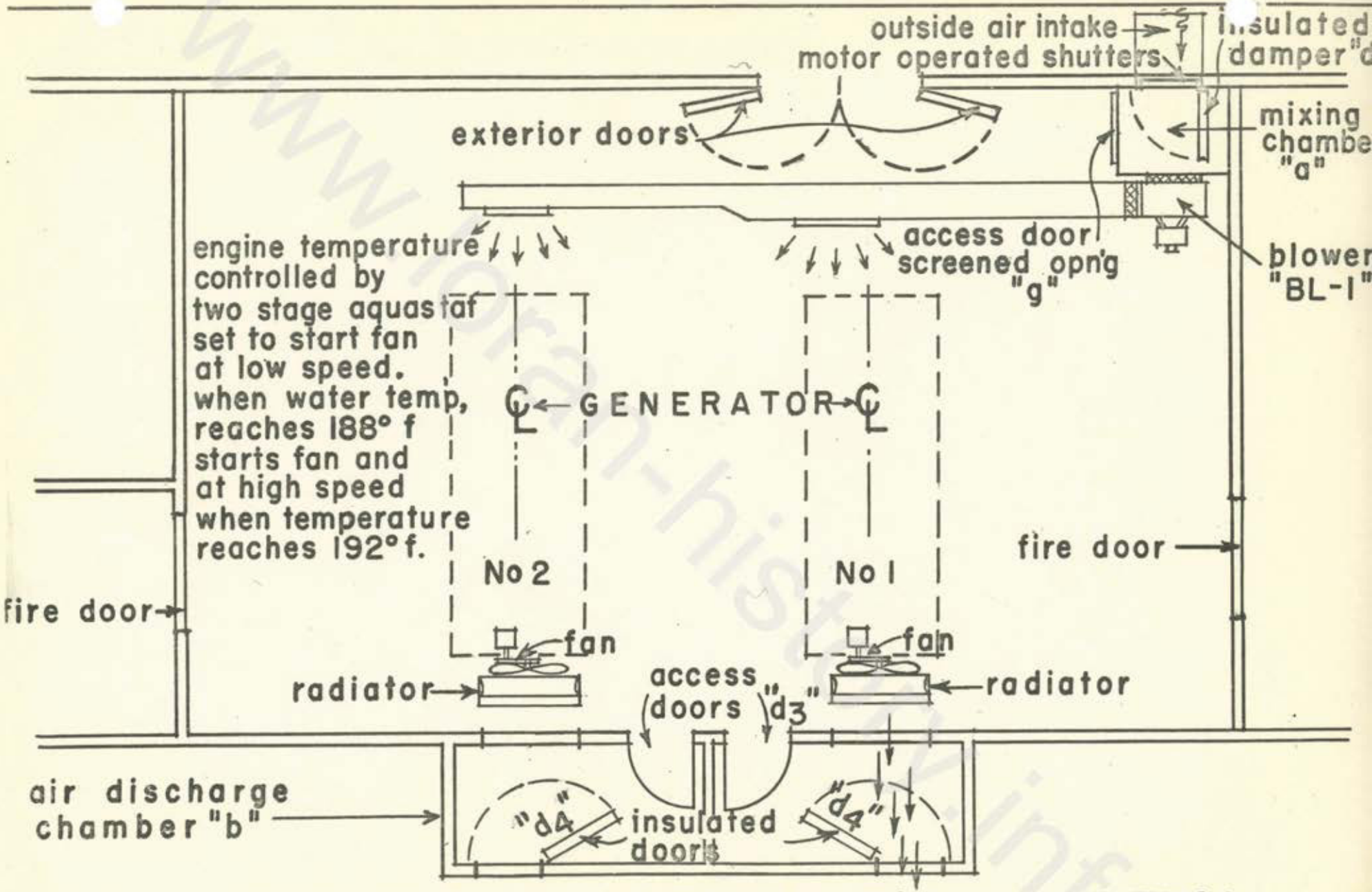
WINTER OPERATION



DOMESTIC WATER DISTRIBUTION SYSTEM



WASTE WATER SYSTEM
(Galley area)



ENGINE ROOM VENTILATION SYSTEM

SUMMER OPERATION

1957-1958

U.S. COAST GUARD LORAN TRANSMITTING STATION
CAPE CHRISTIAN

LTJG JOHN M. WILKINSON, USCG--COMMANDING OFFICER

LAWRENCE R. POBOJIL, ETC

PAUL J. KESSLER, ENC

DOYLE J. EVANS, DCC

CHARLES F. WALSH, EN1
BRUCE CLARK, ET2
WILLIAM H. COX Jr., EM2
JAMES A. WHITE, EN3
FRANKLIN K. PEERCE, EN3
EUGENE A. KOSTERMAN, RM3
JOHN R. JENKINS Jr., SN
PHILIP S. PALERMO, SN
THOMAS J. SMITH Jr., SN

JACKIE L. MC CLASKEY, HM1
LANCE E. SMITH, ET2
WALTER E. DANIELS, CS2
JACK D. GARRETT, DC3
JACK D. THOMPSON, DC3
WALTER H. SIMPSON, SN(BM)
ROBERT A. CRANER, SN
ELLIOTT H. PORTER, SN
LOUIS C. SOZIO, SN

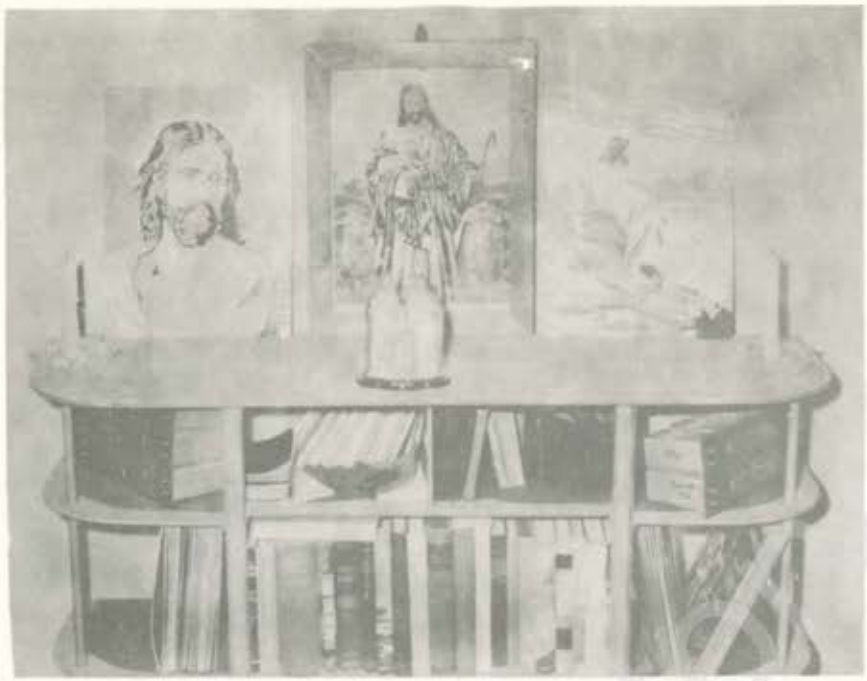
BEFORE-14 Sept., 1957
(front) Thompson, Sozio, Craner, Palermo, Smith, Porter (center) McClaskey, Evans, LTJG Wilkinson, Podojil, Kessler, Walsh, (rear) Jenkins, Feldman, White, Clark, Simpson, Damiels, Kosterman, Cox, Garrett, Pierce (missing) Smith, Barrett.

AFTER-17 May 1958
(front) Thompson, Sozio, Porter, Palermo, Smith, Craner (center) McClaskey, Evans, LTJG Wilkinson, Podojil, Kessler, Walsh (rear) White, Garrett, Pierce, Simpson, Damiels, Cox, Jenkins, Kosterman (missing) Smith, Clark

SUMMER

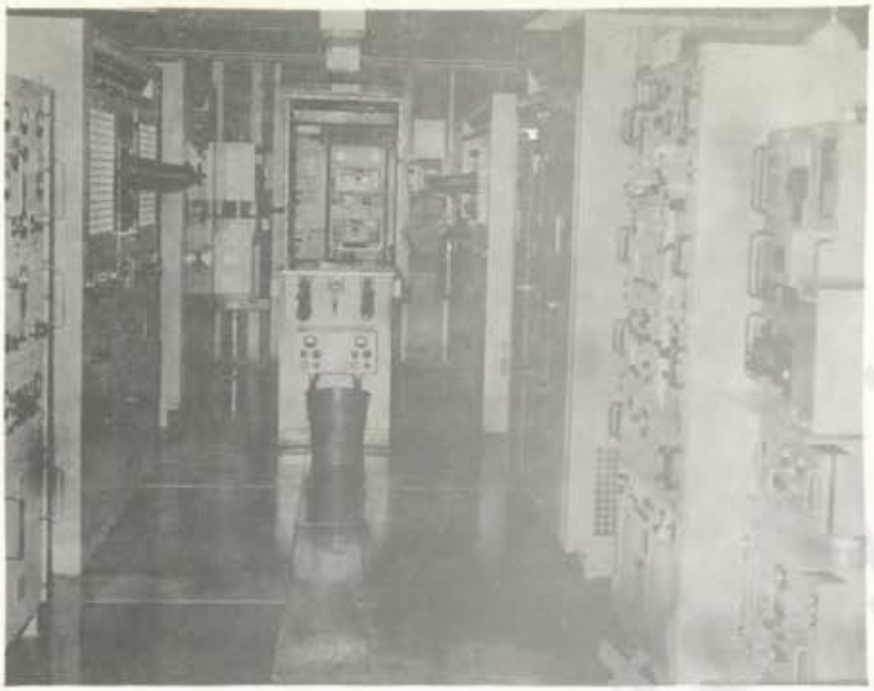
CLARK

SPRING



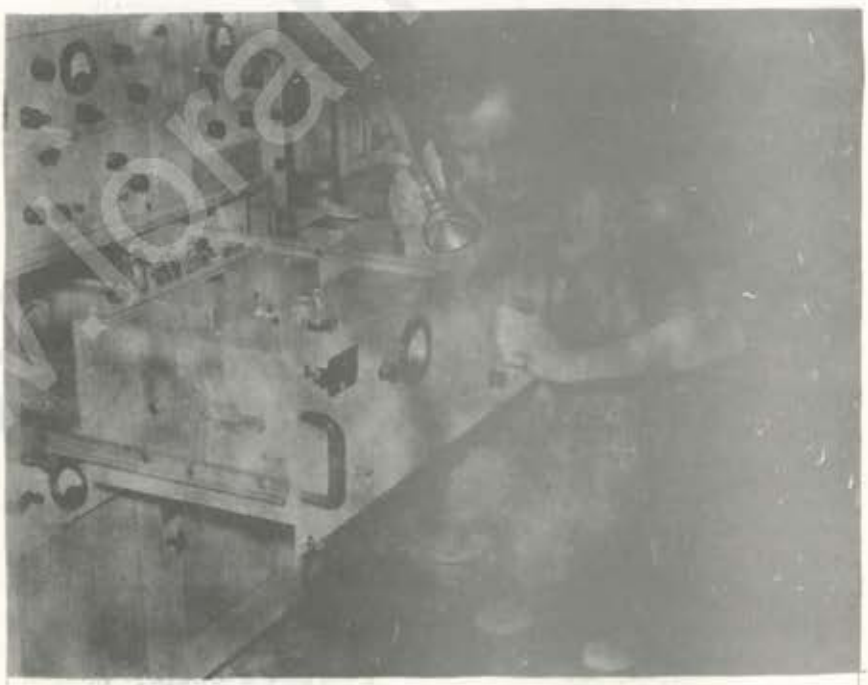
K9JNS/VE8
"GENE"

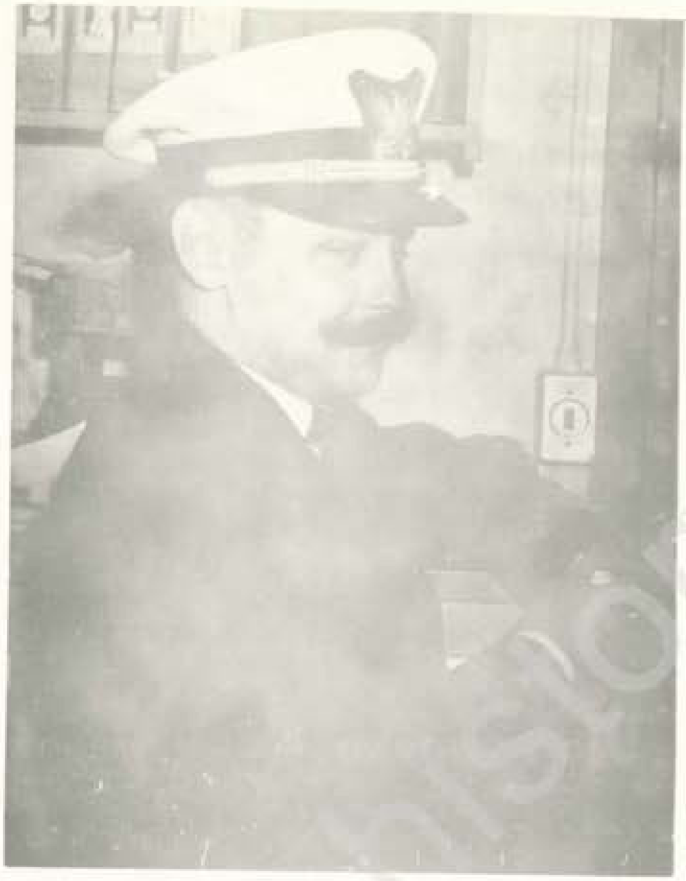
K8JYU
"BOYD"




EXIT

In the paint locker.





DISH WASHING

Palermo washing
Jenkins breaking

WASHING CLOTHES

Palermo

THE BARBERS

SOZIO
EVANS
PODOJIL

THE NEIGHBORS

MIKE, ANNIE, PENAMEENA,
MIMI, LUTI, LIZA

Playing pin the tail on
the polar bear.

SMITH

Where is the polar bear?