FIRST COAST GUARD DISTRICT

GENERAL INFORMATION

Relating to the

LORAN TRANSMITTING STATION

CAPE ATHOLL

GREENLAND

CCGD1 INST P3262.4A
1 DECEMBER 1967

DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

Address reply to:
COMMANDER
First Coast Guard District
J. F. Kennedy Federal Bldg.
Government Center
Boston, Mass. 02203

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~~1 December 1967~~

COMCGDONE INSTRUCTION P3262.4A

Subj: General Information Relating to Cape Atholl Loran Transmitting Station, Greenland

1. Purpose. This publication is issued to revise and update information on the operation, administration and logistic support of Cape Atholl Loran Transmitting Station.

2. Cancellation. COMCGDONE INSTRUCTION P3262.4A of ~~17 June 1965~~, Subj: General Information Relating to Cape Atholl Loran Transmitting Station, Greenland.

3. Discussion. Since the establishment of Cape Atholl Loran Transmitting Station there has been a need, by commands concerned with the support of the station as well as by staff and training activities, for information on the station and matters related to its operation, administration, and logistic support. This publication is revised to update the information on operational, administrative and logistics support of Cape Atholl Loran Transmitting Station. This edition contains additional information and provides for continuity of knowledge which might otherwise become obscured because of extreme isolation and frequent transfer of personnel.

4. Corrections. Comments should be addressed to Commander, First Coast Guard District (o), John F. Kennedy Federal Building, Government Center, Boston, Massachusetts 02203.

W. W. Childress

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R. W. Gehring

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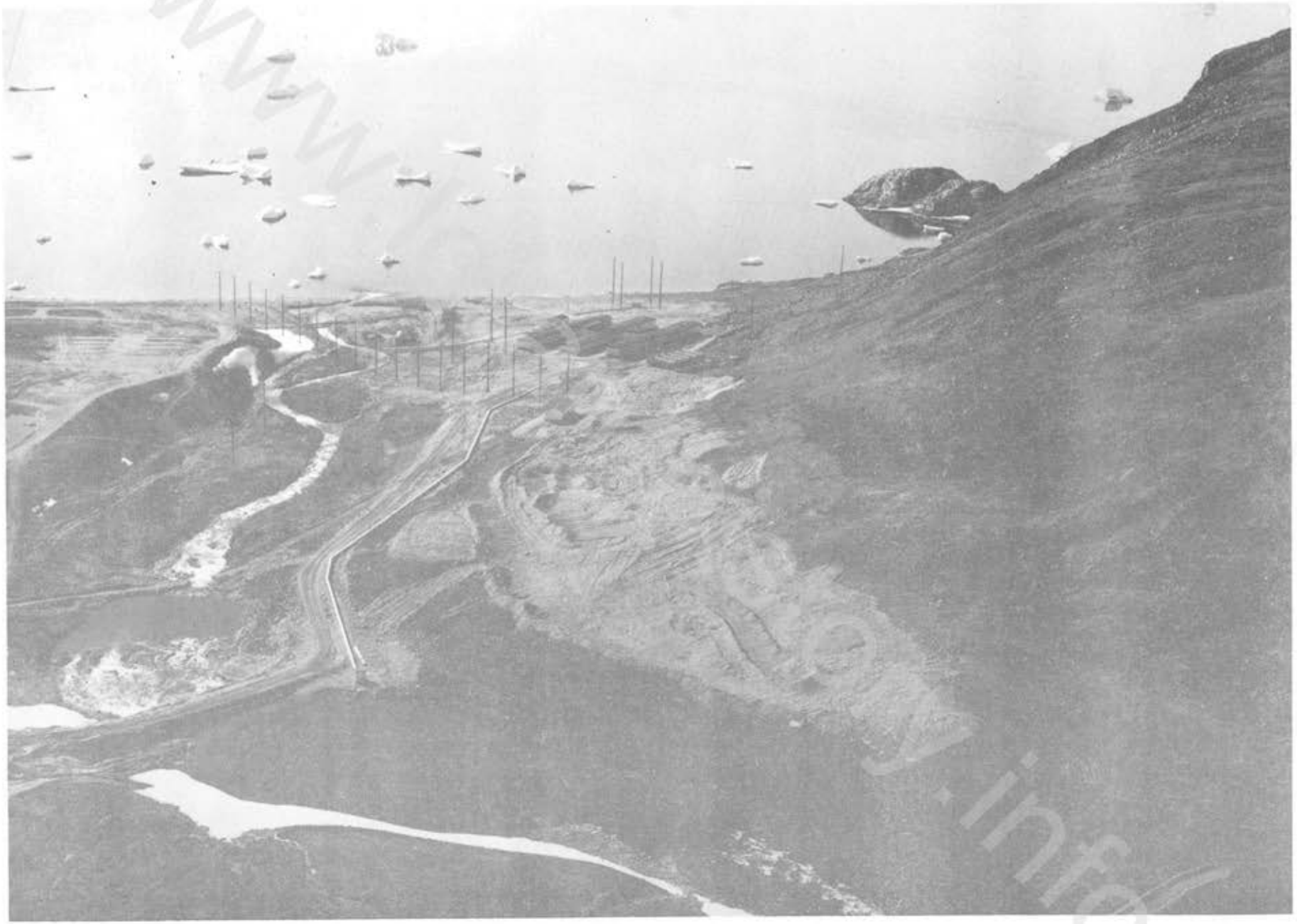
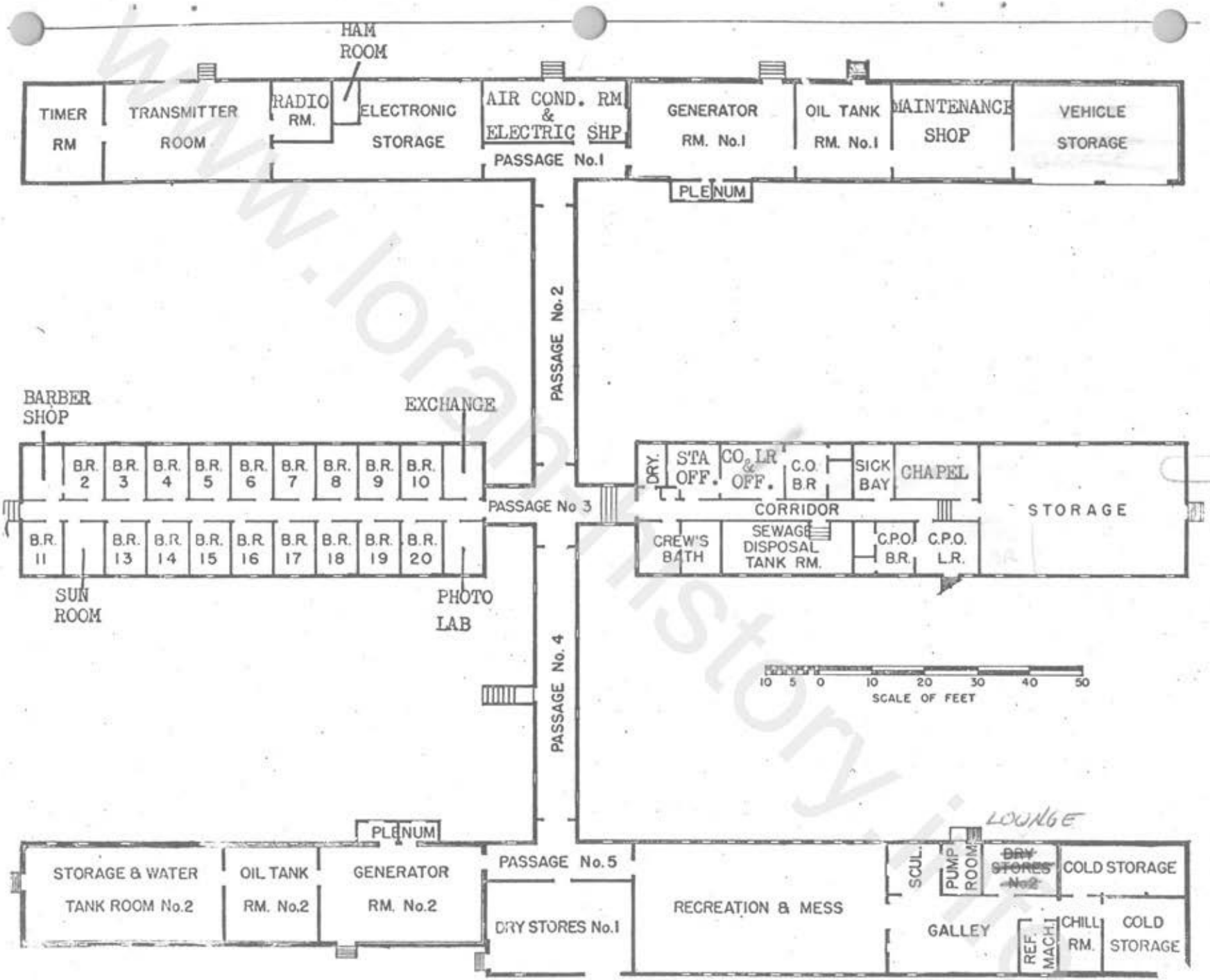
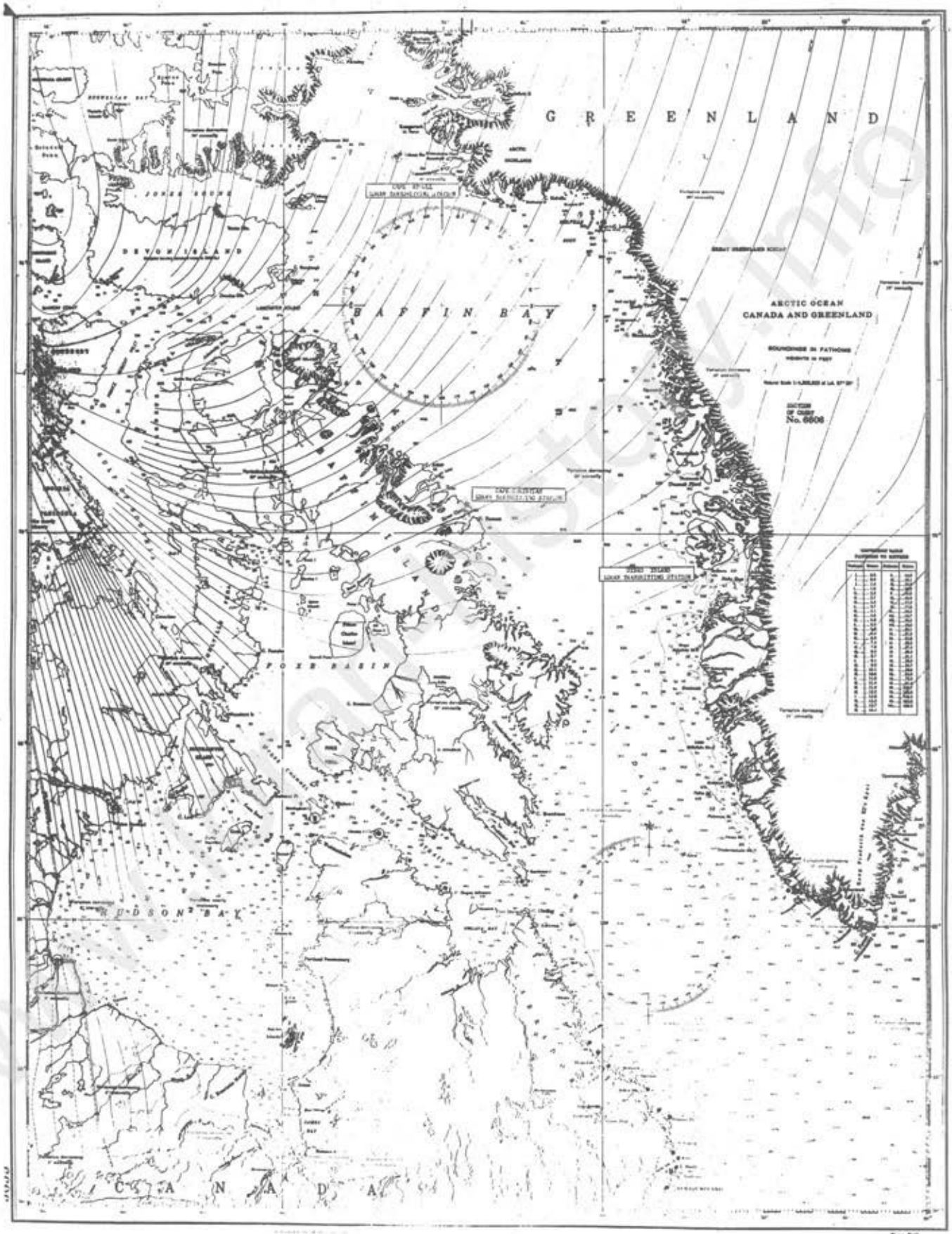


COAST GUARD LORAN STATION, CAPE ATHOLL, GREENLAND (near THULE Air Base). Aerial view facing southwest taken from helicopter off USCGC WESTWIND (WAGB-281), 18 August 1964.



Typical Arctic loran station building layout.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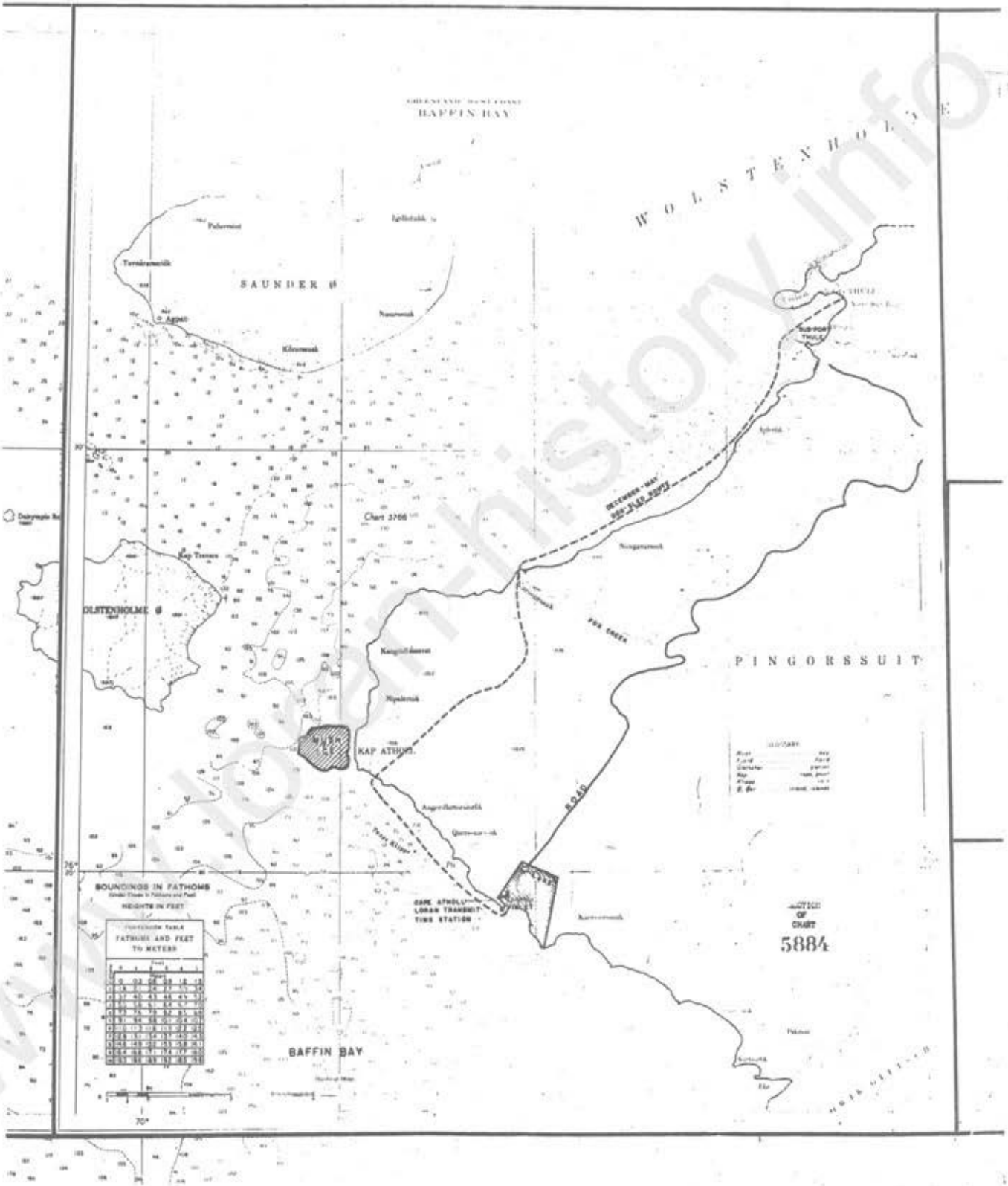
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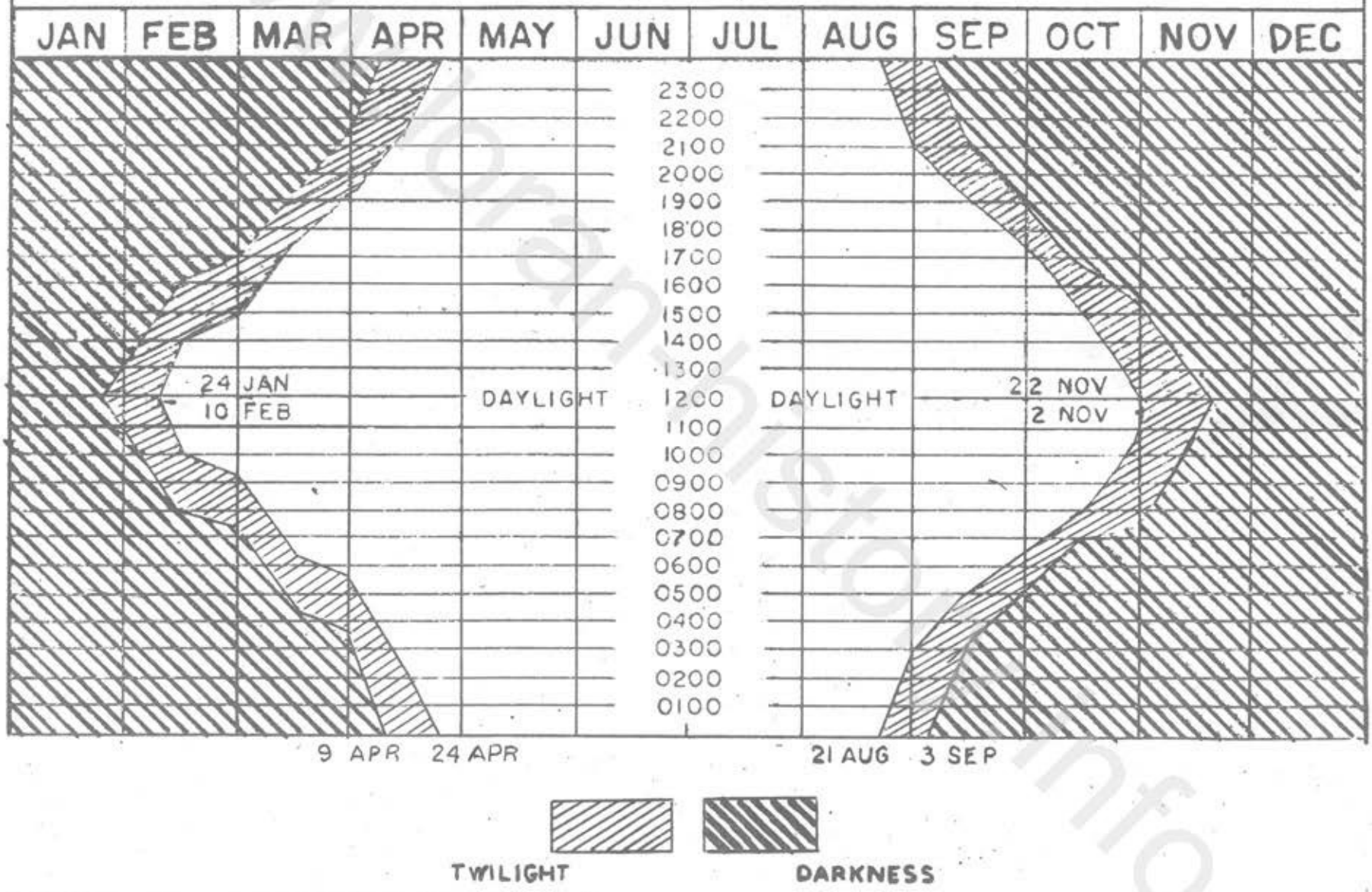


CHAPTER I – GENERAL INFORMATION

A. GEOGRAPHY, LOCATION and TOPOGRAPHY

The natural impulse on hearing that one was going to a station in Northern Greenland, twice as far north of the Arctic Circle as Nova Scotia is north of Washington, D. C., would be to think of nothing but ice, snow and polar bears. Such an impulse would be at best a half true one.

The station is located on approximately the following coordinates: Latitude 76.3 degrees North, Longitude 67.1 degrees West. It is located on the shores of a bay, the Eskimo name of which is Quaratit. The station lies 18 air miles WSW of Thule Air Base. There is a road leading from Thule to the station. The road is 36 miles long, rough-riding at best, and is only open from about the middle of June to the end of August. If the summer is free from snow the trip by road averages 1-1/2 hours. The trip by helicopter is under half an hour. During the winter, Eskimos on their way from Melville Bay to New Thule pass by the station. The journey by dogsled around the sea-ice to Thule in wintertime is 27 miles and takes 4 to 5-1/2 hours, depending on how hungry the dog team is and how heavy the sled.

The Thule area is the northernmost part of the world in which any extensive human population exists. The average population of Greenland is one human inhabitant for every 34 square miles. This is at the opposite end of the population-to-land ratio scale from Monaco (34,000 people per square mile). There are several thousand human inhabitants in the Thule Defense Area, consisting of Air Force, Army, Coast Guard; American and Danish civilians.

The countryside is predominantly rocky and barren. Thule is one of the dustiest places in the world when there is a good wind blowing. The station is fortunate in being located in a valley which is extraordinarily verdant for this part of the world.

The station is bounded at four sides. The southern boundary consists of the shore of Quaratit Bay. The shoreline runs almost due east and west and is about 1,000 yards long. Beyond the inlet is Baffin Bay, a body of water well known to any man who has pulled weather patrol on Station Bravo. The east and west boundaries are 800 and 650-foot hills, respectively. To the north lies an artificial pond (quite small) and farther up the valley is a 2000-foot mountain.

The station property is divided by a creek which is created annually by the spring run off of snow from the mountains (about 15 June) and the overflow from the dam. With the advent of freezing temperatures in early September, the flow of the creek is stemmed, and most of the water in the lake runs out underneath the dam. The problem of domestic fresh water will be dealt with in a later chapter.

During the summer months the valley is quite a garden spot. There is an unusual amount of moss on the hillsides and around the creek and several different varieties of wildflower and lichens grow around the station area. Wildlife in the area is abundant the year-round. This particularly true in the summer. During that period the region is well inhabited by ducks, dovekies, arctic ravens, foxes, arctic hare (a breed of rabbit somewhere between the size of a St. Bernard and a kangaroo) and a few other varieties of beast as yet unidentified. The only die-hard year-round residents of the station area are the foxes. As far as they are concerned, the station garbage area bears the stamp of Duncan Hines. There are also a few walrus and seals in the bay.

B. WEATHER

The local weather can easily be described by one word: Arctic.

Climate, as in the temperate zones, is very much dependent on the amount of daylight present. The worst weather can be expected in the second half of the dark season, and the month following. The Arctic climate is nothing of which to be afraid. In fact on 15 January 1957, Cape Atholl was 52° warmer than Oswego, N.Y. The temperature in Oswego was minus 55, and in Atholl minus 3. More often than not, the coldest temperature recorded in Montana during a winter will be 10° lower than the coldest recorded here.

Temperatures in the summer are usually well up in the 40's, and can be expected to rise into the 50's during late July and early August. Freezing temperatures start to return at the end of August.

The temperatures usually stay below freezing from August to May or June.

The dark season (end of October to middle of February), and the periods at either end of it, seem to bring the most severe weather. This weather manifests itself in things that are known locally as "phases". A phase is a 30-knot-plus wind. Wind gusting over 30 is a phase I. Wind between 30 and 60 knots is a phase II, and a wind in excess of 60 knots is a phase III. These so-called phases are usually accompanied by extremely heavy ground drift, or snow that is picked up off the Greenland Ice Cap by the wind and brought down to the coastal areas such as Thule and Quaratit. This snow is unlike any snowstorm the average man has ever seen, since it does not fall, but travels horizontally. During a phase, it is impossible to go more than 20 yards from some concrete point of reference (such as a vehicle or a building) without getting completely lost.

Phases are extremely common at Thule, but due to our protected valley we do not experience as many.

To compensate for the dark season, there is a 4-month period of continual daylight (mid-April to mid-August). A daylight-darkness chart is included as an appendix to this chapter. Actual hours of daylight and twilight in this region exceed total hours-per-year of outside natural light in the temperate zones. It is just not doled out by nature in particularly sensible doses.

Record temperatures at the station over the past 2 years have ranged from plus 50 (high) down to minus 52. Due to favorable topography and unobstructed southern exposure, the climate is milder here, even though we are but 17 miles away from Thule. There is more fog here, but we have an unobstructed view of the sun when it is out, and are protected on three sides from that famous arctic wind.

The prevailing wind is northeast, usually at 7 to 10 knots. Above the valley the velocity of this wind is doubtless at least double that, but our location spares us. Actually the sole deficiency of the location, outside of the geographical coordinates, is that it is exposed to the south wind. However, this is an unusual wind in the region. It usually brings with it rising temperatures and TRUE precipitation of some sort. There is a lot of "false" precipitation here in the form of ground drift (snow) brought down from the Ice Cap by the prevailing wind. Actual TRUE precipitation here is about 12 inches per year. The ground drift probably adds another 20 inches or so in the valley and in spots the drifts are 14 feet high by the time the June melt comes along.

The mean barometric pressure is quite low, by temperate zone standards, and it is only rarely that the barometer rises above 29.90 and more often than not it is below 29.50. It is difficult to correlate barometer action here with the weather. A falling barometer can mean clear skies and a rising one can mean storms to come. The best gauges of weather trends are temperature and wind direction. Rising temperatures mean rising winds usually accompanied by ground drift or precipitation. By the same token falling temperatures are usually an indication of good weather.

Any wind in the section of the compass from 310° True to 075° True is a good wind and bodes for clear weather to either come or continue. Falling temperatures usually go hand-in-hand with a wind from this section.

No figures are available on mean annual temperature. However, the temperature remains below zero for about 5 to 6 months out of the year. This is broken, usually, in midwinter by a warm spell. In January 1965 the temperature rose to 29° above zero. This warm spell is inevitably accompanied by the worst set of phases of the year and stretches into February. It would be much more preferable if the temperature stayed below zero. It is during the warm spell that outside movement is almost a complete impossibility. At other times, even with severe below zero temperatures, some outside movement is possible.

C. NEARBY CIVILIZATION and MILITARY UNITS

As has already been said in the first section of this chapter, Greenland is sparsely populated. Therefore, anything that can be termed civilization is in miniature scale when compared to what we are accustomed to at home. Even Thule Air Base, which serves as the Paris, Rome, London and

Mecca of Northland Greenland, is miniature as a metropolis. It houses probably fewer human beings than any place of similar notoriety this side of the Gaza Strip.

A few times during your tour you will probably be able to go to Thule Air Base on R&R. A definite number of times cannot be included herein as they vary depending on station workload and helicopter support, but in the past, crews have averaged eight or nine trips per man. Thule Air Base is such a varied enterprise that very little can be said about it, except indirectly. It is the United States' most northern base and the closest one to Russia. As such, it is a very important spot and many pertinent details concerning it are classified. Everthing, personnel, supplies and mail, comes via Thule. Therefore, its function as the Mecca of Northern Greenland is doubled in the minds of personnel here.

Basically, Thule's buildings are the same as ours, but they are not connected by heated passageways. In view of this, and in view of the immense amount of dust at Thule, it presents a dirty and drab appearance, no matter how hard the personnel there try to keep it clean. What the place is like is something a man must judge for himself. Its relationship to the station seems to vary from year to year, and this will be taken up in another chapter.

The only other signs of human life, apart from Thule and the various outlying Air Force sites, are a few scattered Eskimo villages. There is one village at Cape York (45 miles south) and a few others scattered between here and Thule along the coast. Since the Eskimos are a nomadic people, the only permanent spots they inhabit within 100 miles are Cape York and Kanak (73 miles north). The other villages are strictly stopover points for them and about 60 percent of the time, nobody is there.

D. CUSTOMS REGULATIONS

The only things that limit what a man can bring with him are:

1. His baggage allowance

2. Station Orders (which prohibit sheath knives, whiskey, and private possession of small arms)

3. Danish Law – The Danes forbid the bringing in of either animals or contagious diseases.

Otherwise, anything goes as far as they are concerned, as long as you stay within the Thule Defense Area.

The major effect of Customs Laws will be felt in sending things back to the CONUS. Our Customs Inspectors have an insatiable curiosity. Most items get through, if the Custom's Declaration tag is made out properly on the package. However, quite often men have sent home exposed undeveloped color film which the inspectors have unravelled and ruined. The solution to this is to send all film by First Class Mail and mark it "Do Not X-Ray – Film".

CHAPTER II – OPERATIONS

A. AIDS TO NAVIGATION

Naturally, with this being a Loran Station, this is the most important phase of the unit's operation.

The Coast Guard Loran Transmitting Station, Cape Atholl, Greenland, is the Master Station of Rate 2S6 Baffin Bay – Davis Strait Chain. There really isn't much more to say about the Loran, except in the engineering sense, which is covered in Chapter IV. We fire off 20 full megawatt pulses per second on a frequency of 1850 kilocycles, and Cape Christian, the Slave Station, does the same keying their pulse one one-thousandth of a second after they receive ours.

The difficulties of Arctic Loran operation are discussed in Chapter IV, and the special instructions in regard to deviation from Appendix C to A/N Manual (CG-222) are included as an appendix to that chapter. Whether or not a man understands what Loran is, one fact should be brought to his attention: while Rate 2S6 produces reasonably good Loran in percentage of usable time, this takes a goodly amount of figurative blood, sweat and genuine tears (eyestrain from scope-watching) on the part of operating personnel.

Another aid to navigation the station operates is a 750 watt Radiobeacon for the Air Force. This is a so-called Homer, and acts as the "Sea Buoy" for Thule Air Base. It keys the characters CPA twice every half minute on a frequency of 321 kilocycles.

The Radiobeacon tower was constructed in the summer of 1956.

B. COMMUNICATIONS

A magneto land line telephone was put in operation in the summer of 1964. This enables us to call Thule Air Base anytime, and calls to the States can be made dependent on the traffic. Morale calls can be made at certain times through Air Force lines (~~one 6-minute call per week~~ (10 MINUTE CALL).

We maintain a continuous watch on SSB and 4577.5 kcs. In this way, Thule and Cape Christian can raise us any time they have important high precedence traffic. The 4577.5 kcs. circuit is also guarded continuously at Thule. Cape Christian guards 5320 kcs., an authorized voice frequency for emergencies (usually Loran connected).

The purpose for which the Thule circuit is most used is ~~for passing weather information from here to Thule. On each schedule, a weather message goes out. At present, due to the high proficiency of the unit's radioman, the radioman takes the observations and makes up the message. This is then checked by the Commanding Officer and released.~~ A BACK-UP FOR TELEPHONE COMMUNICATIONS

Thule also passes all traffic from this unit to CCGDONE, and other commands within CONUS. In past years difficulties have been encountered with the Thule circuit. These have been inability to raise Thule at non-scheduled hours, garbling of messages, and operators who don't measure up to the standard to which a Coast Guard operator is accustomed. ~~The "open circuit" with Thule was established in October 1956, and has proven to be mutually satisfactory and beneficial. As a general rule now, this unit's schedule is worked at Thule by the supervisor of the watch, which has eliminated most of the garbling and other difficulties created by inexperienced operators at the other end.~~ VIA TELEPHONE.

The Cape Christian circuit is used largely for Loran information. Due to the fact that the operators at either end of the line usually know each other and are friendly before they start their official relationship, this circuit poses the fewest difficulties. Also it is our only purely Coast Guard circuit and the operators are accustomed to identical procedures.

Another valuable use of the Cape Christian circuit is the solution of common problems not connected with Loran operation. These problems run the gamut from engineering problems to methods of improving the palatability of dehydrated and frozen foods. Occasionally, important items pertaining to morale are also passed.

INSERT

A new landline cable will be installed between Thule AFB and Cape Atholl loran station during the summer of 1972. This will enable the installation of a 100 wpm Teletype link between the two stations enabling more rapid and reliable means of communications. Cape Atholl equipment will consist of a Model 28 ASR with dome mounted reperferator. This will be connected to similar equipment in the Thule AFB Communications Center for direct access to conus via Autodin. Cable will also provide additional telephone circuits.

Communications equipment ~~available~~ present for 1 Operator position:

1 28ASR Teletype (summer 1972)
2 R390/URR Receiver (replacing R596/URR)
1 R100 Radio Receiver
1 RCA Mark II A SSB-1 transceiver
1 AN/URC-35 Receiver (UHF)
1 AN/FRT-23 Transmitter
1 AN/URC-7 Transceiver
1 AN/URT-20 Transmitter (being installed)
1 TDE-1 Transmitter(replaced by URT-20)
1 TED-1 Transmitter (UHF)

ANTENNAS:
Broad Band Receiving
Verticle Transmitting
Horizontal Longwire(MF) Transmitting
Dipole Antenna for URT-7
UHF Antenna

Also 1 TRP-141 Transceiver(Emergency equipment)

Communications between Cape Atholl and CONUS are frequently slow and sometimes garbled. There is really no standard amount of time it takes a message to get from here to CCGDONE or vice versa. **ROUTINE** precedence messages have taken as long as 1 day● to get here from Boston. **PRIORITY** messages have taken anywhere from 3 hours to 1 day. However, more often than not, the messages get here within a reasonable length of time, considering the large number of relay points between here and Boston.

INSERT

C. LAW ENFORCEMENT and INTELLIGENCE

This is an area of the unit's operation which is almost negative. Since we are on foreign soil, Law Enforcement activities are non-existent. The little intelligence work done consists of sightings. We report to Thule all ships seen in the vicinity, as well as anything which appears "unusual".

D. SEARCH and RESCUE

Here again, operations have been slight. In the unit's entire history, there has been but one assistance case, outside of weasels and snowmobiles running into trouble within the confines of our own valley.

This assistance case occurred on 7 November 1955. A helicopter from the 55th Air Rescue Squadron at Thule brought mail into the station that afternoon. At 1800, a message was received from Thule requesting the pilot's intentions. The aircraft had left at 1455. There ensued a joint search, from Quaratit by foot and from Thule by HU-16-E for the missing helicopter. The Air Force found the downed helicopter around midnight, and our sole contribution was determining that the helicopter had not crashed within 5 or 6 miles of the station.

Even though this may seem a minor incident, it had quite a bit of value as an experience in what methods should be used for rescue under conditions of Arctic darkness.

There is always the possibility of an assistance case arising, particularly when the sea-ice is "in". Arctic weather frequently prevents flying, and the Cape Atholl road goes far enough inland to be affected noticeably by any adverse weather conditions on the Greenland Ice Cap. Therefore, non-flying weather also means non-driving weather, even in a weasel over the Cape Atholl road. If there were a mishap between Cape Atholl and Petowik Glacier (10 miles south), it would be highly likely that the rescue job would fall to us. The sea-ice from Cape Atholl to Petowik is almost always traversable from 1 December to 30 May. It is smooth and solid and the cliffs of the Greenland coast (from 700 to 1600 feet high) frequently protect it from the Ice Cap winds.

E. BOATS and VEHICLES

The station is not equipped with boats. It does, however, possess a certain amount of heavy rolling stock. This consists of two Caterpillar D-8 tractors, one tractor "Athey" water wagon and a 1967 Dodge-Power Wagon, Six Passenger Crew Cab, 4x4, TRACKMASTER AND THICKOL, THE LATTER TWO BEING SNOW VEHICLES

The above equipment is used to maintain the station roads, hauling trash and other heavy items, and in meeting support vehicles. The equipment is adequate **most** of the time.* In addition to local work, the travelall is used to haul supplies to and from Thule during the summer. This is a long, hard ride, like riding a bicycle on the railroad tracks. The useful life of the vehicles is very short, even when used with special care.

* DURING THE SUMMER, MAIL AND PRIORITY SUPPLIES ARE PICKED UP IN THULE AND BROUGHT TO THE STATION OVER THE ROAD

CHAPTER III – PERSONNEL

A. MEDICAL, HEALTH and SANITATION

Despite the unit's isolation and rigors of the Arctic climate, this is not one of the "problem" areas of the station's operations.

Sanitation, other than purifying and testing the water from the runoff each spring, is no problem. Very few self-respecting germs see fit to take up residence in the Arctic, so few measures beyond ordinary cleanliness had to be taken to keep up the station's sanitary standards. Rats, cockroaches, tsetse flies and jungle rot are all non-existent here. The only items (outside of collateral duties) which come to the attention of the Hospital Corpsman assigned are the few germs the men bring with them from the States or cuts and bruises.

Occasionally, mild cases of frostbite are encountered during the really cold months, and these clear up rapidly when they do occur. With the abundance of Arctic clothing on hand at the station, there is very little excuse for a man becoming frostbitten.

Seventeen miles away, at Thule Air Base, there is a large hospital. One member of the 1963-1964 crew broke his leg and required treatment there. No problems were encountered in evacuation at the time because of good weather. One of the 1966 crew had his appendix removed and fine Coast Guard-Air Force cooperation was encountered.

Sanitation, in the form of plumbing and sewage disposal, will be taken up in the section on Civil Engineering.

A man's health (unless he is arthritic or has some similar chronic ailment) is the least of his worries up here. The Arctic climate is rough, but its dryness seems to act as an excellent preventive of what we know as the civilized diseases.

B. TRAINING and EDUCATION

Again we have an area in which a man assigned to the station should have no apprehension or worries. On a percentage basis, this is one of the most trained and educated units in the Coast Guard.

Institute activity is very high. An average of two-thirds of the crew is enrolled in courses at any given time and some men complete as many as three or four courses in their year here. Courses and tests are ordered in the same manner as any CG unit. USAFI activity is also high and General Educational Development Tests are very popular.

In addition to textual training, the unit has a number of practical training devices. These include an International Code flag set, International Morse Code records, amateur radio publications, etc.

For the training of future Boatswain's Mates, we have plenty of line for knot tying and an abundance of paint. For future Damage Controlmen, both the Hobby Shop and Maintenance Shop are well equipped with the tools of the trade, both hand and power.

Although it is primarily for recreation, the station darkroom is a spot where a man can do some valuable self-training. ~~Black and white~~ photography can be pursued on a year-round basis, and can be a rewarding hobby ~~for a man to become interested in.~~

In general the training opportunities are excellent for men in pay grade E-4 and below. For Second Class Petty Officers and above, training opportunities in the various specialties are narrow. For the Senior Petty Officer, the only broad experience to be gained here which would be highly valuable is that of status and responsibility as a Division Head. Even though this may be on a small scale, it is excellent supervisory training. Hand-in-hand with this goes the experience of handling men under unusual and often severe conditions. This may or may not be considered "Training", but a year here is an excellent opportunity for any man, irrespective of service rank or chosen profession in life, to observe almost every facet of human nature at close hand.

For non-rated men, the best striking opportunities exist in the rates of ~~CS, EN, DC and ET~~ CS. There is also a limited opportunity to strike for the rates of RM, BM, and ~~EM~~. The possibility of becoming rated in these last three specialties is slight while here, although men have been able to obtain designators in the past.

The Arctic Survival School in Thule sends its instructors out to the station on request for 2 days and teaches us how to survive in the Arctic Region.

Men assigned here who hope to become Boatswain's Mates should make sure that they have fulfilled their "practical" factors before arriving. We have no boats, davits or related equipment aboard here. It might be possible to fulfill the practical factors aboard an icebreaker while here, but to make sure that he doesn't miss out, a man planning on being a BM striker should take his practical factors examination in Boston.

C. MORALE, WELFARE and RECREATION

Due to their close interrelation, these three items are lumped together in one category. Actually all three of them are not only dependent on each other, but are also thoroughly dependent on weather and darkness conditions.

The major factors in the happiness of any organization is a close sense of team work to make things function smoothly. A constructive attitude on the part of all hands in the first requisite for this. It is something that cannot be imposed from above; it can only come from the individuals who make up the crew. The 1966-1967 crew was exceptional in this respect, and apparently the same was true of the previous group here. If the selection of the crew is as astute each year, it is hoped that this can be maintained as a unit tradition. The difficulties of Arctic operation practically preclude operating in any other manner.

The next consideration in regard to morale is mail. Mail has arrived here in as little time as ~~62 hours~~ 30 days from the central U. S. This was an exception. There is really no "standard" time for a letter to reach here from CONUS. Most letters reach Thule Air Base (APO NY. NY. 09023) in an average time of 4 days. How long they wait in Thule before coming out here is dependent on many things.

There are three dominant factors in mail service and all must be favorable at the same time in order to enjoy any sort of consistent support. These are:

1. Relations between the station and the various commands at Thule Air Base
2. The type of people who happen to be in authority at Thule
3. Weather

The history of the unit's support has been a blow-hot, blow-cold matter in the past; however, the support received by the ~~1966-1967~~ 1970-1972 crew was outstanding. In general, personnel who come here in the future can expect mail fairly regularly every 2 or 3 days depending on the weather, on how fast mail leaves McGuire Air Force Base, New Jersey, for Thule Air Base, and how often people write to you.

The Ham Station equipment consists of a complete line of Collins SSB gear and a HRO-60 receiver. The equipment is entirely adequate for reliable communication with the States by CW. However, it is not entirely reliable communication for phone. We are capable of meeting only 40 to 50 percent of our stateside phone schedules due to the fact our signal is not too strong by the time it has traveled 3000 miles, and when it gets there it is competing to be heard in a large group of full kilowatt stations. The station's antenna system is good, consisting of a 5 element, 10, 15, and 20 meter beam for transmitting and receiving.

In order to establish or operate a Ham Station in Greenland, a man must first have a so-called "Greenland Call." These calls are issued by the Northeast Air Command to U. S. Armed Forces

personnel who are **already licensed** (Conditional and above) by the FCC. As has been indicated in Section B of this chapter, a man can obtain a Conditional Operator's License while here. This process takes anywhere from 8 to 14 weeks. Getting a "Greenland Call" takes an additional 4 to 6 weeks.

Incoming personnel of the rates ETC, ET1, and RM2 are urged to qualify for a Ham License before leaving the States. It is possible for them to be examined by the FCC office in Boston while they are awaiting transfer up here. The amount of time and trouble it takes for men of these rates to study for the examination should be negligible if they can meet the rate qualifications as outlined in the Personnel Manual, and the rewards of having an active hobby while here are inestimable.

Another active hobby which can be followed on a year-round basis is photography. Both the station and Greenland itself are unusual places, and pictures of this tour of duty can be among its most rewarding aspects. The station has a Kodak 620 "Chevron" camera and an ample supply of Verichrome Pan film. This is adequate for all black and white picture work a man does here. If he intends to go in for camera work seriously, he should give consideration to 35mm work. There is enough color around here to make excellent slides. Kodachrome film is available in the station exchange and 35mm cameras can be purchased ~~from the Exchange at Thule Air Base~~ THROUGH THE STATION EXCHANGE at prices averaging 40 percent of prices in the States.

The station dark room is well equipped. The darkroom's prime feature is an Omega D2 enlarger which is capable of blow-ups of almost infinite size. The only limitation on size of enlargements is the size of the paper. The darkroom is amply supplied with developer, fixer and paper. The work here is confined to black and white developing and printing; we have no facilities for color work. Color film can be sent back to the States for developing, printing and mounting. If the Customs Declaration Tag is made out properly and the film is sent First Class Mail and marked "Do Not X-Ray," no troubles are encountered.

On the whole, other recreational aspects of the station are good. For "inside men" we have pool, ping-pong and a one-ended basketball court in the Storeroom area. Outside recreation consists of hiking almost year-round, fishing during July and August (not very good), skiing 2 months out of the year (fair to excellent), ~~skating (fair to good in September only), and~~ horseshoes and volleyball in the summer. Adequate equipment for all the above is at the station. ~~With the exception of ice skates~~.

In addition to the above "active" items, there is a large supply of parlor games such as picture puzzles, checkerboards and the like, one portable RCA phonograph and a large stock of records. Many of the records sound as though they were being played through a bowl of rice crispies, but they still provide a pleasant respite from the radio station at Thule. Movies are held every night. Most of the films are out of circulation sea-prints, and are well laden with scratches both of the viewing surface and soundtrack. Various other units along the line have edited out many scenes. However, we can see and hear what is going on in the films most of the time, and the "edited" sequences had little to do with the plot. Despite the age of the movies (many of them are pre-1940) and their condition, they provide good entertainment. Old timers like "San Francisco," "Boom Town," "The Awful Truth," and "My Wife's Best Friend" are many notches above what Hollywood is putting out this day and age. A program was instituted to provide the station with 90 movies quarterly. These are usually in the ~~1955-1966~~ 1960-1971 bracket and on an average are very good.

Between Institute Courses, USAFI Exams, and hobbies, a man doesn't have to look far to find activity. The Hobby Shop has all necessary power tools for wood-working and related carpentry. There is also a library of about 3000 hardbound books.

For the convenience of the crew, the station maintains ~~a small~~ AN exchange. All items necessary for personal comfort are stocked. Shampoo, soap, toothpaste, razors, blades, shoe polish, etc., are all carried in a variety of brands. Also sold in the exchange are candy, soft drinks, beer, cigarettes, pencils, pens, 35mm, 8mm, 620 and 127 film, along with other minor luxury items. A man coming here shouldn't worry about "needing" any toilet articles or other essentials. These are all stocked. Certain men with highly developed tastes might miss their Yardley Talc or Countess Mara After-Shave, but such minor hardships can be borne without undue suffering in most cases. A man with exotic tastes in toilet items should bring a year's supply with him. For normal citizens, the standard brands stocked by the exchange will be quite adequate. Special items such as tape recorders, amplifiers, speakers, cameras, etc., can be purchased through the station Exchange.

REPORTING SHOULD LEAVE BOSTON WITH AT LEAST $50.00. THIS WILL BE USED FOR TAXIS, BUS RIDE FM NEWARK TO MAGUIRE, FOOD ETC.

Personnel ~~in past years have been discouraged from bringing money with them.~~ Purchases at the exchange are made on a credit basis and the men pay off when they return to Boston. Enroute home transportation by MAC requires no cash. Both coming here and leaving, there may well be delays at USAF depots, such as Thule and Goose. If a man wants to hit the local NCO Club or see a movie while he's there, he must pay. There also might be items in the local exchange (Chanel No. 5 goes for $12.50 a pint at Thule) which he would want to bring back to his wife and family. Here again, cash is necessary. Trips to Thule R&R require some money for the NCO Club and for the exchange. Personnel receive one check per month of ~~$20.00~~ 50.00

Necessary items of uniform are covered in Chapter VII.

Despite our remoteness, facilities and assistance in regard to morale and welfare are good. The Red Cross and the District Morale Office are both excellent in regard to inquiring into a doubtful family situation (pregnant wife; not hearing from family, etc.). Thule Air Base has a Red Cross Field Director attached.

The unit maintains a small morale fund which can be used for emergency leave or trips to Thule Air Base while the members are on R&R if sufficient funds are available to grant a "liberty loan." However these funds are usually reserved for emergencies.

In general, a man has no worries in the personal line. The passage of time is swift and there is no worry in regard to being completely cut off from one's family. For a great majority of the personnel who have been here, the tour has passed more swiftly than equivalent periods in "civilization." The ones for whom this is not true are those with pressing family problems (very few of these are assigned) and those who fail to use what imagination the Good Lord gave them.

CHAPTER IV – ENGINEERING

A. CIVIL ENGINEERING

This is a topic which is fairly well covered in past issues of the "Engineer's Digest" and in the "Dope I Instruction Book" which was promulgated by Commander, First Coast Guard District(e) at the same time of the building of the station. The only aspect of engineering which was not covered in these two publications is winter water. After a brief rundown of the general areas of Civil Engineering, we shall go into detail on the water situation.

The basic construction of the station buildings is of 2-foot panels, 5 inches thick. These panels are sandwiches of aluminum, plywood, and fibreglass. They were utilized due to the ease with which they can be put together and the ease of handling. These are both necessary items in Greenland where transportation problems are great and the construction season is short. For their weight and thickness, the panels provide excellent insulation if the exterior of the buildings is kept well caulked. The buildings are identical to those at Thule Air Base, with the exception of refinements introduced by Coast Guard Engineers who participated in the designing of the station.

These refinements, though minor on the surface, have made a considerable improvement on the standard of comfort and efficiency at the station. They are: Heated passageways for going between buildings and for running of electrical and fuel lines; pitched and corrugated iron roofs which shed melting snow; and flush toilets. All traffic between buildings at Thule Air Base is outside and, at times, thoroughly uncomfortable. In addition they were built with flat roofs and severe leakage problems resulted. Last of our improvements is a humidifier which keeps the buildings at a constant 55 percent relative humidity. Due to the dry climate, this creates a great improvement in indoor living but can only be used during summer months because of the amount of scarce water it consumes.

The plumbing system is a good one, and relatively trouble free. During the summer, when there is plenty of fresh water from the station dam, toilets are operated on fresh water and the plumbing is strictly "Stateside." During 9 months of the year this system operates on waste water from the showers, laundry and washbasins. Due to the fact that the station uses but 200 gallons of water per day during the "non-dam" months, common sense must be used in regard to flushing the toilets. However, the waste water is adequate for flushing purposes a good part of the time. The only time shortages occur is after a holiday week-end, and these have always been minor and temporary. Although a severe odor arises from reclaimed water, Ano-zone air purifier has been installed to curtail the odor and great amounts of disinfectant are used.

Other engineering equipment consists of four Caterpillar "D-13000" engines driving 75 KW generators, two Cleaver Brooks compression type evaporators, one Cleaver Brooks Ice Melter (2000 gallons) and the station's rolling stock.

The station's heating system operates largely off the waste heat from the Loran Transmitting equipment and from the engines. For extreme temperatures, there is an oil-fired boiler in each engine room which cuts in when the water temperature drops below 160 degrees Farenheit. The water which cools the ergines is circulated throughout the station to provide heat through water jackets and blowers in the various heating ducts. Power, plumbing and heating are all well covered in the " Dope I Instruction Book."

The heating system is adequate. Occasionally, during prolonged 30 below zero spells accompanied by wind, the temperature in the rooms will go down to 65 and even 60. These events are rare and usually last no more than 2 days. The arctic seabag issued in Boston to personnel coming here is more than adequate for warmth during the winter.

In general, the engineering of the station is exceptional. It is efficient, economical, and trouble free. Any troubles encountered are minor, provided all aspects of engineering are operated in accordance with printed matter on hand at the station although age of equipment is commencing to take its toll.

B. FRESH WATER

During the summer, fresh water is available from the dam. Sometime between the last week in May, and the first week in July, the runoff begins. This fills the resevoir behind the dam, and fresh water is available until early September. This water should be tested for bacteria, and as soon as it is free of all bacteria and suspended matter, water should be transfered to all six outside storage tanks. This will provide approximately 158,000 gallons of storage for the following winter. Water should be used directly from the resevoir during the summer as long as there is runoff. When freezing temperatures return, all the water runs out underneath the dam. Following this, fresh water is available for about three weeks from a water hole downstream of the dam. After the water hole is disipated, the station must use its stored capacity. This stored water is transfered to inside storage tanks about once a week. 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. 5000 gallons of this water is reserved for firefighting, and the water stored in the ice melters should be used first because each fire pump can take suction only from the adjacent water tank. All water is treated with Calcium Hypochlorite after each replenishment of supply and continuously with chemical feeders.

Outside of fresh water, there are but two "watch-out" areas in Civil Engineering. First and most important of these is fire. While the panels of which the station are constructed do not catch fire readily, once a fire starts in them it is relatively impossible to put it out. The few fires that have occurred at Thule Air Base have completely demolished the buildings in which they started. What happens is that the fire travels along inside the panels via the plywood, so when the fire is apparently extinguished at one spot, it usually breaks out all over again two or three panels away. According to the OIC of the Thule Air Base Fire Department, the only reliable method of completely stopping a full-grown fire is to take a bulldozer and mow down the burning part of the building.

This means that a tremendous amount of stress has to be laid on fire prevention, and the importance of the Night Fire Watch cannot be overestimated. Apart from this one weakness (which isn't really a weakness if proper care is exercised), the construction of the buildings is excellent. In fact, considering the circumstances and difficulties of Arctic construction, it is fantastic.

Second of these "watch out" areas is the utiliduct, or sewage discharge line. The line is heated by air from the buildings and by a heating coil near the discharge end of the line. It is short and of good slope, and if it is watched carefully it will not freeze up even in the most severe weather. The line itself does not have to be watched, but in the freezing temperatures a "totem pole" builds up at the discharge end. The "totem pole" is a petrified tree of frozen sewage and it has to be checked daily for height and cut down occasionally. This job is not as unpleasant as it may sound, since the sewage is relatively clean, odorless and frozen hard as a popsicle with minimum exposure of personnel to the elements.

The value of this detail for first class sea story material is adequate compensation for the minor hardships involved.

B. FRESH WATER

Revise

During the summer, fresh water is available from the dam. Sometime between the last week in May and first week in July, the so-called spring runoff occurs. This fills the dam, and fresh water is available from the runoff until early September. When freezing temperatures return, all the water runs out underneath the dam. Following this, fresh water is available for about 3 weeks from a water hole downstream from the dam, and has to be hauled up to the station in the tank wagon.

After the water hole is dissipated, the station goes on snow or ice runs until the next runoff starts the following summer. Fresh water storage facilities total 13,650 gallons, 3,650 for domestic use and 10,000 for fire. At a daily consumption rate of approximately 200 gallons, it is necessary to make a snow run only once a week which involves all hands. Also installed are two fresh water tanks of 33,000 and 34,000 gallon capacities.

C. ELECTRONICS ENGINEERING

In general, the electronics engineering is both modern and standard. Since detail writeups on all equipment installed are available from the various technical manuals involved, this section of the book will consist largely of listing equipment on hand and a few comments on Arctic Loran operation.

Under the scope of this heading, all communications, radiobeacon and Loran equipment are included.

Communications equipment is thoroughly adequate to meet the unit's commitments as outlined in Chapter II. It consists of the following: AN/FRT-23 and TDE-1 transmitters for working Thule Air Base and Cape Christian Loran Station, on both voice and CW; AN/URC-7 for working passing ships and the subport at Thule on 2716 kcs. National HRO-60 receivers are used throughout.

The radiobeacon equipment consists of the following: AN/URA-11 timer, TB-142 transmitter, TB-143A radio frequency amplifier and, at the foot of the 180-foot tower, a CU tuning unit. There is standby equipment for all of the above, with the exception of the tuning unit.

Loran equipment is of recent vintage and, aside from the misarable signal conditions that prevail in the Arctic during the winter, the operation of it is comparatively trouble free. It consists of the following: AN/FPA-2 Electronic Switch Group; (2) AN/FPN-30 Timers (1) FPN-30/MOD using four servo loops and a phase lock; AM-701/FPN Radio Frequency Amplifiers; and T-325B/FPN Transmitters.

The antenna system is standard. The ground systems may differ from those in the temperate and tropic zones in that they are laid on top of the ground instead of sunken. With the large amount of permafrost and rock here, burying the ground system is out of the question.

Test equipment for the electronic gear is versatile and adequate. The addition of a Power Meter-Standing Wave Indicating Device would round out what is at present a very good setup in this line.

For about half the year, Loran operation can be considered normal and trouble free. This is true from May through October. In November, occasional sky-wave distortion of the Slave's ground wave is encountered, along with a noise-to-signal ratio which increases steadily. The combination of increased magnetic interference, no daylight, poor conductivity and sea-ice all serve to intensify these problems as the winter goes on. Three major manifestations of these unfavorable conditions are seen:

1. A tremendous amount of noise on the scope.

2. The sky-wave overriding the ground wave from Cape Christian and often completely obliterating the trailing edge of the Slave signal.

3. An occasional "false additional delay" during periods of high magnetic activity when the slave signal will appear healthy in all respects except for being 10 to 16 microseconds out of synchronization on the high side.

From past and present experience, conditions "touch bottom" around the middle of January. Sometimes the Slave has to take over the job of monitor and synchronization.

During the first two years of the chain (at that time rate 1L7 instead of 2S6) receiving conditions seemed to be better at the Master than they were at the Slave. A good deal of those first two years were spent with the Master not only monitoring but holding synchronization as well.

The summer of 1956 saw the addition of line amplifiers to the receiving equipment at the Slave and this appears to have brought about a considerable improvement in its ability to read our signal and hold synchronization. At times during January 1957 when the Master was observing a signal to noise ratio of 1:1, the Slave was reporting anywhere from 6:1 to 12:1.

In addition to all the above, during the periods of sky-wave activity, there is a problem of crossover from other rates. This occurs mostly with 2S7, the rate maintained by Cape Christian and Disko Island. The crossover "shreds" the Slave signal as it goes across the scope and at times makes Cape Christian unreadable for periods up to several seconds.

Generally there are no worries with the equipment setup. There is an intangible factor in Loran operation, though, which consists of the fullest cooperation in all respects between this station and Cape Christian. We may be 350 miles apart, but we are basically in the same boat. Unless this is recognized right off and unless the two stations give their best to each other, the rewards of the year for supervisory personnel at both ends will diminish considerably. Due to inherent terseness of CW communication, it will seem at times that the other station is being brusque or intentionally rude. However, unless an aggravated situation is permitted to arise, this will not often occur. When communication must be quick and to the point, amenities and vanities at each end have to be cast aside.

CHAPTER V - COMPTROLLER

A. CLOTHING and PAY

Although these two items would not ordinarily fall under the same heading, they are lumped together for our purposes since they both come under the "back in Boston" category.

A list of essential clothing is included in Chapter VII. It is important for a man to make sure that he brings clothing that is sufficient in both quantity and life-expectancy to last out the year. Small stores items can be obtained from Boston on a "deduct from pay" basis during the year. While the work involved in getting the clothes up here isn't great, it is a nuisance as most men with reasonable foresight will bring enough clothing with them, if only in self-defense.

One $~~20.00~~ 50.00 check is received monthly. Whatever is left from his allotments is accrued in his Pay Account in Boston. On his return he receives his credits, minus his exchange bill for the year, in one lump sum. In past years, men have sent in requests for checks against their pay so they could buy souvenirs and exchange items on the way home. These checks varied in amount from $20.00 to $350.00, and the District Finance Office has been very obliging and prompt in sending them.

If, during the year here, a man wishes to buy an expensive item such as a camera or a tape recorder he may order it from the Thule Base Exchange for sale through the station exchange and realize a considerable savings.

B. FUEL and SUPPLY

From the material standpoint the station is self-sustaining. There are some exceptions to this, such as obscure and suddenly needed spares for engineering equipment, but these are few.

As near as possible, 2-years' supply of everything is on hand. This includes fuel on down to commissary items. The station receives the bulk (99.5 percent) of its supplies in one slug, usually in August and early September. The one slug has two separate parts, but they are close enough together to be considered one continuous dose. This is known as the "Annual Resupply."

We shall trace this resupply from its beginning at Quaratit in December:

In the early part of October, the Commanding Officer and the Department Heads of the station get together and make an estimate of the unit's various needs from August of the following year until August of the year after. These estimates are based on past consumption and present supply, On the basis of these figures the requisitions are made up and forwarded to Commander, First Coast Guard District.

The District Staff then reviews the requisitions, usually in mid-January to mid-February, and straightens out any discrepancies such as requests that appear excess, inadequate description of items, etc. After Staff review, commercial general stores and morale items included in the resupply requisitions are purchased by Commander, First Coast Guard District for direct shipment to Commanding Officer, CG Supply Center, Brooklyn, New York.

Requisitions for standard stock items, (items available from government sources), are forwarded by the District to the CG Supply Depot, Boston, for editing and further processing. When edited, these requisitions are forwarded by the District to the CG Supply Center, Brooklyn, New York. The Supply Center will issue available materials from stock and will order remaining items from other government supply sources, i.e., Navy, General Services Administration, etc. When the Supply Center has received and staged all materials included in the resupply requisitions, shipment is then made to the Hampton Roads Army Terminal, Norfolk, Virginia for final staging and ultimate transportation to Cape Atholl by Sea-Lift, as part of the Northern Area Project (SUNEC) "Support Upper Northeast Command."

The ships carrying the cargo north are attached to the Military Sea Transportation Service (MSTS) and depart Hampton Roads, for the Northern Sites, in June and arrive at Cape Atholl during July and August.

Under a written agreement between the Commander, First Coast Guard District and the 64th Air Division, Stewart Air Force Base, Newburgh, New York, the following direct support is now rendered Cape Atholl by Thule Air Base:

1. Air or ground vehicle pick-up and delivery of mail three times per month, except when prohibited by weather and urgent operational commitments.

2. Air drop of critical or emergent materials, essential to welfare of personnel and sustained operation of unit, as requested by the Coast Guard.

3. Evacuation of personnel for medical or emergent reasons.

4. Use of Thule Air Base postal facilities, i.e., APO New York, N.Y. 09023.

5. Honor Coast Guard requisitions during the year for all consumable supplies, and commissary provisions which are normally carried in stock at Thule Air Base or which are available in the Air Force Supply System.

Item requirements arising during the year which cannot be obtained from Thule directly, and are not provided on the annual resupply will be requisitioned from Commander, First Coast Guard District(f). These will be purchased and airlifted to Cape Atholl via regularly scheduled "MAC" flights from McGuire AFB, Newark, N. J. to Thule Air Base.

With improved support, commissary items such as fresh milk, produce and bread are ordered on an as-needed basis. This does not always work as planned, and sometimes the fresh food runs out. It comes down to the fact that if there is good support, the station will have fresh food.

C. COMMISSARY

The station operates a Class E General Mess. With the exception of the ration value, which for this unit is 150 percent of the District General Mess ration value, and the almost unlimited size of the commissary inventory, the mess is run just the way they tell you in Volume 4 of the Comptroller Manual.

The station complement has a CS1 and a Mess Cook. These two men perform all the food preparation and take care of galley sanitation. The CS1 maintains all the books and charge-out sheets, and takes the monthly inventory with the Commanding Officer. It is a safe statement to say that the galley men are the two busiest crew members here.

The fare enjoyed by the present crew is probably among the best in the Coast Guard. There is sufficient variety in the sixteen thousand dollar inventory and enough money from the increased ration value to set a real Gourmet-type table. Sometimes when support units can't get in here for a while, it gets a little un-Gourmet through having to rely on non-fresh foods. However, most of the time there is at least **something** fresh on the table, and the stock of frozen fruits and vegetables seems to take up the slack when we run short on fresh items.

The galley is extremely well equipped. A Hotpoint Double Electric Range, Hotpoint French Fryer, waffle iron, two toasters, Waring Blender, ice cream freezer, and two standard electric beaters take of our needs nicely. Future cooks have no worries in regard to either budgetary or equipment limitations. The only limiting factor in regard to the excellence of the food is the ability of the cook assigned. The men enjoy, day in and day out, the best food they have ever had, in fact a few are having grave troubles with the battle of the bulge.

D. TRANSPORTATION

Here again, we have a matter that is tied directly to the mail service.

The road from here to Thule Air Base is sometimes open until the end of August. With gung-ho cooperation on both sides, the road might with luck be opened within a week after the runoff. In an ideal year, the road could conceivably be open the first of June. Average time for rehabilitation of the road each year is 15 days from the time our dam fills. With a runoff averaging mid-June, the probable date is 1 July.

In consideration of the topography, weather and the distance we are from civilization, helicopter transportation and support can be evaluated as outstanding.

CHAPTER VI – ADMINISTRATION

A. GENERAL

The internal administration of the station is carried out by the Commanding Officer with the assistance of the Chief Petty Officers and Department Heads.

External administration, such as relations with other military commands and with the Danes is carried out by the Commanding Officer.

The internal succession to command is EMC, ETC, etc. The EMC is designated second in command to take over the station in the CO's absence.

B. PAPERWORK

The paperwork involved with the administration of the unit is extensive considering the size of the complement. However, all administrative work which falls to the Commanding Officer and HM can be accomplished during the course of the regular working day.

There are six monthly reports which have to be forwarded to the District Office in Boston. The biggest of these is the Commissary Report. In addition to this, there are reports covering Communications, Loran, Medical, Safety and Exchange. These six monthly reports are the minimum that will go out in any given month.

Besides the basic "Monthlies" there are several other periodical reports. These cover publications, vehicles, enlisted performance marks, office machines, small arms, etc. The frequency with which these occur is the same as the stateside units.

All personnel jackets are retained at the District Office in Boston. When a man is assigned here the Military Personnel Officer makes an abstract of vital information in his service jacket and forwards it here with his orders. No personnel diary is maintained here. This is accomplished by District personnel who are advised by message of any changes here which might effect the diary.

Under the present setup with paperwork, the rough items are turned out by the Commanding Officer and are typed up smoth by the HM, who also assists the Commanding Officer with the legwork and mule-work involved with periodical reports. The Loran Report is abstracted by the Senior Electronics Technician and then checked by the Commanding Officer who fills in the spaces requiring narrative reporting.

Even though the "Pending Box" gets a little full at the beginning of each month, the paperwork burden is heavy enough to make the time pass swiftly for those involved and yet not so heavy as to be drudgery.

C. DISCIPLINE

While a Loran Station is nowhere near as formal as a large Cutter, the military amenities in regard to this phase of administration are observed. While there may not be much exterior formality here, the standard of what an adequate job consists of is probably higher, since at a small unit discrepancies are discovered more quickly.

Since the commissioning of the station, Commanding Officer's Mast (Article 15, UCMJ) has occurred with an average frequency of once every 2½ to 3 months. Most of the offenses have been in regard to the standing of Security Watches and most of the punishments have been light, however, other offenses have come before the Commanding Officers at Mast.

There are no figures on how this compares with other units of similar size, but on a service-wide basis per man, it is probably fairly close to the norm.

A man need have no fears in regard to discipline here if he is well-qualified to hold his rate and if he makes sure he maintains a careful and conscientious standard of workmanship during his tour.

D. SAFETY

Safety is administrated jointly by the Commanding Officer and the unit's Safety Board which is composed of the Chief Petty Officers.

Other than a broken leg in 1964, there have been no accidents here since the station opened which involved any amount of lost man-days. Other than the extra caution which must be exercised in regard to fire, the standard service-wide accident prevention measures have been adequate to meet the station's needs.

Safety Instructions are held regularly for the benefit of the crew.

E. RELATIONS with OTHER COMMANDS and PEOPLE

This is the "exterior" administration referred to in the first section of the chapter. While the bulk of it rests with the Commanding Officer, the response of the crew to guests and visitors is important. An attitude that "nothing is too good for the mailman and visitors" is essential for all hands. Logistic support will vary according to the extent that the crew is able to show this kind of hospitality.

Also of importance is the maintenance of close ties with Thule Air Base, the Danes and the natives. Two-thirds of the personnel at Thule "rotate" back to the U. S. without ever seeing the men who replace them. Every summer the public relations with Thule Air Base has to be done all over again. This consists of as many trips to Thule as are conveniently and operationally possible on the part of the Commanding Officer during the open-road season. Knowing the men in charge of the supporting agencies is absolutely essential in order to get full cooperation.

Even though the station is a tourist mecca during the summer and is swarmed on weekends by sightseers from other services, men in command posts at Thule seldom leave the Base proper, particularly for someone they don't know personally. A vigorous program of official calling is in order for any officer assigned to this command, soon after his arrival.

In conclusion, if the administrative personnel assigned are aggressive, competent and level-headed, neither they nor the unit are going to run into any problems which are more than minor or temporary.

A sample Watch, Quarter and Station Bill follows.

U. S. COAST GUARD LORAN STATION
CAPE ATHOLL, GREENLAND

WATCH, QUARTER & STATION BILL

Billet No.	Authorized Rate	FIRE	ANTENNA CASUALTY	EMERGENCY EVACUATION
CO	LTJG	On Scene, Safety Observer.	On Scene, Safety Observer.	Co-ordinate Movements. Account for Personnel.
101	ETC	In Charge Signal Bldg.	In Charge at Scene.	Secure Signal Wing.
102	ET2	Provide OBA.	In Charge Signal Bldg.	Provide TRP-141.
103	ET3	Provide Badger Extinguisher, Report to CO. Man phones & maintain contact with 105.	Dog House, Provide Safety Belt & PRC-59.	Provide Battery for TRP-141.
104	EN1	Move Cat. to Upwind Position & Standby.	Assist 201.	Drive Cat. clear of Bldg. & Standby.
105	EN3	Start Diesel Fire Pump.	Pole Crew #2.	Assist 201.
106	DC2	Investigator. Man #1 Hose.	Pole Crew #1.	Provide Evacuation Vehicle.
107	HM1	Provide First Aid Kit. & insure D.P. Kit has been provided by 202.	Provide First Aid Kit. Assist as Necessary.	Report to C.O. Provide First Aid Kit, Exposure Rations, Rifle & Ammo.
108	SN	Pass Word of Fire Thru All Zones. Assist 104.	Report to C.O. at Scene.	Assist 104.
109	SN	Provide CP2. Back-up Man for #1 Hose.	Provide Emergency Lights. Place as Directed.	Assist 107.
201	ENC	On Scene Leader.	Standby in Power Bldg. Split Plant if ordered.	Secure Building.
202	ET2	Provide DC Tool Kit. Report to 201.	Pole Crew #1 In Charge.	Assist 201.
203	ET3	Provide OBA	Pole Crew #2 In Charge.	Assist 207.

Billet No.	Authorized Rate	FIRE	ANTENNA CASUALTY	EMERGENCY EVACUATION
204	EM1	Secure Ventilation. Standby Switchboard.	Assist 201.	Start Generator in Disaster Hut.
205	FN	Provide Applicator. Man #2 Hose.	Report to C.O. on Scene.	Assist 106.
206	CS1	Wake All Sleeping Personnel. Secure Galley. Report to 201.	Wake all Sleeping Personnel. Provide Hot Coffee.	Secure Galley Equipment. Open Door to Dry Stores Outer.
207	RM2	Contact Thule and Prepare to Evacuate.	Assist 102.	Contact Thule. Evacuate Classified Publications.
208	SN	Provide Fire Ax. Back-up Man #2 Hose.	Report to C.O. on Scene.	Report to C.O.
209	SN	Provide CO2 Extinguisher. Report to 201.	Provide Two Emergency Lights. Place as Directed.	Report to C.O. Provide Station Log, Binoculars, Compass.

CHAPTER VII – WORDS OF WISDOM FOR RELIEFS

A. GENERAL

Looking back over this publication, perhaps we have deviated from straight factual text in more places than we should have, and possibly we have been a little repetitious. However, we tried to cover every aspect of each phase of the unit's operation, and in such an effort certain things will have to overlap and be repeated. Past experience has shown us that a man's ability to enjoy this tour of duty and make the most of it is dependent on the following:

1. 20 percent on his native ability.
2. 29 percent on training, technique and knowing what's ahead of him.
3. 51 percent on his frame of mind.

If a man can't decide to do a good job and be a good member of this community, he will spend a miserable and lonely year. On the other hand, if he takes a constructive position the rewards will outnumber the price he pays in coming here.

B. WHAT to do and WHAT to bring

WASH & WEAR Clothing: For Officers and CPO's, wear blues. You should also bring at least six sets of ~~washable~~ Khakies and eight sets of underwear. The blue uniform of CPO shirt, tie and blue pants is optional here and may be brought. It is a pleasant rest from the Army brown wool jobs issued in Boston. R&R in Thule is ~~with blues~~. USUALLY IN CIVILIAN CLOTHES. CIVILIAN CLOTHES ARE AUTHORIZED FOR ALL PERSONNEL IN OFF DUTY STATUS.

The remainder of the crew will wear blues on the trip up. A peacoat is necessary in months other than summer months. Undress blues are **NOT** necessary. Men should bring eight sets of dungarees and eight sets of skivvies. Several pairs of cotton socks should be brought. Make sure all the uniforms are in **GOOD** condition. Aside from this, plus two white hats, the Arctic seabag will be adequate for warmth during the winter.

If a man plans to be a basketballer, he should bring sneakers and two pairs of white wool socks. If he is a skater, he should bring his own ice skates.

Bring three bath towels for personal use.

Bring any items of decoration you may want, such as pictures, etc. You will live here a year and your room will be your home for that time.

Stationery is available here from the Exchange. For personnel residing in Boston, New York or Philadelphia, 6 cent stamps will do the job just as quickly as Air Mail. For personnel whose homes are beyond that orbit, 10 cent Air Mails are 1 to 2 days quicker.

Bring a calendar so you can tell what day it is during the dark season.

For photo bugs, film and flashbulbs are available in all common sizes at the station Exchange.

If a man desires vocal communication with his family, either by Ham Radio or Tape Recorder, he should do the following: Contact a Ham in his home town as outlined in Chapter III; **Make sure** that a tape recorder is available to his family. Most families do not own recorders, but in most towns of a population of 10,000 or more, recorders can be rented very reasonably. Men in the present crew who have availed themselves of the station's recorder have found this a most satisfactory means of communication with home

Inform your family to contact the **RED CROSS** in any emergency. They will handle the details of any situation with the District Morale Officer.

Notify your friends and family that the proper mailing address of the station is:

NAME, RATE
U. S. COAST GUARD
LORAN TRANSMITTING STATION
APO NEW YORK 09023

DON'T bring blankets, sheets, pillows, or pillowcases. These are available at the station.

DON'T bring skis or ski-boots. We have them here.

DON'T bring irons, soap powder, or any other laundry items. Irons and ironing boards are in stock for your use and the station operates its own laundry.

DON'T bring Undress Blues, ~~unless you feel they would look nice on Sunday.~~

DON'T bring sheath knives, alcoholic beverages or weapons of any kind. Possession of these are prohibited by Station Order.

If you own property, securities or an automobile, you may want to give your wife or family **POWER OF ATTORNEY** to either register or handle details connected with these items. The District Legal Officer can handle this. **DO IT BEFORE LEAVING BOSTON.**

There are no worries in regard to payment of Income Tax. This can be done within 90 days after your return to CONUS.

C. **AT THE DISTRICT OFFICE**

If you are a member of a "relief group" of two or more men, **STAY TOGETHER.** Do all your errands in one group. This makes it easier on you and easier on District Personnel. The senior man in each group should see that this is done.

Make **SURE** arrangements are properly made for movement of furniture and your per diem and dislocation allowance are paid. If you run into any snags, the Military Personnel Officer will tell you who to see to get straightened out.

D. **EN ROUTE**

Get your orders endorsed at each stop-over point. Make **SURE** that this is done. If it isn't, getting reimbursement for travel and perdiem will be difficult.

If at U. S. Air Force Bases and in doubt, contact **OPERATIONS**. These are the people who know who's who.

E. **AT THULE AIR BASE, GREENLAND**

THERE IS USUALLY A 2-DAY

~~It is possible that there will be a slight~~ layover at Thule for men coming up here. ~~We hope that this is not so, but sometimes it is inevitable~~.

DURING THE DARK MONTHS,

The senior man of each party of reliefs should make a check-off list of the following:

1. Get all orders endorsed by the Traffic Officer. If he will not do this, go to Base Operations.
2. Upon arrival at Thule Air Base, the senior man in each group should call Cape Atholl by dialing "0" and asking for "Cape Atholl," then speak to the Commanding Officer. ALL INSTRUCTIONS WILL BE GIVEN THEN
3. ~~If you have a layover in Thule, the senior man should check with the 18th Detachment EARCC, Telephone: 7123 twice daily for transportation to the station.~~

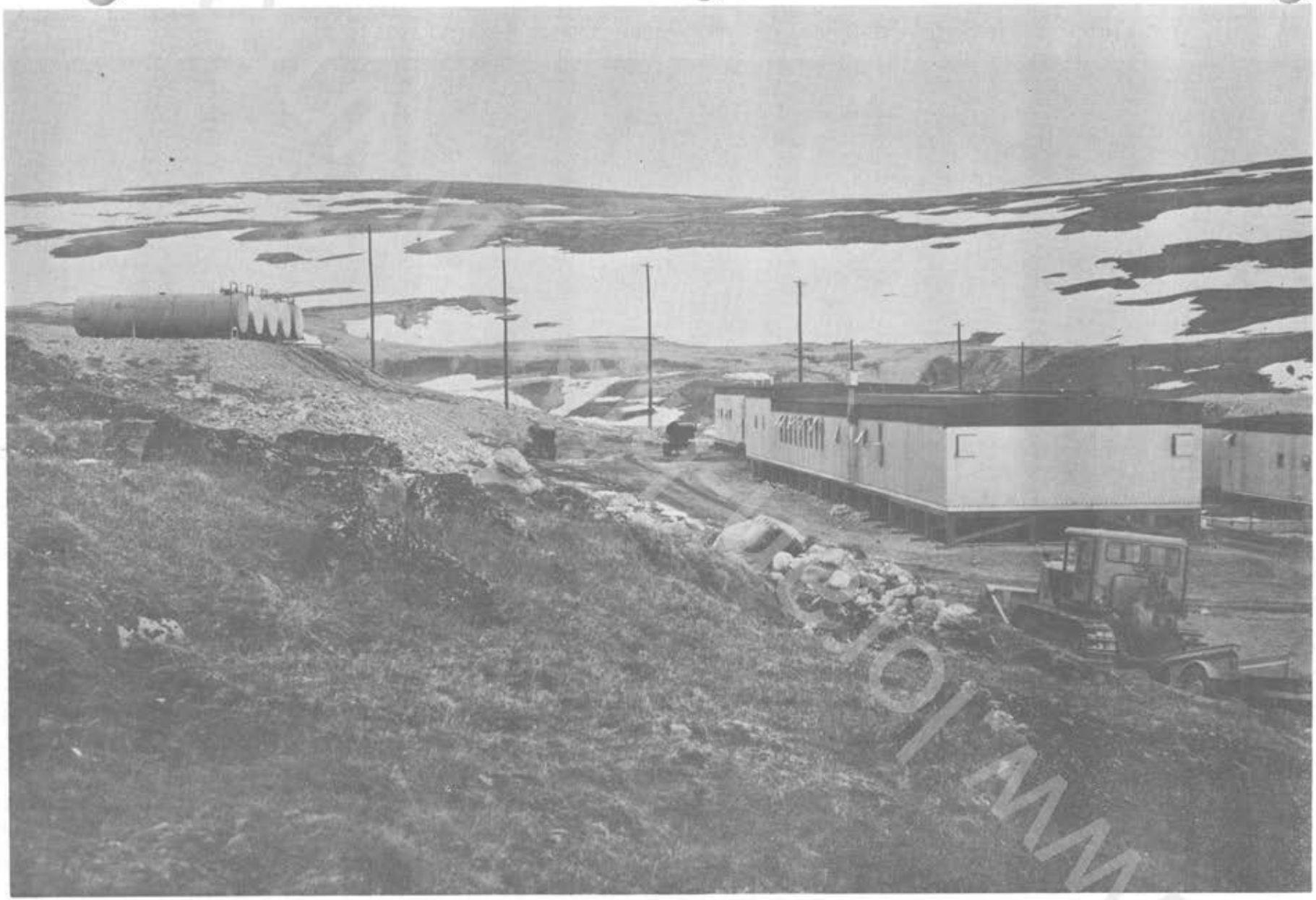
3 In case of individuals traveling alone, the above check-off list is to be used.

CAPE ATHOLL LORAN STATION

Supplement No. 1

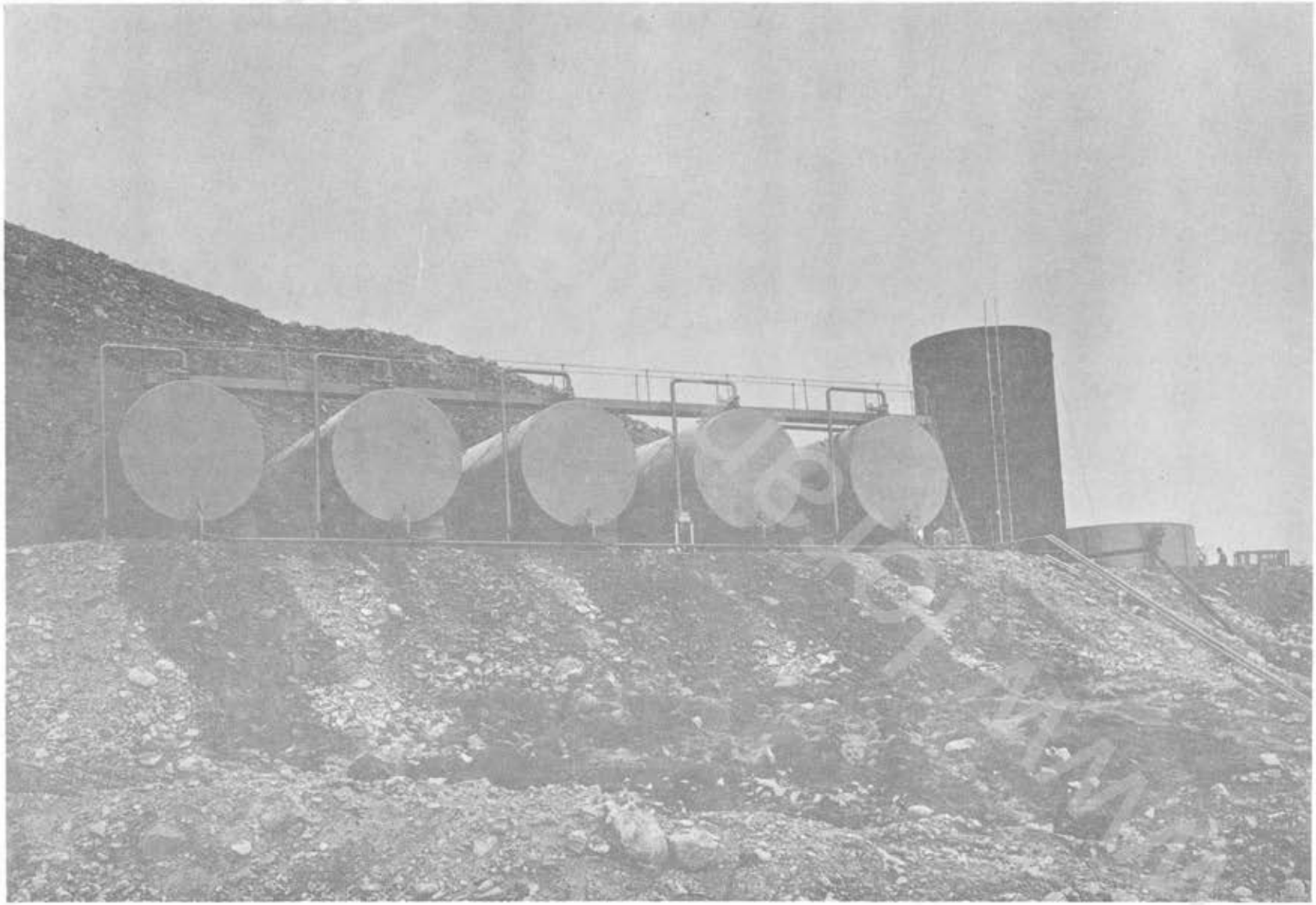
STATION PHOTOGRAPHS

COAST GUARD LORAN STATION, CAPE ATHOLL, GREENLAND (near Thule Air Base) facing east, 18 August 1964.
(Photo credit CGC WESTWIND)

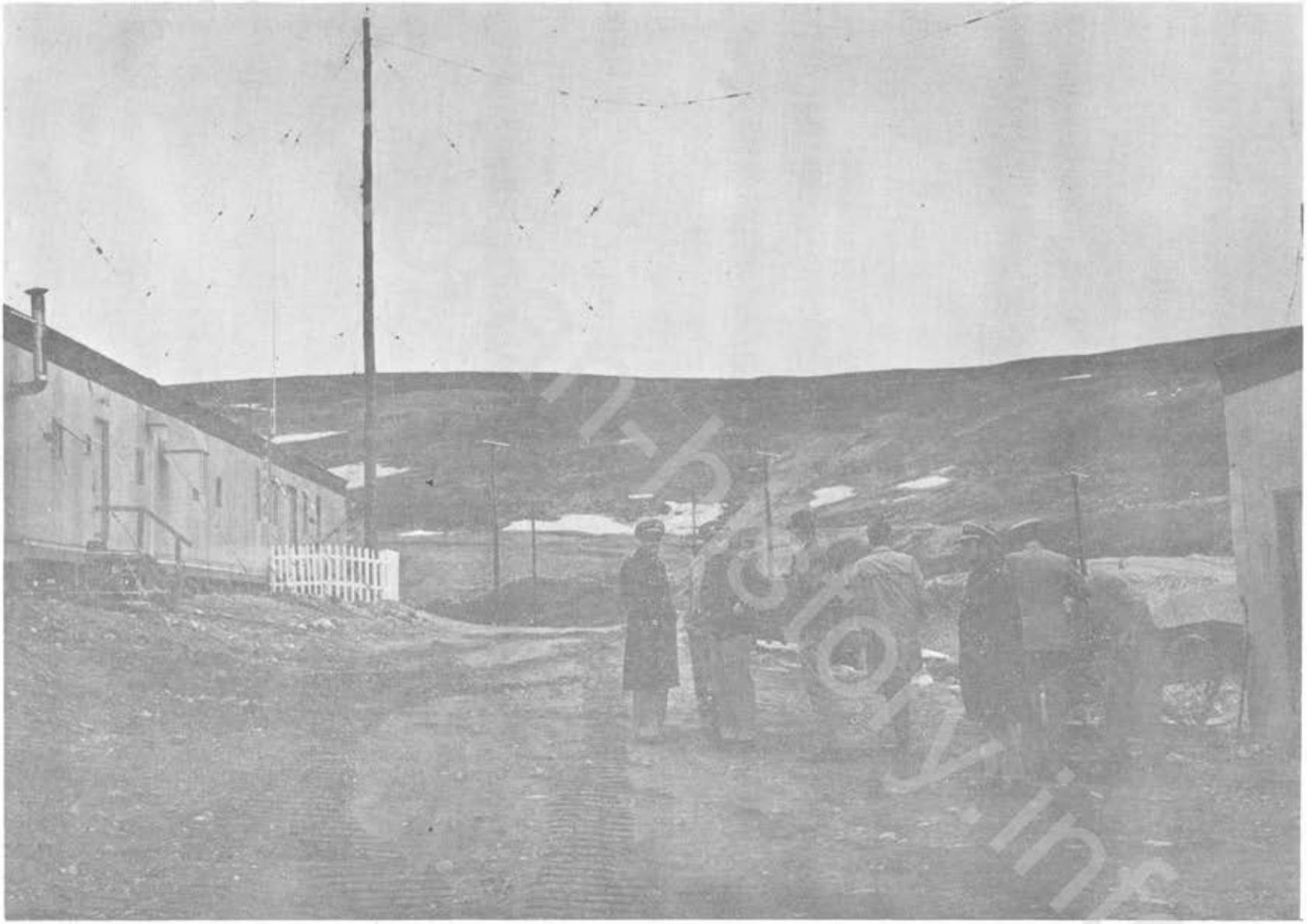


Another view of CGLORSTA, Cape Atholl, facing east, 18 August 1964.
(Photo credit CGC WESTWIND)

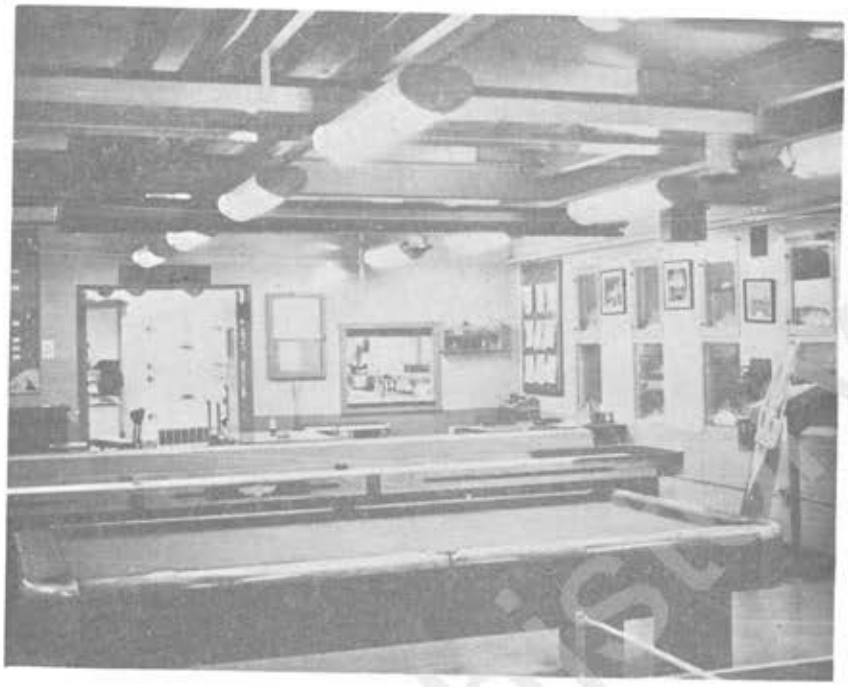
General view of Cape Atholl Loran Transmitting Station from helo pad -- 1967



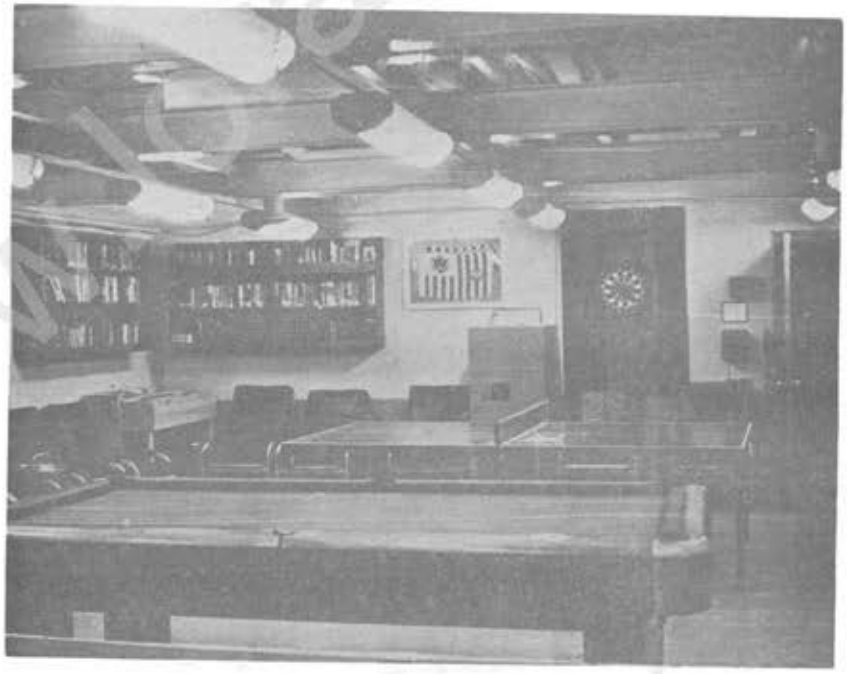
Five fuel tanks adjacent to two new heated fresh water tanks – 1967



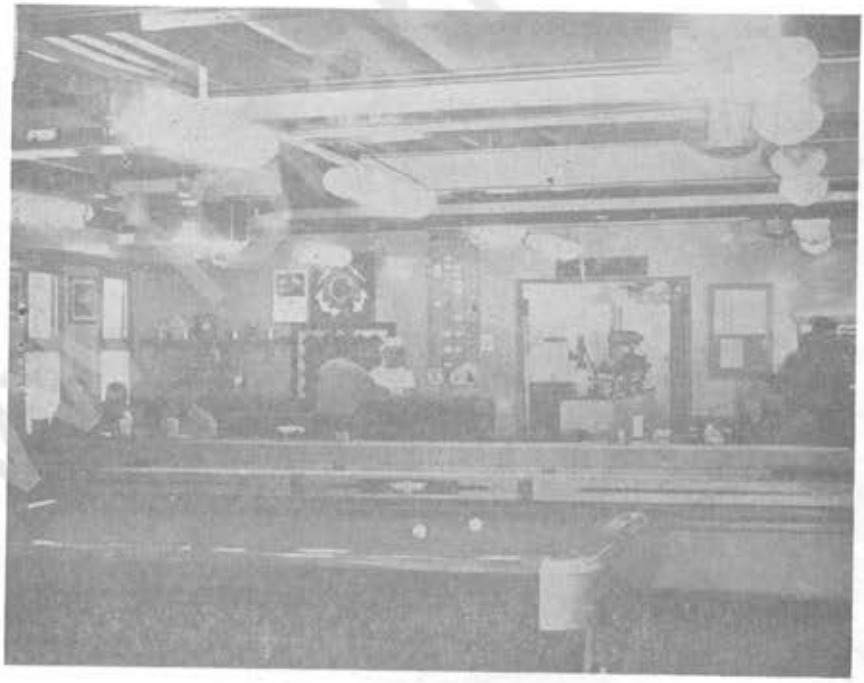
District Commander's Inspection – Cape Atholl Loran Transmitting Station 1967



TWO VIEWS OF RECREATION AND MESS DECK



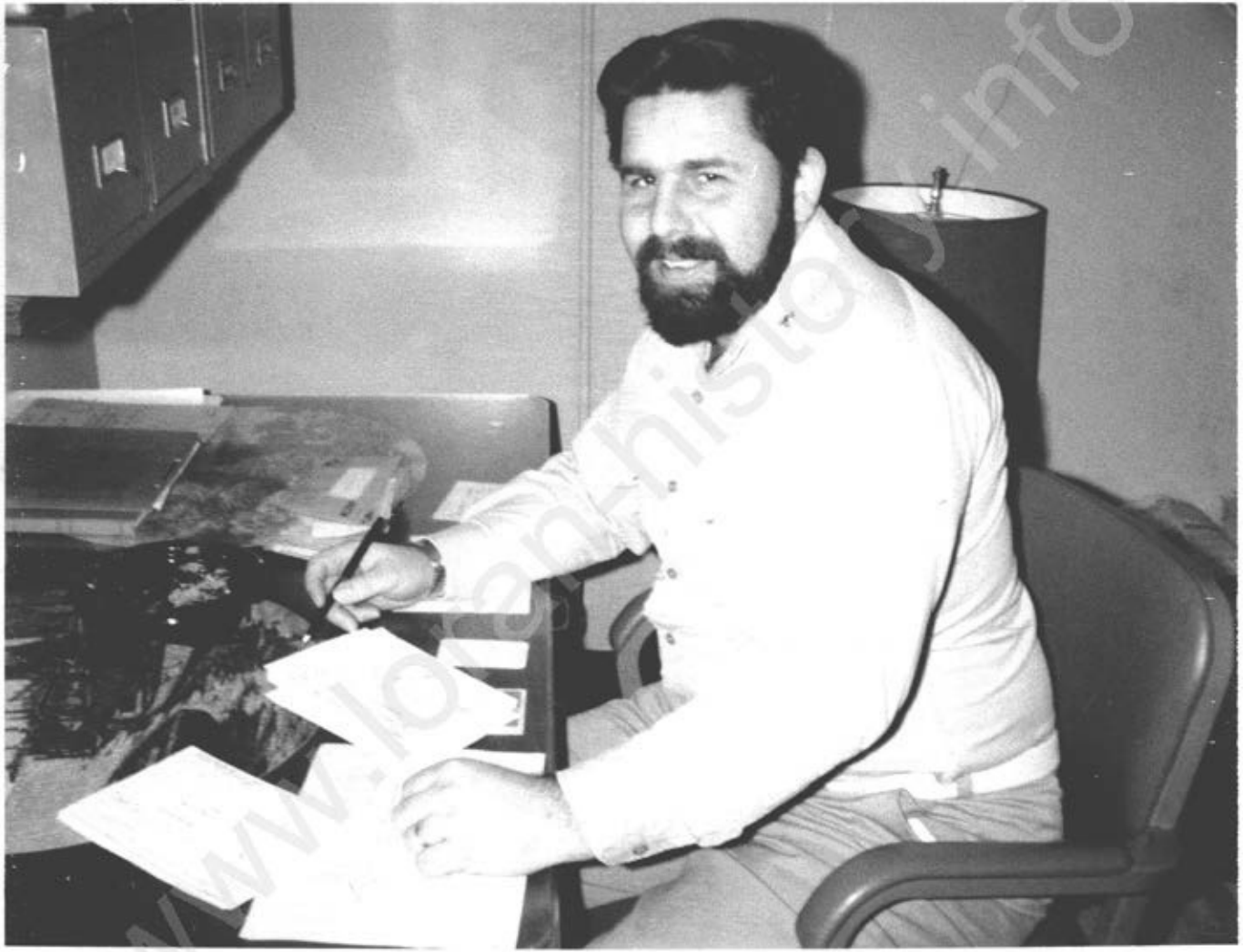
NOT ALL THE SHARKS ARE IN THE OCEAN. IT'S "8" BALL THE HARD WAY HERE.

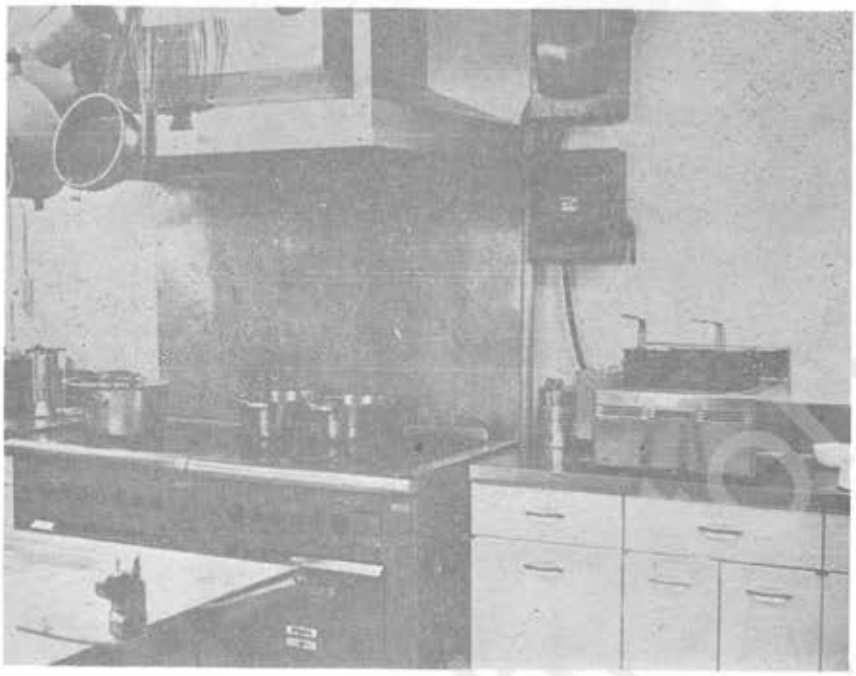


~~WONDER WHAT'S FOR CHOW? PLENTY OF SEATING SPACE.~~

CHIEF, ~~ELECTRICIAN~~ HOLDING TITLE "B" INVENTORY
ELECTRONICS TECHNICIAN

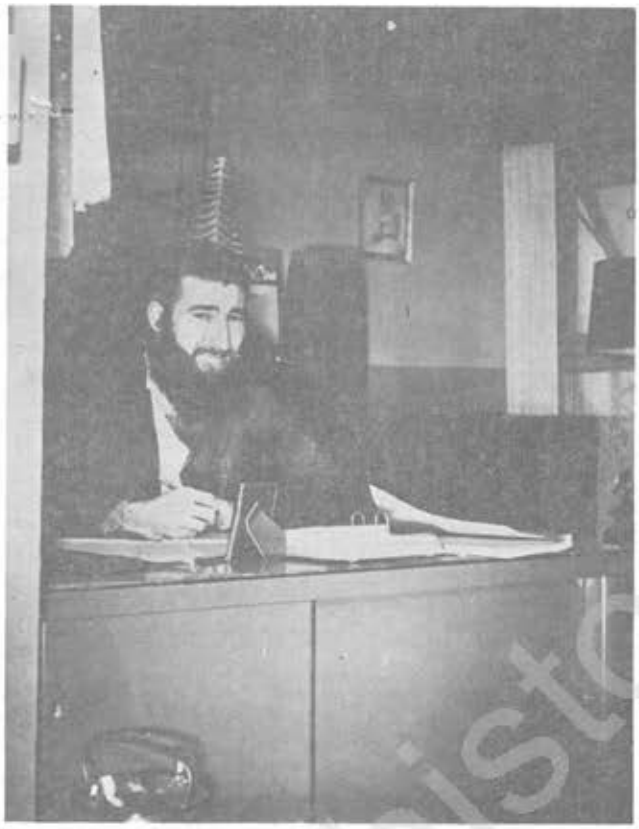
revious page; insert over “Wonder what’s…”





ALL ELECTRIC GALLEY

OUR COOKS



COMMANDING OFFICER

HM1 "Secretary-at Large"

LIVING QUARTERS

STATION EXCHANGE

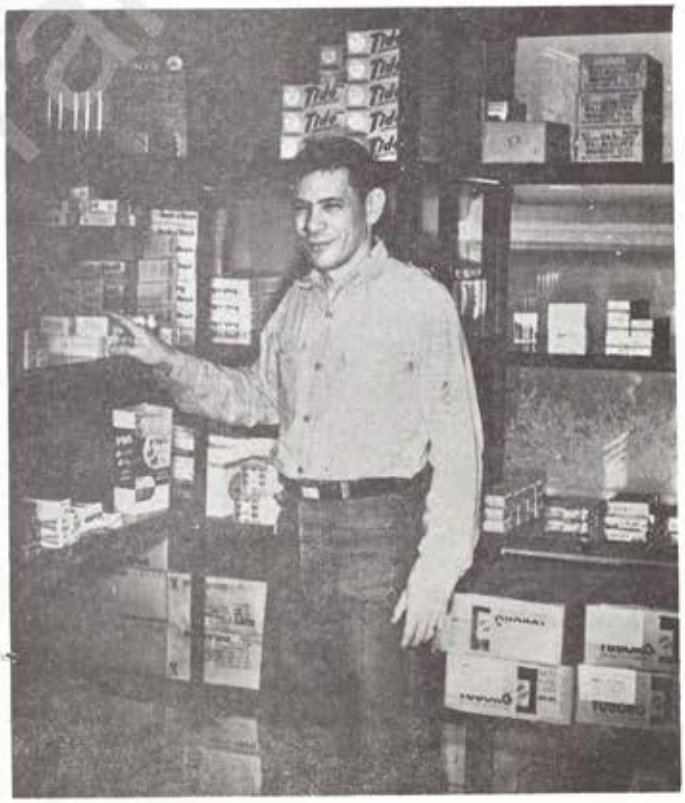


Photo stapled to previous page; insert over “Station

CAREFUL MEN, NO LEAKS, IT'S A LONG WINTER.
HOOKING UP FUEL LINE TO TENDER.

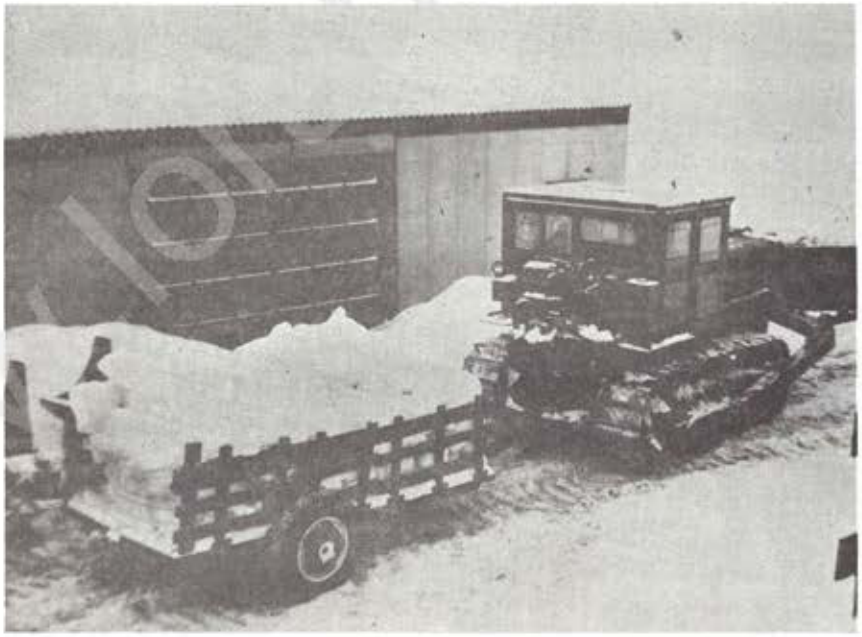
C.O. TALKING TO TENDER REDBUD DURING REFUELING
OPERATIONS

Supply Tender MSTS REDBUD

It's O.K., we'll take you to the Thule Thruway.
CG CAT PULLING AF TRUCT OUT OF ARMY LSM.

ELIMINATE

PLAYING WITH THIS WEEK'S WATER



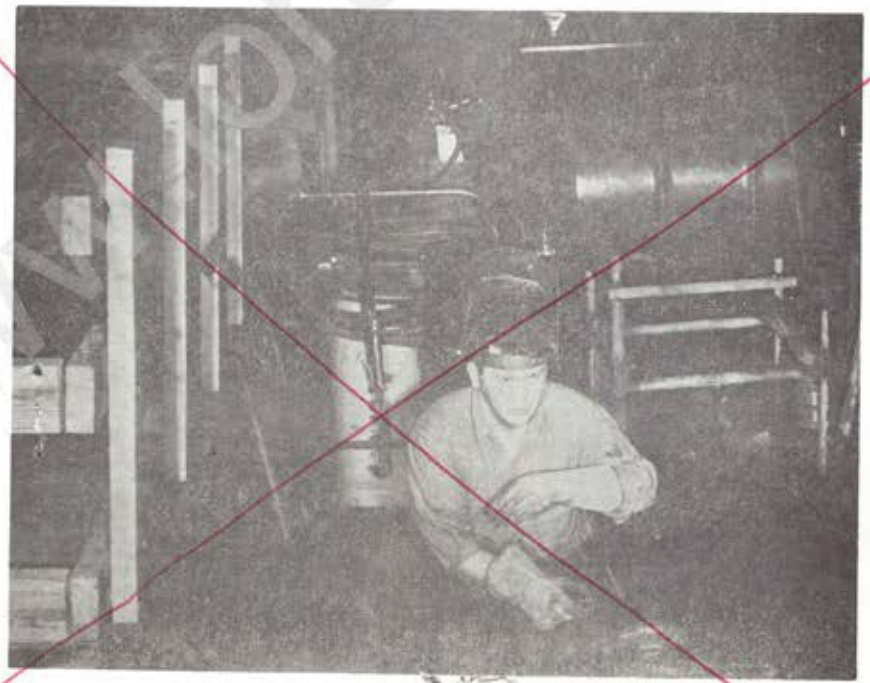
~~OUR STACKED UP WATER SUPPLY FOR NEXT WEEK~~

DUE TO THE NEW POTABLE WATER TANKS, THIS FORM OF WATER COLLECTION IS USED ONLY IN EMERGENCY SITUATIONS

WHEN YOU HAVE PROBLEMS GIVE YOUR FEET A REST

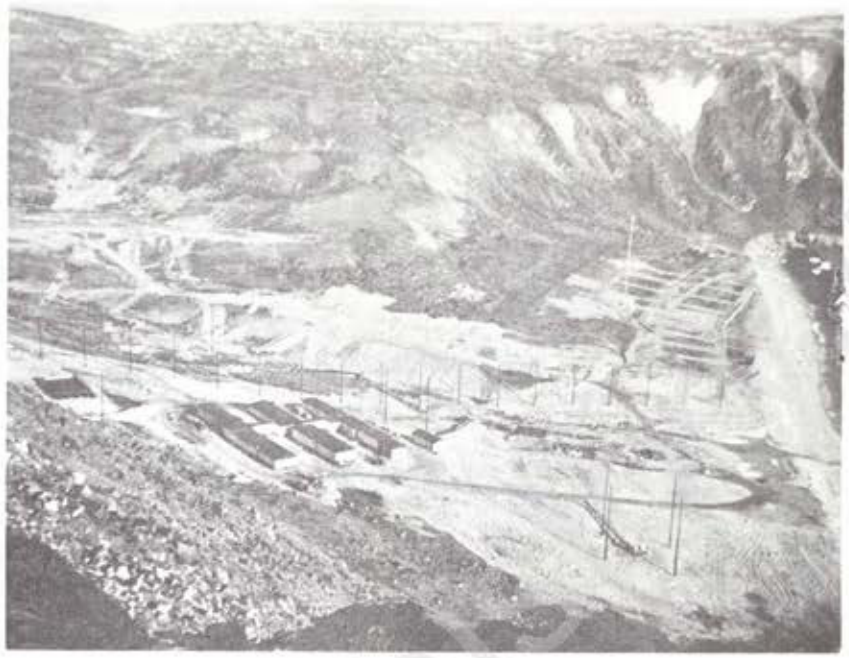
COOK? Maybe the nightwatchman.

IS THIS A NEW GAME?



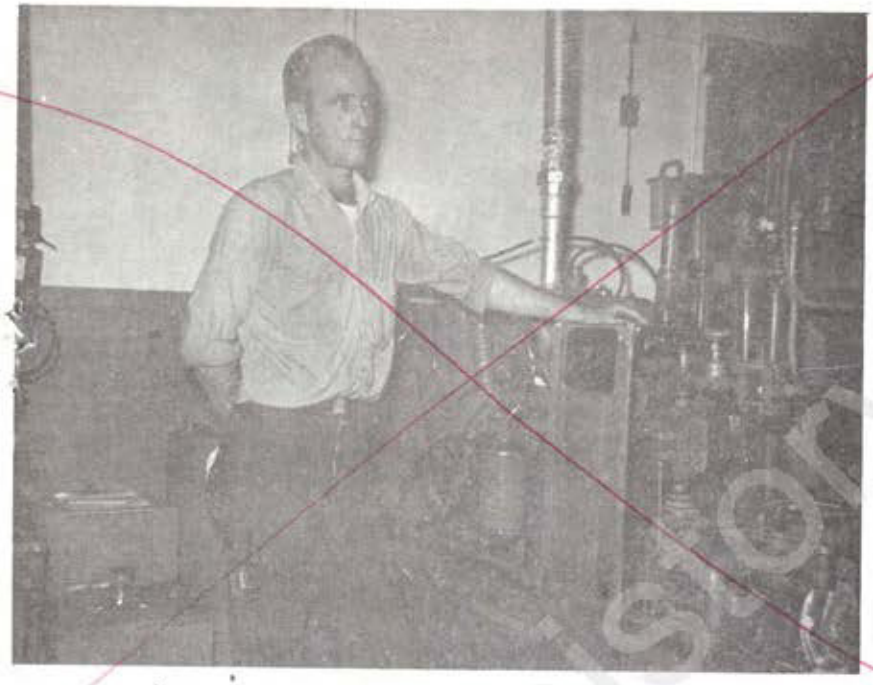
DELETE

~~WONDER WHAT'S IN THE FUEL DRUM BEHIND~~
CHIEF ENGINEMAN Checking STATIONS GENERATOR



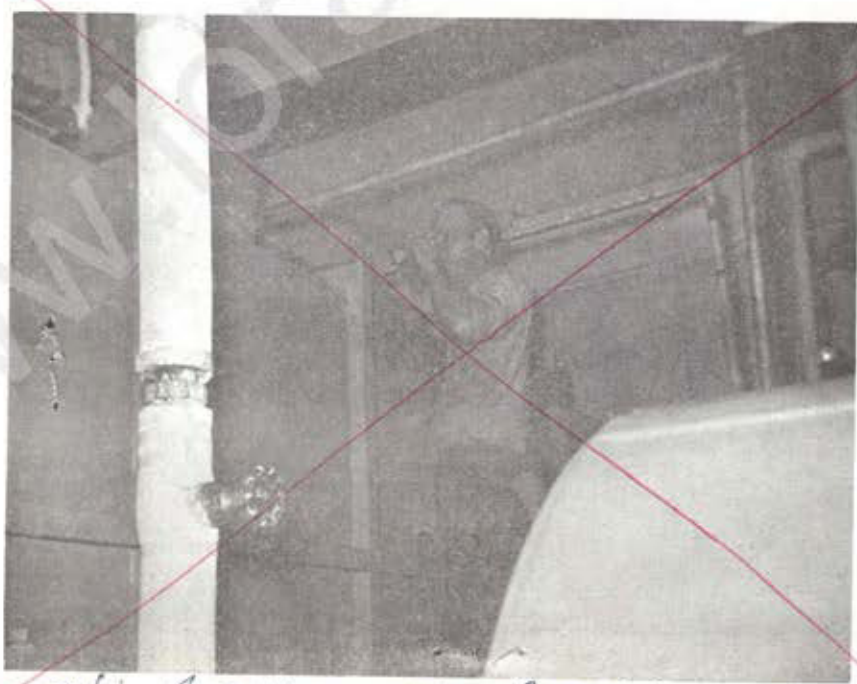
VIEW OF STATION AT 1600 HOURS ON 21 JULY

VIEW OF STATION AT 1200 HOURS ON 5 NOVEMBER



ELECTRICIAN AND MASOT. ELECTRICIAN HAS THE STRIPS ON HIS SHOULDER

~~"Operation Moonshine", interior aspects only. These are pictures of Norman Morris, EN1, standing "Evap Watch" above, and testing water, below.~~



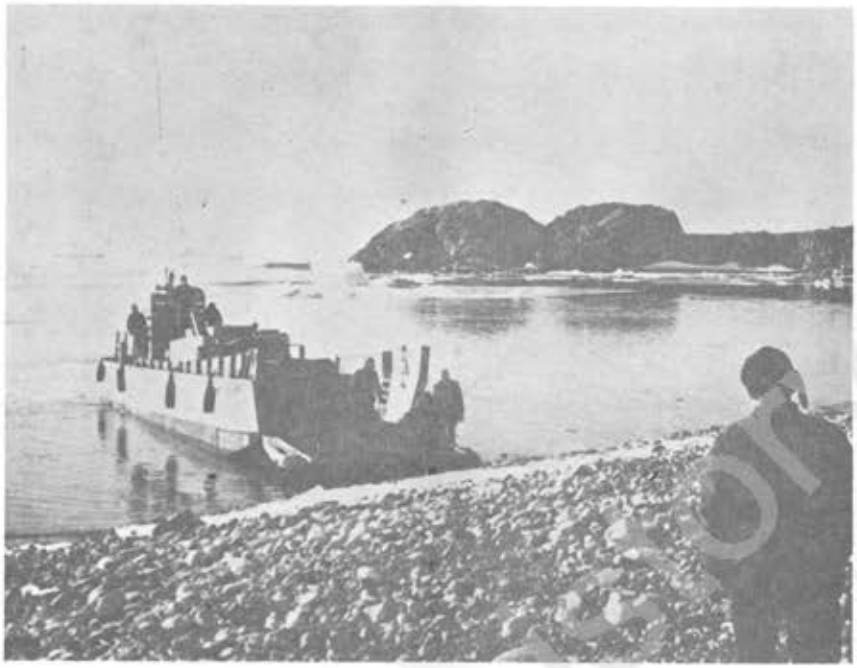
CHIEF ENGINEER CATCHING UP ON PAPERWORK.

DELETE

IF YOU JOIN THE USCG YOU DON'T HAVE TO LIVE THIS WAY.

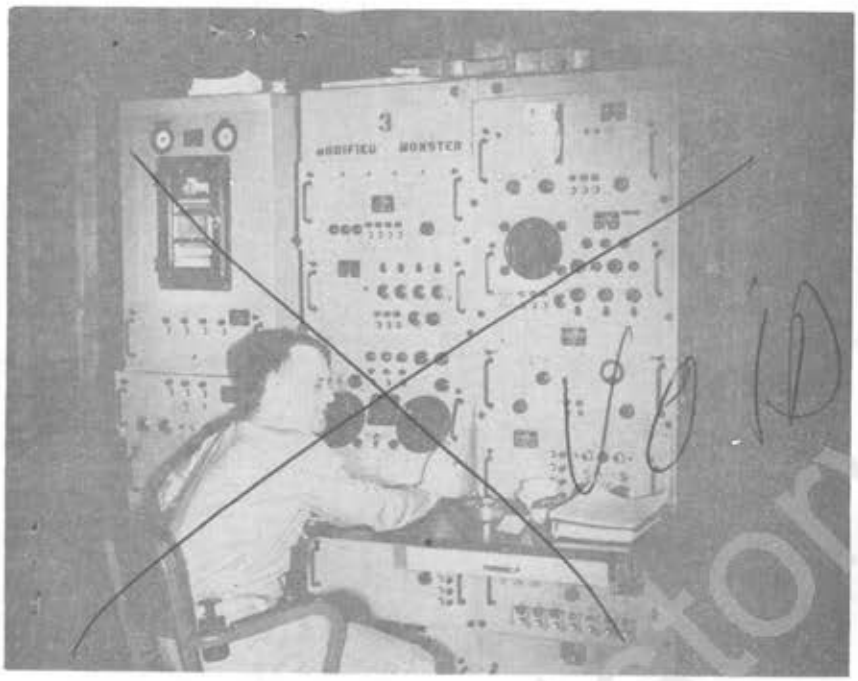
YOU GET TO GO TO THE BIG HOUSE IN THE BACKGROUND
WHERE THEY HAVE A ROOM (below) LOADED WITH FRESH FOOD.

IF THIS ONE WON'T TAKE YOU THERE, TRY THE ONE BELOW.



ONE WAY TO GET GROCERIES

HOPE TRAFFIC WON'T BE TOO HEAVY FROM HERE
TO THE STATION.



~~CHIEF ELECTRONICS TECHNICIAN TUNING THE "MODIFIED MONSTER"~~

ET GANG.

~~RADIOMAN AT SENDING POSITION WITH TELEGRAPH KEY (CW)~~

RADIOMAN AND CHIEF ELECTRONICS TECHNICIAN IN COMMUNICATION OFFICE

Photo stapled to previous page; insert over


US
COAST
GUARD

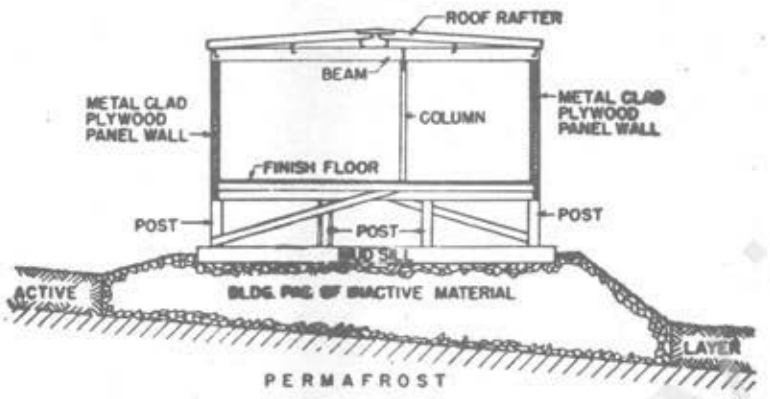
IN CASE YOU GET SLEEPY TRY OUR PING PONG TABLE

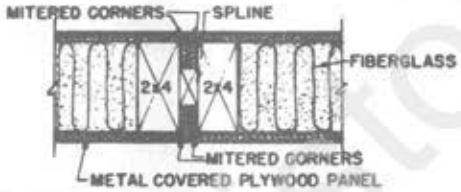
CAPE ATHOLL LORAN STATION

Supplement No. 2

ENGINEERING DIAGRAMS

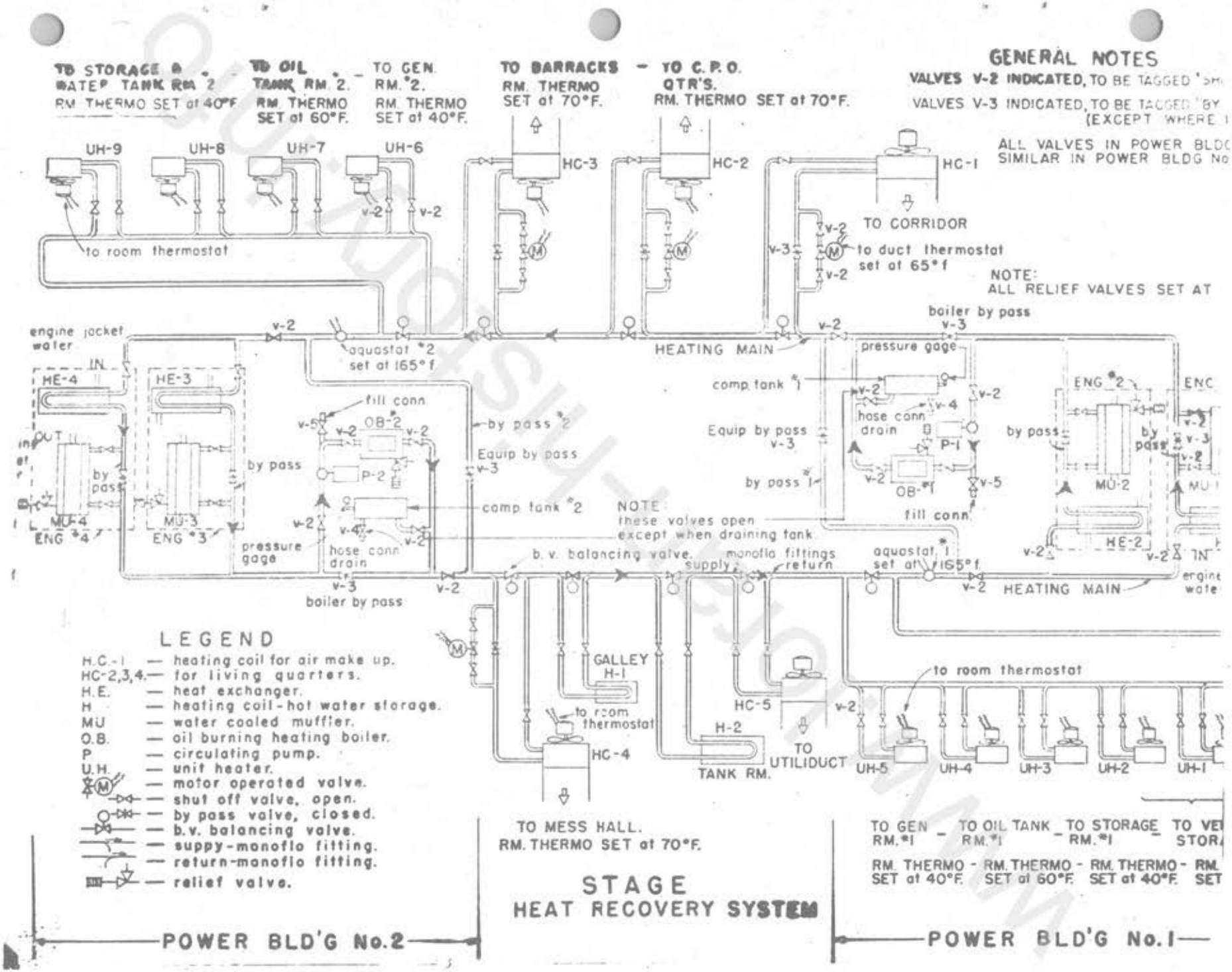
TYPICAL SECTION THRU BUILDING WING

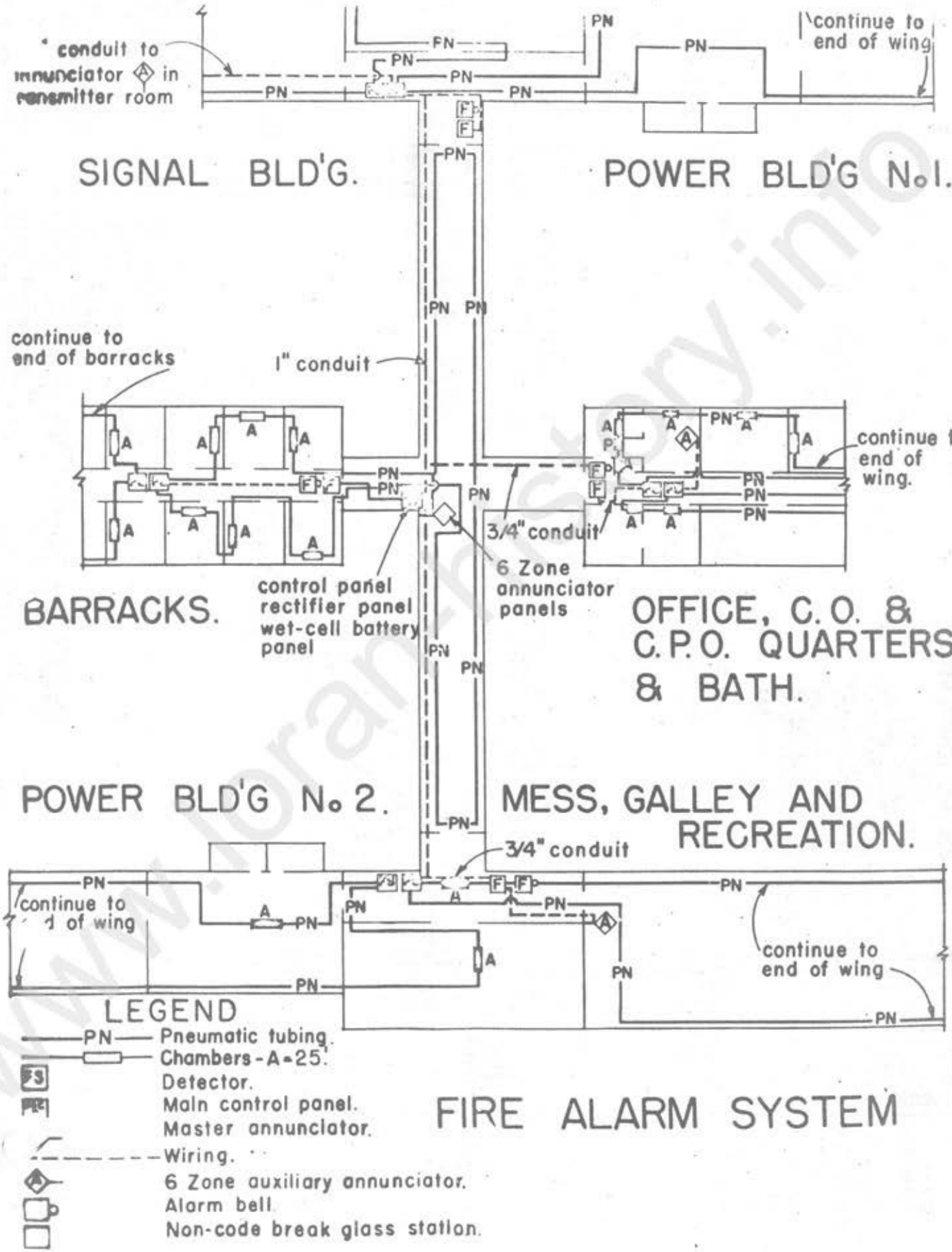


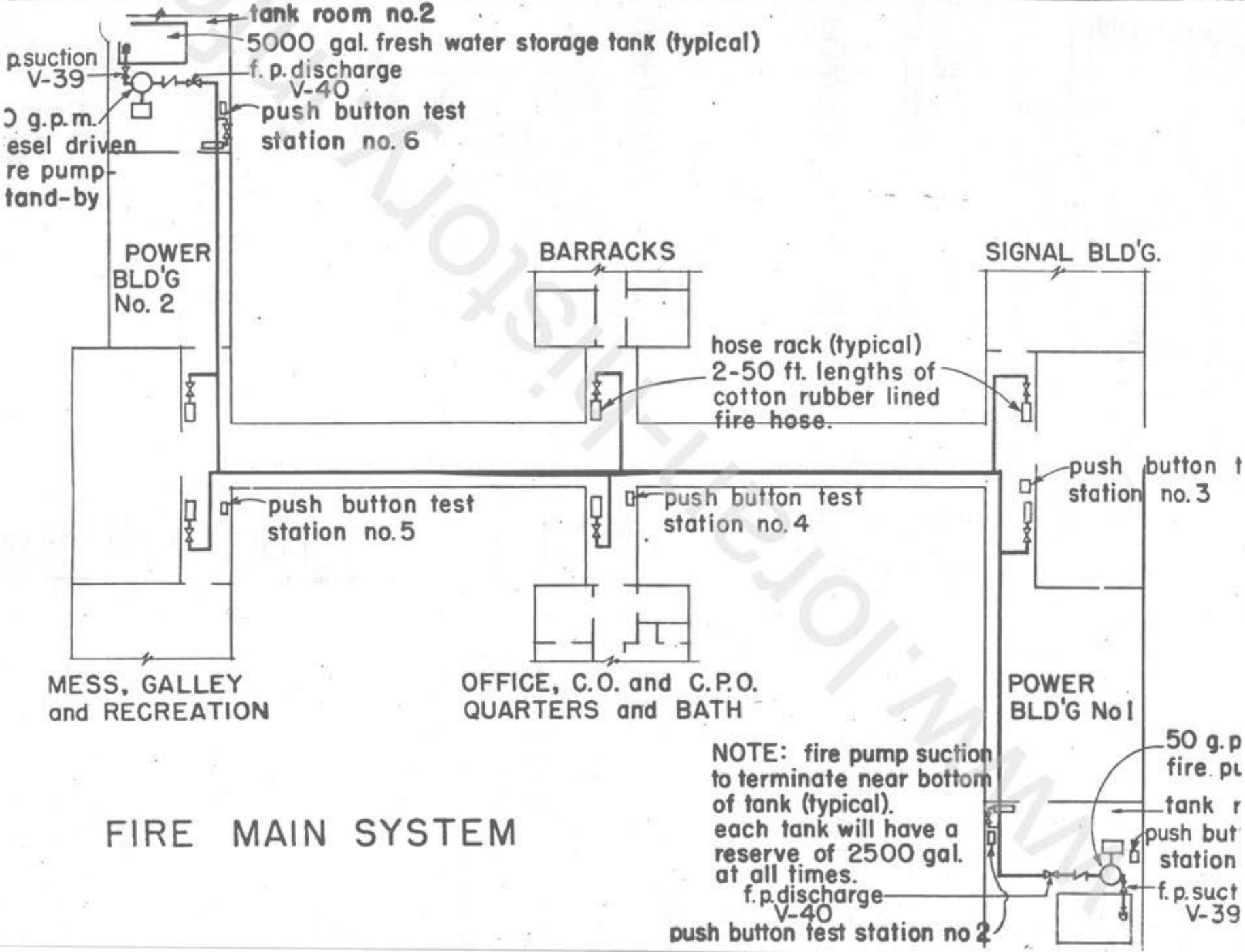


SECTION THRU EXTERIOR WALL PANEL

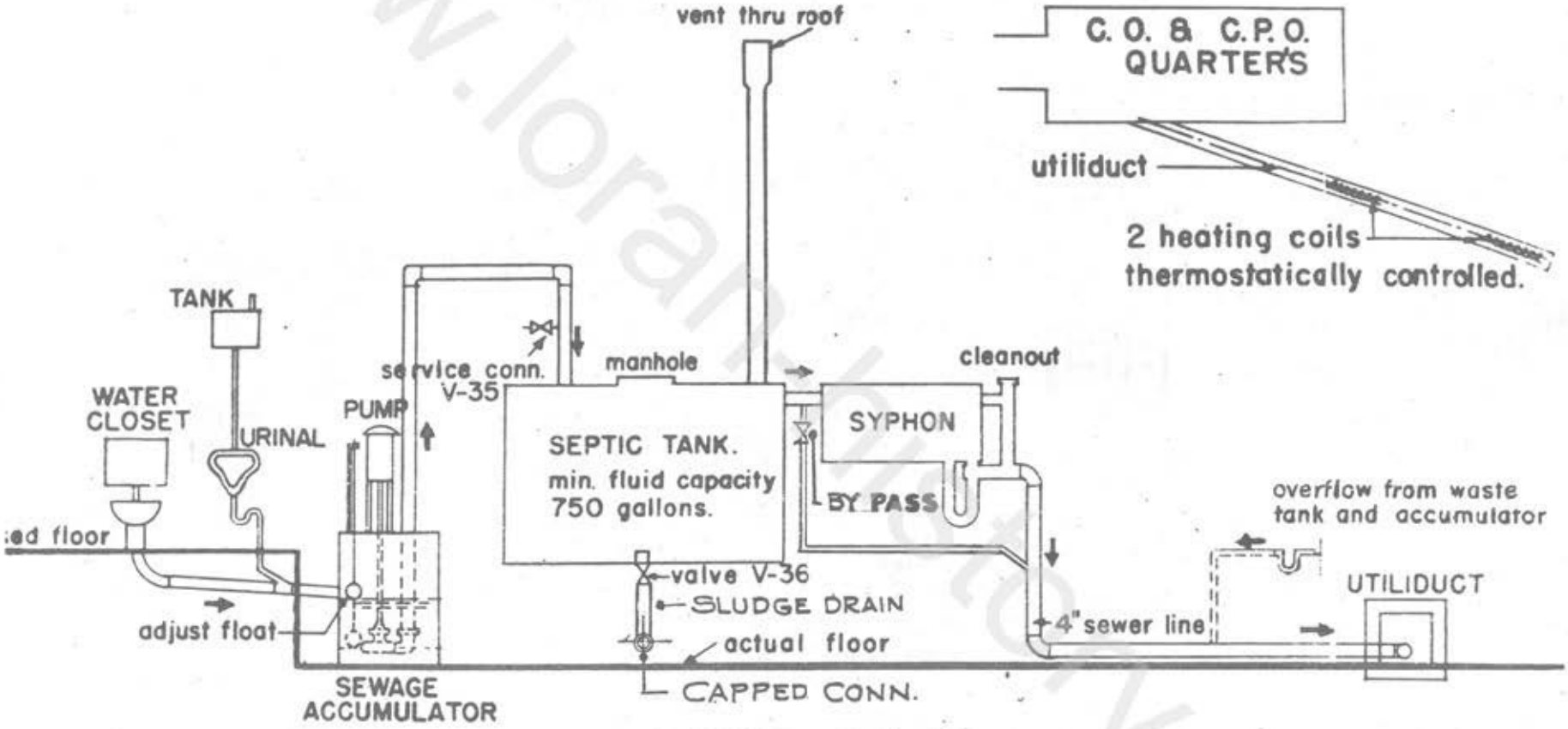
[TWO (2) FOOT MODULAR]


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 "SH
VALVES V-3 INDICATED, TO BE TAGGED "BY
(EXCEPT WHERE I
ALL VALVES IN POWER BLDG
SIMILAR IN POWER BLDG No
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
engine jacket water
IN
OUT
HE-4
HE-3
aquastat °2 set at 165° f
HEATING MAIN
boiler by pass
pressure gage
comp. tank °1
Equip by pass
by pass °1
hose conn
drain
P-1
OB-°1
fill conn.
ENG °2
MU-2
HE-2
fill conn
OB-°2
P-2
by pass °2
Equip by pass
comp. tank °2
by pass
MU-4
ENG °4
MU-3
ENG °3
pressure gage
hose conn drain
NOTE
these valves open except when draining tank
b.v. balancing valve.
monoflo fittings
supply
return
aquastat °1 set at 165° f
boiler by pass
HEATING MAIN
GALLEY H-1
to room thermostat
HC-4
H-2
TANK RM.
HC-5
TO UTILIDUCT
to room thermostat
UH-5
UH-4
UH-3
UH-2
UH-1
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.
STAGE
HEAT RECOVERY SYSTEM
TO GEN RM. °1
TO OIL TANK RM. °1
TO STORAGE RM. °1
TO VE STOR
RM. THERMO SET at 40°F.
RM. THERMO SET at 60°F.
RM. THERMO SET at 40°F.
RM. SET
POWER BLD'G No.2
POWER BLD'G No.1


* conduit to annunciator in transmitter room
PN
continue to end of wing
SIGNAL BLD'G.
POWER BLD'G No.1.
continue to end of barracks
1" conduit
3/4" conduit
continue to end of wing.
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
LEGEND
PN — Pneumatic tubing.
Chambers - A - 25.
Detector.
Main control panel.
Master annunciator.
Wiring.
6 Zone auxiliary annunciator.
Alarm bell.
Non-code break glass station.
FIRE ALARM SYSTEM

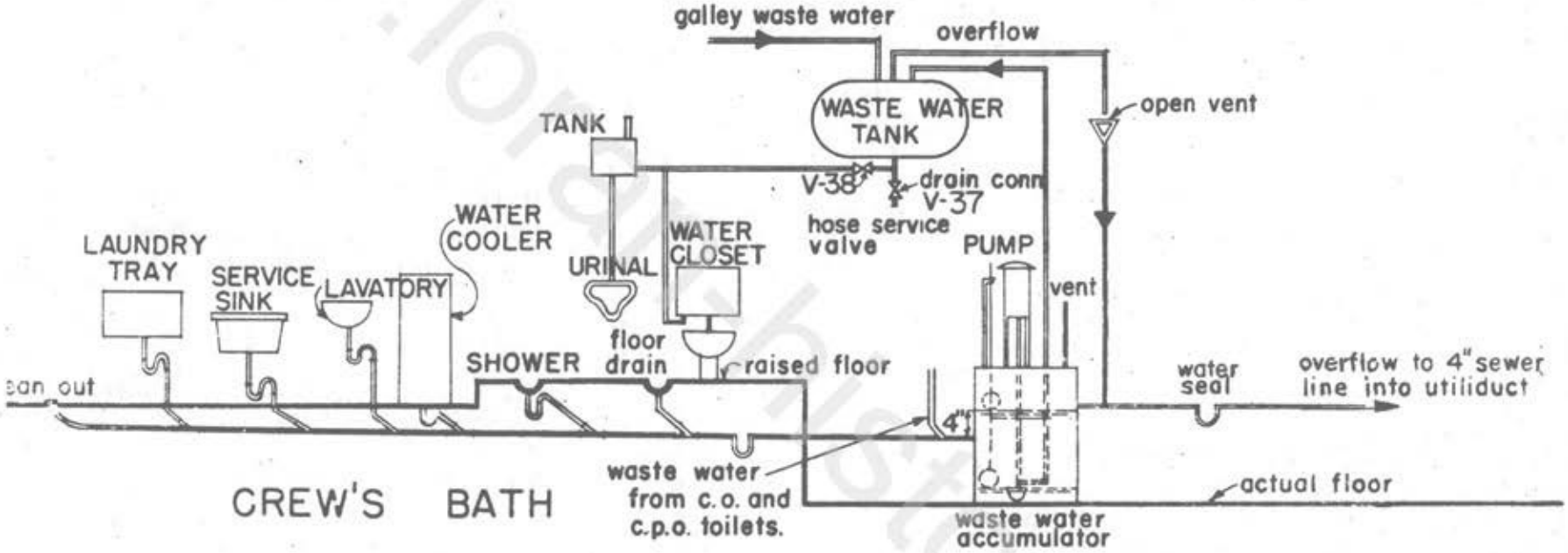


FIRE MAIN SYSTEM



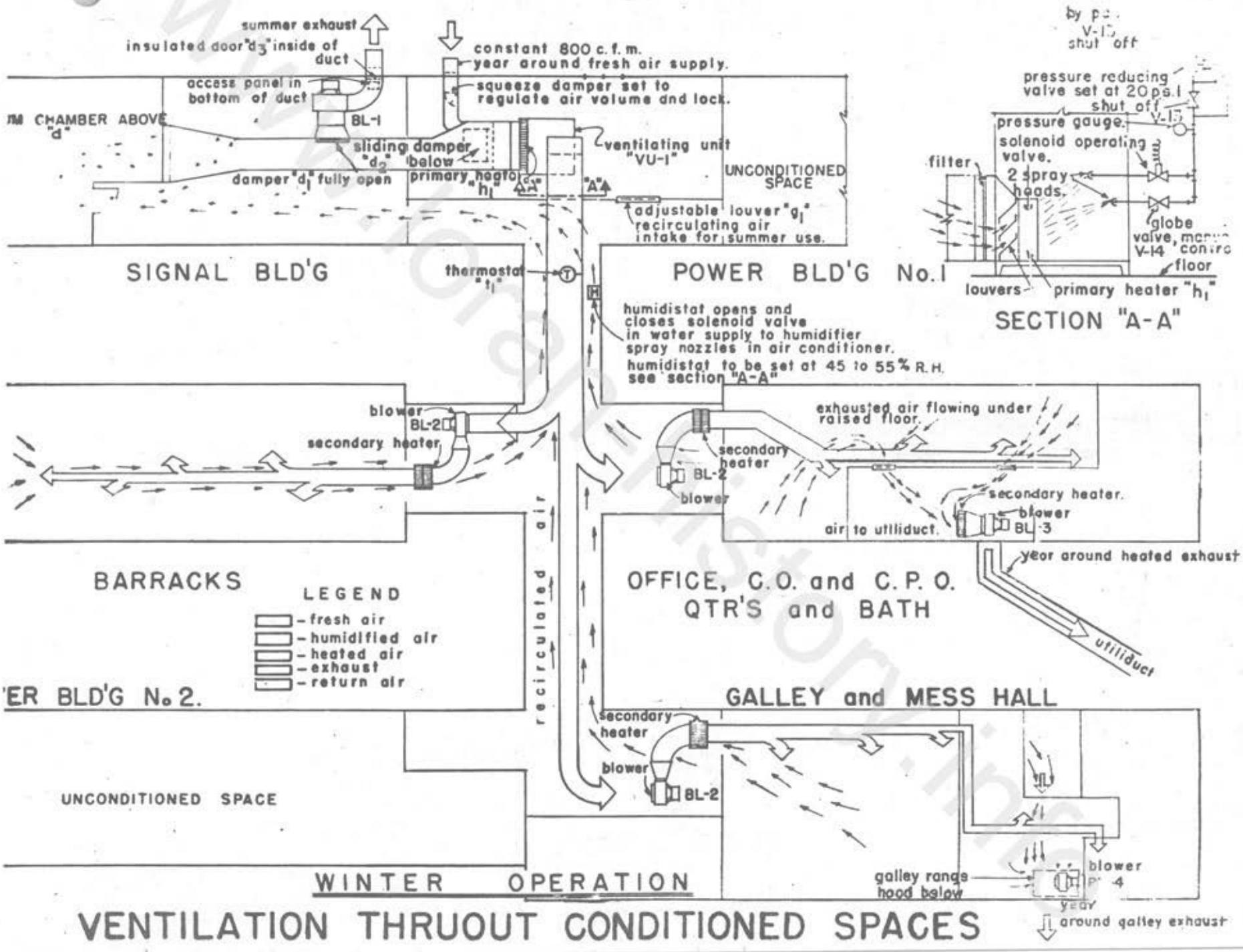
TANK ROOM

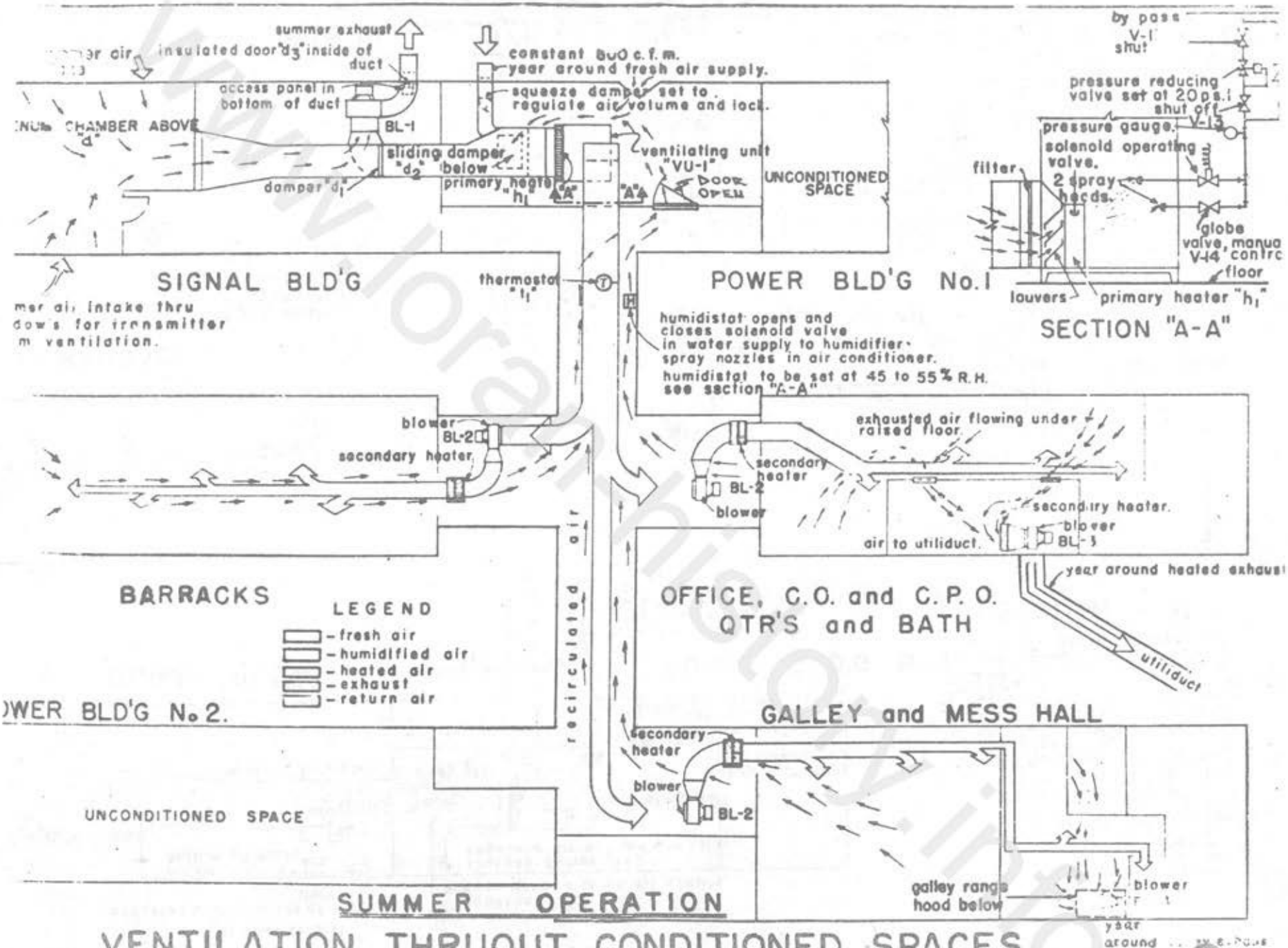
SEWAGE SYSTEM

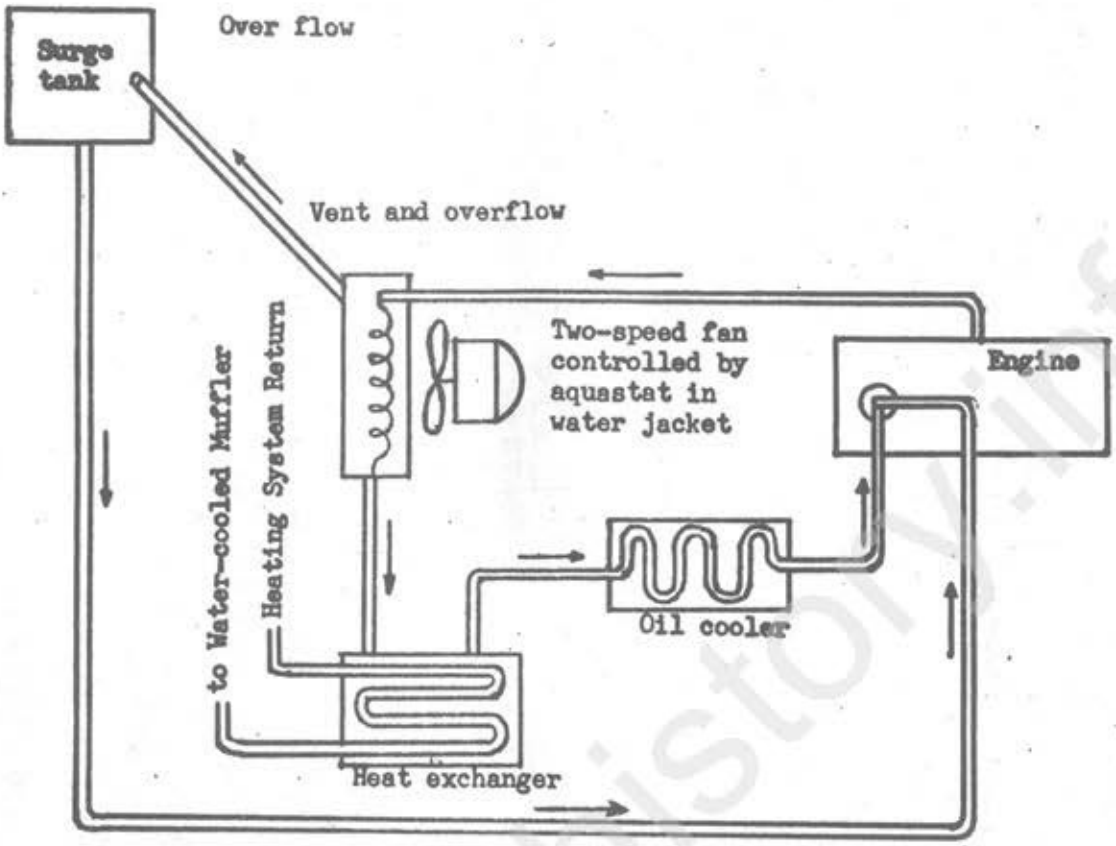


WASTE WATER SYSTEM

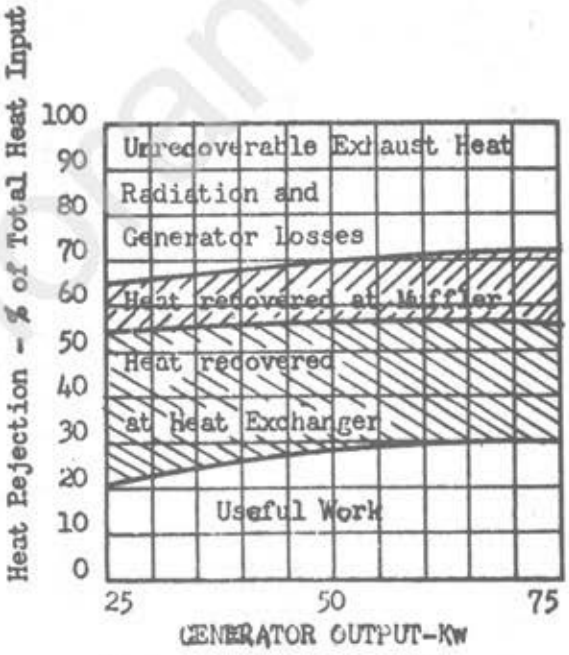
(Toilet area)


summer exhaust
insulated door "d3" inside of duct
access panel in bottom of duct
BL-1
constant 800 c.f.m.
year around fresh air supply.
squeeze damper set to regulate air volume and lock.
CHAMBER ABOVE "d"
sliding damper "d2" below primary heater "h1"
damper "d1" fully open
ventilating unit "VU-1"
UNCONDITIONED SPACE
"A"
adjustable louver "g1" recirculating air intake for summer use.
SIGNAL BLD'G
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 p... V-13 shut off
pressure reducing valve set at 20 p.s.i
shut off V-13
pressure gauge.
solenoid operating valve.
filter
2 spray heads.
globe valve, manu... control V-14
floor
louvers
primary heater "h1"
SECTION "A-A"
blower BL-2
secondary heater
exhausted air flowing under raised floor.
secondary heater
BL-2
blower
secondary heater.
blower
air to utiliduct.
BL-3
year around heated exhaust
utiliduct
BARRACKS
LEGEND
- fresh air
- humidified air
- heated air
- exhaust
- return air
OFFICE, C.O. and C.P.O. QTR'S and BATH
recirculated air
ER BLD'G No. 2.
GALLEY and MESS HALL
secondary heater
blower
BL-2
UNCONDITIONED SPACE
galley range hood below
blower
P... 4
...ear around galley exhaust
WINTER OPERATION
VENTILATION THRUOUT CONDITIONED SPACES

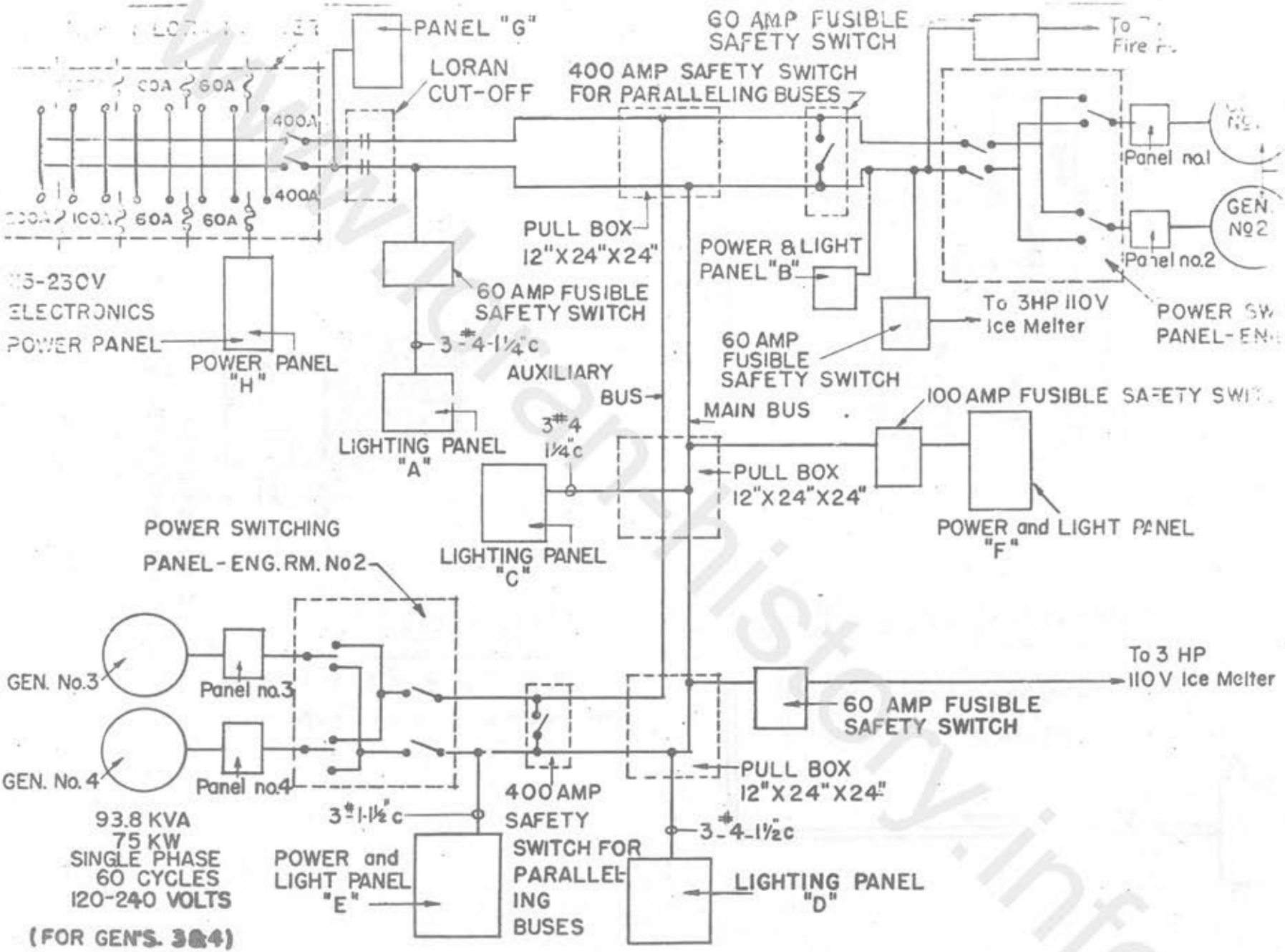

summer exhaust
insulated door "d3" inside of duct
access panel in bottom of duct
BL-1
sliding damper "d2" below
damper "d1"
constant 800 c.f.m. year around fresh air supply.
squeeze damper set to regulate air volume and lock.
ventilating unit "VU-1"
DOOR OPEN
primary heater "h1"
UNCONDITIONED SPACE
SIGNAL BLD'G
POWER BLD'G No.1
thermostat "t1"
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 V-1 shut
pressure reducing valve set at 20 p.s.i.
shut off V-13
pressure gauge.
solenoid operating valve.
2 spray heads.
filter
globe valve, manual V-14 control
floor
louvers
primary heater "h1"
SECTION "A-A"
blower BL-2
secondary heater
exhausted air flowing under raised floor.
BL-2
blower
secondary heater.
blower BL-3
air to utiliduct.
year around heated exhaust
utiliduct
BARRACKS
OFFICE, C.O. and C.P.O. QTR'S and BATH
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 below
blower
year around
SUMMER OPERATION
VENTILATION THRUOUT CONDITIONED SPACES



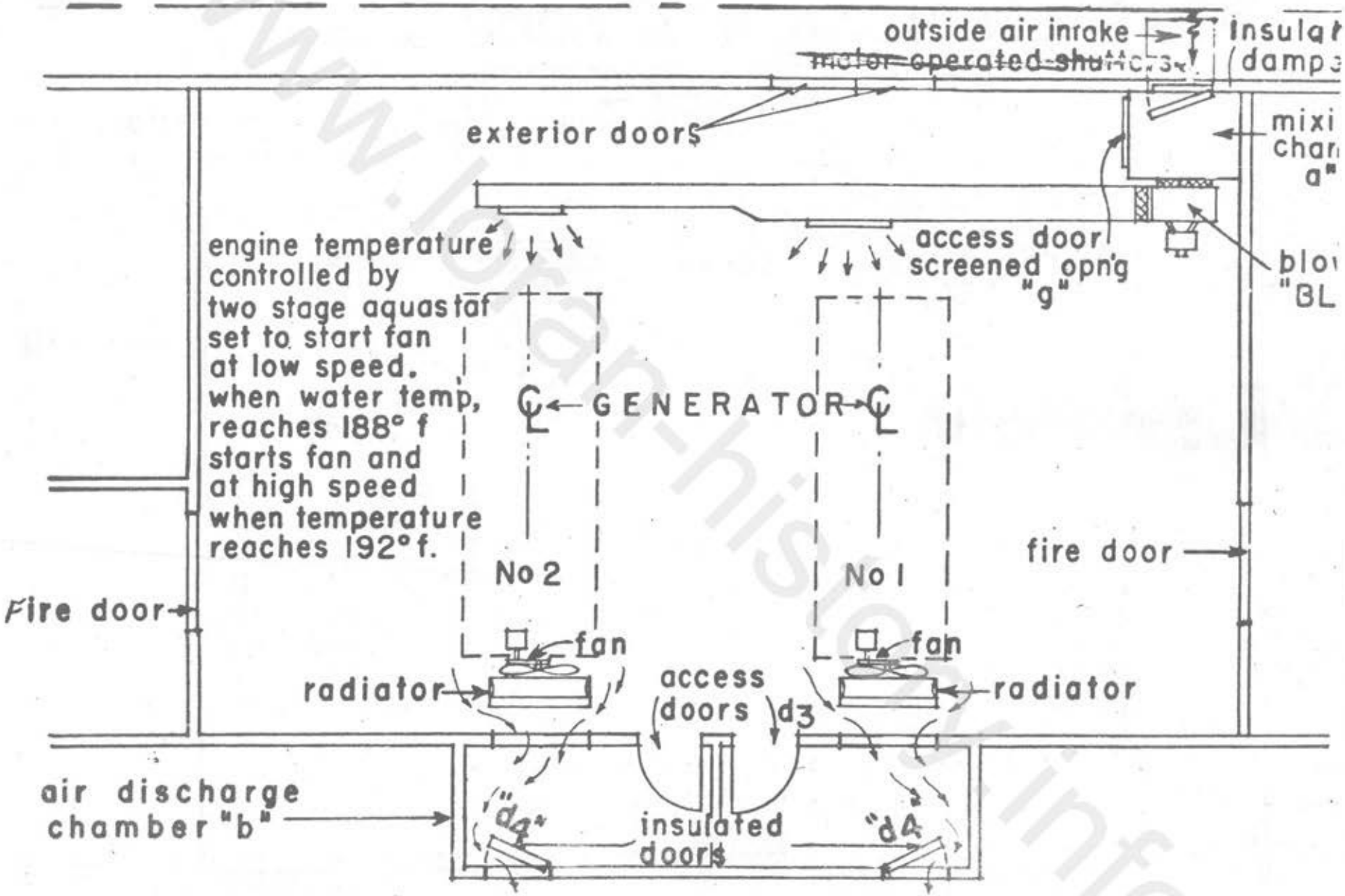
Engine-cooling System (Diagram taken from Engineer's Digest)



Engine Heat Recovery Diagram

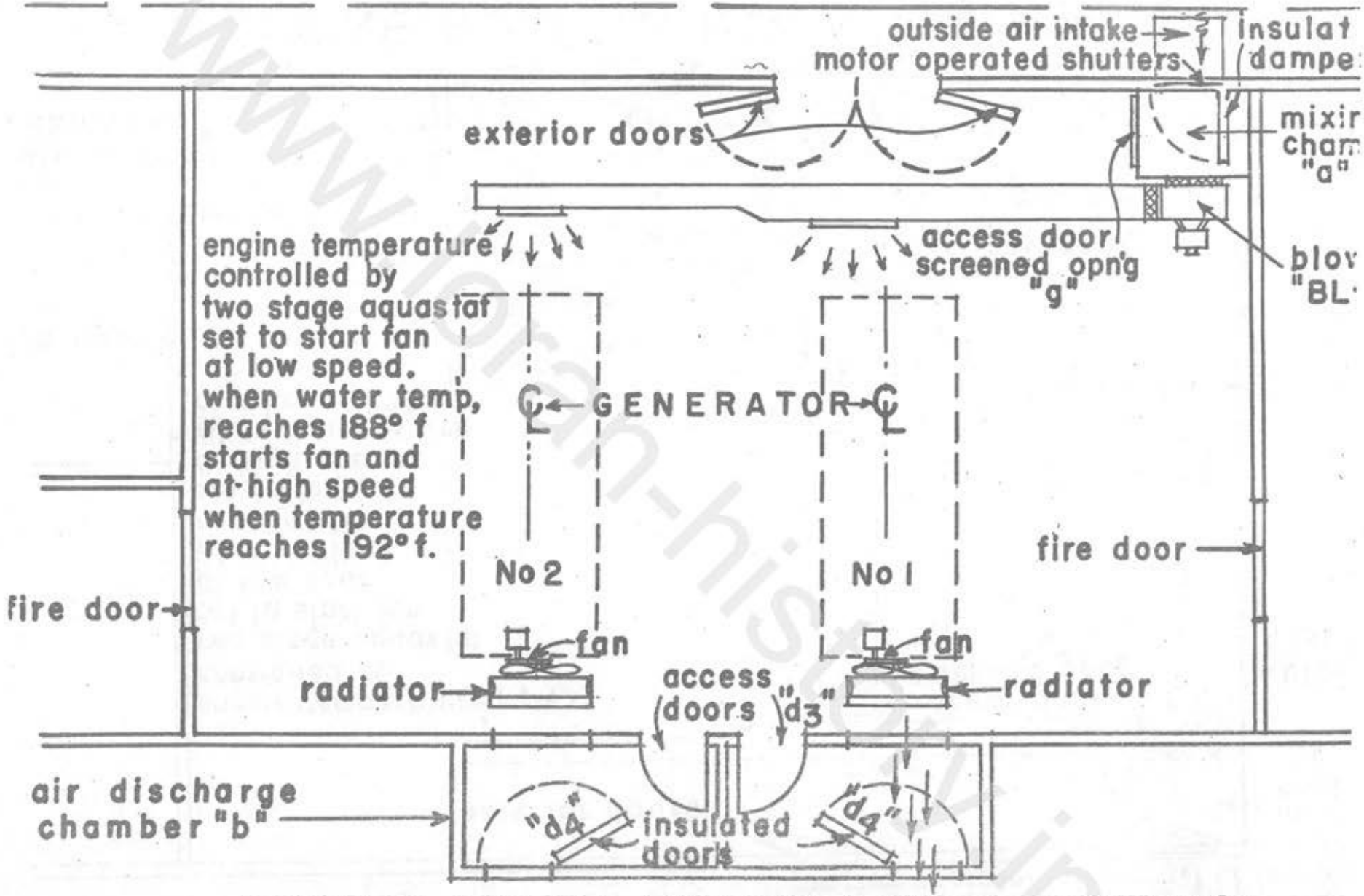


POWER, ONE-LINE WIRING DIAGRAM



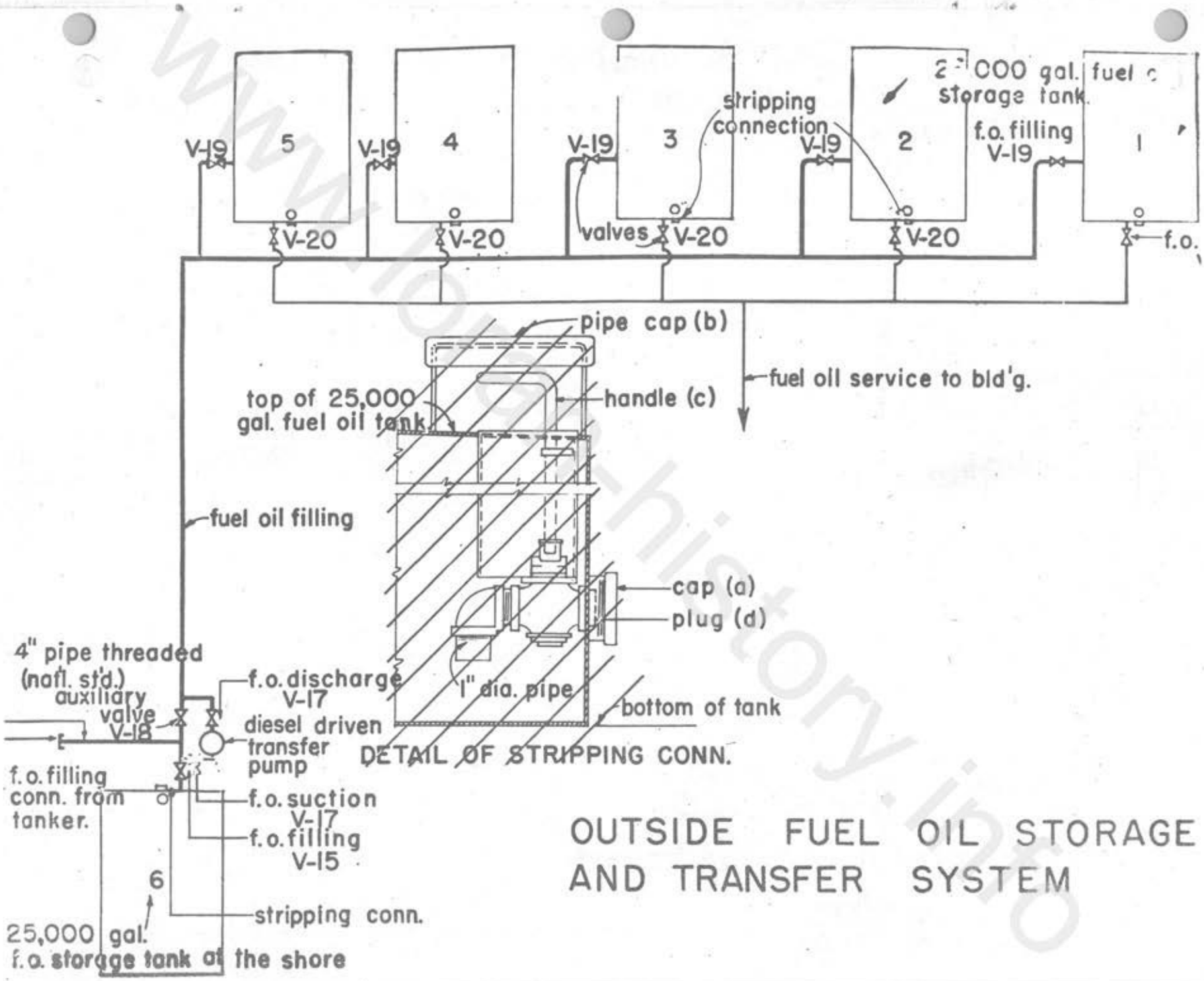
ENGINE ROOM VENTILATION SYSTEM

WINTER OPERATION

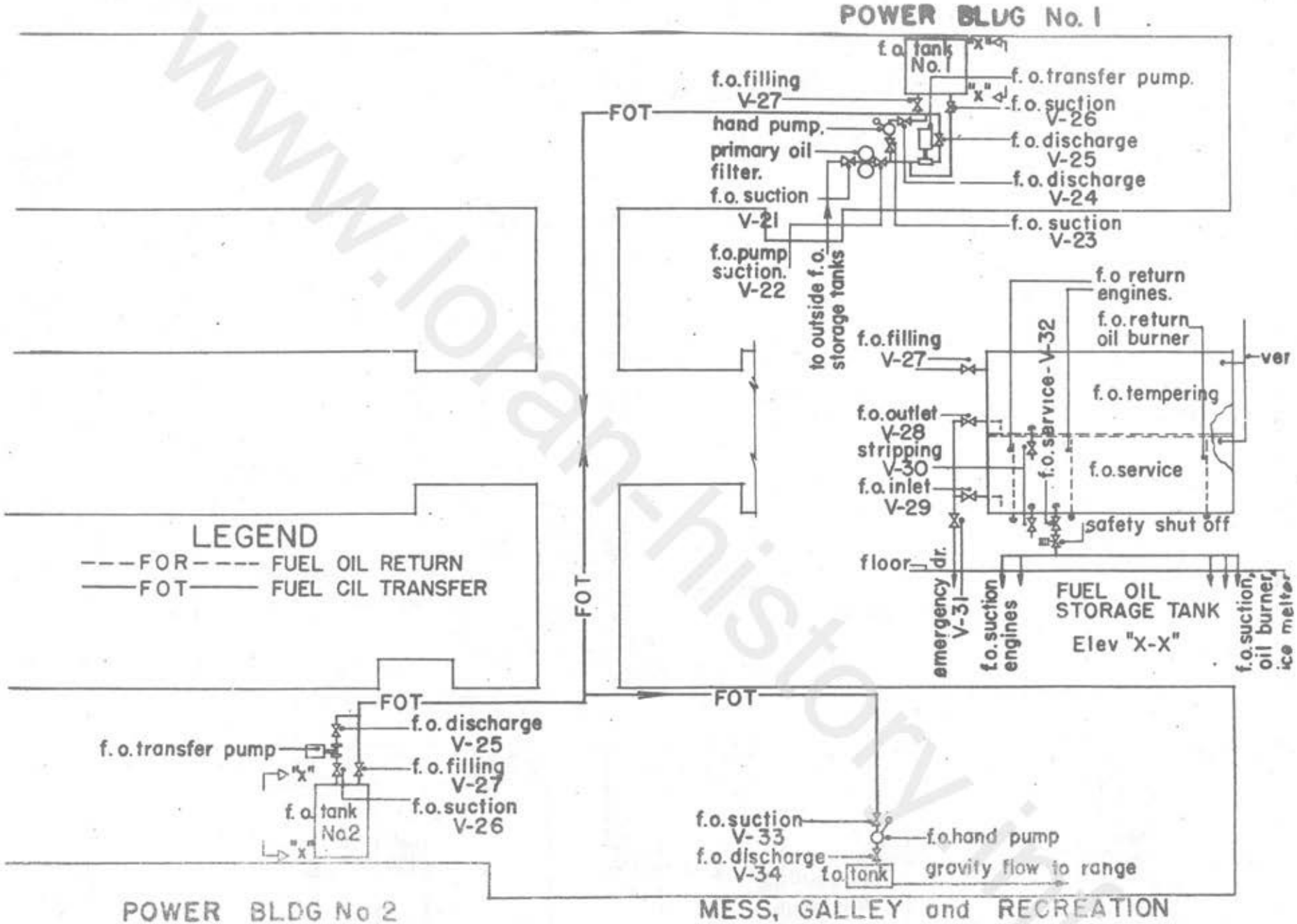


ENGINE ROOM VENTILATION SYSTEM

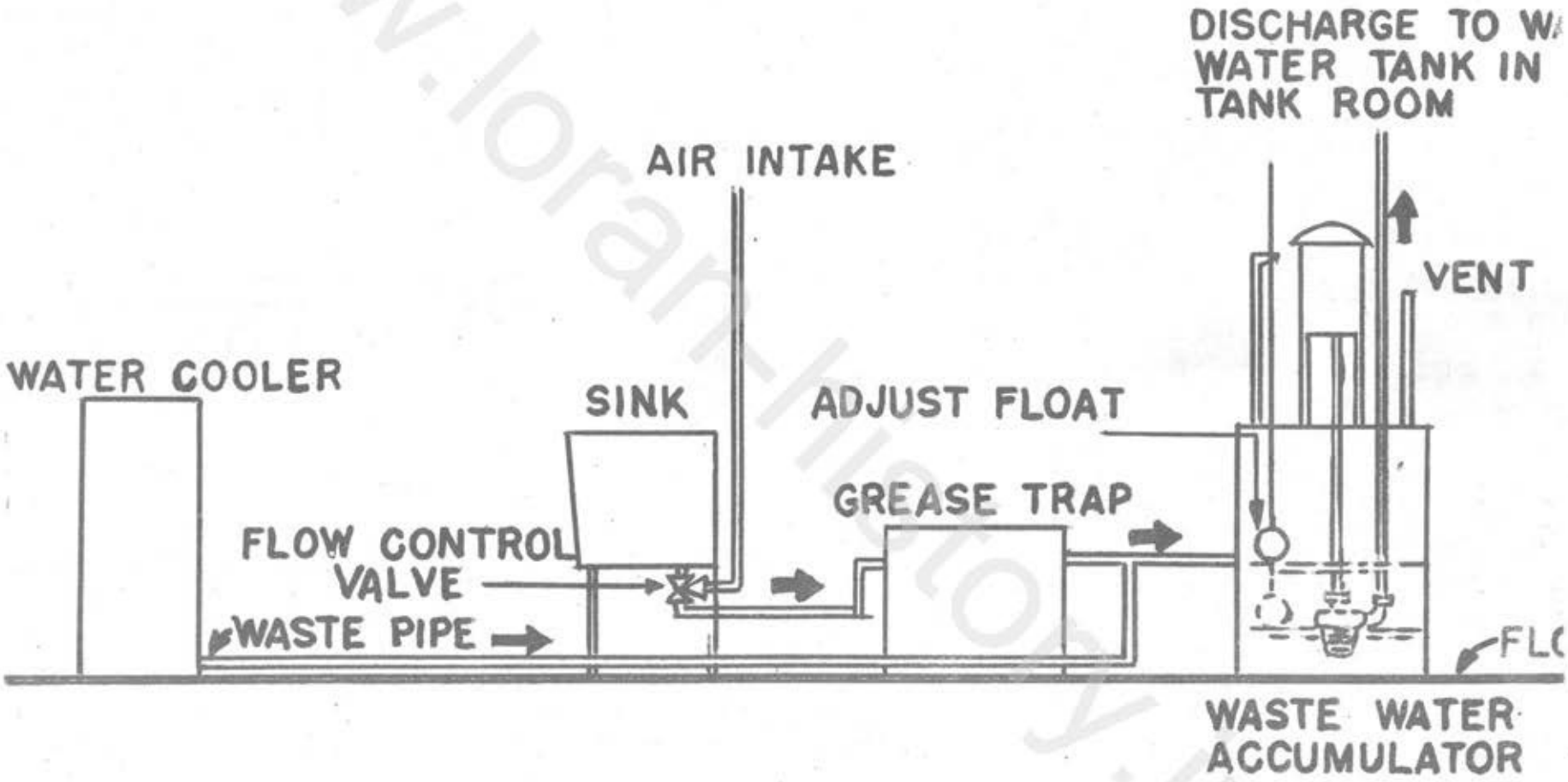
SUMMER OPERATION



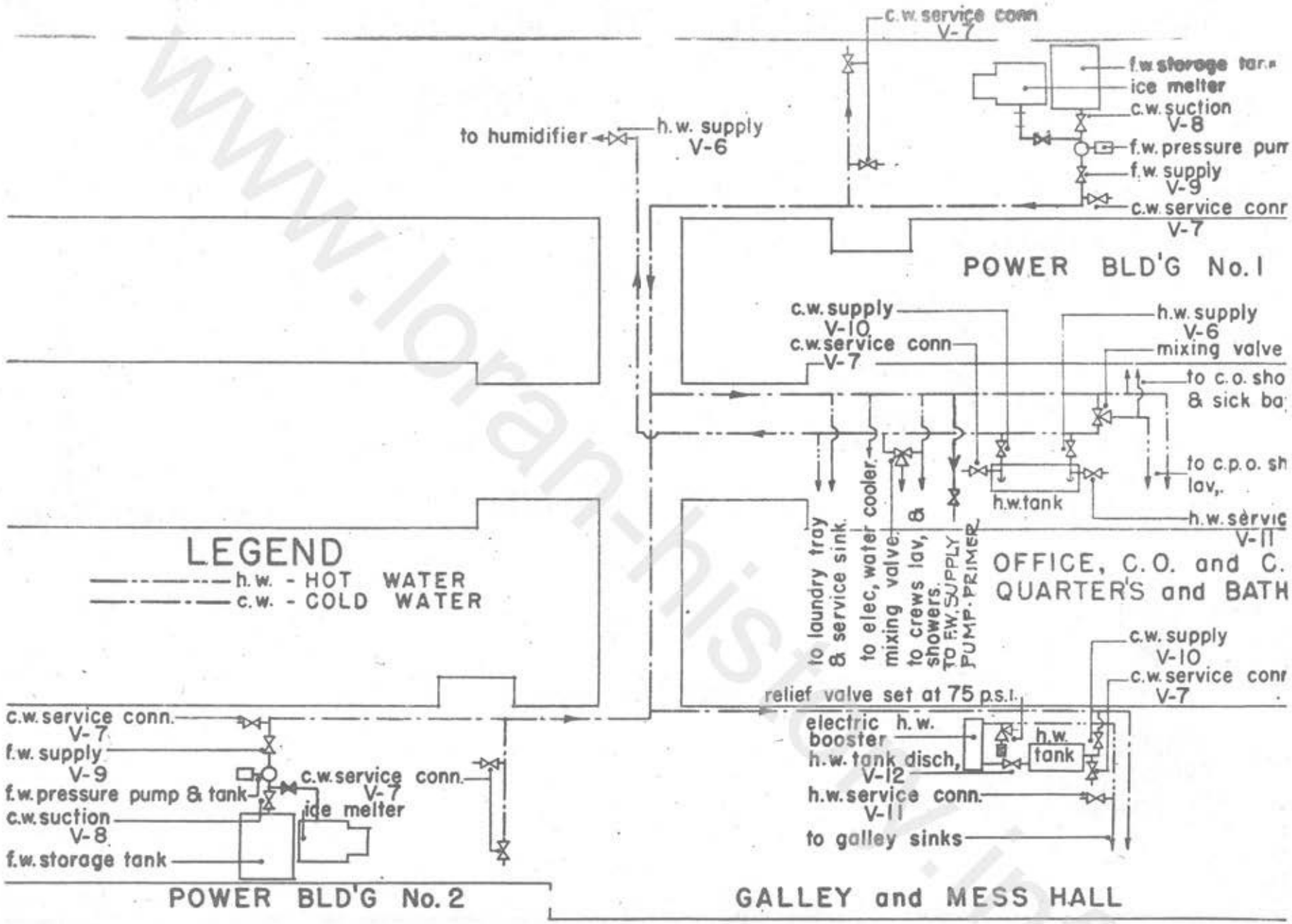
OUTSIDE FUEL OIL STORAGE AND TRANSFER SYSTEM



INTERIOR FUEL OIL SERVICE SYSTEM



WASTE WATER SYSTEM
(Galley area)


c.w. service conn V-7
f.w. storage tank
ice melter
c.w. suction V-8
f.w. pressure pump
f.w. supply V-9
c.w. service conn V-7
to humidifier
h.w. supply V-6
POWER BLD'G No. 1
c.w. supply V-10
c.w. service conn V-7
h.w. supply V-6
mixing valve
to c.o. sho & sick ba
to c.p.o. sh lav,.
h.w. tank
h.w. servic V-11
to laundry tray & service sink.
to elec. water cooler.
mixing valve.
to crews lav. & showers.
TO F.W. SUPPLY PUMP-PRIMER
OFFICE, C.O. and C. QUARTER'S and BATH
LEGEND
h.w. - HOT WATER
c.w. - COLD WATER
c.w. supply V-10
c.w. service conn V-7
relief valve set at 75 p.s.i.
electric h.w. booster
h.w. tank
h.w. tank disch, V-12
h.w. service conn. V-11
to galley sinks
c.w. service conn. V-7
f.w. supply V-9
f.w. pressure pump & tank
c.w. service conn. V-7
ice melter
c.w. suction V-8
f.w. storage tank
POWER BLD'G No. 2
GALLEY and MESS HALL
DOMESTIC WATER DISTRIBUTION SYSTEM