~~Professional Studies~~
Personnel

GENERAL INFORMATION

RELATING TO THE

LORAN TRANSMITTING STATION

CAPE ATHOLL

GREENLAND

(CGD1-1005-1)

COMMANDER
FIRST COAST GUARD DISTRICT
BOSTON, MASSACHUSETTS

U. S. COAST GUARD
TREASURY DEPARTMENT

UNITED STATES COAST GUARD

Commander
First Coast Guard District
1400 Custom House
Boston 9, Massachusetts

2 November 1961

LETTER OF PROMULGATION

1. Since the establishment of Cape Atholl Loran Transmitting Station, Greenland, 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 ATHOLL LORAN TRANSMITTING STATION (CGD1-1005-1) was prepared originally and issued in 1957. It has been revised and updated by LTJG David J. Meskell, Jr. USCG, Commanding Officer of the station from July 1960 to July 1961. 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 ATHOLL LORAN TRANSMITTING STATION (CGD1-1005-1) has been reissued for distribution to those commands having an interest in the station, and is herewith promulgated as a First Coast Guard District publication, superseding the 1957 edition.

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

C. L. Harding

C. L. HARDING

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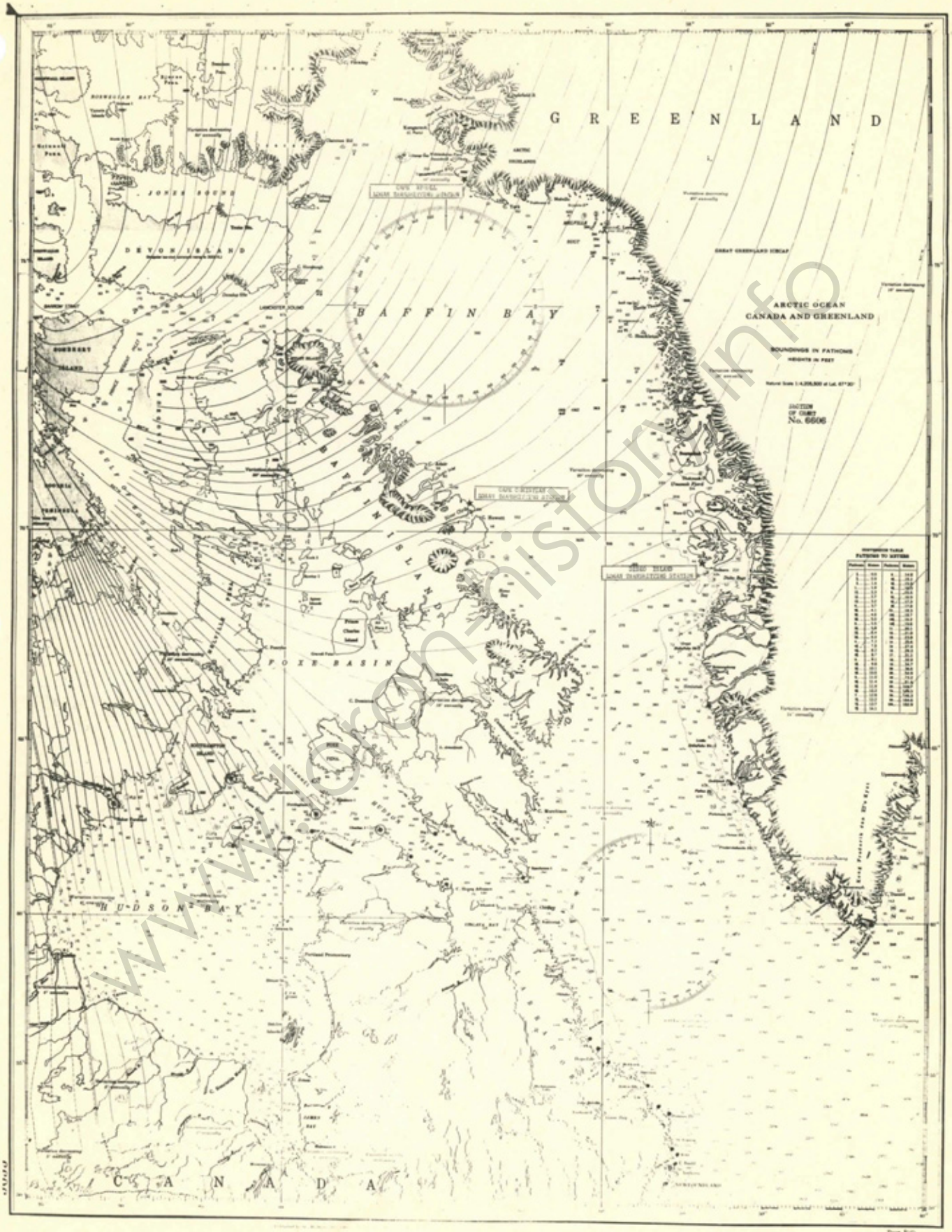
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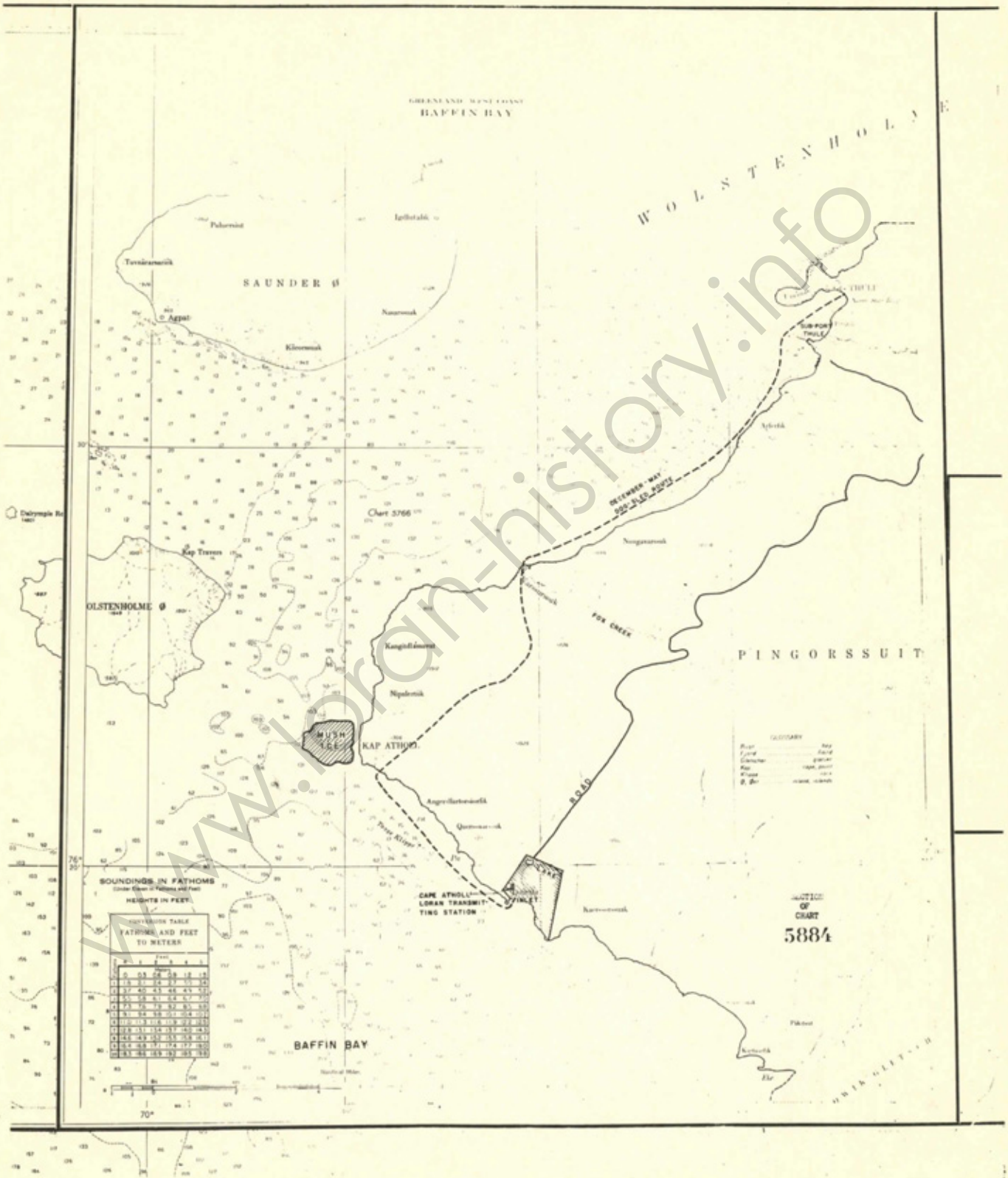
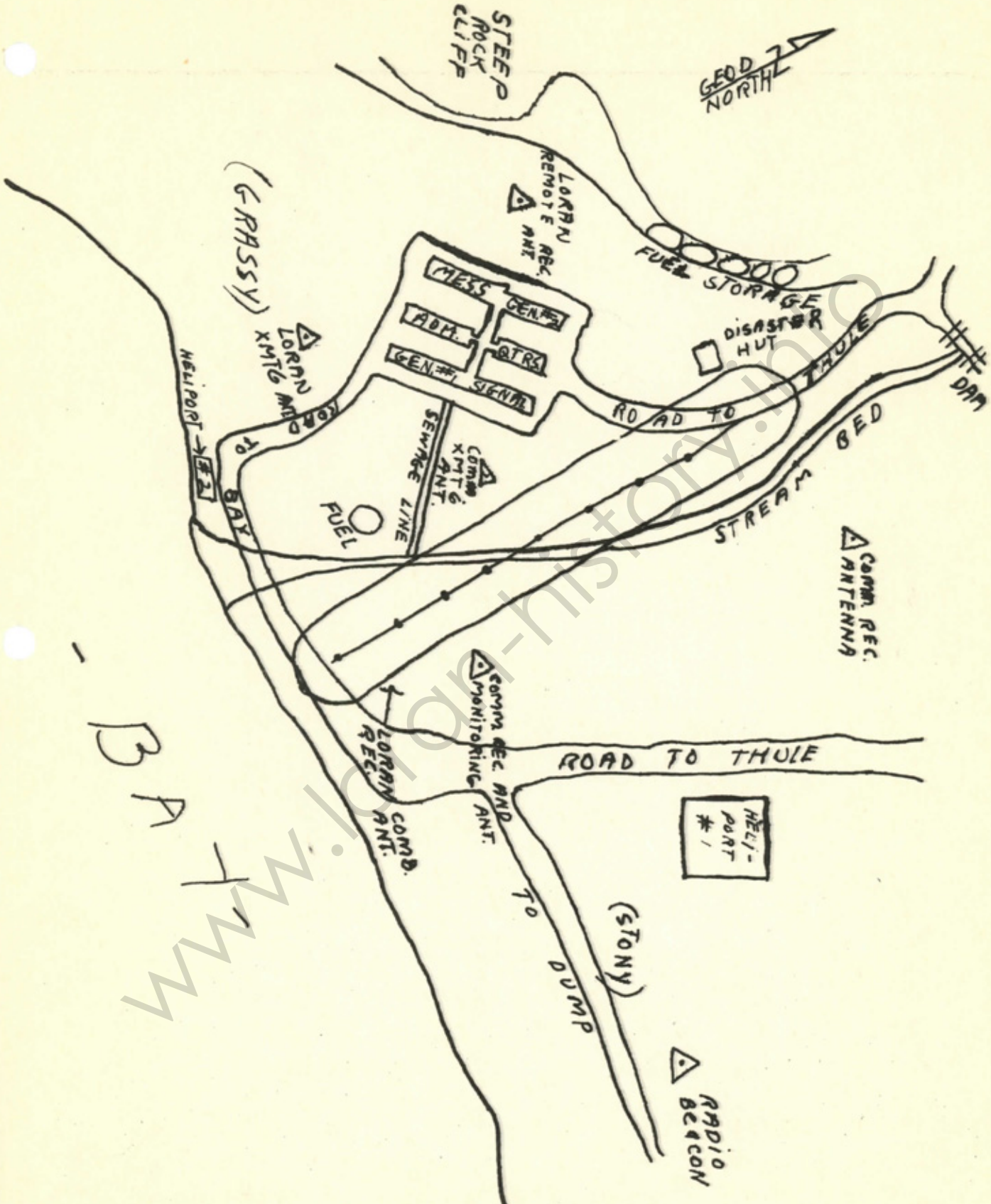




PLOT SKETCH - CAPE ATHOLL LORAN TRANSMITTING STATION

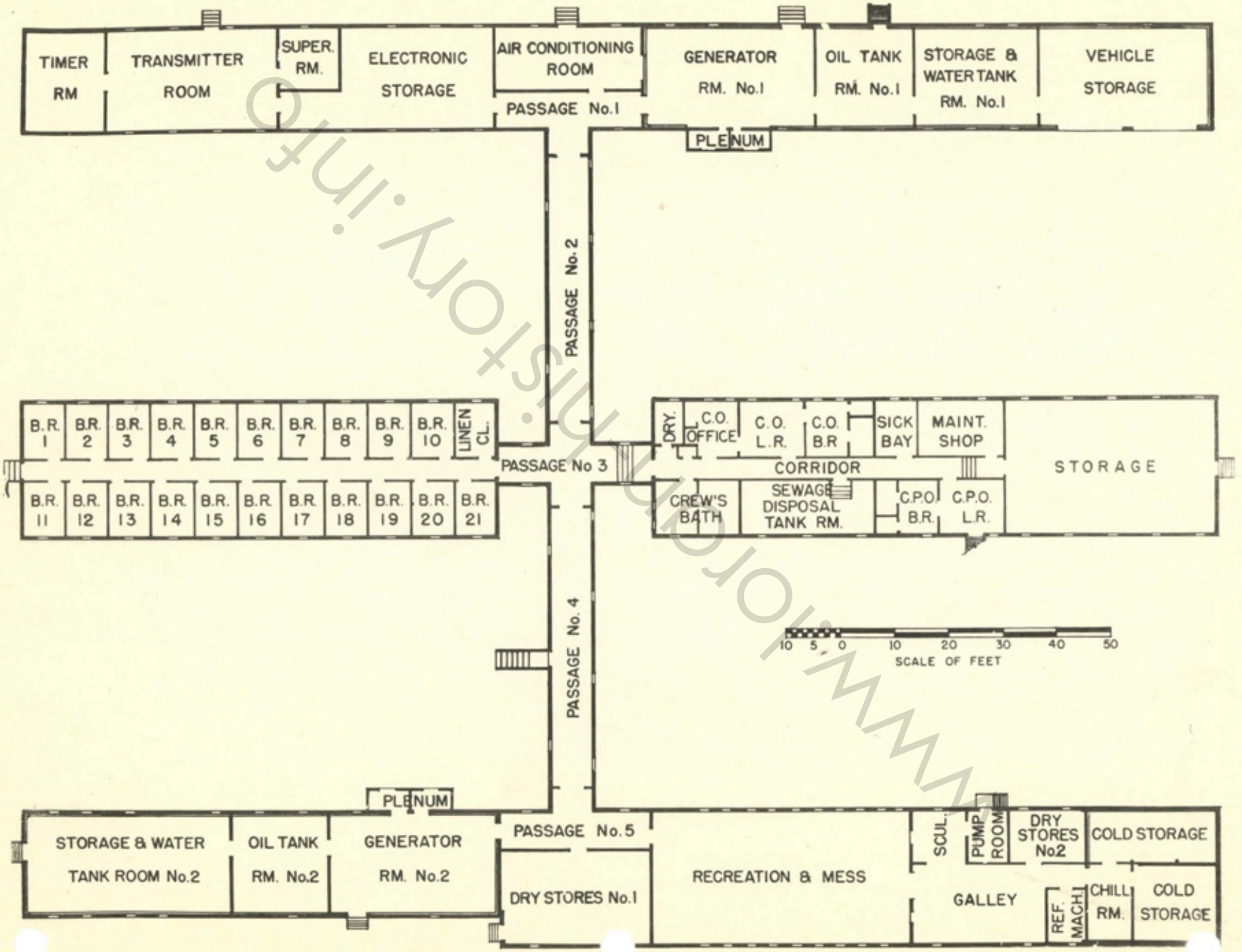
Rough scale - Station to Dam = 1200 ft.

△ - ANTENNA LOCATION

O - FUEL TANKS

DOPE I

PLOT SKETCH



Typical Arctic loran station building layout.

CHAPTER I

1. 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 77.5 degrees North, Longitude 70 degrees West. It is located on the shores of a bay, the Eskimo name of which is Quaratit. The station lies 17 air miles WSW of Thule Air Base. There is a road leading from Thule to the station. The road is 32 miles long, rough-riding at best, and is only open from about the middle of June to the end of August. The trip by road averages an hour and fifty minutes. 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 four to five and a half hours, depending on how hungry the dog-team is and how heavy the sled. This trip has not been attempted by station personnel, but Danes pass by here fairly often and have been known, from time to time, to take the station's mail up to Thule by this route.

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 thirty-four 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, including Air Force Personnel.

The countryside is prepounderantly 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 verdent for this part of the world.

The station is bound 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 any man who has pulled a weather patrol on Station Bravo is well acquainted with. The east and west boundaries are 800 and 650 foot hills, respectively. To the north lies an artificial lake (quite small) and further up the valley is a 2000 foot mountain.

The station property is divided by a creek which is created annually by the spring runoff 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 grass on the hillsides and around the creek; several different varieties of wildflowers and lichens grow around the station area. Wildlife in the area is abundant year-round. This is particularly true in the summer. During that period the region is well-inhabited by Auks (minature penguins), ducks, dovekies, crows, foxes, Arctic hare (a breed of rabbit somewhere between the size of a Saint 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 in the bay. But a man must have a good eye and a sneaky way about him to catch one when he's come up for air.

2. Weather.

The local weather can easily be described by one word: Arctic. Of course to one who has neither lived in nor read extensively about the Arctic, this is as good as no comment at all. So we shall explain in as great detail as is possible.

Climate, as in the temperate zones, is very much dependent on the amount of daylight present. So naturally the worst weather can be expected in the second half of the dark season, and the month thereafter. However, the arctic climate is nothing of which to be afraid. In fact, on 15 January 1957, Cape Atholl was 52 degrees warmer than Oswego, N. Y.! The temperature here was minus 3, and down there it was minus 55. More often than not, the coldest temperature recorded in Montana during a winter will be ten degrees 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 60's during late July and early August. The annual resupply of 1956 (4 August) was unloaded by a work party all personnel of which were stripped to the waist. Freezing temperatures start to return at the end of August. The last above 32 reading on the thermometer was 18 September. It will remain the last until this coming May.

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 thirty and sixty knots is a phase II, and wind in excess of sixty knots is a Phase III. These socalled 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 white 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 luckily for us they are a rare occurrence here. The valley is so well protected from the winds off the Ice Cap that we do not often feel them.

Oncoming personnel are advised not to accept weather in the valley as an indication of the general weather of the region. On 22 August, 1956, the Commanding Officer was being taken by an Army Lieutenant in a Jeep to Camp TUTO for an official call. The Lieutenant had made the trip from Camp TUTO to the station in an hour and fifteen minutes the previous evening, and had encountered no bad weather. The morning of the 22nd there was a light snowfall in the valley but it was nothing of an order that would deter travel of any sort. Four miles from the station the road had been buried under three feet of snow and there was a beauty of a phase going on. The road had been travelled the previous night at 2300. It took ten hours for the snowstorm to completely obliterate the road until June, 1957.

To compensate for the dark season, there is a four-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 for the region over the past two years have ranged from plus 68 (high) down to minus 47. These have been recorded at Thule. Due to favorable topography and our unobstructed southern exposure, the climate is milder here, even though we are but seventeen miles away. 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 general 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 <u>three inches per year</u>. But the ground drift probably adds another twenty inches or so in thevalley and in spots the drifts are fourteen feet high by the time the June melt comes along.

The mean barometric pressure is quite low, by temperate zone standards. 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 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. Hoverer, the temperature remains below zero for about five to six months out of the year. This is broken, usually, in midwinter by a warm spell. In 1955-56 the temperature rose to 32 above zero on 23 December. In 1957, the temperature hit 25 above on 11 January. This warm spell is inevitably accompanied by the worst set of phases of the year. It would be much preferable if the temperature stayed below zero. It is during the warm spell that outside movement is almost always a complete impossibility. At other times, even with severe below zero temperatures, some outside movement is possible.

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

In view of the short open road season and the time it takes to go to Thule, no liberty is taken there. The only time station personnel will see Thule is enroute to the station or when sent there on official business.

Thule Air Base is such an amorphous 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. Also, again as such, many pertinent details concerning it are classified.

Everything that comes here, 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 the ones here, but they are not connected by heated passageways. In view of this, and in view of the immense amount of dust at Thule, it gives 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 Camp TUTO (U. S. Army) and the various outlying Air Force sites, are a few scattered Eskimo villages. There is one village down 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 a hundred miles are Cape York and New Thule (73 miles north). The other villages are strictly stopover points for them and about 60% of the time, nobody is there.

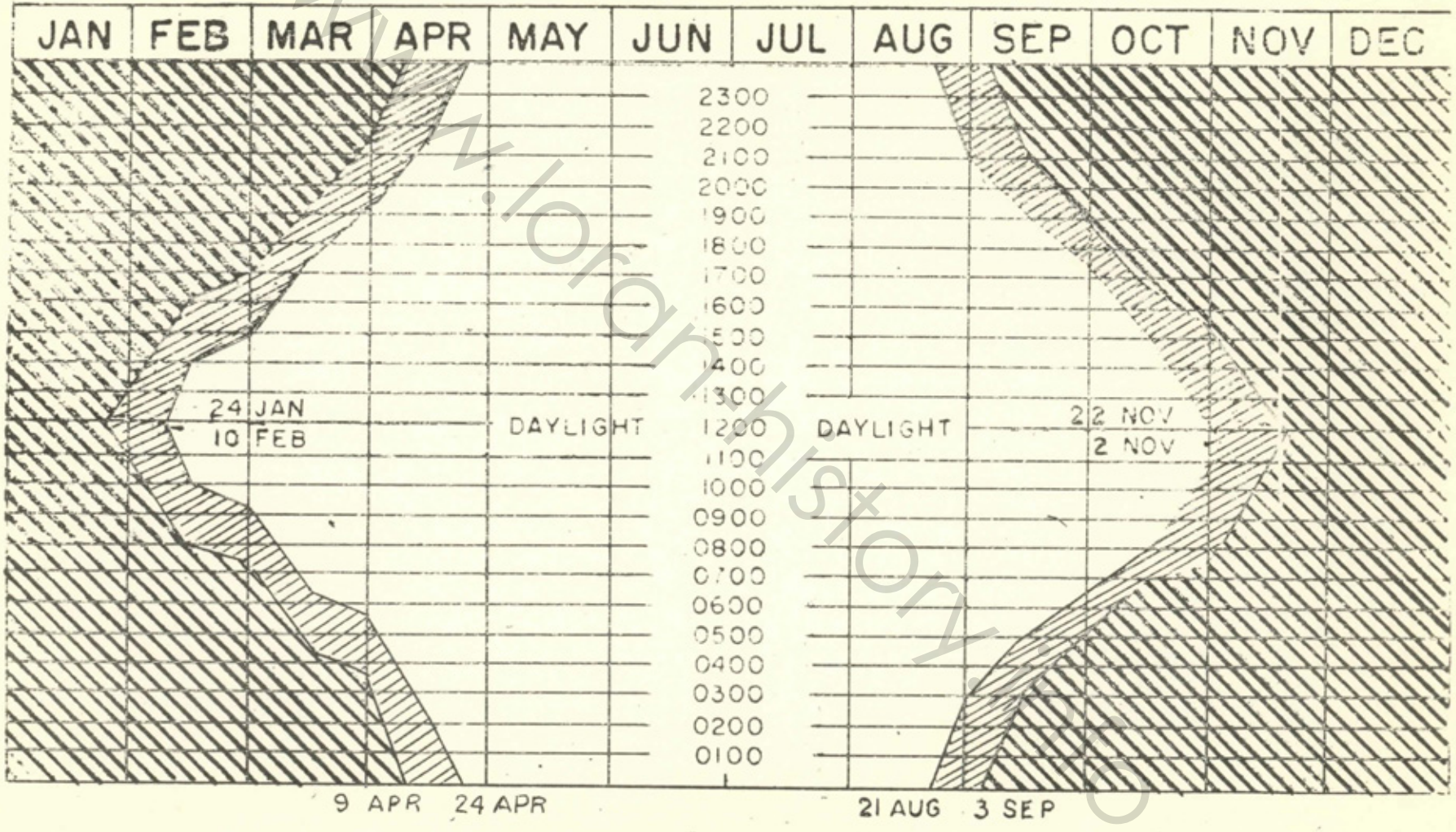
4. Customs Regulations.

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), and the Danish Law. The Danes forbid the bringing in of either animals or contagious disease. Apart from that, 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 ZI. Our fellow T-men, the Customs Inspectors, have an insatiable curiosity. Most items get through, though, if the Customs 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 seems to be sending all film by First Class Mail.

There are no worries in regard to sending home souvenirs of the region. There is a no contact policy in regard to the Eskimos, and the enforcement of this particularly rigorous in regard to trading. Eskimos have been aboard the station in the past, but only under Danish auspices and only under fairly rigid supervision. The present Commanding Officer is going to attempt to procure some genuine regional souvenirs through the Danish Liaison Officer at Thule. What measures of success he will enjoy is not known at this writing.

DAYLIGHT-DARKNESS CHART
THULE, GREENLAND



CHAPTER 2

1. 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. At rock-bottom, there really isn't much more to say about the Loran, except in the engineering sense, which is fairly well covered in Chapter 4. We fire off 25 full megawatt pulses per second on a frequency of 1950 kilocycles, and Cape Christian, the Slave Station, does the same thing, keying their pulse one one-thousanth of a second after they receive ours.

The difficulties of Arctic Loran operation are discussed in Chapter 4, and the special instructions in regard to deviation from the Loran Bible (CG-155) are included as an appendix to that chapter. Whether a man understands what Loran is or not, one fact should be brought to his attention right off. And that is that while Rate 2S6 produces reasonably good Loran in percentage of usable time, this takes a goodly amount of figurative blood and sweat and a goodly amount of genuine tears (eyestrain from scope-watching), on the part of operating personnel.

Another aid to navigation the station operates is an 800-watt Radiobeacon for the Air Force. This is a socalled Homer, and acts as the "Sea Buoy" for Thule Air Base. It keys the characters CPA twice every half minute on a frequency of 364 Kilocycles.

The Radiobeacon tower was constructed in the summer of 1956.

2. Communications.

For a unit this size we are unusually communicative. We have daily schedules with Thule (0800, 1330, 1730), and with Cape Christian (0930 and 1330). In addition to this we maintain a continuous watch on 5320 kcs. (CW), 4577.5 kcs. (Voice), and 126.18 mcs. (Voice). In this way, Thule and Cape Christian can raise us any time they have important or 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) only.

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. Occasionally corrections have to be made, but this only happens with about one message in twenty, an excellent batting average for an RM3.

Another big source of traffic for the Thule circuit is the Radiobeacon. Since the 1983rd AACS Squadron at Thule has the primary responsibility for the operation and maintenance of the beacon, their interest in it is keen. Traffic occurs in this regard on a shift of transmitters or timers, interruption in service, or anything else which is beacon connected.

Thule also passes all traffic from this unit to CGDONE, and other commands within the ZI. 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 which a Coast Guard operator is accustomed to. 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. This has eliminated most of the garbling and other difficulties created by inexperience operators at the other end.

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 there is an element that 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 passed also.

Communication between Cape Atholl and the ZI is frequently slow. This is not always true, but there is really no standard amount of time it takes a message to get from here to Boston or vice versa. ROUTINE precedence messages have taken as long as five and a half days to get here from Boston (Air Mail letters have been received sometimes from the Central U. S. 62 hours after postmark), and DEFERRED messages have gotten here in eight hours. PRIORITY messages have taken anywhere from six hours to three days. However, more often than not, the messages get here within a reasonable length of time, considering the large number (5) of relay points between here and Boston. For important traffic, it has been found much quicker and more reliable to send the traffic through Cape Christian.

3. Law Enforcement and Intelligence.

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

Since 1 July 1956, the only item reported to Thule outside of a passing ship was the sight of a large smoke trail in the southern sky which looked like an airplane in trouble. The matter was reported, but we never heard what it was or what Thule did to investigate it. For all we know, it might have been an unusually large sized vapor trail from a jet.

4. 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 in to 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 SA-16, 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 five or six 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 sufficiently far inland to be affected quite markedly 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. Under conditions of this nature, the only route which is safe is the sea-ice. And the sea-ice at Cape Atholl (7 miles north, between here and Thule) is often impassable for a vehicle due to the effect of the tides. Therefore 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 never untravellable, from 1 December to 30 May. It is smooth and solid, and the cliffs of the Greenland coast (from 700 to 1600 feet high) protect it well from the Ice Cap winds.

The station is the owner of an aggregation of seven Eskimo mongrels of varying ages and capabilities. Together, dependent on what frame of mind they happen to be in, they function as a dog-team. Station personnel have built a sled from lumber scraps retrieved from the dump. If there were a mishap locally, this aggregation of hounds would probably be employed. Even though the dogs' value at present is entirely recreational and they see action only on weekends and off-duty hours, it is perfectly conceivable that they could be very useful in an emergency. Thus mention of them is made in this section.

The station also has a weasel for emergency use. This would be used in case of emergency evacuation or search and rescue use. This weasel is in good shape, in fact, the Thule survival school would like to have it as it is better than theirs.

5. Boats and Vehicles.

The station is equipped with neither boats nor vehicles. It does, however, possess a certain amount of heavy rolling stock. This consists of three international Harvester TD18-A tractors, two of which has a dozer blade, two tracked "Athey" wagons, two heated water-hauling tanks, one of which is mounted on a tracked chassis, an open-top road scraped, a jeep and a power wagon.

The above equipment sees use in maintaining 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 jeep and power wagon are used to haul supplies to and from Thule during the summer. This is a long hard ride, something like riding a bicycle on the railroad tracks. Therefore, the useful life of the vehicles is very short, even when used with special care.

CHAPTER 3 - PERSONNEL

1. Medical, Health and Sanitation.

Despite the unit's isolation and despite the 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 have had to be taken to keep up the station's sanitary standards. Rats, cockroaches, tsetse flies and jungle rot are all non-existant here. Therefore the only items (outside of his burden of collateral duties) which come to the attention of the Hospital Corpsman assigned are such few germs as the men bring with them from the ZI, cuts and bruises.

Occasionally, mild cases of frostbite are encountered during the really cold months. However, these seem to clear up rapidly when they do occur. Actually, 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. However, due to Arctic transportation difficulties, this is not always immediately available to us for cases requiring extensive treatment. No members of the 1956-57 crew have been sufficiently ill to require treatment at Thule Air Base. However, the previous crew had a couple of "commuters" to the Base Hospital there. No problems were encountered in evacuation at the time.

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 preventor of what we know as the civilized diseases.

2. Training and Education.

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

The station runs its own Institute. Every Coast Guard Institute Course which has any application at all to the Rates allowed the station is stocked, along with lesson keys, final examinations and examination keys. The courses are controlled by the Commanding Officer. Lessons are submitted to him and graded. When a man has completed all the lessons in a course, the Commanding Officer administers and grades the examination. The results are then forwarded to the Coast Guard Institute at Groton, and a certificate is issued to the man, via the District Personnel Office.

Institute activity is very high. An average of two-thirds of the crew is enrolled in courses at any given time. Some men complete as many as three or four courses in their year here.

USAFI activity is also high. General Educational Developement Tests are very popular here, though. Every man in the 1956-57 crew who had less than a year of college took either the High School level or the College level GED Test. Up to 20 January 1957, the Commanding Officer had administered 15 of these tests. With the improved support, USAFI courses have proved practical for this unit. True there may often be delays, but in general, there is plenty of time to complete one or two courses.

In past years, the unit has run a "Heathkit" electronics training program for all hands. Electronics personnel have built oscilloscopes and other fairly complicated pieces of equipment and the rest of the crew has built radio receivers. This is inevitably a high point of interest, since when a man has built his piece of equipment it is his for keeps. Men return from here, usually, with a radio which would retail for sixty-five dollars or so. There is also a great deal of valuable experience to be gained from such a project.

In addition to textual training, the unit has a number of practical training devices. These include an RCA Electronics Trainer, 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 very 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 very valuable self-training. Photography can be persued on a year-round basis. Thus it can be a very rewarding thing for a man to become interested in while he is here.

Although "Ham" Radio is also an item which ordinarily falls under Recreation, this is another area where many men have obtained training as well. Five members of the 1956-57 crew have taken examinations for Amateur Radio Operator Licenses. Two others are in the process of studying for licenses. Even though none of the men assigned here was a Licensed Amateur Radio Operator when he arrived, it is likely that by late Spring of 1957, this will be the "Hamingest" military unit in Greenland.

On 26-28 December, 1956, Mr. Harold L. Strong of the Arctic Survival School at Thule Air Base gave a three-day course in Survival Training at the station. During the course, eight men were given a complete Arctic Survival indoctrination. This indoctrination included a 24-hour field trip on which they carried nothing but C-Rations, sleeping bags, knives, and gas stoves. The temperature was minus seventeen degrees, Farenheit. The value of this training is tremendous, and adds a very large safety factor for station personnel in the event of a disaster here, or in the event of getting suddenly caught by the weather when out on a hike. It is likely that such training will be available to those who desire it in the future, unless the Survival School is moved from Thule Air Base.

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 had here which can be called highly valuable is the experience of having status and responsibility of 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. Also, even though this may or may not be considered "Training", 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. The value of this is self-explanatory.

For non-rated men, the best striking opportunities exist in the rates of Commissaryman, Engineman, Damage Controlman and Electronics Technician. 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.

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 or 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.

3. Morale, Welfare and Recreation.

Due to their close interrelation, the above three items are lumped together in one category. Actually, all three of them are not merely dependent on one another, but are also thoroughly dependent on weather and darkness conditions.

The prime consideration in the happiness of any organization is a close sense of all hands working together to make things function smoothly. A constructive attitude on the part of all hands is therefore the first consideration under this topic. This is something that cannot be imposed from above; it can only come from the individuals who make up the crew. The 1956-57 crew has been exceptional in this respect. From such appearances as we saw, the same was true of the previous group here. If the man who does the selection of the crew for us is as astute this year as he has been in the past, it is hoped that this can be maintained as somewhat of a unit tradition. The difficulties of Arctic operation almost prevent operating in any other manner.

The next consideration in regard to morale is mail. Mail has gotten here in as little time as sixty-two (62) hours from the central U. S. However, this was an exception. There is really no "standard" time for a letter to reach here from the ZI. Most letters reach Thule Air Base (APO 23) in an average time of four days. How long they wait in Thule before coming out here is dependent on many things.

Among the factors upon which the mail service depends are the following, in order of importance: 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 (in view of the one-year tour of duty, this varies prodigiously from year to year); 3) weather. These are the three dominant factors in mail service. They must all three be favorable at once in order to enjoy any sort of consistent support. However, this seems to vary in direct proportion with item (2) above.

The history of the unit's support is a blow-hot, blow-cold matter. It has run the gamut from unbelievably good to unbelievably poor.

From the commissioning of the station until 7 November 1955, all support was accomplished by the 55th Air Rescue Squadron at Thule Air Base. In early 1955, informal trips from other organizations supplemented the service from the Air Rescue Squadron. Several trips by snowmobile were made down here in early 1955 and in March, a snowplow team from Thule came down here and plowed out the Cape Atholl road.

On 7 November, 1955, a helicopter came down here and crashed on the way back to Thule Air Base (discussed in Chapter 2, Section 4). Helicopter support from the 55th Air Rescue Squadron ceased. However, for about three more weeks they furnished the station with airdrops from an SA-16. After that, they were directed by a higher command to stop all logistical support of the station, in view of the fact the 7 November flight had been made under hazardous conditions (light snow falling, total darkness) and no flight plan had been filed beforehand by the pilot.

In late November 1955, Thule Air Base assigned the support responsibility to the 6607th Maintenance and Supply Group. They made weasel trips here on Thanksgiving, 10 December and Christmas Eve. Their commitment was for one trip per month. After Christmas Eve support from this unit stopped without further word.

This marked the beginning of one of the blow-cold periods of mail service. The station had "mail famines" of 43, 33, and 24 days right on top of one another. The deliveries which broke these famines were accomplished in the first and third instance by the Army TransArctic Group Air Detatchment and in the second instance by a travelling Danish Inspector and his Eskimo companion. The operations order which directed the support of the station to the 6607th M&S Group remained in effect until 18 September 1956. Under the terms of that order, one trip was made (on 10 June 1956) from Christmas Eve 1955, until its supercession.

During that period, the support of the station was assumed by the pilots of the Army TransArctic Group. This was something they undertook through generosity; no one directed them to pick up the ball. The flights down here had no regular schedule, but were made as weather and commitments permitted and were logged as "training missions". From 31 March 1956 until the following fall, it became apparent to the Army Pilots that for the time being at least, nobody else was going to help us out, so they unofficially assumed the entire burden of our support.

During the summer of 1956 this service was supplemented by trips over the road from Thule Air Base by various individuals. While none of these trips were "official", they were a very pleasant supplement to the Army's excellent service.

In early August of 1956, the Commanding Officer was informed by Thule Air Base that the reason for the cessation of the weasel service was that the Cap Atholl road could not be followed when it was snowed over. Plans were laid in mid-August to completely mark the road from the station to Fox Creek (see map, inside front cover). These plans were aborted by the year's first snowfall on 22 August. However, we had managed to mark the road out to Mile Eight, and it turned out that these were the miles which needed marking the most.

During the summer of 1956, a very good relationship was established with the USAF Arctic Survival School at Thule Air Base. This was the greatest of the sundry blessings received by the station in the Calendar Year 1956. Through behind-the-scenes action on the part of the Commanding Officer of the school and Mr. H. L. Strong (GS-12), an Arctic expert attached to the school, the support responsibility was assigned to them. Again, the assignment was for a once a month trip. Through the generosity of the Base Commander at Thule Air Base and of the personnel of the school, this was trippled in mid-October.

Personnel of the Arctic Survival School have completed the road marking on support trips made since 20 September. The markers consist of three-foot "trail wands" which will have to be replaced annually. The markers out to Mile Eight are permanent. The marking of the road has cut the trip time from Thule Air Base by weasel in half. Record time in 1955 was five hours and forty minutes. Now it is by no means unusual for a weasel to make it out here in three hours, and on 4 October a snowmobile got here in two hours. The trip by vehicle with the road open is usually an hour and fifty minutes.

With the exception of January 1957, the station has had support from the Arctic Survival School and/or Army three times a month since the summer of 1956. And the lack of support in January has been entirely due to the weather. The school scheduled two trips out here early in the month which were stopped by phases. The mean temperature for the first 24 days of January 1957 has been minus 16. Six of those twenty-four days were "phase" days with above zero temperatures, so one can imagine what the rest of the month was like.

On 25 January, 1957, a snowmobile from Thule Air Base attempted the trip down to Quaratit over the sea-ice. The snomobile ran into mush at Cape Athool (see map, inside front cover). This mush exists between the Cape and Wolstenholme Island no matter how cold it gets, since the strong tides and currents are constantly breaking newly-formed ice away from the shore. The snowmobile went through the ice and sank, taking with it better than half a ton of mail and cargo marked for delivery to the station. Receiving this mail would have marked the end of a 27-day mail famine. Neither of the personnel in the vehicle suffered more than minor exposure. What effect this will have on future trips by the Arctic Survival School is not known.

However, the Danes have helped us out in the past and we have no reason to feel that this will not continue. The evening of the snowmobile incident, four Eskimos stopped by the Station. One of them required minor medical attention, for which entrance of Eskimos into the station proper is authorized by the Danes. When they left the following morning they were given the personal mail of men who were willing to have their letters taken to Thule Air Base by a native. No Official mail went out with them since there was no English-speaking Danish authority present to certify that the mail would get to APO 23.

In general, the somewhat clouded crystal ball seems to indicate that personnel who come here in the future can expect mail fairly reliably every other week. Also to be expected are two or three fifteen-to-twenty day "mail famines" and one of thirty days. However, for half the year, April through October, mail will probably continue to come in weekly, or at least every ten days. While this is not to be counted on as a sure thing, past performance seem to indicate this to be the trend.

To bring the mail situation up to date, it must be said that the situation has again reversed. At present, March 1961, our support is entirely dependent on helicopters from Thule. These helicopters are the sole source of support from mid-September until mid-May. For the most part, they can be counted on for four or five trips a month when there is daylight and two or three trips per month during the dark season. This does not mean there will always be a trip every six to ten days, as sometimes you will receive trips two days apart and then a famine of twenty days. During the summer, the frequency of mail depends on the trips to Thule, but never drops below two per week. In general, though it is not like being home, it is pretty good.

As anyone who has even a nodding acquaintance with "Ham" Radio knows, mail is not the only way of keeping in touch with relatives and friends. Our "Ham" Radio Station, KG1CG, is very active. It maintains daily schedules with the Coast Guard Training Station, Groton and with W1CLY (Roy Prior, Newport, New Hampshire) and W9NZZ (Stan Surber, Peru, Indiana), for the purpose of handling traffic to friends and relatives.

The most active of these "circuits" is the W9NZZ one. Mr Surber has been given the unofficial title of "The Polar Post Office". He spends seven hours a day contacting remote Arctic stations for handling traffic by CW. Through him, an average of one radiogram per man per week is gotten out. Also through him, friends and relatives can communicate with the personnel here. The daily schedule was set up with him more as a luxury than anything else, since at the time of its inception mail was coming in three times a month. This was on 4 January, 1957. However, the events which followed (mail famine and snowmobile incident) made Mr. Surber's services a sort of "Staff of Life" for us here, and he has rendered the pains of isolation far less severe than they would be without him.

The Amateur Radio Station will also make contacts with a "Ham" in a man's home town, if such a contact can be arranged. However, the man concerned must make the arrangements for such contacts on his own. The station's operators are kept very busy between their own official duties and keeping the radiogram schedules, and the addition of correspondence with home-town hams to their already heavy burden would be a little too much. For future crewmembers, it is recommended that they contact a "Ham" in their home town and ask him if he will observe schedules after the man arrives in Greenland.

Once the man is here, he can write to the "Ham" in his home town and advise him of the status of the Amateur Station here. Before leaving the ZI, the man should determine the following: the power input of the equipment of the Ham he wishes to contact, (it should be around 500 watts on Phone), the Ham's Call Sign, and what days and time are convenient for him. After 8:00 P.M. in the evenings and on weekends, voice contacts with the ZI are almost impossible, due to the large amount of Stateside interference.

The Ham Station equipment consists of two transmitters (B&W 5100, 150 watts CW,-120 watts, Phone; and BC-610-F, 400 watts CW,-300 watts, Phone), and an HRP-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 but 40 to 50% of our stateside phone schedules (if that much), due to the fact our signal is not too strong by the time it has travelled 3000 miles, and when it gets there it is fighting to be heard in a large group of full kilowatt stations. The only possible rectification of this would be to trade in the present equipment for a transmitter capable of delivering 500 watts on CW, AM Phone, AND Single Sideband. The station's antenna system is good, consisting of a 3-element, 20-meter Beam (much battered after three winters in the Arctic) for receiving, and a 2½ wave-length, 20-meter, V-Beam for transmitting.

In order to establish or operate a Ham Station in Greenland, a man must first have a socalled "Greenland Call". These calls are issued by the Northeast Air Command to U. S. Armed Forces personnel who are <u>already licensed</u> (Conditional and above) by the FCC. As has been indicated in Section 2 of this chapter, a man can obtain a Conditional Operator's License while he is up here. This process takes anywhere from eight to fourteen weeks. Getting a "Greenland Call" takes an additional four to six weeks.

Oncoming personnel of the rates ETC, ET1 and RM2, are urged to qualify for a Ham License before leaving the ZI. It is possible for them to be examined by the FCC office in Boston, while they are waiting 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 persued 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 Varichrome-Pan film. This is adequate for all black-and-white picture work a man does here. However, if a man intends to go in for camera work seriously, he should give consideration to 35 mm. work. There is enough color around here to make excellent slides. 35 mm. Kodachrome film is available in the Exchange here and 35 mm. cameras can be bought from the Exchange at Thule Air Base at prices averaging 40% of prices in the States.

The station darkroom is well equipped. The darkroom's prime feature is an Omega D2 Enlarger which is capable of blowups 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. Darkroom work is confined to black-and-white developing and printing; we have no facilities for color work. However, color film can be sent back to the ZI for developing, mounting and printing. If the Customs Declaration Tag is made out properly and the film is sent First Class Mail, no troubles are encountered.

Other recreational aspects of the station are, on the whole, good. For "inside men" we have Pool, bar room type Shuffleboard, 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 6 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 parlour games such as picture puzzles, checkerboards and the like. Also the station has three Columbia "360" phonographs (a trifle battered but still operating) and a large stock of records. Many of the records sound as though they were being played through a bowl of rice krispies, but they still provide a pleasant respite from Radio Station "KOLD", Thule. Movies are held every night. Most of the films are out-of-circulation sea-prints. as Such, they are well laden with scratches, both on the viewing surface and on the soundtrack. Also, 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 largely consisted of passionate kissing or belly-dancing and thus had little to do with the plot. They are only missed by a small minority of the viewing audience. Despite the age of the movies (many of them are pre-1940) and the condition of many of them, 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.

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 pursuing carpentry, and Leathercraft, Paintkits, Model kits, and other do-it-yourself items are amply stocked. The station also has a library of 1250 paper-back books.

For the convenience of the crew the station maintains a small 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, 35 mm. and 620 film, along with other minor "luxury" items. A man coming here shouldn't worry much 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 taste 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.

Personnel in past years have been discouraged from bringing money up with them. Actually, money isn't necessary. Purchases at the exchange are made on a credit basis and the men pay off when they return to Boston. Enroute home, transportation by MATS requires no cash and TR's are issued at McGuire for personnel returning to Boston. However, despite the fact that it isn't "needed", a small amount of money (ten to forty dollars) should be brought. Both coming here and leaving, there may well be delays at USAF depots, such as at 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 #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.

Necessary items of uniform are covered in Chapter 7.

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 in a while, etc.). During the first six months of the 1956-57 crew, three such inquiries were lodged. Answers were received in four days.

The unit maintains a small morale fund for cases of great need in regard to cash. The only use it has been put to so far is to make loans to men suddenly transferred or called away on emergency leave.

In general, a man has no worries in the Personnel 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 of time 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 4 - ENGINEERING

1. Civil Engineering.

This is a topic which is fairly comprehensively 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 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 two-foot panels, five 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 are kept well caulked. The buildings here 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 here on the standard of comfort and efficiency of the station.

Among the refinements are: heated passageways for going between buildings and for running of electrical and fuel lines; pitched, 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. The buildings at Thule were built with flat roofs and severe leakage problems were encountered. And our greatest luxury of all is the flush toilets - over the hill they use "skippers" or "one-arm bandits", which bear a strong and distinctive odor and frequently backfire. Last of our improvements is a humidifier which keeps the buildings at a constant 55% relative humidity. In the dry climate here, this makes a tremendous difference.

The plumbing system is a good one, and relatively trouble free. During the summer, when there is plenty of water from the station dam, toilets are operated on fresh water and the plumbing is strictly Stateside. This may sound run-of-the-mill to a newcomer, but in this region it is entirely unique. The visitors who come here during the open-road season are inevitably spellbound by this unbelievable phenomenon.

During nine months out of the year, however, the plumbing 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, judiciousness must be used in regard to flushing the toilets. However, the waste water is adequate for flushing purposes a good 98% of the time. The only time shortages occur is after a holiday weekend, and these have always been minor and temporary.

Other engineering equipment consists of four Caterpillar "D-13000" engines driving 75 KW generators, two Cleaver-Brocks 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 engines is circulated throughout the station to provide heat through water jackets and blowers in the various heating ducts. Power, plumbing and heating are all very 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. But these occasions are rare, and usually last no more than two 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.

Outside of fresh water, there are but three "watch-out" areas in Civil Engineering. First and most important of these is fire. While the panels of which the station is constructed do not catch fire readily, once a fire starts in them it is relatively impossible to put out. The few fires that have occurred at Thule Air Base have completely demolished the buildings they got started in. 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 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 the "watch out" areas in Engineering is the evaporators. Compression-type evaporators are more tricky than boiler-type. Future engineering personnel will find that they take a little getting used to. Cleaning them is a major task. There are 687 tubes which have to be reamed out individually in each evaporator.

Third 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 every other day. The job of cutting it down is not as unpleasant as it may sound. The exposure to the elements for personnel is short and the sewage is relatively clean and odorless, since it is frozen as hard as a popsicle. The value of this detail as a first-class sea story material is adequate compensation for the minor hardships involved.

2. Fresh Water.

Inasmuch as the treatment given this aspect of the station's operation in the publications mentioned at the beginning of the chapter is slight, we are devoting an entire section to this item.

During the summer, fresh water is available from the dam. Sometime between the last week in May and the first week in July, the socalled 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. From that point, for about three weeks, fresh water is available from a "water hole" downstream from the dam. This water has to be hauled up to the station in the Tank Wagon.

After the water hole is dissipated, the station goes on evaporated water. By the end of the present winter, thirteen evaporating periods will have been held. The station's fresh water storage facilities amount to 10,000 gallons, 5,000 for domestic use and 5,000 for fire. In addition to this, the Ice Melter can store 2,000 gallons of fresh water. At a daily consumption rate of 200 gallons per day, it is wise to evaporate every week during the sub-zero months. During the zero-plus months (October, April, May, June), it is only necessary to evaporate once a month.

Under the present set-up, evaporating periods start at 0600 on a Monday. Three of the engineering rates stand evaporator watches for the period. The fourth engineering rate supervises the water-hauling crew. The ENC supervises the entire operation. At present, water-hauling crews consist of three men each, one from each department. All hands except for the cooks, the Chiefs and the Commanding Officer take their turns on water crews. There are four duty crews, each of which is assigned hauling duties for an entire evaporating period. During evaporating periods, an average of seven to eight runs are made to the sea with the water tank wagon. These runs take about one hour apiece and occasionally, when there is a surf running in the fall or if the temperature is below minus ten, they involve a certain amount of discomfort. During the evaporating periods, which run for 14-16 hours, both watchstanders and water crew members are exempted from other duties.

While the water runs generally provide discomforts no more than minor, they are thoroughly cumbersome. Six man-hours plus fuel for the tractor and pump is a high price to pay for getting 900 gallons of water a quarter of a mile. By the time they leave here, each man in the present crew will have made twenty-four runs to the sea with the tank wagon. Some of these runs have involved no discomfort whatever. Others, such as when the suction hose has been flung back repeatedly by the surf or when freezing hoses have to be handled, have been the heaviest labor that is offered here.

However, once a man does his turn on a crew, he doesn't make another water run for two and a half months. So the discomforts are temporary and somewhat infrequent. In general, it can't be said that this method of obtaining fresh water at Latitude 77 is either efficient or satisfactory. But, as in all things, where there's a will there's a way. The efficiency of the water crews in the present complement can only be described as "breathless". The men involved have performed with a zeal and competence that is a high compliment both to themselves and to the Coast Guard.

3. Electronics Engineering.

In general, the Electronics Engineering is both modern and standard. Inasmuch as detail writeups on all the equipment involved 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 2. It consists of the following: AN/FRT-23 and TDE-1 transmitters for working Thule Air Base, Cape Christian Loran Station, and Camp TUTO on both Voice and CW; AN/URC-7 for working passing ships and the Subport at Thule on 2716 kcs.; and a T-336/URT-7 VHF for working aircraft. National HRO-60 receivers are used throughout, except, of course, with the VHF. All maintenance of this equipment is done by the Radioman, except occasional jobs which require a high degree of technical training, such as VHF maintenance and complicated circuitry.

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-330 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 miserable signal conditions that prevail in the Arctic during the winter, the operation of it is relatively trouble free. It consists of the following: AN/FPA-2 Electronic Switch Group; AN/FPN-30 Timers, AM-701/FPN Radio Frequency Amplifiers, and T-325B/FPN Transmitters. The antenna system is standard and the location of the various Loran antennae can be seen from the map inside the back cover. 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. Naturally, 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 thoroughly 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, and 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 ten to sixteen microseconds out of synchronization on the high side.

From past and present experience, conditions "touch bottom" around the middle of January. The measures that Commandant, Coast Guard and Commander, First Coast Guard District have taken with these unfavorable conditions are included as an appendix to this chapter. During the month of January, 1957, the Master was able to monitor less than 25% of the time due to a signal-to-noise ratio which seldom exceed 1½ : 1.

During the first two years of the chain (at that time rate 1L7 instead of 1LO) 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 periods of sky-wave activity, there is a problem of crossover from other rates. This occurs mostly with 1L1, 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.

In general, with the equipment setup there are no worries. 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 400 miles apart, but we are basically in the same boat. Unless this is recognized right off and unless the two stations give their fullest to one another, 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 5 - COMPTROLLER

1. 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 fall under the "back in Boston" category.

A list of essential clothing is included in Chapter 7. 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 here. Small stores items can be obtained from Boston on a "deduct from pay" basis during the year. But due to the postage involved, the items are more expensive. And, while the work involved in getting the clothes up here isn't great, it is a nuisance in view of the fact that most men with reasonable foresight will bring enough clothing with them, if only in self-defense.

No pay is received while a man is on this tour of duty. 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 twenty to three hundred and fifty dollars, and the District Finance Office has been very obliging and prompt sending them up.

If, during the year here, a man wishes to buy an expensive item such as a camera from the Base Exchange at Thule, it is possible to do so without having the cash with him. In such an instance, a request for a check is sent to the District by message and the check usually appears in the next mail delivery.

2. 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 is possible, two years' supply of everything is on hand here. This includes everything from fuel on down to commissary items. The station receives the bulk (99.5%) 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 excessive, inadequate description of items, etc. After staff review, commercial general stores, exchange and morale items included in the resupply requisitions are purchased by Commander, 1st CG 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). 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, 1st 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 Force 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 the Thule Air Base postal facilities, i. e., APO 23, New York, N. Y.

(5) Honor Coast Guard requisitions during the year for all

consumable supplies, and commissary provisions which are normally carried in stock at Thule Air Force 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, 1st CG District (f). Materials requested as such will be purchased and air-lifted to Cape Atholl utilizing regularly scheduled "MATS" flights from Dover Air Force Base, Dover, Delaware to Thule Air Force Base.

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

3. Commissary.

The station operates a Commuted Ration Mess. With the exception of the ration value, which for this unit is 150% 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 to do it in Volume 7 of the Comptroller Manual.

The station complement has a CS1 and a SN striker. 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 crewmembers here.

The fare enjoyed by the present crew is probably among the best in the Coast Guard. There is a sufficient variety in the sixteen thousand dollar inventory and there is sufficient 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 somewhat on non-fresh foods. However, most of the time there is at least <u>something</u> 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, a Hotpoint French Fryer, a waffle iron, two toasters, a Waring Blender, an Ice Cream Freezer, and two standard electric beaters take care 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 nineteen men here enjoy, day in and day out, the best food they have ever had, in fact a few are having grave troubles in the battle of the bulge.

4. Transportation.

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

The road from here to Thule Air Base is 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 rehabilitating the road each year is fifteen days from the time our dam fills. With a runoff averaging mid-June, the probable date is 1 July.

While periods of time that seem lengthy pass without anyone coming by the station, we have encountered no emergency evacuation problems or emergency supply problems. In consideration of the topography, weather and the distance we are from civilization, transportation can be evaluated as good.

CHAPTER 6 - ADMINISTRATION

1. 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 ETC, ENC, etc. While not in the strictest sense an Executive Officer, the ETC has supervisory authority over all departments of the station.

2. 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 five 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 and Safety. These five monthly reports are the minimum that will go out in any given month.

Above the basic "Monthlies" there are several other periodical reports. These cover Exchange, Publications, Individual Exchange bills, Institute activity, Venicle reports, proficiency marks, office machine, small arms, and so forth. The frequency with which these occur is the same as it is for 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 dispatch 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 smooth by the HM, who also assists the Commanding Officer with the leg-work 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.

3. 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 quite so 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 two and a half to three 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 here. Since the station was built no officer has spent a year here without holding Mast at least twice.

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.

4. Safety.

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

Other than one case of over-exposure to a sunlamp in the spring of 1956, 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.

5. 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 of "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 prime importance is the maintenance of close ties with Thule Air Base and with the Danes and Natives. Two-thirds of the personnel at Thule "rotate" back to the ZI without ever seeing the man who replaces them. Thus relieving personnel at Thule Air Base never get to hear about how nice the station was to the man or men who were there the previous year. Every summer the public relations with Thule Air Base has to be done all over again from the bottom. 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 over at Thule seldom leave the Base proper, particularly for someone they don't know personally. Therefore, a vigorous program of official calling is in order for any officer assigned to this command, fairly soon after his arrival.

The Danes are also very helpful. As can be seen in Chapter 3, they stopped a five-week mail famine for us once, and in many other ways they have made the passage of years for previous personnel more pleasant. Even though we may be unwilling guests on Danish soil, we are nonetheless guests. As hosts, the Danish representatives couldn't be nicer.

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 list of billet functions is appended to this chpater.

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

WATCH, QUARTER & STATION BILL

Billet No.	Auth. Rate	Fire Bill	Air Drop Bill	Antenna Casualty	Emergency Evacuation
00	LT	In Charge	At scene	In charge at scene	Logs, Compass & Field Glasses
101	ETC	Signal Bldg.	ET Spaces. Supervise Communications w/A/c	Signal Bldg.	Rifle & Ammo.
102	ET2	Provide CP2 Extinguisher	As assigned	In charge Pole Crew #1	TRP-141
103	ET3	Badger Extinguisher	As assigned	Provide Safety Belt & Sp. Phone	Battery for TRP-141
104	EN1	Start Alt. Generator	Start Tractor	Assist #201	Drive TD-18A clear
105	EN3	Start Diesel Fire Pump	Tractor Crew - Provide CO2	Assist #201	Drive TD-18A clear
106	DC2	Provide DC tools	As assigned	Crew #1 Tool Kit	Tool Kit
107	HM1	Provide First Aid Kit	Stand by w/First Aid Kit	Provide First Aid Kit	Provide First Aid Kit
108	RM2	Radio Shack Contact XPH	Radio Shack	Radio Shack Assist #101	Class. Pubs. Contact XPH
109	SN	Provide OBA	Retrieving Crew	Crew #1 Floodlamps	TRP-141 Spare parts

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

WATCH, QUARTER & STATION BILL

Billet No.	Auth. Rate	Fire Bill	Air Drop Bill	Antenna Casualty	Emergency Evacuation
201	ENC	Secure Blowers	Relieve Duty EN	Stand by in Engine Room	Secure Machinery
202	ET2	Signal Bldg.	As assigned	Assist C. O.	Assist #108
203	ET3	Provide CO2 Extinguisher	As assigned	In charge Pole Crew #2	Assist C.O.
204	EM1	Badger Extinguisher	Provide Target	SP. Phone - Signal Bldg.	Disaster Hut Generator
205	BM1	Hose Detail	In charge retrieving	Assist with rigging	Light stoves in Disaster Hut
206	CS1	Secure Galley	Galley	Galley	Galley Equipment
207	FN	Provide OBA	Tractor Crew - Provide CO2	Assist #106	Assist #201
208	SN	Hose Detail	Retrieving Crew	Crew #2 Floodlamps	Assist #101
209	SN	Hose Detail	Provide CO2	Assist #206	Assist #206

CHAPTER 7 -

WORDS OF WISDOM FOR RELIEFS

1. General.

Looking back over the book, perhaps we have deviated from straight factual text in more places than we should have, and perhaps 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. Also, 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: 20% on his native ability, 29% on training, technique and knowing what's ahead of him, and 51% 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 here. On the other hand, if he takes a constructive position the rewards will outnumber the price he pays in coming here. After all, many of our contemporaries have taken up permanent residence under little white crosses near the 38th parralel, and they didn't even get 30 days compensatory leave.

We are going to list below the DO's and DON'T's for coming up here, along with such other advice as we feel will be helpful.

2. WHAT to do and WHAT to bring.

Clothing: For Officers and COP's, wear dress khakies on the trip. Dress Blues are too hot and white shirts can't be laundered here. These men should also bring at least six sets of washable khakies and eight sets of skivvies. 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.

Commissary personnel should bring at least eight (8) sets of whites.

The remainder of the crew will wear Blues on the trip up. A Peacoat is not necessary. Undress Blues are not necessary. Men should bring eight (8) sets of dungarees and eight (8) sets of skivvies. Several pair of cotton socks should also be brought. Make sure all the uniforms are in good condition. Aside from this, plus two (2) 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 (2) pairs of white wool socks. If he is a skater, he should bring his own ice skates.

Bring three (3) bath towels for personal use.

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

Bring at least a half year's supply of stamps. Stationery is available here from the Exchange. For personnel residing in Boston, New York and Philadelphia, 4¢ stamps will do the job just as quickly as Air Mail. For personnel whose homes are beyond that orbit, 7¢ Airmails are a day to three days quicker.

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

Buy your Christmas presents before leaving. Time may be short in Thule when you arrive. If you are thinking of getting perfume through the Base Exchange at Thule for your wife or girl, there is a 5 to 1 chance that you will be able to do this between your arrival and Christmas.

If a man plans to do extensive interior photography in color he should bring blue flash bulbs with him. The station Exchange carries enough blue bulbs for the camera bugs to get about 18 apiece. For some men this is not enough. Also for color photographers, if their camera is other than 35 mm., they should bring color film. For indoor work with 35 mm., type A film (not stocked by the station Exchange) should be brought. However, daylight film with the blue flash bulbs gives very satisfactory results inside. If a man brings a camera other than a 35 mm. or a 620, he should bring a year's supply of film with him.

If a man desires vocal communication with his family, either by Ham Radio or by Tape Recorder he should do the following: Contact a Ham in his home town as outlined in Chapter 3. 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 stations recorder have found this a most satisfactory means of communicating 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:

U. S. Coast Guard
Loran Transmitting Station
APO 23
c/o Postmaster, New York, N. Y.

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

DON'T bring skiis or ski-boots. These are available here.

DON'T bring irons, soap powder, or any other laundry item. Irons and ironing boards are available here, and the station operates its own laundry.

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

DON'T bring either sheath knives or alcoholic beverages. Possession of these is prohibited by Station Order.

If you own property, securities or an automobile, 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 the ZI.

3. 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 make sure 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.

4. En Route.

Get your orders endorsed at each stopover point. Make SURE that this is done. If it isn't, getting reimbursement for travel and per diem will be difficult.

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

5. At Thule Air Base, Greenland.

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.

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. Senior man in each group should contact the 1983rd AACS Squadron, if a layover of greater than half a day is anticipated. He should request that they notify us that men are in Thule awaiting transport. He should give the number of men and their rates. Names will not be necessary.

3. The senior man should check BOTH APO 23 and the Freight Traffic Terminal (next door to the Passenger Terminal) for mail for us. If they don't know what he's talking about when he asks for mail for the Loran Station, Cape Atholl, the term "DOPE I" will usually bring them to their senses. Make SURE that no mail is left in Thule. Reliefs will be welcome, but doubly so if they are mailmen also.

4. If you have a layover in Thule, the senior man should check with the site resupply twice daily for transportation to the station.

5. In case of individuals travelling alone, the above check-off list should also be used.

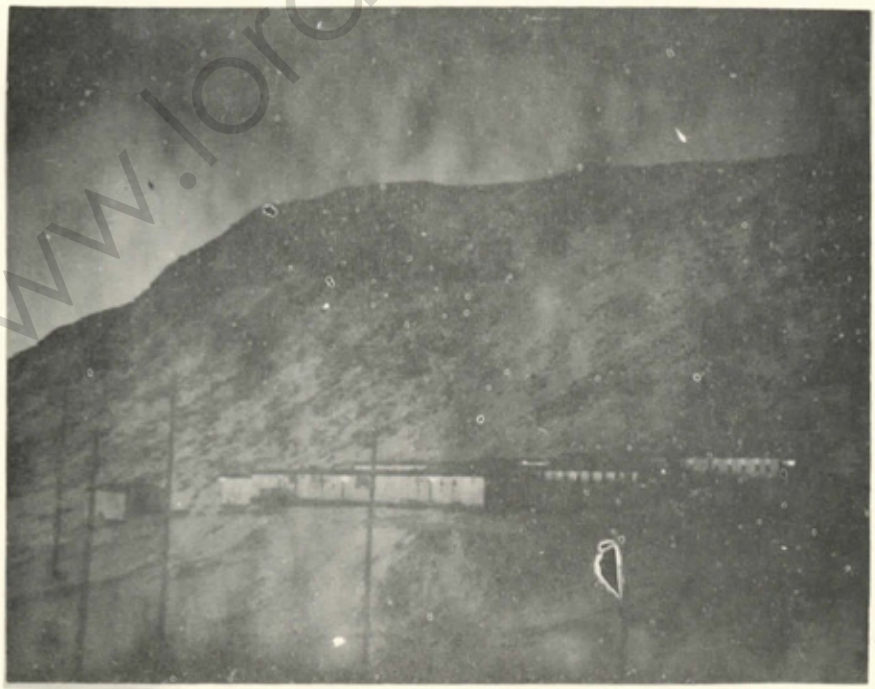
Supplement No. 1

STATION PHOTOGRAPHS

Photos by
J. P. DONOVAN, ET3
D. R. HENRIQUES, EM1
A. L. GEBHART, SN

Station at Noon on 20 January, 1957.

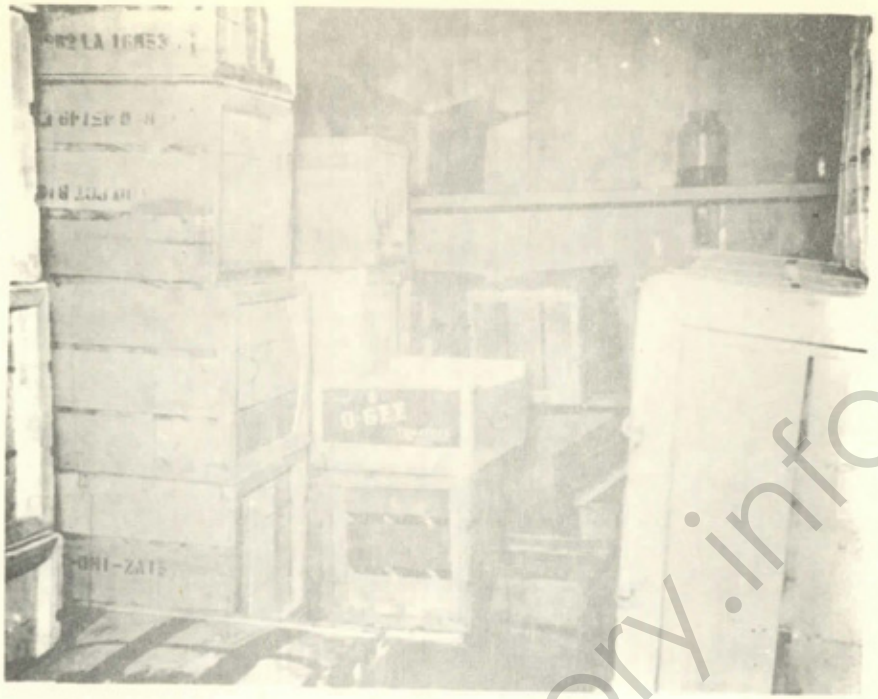
View of station at 1600 hours on 21 July.



View of station at 1200 hours on 5 November.

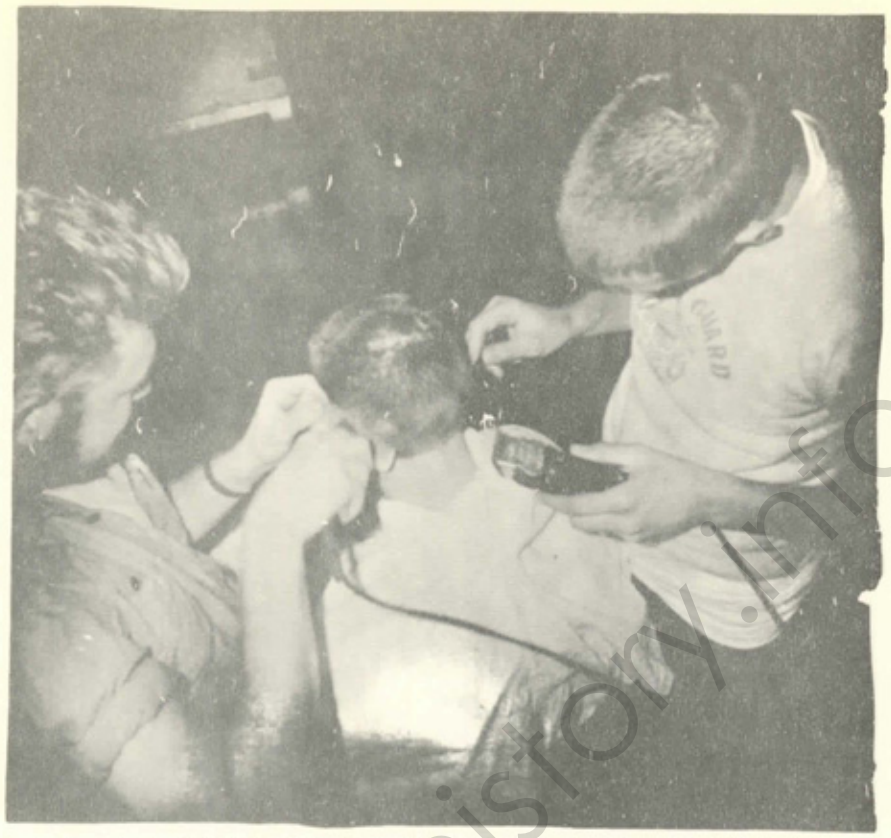
Never mind the official business, get the mail.

Can't avoid them even in the arctic, so get in line.



Above a full larder of fresh vegetables. The rareness of this sight occasioned photographing it and recording it for posterity.

Resupply, Westwind style. Right, he put them down in the truck.

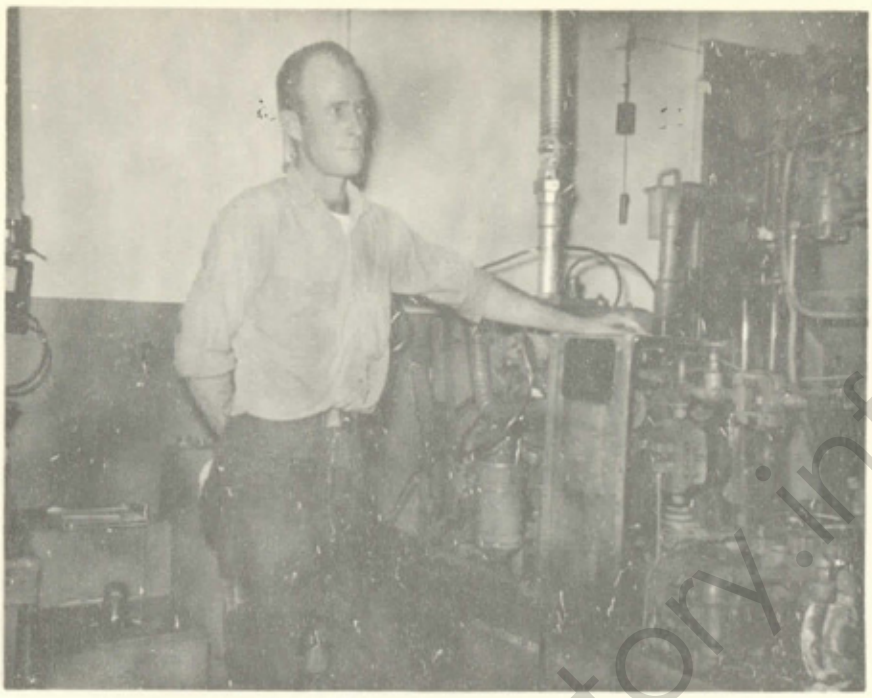


Oh well, no one will see me for another six months anyway.

Chaplain DeVault leading services on the recreational deck.

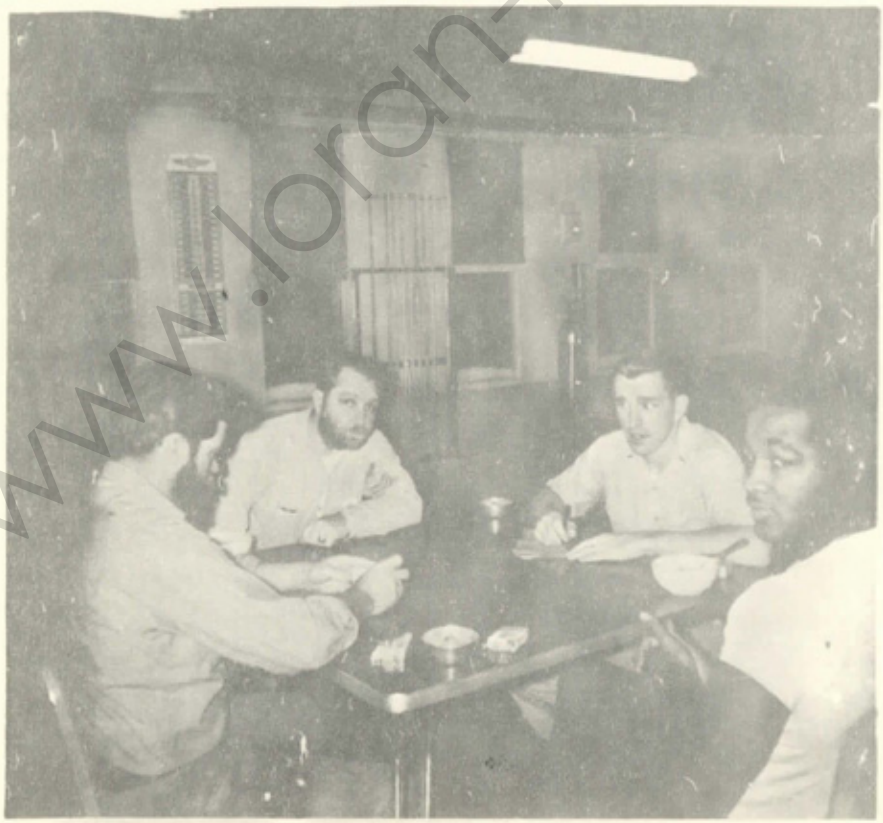
The resupply of August 1961. If you look closely, you can see what happens when you try to beach an LST at low tide. Not a very good landing.

A corner of the C. O.'s Living Room.



"Operation Moonshine", interior aspects only. "Evap Watch" above, and testing water, below.

Spring Training



"Who reneged?"

5:09 to Thule Express.

The "Quaratit Trans-Lux Cinema". Movie time is usually an all-hands evolution.

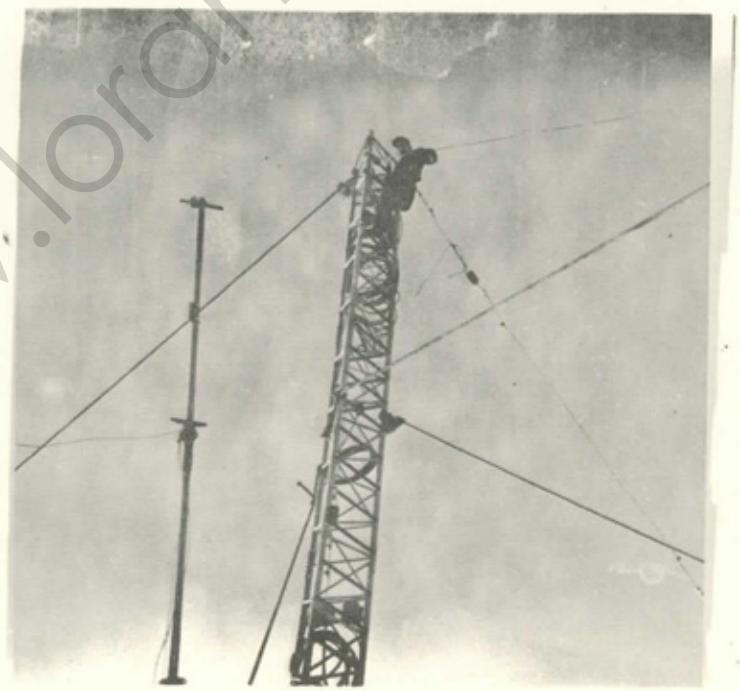
Dark Season recreation is largely indoors.
Above - two crew members in an active pastime.
Below - two men in a more passive one.

The Dark Season does not depress all spirits. These pictures are the outcome of an argument over who was more rugged than whom.

Polar Bear Club

Next weeks water in the rough.

Above - Offshore, December 1, 1956.
It's a safe statement to say that icebergs are probably the most remarkable scenery a man will ever see. The Greenland Coast during the long Polar Night is a thing of remarkable beauty, believe it or not.

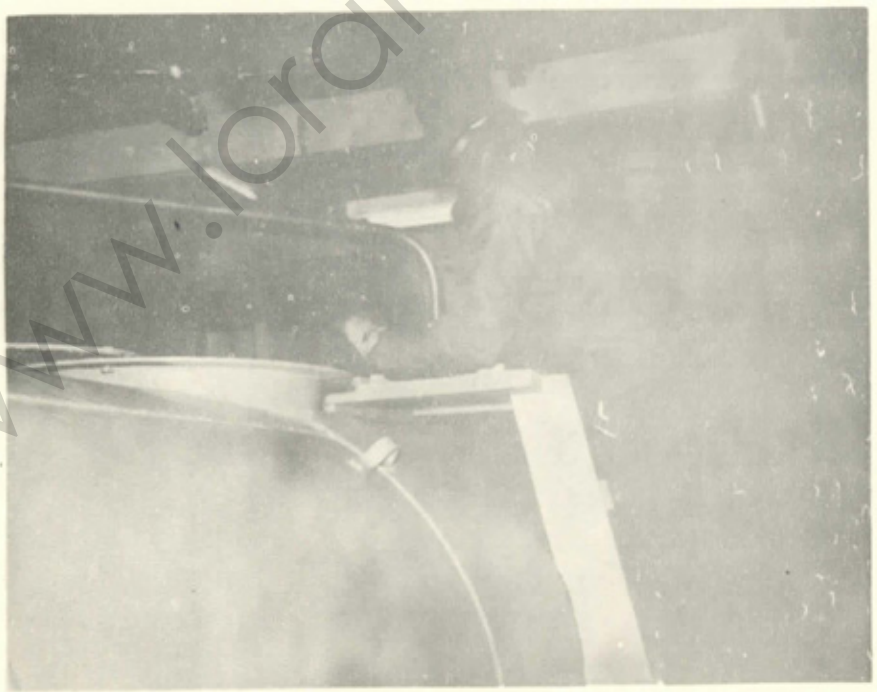


Everyone gets a chance at many jobs, even being a steeplejack.

"Water Run"

Above - checking tank during filling.

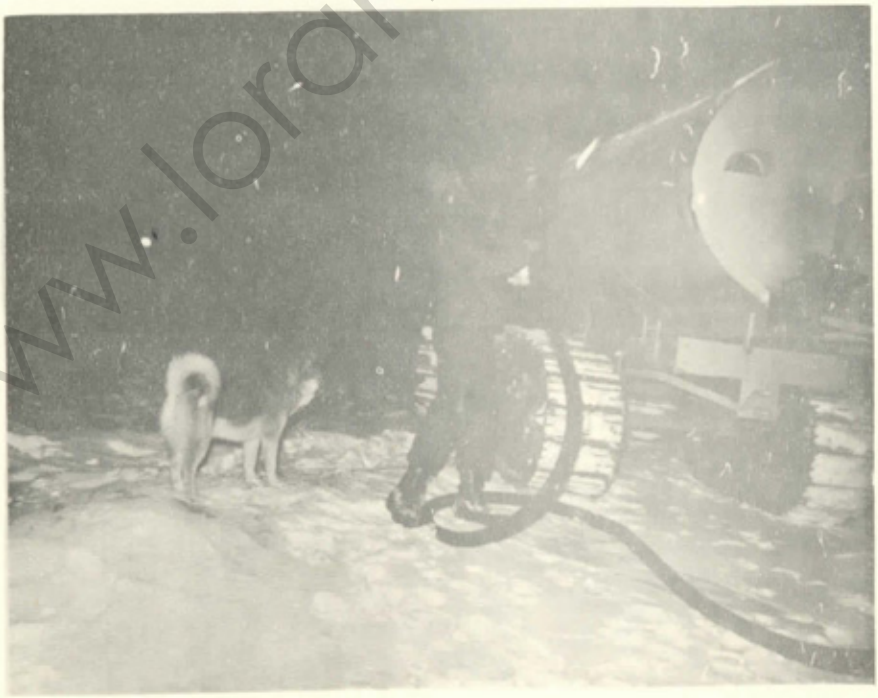
Below - Donald Henriques, EM1, giving the "secure" sign to the pump operator after sea-water tanks are topped off.



"Water Run"

Above - digging hole in ice for suction.

Below - removing hose from recirculating position before taking suction.

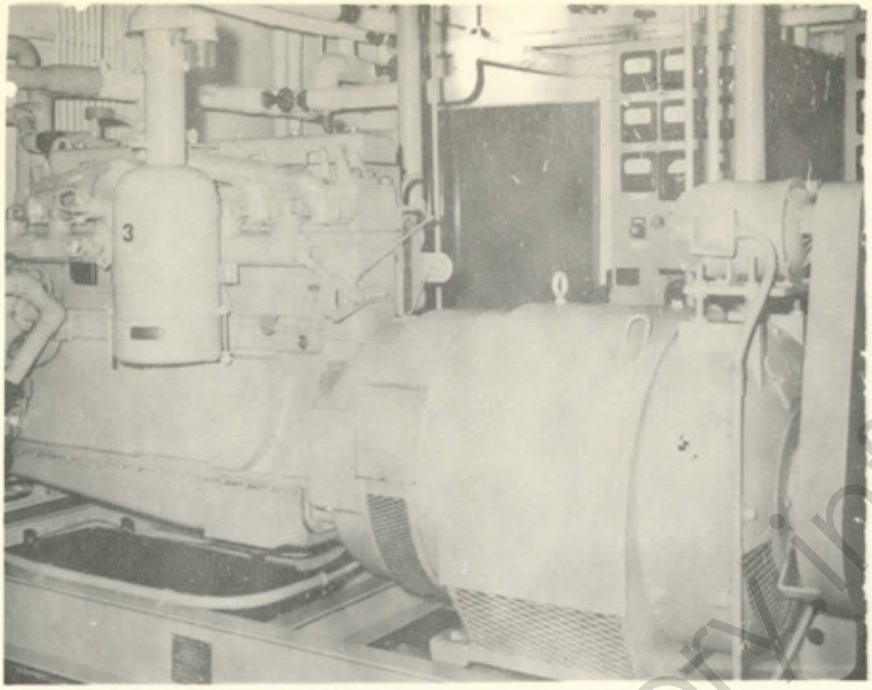


"Water Run"

Getting underway outside of Engine Room #2

"Water Run"

Mounting the pump.



Station Generating Units

Sunrise, on February 10, 1957.

Crew member and his young eskimo pal.

Eskimos who delivered station mail on 9 FEB after 43 days of doing without. Left to right: Einnuq, Mikejho Palouk, Rasmussen Pedersen, and Ilei. Mikejho Palouk menas "Little Soup". He is the son of Massangoua Palouk (Medium-sized soup), who delivered mail for us twice in March of 1956.

HENRIQUES, D. R., EM1, and Ilei. HENRIQUES is the victim of falling hair, and the picture was taken so that he would have an excuse to his children for his baldness.

Ilei telling sea-stories in the Maintenance Shop.

Dog-team being hitched up. The box on the forward part of the sled is an integral part of the sled. Note the "USCG".

Dog-team - "Morris," one of the more personable team members. An excellent puller, his main drawback is a frequent confusion as to whether he is a sled-dog or a lap-dog.

Dog-team underway enroute to Petowik Glacier.

HENRIQUES cutting snowblocks and loading them onto the dogsled.

HENRIQUES and MOON, H.H. ET2. They are "supposed" to be eating Seal meat, I believe.

HENRIQUES and MOON again, just after they completed the construction of the igloo.

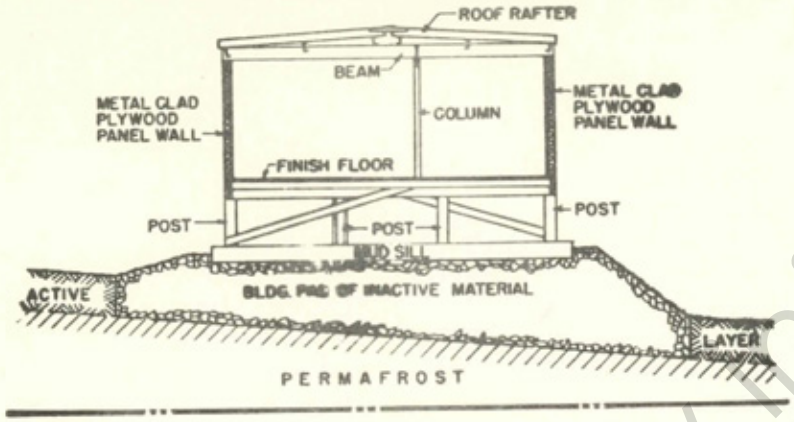
Topping off fuel tanks for coming winter.

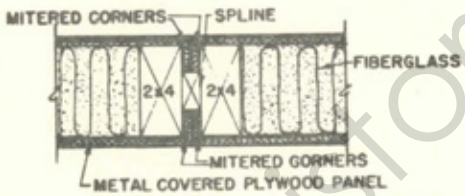
Sunday afternoon - "Wonder what exciting and unusual thing will happen today?"

Supplement No. 2

ENGINEERING DIAGRAMS

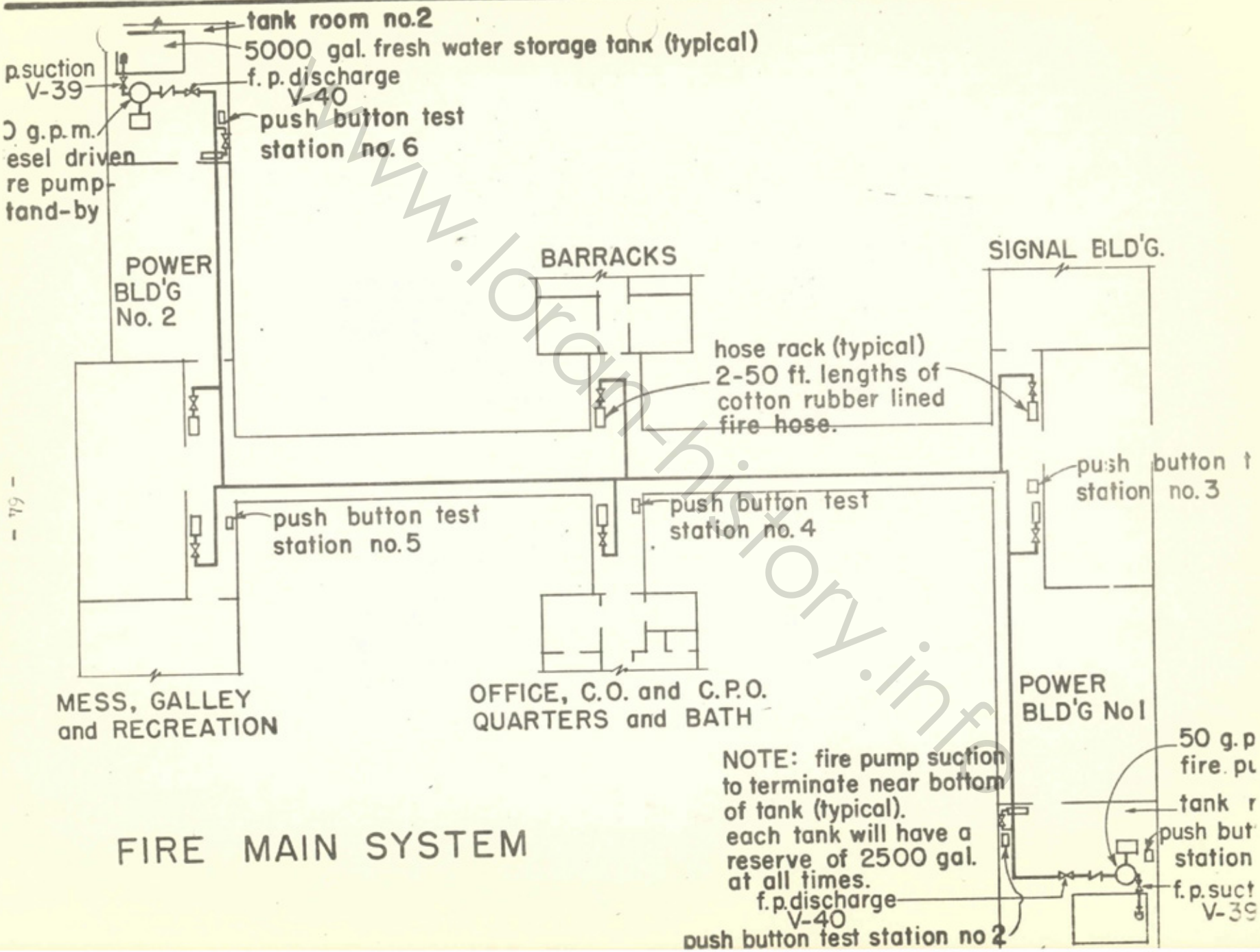
TYPICAL SECTION THRU BUILDING WING



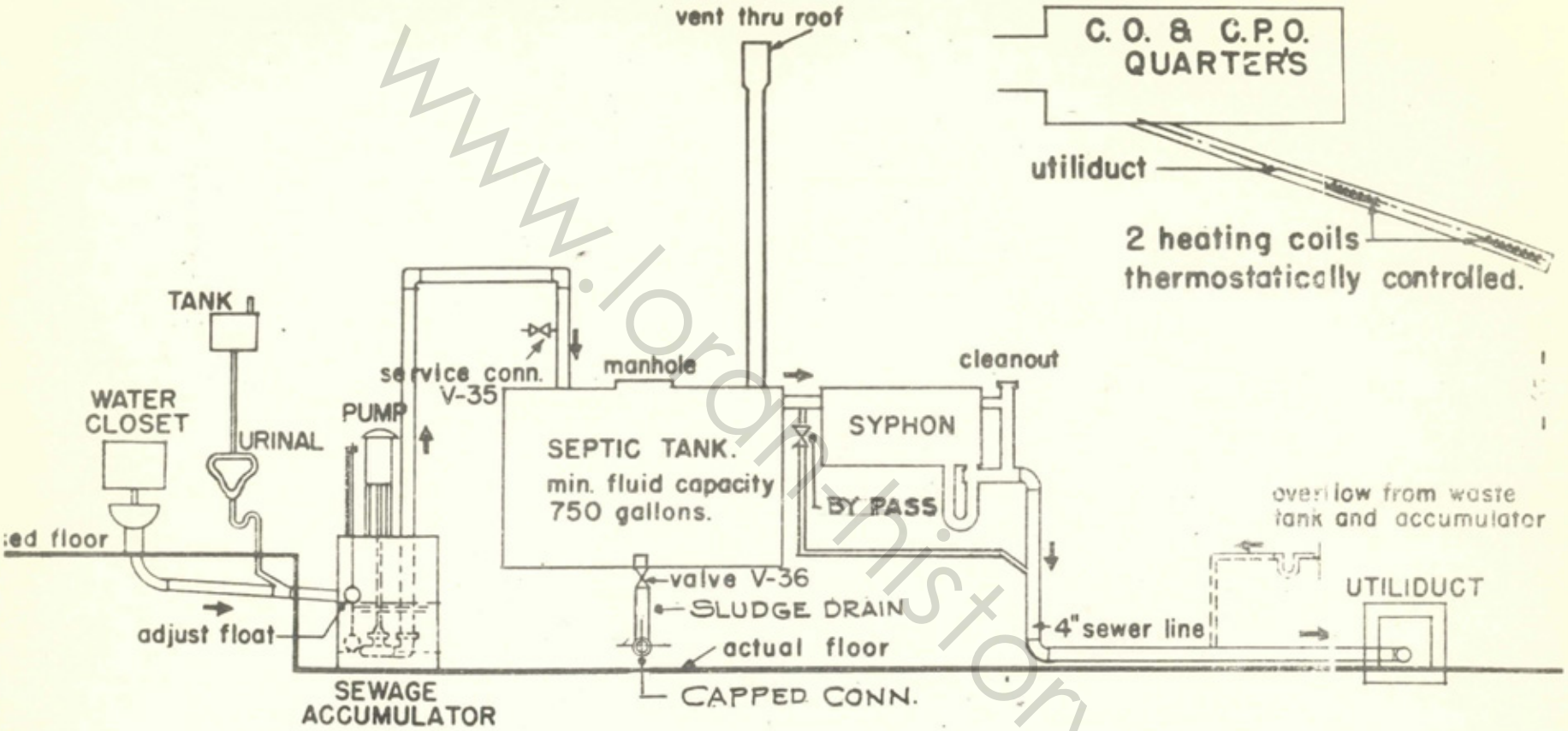


SECTION THRU EXTERIOR WALL PANEL

[TWO (2) FOOT MODULAR]

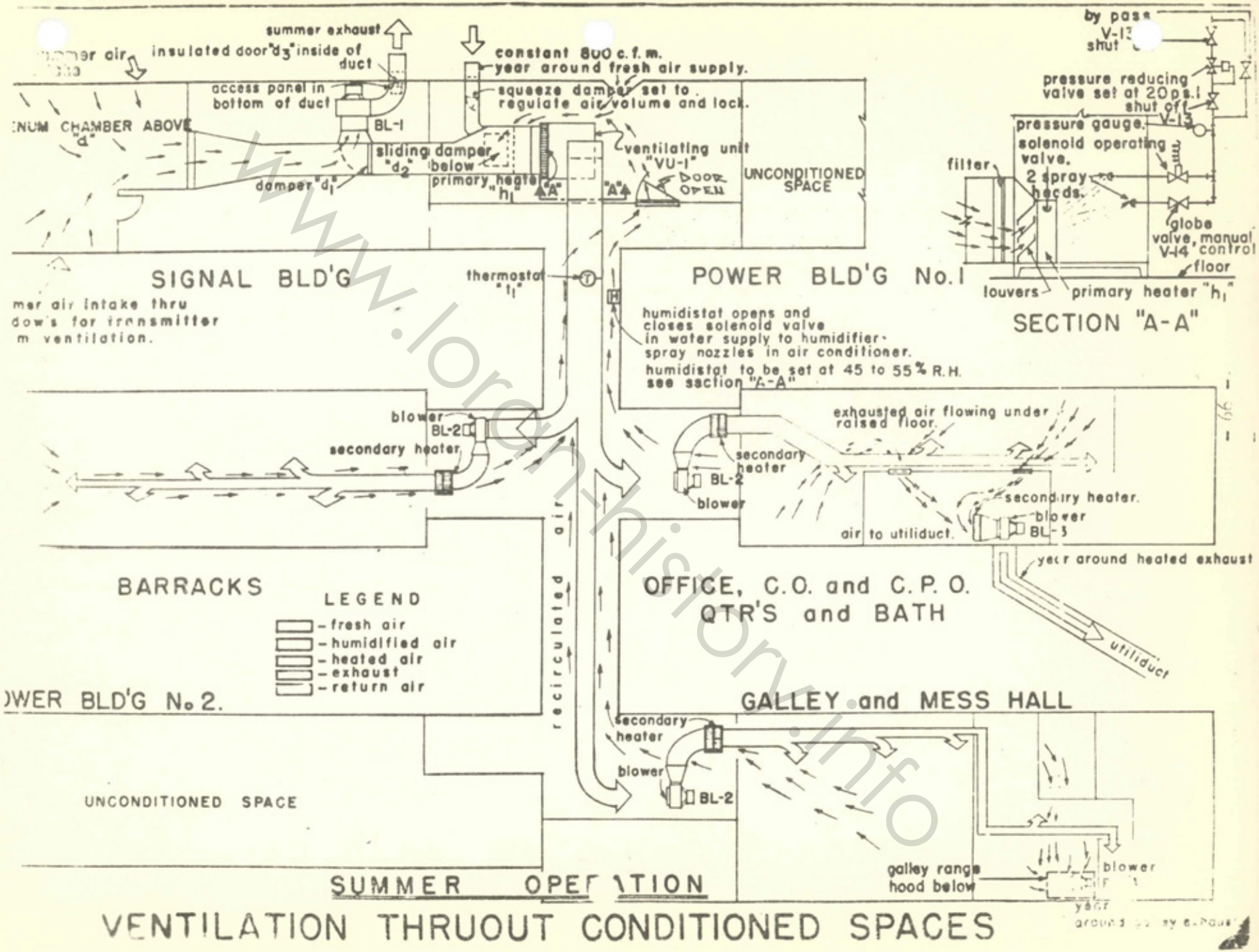


FIRE MAIN SYSTEM

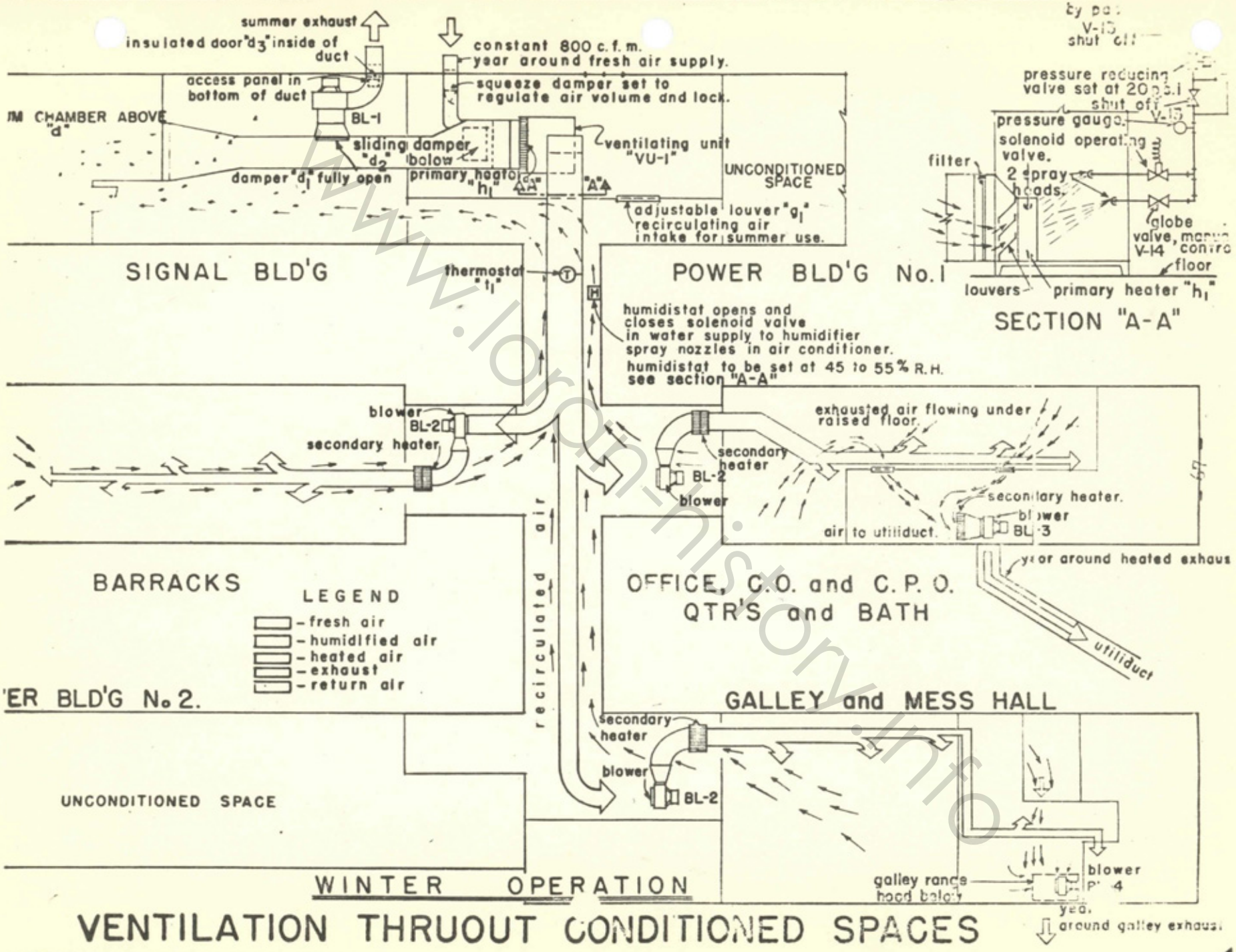


TANK ROOM

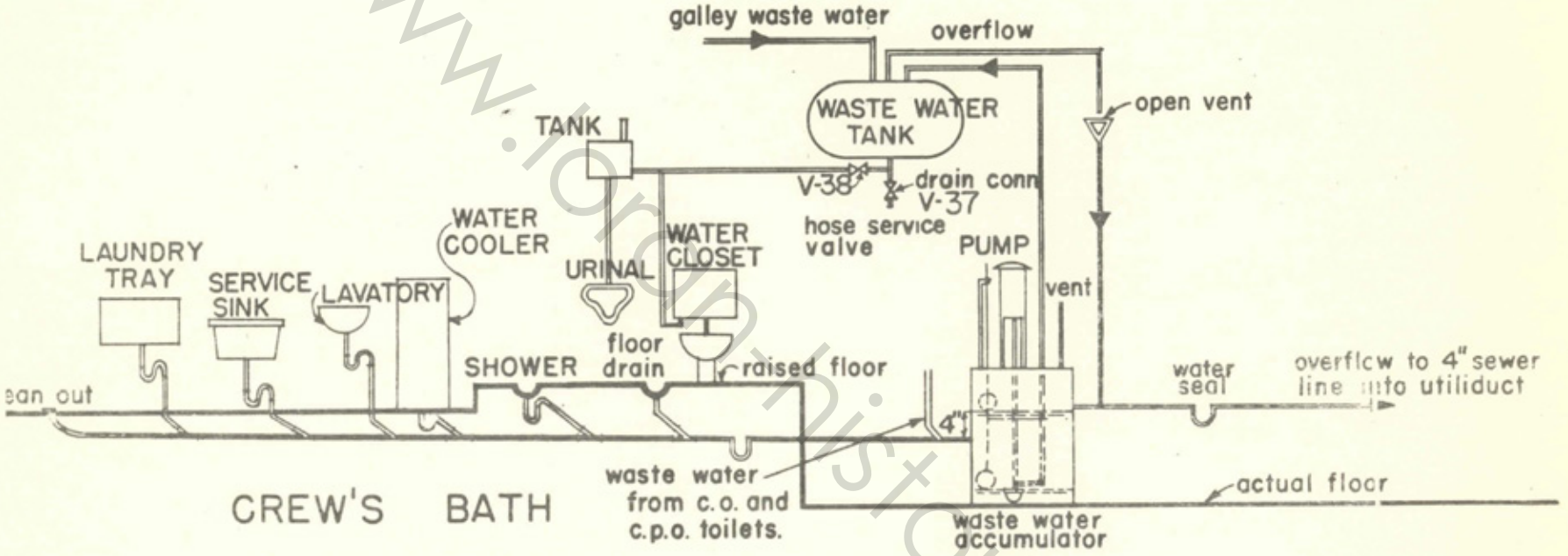
SEWAGE SYSTEM



VENTILATION THRUOUT CONDITIONED SPACES

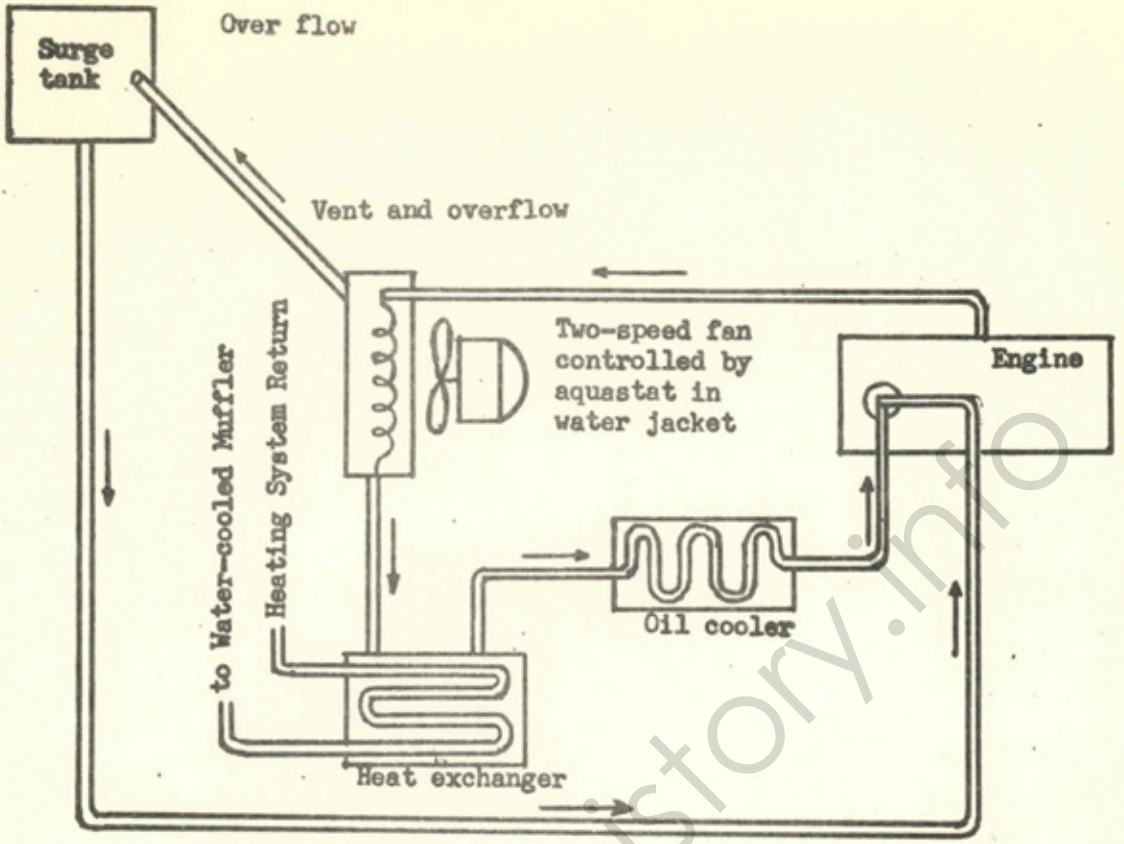


VENTILATION THRUOUT CONDITIONED SPACES

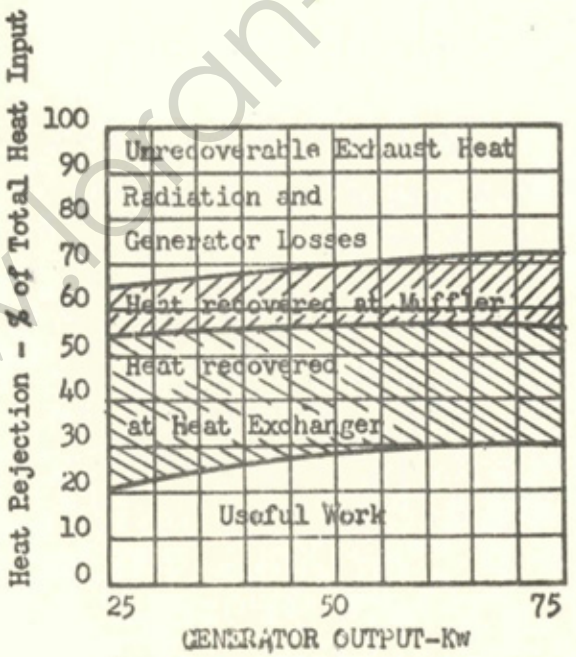


WASTE WATER SYSTEM

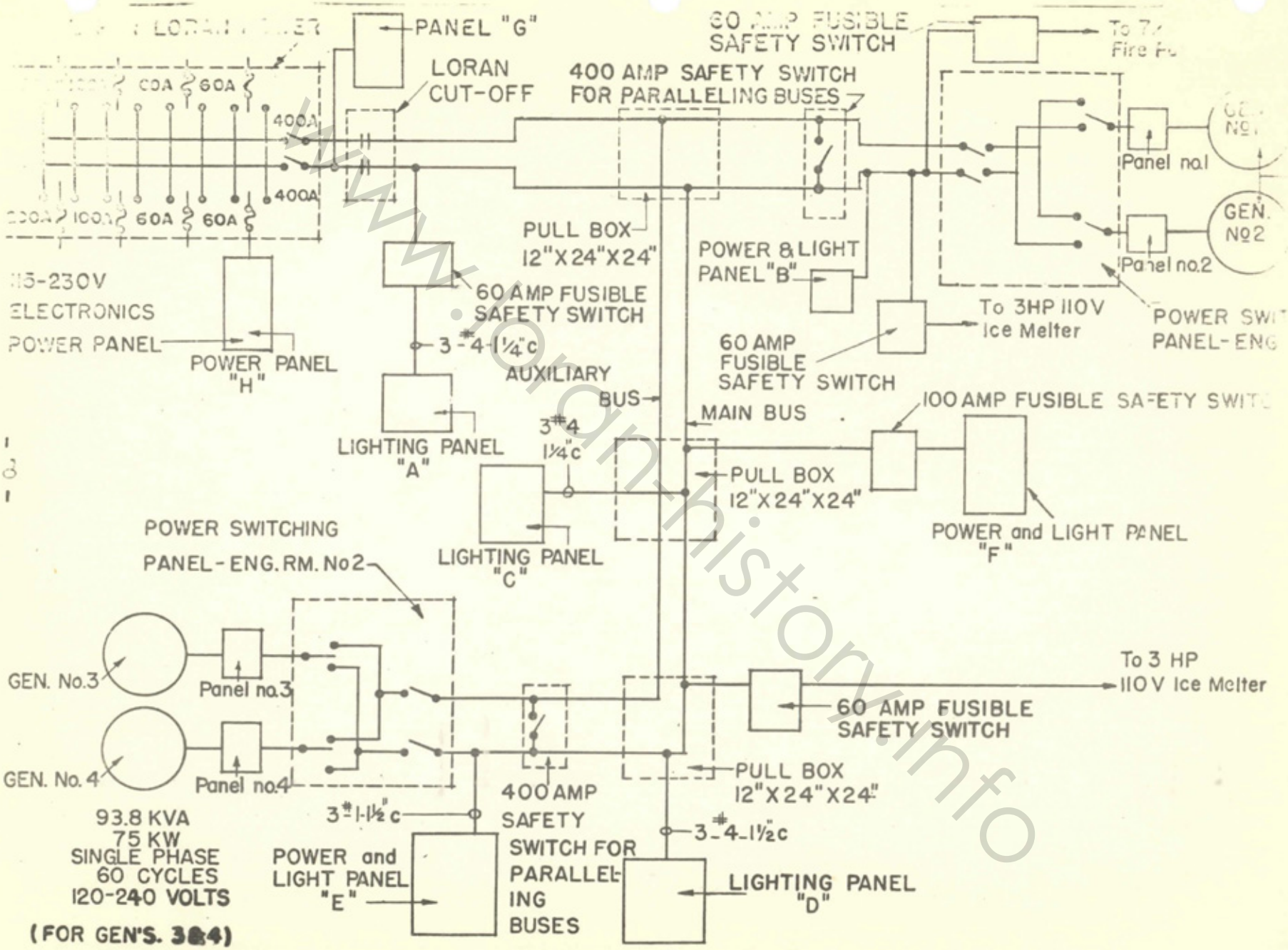
(Toilet area)



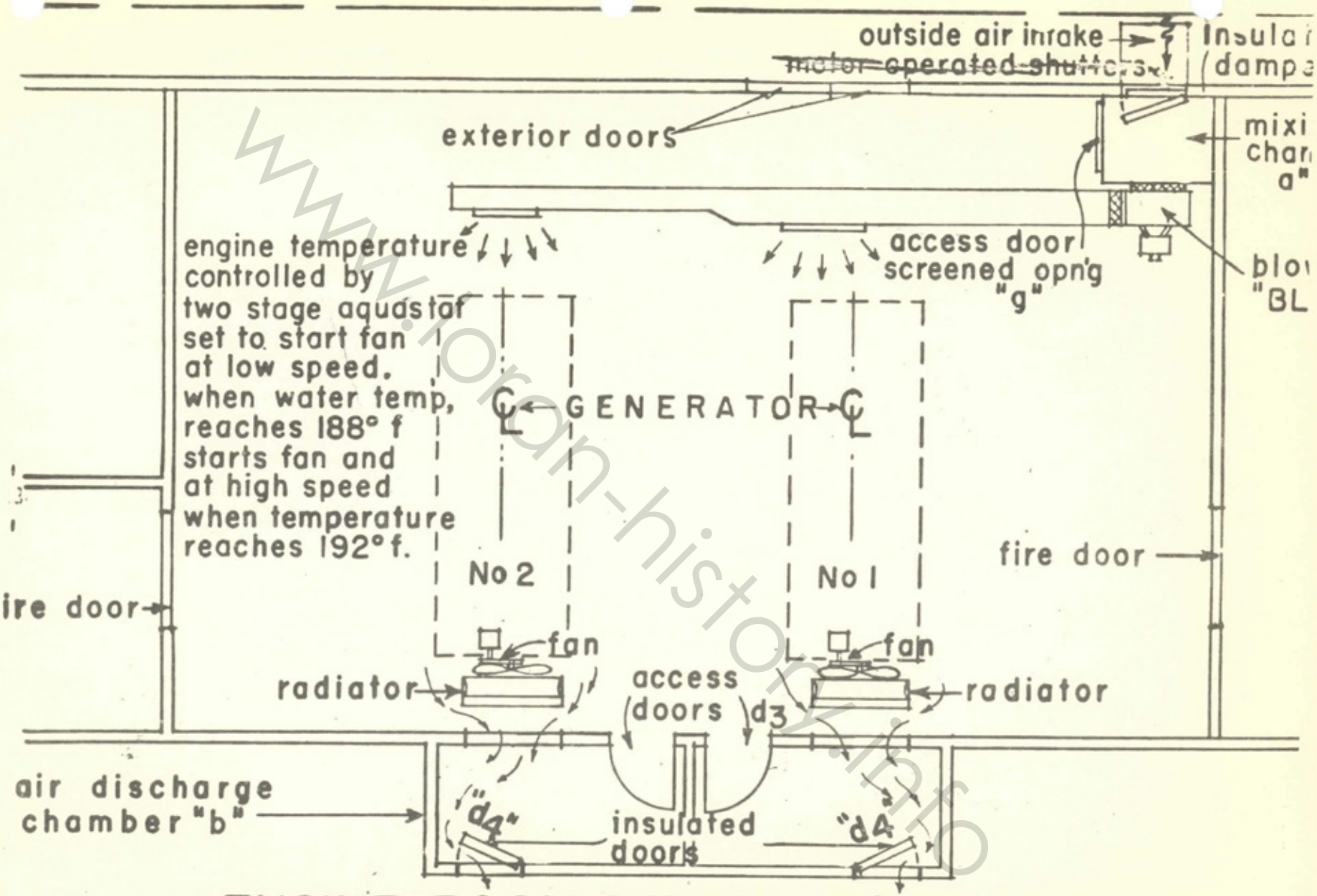
Engine-cooling System (Diagram taken from Engineer's Digest)



Engine Heat Recovery Diagram

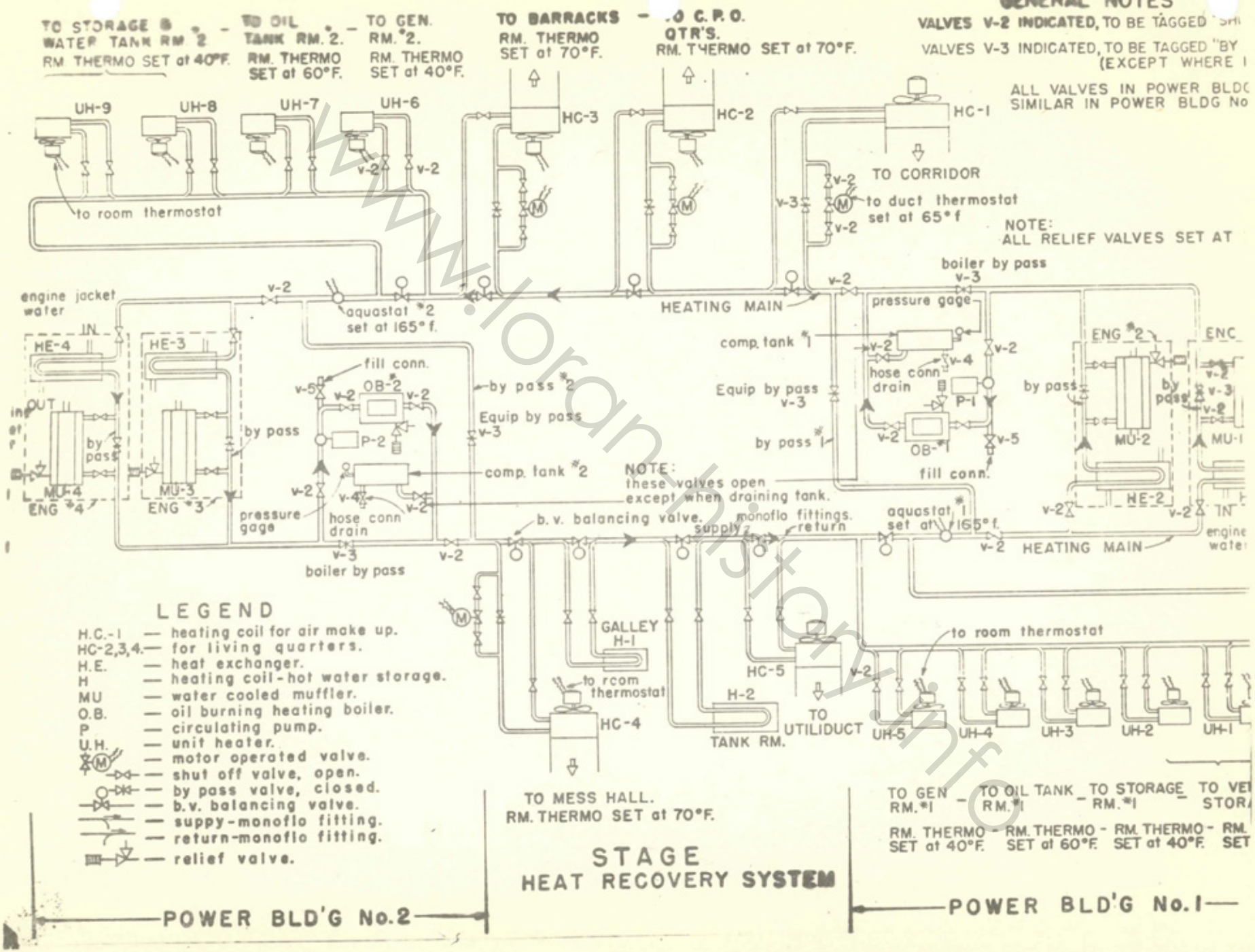


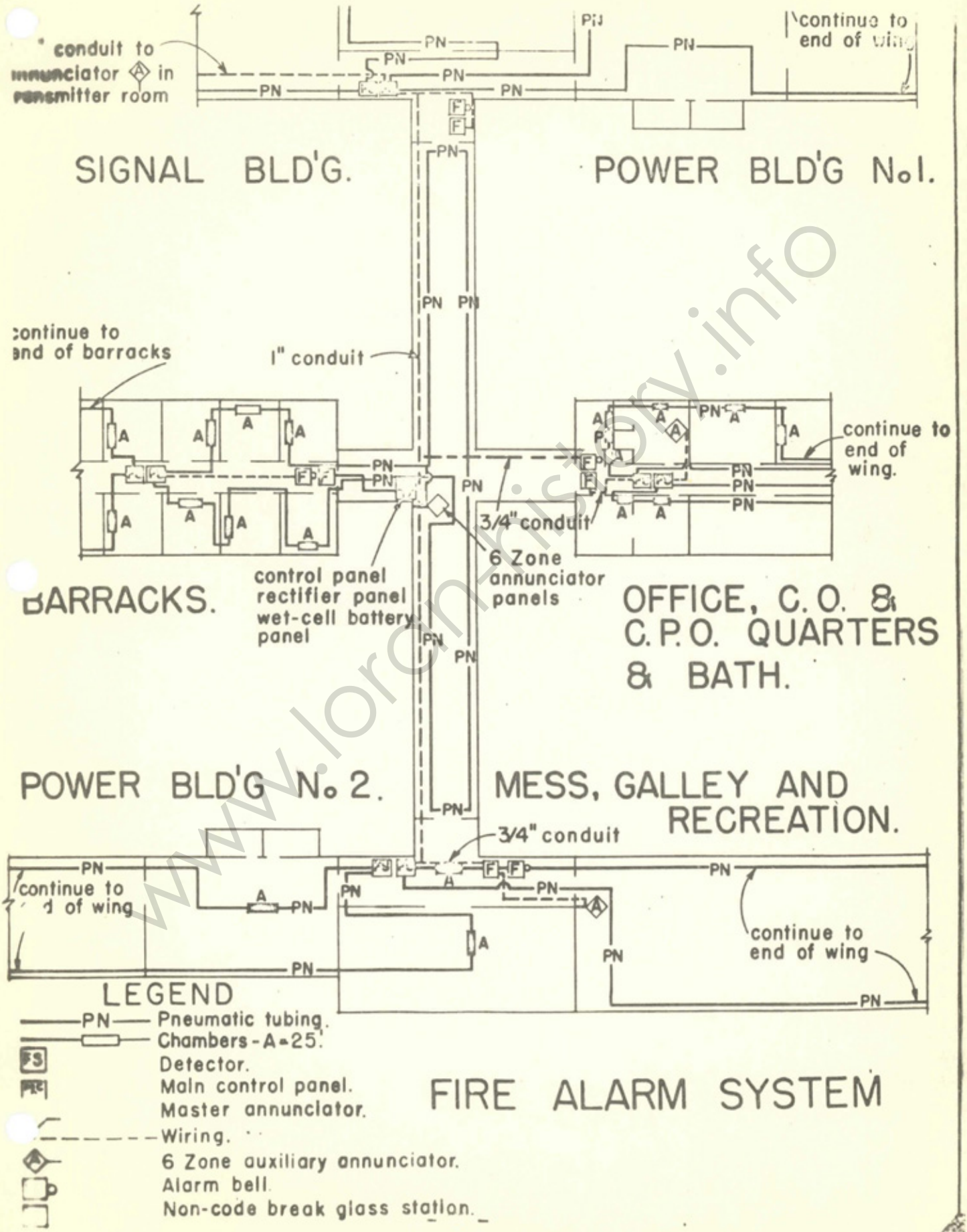
POWER, ONE-LINE WIRING DIAGRAM

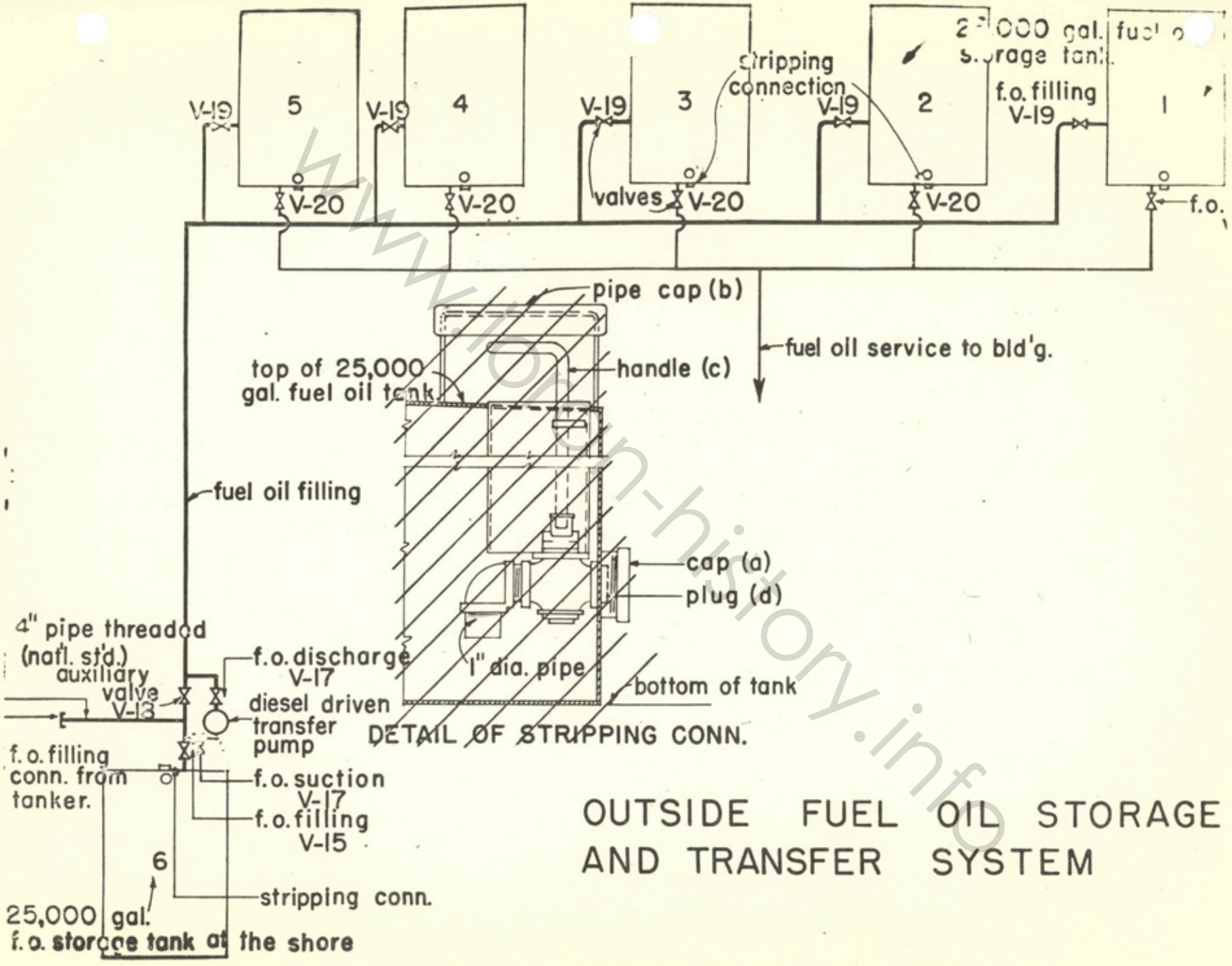


ENGINE ROOM VENTILATION SYSTEM

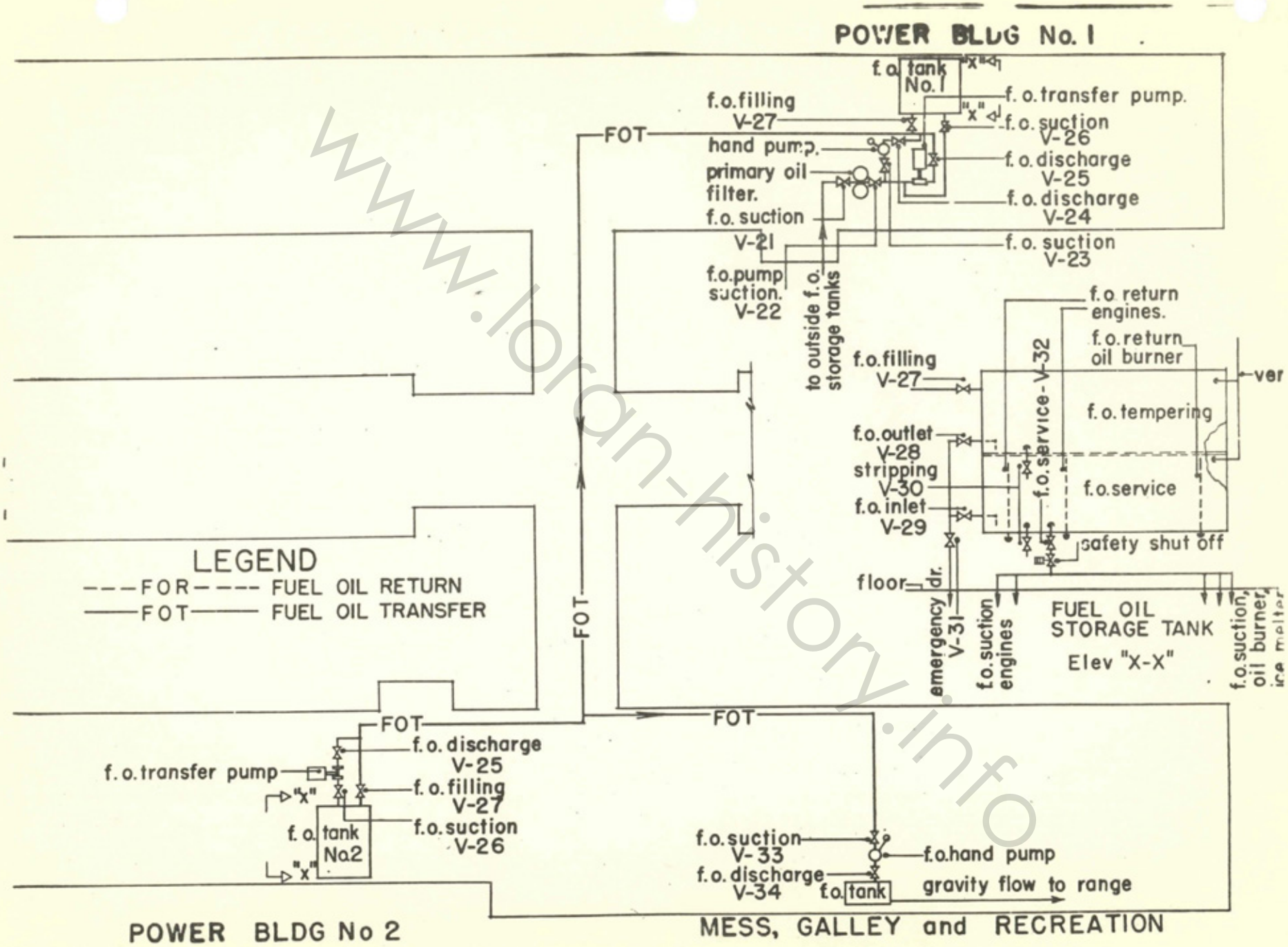
WINTER OPERATION



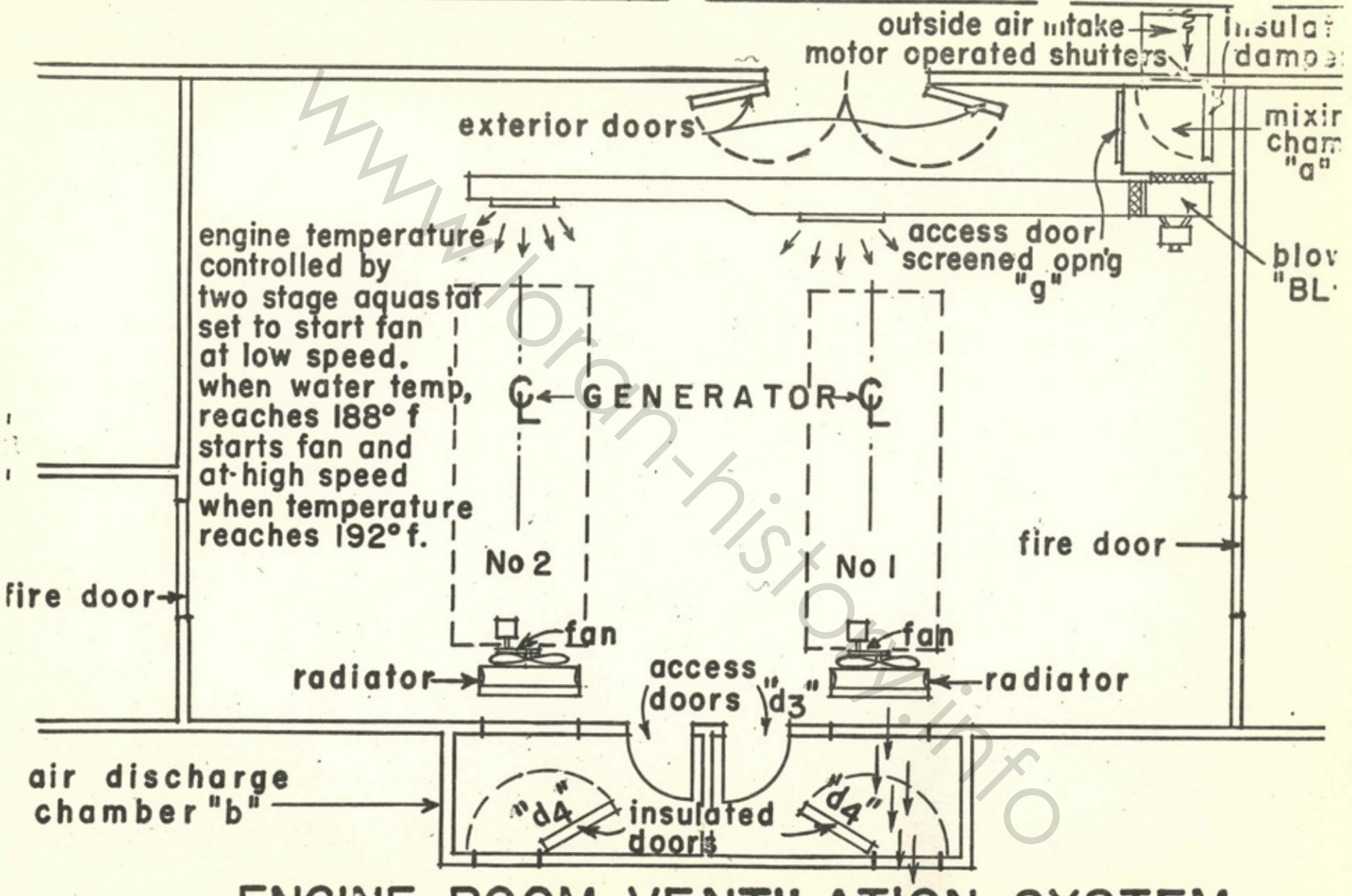

conduit to annunciator in transmitter room
continue to end of wing
SIGNAL BLD'G.
POWER BLD'G No.1.
continue to end of barracks
1" conduit
continue to end of wing.
3/4" conduit
6 Zone annunciator panels
control panel
rectifier panel
wet-cell battery panel
BARRACKS.
OFFICE, C.O. & C.P.O. QUARTERS & BATH.
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'
Detector.
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

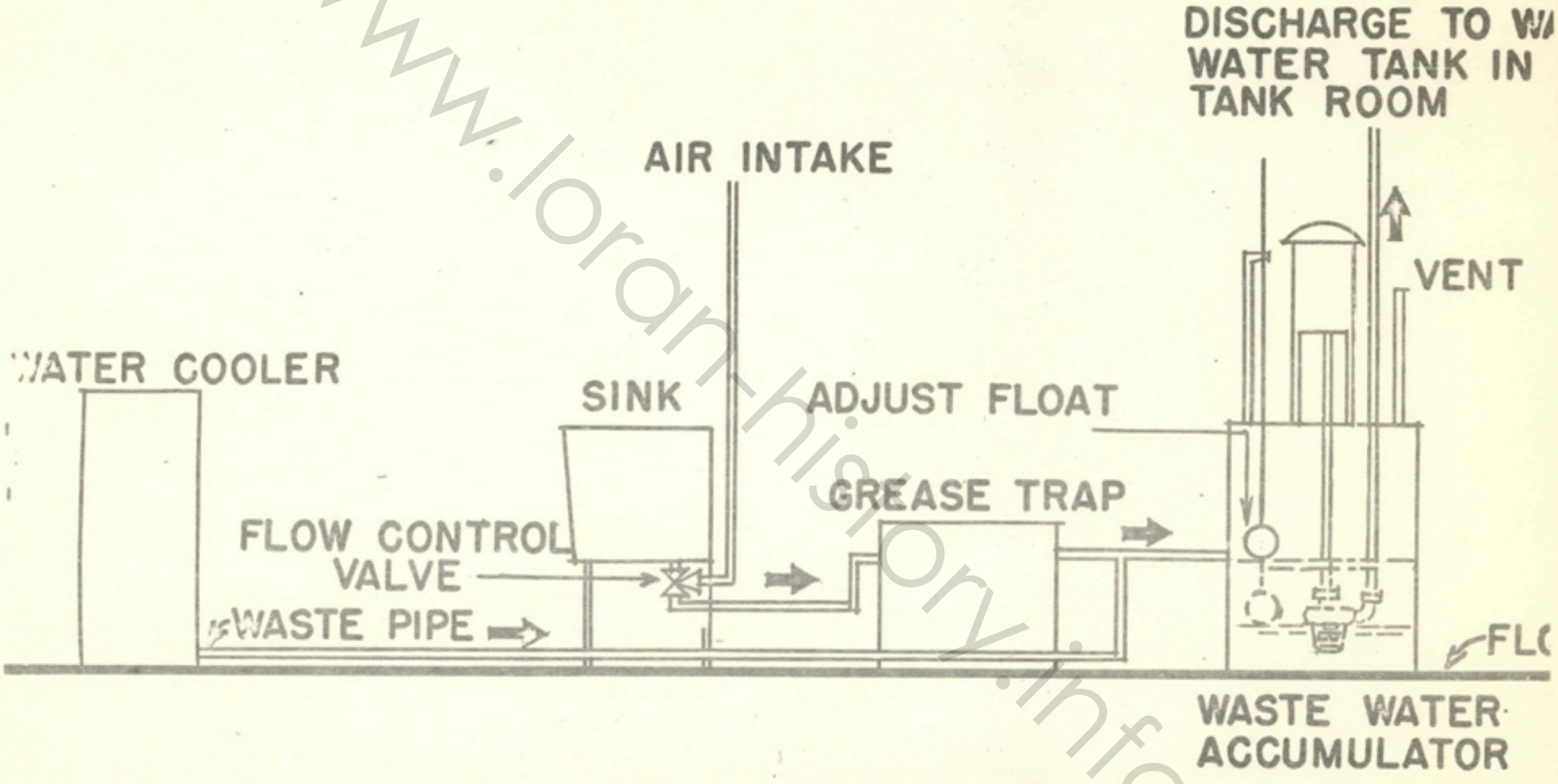


INTERIOR FUEL OIL SERVICE SYSTEM

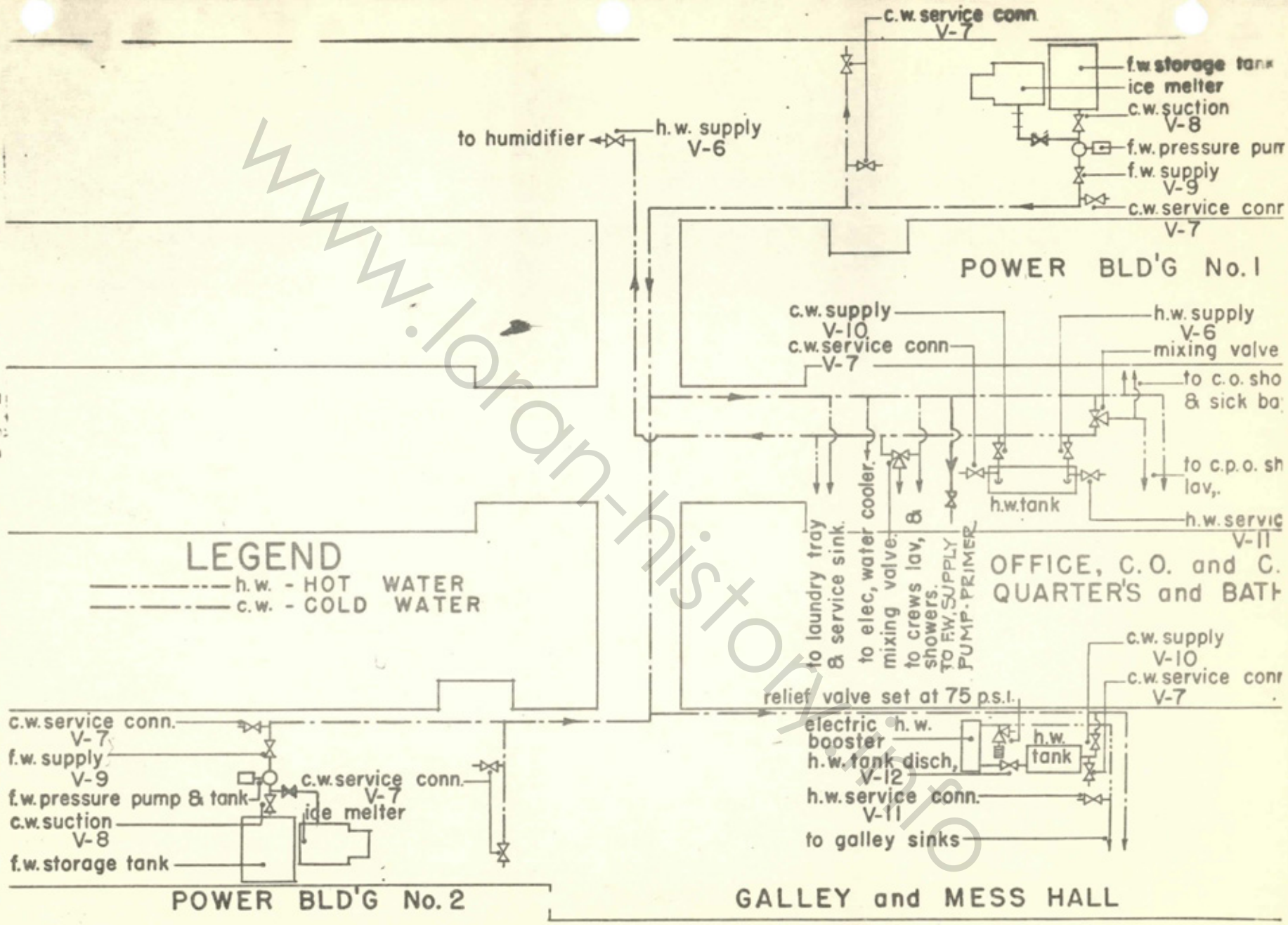


ENGINE ROOM VENTILATION SYSTEM

SUMMER OPERATION



WASTE WATER SYSTEM
(Galley area)



DOMESTIC WATER DISTRIBUTION SYSTEM