

U.S.S. CALHAN (SS323)
Care of Fleet Post Office
San Francisco, California

R-E-E-T-I-R-I-C-T-E-D

(B) MATERIEL

(1) HULL AND MACHINERY

(a) Engine Liners

During operations in Puget Sound Area inside cracks developed in four (4) engine liners. All cracks were verticle, approximately two (2) inches in length, and originated at or near a liner holding down stud at liner to head connection.

The cracks were as follows:

<u>Engine</u>	<u>Unit Number</u>	<u>Hours</u>	<u>Date Installed</u>
No. III	No. 14	5569	1-25-46
No. II	No. 3	6664	12-20-44
No. I	No. 2	2222	5-6-49
No. I	No. 15	10160	12-20-44

The liners were replaced with "on board" spares by ship's force in average time of 4 1/2 hours.

(b) Engine Cylinder Heads

During operations in Puget Sound Area, inside cracks developed in three (3) engine heads. In all three cases the cracks developed across the water jacket between two (2) exhaust valve seat apertures.

The cracks were as follows:

<u>Engine</u>	<u>Unit Number</u>	<u>Hours</u>	<u>Date Installed</u>
No. IV	No. 6	9304	7-17-44
No. III	No. 9	9206	7-17-44
No. II	No. 15	4301	1-19-47

The cylinder heads were replaced with "on board" spares by ship's force in average time of 3 hours.

The cause of the excessive number of liner and cylinder head casualties has not been completely determined. A possibility is suggested that the average low injection temperature (between 40° - 44° (F)) and the average number of dives made per operating day (between 6-12) could have been a contributing factor to the excessive failure of the fresh water cooling parts. Every effort was made to combat this possibility by longer warming up periods and, by setting up the fresh water syphon temperature regulators.

R-E-E-T-I-R-I-C-T-E-D

Enclosure (1)

U.S.S. CATHAN (SS323)
Care of Fleet Post Office
San Francisco, California

R-E-S-T-R-I-C-T-E-D

(B) MATERIEL

(1) HULL AND MACHINERY

(c) Grounds Due to Salt Water

Just prior to getting underway for the Puget Sound Area, standard submarine running lights were installed near the bow and stern anchor lights in a horizontal position in accordance with a request from ComFainling Four. These lights were "tapped" into bow and stern light housings. Time did not allow hydrostatic test on pressure proof cable fittings. The bow light flooded out on the first dive and numerous attempts to clear the ground resulted only in lowering the reading to 100 volts. It is considered advisable to renew the bow anchor light and replace the pressure proof cable.

(d) No. II Lubricating Oil Transfer Pump Electrical Starting Panel

On 10 July the relay coil to #2 lube oil transfer pump starting panel burned out rendering this unit in-operative. Coil was removed in two hours by the ship's force. The cause of failure was determined to be "chaffed" insulation on several turns of coil.

(e) No. I High Pressure Air Compressor

On July 15 during an air charge, excessive pressure was indicated on first stage of No. I H.P. Air Compressor. The cause of the excessive pressure was found to be a cracked plate on first stage discharge valve and the second stage suction valve. Both plates were replaced with "on board" spares by ship's force in two hours. The failure was attributed to metal fatigue from one hundred (100) hours use.

(f) No. I Main Hydraulic Plant

On 18 July the automatic bypass valve mechanism was found to be working improperly and with excessive noise. The cause of the faulty operations was found to be a worn leather guide washer. The washer was removed with "on board" spares by ship's force in one (1) hour. The failure occurred after 1000 hours of use.

(g) Negative Tank Flood Operation Linkage

On 22 July an unsuccessful attempt to open negative flood valve while submerged revealed the clevis pin connecting the horizontal linkage to the vertical flood valve linkage had sheared the cotter pin allowing the pin to partially back out engaging the framing of the ship and causing malfunctioning of linkage movement. Repairs were made by ship's force in ten (10) minutes.

R-E-S-T-R-I-C-T-E-D

E-E-S-T-R-I-C-T-E-D

(3) MATERIAL

(1) HULL AND MACHINERY

(h) Air-conditioning System, use of

Due to the high relative humidity of the air in the area at this time of the year, much condensation accumulated throughout the ship during submerged operations. Consequently the air conditioning plants were used constantly to combat hazard of excessive grounds. In constantly operating these units it was found that the condensate drainage system from both sets of coils was not designed to handle this excessive condensation adequately. A complete evaluation of this system with possible suggestions for improvement is recommended.

Even though the use of both air conditioning plants kept the temperature of the air below comfortable living, electrical grounds were kept at a minimum.

(i) Main Engine Outboard Exhaust Valves

On 17 July, just prior to getting underway, No. II Main Engine outboard exhaust valve was tested and found to operate slowly and noisily. This engine was secured, and the inspection plate was removed as soon as operations were completed. An inspection revealed that the cap bolts in the clevis pin pad, bolted to the valve and connecting the operating linkage, had loosened sufficiently for the linkage arm to become misaligned enough to cause a binding in the main linkage. All other exhaust valves were inspected and found secured tightly. These cap bolts depend only on lock washers to keep them from backing out.

It is suggested that a possible improvement to this installation could be accomplished by drilling 1/16" holes through each cap bolt and passing a non-corrosive wire around through each drilled passage which would lock the entire set of cap bolts together. This installation would be similar to that used on the nuts that hold underwater zinc plates in place.

(j) Superstructure and Hull

Two deck lockers were damaged by heavy seas. The after torpedo deck loading skid was lost while submerged. The brow pulled loose from the deck, swung into the conning tower and broke.

It is highly recommended that the brow and loading skid be secured by stud bolts which screw into a threaded pad welded to superstructure framing.

There was no opportunity for deck work other than greasing.

U.S.S. CALEW (SS323)
Care of Fleet Post Office
San Francisco, California

R-E-S-T-R-I-C-T-E-D

(3) MATERIAL

(1) HULL AND MACHINERY

(k) General

The performance of all machinery was excellent. At no time were operations curtailed because of machinery or hull failures. A one hour battery discharge, a six hour battery discharge, and a twenty four hour engineering endurance run were conducted without any casualties. Excellent performances were obtained.

(2) ORDNANCE AND GUNNERY

(a) Torpedoes

The torpedo loading of the CALEW was as follows:
eight (8) Mk 14-3A war shots and two (2) Mk 23 exercise shots.

(b) Special Weapons

None carried.

(c) Pyrotechnics

No remarks.

(3) RADIO

The overall performance of radio communications was good. A complete log of sugar serials and general messages was maintained throughout the cruise. NFI How Fox was copied continuously. All messages missed during daily operations were copied on the 1000 zebra Fox Sked. All general messages missed while operating submerged were obtained from Com13 communication office. NFI at MLS, Whidbey Island generally relayed ship-to-shore traffic for the CALEW due to continuous operations with Commander Fleet Air Wing Four.

Atmospherics were common due to weather conditions or geographical location of operating areas, or both.

On 22 June Model RBS (No.2) Radio Receiver output level became extremely low. Replacement of burned out audio output tube type 1246 (Symbol V511) restored normal operations.

(4) RADAR

(a) SV-1 RADAR

The SV-1 radar performance during this cruise was considered excellent. No hours of operation were lost due to failures of any kind. Total hours of operation to date 14,001 (during this period 1463).

R-E-S-T-R-I-C-T-E-D

(9) INTERVAL

(4) ADAR

(c) SV-1 ADAR (Cont)

- 30 June Changed 5D21 tubes (symbol /VL, 2, 3, and 11) in order to "bake in" new tubes drawn prior to departure Pearl Harbor.
- 14 July Unable to tune TR and AR tubes (symbol /VL3 and 14, both 1B27). Normal hours of operation for these tubes had been exceeded. Replaced tubes.
- 20 July Due to wear, the wheels of the range counter, mile indicator section, locked together. Removed this section. No spare carried. The yard indicator section was still operative.
- 22 August A hole was discovered in the polystyrene window on the wave guide adapter at the bottom of the SV-1 mast. Hole was caused due to condensation from inside of the wave guide collecting at the bottom which caused an arc. Replaced polystyrene window. Capacitor C-25, in PFI sweep on-time multivibrator for the precision/8000 yard position, broke down. Due to excessive leakage current, both sweeps disappeared. Replaced capacitor.

(5) SSA-SV ADAR

- The total hours of operation of this equipment to date are 13,929. (During the period of this report 1455). The equipment was never completely out of commission though it was considered to have had 40 hours 'lost time' during the period covered by this report. Over-all performance was good.
- 21 June During a routine resistance check the I.F. cable between the transmitter-receiver and the Indicator console was found to be grounded. The effect of the grounded cable appeared on the "A-B" scope as a series of transmitter pulses (approximately 9) following the original transmitter pulse. The spare cable terminated in an inaccessible position behind the Indicator Console and rather than remove the console, a new cable was utilized.

R-E-S-T-R-I-C-T-E-D

U.S.S. CLINTON (SS323)
Care of Fleet Post Office
San Francisco, California

R-E-C-T-R-I-C-T-E-D

(V) MASTER

(4) RADAR

(b) SSC-SS RADAR (Con't)

- 2 July 1 high voltage fuse blew. 5D21 tube was found to be 'Gassy' and was replaced.
- 3 July Another high voltage fuse blew. Magnetron (symbol # V14, tube 2J50) was discovered arcing between the filament leads at their entrance point into the tube. Filament voltage was found to be 2.5 volts in excess. This was rectified and a new magnetron installed.
- 15 July The filament of tube type 2A1P1 (symbol #V4), the tuning indicator tube in the transmitter-receiver unit, was found to be open. Replaced this tube.
- 3 August Blew a high voltage fuse due to internal arcing of 5D21 tubes (symbol # V7 and V8). Replaced these tubes. Removed TR tube, 1B24, (symbol # V11). This tube had exceeded its normal life and could not be tuned.
- 9-15 August The 48 hours of 'lost time' during this period were due to an intermittent trouble in the range stop generator or the range unit. This range stop on the "A-B" scope and the range mark on the PPI scope would intermittently disappear. A very thorough voltage check, resistance check, component parts search and wave forms taken failed to reveal the trouble. This did not actually place the radar out of commission. Accurate ranges could not be taken, but bearings and approximate ranges could be taken. Before the trouble was found, the condition disappeared.

R-E-C-T-R-I-C-T-E-D

Enclosure (1)

U.S.S. GANNET (S2223)
Care of Fleet Post Office
San Francisco, California

R-E-S-T-R-I-C-T-E-D

(B) INTEL

(4) RADAR

(c) RCM

12 August

SPM-1 (pulse analyzer) pulse rate frequency meter would not operate. Ground meter fuse blown. Replacement of fuse restored operation.

(d) IFF

No signals.

Tubes replaced on all electronic devices:

Type	Number	Type	Number
6AC7	5	72AE	1
6AC7	12	35Z5	3
6J5	2	35L6	1
6SN7	6	5Y3	1
6SL7	1	VR-150	2
6AK5	6	2AP1	1
6AL5	2	2J50	2
6SA7	1	4J70	3
6V6	4	3FF7	1
6H6	2	1DC7	2
5021	4	393A	1
607	4	12AE	1

Representative Radar Ranges Obtained:

Equipment	Maximum Range	Contact Range	Target
SSc	64 miles	67 miles	land
SSc	31500 Yds.	32500 Yds.	Lightship
SSc	27400 Yds.	28500 Yds.	land
SSc	19500 Yds.	23500 Yds.	PDY
SSc	16750 Yds.	17400 Yds.	Fishing Boat
STc	3700 Yds.	3700 Yds.	Plane
SV-1	70 miles	75 miles	land
SV-1	30000 Yds.	35000 Yds.	Plane
SV-1	17300 Yds.	18500 Yds.	Fishing Boat
SV-1	28 miles	29.3 miles	Tanker

Note: Maximum range - range of positive identification.
Contact range - radar pip, identification doubtful.

R-E-S-T-R-I-C-T-E-D

U.S.S. CAIMAN (SS323)
Care of Fleet Post Office
San Francisco, California

R-E-S-T-R-I-C-T-E-D

(B) MATERIEL

(5) SONAR

(a) The WFA-1 and JT sonar equipment operated in a satisfactory condition throughout the period of this report.

Sonar conditions were found to be generally poor in the Puget Sound Area due to prevalent steep negative gradients.

(b) WFA-1

19 August Fuse F404($\frac{1}{2}$ amps 1000 volt fuse) blew. All four power amplifier tubes (V405, V406, V407 and V408) were found to be "gassing", causing loss of amplifier plate current and output current. Replaced tubes and fuse. Equipment restored to operation.

21 August Ranging driver operated intermittently. Relay K611 in BDI amplifier stack was found to be pitted. Cleaned and adjusted relay.

(c) JT SONAR

No comment. Equipment operated satisfactorily.

(d) MCA FATIGUE METER

Equipment performed satisfactorily and was used extensively for navigating in fog.

22 August Keying switch S301 on the indicator unit became difficult to operate. Minor readjustment of the mechanical ends of the switch assembly eliminated trouble.

R-E-S-T-R-I-C-T-E-D

U.S.S. CAIMAN (SS323)
Care of Fleet Post Office
San Francisco, California

R-E-S-T-R-I-C-T-E-D

(C) PERSONNEL AND TRAINING

(1) OFFICER TRAINING

When the cruise began six officers were attached, three of whom were unqualified. Four of them stood all of the O.O.D. watches until the new executive officer, LT L.A. FRANK reported aboard on 14 July 1950. The day before final departure from Port Angeles, Washington, LTJG J. L. SKOOG, USN, a recent graduate from Electronics School, T.I., reported aboard for duty, making a total of eight officers aboard.

Each unqualified officer made considerable progress toward completing his qualification notebook and was able to gain extensive practical experience. The navigation requirements for qualification were met by the two most recent graduates from Submarine School. All of the junior officers were given extensive security and cryptographic training. The two hundred and forty dives made between 1 July and 25 August 1950 developed all junior officers aboard into very capable and reliable diving officers.

Since the ship anchored in Noah Bay, Washington quite frequently, each O.O.D. was able to anchor the ship at least twice. Each officer was able to improve his shiphandling ability by getting the ship underway and bringing it alongside frequently. In addition the recovery of sonobuoys improved their man overboard technique. The ship carried at least one reserve officer during all but about three weeks of the period in the Puget Sound Area. These officers were aided in every way possible by the ship's officers. Their progress toward obtaining an SG qualification was stressed continuously.

(2) ENLISTED TRAINING

At the beginning of the cruise there were many new and unqualified men aboard. An intensive training program was conducted throughout the cruise. School of the boat was held daily from 1000-1100 and 1300-1400. The frequency of diving enabled the development of some expert planesmen. Of the 240 dives made in the Puget Sound Area only two went awry -- one as a result of an error in compensation and one due to faulty performance of the stern plane locking wedge in the after torpedo room. The cruise was an excellent shake down where diving and/or "Station the Fog Watch" was more routine than a cup of coffee.

Service wide examinations for advancement in rating were conducted during the month of July.

U.S.S. CAIMAN (SS323)
Care of Fleet Post Office
San Francisco, California

A-I-E-E-T-R-I-C-T-E-D

(6) PERSONNEL AND TRAINING

(2) ENLISTED PERSONNEL (Con't)

Total number of non-qualified men aboard at start of cruise.	<u>17</u>
Total number of men who qualified during the cruise.	<u>9</u>
Total number of men rated during the cruise.	<u>0</u>
Total number of men taking service wide exams.	<u>23</u>
Total number of men passing service wide exams.	<u>Unknown</u>

During the month of July, one MEC was given the examination for appointment as Ensign, Medical Service Corps.

(3) SHIP TRAINING

General drills and casualty drills were held frequently while enroute to the assigned area and while reserve personnel were aboard. Type training was negligible due to the demands for ASW services. The state of training in ship control is considered at a peak. The fire control party has undoubtedly become rusty. Radar tracking was conducted at every opportunity. A DRT plot set up during the fog watch was a must in order to avoid the heavy traffic and numerous fishing boats in the Strait of Juan de Fuca. It is felt that a few torpedo approaches will snap the fire control party back into shape.

The following training exercises listed in USF 45(A) and USF 54 were conducted:

SUBMARINE EXERCISES

<u>Exercise</u>	<u>Number of Exercises</u>
S-21-E	1
S-22-E	1
S-11-E	1

ASW EXERCISE

<u>Exercise</u>	<u>Number of Exercises</u>	<u>Exercise</u>	<u>Number of Exercises</u>
Y-70-AW	9	Y-27-AW	1
Y-72-AW	9	Y-28-AW	1
Y-80-AW	31	Y-30-AW	3
Y-61-AW	16	Y-31-AW	3
Y-63-AW	25	Y-PAW-4-A	2
Y-64-AW	33		

P-E-S-T-E-R-I-C-T-E-D

R-E-S-T-R-I-C-T-E-D

(D) HEALTH, FOOD, AND HABITABILITY

(1) HEALTH

In general, the health of the crew was excellent. However, on first arrival in the Puget Sound Area, nearly all hands contracted severe head colds due to the radical change in climatical conditions. These soon abated and for the remainder of the cruise few colds were experienced.

(2) FOOD

The food was of the highest quality obtainable and excellently prepared. Sixty days dry provisions and maximum load of refrigerated meats and perishable provisions were obtained prior to departure from Pearl Harbor.

Bread and fresh milk were the only two items available at Port Angeles, Washington under 13th Naval District contracts. Requisitions for dry and fresh provisions were mailed to the Supply Depot, Seattle, Washington. All deliveries were made directly to the ship on arrival Seattle.

(3) HABITABILITY

The habitability of the boat was good, except for the passage from Pearl Harbor to the Straits of Juan de Fuca during which many storms and rough seas were encountered. The high relative humidity during the entire cruise caused much condensation in the ship's air conditioning system, causing some discomfort to the crew.

(E) MILES STEAMED - FUEL USED

Pearl Harbor to Port Angeles, Wash. 2254 miles - 31,610 gallons.

Port Angeles, to Grays Harbor, Wash and return
302 miles - 5,755 gallons.

Port Angeles to Astoria, Oregon and return 407 miles - 6,675 gallons.

Going to and from operating areas 3354 miles - 66,400 gallons.

Port Angeles to Pearl Harbor 2254 miles - 40,000 gallons.

Total fuel used on entire cruise 8,571 miles - 150,640 gallons.

U.S.S. CAHMAN (SS323)
Care of Fleet Post Office
San Francisco, California

R-E-S-T-R-I-C-T-E-D

(F) REMARKS

1. This report covers an eight week period of USN services in the Puget Sound Area and approximately two weeks enroute to and from Pearl Harbor. Services were rendered to (a) ComFleetMing Four (b) Naval Air Reserve Training Unit, Seattle and (c) Com13 for organized submarine reserves, and part of the week of 10-14 July for surface units under the operational control of Com13. The weekends of 5-6, 12-13, and 19-20 August were made available for Submarine Reserves from the 13th M.D.

Due to the nature of the services rendered it was impossible to obtain any type training during the cruise. The monotony of operations was broken by two weekends in Seattle, one weekend in Astoria, Oregon, one weekend operating in and out from Esquimalt, B.C. and the 4th of July trip to Gray's Harbor.

2. July and August are the two worst months for fog in the Pacific North West. Much time was wasted in the operating areas waiting for either the fog to lift or for operations to be cancelled. At first operating in the fog was quite a strain due to the volume of traffic in the Strait of Juan de Fuca and the numerous fishing boats. The salmon run was abnormally heavy this year which accentuated this situation. With almost daily practice the "fog watch" became very proficient and the strain of fog operations became a routine.

3. Liaison with the staff of ComFleetMing Four was maintained by visits from the Training Officer and the Asst. Operations Officer. Also a direct line from the Coast Guard Air Station, Port Angeles to NAS Whidbey Island was available. Relationships were excellent. On one occasion laundry was picked up, delivered to NAS laundry and later delivered to the ship. It is desired to express particular appreciation for the excellent pay day services rendered by Ens. J.A. MAYO, Jr., USN, paymaster from NAS Whidbey Island. His prompt and efficient services were very beneficial for the morale of all hands.

4. The Coast Guard Air Station, Port Angeles was very cooperative and considerate. It proved to be a home port away from home. Services received included line handlers, fresh water, mail pick up and delivery, use of barracks and B.O.Q. facilities, movies, transportation and most of all a friendly desire to assist in any way possible. Appreciation for these friendly services is covered by a separate letter.

(G) RECOMMENDATIONS

1. It is recommended that submarine services during the month of July and August in the Puget Sound Area be discontinued. Nine operating days in July were either cancelled, delayed, or partially cancelled due to

R-E-S-T-R-I-C-T-E-D

U.S.S. CALEB (SS323)
Care of Fleet Post Office
San Francisco, California

R-E-S-T-R-I-C-T-E-D

(F) RECOMMENDATIONS (Cont)

fog. Up to the 25th of August there were ten days in which fog cancelled or partially cancelled operations. There were six days when no submerged operations were conducted and four in which one or two dives were made. The above figures do not include days when no operations were scheduled.

2. There were five days in the eight week period when no operations were scheduled. It is realized that commitments for Reserve Training necessitate weekend operations. It is recommended that for future operations consideration be given to scheduling operations from Thursday to Monday or Tuesday.

3. Several Naval Reserve aviators from time to time rode the submarine as observers. This greatly enhanced their appreciation of the submarine problems, and subsequent operations were improved thereby. It is recommended that NATU representatives ride the submarine as frequently as possible.

4. Commercial laundry prices in the State of Washington are exorbitant. It is recommended that submarines rendering service in the Puget Sound Area in the future equip themselves with a laundry machine before departure from home port.

5. FleetAirWing Four did an excellent job delivering mail for the CALEB. However, mail was slow getting from Seattle to Whidbey Island. It is recommended that in the future mail be forwarded direct to ComFleetAir Wing Four.

R E S T R I C T E D

U.S.S. CAMERON (SS323)
Care of Fleet Post Office
San Francisco, California

E-U-E-T-E-I-O-A-E-D

DESCRIPTION OF OPERATING AREAS

(a) Fox-5 (Strait of Juan De Fuca)

Boundaries:

North International Boundary.

East A line beginning at International Boundary at Lat 48°-17' North, Long 123°-17' West running Southeast to coast at point Lat 48°-00' North, Long 123°-13' West.

South South Coast of Strait of Juan De Fuca.

West Long 124° 00' W.

Average depth of water - 80 fathoms
Minimum depth of water - 22 fathoms

Heavy traffic in area consisting of fishing vessels, ocean going freighters, and ferry boats.

(b) Man-3 (Strait of Juan De Fuca)

Boundaries:

North Lat 48°-25' North

East West Coast of Whidbey Island

South Lat 48°-21.5' North

West A line from a point Lat 48°-25' North, Long 123°-05' West to a point Lat 48° 23' North, Long 123°-06' West and thence to a point Lat 48°-21.5" North, Long 123°-03' West

Average depth of water - 75 fathoms
Minimum depth of water - 10 fathoms

Relatively little traffic.

(c) Man-C (Washington Coastal Area)

Boundaries:

North Lat 48°-20' North

East Long 124°-50' West

E-U-E-T-E-I-O-A-E-D

U.S.S. CATLIN (SS323)
Care of Fleet Post Office
San Francisco, California

R-E-S-T-R-I-C-T-E-D

(c) Area-C (Con't)

South Lat 45°-00' North

West Long 125°-20' West

Average depth of water - 100 fathoms
Minimum depth of water - 24 fathoms

Heavy traffic in eastern and north-eastern section of area consisting of fishing boats and coastal freighters.

(d) Special Area

Boundaries:

North Lat 45°-20 North

East Long 125°-20' West

South Lat 47°-00' North

West Long 127°-00' West

Average depth of water - 1200 fathoms
Minimum depth of water - 350 fathoms

Relatively little traffic

R-E-S-T-R-I-C-T-E-D