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From: The Commanding Officer, U.S.S. RAZORBACK
To: The Commander in Chief, United States Fleet.
Via:

Subject: U.S.S. RAZORBACK, Report of War Patrol
Number THREE.

Enclosure: (A) Subject Report.
(B) Track Chart.
(C) Chart of Land-based Radar Contacts.
(CanSubPack&Com only.)

1. Enclosure (A), covering the THIRD war patrol of this vessel, conducted in the EAST CHINA SEA during the period from 1 February to 26 March 1945, is forwarded herewith.

2. This vessel was a member of FULP'S FIDDLERS, consisting of USS SEGUNDO (Comdr. J. D. Fulp, Jr., USN, pack commander), USS SEA CAT (Lt-Comdr. R. H. Bowers, USN) and the USS RAZORBACK.

C. Donald Brown

C. DONALD BROWN

DECLASSIFIED-ART. 0445, OPNAVINST 5510.1C

BY OP-09B70 DATE 6/1/72

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(A) PROLOGUE

Arrived APRA HARBOR, GUAM, from second war patrol on 5 January 1945, for normal refit by the USS SPERRY (AS12) and Submarine Division EIGHTY-TWO relief crew. In spite of a large personnel turnover since their last refit, Division 82, with the cooperation of the SPERRY, accomplished a very creditable overhaul of engines and auxiliaries. There were no major work items.

Camp Dealey (the materials for which we were amazed to find were unloaded from the SPERRY less than two months prior to our arrival) was a very well constructed establishment which afforded all hands a good rest.

On 20 January, the crew returned to the ship, tested machinery the next day, and completed a deep dive and underway tests the day following. Our training period consisted of four days and one night independent exercises, under Commander L. T. STONE, USN (ComSubDiv-82), whose suggestions were much appreciated. Three exercise torpedoes were fired. One extra day and night of training as a pack with the SEGUNDO and SEA CAT proved very effective in ironing out small difficulties.

On 31 January, PETTY, H.P., 355 92 65, CEM(T), USN, was appointed to ELECTRICIAN (T) and transferred to Submarine Division 82; Ensign F. E. FARRIS, USN; File #389559, reported aboard for duty.

(B) NARRATIVE

<u>Officers:</u>	<u>Previous War Patrols</u>
Lt.Comdr. C. D. BROWN, USN	2
Licut. R. L. SMITH, (DE), USNR	4
Licut. R. S. THOMPSON, (DE), USNR	2
Licut. A. R. HERSH, Jr., USN	4
Licut. L. B. CRANN, (DE), USNR	2
Lt.(jg) W. C. ANDERSON, (E)R, USNR	2
Lt.(jg) E. L. JOHNSON, USN	1
Lt.(jg) L. T. ADAMS, (DE), USNR	2
Lt.(jg) W. H. PATTILLO, (D)L, USNR	1
Ensign F. E. FARRIS, USN	0
<u>Chief Petty Officers</u>	
FORT, Henry F., CQM(AA), USN	2
GORDON, James E., CMOMM(PA), USN	7
PIAZZA, Peter (n), CMOMM(PA), USN	7

1 February (Unless otherwise designated, all times listed are "I".)

1530 Underway from APRA HARBOR, GUAM, for patrol area as a unit of FULP'S FIDDLERS, consisting of the USS SEGUNDO (Comdr. J. D. FULP, Jr., USN, Pack Commander), USS SEA CAT (Lt-Comdr. R. H. BOWERS, USN), and USS RAZORBACK, with escort USS DEMPSEY (DE-1026), in accordance with ComTaskFor 17 Operation Order #35-45.

2135 Having completed her duty as escort, the USS DEMPSEY departed. Started for station 20 miles from USS SEGUNDO, 30 degrees on her port quarter.

2 February

0600 Made trim dive.

0625 Surfaced.

0642 Spoke to USS SEA CAT, who requested a hydraulic spare which unfortunately we do not have.

1200 Position: Lat. 16-40-N, Long. 142-13-E.

1505 Exchanged calls with USS TRIGGER (SS237).

Had 1 to 3 friendly radar-equipped planes circling us too close aboard after dark tonite. Detected them by strange radar interference on SJ, which changed bearing too rapidly to be a ship. SD located them at 3 to 4 miles.

2100 Closed USS SEGUNDO for instructions. Had good VHF reception at 5200 yards, which is the only satisfactory performance we've had with this equipment while underway; it functions perfectly in port.

3 February

0540 and 1138 - Made short section dives.

1200 Position: Lat. 20-25-N, Long. 138-29-E.

1308 Exchanged recognition signals with U.S. submarine on opposite course. Sun prevented identification.

2000 Spoke SEGUNDO by radar.

4 February

0600 Made section dive; surfaced at 0633.

1200: Position: Lat. 24-24-N, Long. 135-14-E.

5 February

0532 As on 2 February, detected ten-centimeter radar-equipped plane circling us at 3 miles; dived. Presence of plane suspected by rapid bearing change of radar interference on SJ; substantiated by keying the SD. The operator described the note in the phones as considerably lower than friendly SJ. We did not use IFF. If friendly, we wish these planes would not come so close.

0600 All clear on SD; surfaced.

0800 Having made up distance we were behind schedule, dived for submerged patrol.

1200 Position: Lat. 27-44-N, Long. 133-10-E.

1615 Held battle problem.

1815 Surfaced.

1905 Exchanged calls with SEGUNDO by radar and reported plane encountered this morning to pack commander.

6 February

0615 Dived for submerged patrol.

1200 Position: Lat. 29-52-N, Long. 130-57-E.

1831 Surfaced.

1949 Radar contact, 168⁰T, range 12,000 yards; tracked him on same course. Exchanged calls with USS SEA CAT.

2125 Went ahead on four engines to transit COLNETT STRAIT.

2240 Sighted faint white light in direction of YAKU SHIM.

During transit we had land radar sets on APR as indicated by current publications.

2255 Entered patrol area.

2349 Received contact report from SEGUNDO, placing a submarine a few miles north of UMANO SE by our best calculations. We skirted 100 fathom curve to north of HIRI SE. Challenged by SEA CAT at this point. She is making transit astern of us - distant six miles.

7 February

- 0600 Dived for submerged patrol with GAJA SHIMA bearing 170°T, distant 12 miles.
- 1200 Position: Lat. 30-10-N, Long. 129-22-E.
- 1855 Surfaced; sea has increased to state 5.
- 1920 Ten centimeter radar interference in direction of GAJA SHIMA.
- 2030 APR contact, 153 mc, strength from one to three sevenths. This set appeared to be land based and was steady on our bearing for a period of about thirty minutes.

8 February

- 0600 Submerged.
- 1200 Position: Lat. 30-01-N, Long. 129-11-E.
- 1250 Engine room reported hearing two distant explosions.
- 1853 Surfaced, set course for new area in accordance with pack patrol plan.

9 February

- 0240 Intermittent APR contact, 143 mc, apparently land based.
- 0600 Dived for submerged patrol with KUSAKARI JIMA bearing 126°T, distant 17 miles.
- 1200 Position: Lat. 31-01-N, Long. 129-20-E.
- 1901 Surfaced.
- 2308 Exchanged recognition signals with SEGUNDO by radar.

10 February

- 0401 APR contact strength four sevenths, steady on.
- 0403 SD contact 2 miles, dived. It may have been a rain squall.
- 0429 All clear on SD; surfaced.
- 0600 Submerged for patrol with UJI SHIMA bearing 082°T, distant 16 miles.

1200 Position: Lat. 31-14-N, Long. 129-12-E.
1853 Surfaced and cleared pack area to send weather report.
2000 Raised NPM. Transmitter went out of commission.
2055 Transmitter back in commission.
2157 Weather report sent and receipted for.

11 February

0600 Submerged for patrol 14 miles S.W. of UJI SHIMA. Intend to make passage between UJI GUNTO and KUSAKKI SHIMA today. Assume Jap land based radar cannot detect us over 15 miles, but we will be unable to cover much area on surface inshore without being discovered.

1200 Position: Lat. 31-01-N, Long. 129-24-E.

1323 Maneuvering room reported distant explosion.

1856 Surfaced; SJ contact 4800 yards.

1900 With a 150 mc APR contact, and the SJ contact closing slowly to 4300 yards, dived. OOD thought he saw a small vessel after the diving alarm was sounded, so at

1906 Surfaced; SJ contact at 5700 yards, tracked on diverging course.

1908 APR contact 155 mc, definitely over saturation and steady on. Since we had picket boat or enemy submarine in vicinity, went on the assumption that we would be unmolested by planes.

1925 Lost SJ contact at 6000 yards. This picket boat had ten centimeter radar by which we continued to track it. The note of the signal in the SJ phones was considerably higher than that of our own equipment. He either did not contact us or was not anxious to close.

1951 Received message from pack commander shifting areas in reference to a Comsubpac despatch we do not have. With our exact location known, (I don't see how we could assume otherwise) decided to pose as picket boat until clear of land; this didn't include transmissions on pack frequency.

2010 Lost contact with 155 mc APR signal momentarily and picked up new 159 mc signal, steady on us and well above saturation.

- 2015 We now had both APR contacts 155 and 159 mc signals steady on, saturated, with very loud signal.
- 2116 Went to three engine speed.
- 2130 New APR contact, 77 mc, maximum strength three sevenths, contact lost at 2159.
- 2300 Contact at 150 mc reduced in intensity and suddenly disappeared.
- 2307 With 159 mc APR contact varying between three sevenths and saturation, informed pack commander we did not have Comsubpac message to which he had referred. (TAKA SHIMA 12 miles astern; SHIMA KOSHIKI, 14 miles.)
- 2346 Received pack commander's instructions to patrol position Lat. 32-14-N, Long. 127-02-E.

12 February

- 0004 Went to four engine speed.
- 0115 Finally lost our persistent 159 mc APR contact. (TAKA SHIMA 41 miles astern.)
- 0235 Picked up DANJO GUNTO bearing 337^oT, distant 32 miles.
- 0640 Submerged, with DANJO GUNTO bearing 092^oT, distant 41 miles. We are in our assigned patrol area, but 28 miles short of the point designated by pack commander. Assume that our not being detected is fully as important as being exactly on station.
- 1200 Position: Lat. 32-06-N, Long. 127-22-E.
- 1851 Surfaced.
- 1950 Received message from pack commander to return to regularly scheduled area.
- 2143 Having had a rapidly moving SJ contact at 26,000 yards, checked with SD and had possible contact at 3 miles. Dived. There was no APR warning on this contact which may have merely been a plane in transit.
- 2203 Surfaced.
- 2355 APR contact, 98 mc.

13 February

- 0100 SJ radar interference and signals from 102°T. As this was also bearing of DANJO GUNTO, did not answer up. Subsequent bearing change of the interference indicated the signals were from another member of the pack, but no further attempts were made to establish identity.
- 0127 Weak APR contact 150 mc.
- 0615 Submerged for patrol with SHIMO KOSHIKI light bearing 080°T, distant 46 miles.
- 1200 Position: Lat. 31-26-N, Long. 129-13-E.
- 1900 Surfaced.

14 February

- 0020 Radar contact bearing 323°T, distant 9,450 yards.
- 0025 Challenged and exchanged calls with SEGUNDO by radar.
- 0600 Submerged for patrol 7 miles off 100 fathom curve, with KAMI KOSHIKI bearing 134°T, distant 21 miles.
- 1200 Position: Lat. 32-01-N, Long. 129-38-E.
- 1545 Sighted large twin-engine bomber bearing 029°T, distant 6 miles, heading north.
- 1855 Surfaced.
- 1930 Sighted loom of intermittent light on various bearings between 205°T, and 225°T, during period of about ten minutes. This light was seen three times. There was no land in that direction.
- 2007 Fire in the maneuvering room. Remote governor control burned up.
- 2012 Went ahead on battery.
- 2015 Resumed engine propulsion.
- 2020 Secured from fire quarters.
- 2328 SJ contact 326°T, distant 25 miles; went ahead on four engines and turned toward to investigate. Due to several inconsistent radar bearings the first few navigational plots put the contact about ten miles from DANJO GUNTO.

2352 Sent contact report to rest of pack.

15 February

0010 Having verified contact as DANJO GUNTO, cancelled contact report.

0034 Received SEA CAT contact report on three small targets; went ahead on four engines to close contact.

0115 Having had no amplifying report from SEA CAT, concluded her report as a warning and slowed down.

0117 Received SEA CAT report that she was attacking.

0205 SEA CAT reported completion of attack. With no further information, original contact having been at 10,000 yards, and targets apparently remaining in same area, felt it was our best bet to stay clear.

0210 Pack commander requested type of target from SEA CAT; the latter reported unidentified.

0241 Pack commander informed pack he had ceased search.

0600 Submerged for patrol, with FUKAE SHIMA bearing 000°T, distant 18 miles.

1200 Position: Lat. 32-20-N, Long 128-40- E.

1858 Surfaced.

2146 Received pack commander's orders to patrol position: Lat. 31-54-N, Long. 126-35-E.

16 February

0250 Received pack commander's orders to shift patrol point to Lat. 33-36-N, Long. 128-39-E, and to dive at discretion.

0302 Headed for assigned position on four engines.

0623 Submerged for patrol.

1200 Position: Lat. 32-49-N, Long. 127-57-E.

1900 Surfaced.

2150 Went ahead on four engines to assigned patrol position anticipating possibility of pack commander using SJ radar for signals.

2250 In position, slowed to one engine speed. SEGUNDO radar interference bore 340°T.

17 February

0013 Received pack commander's orders to patrol position: Lat. 34-02-N, Long. 128-40-E.

0610 Submerged on station for patrol.

1200 Position: Lat. 33-58-N, Long. 128-44-E.

1905 Surfaced.

1915 Sighted several lights which may have been navigational lights, bearing 335°T.

1942)
2032)-
2035) SJ radar contacts from 2000 to 3000 yards - avoided.

2111 Received message from SEGUNDO reporting her radar out of commission.

2258 Radar contact 020°T, distant 18,200 yards; commenced tracking. This target was passing very near SEGUNDO's possible position, but the range seemed excessive for a submarine contact.

2304 SEA CAT reported nine sampans in her area.

2322 Reported radar contact to pack commander and asked if it were the SEGUNDO.

2352 Received negative answer.

18 February

0013 Sent complete contact report to pack and continued to track at 15,000 yards range. Enemy course was 280°T, speed 9, which headed him toward shallow water to north of S.ISHO TO.

0100 This target was hard to pass up. Since our mission did not allow us to attack at this time, secured tracking party and headed away to avoid detection, and the possibility of being drawn clear of the area for which we were responsible.

0112 SEGUNDO reported radar contact; apparently on same target.

0120 Lost target, bearing 334°T, distant 21,450 yards.

0151 Had the first of many SJ contacts from 1700 to 4000 yards. We were continuously pestered by "pixies" until 0330. Some of these contacts may very well have been small boats, but nothing was seen from the bridge.

0600 Submerged for patrol.

1025 OOD sighted smoke and the upper works of a ship through the periscope, bearing 042°T.

1027 Went to battle stations. The target appeared to be a medium tanker or freighter. Only a high bridge just forward of a very tall, thin, and smoky stack was observed. Did not attempt to close.

1040 Sound picked up fast screws on port quarter which proved to be a small lugger on collision course. Turned away.

1105 Secured from battle stations. Hope our primary mission comes to a successful close soon. The crew just can't fathom this "normal escape course" business in which we are apparently engaged.

1130 Sighted two unidentified objects over the horizon, bearing 280°T. Made out what appeared to be two identical ships, two-masted, with single stack. (Stack later proved to be tall bridge amidships.)

1134 Turned toward and went ahead standard to investigate. On subsequent observations determined targets zigging radically across our line of sight and back again.

1146 JP reported contact with these targets; light fast screws, later variable, speeds sometimes stopped.

1155 Targets hoisted sails; identified them as sea trucks of about 500 tons.

1200 Position: Lat. 34-05-N, Long. 128-47-E.

1405 Sighted small sailboat.

1425 Lost contact with pair of targets sighted at 1130.

1535 All clear on periscope.

1903 Surfaced.

- 1930 Sighted lights at 240°T. Later identified as lights of two small vessels on easterly heading. These ships had bright side lights, and burned alternately (for five or ten minutes) a white or another red light under their portside lights. They may have been magnetic minesweepers. Cleared these targets to the northward.
- 2222 SJ contact 327°T, distant 9,000 yards.
- 2235 Exchanged recognition signals and calls with SEGUNDO.

19 February

- 0135 SJ contact 007°T, distant 9200 yards.
- 0145 Again exchanged recognition signals and calls with SEGUNDO.
- 0557 Submerged for patrol.
- 1200 Position: Lat. 33-57-N, Long. 128-37-E.
- 1915 Surfaced.
- 2138 Received pack commander's orders to take station for independent ship cooperative patrol; proceeding to new pack area.
- Having seen no traffic while within range of land radar installations, intend to patrol west of TORI SHIMA along reported westbound traffic lane from NAGASAKI.
- 2200 Exchanged recognition signals and calls with SEGUNDO.

20 February

- 0612 Submerged for patrol.
- 1200 Position: Lat. 32-52-N, Long. 127-44-E.
- 1755 JK reported echo ranging bearing 315°T; nothing in sight on periscope.
- 1758 Went ahead standard to close pinger.
- 1803 Sighted top of unidentified ship which changed bearing to right. Battle stations, torpedo - started approach.
- 1817 Target definitely identified as a DE.
- 1822 The best position we were able to attain was with torpedo run of 4200 yards, angle on the bow 105 starboard, speed 13 knots. At this time target zigged away 40°.

- 1906 Surfaced.
- 1916 Went ahead full on three main engines.
- 1948 Regained contact on SJ, bearing 128°T, distant 17,900 yards. Tracked target on base course 100°T at 15 knots, zigging 20° to left and right of base course.
- 2042 Due to excellent visibility, our only possible attack was at radar depth from ahead; therefore broke off chase with target bearing 115°T, distant 15,000 yards. The DE was apparently enroute to NAGASAKI.

21 February

- 0027 First of three "pixie" contacts, bearing 309°T, distant 9000 yards.
- 0058 Secured tracking "pixies".
- 0145 OOD sighted flare bearing 135°T.
- 0355 More "pixies".
- 0618 Submerged for patrol.
- 1200 Position: Lat. 32-31-N, Long. 127-30-E.
- 1412 Explosion reported throughout ship and on sound.
- 1900 Surfaced.
- 1930 "Pixie" at 2800 yards.
- 2144 Cleared weather message to ComSubPacAdComd.
- 2350 Exchanged recognition signals and calls with USS SUNFISH (SS281) by radar.
- 2355 SJ contact bearing 329°T, distant 5400 yards; lookout sighted USS SUNFISH; avoided on four engines. The SUNFISH was visible, up moon from us, to a range of 9000 yards with large angle on the bow. She was plainly visible at 5000 yards with zero angle on the bow.

22 February

- 0245 Another "pixie" at 1500 yards.
- 0618 Submerged for patrol.

1200 Position: Lat. 32-33-N, Long. 127-53-E.

1923 Surfaced.

23 February

0600 Submerged for patrol.

1010 OOD sighted smoke bearing 060°T; turned toward at standard speed.

1019 Sighted upper works of MFFM ship.

1023 Battle stations. The target was further identified as an unescorted AP.

1046 With torpedo run of 3200 yards, gyros 15 R, track angle 95 starboard, target speed 16 knots, started firing full bow nest. As fifth torpedo left the tube, saw red cross on hull. Checked fire. No hits were seen or heard; no end of run explosions. (For further details of target, see Attack Data.)

1050 Target turned away 90°.

1056 Secured from battle stations.

1105 Target out of sight.

1200 Position: Lat. 32-35-N, Long. 127-43-E.

1912 Surfaced.

2115 OOD sighted light, bearing 205°T. Put three engines on propulsion and closed slowly to investigate. Battle stations. Although the light was above the horizon there was no evidence of a target on the SJ until

2125 Radar contact dead ahead, distant 5200 yards.

2126 OOD and lookout sighted small darkened ship between the light and us, considerably closer. This definitely looked like a trap to me, so

2128 Reversed course and cleared vicinity.

2135 Secured from battle stations.

24 February

0030 We had two sets of radar interference on SJ, bearing 075°T and 325°T respectively. Both looked friendly, but the latter was unexplained and was in the vicinity of SAISHO TO.

0450 SJ contact 164^oT, distant 32,600 yards.

0455 Went to four engines and closed to investigate.

0515 Possible SJ interference from bearing of contact; not seen again.

0532 SEGUNDO receipted for contact report.

0534 Sighted cluster of lights on horizon, target had been tracking at zero speed since contact. There were several pips on the radar at 16,000 yards.

0537 Slowed to one third. This set-up looked similar to trap we encountered last night. Can't believe the Japs are going around burning bright lights on good torpedo targets.

0538 Radar reported nearest and largest target closing us at fifteen knots, range 13,000 yards; turned away at slow speed.

With only half an hour before dawn, considered it prudent to put some distance between us and this contact. The ship coming our way was now tracking at nineteen and twenty knots so at

0545 Opened at full speed.

0550 Our pursuer changed course and gave us 130^o starboard angle on the bow, range 11,000 yards.

0558 SEGUNDO and SEA CAT receipted for our report of suspected trap.
From the time of the first contact, the pips on the SJ screen looked like false targets. They faded in and out and were difficult to track even when we had halved the range. The target which bent on twenty knots in our direction, however, was easily tracked.

0618 Submerged for patrol.

1127 JP and several compartments reported three explosions.

1133 JP reported another explosion.

1200 Position: Lat. 32-52-N, Long. 128-07-E.

1217 Sighted two cylindrical buoys, one was red marked with a white circle enclosing what appeared to be numeral eight; the other was grey with a yellow top marked with red outer and white inner circle with a green center. These buoys looked like 4" ammunition cases floating upright.

- 1335 Observed momentary flash of light on right tangent of FUKAE SHIMA.
- 1900 Surfaced.
- 2135 Received orders from pack commander to patrol assigned area, SEA CAT to work south of 30-23-N, and a report that minecraft were operating in our new area near SHIMONO SHIMA.

25 February

- 0629 Submerged for patrol east of SAISHO TO with KYOBUN TO bearing 000°T, distant 20 miles. Found our first good gradient in this area at 250 feet.
- 1200 Position: Lat. 33-41-N, Long. 127-29-E.
- 1915 Surfaced.

26 February

- 0606 Submerged for patrol.
- 1200 Position: Lat. 33-20-N, Long. 128-33-E.
- 1646 Sighted small mast with pennant on horizon, bearing 221°T; turned toward. Identified contact as a spherical black buoy with a ten foot mast on which flew a black pennant and a long tassel of light cloth.
- 1912 Surfaced.

27 February

- 0000 SJ contact 160°T, distant 750 yards. We ran right through this point but saw nothing that could cause a "pixie".
- 0030 SJ contact 272°T, distant 12,000 yards. We closed this slowly with four engines on the line. Found about a dozen birds sitting on the water which may have been our target. The latter disappeared about five or ten minutes after original contact.
- 0610 Submerged for patrol.
- Heard numerous distant explosions throughout the morning. They sounded like hammer blows on the hull.
- 1200 Position: Lat. 33-07-N, Long. 127-00-E.

1633 JP picked up disturbance bearing 265°T. OOD sighted two masts on the horizon, same bearing.
Closed track and identified as a power fishing boat.

1830 Lost sight of fishing boat.

1920 Surfaced.

2242 Cleared weather message. Unable to raise NPM; VHA 1 received and authenticated for the message.

28 February

0611 Submerged for patrol.

0733 Sighted two-masted sailboat.

0737 Sighted another sailboat.

0843 Sighted third sailboat.

1200 Position: Lat. 34-14-N, Long. 128-07-E.

1315 Sighted fourth sailboat.

1505 All clear on the periscope.

1905 Surfaced.

1920 Heading for patrol point east and slightly north of KANJO GAN.

2200 SJ contact on land bearing 280°T, distant 4900 yards, which put us or KANJO GAN about ten miles out of position.

1 March

0115 First of seven SJ radar contacts at 6000 yards. The sea had roughed up considerably so are reasonably sure these were not "pixies". These small ships tracked well and had us pretty well hemmed in for awhile. Targets tracked at 10 and 15 knots when we were running with or away from them. The last one encountered stopped when we turned to opposite course and evaded across his stern. Decided to patrol off NISHI SUIDO in view of small patrol boats in vicinity of position of first choice.

0345 Lost contact with last small patrol boat.

0611 Submerged for patrol.

0821 Sighted masts bearing 111°T.

- 0838 Made out as three-masted schooner headed directly toward us; battle stations torpedo.
We did not even change course for this fellow but waited for him to overtake us and then turned off the track.
- 0928 With a thirty-nine second torpedo run and a cold set-up, fired three fish from the stern tubes.
Everything checked, including half a dozen ping ranges so we were amazed when the ship didn't disintegrate.
- 0930 There was much scrambling about on the schooner and they broke out a red flag on deck. Although we could see no other ships in the vicinity, assumed he had friends either on the surface or submerged within signalling distance.
- 0940 Secured from battle stations.
- 1200 Position: Lat. 34-08-N, Long. 128-29-E.
- 1900 Surfaced, proceeding to next pack area assigned.
- 2150 Received request from pack commander for torpedo report and number of days able to extend patrol.
- 2248 Cleared answer to pack commander.

2 March

- 0350 APR contact 155 mc, non-rotating antenna, strength 1/2 saturation, keyed at irregular intervals.

The fact that this set was not encountered when we passed through this area previously, and that it was being keyed, indicated a mobile unit. We could see nothing on the SD though the signal reached saturation several times. Plotting intensity on various headings revealed nothing conclusive, as intensity varied greatly on the same headings.
- 0525 APR contact dropped from 1/3 saturation to zero and was not seen again.
- 0610 Submerged for patrol west of FUKAE SHIMA.
- 1200 Position: Lat. 32-38-N, Long. 128-12-E.
- 1715 Sighted TORI SHIMA bearing 186°T, distant 8 miles.
- 1905 Surfaced.
- 1940 Exchanged recognition signals and calls with SEGUNDO.

3 March

- 0130 SJ radar out of commission for 30 minutes.
- 0611 Submerged for patrol.
- 1200 Position: Lat. 31-26-N, Long. 128-16-E.
- 1901 Surfaced.
Could not raise NPM for weather message. NQM receipted for it, but we were unable to get a correct authentication. Sent message blind three times and secured transmitting. Period of transmission was two hours.

4 March

- 0524 With a saturated land based radar contact of 159 mc, steady on us, swung ship. The pattern obtained was inconclusive. The strength did fall off on opposite headings, indicating the direction of the set. However, it sometimes came in saturated on these same headings, indicating difficulty for Japs to stay on us (when heading directly toward or away) rather than a null in the antenna.
- 0612 Submerged for patrol.
- 0808 Two loud explosions heard in control room.
- 1200 Position: Lat. 30-23-N, Long. 129-43-E.
- 1912 Surfaced.
- 2018 A school of porpoises kept the OOD's and captain's hearts in their mouths for about half an hour. These fish had been trained to run hot straight and normal.

5 March

- Intended to patrol submerged to the southward of BONO MISAKI today, but at
- 0014 Received orders to patrol with pack in area to northward.
- 0035 Headed toward new area on three engines. Will have to stay on the surface during daylight.
- 0055 SJ interference bearing 166^oT.
- 0804 Lookout sighted RUFÉ, bearing 102^oT, distant 15 miles - dived.
- 0840 Surfaced.

- 1038 Lookout sighted two unidentified objects on the horizon, bearing 255°T; turned away. These were identified through the periscope as two small ships, with zero angle on the bow.
- 1057 Angle on the bow of ships had changed to 30 port; turned to take position ahead of targets. Ships now identified as two diesel powered sea trucks, apparently engaged in fishing.
- 1100 SD contact, 11 miles.
- 1107 SJ contact bearing 180°T, distant 7.5 miles; sighted two twin-engined bombers through high periscope.
- 1108 Dived.
- 1143 Surfaced. Ship contacts out of sight; commenced search.
- 1200 Position: Lat. 31-51-N, Long. 127-34-E.
- 1211 Lookout sighted our previous contacts bearing 275°T, distant 7000 yards. Headed to obtain position astern and up wind from fishing vessels.
- 1233 Lookout sighted aircraft bearing 280°T; OOD identified as a single-engine, gull wing plane, with zero angle on the bow, much too close aboard; dived and headed directly toward targets.
- 1300 Fishing vessels in sight bearing 293°T, distant 4500 yards.
- 1341 Battle stations gun action. Was pretty leary of the situation in view of the aircraft and targets' affinity for practically the same spot, but a fortunate rain squall put things in our favor, so at
- 1353 Battle surfaced.
- 1356 Commenced firing. The 4" gun was the only weapon that started off with a bang, but the 20mm and 40mm were soon in action. The .50 cal. MG's proved to be single shot weapons, as usual, in spite of the conscientious efforts of the gunnery officer. The last guns mentioned were working perfectly shortly before we entered the area.
- 1406 Ceased firing on the first target which had sustained a half dozen hits from each of the 4", 40mm, and 20mm guns. Target was stopped and burning briskly.
- 1416 Commenced firing on target No. 2.
- 1431 With the second target so low in the water that it was difficult to hit, shifted back to first target.

- 1437 First target sunk after several more 4" hits.
- 1448 Picked up three survivors from the first target.
- 1452 Approached the second target to see if it needed any urging toward the bottom and saw it sink.
- Pictures were obtained throughout this gun attack.
- 1453 Secured from battle stations and cleared the vicinity on four engines.
The three prisoners were a bit reluctant about coming aboard. They waved us away as we came alongside but when the first man got aboard and wasn't shot, the others came aboard without much urging. All prisoners were wounded to some extent. Approximately twelve survivors were left to fend for themselves; one from the first and eleven from the second target.
- Think we may do more harm than good by interrogation so have limited the questioning to essentials and intend to leave the prisoners alone until we can turn them over to the experts. They are now stored in separate compartments under armed guard.
- 1536 Slowed to two engine speed.
- 2345 SJ contact 024°T, distant 5400 yards. The seas were much too high for any kind of an attack on a shallow draft target, so avoided.
- 6 March
- 0053 Lost contact with target, bearing 156°T, distant 10,000 yards.
- 0324 Received Comsubpac orders to terminate patrol at sunset on 8 March.
- 0540 SJ contact bearing 355°T, distant 8800 yards.
- 0608 Submerged for patrol heading toward target to investigate.
- 0700 Sighted two masts, bearing 227°T.
- 0741 Target is a two-masted schooner with sails furled, drifting with the wind. Decided to trail for battle surface later in the day. The sea is not favorable for gun action.

- 1145 A faulty switch which failed to break the circuit when in the off position caused the deep fat fryer to overheat. When the cover was removed the fat burst into flame. The fire was quickly extinguished by replacing the cover, but the fryer continued to emit smoke which soon made the boat untenable. This naturally might have been extremely serious.
- 1155 Surfaced. The schooner was bearing 145°T, distant 4000 yards.
- 1200 Position: Lat. 33-50-N, Long. 128-00-E.
- 1201 Battle stations gun action.
- 1215 With range 500 yards, commenced firing with the 4" gun. The first round was a hit. Sea conditions were still unfavorable (state 4) for good pointing.
- 1218 Having fired 12 rounds with 75% hits, plus several 40mm hits, ceased firing.
- 1222 Target sank.
If this ship was any criterion of Jap schooners, our three-masted ship (torpedo target of 1 March) was probably 150 instead of 500 tons. Today's target was riding out the weather to a sea anchor. A lookout and the 4" pointer reported four or five men on deck before the first shot was fired. Subsequently no sign of life was noted.
- 1223 Secured from battle stations.
- 1300 Gave one deep fryer the deep six.
- 1317 SD contact 13 miles.
- 1319 Dived.
- 1901 Surfaced.
- 2047 Cleared weather report and information on the China Sked reception to ComNavGrpChina. Although we had easily copied their 1900(I) sked tonite, we could not hear their receipt. NPM receipted for them.
- 2103 Reported leaving area to pack commander.
- 2205 Received SEA CAT message that she had requested extension with SEGUNDO.
We would like to stay with them but feel it inadvisable due to poor condition of attack periscope, the apparent fatigue of the crew, and the possible loss of one prisoner unless we get him to better medical facilities soon.

7 March

- 0610 Submerged to patrol in waters between FUKAE SHIMA and DANJO GUNTO.
#4 outboard exhaust valve is not seating properly.
- 0853 OOD sighted two small ships bearing 336°T, distant 6000 yards. These appeared to be subchasers or PC boats. They were zigzagging at about eight knots on base course 190°T. Definite identification could not be made. Since there was no pinging heard,
- 0940 Battle stations gun action.
- 0950 Surfaced.
Range to targets - 8000 yards.
Chased targets. They still looked like SC's and as we were less than 15 miles from the land for which they were headed, turned away at 1010.
- 1015 Secured from battle stations and began surface search in direction from which targets had come in hopes they were making a preliminary sweep for something better.
- 1042 SD contact 14 miles.
- 1043 Dived and continued submerged patrol.
- 1200 Position: Lat. 32-22-N, Long. 128-36-E.
- 1905 Surfaced.

8 March

- 0605 Submerged for patrol.
- 1100 Passed close enough to KUCHINOYERABU to see houses, etc., in the harbor, but there was no shipping in evidence.
- 1200 Position: Lat. 30-25-N, Long. 130-07-E.
- 1737 Sound picked up echo ranging bearing 120°T; OOD sighted mast on that bearing and turned toward. Was unable to identify this ship. She worked north along the 100 fathom curve off YANU SHIMA, where she blended perfectly with land background.
- 1845 Lost sound contact.
- 1900 Surfaced and cleared patrol area enroute Midway.
- 2030 Exchanged recognition signals and calls with USS TILEFISH, (SS307).

9 March

- 0005 Cleared message to Comsubpac reporting results of patrol.
- 0802 Quartermaster sighted ship through high periscope, bearing 033°T. Closed and identified as a sailing ship.
- 0810 Battle stations gun action.
Target was a two-masted junk, 100 feet long.
- 0852 Commenced firing at range 400 yards. The 4" hit consistently, shots apparently passing through and through hull, as we could see daylight through hits in the bow. The 40mm and 20mm soon started a brisk blaze aft.
- 0915 With target burning brightly, one mast down, and thoroughly holed, secured from battle stations and shoved off.
- 0955 The officer of the deck reported he thought he saw a sail being raised on remaining mast. Reversed course.
- 1015 Received Comsubpac's message rerouting us to GUAM to discharge prisoners.
- 1019 Battle stations gun action.
- 1031 Commenced firing. Raked target from ahead with all guns at 50 yards range.
- 1035 Sighted several survivors.
- 1040 Alongside one survivor who willingly reported aboard.

Passed astern of target again raking her with all guns. Finally got the remaining mast down and the target very near water level.
There were several lone survivors, plus about six on a raft in the vicinity. Felt we had enough prisoners aboard for the time being.
- 1050 Secured from battle stations and cleared area. The target had been holed from stem to stern; the debris remaining was still afire when we left.
- 1200 Position: Lat. 29-31-N, Long. 133-39-E.
- 1340 SD interference.
- 1400 Sighted submarine through high periscope.
- 1445 Exchanged recognition signals and calls with USS GATO (SS212) by radar.

1655 Finally cleared rendezvous message to ComTaskFor 17.7 through NPN. Unable to raise NDP4.

2230 Friendly SJ interference bearing 048°T.

10 March

0320 Exchanged recognition signals by radar with unknown ship.

0807 Received CSP message to be on lookout for downed aviators. Started keeping station 10,000 yards on quarter of USS GATO to facilitate search.

0810 Sighted unknown U.S. submarine through high periscope.

1200 Position: Lat. 27-15-N, Long. 137-12-E.

1625 SD contact 15 miles.

1628 Sighted B-29, distant 10,000 yards, no IFF, dived.

1652 Surfaced.

1835 OOD reported what may have been a white flare bearing 195°T, turned toward and reported flare to USS GATO by radar.

1857, 1914, 1923, and 1927 - fired green Very stars.

1927 Reversed course.

1947, 1955, 2003, 2008, 2030, 2045, and 2100 - fired green Very stars.

2100 Secured search. Lost contact with GATO.

2203 OOD sighted bright white light bearing 210°T, apparently at considerable distance, very high, and of great enough intensity to light up the clouds.

11 March

0945 Sighted submarine on high periscope bearing 191°T; exchanged recognition signals and calls with USS SPOT (SS413).

1045 Sighted U.S. submarine, not identified.

1115 Made section dive; surfaced at 1145.

1200 Position: Lat. 22-08-N, Long. 137-34-E.

1245 Exchanged recognition signals with unidentified U.S. submarine.

1425 Made section dive; surfaced at 1450.

12 March

1200 Position: Lat. 17-43-N, Long. 137-57-E.

1346 Received CTG-17.7 message assigning HAZONBACK and GATO same escort.

2117 Exchanged recognition signals and calls with USS TRIGGER(SS237).

13 March

1036 Cleared message to CTG-17.7 repeating dawn rendezvous requested on 9 March.

1200: Position: Lat. 15-14-N, Long. 141-42-E.

1400 At four-engine speed, the boat literally dived under a wave. The port lookout, LONG, E.G., 658 83 27, EM2c, USNR, was knocked unconscious. Instinctive and immediate action by Lt(jc) W. H. PATTERLO, USNR, saved LONG from going overboard.

1534 Received CTG-17.7 message stating he had not received our first rendezvous message, escort to be designated later.

2213 CTG-17.7 designated escort, PC-824.

14 March

0631 In company with PC-824; approaching Guam.

1157 Moored starboard side to USS APOLLO (AS25), APRIA HARBOR, GUAM. Transferred four Japanese prisoners to Army guard detail which reported aboard to receive them.

15 March

The USS APOLLO gave us every consideration. In view of our short stay, we didn't ask for laundry service, but they talked us into it. Voyage repairs requested were accomplished with enthusiasm; we received plenty of fresh fruit; and left with a warm feeling for our treatment. We received 45,000 gallons of fuel.

Lt. Frank J. O'Hara, (S), USNR, File #133067, reported aboard for transportation.

1500(K) Underway from GUAM for PEARL HARBOR, in accordance with CTG-17.10 despatch of 15 March.

1536(K) Joined escort, USS DUNLAP (DD384).

1915(K) Parted company with escort.

16 March

- 0800(K) #2 main engine out of commission.
1200(K) Position: Lat. 16-35-N, Long. 145-50-E.
1400(K) #2 main engine back in commission.
2300(K) #1 main engine out of commission.

17 March

- 0530(K) #3 main engine out of commission.
0800(K) Reported necessary reduction in S.O.A. to CTG-17.7 and ConSubPac.
1200(K) Position: Lat. 17-50-N, Long. 151-04-E.
2000(K) SJ radar interference bearing 116°T.
2015(K) With interference steady on us, sent first major war vessel challenge several times slowly; no response.
2030(K) SJ contact 107°T, distant 9500 yards; evaded to northward at full on two engines.
2110(K) With this fellow apparently knowing our position and trailing on starboard quarter, distant 8500 yards, fired emergency identification signal from Buck Rogers gun. Target opened to 10,000 yards.
2054(K) Received request for 1708³⁰ position from ConSubPac in connection with USS TIGRONE (SS420) contact report.
2059(K) Received TIGRONE contact report putting periscope one degree east of our longitude at time of contact.
2200(K) SJ contact bearing 115°T, distant 9000 yards. This may have been the same ship, but I think not.
We again avoided to northward and soon had signals on SJ much to rapid to be read by an experienced signalman, or indiscriminate keying to confuse us.
2250(K) Lost contact with target bearing 273°T, distant 11,500 yards; his radar interference persisted for thirty minutes.
The minimum range on these contacts was 8,050 yards. We remained on the surface making every effort to avoid.
2300(K) MFM receipted for message to ConSubPac with our answer and data on trailer.

18 March

- 0400(K) #1 main engine back in commission.
0523(K) Submerged; surfaced at 0703.
1125(L) SJ interference bearing 270°T.
1147(K) Exchanged recognition signals and calls with USS PLAICE (SS390).
1200(K) Position: Lat. 18-50-N, Long. 155-06-E.
1834(K) Exchanged recognition signals and calls with U.S.S. PLAICE.

19 March - 1200(K) Position: Lat. 19-08-N, Long. 160-54-E.

20 March - 1200(L) Position: Lat. 19-50-N, Long. 166-16-E.

21 March - 1200(L) Position: Lat. 19-57-N, Long. 171-00-E.
Conducted deep discharge at the 6-hour rate.

22 March - 1200(M) Position: Lat. 20-07-N, Long. 176-50-E.

23 March - 0215(M) Crossed International Date Line.
1200(M) Position: Lat. 20-21-N, Long. 177-36-W.

23 March - 1200(Y) Position: Lat. 20-37-N, Long. 171-47-W.

24 March - 0008(Y) #2 main engine out of commission.
1200(Y) Position: Lat. 20-38-N, Long. 167-14-W.
1842(X) #2 main engine back in commission.

25 March - 1015(X) Attempted to exchange calls with USS COD (SS294);
we could read her, but were unable to get our call
to her.
1200(X) Position: Lat. 20-57-N, Long. 162-42-W.

26 March 0530(X) In company with USS SEGUNDO and USS PIPEFISH -
Escort, PC-595.

1030(X) Arrived Pearl Harbor for refit.

Razorba 6. #3

(C) WEATHER

No unusual weather conditions were encountered. For the most part the weather in this area, west of KYUSHU and east of SAISHU TO, was governed by the northwest monsoons.

(D) TIDAL INFORMATION

The currents and tides encountered conformed very closely to the sailing directions predictions. Consistent currents were encountered as listed below:

<u>LOCALITY</u>	<u>SET</u>	<u>DRIFT</u>
COLNETT STRAIT	090 to 110	0.8 to 1.5 knots
30-00 to 30-20-N 129-00 to 129-30-E	010 to 040	0.5 knots
31-00 to 31-20-N 129-00 to 129-20-E	030 to 080	0.3 to 0.7 knots
32-00 to 32-20-N 128-30 to 129-10-E	340 to 020	0.5 knots
32-00 to 33-00-N 127-00 to 128-00-E	- - -	0.0
33-40 to 34-20-N 128-00 to 128-55-E	060 to 100	0.3 to 1.0 knots

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1-1770

(E) NAVIGATIONAL AIDS

No navigational aids were encountered on this patrol.

(F) SHIP CONTACTS

No.	Time (I) Date	Lat. N Long. E	Type	Initial Range	Est. Course Speed	How Contacted	Remarks
1.	1856 11 Feb	31-04 129-43	Patrol Boat (Probably)	4800	110°T 5 knots	SJ Radar	None
2.	2258 17 Feb	33-51 128-24	Unknown	18,200	280°T 8 knots	SJ Radar	None
3.	1025 18 Feb	33-59 128-43	Medium AK or AO	14,000	220°T Unk.	Day sub. periscope	None
4.	1130 19 Feb	34-00 128-42	2 sea trucks	9,000	Various Various	Day sub. periscope	None
5.	1930 19 Feb	34-03 128-41	2 small vessels probably minesweepers	15,000	090°T Unk.	Sight, night bridge	None
6.*	1755 20 Feb	32-43 127-38	DE	12,000	100°T 15 knots	JK-heard echo ranging	None
7.	1010 23 Feb	32-27 127-40	Passenger-Freighter	16,000	260°T 16 knots	Day sub. periscope	Torp. Attack #1
8.	0538 24 Feb	33-06 127-49	Unknown	13,000	090°T changed to 340°T 19 knots	SJ radar - This target first de- tected heading at us while we were investigating what appeared to be false targets.	
9.**	1633 27 Feb	33-10 127-03	Power fishing vessel	10,000	330°T 6 knots	JP sound.	None
10.	0730 to 0840 28 Feb	34-07 128-15	3 fishing vessels under sail.	5,000	Various 2-4 knots	Day sub. periscope	None
11.	1315 28 Feb	34-02 128-15	Fishing vessel under sail	5,000	Various 2-4 knots	Day sub. periscope	None
12.	0115 to 0345 1 March	34-18 128-25	7 small vessels probably patrol boats.	5-7,000	Various 10 to 15 knots	SJ radar	None
13.	0838 1 March	34-14 128-35	3-masted schooner	7,000	310°T 6 knots	Day sub. periscope	Torp. Attack #2.
14.	1038 5 March	31-45 127-36	2 sea trucks	10,000	Various 2-4 knots	lookout day time	Gun Attack #1

No.	Time (I) Date	Lat. N Long. E	Type	Initial Range	Est. Course Speed	How Contacted	Remarks
15.	2345 5 March	127-32 34-17	Unknown	5400	Lying to	SJ Radar	None
16.	0540 6 March	34-00 127-55	2-masted fishing schooner	8800	160°T 2 knots	SJ Radar	None
17.	0700 6 March	33-58 127-56	2-masted fishing schooner	6000	160°T 3 knots	day, sub. periscope	Gun Attack #2. Same target as cont. #16.
18.	0853 7 March	32-17 128-32	2 small unidentified ships	6000	190°T 8 knots	Day, sub. periscope	None
19.	1737 *** 8 March	30-10 130-20	Unidentified	14,000	310°T unknown	JK-heard echo ranging	None
20.	0802 9 March	29-40 133-28	2-masted junk	16,000	010°T 3 knots	high periscope daytime	-Gun Attack #3.

* This contact first made by sound. Information relative to this contact is as follows: Depth of water 340 feet; submarine speed 2 knots; keel depth 60 feet; relative bearing 130°; type of ship DE; estimated tonnage 800; estimated target speed determined by periscope observations under good visibility conditions, 13 knots; target RPM 210; type sound equipment making first contact, JK; other type sound gear in use at the time, JP. Sound first picked up pinging (16.7 kcs) range 15,000 yards. Own sound gear was tuned to 18 kcs at time of initial contact.

** This contact first made by sound. Information relative to this contact is as follows: Depth of water 330 feet; submarine speed 2 knots; keel depth 60 feet; relative bearing 200°; type of ship, power fishing vessel; tonnage 50; estimated target speed determined by periscope observations under good visibility conditions, 7 knots; target RPM 120; type sound equipment making first contact, JP-1, other type sound gear in use at time, QB. Sound first picked up screws, range 10,000 yards.

*** This contact first made by sound. Information relative to this contact is as follows: Depth of water 300 fathoms; submarine speed 3 knots; keel depth 55 feet; relative bearing 330°; type ship, unidentified; tonnage unknown; estimated target speed, unknown; RPM - no screws heard; type sound gear making first contact, JK; other type sound gear in use at the time, none. Sound first picked up pinging on 17.5 kcs, range 14,000 yards. Own sound gear tuned to 18 kcs at time of initial contact.

(G) AIRCRAFT CONTACTS

No definite night-flying aircraft were encountered. On one occasion the SD radar had contact on what was more probably land, at 16 miles. On another occasion the SD radar had a contact at 2 miles. This latter contact was probably a rain squall.

Only one aircraft was sighted while we were submerged.

A total of four aircraft contacts were made while we were on the surface during daytime, keying our SD radar 10 seconds out of every 60 to 90 seconds.

(H) . ATTACK DATA

U.S.S. RAZORBACK

TORPEDO ATTACK NO. 1

PATROL NO. 3

TIME: 1046(I) DATE: 23 February 1945. LAT: 32-30-N. LONG: 127-40-E

Target Data -- Damage Inflicted

DESCRIPTION: This target was a small unescorted NKFFM passenger-freighter similar to YAMATO MARU with exceptions as follows:

Estimated tonnage 5000; kingposts forward of bridge were on a raised platform; twin stacks were taller in proportion; no rake to stacks or masts; composite superstructure looked slightly shorter in relation to the hull; forward part of superstructure appeared rounded or faired at outboard corners, similar to Jap passenger vessels of modern construction; no pronounced deck house was noted on the stern.

Contact was made by OOD sighting smoke through the periscope. Visibility was excellent but the attack was badly handicapped by a foggy periscope. This may or may not have been a properly marked hospital ship. After seeing the red cross on the hull I again looked carefully at the bridge and stacks for additional red crosses which were still not apparent. Definite contrast of colors of hull paint (other than the red cross) was not seen and I'm almost positive the stacks were black. Admittedly, these observations were through a somewhat foggy periscope.

The target was not observed to zig until fired upon. No known countermeasures were taken by the enemy as a result of this attack.

SHIP SUNK OR DAMAGED: None. No hits were observed or heard; no end of run explosions were heard.

TARGET DRAFT: Unk. COURSE: 260°T. SPEED: 16 knots. RANGE: 3200.

Own Ship Data

SPEED: 2 knots. COURSE: 160°T. DEPTH: 63'. ANGLE: 0°.

Fire Control and Torpedo Data

TYPE ATTACK: This was a periscope attack. The attack developed rapidly with solution of problem difficult due to fogging of the periscope, which in turn resulted in erratic ranges. One ping range was obtained which appeared impossible as it was a little over half the TDC solution. Another ping range should have been taken to prove or disprove an apparent over-estimate of masthead height by the Commanding Officer. Misses were caused by poor ranges.

ATTACK #1

Tubes Fired	#1	#2	#3	#4	#5
Track Angle	95 S	98 S	100 S	102 S	104 S
Gyro Angle	13 R	16 R	18 R	20 R	22 R
Depth Set	8'	8'	8'	8'	8'
Power	--	high	high	high	high
Hit or Miss	Miss	miss	miss	miss	miss
Erratic	No	No	No	No	No
Mark Torpedo	23	14-3A	14-3A	14-3A	14-3A
Serial No.	65479	26580	24815	40417	24776
Mark Exploder	6-5	6-4	6-4	6-4	6-4
Serial No.	16976	19367	3026	18556	1901
Actuation Set	Contact	Contact	Contact	Contact	Contact
Actuation Actual	None	None	None	None	None
Mark Warhead	16-1	16-1	16-1	16-1	16-1
Serial No.	14401	16598	12804	13661	12739
Explosive	TPX	TPX	TPX	TPX	TPX
Firing Interval	8 seconds				
Type Spread (feet from LOT)	300' left	180' left	60' left	60' right	180' right
Sea Conditions	State 3, direction 310° T, Temp. 62°F.				
Overhaul Activity	USS POLLO for Mk. 23 - USS SPERRY for Mk 14-3A.				
Remarks:	Misses due to fire control errors.				

U.S.S. RAZORBACK

TORPEDO ATTACK NO. 2

PATROL NO. 3

TIME: 0928(I) DATE: 1 March 1945 LAT: 34-13-N LONG: 128-23-E

Target Data -- Damage Inflicted

DESCRIPTION: A gaff rigged, three-masted schooner, with flying jib, outer jib, and jib. She was sailing before the wind with no topsails rigged. Her displacement was estimated at 500 tons. Contact was made by OOD through the periscope. Visibility was fair.

SHIP SUNK OR DAMAGED: None.

TARGET DRAFT: Unknown. COURSE: 308°T. SPEED: 6 knots. RANGE: 965 yds.

Own Ship Data

SPEED: 3 knots. COURSE: 215°T. DEPTH: 63'. ANGLE: 0°.

Fire Control and Torpedo Data

TYPE ATTACK: This was a periscope attack. We let the target overtake us giving plenty of time to get an excellent solution. Took a half dozen ping ranges during the last ten minutes of the approach with good results. Fired, using continuous periscope bearings with three-fish spread, 200 feet normal to the line of sight, forward-aft. Torpedoes ran under.

ATTACK #2

Tubes Fired	#10	#9	#8
Track Angle	106 P	105 P	104 P
Gyro Angle	8 L	8 L	10 L
Depth Set	6'	6'	6'
Power	---	high	high
Hit or Miss	Miss	miss	miss
Erratic	No	No	No
Mark Torpedo	23	14-3A	14-3A
Serial No.	65938	39479	26471
Mark Exploder	6-5	6-4	6-4
Serial No.	14390	19256	19472
Actuation Set	Contact	contact	contact
Actuation Actual	None	none	none
Mark Warhead	16-1	16-1	16-1
Serial No.	16349	18187	16568
Explosive	TPX	TPX	TPX
Firing Interval	8 seconds		
Type Spread (from MOT)	100' left	0	100' right
Sea Conditions	State 3, from 090° T, Temp. 58° F.		
Overhaul Activity	USS APOLLO for Mk. 23 - USS SPERRY for Mk. 14-3A.		
Remarks:	Torpedoes ran under.		

TIME: 1356(I) DATE: 5 March 1944. LAT: 31-51-N. LONG: 127-27-E.

Target Data — Damage Inflicted

SUNK: (IIS) Two sea trucks, 100 tons each, hulls similar to sea truck described in special article entitled, JAPANESE WOODEN CARGO VESSELS in ONI BULLETIN. Identity established through periscope prior to battle surface, and at close range on the surface. Length established at 85 feet by radar range and binocular formula.

DAMAGE DETERMINED BY: Both vessels were observed to sink by all hands on the topside.

Details of Action

At range 3000 yards at time 1350, with both sea trucks dead ahead, battle surfaced. With 2500 yard range commenced firing on one of the vessels which had turned towards. The third 4" shell was a hit and both sea trucks turned away. Heavy rain commenced, visibility 4000 yards, difficult to see. After firing ten rounds of 4" for two hits, ceased fire to close range. Reopened fire at 700 yards. Target burst into flames and appeared to be badly shattered. Ceased firing to chase other vessel. At range 800 yards opened fire on second target. Five 4" hits and many hits from smaller guns were observed before target looked sufficiently damaged. Returned to first target, which was well down by stern. Finished him off with all guns. Retrieved three survivors. Closed second target again. This fellow submerged without further urging.

Fifty rounds of 4" H.C. and common were fired. The empty cases of two rounds were ejected from the gun with great difficulty.

192 rounds of 40mm HEI and HEIT were fired.

480 rounds of 20mm ammunition were expended.

Despite much expert pampering, the .50 cal. machine guns have not functioned properly since their installation at Pearl Harbor. They made no exception in this case.

TDC, radar, periscope and bridge observer combined observations to furnish 4" gun with data. When within 800 yards of target, kept range set on 500 yards and scale at midpoint. This gave good results.

Low freeboard of the targets after sustaining hits, and heavy rain made gunnery difficult. Average firing range was 800 yards. No return fire was experienced.

Photographs were taken of this action.

U.S.S. RAZORBACK (SS394)

GUN ATTACK #2

PATROL #3

TIME: 1215(I) DATE: March 6, 1945. LAT: 33-50-N. LONG: 128-00-E.

Target Data -- Damage Inflicted

SUNK: (LIS) Small, two-masted schooner, estimated 50 tons, identity established by periscope observation and close observation on the surface.

DAMAGE DETERMINED BY: Sinking of vessel observed by all hands topside.

Details of Action

Battle surfaced at range 4000 yards. Closed immediately to range 400 yards. Opened fire with 4" gun. Of twelve H.C. and common rounds fired, nine were observed hits. Sprayed him a little with 40mm, 16 rounds of HEIT and HEI. Fire control consisted of setting range scale at 200 yards, deflection at midpoint. Three of the 4" hits were observed to strike the water about two feet short of target then continue on to tear his hull in devastating blasts. No opposition was encountered. Average firing range was 300 yards.

Photographs were taken of this action.

U.S.S. RAZORBACK

GUN ATTACK #3

PATROL NO. 3

TIME: 0852(I) DATE: 9 March 1945. LAT: 29-40-N. LONG: 133-28-E.

Target Data -- Damage Inflicted

SUNK: A two-masted junk of 100 tons, identity established by observation from bridge.

DAMAGE DETERMINED BY: Observed target completely demolished, with debris remaining above water burning briskly.

Details of Action

Target sighted through high periscope enroute base from area. Closed at battle stations to 400 yards. Expended nine rounds of 4" for nine hits. Target so pulpy that shells pass through causing little damage except in the direct path of the projectile. Opened up with 40mm and 20mm. These caused the stern to burn fiercely and provided more ventilation. With target burning and down by the bow, cleared the area. At range 6 miles, fire appeared to die down and target was still afloat. Returned to scene, maneuvered to get dead ahead of target at 50 yards range so shells will pass all the way through. Commenced firing 4", 40mm and 20mm. Soon cut down remaining mast, pepped up the burning, and then reduced freeboard to zero.

Fire control consisted of setting sights on range 200 yards and at midpoint in deflection. Total ammunition expended - 26 rounds 4" H.C. and common, 160 rounds of 40mm HEI and HEIT, 360 rounds of 20mm.

No return fire was encountered.

Photographs were taken of this action.

ATTACK #8

Tubes Fired	#1	#2	#3
Track Angle	35 P	36 P	36 P
Gyro Angle	005	004	000
Depth Set	6'	6'	6'
Power	High	—	—
Hit or Miss	Hit	Hit	Miss
Erratic	No	No	No
Mark Torpedo	14-3A	23	23
Serial No.	26826	41181	41244
Mark Exploder	6-4	6-4	6-4
Serial No.	1598	12604	8339
Actuation Set	Contact	Contact	Contact
Actuation Actual	Contact	Contact	None
Mark Warhead	16-1	16-1	16-1
Serial No.	17167	12780	17195
Explosive	TPX	TPX	TPX
Firing Interval	8 Seconds.		
Type Spread	Divergent, 300 feet across line of sight.		
Sea Conditions	State 1.		
Overhaul Activity	FULTON for reload.		
Remarks:	None		

(K) MAJOR DEFECTS & DAMAGE

Hull & Machinery:

1. Periscopes.

Periscopes fog in both high and low power. The attack periscope was gauged - the pressure had dropped to 1#. This periscope was recharged with dry nitrogen and the condition improved somewhat. A good periscope attack was impossible and search was difficult and ineffective.

2. Shafts.

At the beginning of the patrol the starboard shaft had a definite squeak at standard speed submerged which could be heard clearly on JP sound gear. This gradually got worse so that when we left the area this could be heard without the aid of sound gear, while making two-thirds speed submerged.

3. Bow planes.

Bow planes creep toward rise in a sea-way. This gives an added handicap on diving of from 4° to 8° on the planes.

4. #1 main engine. *

#1 main engine attached lub oil pump lost suction. Investigation revealed that the key-way and lock-bolt holding the herringbone gears to the driving shaft had sheared. The cause of this failure is undetermined. A spare pump was installed. Total time required for repairs was 29 hours.

5. #2 main engine. *

(a) #2 main engine lost all cooling fresh water. It was found that the rubber seals about the relief valve adapters had in several cases cracked allowing the fresh water to leak off. The affected rubber seals were renewed from spares on board. Total time required for repairs was 4 hours.

(b) #2 engine was secured when a loud thumping noise was heard in the attached lub oil pump. The ball-bearing race on the drive end of the pump had disintegrated and several of the balls had passed through the pump. Installed spare pump. Total time for repairs was 17 hours.

6. #3 main engine. *

#3 main engine was secured when loud noises were heard at the vertical drive end. An inspection revealed no obvious cause, but jacking the engine disclosed a definite binding which is thought to be the roller bearings of the vertical drive. Preparations have been made for lifting the upper crankshaft.

* Occurred enroute from Guam to Pearl.

7. Low pressure blower controller.

The low pressure blower drum type controller failed repeatedly, each time burning the contactor for number four resistor and rendering the blower inoperative. This is believed to be due to the inherent weakness in design of the drum type controllers.

8. Engine outboard exhaust valve.

The outboard exhaust valve for number four main engine and the auxiliary engine failed to seat properly and allowed water to leak by. Fortunately the engines were not flooded. This happened twice during the previous war patrol and a work request was initiated to locate the fault and remedy as necessary. It is known that all mufflers are badly corroded and this condition may be responsible for the trouble.

9. Main engine governor controller.

The main engine governor controller on the control cubicle developed a short from the windings of #1 selsyn transmitter to its frame. The transmitter was replaced from spares on hand.

10. Deep fat fryer.

The deep fat fryer, manufactured by the GRISWOLD MFG. CO., Erie, Pa., developed a short circuit at the switch, causing current to flow when in the "off" position. This caused overheating and a momentary burst of flame when the lid was taken off. The resulting fumes necessitated immediate surfacing during daylight while on station.

Ordnance and Gunnery:

1. February 22 - Outer door of #10 torpedo tube leaks an average of 200 pounds of water an hour. To avoid having the torpedo in that tube continuously flooded, left tube drain open and kept WRT at a low reading. This defect also occurred last patrol. Gasket on #10 tube was renewed by refit activity.
2. February 28 - Slip clutch for forward angle solver Tan-1 motor in TDC allows motor to race while torpedo run exceeds upper limits of mechanism. Removed motor and found that three or four drops of oil had fallen on clutch. When clutch was cleaned and its fiber shoes roughed up slightly with a file, it functioned properly.
3. March 5 - Twice had difficulty ejecting empty case from 4" gun. Cause undetermined.

(L) RADIO

TBL

Replaced burned out No. 860 tube in first intermediate power amplifier. Cause of failure is attributed to material.

Frequency of master oscillator drifted off from frequency meter settings. Investigation revealed that the heater circuit and blower motor which control the temperature of the master oscillator were inoperative. The brushes of the blower motor were burned and the commutator was badly pitted. The movable and fixed contacts of relay K-1 were burned and pitted. The lead from R-1 was shorted across the coil of K-1 causing arcing. The movable and fixed contacts and the blower motor were replaced. The spring tension of K-1 was adjusted. Cause of failure is attributed to material.

RBH

Sensitivity very low and at times barely audible. RF bypass condenser shorted out across primary of the output transformer, putting B plus in the screen. In addition, primary resistance of the output transformer was 2000 ohms instead of 36,000 ohms. Replaced both condenser and transformer. Cause of failure attributed to material.

(M) MAJOR DEFECTS AND DAMAGE, RADAR

SJ-1 Radar

The lobing motor in the upper antenna set up disturbances which were fed back to the "A" scope through power leads from the range indicator and step separation leads. No repair was attempted at sea to the motor; however, the noise voltage on the vertical plates of the "A" scope were partially eliminated by driving the lobing motor from a ship's power supply circuit and detaching the power leads from the range indicator.

Suggestions and Observations on SJ-1 Radar:

1. The steerable sweep installed during our last refit is a valuable aid in bearing and range indication. It is also useful in obtaining accurately measured ranges up to 89,000 yards, by switching back and forth between the normal 40,000 yard sweep on the PPI and the steerable sweep, and varying the range counter until the range circle and the target bright spot occupy the same position. The correct range is equal to twice the range indicated on the range counter.

2. The steerable sweep is useful in determination of the bearing of a 3000 mc. radar while standing a listening watch. The main lobe is much more readily identified on the steerable sweep than it is on the "A" scope.

3. A template based on our SJ antenna's pattern would be most useful as an aid to locating other 3000 mc radar. This vessel would appreciate being furnished the antenna pattern of our own SJ-1 radar.
4. The radar officer on the SEGUNDO furnished us with two valuable figures with regards to interference from friendly submarines:
 - (a) Maximum range at which the radiation may be detected is roughly 15 to 20 miles.
 - (b) All around interference is encountered when the range closes to 6,000 yards. This figure has been confirmed by us.
5. During this patrol our radar detected land as a second sweep echo at 75 miles. It seems reasonable to assume that D/F'ing of our SJ-1 radar is possible from high altitude land stations or aircraft at ranges up to 200 miles.
6. A portion of the signal which drives the vertical deflection plates of the "L" scope may be "pipod" to the SPA (Pulse analyzer). In this unit 3000 megacycle radar can be definitely identified as conforming (or not conforming) to the type used by our submarines.

SD-4 Radar

The two R-F power tubes of the set were destroyed by keying the SD without raising the mast. To avoid a recurrence of this casualty, we have installed indicator lights to show whether the mast is raised or lowered.

(N) SONAR GEAR AND SOUND CONDITIONS

Shortly before we left the area the JP-1 line filter failed, when all main condensers developed low resistance readings. Since spares are not carried for these condensers, we were unable to effect a repair.

The jury-rig talkback from JP-1 to the conning tower burned all its parts beyond repair when a short developed in the filament wiring.

Sound conditions:

<u>Local Date</u>	<u>Local Time</u>	<u>Lat.-N</u>	<u>Long.-E</u>	<u>Sea Cond.</u>	<u>Sound Conditions</u>
18 Feb.	1025	33-58	128-43	State 0	Very good. Picked up screws of ship, hull down, bearing 350°R, at 14,000 yards.
18 Feb.	1146	34-00	128-42	State 0	Good. Tracked two sea trucks and one lugger at ranges of 5000 to 7000 yards.

<u>Local Date</u>	<u>Local Time</u>	<u>Lat.-N</u>	<u>Long.-E</u>	<u>Sea Cond.</u>	<u>Sound Conditions</u>
20 Feb.	1755	32-43	127-38	State 1	Good. JK picked up ping- ing DE for initial con- tact at 130°R at 12,000 yards. Screws picked up at 8000 yards. JP picked up pinging and screws shortly after JK.
27 Feb.	1633	33-10	127-49	State 1	Very good. JP picked up screws of power fishing vessel for initial con- tact at 200°R at 10,000 yards.
8 March	1737	30-10	130-20	State 3	Good. JK picked up un- identified pinger for initial contact at 330°R at range of 14,000 yards. Screws were not heard at any time. Pinging was heard out to 20,000 yards.

(O) DENSITY LAYERS

Bathythermograph record cards were taken on all deep dives and a record made of gradients found. These gradients were plotted on a chart of the area and the following facts were noted:

Conditions found in this area agreed in general with the comments made by the Hydrographic Office Publications on sound conditions and density layers in this vicinity. Close to land, negative gradients at 150 to 400 feet were found to be frequent. At ranges greater than 50 miles from land, isothermal conditions to at least 300 feet were the rule. Good gradients were especially plentiful near the STRAITS of TSUSHIMA and off the southwest tip of KYUSHU.

LOCAL DATE TIME (-9)	DEPTH TO NEGATIVE GR/DIENT	DEPTH OF DIVE	EXTENT OF NEGATIVE GR/DIENT	CONDITIONS DOWN TO GR/DIENT	LAT. N	LONG. E
Feb.						
0600/7	260	335	2° at 335	Isothermal	30-02	129-16
0600/8	355	425	4° at 425	Isothermal	30-02	129-03
0600/9	260	410	2° at 410	Isothermal	31-03	129-10
0600/10	320	405	2° at 405	Isothermal to 180. 3/4° Neg. Gr. from 180 to 370 feet.	31-17	129-06
0600/11	280	385	1 1/2° at 385	Isothermal	30-59	129-18
0615/12	120	360	3° at 220 1° 220 to 340 feet	Isothermal	31-31	128-46
0620/14	N.D.	415	N.D.	Isothermal to 415 feet.	32-08	129-35
0615/15	160	360	3 1/2° at 280	Isothermal	32-03	129-45
0600/16	N.D.	280	N.D.	Isothermal to 280 feet.	32-42	127-55
0600/17	125	225	2° at 225	Isothermal	32-33	127-24
0600/18	110	140	1° at 140	Isothermal	33-59	128.42
0600/19	N.D.	240	N.D.	Is. to 240	33-45	128-40
0600/20	N.D.	65	N.D.	Is. to 65	33-08	127-46
0600/21	N.D.	285	N.D.	Is. to 285	32-13	127-21
0600/22	N.D.	255	N.D.	Is. to 255	32-49	127-50
0600/23	N.D.	280	N.D.	Is. to 280	32-24	127-40
0600/24	N.D.	275	N.D.	Is. to 275	32-56	127-53
0600/25	190	240	4° at 240	Isothermal	33-44	127-29
0600/26	N.D.	300	N.D.	Is. to 300	33-25	128-23
0600/27	N.D.	240	N.D.	Is. to 240	32-58	127-05
0600/28	170	180	1° at 180	Is. to 170	34-08	128-07
March						
0600/1	115	150	4° at 150	Isothermal	34-10	128-37
0600/2	200	300	1° at 300	Isothermal	31-30	128-05
0600/3	140	340	2° at 340	Isothermal	30-30	129-54
March 4	NO DEEP DIVE.					
March 5	No Deep Dive.					
0600/6	None to -	250			32-21	128-25
0600/7	300	380	2° at 380	Isothermal	30-29	129-52

(P) HEALTH, FOOD, AND HABITABILITY

The general physical condition of the officers and men seemed noticeably lower than on the two previous patrols. There was a general feeling of listlessness, tired feeling, and lack of energy. There were five men and one officer admitted to the sick list as follows:

- 1 gastro-enteritis, acute
- 1 hepatitis, acute
- 1 lymphadenitis, right groin
- 1 urticaria
- 1 gastritis, acute
- 1 catarrhal fever, acute

One man was transferred to the U.S.S. APOLLO on March 14, with a diagnosis of dengue fever.

In addition to the above there was an increased number of mild to severe stomach upsets, headaches, constipation, and diarrhea. None of these cases could be traced directly to the food or water.

The food was adequate in variety and quantity, and was well prepared.

There are very limited facilities on this boat for taking care of extra cold weather and wet clothing.

(Q) PERSONNEL

- (a) Number of men detached after previous patrol - - - - - 17
- (b) Number of men on board during patrol - - - - - 75
- (c) Number of men qualified at start of patrol - - - - - 48
- (d) Number of men qualified at end of patrol - - - - - 60
- (e) Number of unqualified men making their first patrol - 12

It is noted with pleasure that men who have been trained by the relief crews and activities at outlying bases are especially quick to fit into the ship's organization and are very active in taking up their duties of qualifying in submarines.

(R) MILES STEAMED - FUEL USED

GUAM to Arca - - - - - 1285 miles - 17,500 gals.
 In Arca - surface: 3296
 submerged: 703 3999 miles - 42,000 gals.
 Arca to GUAM - - - - - 1300 miles - 27,000 gals.
 GUAM to PEARL - - - - - 3600 miles - 56,000 gals.

(S) DURATION

Days enroute GUAM to Arca - - - - - 5
 Days in Arca - - - - - 30
 Days enroute to Base - - - - - 19
 Days submerged - - - - - 30

(T) FACTORS OF ENDURANCE REMAINING

<u>Torpedoes</u>	<u>Fuel</u>	<u>Provisions</u>	<u>Personnel Factor</u>
16	30,000 gals. GUAM 20,000 gals. PEARL	20 days	Unknown - fatigue apparent

(U) RADAR, COMMUNICATIONS, AND SONAR COUNTERMEASURES

1. Intercepted enemy radar signals.

The following brief discussion of our use of the APR equipment in analyzing enemy radar signals is given with the idea that it may prove useful to other ships having this equipment. More specific and detailed instructions on how best to use this equipment would be much appreciated by this ship.

The following observations of APR contacts are made:

- (a) Frequency.
- (b) Pulse width.
- (c) Pulse repetition frequency.
- (d) Whether or not the antenna is directional - rotational speed.
- (e) Whether or not lobe switching is used.
- (f) Signal strength.

The observed characteristics are then compared to a hypothetical radar in an attempt to determine the detected radar's specific use. For purposes of comparison the most simple, directional radar is used on the assumption that any deviation from a radar easy to build, install, and maintain must be for a specific purpose.

Once the deviations from this standard radar characteristics have been noted, the use and possibly the location of the specific set can be determined.

The tentative solution of the set's use and location is checked by further observations of signal strength over a period of time to determine the rate of change of range. For instance, airborne sets produce marked variations in signal strength in a short time. Approaching a land based set will gradually increase the signal strength; opening the range will decrease the signal strength.

A final analysis and check is then made by plotting all APR contacts on a track chart. By noting variations in signal strength of a given set at various geographical locations, the solution of a land based set may be confirmed or disproved. Future predictions of APR contacts from a located set may be made from this analysis, the predictions being more complete and accurate as we move about in the area and become more familiar with it.

Solutions on shipborne and airborne radars are confirmed by their absence as we pass through areas where such radars were previously detected.

Results of the above plotting are submitted as enclosure "C" to this report.

Intercepted radar signals had the following tabulated characteristics and locations:

<u>FREQUENCY IN MEGACYCLES</u>	<u>PULSE WIDTH IN MICROSECONDS</u>	<u>PRF IN PPS</u>	<u>ANTENNA</u>	<u>LOCATION</u>
76	65	500	Not Rotating	34-07-N, 129-13-E
167	15	500	Rotating	34-02-N, 127-20-E
97	30	750	"	33-16-N, 127-05-E
95	17	500	"	32-44-N, 128-40-E
74	60	500	"	32-39-N, 128-40-E
77	55	500	"	32-07-N, 130-06-E
98	40	450	"	32-00-N, 128-20-E
156	12	500	"	31-40-N, 129-43-E
159	7.5	500	"	31-28-N, 130-08-E
152	12	500	"	30-50-N, 129-30-E
159	7.5	500	"	30-30-N, 130-02-E
145	18	500	"	30-18-N, 130-30-E
155	16	1000	Not Rotating	*32-58-N, 128-10-E
156	10	1000	" "	*31-57-N, 129-20-E
156	7.5	500	" "	*31-50-N, 129-10-E
155	8.5	1000	" "	*31-50-N, 129-10-E
98	20	250	Rotating	*33-40-N, 128-20-E

* - Our position at time of contact.

2. No jamming was attempted by us; no enemy jamming was encountered.
3. No deception was attempted or encountered.
4. No photographs of radar phenomena were taken.
5. Two attempts were made to locate enemy radar signals by swinging ship. On one occasion, we attempted to swing ship to determine a line of bearing of an intercepted 156 mc radar; on another occasion we attempted to locate a 159 mc radar. Both attempts were without results. In our opinion, our lack of success was due to, (a) No knowledge of our APR antenna pattern. (b) Relative motion of our ship with respect to the enemy ship and rolling in a fairly heavy seaway, which would cause signal strength to vary in accordance with the shredded antenna beam of the enemy's radar and not the antenna pattern of our APR.
6. The use of a motor-driven, TN-2 tuning unit increased the effectiveness of the APR. The necessary 24-volt DC supply was taken from the VHF motor generator set.

7. Calibration of the APR:

We found calibration of the APR and SPA necessary to prevent changes in gain in these units from being interpreted as a change in signal strength, particularly after being disassociated with a given radar for two or three weeks. This was done by calibrating the APR nightly with the average ship's noise level.

Communications Countermeasures

No deliberate, or at least no effective, attempts at jamming were encountered. Considerable interference was encountered from JAP, as well as U.S. transmissions on ship-to-shore frequencies, particularly 4235 kcs.

No attempt was made to intercept or copy enemy signals.

No attempt at deception by the enemy was noted and no deception of the enemy was attempted on our part.

Sonar Countermeasures

No sonar countermeasures were noted. Pinging was only heard twice on this patrol; once on 16.9 kcs, and once on 17.5 kcs.

(V) REMARKS

COMMUNICATIONS:

1. Reception of Submarine Fox

Experience in the area with reception of 9090 kcs from Guam on the present extended schedule, and the new frequency, 9050 kcs, from NPM, was limited to only two days. The following comments are based on reception in the area prior to these changes.

Reception of Submarine Fox during the period 1000 to 1500 Z, was best on 6045 kcs. 9090 kcs from Guam was best during the period from 1700 to 2100 Z. Frequently, difficulty was experienced in copying the Guam signal due to poor keying of the transmitter. The Guam transmitter sometimes cut out for short intervals of time, and often sounded as if it were missing "dots". Keying from Guam improved slightly after 15 February. Signal strength from Guam was always four to five.

From 1500 to 1700 Z, it was very difficult to find any frequency on Submarine Fox that could be copied. Invariably, at 1455-1500 Z, a strong voice modulated carrier wave came on, which effectively blanketed out the Sub Fox signal on 6045 kcs until time of diving at 2100 Z.

It is recommended that consideration be given to transmitting Sub Fox from Guam on 6045 kcs from 1000 to 1500 Z, and on 9090 kcs from 1500 to 2100 Z, provided that the present difficulties with keying the Guam transmitter can be overcome.

No complete serials, or messages for this area were missed on this patrol. The last part of Serial 1-Z, 270147/FEB, was missed because ten groups were left out near the end by the operator. The last thirteen groups of Serial 2-A, 271832/FEB, were missed when the Guam transmitter cut out momentarily near the end of the message.

2. Ship-to-Shore Transmissions

Eight ship-to-shore messages were sent this patrol. Following is a tabulation of these transmissions:

<u>DATE</u>	<u>TIME OF FIRST CALL-UP</u>	<u>TIME OF DELIVERY</u>	<u>TOTAL TIME TO CLEAR</u>	<u>TO</u>	<u>VIA</u>	<u>FREQ. USED</u>
10 Feb.	1240 Z	1257 Z	17 min.	NPM	Direct	4235 kcs
14 Feb.	1145 Z	1235 Z	50 min.	NPM	Direct	4235 kcs
21 Feb.	1204 Z	1244 Z	40 min.	NPM	Direct	8470 kcs
27 Feb. ¹	1240 Z	---	---	NPM	---	4235 kcs
	1300 Z	1342 Z	1 hr. 2 min.	NPM	VHA 1	8470 kcs
3 March ²	1055 Z	1210 Z	---	NPM	NQM	8470 kcs
	---	1315 Z	2 hr. 20 min.	NPM	Blind	8470 kcs
6 March ³	1110 Z	---	---	NKN	---	8470 kcs
	1120 Z	1147 Z	37 min.	NKN	NPM	4235 kcs
8 March ⁴	1450 Z	1505 Z	15 min.	NPN	Direct	4235 kcs
9 March	0610 Z	---	---	NDP4	---	4155 kcs
	0640 Z	---	---	NDP4	---	8310 kcs
	0725 Z	0755 Z	1 hr. 45 min.	NDP4	NPN	8470 kcs

- (1) Tried unsuccessfully to raise NPM on 4235 and 8470 kcs.
- (2) Tried unsuccessfully to raise NPM on 8470 kcs. NQM receipted for message at 1210 but used questionable authentication. Tried to raise NQM again for forty minutes for check on authentication, with no success. Message finally sent blind three times by broadcast method.
- (3) Could not raise NKN on 8470 kcs. Shifted to 4235 kcs and worked NKN through NPM. NKN could hear us, but we could not hear him even though we had received his 1000 schedule strength 5.
- (4) Tried unsuccessfully to raise NDP4 on both 4155 and 8310 kcs. Shifted to 8470 kcs and sent message via NPN.

3. Wolfpack Communications

The only difficulty encountered in Wolfpack communications was in authentication, using the Shackle cipher. When no date/time group is employed by the originator, the text of the receipt has only one character. A minimum of three is required to use the Shackle grid properly.

There appears to be little choice between the alternate and primary Wopaco frequencies. Both sets of frequencies have a certain amount of Jap traffic on them. The Japs were already using the alternate frequencies before we shifted to them.

4. Reception of China Broadcasts

The China schedule at 1800 Z was copied successfully each night while in the area. The schedule at 1000 Z normally could not be copied because we could not surface in time. It is recommended that the 1000 Z schedule be shifted to 1030 Z. We were submerged during the 0200 Z schedule.

5. Need for an Additional High Frequency Receiver

It has been found during this and previous patrols that our present allowance of high frequency receivers is inadequate. There are three receivers on board at the present time with frequency ranges as follows: RAK-7, 15-600 kcs; RAL-7, 300 kcs-23 mcs; RBH, 300 kcs-17 mcs. The lowest frequencies which submarines in the Pacific are required to guard at any time are certain local area frequencies of 355 kcs, such as at Midway. The RAL-7 and RBH are both capable of receiving as low as 300 kcs, therefore we have no use for the RAK-7 at the present time, and it has not been used since entering the Pacific. The RBO-1 is entirely unsatisfactory for receiving CW because it is not equipped with a beat oscillator.

There are at least two high frequency circuits which must be guarded by submarines in patrol areas: Fox Schedules and Wopaco frequencies. In addition, submarines must often guard ComNavGrpChina schedules, and aircraft lifeguard frequencies. We have only two high frequency receivers and can guard only two of the above four circuits at any time. In addition, transmissions on ship-to-shore frequencies are often very difficult to clear with only one receiver available. Certain types of interference can be tuned out on the RAL-7 that cannot be tuned out on the RBH, and vice versa. During four ship-to-shore transmissions on this patrol it was necessary to secure guard of the Fox Schedule and use both receivers in order to hear the shore station signal and clear the message.

It is hoped that during this refit we can have our second RAL-7 receiver reinstalled in place of the RAK-7. This RAL-7 was removed by Pearl Harbor prior to our first war patrol, when the RBH was installed.

6. Inadequacy of VHF.

This vessel has found the VHF to be inadequate and unreliable for communications. It is suggested that enroute to and from the area the SD radar, in conjunction with the APR, be used for communications. At ranges up to 10 miles the SD radar produces a saturation signal on the APR. Normal procedure has been to use the SJ in lieu of the VHF. The use of the SD and APR would eliminate the loss of the SJ as a search unit during these periods.

General:

I hope the SEGUNDO, SEA CAT, and RAZORBACK will remain a pack. The commanding officers have recuperated together which could not help but prove beneficial by way of professional as well as personal discussions. The extra day's operation as a pack is a sound addition to the training schedule for ironing out small difficulties which might be confusing on station.

It is suggested that boats not carrying ECM be directed to place padding first in scheduled weather reports. This procedure is recommended on the theory that the extra time required to encode and decode check a message in strip is greater than that saved in Pearl by finding the weather first. We could have commenced transmitting about an hour sooner if we had had everything but the weather coded and checked before surfacing.

I recommend that boats assigned shallow or inherently smooth water areas be given priority on electric torpedoes.

Outlying base refit activities do excellent work. More than two successive refits away from Pearl Harbor, however, are not recommended for the following reasons:

- (a) There is still a shortage of spare parts on tenders.
- (b) Tenders are not supplied to perform major alterations. (That a new boat can be so outmoded in seven months without alteration improvements certainly is a tribute to those doing our research and development.)
- (c) Difficulties in supply of fresh foods to outlying bases for recuperation centers takes its toll on the general health and resistance of personnel.

Any suggestions or criticisms concerning our treatment of the prisoners we delivered to Guam would be greatly appreciated.

Needless to say, there will be no more frying done on this ship while submerged.

Serial: 021

DECLASSIFIEDCare of Fleet Post Office,
San Francisco, Calif.,
27 March 1945.

FIRST ENDORSEMENT to
U. S. S. RAZORBACK Report
of Third War Patrol.

From: The Commander Submarine Division FORTY FIVE.
To : The Commander-in-Chief, United States Fleet.
Via : The Commander Submarine Squadron FOUR.
The Commander Submarine Force, Pacific Fleet.
The Commander-in-Chief, U.S. Pacific Fleet.

Subject: U. S. S. RAZORBACK (SS394) - Report of Third War Patrol.

1. The Third war patrol of the RAZORBACK covered a period of fifty four (54) days, thirty (30) of which were spent in the patrol area. RAZORBACK was one of a coordinated attack group consisting of SEGUNDO, SEA CAT, and RAZORBACK with the commanding officer of SEGUNDO as group commander.

2. Area coverage was excellent. The patrol was characterized by the lack of suitable torpedo target contacts, and frequent small boat contacts. Aircraft contacts were not as numerous as would be expected in this area and no definite night flying planes were encountered.

3. Torpedo Attack No. 1.
On the morning of 23 February a submerged periscope approach was conducted on an unescorted AP on a steady course and five air torpedoes were fired at a range of 3200 yards before a red cross was seen on the hull. Fortunately all torpedoes missed their mark due to an apparent over estimation of the range by the commanding officer.

Torpedo Attack No. 2.
During the morning of 1 March a day periscope attack was made on a three masted schooner and three air torpedoes fired with negative results. Misses were probably due to the shallow draft of the target. Torpedoes were set on a depth of six feet.

Gun Attack No. 1
On 5 March two (2) sea trucks of 100 tons each were sunk in a well conducted battle surface. Three prisoners were taken aboard.

Gun Attack No. 2.
On 6 March a two masted schooner of an estimated 50 tons was sunk by 4" gunfire.

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Serial: 021

Fleet Post Office,
San Francisco, California.
27 March 1945.

[REDACTED]

FIRST ENDORSEMENT to
U.S.S. RAZORBACK Report
of Third War Patrol.

Subject: U.S.S. RAZORBACK - Report of Third War Patrol.
-----Gun Attack No. 3

On 9 March a 100 ton junk was demolished by 4", 40 mm,
and 20 mm gunfire. One prisoner was taken from the junk.

4. RAZORBACK arrived in an excellent state of cleanliness
and a fair material condition.

5. The Division Commander congratulates the commanding
officer, officers and crew on the completion of an arduous patrol
and regrets that more opportunity to come to grips with the enemy
was not afforded this splendid fighting ship.

V.L. Lowrance
V.L. LOWRANCE.

SUBMARINE SQUADRON FOUR
Fleet Post Office
San Francisco, California

11/jfs

FC5-4/416-3

Serial: 0254

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29 March 1945.

SECOND ENDORSEMENT to

USS RAZORBACK (SS394) Report of Third War Patrol.

From: The Commander Submarine Squadron FOUR.
To : The Commander-in-Chief, UNITED STATES FLEET.
Via : (1) The Commander Submarine Force, PACIFIC
FLEET, Administration.
(2) The Commander-in-Chief, U.S. PACIFIC FLEET.
Subject: U.S.S. RAZORBACK (SS394) - Report of Third War Patrol.

1. Forwarded, concurring in the remarks of the Commander Submarine Division FORTY-FIVE.
2. The Commander Submarine Squadron FOUR congratulates the Commanding Officer, officers, and crew of the U.S.S. RAZORBACK upon completion of this patrol, and for the damage inflicted upon the enemy.
3. It is recommended that the RAZORBACK be credited with the following:

SUNK

1 - Sea Truck(LIS)	- 100 tons
1 - Sea Truck(LIS)	- 100 tons
1 - Schooner(LIS)	- 50 tons
1 - Junk(LIS)	- <u>100 tons</u>
Total Sunk	- <u>350 tons</u>

W. V. O'Regan
W. V. O'REGAN.

12-10(A)/A16-3(18)

SUBMARINE FORCE, PACIFIC FLEET

mr

Serial 0703

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Care of Fleet Post Office,
San Francisco, California,
3 April 1945.

THIRD ENDORSEMENT to
RAZORBACK Report of
Third War Patrol.

NOTE: THIS REPORT WILL BE
DESTROYED PRIOR TO
ENTERING PATROL AREA.

COMSUBSPAC PATROL REPORT NO. 707
U.S.S. RAZORBACK - THIRD WAR PATROL.

From: The Commander Submarine Force, Pacific Fleet.
To : The Commander-in-Chief, United States Fleet.
Via : The Commander-in-Chief, U.S. Pacific Fleet.

Subject: U.S.S. RAZORBACK (SS394) - Report of Third War Patrol
(1 February to 26 March 1945).

1. The third war patrol of the RAZORBACK, under the command of Lieutenant Commander C. D. Brown, U.S. Navy, was conducted in the East China Sea area. The RAZORBACK, along with the U.S.S. SEA CAT (SS399) and the U.S.S. SEGUNDO (SS398), formed a coordinated attack group with the commanding officer of the SEGUNDO as group commander.

2. Excellent area coverage was maintained and some twenty contacts were made, most of which were small ships. Two unsuccessful torpedo attacks were delivered. The first of these attacks, although somewhat confused by foggy periscope observations, was apparently made upon a hospital ship. If such were the case, it is fortunate that the attack was not successful. Three aggressive gun attacks upon small craft in the area afforded some relief for the lack of good enemy targets during this arduous patrol.

3. Award of Submarine Combat Insignia for this patrol is not authorized.

4. The Commander Submarine Force, Pacific Fleet, congratulates the commanding officer, officers, and crew for having inflicted the following damage upon the enemy:

S U N K

1 - MIS. (Sea Truck) (EC)	-	100 tons (Gun Attack No. 1)
1 - MIS. (Sea Truck) (EC)	-	100 tons (Gun Attack No. 1)
1 - MIS. (Schooner) (EC)	-	50 tons (Gun Attack No. 2)
1 - MIS. (Junk) (EC)	-	<u>100</u> tons (Gun Attack No. 3)

TOTAL SUNK 350 tons

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FF12-10(1)/A16-3(18)

SUBMARINE FORCE, PACIFIC FLEET

Serial 0703

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Care of Fleet Post Office,
San Francisco, California,
3 April 1945.

THIRD ENDORSEMENT to
RAZORBACK Report of
Third War Patrol.

NOTE: THIS REPORT WILL BE
DESTROYED PRIOR TO
ENTERING PATROL AREA.

COMSUBSPAC PATROL REPORT NO. 707
U.S.S. RAZORBACK - THIRD WAR PATROL.

Subject: U.S.S. RAZORBACK (SS394) - Report of Third War Patrol
(1 February to 26 March 1945).

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E. L. Hynes 2nd

E. L. HYNES, 2nd,
Flag Secretary.