

SENIOR CLASS #1933

OP. PROB. IV - 1933

ANALYSES AND COMMENT OF RESEARCH DEPARTMENT by

- (1) Captain Van Auken on battleships, air forces, cruisers and train of BLUE.
- (2) Destroyers and Submarines - Captain Taylor
- (3) ORANGE plans, operations and all ORANGE types, by Commander Hoey.

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OPERATION PROBLEM IV -1933

Comment by

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SUBMARINES - BLUE

The BLUE C-in-C had under his command 12 S-boats and 9 V-boats. The S class submarines have a reliable sustained speed of 10 knots. The V-boats vary greatly in type: V-1-2-3 high speed, short radius; V-4 low speed, long radius mine layer, V-5-6 moderate speed, long radius, large displacement 2-6" guns, V-7-8-9 moderate speed, long radius, moderate displacement.

The Hawaiian command had 13 S-boats. These assumed to be required for defense of HAWAII. This very questionable.

There were six S-boats in the ASIATIC Fleet.

All other BLUE subs were at COCO SOLO and NEW LONDON and took no part in the problem.

The twelve S-boats under the BLUE C-in-C were sent out slightly in advance of the Fleet with orders to proceed independently at best speed by a prescribed route. This route kept them to the north-westward of the Fleet on a generally Easterly-Westerly line 20 miles apart, until the Fleet should pass them. Their orders were to screen the main body, attacking ORANGE forces when possible. It may be noted now that these slow submarines, due to their direct, well selected route and the detours made by BLUE main body, maintained an effective screening position throughout the problem. The ARGONAUT (V-4) accompanied this detachment.

The other U-boats were formed on an arc to the westward of the Fleet center, scouting interval 60 miles, distance 15 miles. Task: screening, information and attack.

The 13 Hawaiian S-boats were sent out as a false screen disposed on the arc of a circle which was not the BLUE Fleet center. They stood out to the southward and westward until the morning of 4 December, when they returned to HAWAII. About noon on 1 December these submarines made several contacts with the ORANGE Advance Submarines which caused the latter to hold their positions, expecting the BLUE Main Body to follow, but BLUE had previously

Submarines - BLUE

taken course South, so that these ORANGE submarines lost contact and never regained it by their own efforts. This screen proved effective in masking BLUE'S movements.

On 2 December the S-boats belonging to the BLUE Fleet made two contacts with these ORANGE submarines at a distance of 300 miles N.W. of BLUE MAIN BODY. This was also very misleading to ORANGE, resulting in a search to the Eastward by ORANGE submarines which resulted in no contact. Again on the morning of 6 December these two forces had another contact 450 miles N.W. of BLUE main body which was of no use to ORANGE. The night of 7 December the ARGONAUT was detached to investigate the PELEWS.

On the morning of 8 December one of the U-boat screen sighted and attacked an ORANGE CL, making one torpedo hit on her. On the morning of 9 December one of these submarines reported an ORANGE CL, resulting in BLUE bombing attack sinking her. Three of the BLUE submarines fueled on the 9th. (These were the V-1-2-3). It took 9 hours to accomplish this with wind force 5, sea moderate. At 8.5 hours on account of enemy contacts reported the last boat cast off and did not complete fueling. On 10 December several contacts were made with ORANGE cruisers, and after dark contacts with cruisers and destroyers warned of the approaching ORANGE destroyer attack.

On 11 December, the BLUE submarines sighted and reported various ORANGE forces withdrawing to the N.W. at high speed, but got no chance to attack.

On 12 December the BLUE submarines made contact with 1 ORANGE submarine and an ORANGE CV was sighted twice, but succeeded in avoiding attack.

On 13 December, one of the BLUE submarines in the Northern screen sighted two ORANGE CC at 10 knots and was in excellent position to attack. Because he sent contact report, the CC were warned by the director and avoided attack.

There were three instances in this problem in which surface ships were informed of submarines in their vicinity sending contact reports on high frequency. While there is a possibility of picking up such messages, it seems very improbable except on ships having an elaborate radio intelligence organization and separate radio equipment for that purpose. Even if picked up, it is practically impossible to tell the distance of the sender when high frequency is used. If ships change course radically every time they hear high frequency radio, even on what they believe to be the enemy's submarine frequency, they would be unable to accomplish their task. It is not believed sound for the War College to force a doctrine of not making contact reports by submarines previous to attacking.

This same day an approaching ORANGE bombing flight was reported by a BLUE submarine in time to repel it with a large flight of BLUE VFs.

Early morning of 14 December one of the northern BLUE submarine screen attacks one of two ORANGE CC and makes two hits.

In the meantime the ARGONAUT had been diverted to TRUK. She entered the large lagoon and laid a mine field without discovery. Later, she lay off NE pass and heard a mine explode and saw ORANGE tankers and hospital ships standing out. An ORANGE tanker was sunk in this mine field.

Again on 14 December BLUE submarine makes contact with the two ORANGE CCs, but the ORANGE planes sight and warn CCs, which avoid. This is the third time these CCs have exposed themselves to submarine attack in the same position relative to BLUE Fleet.

Also on 14 December the BLUE submarines reported approaching enemy air attacks in time to get out BLUE air counter offensive and drive them off.

On the evening of 14 December, 5 of the BLUE submarines report 5 ORANGE DD standing toward the BLUE Fleet at high speed, thus warning of the impending ORANGE night attack from 2-1/2 to 4 hours before the first contact with BLUE destroyer pickets. At this time

the two groups of BLUE submarines covered a sector of 120° with respect to the BLUE Fleet. The BLUE submarines took no part in the night action.

At the end of the problem the ARGONAUT was patrolling off TRUK; 5 S-boats from the ASIATIC Fleet were observing about the PELEWS and one at SONSOROL.

#### COMMENTS

The use of BLUE submarines in this problem is an excellent example of their possible value in such an operation. It is particularly to be noted how much use was made of the S-boats, in spite of their low speed. By sending them at their best speed on well selected route they were kept in position relative to the BLUE Fleet from which most enemy attacks developed. This was due to the detours the BLUE Fleet made and to the fact that the southern route of the BLUE Fleet threw ORANGE bases all on one flank. ORANGE might have attacked from other directions, but was loath to do so on account of logistics as well as difficulty of attaining such attack positions and withdrawal after attacks.

The warning of approaching air attacks show the desirability of delivering them at dawn when they have the best chance of escaping observation by distant submarine screens.

It is to be noted that the large cruiser submarines were not employed in their specialty but accompanied the Fleet. Also that the BASS, BARRACUDA and BONITA were required to refuel under what would have been at least difficult conditions.

The BLUE submarines demonstrated their great value as a distant screen even as far out as 300-400 miles.

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ORANGE Submarines

ORANGE has available in this problem 65 submarines. The general plan of the ORANGE C-in-C included observing BLUE departure and tracking from Hawaii with submarines, attacking BLUE repeatedly with a Striking Force, and then on the assumption that BLUE'S superiority would be wiped out, defeating BLUE in decisive engagement.

ORANGE submarines were assigned in accordance with this plan as follows:

Advance Submarine Force:

20 submarines of 19 knots surface speed; of these  
4 are minelayers.

To Striking Force, 45 submarines.

The initial disposition was as follows:

12 submarines of the Advance Submarine Force were off HAWAII and 8 (s SMS) were at JALUIT with 2 tenders and a tanker. Those off HAWAII fueled at sea near the islands.

The submarines of the Striking Force were at the BONIN ISLANDS, while the rest of the Striking Force was en route to the MARSHALL ISLANDS.

ORANGE Advance Submarine Force

The submarines off HAWAII on 30 November observed increased air activity and destroyer activity which kept those which were close in totally submerged. They heard a large force passing to the Westward, however, in the evening and all withdrew to the Westward. One submarine was sunk in BLUE minefield.

The next day contacts were made with BLUE aircraft and submarines. One ORANGE submarine was sunk by aircraft bomb. These ORANGE submarines therefore continued West during the following night.

As there were no further contacts, these submarines were now divided - five proceeding N'Westerly and five S'Westerly. The southward group contacted a BLUE submarine. No further contacts were made until 6 December, when BLUE SS was sighted. The submarines at JALUIT joined in the search.

The BLUE surface forces were not sighted by ORANGE until the morning of 8 December to the SE of JALUIT and then by a cruiser.

In the meantime the ORANGE Advance Submarine Force had been refuelled at JALUIT and TRUK and stood to the SW to intercept the BLUE Fleet.

Thus these 12 submarines were unable to keep touch with the BLUE Fleet or to find it after contact was lost. This was due principally to not acting on the information furnished by the inner observation vessels. Instead of standing to the eastward or even waiting in position, the submarines on the outer circle stood to the westward from the evening of 30 November until the morning of 2 December which gave the BLUE Fleet room to detour around them, assisted by the contacts of the BLUE submarines.

This failure therefore carries no lesson regarding the effectiveness of submarines in such operations but does again bring out the necessity for locating an enemy as near as practicable to his point of departure. The area he may be in increases with the square of the time since his departure.

When the BLUE Fleet was finally located by the ORANGE cruisers the ORANGE Advance Submarines were far to the northward of BLUE'S position.

Commander Scouting Force sent out estimated BLUE position at 0700, 10 December (80 miles in error). On this basis the Advance Subs ran to attain position ahead. One division attained position 200 miles ahead of BLUE Fleet at 1800. Contacted BLUE ZR.

During the night BLUE'S detour to the South was discovered in the course of an ORANGE DD attack, so the ORANGE subs stood to the southward. And the two southernmost divisions next day made some contacts, while the other divisions tood in to TRUK to refuel. At dark these 10 subs were covering an arc of about 60° to the westward of BLUE at distances from 25 to 90 miles from center of BLUE Fleet. They stood generally parallel to the BLUE Fleet during the night and made several contacts with BLUE screen, getting three torpedo hits on BLUE CAs.



During the next day, 12 December, these submarines make numerous contacts with all classes of ships and succeed in doing damage with torpedoes. Plane and destroyer activity gradually forces them astern. ORANGE loses 1 sub. sunk by air bombing, 1 sunk by depth charges at night, and 2 damaged by air bombs. BLUE CV2 was badly damaged and BLUE CA-28 sunk by torpedo from these submarines.

The eight submarines which were refuelling at TRUK now stand to the southward to intercept BLUE. So on the morning of 13 December ORANGE Advance Sub Force has submarines about 40 miles to the eastward of BLUE; 4 submarines about 300 miles to the westward, and 4 about 500 miles to the westward.

The ORANGE submarines astern of the BLUE formation contact a BLUE CV; one in position to attack uses radio and CV avoids. This is highly artificial in my opinion. BLUE planes carry out observation and bombing attacks on these submarines and succeed in sinking one with bombs. These submarines are by these activities kept submerged until dark when they stand to the westward on the surface making no contacts.

By dark the ORANGE Subdiv to the westward had approached nearly to BLUE outer screen. These retire to the westward during the night.

During 14 December the ORANGE submarines endeavor to close the BLUE Fleet but due to distance away at dawn; error in knowledge of BLUE'S position and BLUE plane activities they are unable to do so, and by night all the ORANGE submarines in this area are in a sector bearing from North to ENE from BLUE and at distances off from 35 to 140 miles from BLUE Fleet center.

During the night, aided by the searchlights, flares and gunfire occurring during the ORANGE destroyer attacks, two of these submarines get within the BLUE screen. One of these made two torpedo hits on a BLUE CA and the other made two torpedo hits on a BLUE BB, and one torpedo hit on a BLUE CL. They fired 22 torpedoes.

The next morning there were 7 ORANGE submarines among the BLUE FLEET, of which 2 had fired all torpedoes. They succeeded in getting 1 hit in a BLUE CA but plane activity and increasing heavy seas cause them to drop astern without accomplishing any more.

The following day (16 December) there are left 15 submarines of the ORANGE Advance Submarine Force to the southward and eastward of BLUE Fleet endeavoring to regain contact.

The Submarines of the Striking Force are now approaching BLUE Fleet from the NW and will be about 400 miles away at 1800 on 16 December.

It is apparent that BLUE is about to be subjected to much more intensive submarine attacks than he has just encountered, as ORANGE has 60 submarines converging on him. So this problem is by no means an indication of the total damage from submarines which a BLUE movement of this sort can expect. In fact the ORANGE submarine effort has scarcely commenced at the end of the problem.

#### COMMENT

It is to be noted that ORANGE used only 12 out of 20 available submarines for observation off HAWAII and tracking. Submarines cannot be relied on for tracking unless large numbers are used.

While the conditions of this problem regarding declaration of war did not permit submarine mining operations off LAHAINA ROADS, it should be noted that ORANGE had 4 submarine minelayers in the advance submarine force.

In operations such as ORANGE submarines undertook in this problem they are dependent on refuelling facilities.

The night attacks by ORANGE surface ships were of great assistance to ORANGE submarines by furnishing them with information of BLUE'S night movements, without which they would have been unable to regain contact so soon.

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DESTROYERS - B L U E

In Cruising Disposition 1.

BLUE assigned destroyers as follows:

To Battleships..... 17 DD  
Sector One..... 11 DD  
Sector Two ..... 14 DD  
Sector Three.... 12 DD  
Air Force..... 13 DD  
Train..... 14 DD

The Battleships Air Force and Train used the DD principally as anti-submarine screen.

Those assigned to sectors were stationed singly as pickets on the outer circle, radius 12 miles at night, 24 miles during daylight, 30 miles when ordered.

NOTE: The train anti-submarine screen had besides the DDs, 1 CM, 14 AM, 4 AT and 1 ASR. The ASR should certainly not be used for this purpose as she carries immensely valuable diving equipment and air compressors, besides being the slowest vessel in the fleet.

Thus the destroyers were assigned purely defensive tasks except tactically against submarines.

In Cruising Disposition two, a group of destroyers was assigned to each sector designated as Anti-submarine striking group. 4 DD in sector one, 2 in sector 2, and 2 in sector 3.

The BLUE destroyers encountered no enemy forces except sighting a few scouting planes until early morning of 11 December when the first ORANGE night attack was made. At this time BLUE Fleet was in cruising disposition two. The destroyer pickets picked up and illuminated the ORANGE scouting CLs, but the ORANGE CA division passed the picket line without being seen. When the pairs of ORANGE destroyers began coming in the BLUE pickets were of considerable assistance in stopping them as the diversity of targets

would probably have made it impossible for the BLUE cruisers to have stopped all of them. It happened that some of the BLUE destroyers involved were the class now building with heavy gun batteries which made them especially effective in this work. Some of these BLUE destroyers also succeeded in torpedoing two of the ORANGE CAS as they were withdrawing. BLUE loses four destroyers sunk and two badly damaged in repelling this attack. These two were abandoned and sunk.

The next morning on warning of air attack furnished by BLUE submarine the BLUE DD assigned battleships and carriers try to cover them with smoke which was ineffective. The BLUE DDs were fuelled from tankers.

Until the night of 14-15 December the BLUE DD were engaged in anti-submarine measures, using listening gear. They succeeded in keeping the tracking ORANGE submarines in the rear and sink one with depth charges.

Two BLUE DD were detached on 14 December to investigate KAPINGAMARINGA ISLAND.

In the night action of 14-15 December, the first contacts between surface ships were between ORANGE DD scouts and BLUE DD pickets. These contacts occurred in an arc from N by E to WxS with ORANGE scouts involved. Of these two withdrew, one was sunk at the cruiser circle and one was sunk inside the cruiser circle. The BLUE DDs used searchlights and starshell and guns. The main ORANGE attack came in from the NE. As this was led by a division of cruisers the BLUE DD pickets were able to use their torpedoes effectively, thus not only serving as pickets to give warning of the attack but also to do some initial damage to the attacking forces.

Two of the battleship divisions used their attached destroyers in a novel way. The battleships opened out to one to two miles to give no closed targets and better freedom of individual ship maneuver. The destroyers were placed between the battleships, thus being placed where they would be least liable to be fired on

if they lost sight of each other. This was not entirely successful due to the maneuvers of the battleships, but seems a good idea under these conditions. They fired 30 torpedoes at the attacking forces.

The BLUE DD pickets served their purpose, but BLUE lost 14 DD and had 2 badly damaged.

The BLUE pickets under the conditions of this attack made valuable use of their torpedo armament. This would probably not be the case except where the attack is led by cruisers.

The two BLUE DD which had been sent to KAPINGAMARINGA ISLAND encounter an ORANGE DD and some VP planes there. Later, after the planes depart without fuelling, the ORANGE carrier arrives. The DDs are unable to attack and trail the ORANGE CV and DD to TABOR ISLAND, where the BLUE DD sink the ORANGE DD and attack the CV with torpedoes unsuccessfully. The BLUE DD are sunk by gunfire and air plane bombs.

During the rest of the problem the BLUE DDs with the BLUE Fleet assist in harassing the ORANGE submarines and aid in preventing their getting up ahead of the BLUE Fleet.

The BLUE desron in the PHILIPPINES proceeded to DUMANQUILAS with the PHILIPPINE FORCE. They were used for escorting duty and on one occasion attacked an ORANGE mine layer division, sinking one CM and losing one DD.

There are no particular interesting points involved in the use of BLUE DD as they were used throughout in the usually accepted rôles and, with the exception of the matter of night disposition of anti-submarine screen, in the usual tactical methods. The outstanding point seems to be their use of torpedoes against a night attack led by cruisers. Their position on the picket line made it practicable to do this without endangering their own forces.

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### Destroyers - ORANGE

In this problem ORANGE was assumed to have a total of 112 DD and DLs.

Of these, 92 were under the command of the ORANGE C in C and 20 were in the Chinese Squadron.

The ORANGE C in C assigned 88 to the Striking Force and 4 to the Advanced Air Force.

Thus we have an example of the use of practically the whole ORANGE destroyer strength in an offensive rôle under a single command.

These ORANGE destroyers were kept concentrated by the Striking Force Commander and none were used for scouting except for local scouting immediately preceding destroyer attacks. The ORANGE destroyers were thus used strategically in the manner which generally represents BLUE opinion of the proper use of destroyers. One can but wonder whether actually the ORANGE conception would take this same line.

The ORANGE Striking Force delivered two night attacks. The first was started at such great distance that it failed to reach its objective before approaching dawn made its withdrawal mandatory. The influence of air scouting is here brought out. It prevented surface ships hanging on the outskirts of a fleet ready to dash in when dark falls, thus making it not only more difficult to reach the objective in time but also made accurate knowledge of the enemy's movements difficult, if not impossible. The conception of this first attack was a raid by 6 CAs on one part of the BLUE screen and a destroyer attack on a widely separated point in the BLUE screen. This plan could not be executed due to inaccurate estimates of BLUE position and movement.

The second attack was a highly concentrated one in which ORANGE sent in a line of destroyer scouts followed closely by two striking groups.

Each Striking Group had a division of cruisers in column leading, followed closely by destroyers in two columns. This form of attack suffered considerable damage from the BLUE picket line due to the ability of the pickets to use their torpedoes against the cruisers because the cruisers were seen first and thus had no warning. The first striking group was repulsed, reaching only long range firing position on the objective (BLUE BBs). This attack group held its close formation until forced to spread out by damage to the head of the formation. The second attack group came in with the destroyer divisions, separated and succeeded in delivering heavy torpedo attacks on three BLUE BBs. It can not be concluded that the difference in the success of the two groups was due solely to the difference in their attack formation, because the first attack caused BLUE losses and disorganization of the screen, which materially aided the second. However, taking this into consideration, it still seems demonstrated that, based on War College rules, it can be said that a somewhat dispersed attack has more chance of success than a highly concentrated one against the form of screen used by BLUE.

The details of losses and hits scored by the ORANGE destroyers in this problem are contained in the diagrams and critique. It may be said, however, that while BLUE was very seriously damaged, it is considered that due to the very large losses of ORANGE these night attacks were not a profitable undertaking in the form in which made.

As regards destroyer design, it has been impossible to find clear-cut instances to furnish comparisons because of the participation of cruisers in engagements between BLUE and ORANGE destroyers, with very few exceptions, and in those exceptions the BLUE destroyers were favored by priority of fire due to the position of the moon. Both BLUE and ORANGE were under the necessity of refuelling destroyers at sea, with the attendant hazards of delays by bad weather and enemy action.

