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2-28-34

SENIOR CLASS OF 1934

OPERATIONS PROBLEM III

AND

TACTICAL PROBLEM III

ANALYSES AND COMMENT OF RESEARCH DEPARTMENT

RESEARCH DEPARTMENT
Naval War College
Newport, R.I.
18 January, 1934

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Naval War College
Newport, R.I.

January 18, 1934.

From: Research Department
To: President, Naval War College

Subject: Analyses and comment upon Operation Problem III and
Tactical Problem III-Senior Class, 1934.

Reference: (a) Analyses and comment upon Operation Problem IV
and Tactical Problem V - Senior Class, 1933.

1. In reference (a), previously submitted, was given a complete analysis with some conclusions from the major BLUE - ORANGE problem of the year played by the Class of 1933 in April 1933. In connection with the consideration of this important example of a major BLUE-ORANGE naval campaign, the present analyses of Operation Problem III and Tactical Problem III, Senior Class, 1934, enclosed, is most important.

2. Operation Problem III as analyzed and commented upon was made up in general of a continuation of Operation Problem IV. It is therefore of great interest to consider the results of this problem superimposed upon the analyses of last year's game.

3. This problem was observed by the members of the Research Department and the analyses and comment enclosed was made and compiled by Captain Conant Taylor, U.S.N. It is of special value in observing the operations of air forces, cruisers and submarines.

4. It is recommended that the outstanding facts (Part V) and the conclusions (Part VI) be furnished each member of the staff and classes of the War College. It is further recommended that mimeograph copies of the problem be made and distributed according to the official mailing list.

W.R. Van Auken,
Captain, U.S.N.

January 18, 1934.

From: Research Department.
To: President, Naval War College.

Subject: Analyses and comment upon Operation Problem III and
Tactical Problem III - Senior Class, 1934.

Characteristics of the Problem. (Part I)

The forces involved in this problem are the BLUE and ORANGE Fleets, more or less in the condition in which they found themselves after the conclusion of BLUE's trans-Pacific advance as developed in Op. IV- Tact. V - 1933.

This problem is intended to represent a probable initial operation of the BLUE Fleet after having crossed the Pacific receiving severe damage, having found ORANGE in possession of LUZON, and having established its train and advanced base force at Dumanquilas. The base facilities are very meager and the arrival of three convoys via the Indian Ocean with troops, supplies and additional repair facilities is essential to secure the defense of the base and provide supplies and repair facilities for the Fleet.

In considering this as a continuation of Op. IV-Tact.V-1933, however, it is necessary to bear in mind the following:

BLUE is assumed to have repaired

- 1 BB damaged 20% above water
- 1 BB struck by a torpedo
- 2 CAs damaged 20% above water
- 2 CAs struck by torpedoes

BLUE also is given 7 DD and 2 submarines additional to what was available at the end of the previous problem.

ORANGE is assumed to have repaired 8 CLs, 12 DD and DLs and 7 submarines. It is believed that these adjustments greatly favored BLUE from the point of view of probability of accomplishment.

Furthermore, BLUE had still 1800 miles to go to Dumanquilas and ORANGE had available air forces and submarines with which to make further attacks. The problem ended with a violent gale coming on which would make it as difficult for BLUE to bring in his damaged ships as for ORANGE to keep in touch with them or to attack.

The area involved in this problem is the whole East Indies and Philippine Island region.

The time of year is January.

BLUE MISSION.

To secure the safe arrival of convoys A, B and C while maintaining the security of the base at Dumanquilas, in order to consolidate the position of the BLUE Fleet in the Philippines.

ORANGE MISSION.

To prevent the establishment of the BLUE Fleet in the Far East in order to regain control of the Western Pacific.

The principal features of the two operation plans were:

BLUE: To defend both the convoys and the base against ORANGE main force by interposing the BLUE main body in the Celebes Sea and to reinforce convoy escorts to defend against raids.

ORANGE: To destroy BLUE Fleet and/or seize and deny to BLUE his base at Dumanquilas by forcing dispersal of BLUE forces through threatening the convoys, finally engaging decisively BLUE main body or seizing Dumanquilas by joint operations in force.

The problem developed the following types of operations:

1. Air and submarine patrol.
2. Harassing air attacks on a poorly defended base.
3. Submarine attack on large force in restricted waters.
4. Air scouting.
5. Attempt of inferior fleet to break off engagement.
6. Attack on and defense of base defended only by advanced base force with present equipment.
7. Action of Fleets in retreat and pursuit.

8. Operations of plane carriers in fleet action.
9. Operations of patrol type planes in a naval campaign.
10. Attempt by superior fleet to defend two widely separated objectives of enemy attack.

Employment of Types.

ORANGE and BLUE Battleships.

The ORANGE battleships acting as a powerful concentrated force with the power of supporting attacks on the BLUE convoys forced BLUE battleships to concentrate against them, thus leaving the base open to attack as far as protection by battleships is concerned. BLUE was definitely superior to ORANGE and the engagement turned into a retirement on the part of ORANGE and a pursuit on the part of BLUE.

ORANGE laid an airplane smoke curtain close to BLUE battle line with the intention of interrupting BLUE fire, as some of the ORANGE ships were suffering severely. This happened to leave exposed one end of BLUE battle line. ORANGE battle line thereupon turned to starboard about 45° to take advantage of this and concentrate on the exposed BLUE ships, while BLUE turned to port to get the exposed ships behind the smoke as quickly as possible. If ORANGE had stood on and BLUE had gone around the smoke screen as he did, ORANGE would have got out of range of BLUE except by indirect fire. This smoke screen was not as effective as the two commanders apparently judged it to be, because both had established the range and had plane spot so that fire could have continued to be fairly effective.

It is believed that some of the ORANGE battleships which were heavily damaged might have been saved if ORANGE had taken advantage of BLUE's delay caused by this smoke to open the range instead of trying to get a gunnery advantage out of it.

This would have been assisted also by BLUE having to go around the mine field which ORANGE laid at this time.

The actual result was that BLUE battleships gave up the chase, but not until the badly damaged ORANGE ships had been sunk.

BLUE on the other hand would have done better to continue the chase standing right through the smoke. This was his only choice if he was determined to finish off the ORANGE force now at all cost, which was his surest chance of ultimate success, since he knew his base had fallen. The range when the smoke was laid was 25,000 yards. ORANGE at that time had 1 knot superiority over BLUE, so BLUE could have held ORANGE in range

for at least an hour and a half. BLUE failed to realize how badly some of the ORANGE ships were damaged. Whereas there were 6 ORANGE against 5 BLUE, the 5 BLUE were actually greatly superior. In fact, one ORANGE BB sank while BLUE was making this maneuver.

PART II

Employment of Types - - ORANGE Cruisers

ORANGE assigned, as an observation detachment, 4 CLs and 4 XCAs (total 14 VS carried) to the Battle Force, 5 CLs and 4 CAs, to the Dumanquilas attack force 3 CLs (3 VS).

The Observation Detachment was to observe Sunda and Lombok Straits. The detachment proceeded in advance of ORANGE main body, but its mission was completely changed before reaching its stations and it was ordered to scout to the eastward in the Java Sea because of information that the BLUE main body was coming down through Makassar Strait. Investigated bays on coast of Borneo.

19 January 1530 made contact BLUE main body by means of planes. 2 CLs detached to Tering Bay. The other two CLs were discovered by enemy plane and bombed and sunk.

One XCA was sunk by BLUE CL.

The remaining 2 CL and 3 XCA joined the ORANGE main body.

Thus the report of BLUE main body plus such negative information as was obtained cost ORANGE 2 CLs and 1 XCA.

This detachment had been at sea from 11 January to 24 January when it joined main body.

The cruisers attached to the Battle Force proceeded with the main body until night of 23 January when 3 CL were sent out to scout to the eastward.

In the morning before daylight the DLs on outer screen of ORANGE main body contacted BLUE cruisers and 4 CA were sent out to develop this contact. Further contacts between ORANGE and BLUE cruisers followed with damage to both.

As day broke the tactical phase of the problem was developed on the game board. ORANGE had remaining 4 CA, 9 CL and 2 XCA.

In the ORANGE battle plan the cruisers were assigned to a "light force" task group with most of the destroyers under a single command. As in the case of BLUE, this task organization was not carried out and no student was assigned to command this task group.

The task assigned this task group was, for cruisers, engage BLUE cruisers opposite at decisive ranges, avoid coming under fire of BLUE battle line, then attack BLUE battle line. This was based on the assumption that BLUE light forces were inferior, which was correct. The ORANGE battle plan was not carried out, however, so that these cruisers really operated without any battle plan. As day broke the 4 CA were concentrated in the center, 4 CL were spread out on a screen to their rear, 3 CL were way off to the eastward where they had been sent during the night to scout, two CL were joining from the northwest and 3 XCA were to the northward. During the engagements which followed with BLUE cruisers these forces, except the 3 CL to the eastward, withdrew and were finally disposed on the flanks of the ORANGE battle line 3XCA and 4 CL to the northward and 4 CA and 2 CL to the southward. Some of these ORANGE cruisers were fired on by BBs as daylight came on.

The 2 CL to the southward crossed astern of their own battleships (engaged side) and joined the CLs on the other flank at high speed. This was a run of 37 miles over the ground.

During the ORANGE retreat one CA was sunk by the BLUE CAs and one was sunk by airplane bombs.

The CLs on the northern flank laid a minefield on orders. An ORANGE XCA and two ORANGE DL were sunk by this mine field. No enemy vessels crossed it.

Thus up to the end of the board maneuver these cruisers failed to accomplish anything except some damage on BLUE cruisers, which was not in any way decisive, but suffered severe losses themselves.

BLUE Cruisers.

BLUE has 4 CLs and 6 CAs remaining at the beginning of this problem. They, with three squadrons of destroyers (35 total DD), were assigned as an Escort Reinforcement. They performed this duty with respect to Convoy A with no opposition except from submarines. They steamed 480 miles at high speed to join this convoy. In this connection it is interesting to note the difference between 30 knots and 28 knots for this run is 1 hour, 10 minutes. These cruisers used their high speed in returning to Dumanquilas through an area known to be occupied by ORANGE submarines.

Later the cruisers sortied with the main body and proceeded to the north coast of Java. One CA and one CL were sunk by ORANGE submarines during this passage in Makassar Strait.

One CL was sent to investigate Banka Strait, proceeded at 22 knots, examined with plane and discovered ORANGE Fleet. The CL rejoined, taking 46 hours for this task. Her speed was selected to suit times of daylight and dark, so that higher speed would have been of no use.

Another CL was sent to search to the westward and using her planes discovered the ORANGE main body at 1600 22 January. This cruiser sank an ORANGE XCA while on this mission.

3 CL and 1 CA were now used by BLUE as a scouting line ahead of the main body.

Early on 24 January two of these CLs engaged two ORANGE CLs and 1 BLUE CA engaged one ORANGE CA. ORANGE lost 1 CL and BLUE cruisers were severely damaged. These daybreak contacts were accidental and of no particular value to either side since both developed the situation quickly by air scouting.

The cruisers therefore played a very minor role in the service of information and security, except for their success in using planes to get definite information of an enemy whose approximate position was known from other sources. The use of single cruiser for this purpose is noteworthy. Economy of force.

In the tactical phase of the problem the cruisers took up, in the approach disposition, position as follows: right flank, 1 CL; left flank, 2 CL and 5 CA.

The BLUE Battle Plan had not specified stations or command organization of battle areas, all the cruisers and the majority of the destroyers being assigned to Commander Light Forces. As a matter of fact, no such command was exercised and no player was assigned that title. Such orders as were issued to light forces were issued to the unit by the O.T.C.

As a result, there was some confusion in the handling of the BLUE CLs. After the initial cruiser actions two of them were on the left flank with the 5 CAs, while on the right flank was only 1 CL. The two CLs on the left flank were ordered to the right flank and crossed ahead of the BLUE battleships, coming under fire of ORANGE CC. One was sunk and another seriously damaged. Their assignment of position should probably have been made when the first contacts developed.

The battle task assigned the cruisers as part of the light forces was to defend the battle line and when directed attack enemy battle line.

In the initial engagements between cruisers, which were brought about by their finding themselves in range as day broke, the BLUE cruisers acted rather aggressively, considering their assigned task, and followed up the retiring ORANGE cruisers until threatened by ORANGE CC, when the BLUE CAs withdrew. During this time they inflicted on ORANGE cruisers damage equivalent to 7.76 14" penetrative hits and received from them damage equivalent to 5.86 14" penetrative hits. Due to this aggressive action one ORANGE CA was forced to slow down and fell a victim to the BLUE CAs later.

Thus these BLUE CAs, regardless of battle orders, took advantage of the existing situation to weaken the enemy's cruiser force.

Two BLUE CA were sunk by airplane bombs.

The cruisers took no further part in the action up to the end of the maneuver on the board. BLUE had left for further operations 3 CA and 2 CLs.

The task laid down in the battle plan have been carried out up to the end of the maneuver as played.

ORANGE aircraft and aircraft carriers.

The ORANGE aircraft were assigned in the Operation Plan as follows:

Ship planes under normal organization.
Airdiv 1 (the KAGA- CV-3) to Battle Force
Airdivs 2 and 4 (NOTORO and KAMOI, HAWAII MARU and
MANILA MARU (2 AVs + 2 XAVs)
as task force entitled Air Force.

The planes were thus distributed as follows:

Observation Detachment - 12 VS.
Battle Force, 14 VO, 5 VS, 32 VF, 16 VB, 32 VT.
Dumanquilas Force, 6 VO, 11 VS, 6 VF.
Air Force, 64 VP.

In the mission actually assigned the Observation Force they were on 19 January able to obtain information of the BLUE main body, by the use of their planes, without any losses. On the next day, however, while repeating these scouting flights, two ORANGE CLs were bombed and sunk.

These VS planes accomplished their part of the task assigned. It should be noted that even the use of aircraft does not save scouting forces from losses if the enemy has air forces powerful enough to attack the ships. The distribution of the scouting ships to cover an area makes it easy for the enemy aircraft to locate some of them.

During the advance of the ORANGE Battle Force into the South China Sea, its aircraft were used to a considerable extent for screening flights. No contacts were made. They were of great value in examining the Banka Roads prior to the arrival of the Battle Force, thus assuring its safety in approaching these narrow waters.

The naval aircraft of the Dumanquilas Force were used in an unsuccessful attempt to defend against a BLUE bombing attack while approaching Dumanquilas. During the landing the VFs were sent to support an ORANGE bombing attack on Dumanquilas and were absent while the landing was being bombed by BLUE. The aircraft originally with the Dumanquilas Force were quite inadequate and accomplished little.

The Air Force consisting of the four tenders and 64 VP were given an initial task of giving information of BLUE movements and dispositions in Sulu and Celebes Seas and at Dumanquilas. They were later ordered to operate under the Commander Dumanquilas Force.

In carrying out their initial task they were successful in reporting all important BLUE movements within their range, including the departure of BLUE main body from Dumanquilas. Their ability to shift base of operations quickly according to need and the possibility of planes continuing to operate after their tender was destroyed, by using other tenders, even though at cost of less adequate facilities, is noteworthy as indicating the great value of this type of plane in such areas as the Philippines where small harbors abound near important areas. The vulnerability of these tenders when discovered, however, stands out on the other side of the picture.

Tactical Employment of ORANGE planes.

As the two main bodies drew near each other ORANGE Crudiv 5 was ordered to use planes to scout for enemy on 24 January, but as day broke ORANGE and BLUE ships found themselves in sight of each other and so planes were not used to locate the enemy except to search for the aircraft carriers.

The ORANGE CV had been sent about 95 miles to the westward of the ORANGE main body on the assumption that the BLUE main body was to the eastward, which assumption was correct. The ORANGE battle plan used the CV as a separate task group entitled "Air Force". The ORANGE air force carried out the tasks assigned in the battle plan to a considerable extent. The orders in the battle plan were

1. Attack BLUE cruisers with bombs.
2. Lay smoke curtains near BLUE battle line as directed by O.T.C.
3. Attack BLUE battle line with torpedoes.
4. Attack BLUE carrier when located.

CARRIER PLANES.

ORANGE CV-3 used 8 VF in pairs for initial tactical scouting. On approaching the main body, however, these planes took up a close formation and succeeded in locating the BLUE main body and making out his disposition. They then proceeded to the ORANGE main body. 0545, for the smoke-laying task the CV launched 16 VT and an escort of 7 VF to report to O.T.C. 0606, for the bombing task the CV launched 16 VB 1000# bombs, escort 14 VF, to rendezvous near main body. This bombing group was ordered to attack BLUE carrier but found itself on further information unable to reach and asked position of BLUE main body. Finally attacked a BLUE CA in formation with 4 other CAs and sank her, losing 3 VB. The remaining 13 VB return to the CV. Here is an example of a bombing flight launched before its objective is located, using its fuel up and accomplishing little. The objective was too far away for this method to succeed. 0718 - for the torpedo task CV launched 16 VT, escort 7 VF, with orders to attack enemy battle line. 7 VT smokers previously launched were assigned to this task also. The BLUE battle line had DD screen 4,000 yards out, but the ORANGE smokers laid a smoke curtain on them through which the VTs attacked on each bow of the BBs. At the same time VFs made strafing attacks on anti-aircraft gun crews. ORANGE was given 4 torpedo hits and lost 6 VT and 3 VF.

0907, 3 of the VT smokers laid a smoke screen near BLUE battle line, losing 1 VT. The effect of this screen is discussed under the BB action. These planes had been flying 3 hours and 22 minutes before being used.

0924, the 13 VB re-serviced, were launched with orders to bomb BLUE BBs (note change of plan; original plan was to bomb cruisers). They bombed BLUE BB, losing 3 VB (damage to BB was 2.65 A.W. and .85 U.W.).

1100, 10 VT, re-serviced, with 6 VT smokers try to repeat torpedo attack on BLUE battle line, but BLUE destroyers lay smoke screen behind the screen laid by ORANGE planes and ORANGE VTs coming through unable to see and pull out. They then attack a BLUE CA, sinking her and losing 3 VT. They lost 1 VT and 2 VF in the attempted attack on the BBs.

This defense against torpedo planes by the anti-submarine screen laying smoke is an interesting development. It appears on the game board to be an excellent means of defense when the planes use a smoke curtain because there is a strong element of surprise in coming through their own smoke curtain expecting to run into the clear and suddenly finding themselves smothered in destroyer smoke.

SUMMARY

Battleship planes spotted for gunfire, lost none in operation, lost eight on deck.

Cruiser planes used for scouting obtained excellent information, lost 10 planes, assisted attack on Dumanquilas, lost 4 planes.

Carrier planes. VFs were used for short range protective screening during early part of problem; lost 1 plane. Also for tactical scouting a few were used. Main use was to escort heavy planes and strafing attack on AA batteries during torpedo plane attacks. They were valuable but not decisive in this. Lost 11 planes in these operations.

VTs were used as torpedo planes and heavy smokers in co-operation. They inflicted on BLUE a total of 11.1 14" penetrative hits under-water damage. Lost 18 planes in these operations.

VBs were used in bombing heavy cruisers and battleships. They inflicted damage equivalent to 13.4 penetrative 14" hits above and under-water damage. They lost 6 planes in these operations.

Tender based VPs. Furnished very valuable information during the early part of the problem. They lost 4 planes during these operations.

They were used in bombing Dumanquilas, but had little decisive effect in that attack as the damage inflicted was not on the defense forces. BLUE BB-42 and 2 auxiliaries destroyed in harbor. Lost 11 planes in these operations. They also bombed BLUE XAV at Tawi Tawi and sank her. Lost 2 planes in this operation

ORANGE lost:	100%	VFs
	50%	VSs
	43%	VOs
	100%	VBs
	41%	VTs
	36%	VPs

At the end of the problem the remaining VTs have no place to land and will be all lost.

The ORANGE CV is 14% damaged with her flight deck wrecked, and one ORANGE XAV is 29% damaged at the end of the problem.

ORANGE lost 52% of total number of planes.

In general it is to be noted that about half of these planes were lost through breakdown, navigational errors, and being bombed on deck. A large percentage of these losses was avoidable without detracting from the tasks accomplished. This applies only partly to the losses of scouting planes, some of which are inevitable and are part of the cost of information.

BLUE Aircraft and Aircraft Carriers.

BLUE air craft were assigned in the Operation Plan as follows:

Ship planes under normal organization.
Cardiv two and four with a Desdiv constituted task group entitled "Air Force".
AV-2 and planes of Marine Advance Base Force assigned to Base Force.

The planes were thus distributed as follows:

<u>Air Force</u>	54 VF
	30 VS
	54 VB
	18 VT
	64 VP (25% spares in hold)
<u>Escort Reinforcement</u>	34 VS
<u>Main Body</u>	27 VO
<u>Base Force</u>	18 VP
	27 VF

Battleship Planes.

The battleship VOs were used for patrolling while the Fleet was at Dumanquilas and again while fueling at Benda Roads.

In the tactical phase they were launched on first contact reports and spotted and made some tactical reports of enemy heavy ships.

Cruiser Planes.

Cruiser planes in small numbers were used for scouting very successfully after BLUE had received general information of the location of the ORANGE forces through observers on shore and neutral ships.

In the tactical phase cruiser planes were used in an attempt to destroy ORANGE spotters, but were not successful as the spotters withdrew to the protection of their own ships' anti-aircraft batteries. This is a questionable situation which has not been worked out at the Naval War College. It would not appear practicable for the anti-aircraft batteries to single out enemy planes if the spotters were being closely attacked. On the other hand since the VOs and VSs have practically the same characteristics, cannot the VOs avoid engagement with VSs, but while doing so can they continue spotting? There is no provision in the War College rules for reduction in spotting efficiency due to interference by enemy planes and probably no need for it so far as gunnery is concerned, but in studying employment of planes it makes it impossible to arrive at any conclusion as to whether enemy spotters are proper objectives of cruiser planes.

VP planes of the Aircraft Tenders.

These planes were extensively used by BLUE and proved very valuable both in obtaining information and as bombers.

Extensive patrols from Dumanquilas kept BLUE well informed of ORANGE forces in the Celebes Sea, including submarines. A good many planes were lost in this strenuous duty.

The AVs were very vulnerable to attack when discovered and BLUE lost two by bombing.

This worked both ways and the BLUE VPs discovered and bombed ORANGE AV.

BLUE VPs discovered and attacked ORANGE expedition against Dumanquilas and considerably reduced its strength before the landing was effected.

BLUE succeeded in getting 11 VPs to the scene of the Fleet action by using small harbors as bases. These damaged an ORANGE BB 1.68 above water and .89 under water but losing 4 VPs.

In general the value of the VPs to BLUE was very great and their ability to shift base and use makeshift facilities adds to their value in an area such as this where many small harbors are available.

Carrier Planes.

During the early part of the problem the BLUE carriers used VS planes for anti-submarine patrol and for scouting. They succeeded in warning of submarines near the main body. They located three ORANGE scouts, which were sunk as a result of these contacts and located other ORANGE scouting forces.

Carrier Planes

When the Fleets came so close together that an engagement seemed likely the CVs were stationed 50 miles from the BLUE main body, one East and one S.E. Although located by ORANGE CLs the ORANGE bombers failed to reach them and they remained effective throughout the problem.

In the BLUE battle plan the two carriers were designated as "Air Forces" and given the general task of attacking enemy capital ships and carriers and defending own battle line and carriers.

The VS planes were used initially for scouting and soon located the ORANGE fleet and reported its disposition. These planes also succeeded in locating the ORANGE carrier, although it was 95 miles beyond the ORANGE main body.

The BLUE carriers proceeded to attack the ORANGE battle line with bombs and torpedoes, using VFs to escort the formations and to make simultaneous strafing attacks on the anti-aircraft batteries. A few VT and VS planes were used in conjunction with the torpedo planes to lay smoke curtains. The air opposition encountered was not effective as the BLUE VF planes were in superior numbers. The two BLUE carriers delivered five bombing attacks and two torpedo attacks during the engagement. Two bombing attacks were made on the ORANGE battle line - one on ORANGE CC, one on ORANGE CV and one on ORANGE CAs. The two torpedo attacks were made on the ORANGE battle line. The results were of greatest importance. They succeeded in slowing down the ORANGE ships enough, so that with other damage ORANGE lost 4 capital ships and lost the carriers flight deck.

Thus the air force carried out its task most satisfactorily. No specific measures were taken to carry out the task of defending own battle line, but the attack on the carrier accomplished this in part, though rather late due to the distance.

This action indicates that it is much more difficult to disengage a weaker fleet than it was before the advent of air craft in large numbers.

BLUE lost:	87%	of VFs
	34%	of VSs
	39%	of VBs
	56%	of VTs
	40%	of VPs
	11%	of VOs

The total damage inflicted on ORANGE by BLUE aircraft was equivalent to 48.6 penetrative 14" hits. The total damage inflicted on the ORANGE capital ships by the 8 BLUE battleships was equivalent to 54.9 penetrative 14" hits. This does not represent the relative importance of these forces, it is merely stated to

show this one element of damage to the enemy in this particular problem.

As a matter of fact, some of the damage to ORANGE due to BLUE battleship gunfire was possible only through the air attacks bringing ORANGE ships within effective range of BLUE guns unsupported.

BLUE Submarines.

BLUE dispersed the 23 BLUE submarines to observe 11 straits or passages through the Philippines and the southern East Indies. This automatically precluded getting any considerable opportunity for offensive action since ORANGE would not conceivably use more than a few of these passages in any case and so only a few submarines could get chances to attack. It was an attempt to get information over every possible route except one and that was the one ORANGE used.

Northern detachment en route stations sight several ORANGE VPs.

- 14 January S-34 sights ORANGE tanker, sinks her.
- 14 January 2300 S-34 and S-35 hear two ships passing to the S.W.
- 15 January 1130 SS-170 sighted ORANGE submarine near Balabac Strait.
- 15 January S-34 off Manila during dark heard three ships leaving Manila.
- 16 January Northern subs re-disposed giving more concentration. 5 observation stations now permitting 3 subs. each at Sibutu, Basilan and Balabac.
- 17 January S-34 and S-44 sighted several ORANGE submarines.
- 20 January S-36 sighted 5 ORANGE subs and hit one with torpedo.
At 2400 S-34 heard number (20-24) large and small ships pass on S.W. course. (This was force proceeding against Dumanquilas).
- 22 January 2230 S-36 heard large number of submarines pass through Sibutu Pass to the southward.

23 January 1730. S-30 and S-31 sighted 5 XAP, 3 CL and about 20 AM and DM approaching from N.W. S-30 hit CL with torpedo. These followed up this force and S-30 hit XAP with torpedo.

Thus the BLUE submarines were of little value to BLUE either for information or attack. The only information they obtained was the sailing from Manila of the ORANGE expedition against Dumanquilas. This information was very vague and could not be used by BLUE on that account. The composition and probable objective of this force was determined by air scouting as it would have been regardless of the information from the submarine.

When the BLUE and ORANGE scouts made contact and it became evident that an engagement was likely, BLUE had 5 submarines in such position that there was any probability of getting into position to attack the ORANGE main body.

At the end of the problem there were two BLUE submarines only which had been able to get near the ORANGE Fleet. One of these had failed to intercept and was astern of the enemy. The other as the problem ended was in a good position from which to attack.

The BLUE submarines carried out the task assigned them, but this task contributed practically nothing toward accomplishing BLUE's mission. It would appear that a more careful consideration of the value of information which there was any probability of their obtaining would have indicated that they would have been more valuable elsewhere. For example, in the defense of Dumanquilas.

ORANGE Submarines.

ORANGE had 67 submarines. At the beginning of the problem 29 of these were already on stations in the Southern Philippines.

The ORANGE operation plan put all the submarines under one command entitled "Submarine Force". This force was given the task of "reducing BLUE strength" and assigned three operating areas, viz: Balabac, Makassar Straits and off Dumanquilas.

Before BLUE main body left Dumanquilas ORANGE had disposed his submarines as follows:

Off Dumanquilas.....	10
Balabac Strait.....	34
Makassar "	23

Thus out of 67 only 10 were where they would be practically sure of having some opportunity to attack in accordance with their assigned task. ORANGE was practically sure, however, that BLUE main body would be forced to pass through either Balabac or MAKASSAR Strait eventually.

The Dumanquilas detachment had opportunities to attack the BLUE convoy escort reinforcement and BLUE convoy A, but were handicapped by lack of numbers. They disabled a BLUE tanker which was towed in, however, and they made one hit on each of two BBs which forced one to return to Dumanquilas and made the other useless to BLUE in the battle later due to loss in speed. They lost two submarines later in BLUE mine fields.

The Balabac detachment accomplished nothing, but lost one submarine torpedoed by BLUE submarines.

The Makassar detachment had opportunities to attack BLUE advanced forces during daylight and sank 1 CL, losing one submarine by depth charges.

The BLUE main body came through at night and these submarines made a hit on a CA and lost one submarine by gunfire. The second line retired to get daylight attacks, but poor visibility and effective air patrol prevented any successes.

These submarines instead of pursuing BLUE main body resumed their stations and never accomplished any more.

The Dumanquilas and Makassar submarines furnished very valuable information of BLUE movements.

ORANGE submarines were not of great value in this problem because they were not moved soon enough to take advantage of information of BLUE movements.

ORANGE Destroyers .

ORANGE had 12 DLs and 12 DDs. These were all assigned to the Battle Force in the operation plan. They consequently accompanied this force acting as anti-submarine screen making no contacts.

In the battle plan 4 DD were assigned to the aircraft carriers and the remaining DL and DD to the "Light Forces". Under the tasks assigned the Light Forces the destroyers were specifically ordered to "defend our battle line, attack BLUE battle line when directed." This was in accordance with ORANGE intention to disengage if enemy is superior.

During the early part of the engagement the 12 DL and 8 DD constituted a double anti-submarine screen.

Later the DLs formed across the rear of the battle ships and laid a mine field (264 mines).

In these operations two DL were sunk by the mines laid shortly before by the CLs.

The destroyers took no further part in the action.

It is to be noted that ORANGE did not use his light forces in an attempt to break off the action but let his damaged battle-ships fall astern and be sunk. The destroyers were of little use to ORANGE in this problem.

BLUE Destroyers.

BLUE had a total of 78 DDs. BLUE operation plan assigned 4 DD to the Air Force, 35 DD to the convoy Escort Reinforcement, and 39 DD to the Main Body.

Thus in the strategic phase the destroyers were used primarily as anti-submarine defense, although they were available for counter-attack against surface forces. As the problem developed destroyers assigned to the main body were used for anti-submarine patrol off Dumanquilas and between Basilian Strait and Sibutu Passage. They discovered ORANGE submarines operating off Dumanquilas, but these were also reported by planes.

The division assigned to Air Force escorted 2 AVs to Tawi Tawi without incident, and returned.

During the movements of the Main Body and Escort Reinforcement the DD formed anti-submarine screen. They sank 2 ORANGE submarines, - one in daylight by depth charges and one at night by gunfire, but they did not prevent the submarines from damaging BLUE ships, although they reduced the amount of such damage by interfering with the submarines freedom of action.

Four DDs were sent to sweep the Western part of the Flores Sea to assure absence of ORANGE forces there while the Fleet entered Bunda Roads.

Four DDs were detached to escort two BLUE tankers into Bunda Roads.

During the time the BLUE Fleet was at Bunda Roads the destroyers maintained an anti-submarine patrol.

This illustrated the usual tendency to give a number of odd tasks to destroyers during such an operation. As it happened, their value in such uses was not tested as no contacts were made except with submarines.

In the BLUE battle plan the destroyers were reassigned as follows:

Battle line.....	13 DDs
Light Forces.....	57 DDs
Air Force.....	8 DDs

Those assigned to the battle line and Air Force were anti-submarine screen.

The destroyers assigned the Light Forces were to defend battle line and attack enemy when ordered. These destroyers took no active part in the action, but BLUE intended to use them for attack later.

The destroyers of the anti-submarine screen broke up an ORANGE torpedo plane attack by laying smoke between the ORANGE protective smoke curtain and the BLUE battleships as discussed under air craft.

BLUE destroyers thus played little part in this action, principally because BLUE was not attacked by ORANGE light forces and because ORANGE was attempting to break off the action.

PART III

Summary of relation between plans and actual operations.

BLUE operation plan called for protecting the convoys by reinforcing their escorts and protecting the base by interposing the BLUE main body against any advance against it which was supported by the ORANGE main body. The fundamental assumption was not stated in the plan but stated orally by the BLUE C-in-C. This was that ORANGE could not take Dumanquilas without the support of ORANGE main body in so short a time but that BLUE main body could relieve Dumanquilas from as far away as the Java Sea. This assumption was incorrect, so that Dumanquilas was captured by ORANGE.

When BLUE learned that ORANGE main body was concentrated and approaching the Java Sea, BLUE held the convoy escort reinforcements and tried to bring the ORANGE Fleet to action.

ORANGE operation plan was to separate BLUE forces by threatening the BLUE convoys and either defeat BLUE or seize BLUE bases, or both.

When ORANGE discovered that the whole BLUE Fleet had been drawn into the Java Sea he ordered the attack on the BLUE base and endeavored to engage BLUE Fleet's attention in the Java Sea until the base had fallen, but ORANGE rashly ventured too close to BLUE Fleet and could not disengage until he had lost more than half his capital ships. ORANGE strategical plan worked, but he failed tactically.

The ORANGE Commander-in-Chief felt that the War College staff expected a tactical problem to result from the strategic problem. Hence no lesson can be learned from the fact that BLUE was able to bring the ORANGE Fleet to action. There is every probability that BLUE was powerless to do so except for extraneous influences.

PART IV. (No Remarks)

ANALYSES AND COMMENT BY RESEARCH DEPARTMENT

on

OPERATIONS PROBLEM III - TACTICAL PROBLEM III - 1934- SR.

PART V.

Outstanding Facts developed in this problem.

1. ORANGE with inferior fleet succeeded in drawing BLUE with superior fleet away from his base while ORANGE captured the base with other forces.
2. ORANGE with inferior fleet was unable to disengage from BLUE superior fleet without being decisively defeated.

NOTE: The following features affected this:

- (a) Action began in early morning.
- (b) Visibility was generally high.
- (c) Superior fleet was greatly superior in air force and destroyers.

3. Submarines as used were of greater value to ORANGE than to BLUE during the strategic phase.
4. Nearly all losses during the strategic phase of the problem were inflicted by air forces and submarines.
5. Neither side used submarines in the battle area except that 2 BLUE submarines got in by the end of the problem.
6. The opposing carriers were during the tactical engagement about 140 miles apart. The BLUE carriers were not bombed and the ORANGE carrier was not bombed until after about 5 hours of air operations.
7. There was no use of destroyers by either side except as anti-submarine screens.
8. Tactical mine field was used by retiring fleet. Forced slight detour on pursuing fleet at cost of 1 XCA and 2 DLs sunk in own mine field. Above detour was not important.
9. Smoke curtain placed to interrupt gunfire caused delay to pursuing fleet.
10. Use of smoke by anti-submarine screen was effective in breaking up torpedo plane attack. Note the special situation which existed, however.

11. Patrol type planes were very valuable in this area.
12. Scouting was done most effectively by aircraft.
13. No aircraft carrier used her guns during this problem.
14. No submarine used her guns during this problem.

VI.

Conclusions drawn from this problem.

1. The ability of an inferior fleet to break off engagement has been greatly reduced by the development of modern naval air forces.
2. A base unable to defend itself is of no strategic value as a base. A Marine Corps Base Force should be developed to the highest possible standard of equipment, organization and training, if a situation such as faced BLUE in this problem is at all probable.
3. In the strategic use of submarines prompt initiation of their movements is vital to success. NOTE: ORANGE lost 4 days in starting 35 submarines south from Basilian Strait.
4. The concentration of submarines in restricted passages which may be traversed in one night period is not very effective.
5. The tremendous losses of aircraft suffered by both sides raise the question of whether the air operations in these problems is on a practical basis.