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TACTICAL PROBLEM III-1934-SR.  
(Op.III-1934-Sr.)

CRITIQUE

by

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17-18 November 1933

DEPARTMENT OF OPERATIONS  
Naval War College  
Newport, R.I.  
November 1933

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TAC. III-SR - CRITIQUE

By Captain R.C. MacFall

The tactical problem about to be discussed developed from the strategic playing of Operations Problem III. Before going into the details of the game board playing of this problem it is well to again fix in our minds the Missions of the two opposing commanders.

ORANGE Commander had as his mission, "To prevent the establishment of the BLUE Fleet in the FAR EAST in order to regain control of the WESTERN PACIFIC. His decision to accomplish this mission was:

- (1) To destroy the BLUE Fleet, or
- (2) To seize and deny to BLUE his base at DUMANQUILAS.

ORANGE hopes that by threatening BLUE convoys en route to DUMANQUILAS, he would cause a dispersal of BLUE forces which would permit him to destroy a considerable part of the BLUE fleet before it could be reenforced or would be able to defeat the defending force and seize DUMANQUILAS, thereby denying BLUE a suitable base in the FAR EAST.

An ORANGE Army expedition was on its way to DUMANQUILAS, but, ORANGE at the time of contact with BLUE Main Body, had had no news as to the results achieved by this expedition, although such news was expected at any time.

On the morning of 24 January, when contact was made with BLUE cruisers, ORANGE had a very uncertain knowledge of BLUE forces in the area, and did not know that BLUE, in full force, was near at hand.

Looking at the situation from BLUE's standpoint, BLUE mission was, "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".

His decision was, (1) "to prevent ORANGE attacks in force on the convoys or base at DUMANQUILAS, by initially interposing the BLUE Main Body in the CELEBES SEA and by destroying the enemy forces in that area with the Main Body supported by the air force", and (2) by "defending the convoys against ORANGE raids or attacks of attrition, by reenforcing the escorts."

At the time the tactical problem began, BLUE Convoy "A" had already been conducted to DUMANQUILAS, while Convoys B and C were still en route with ORANGE Main Body known to be in a threatening position. BLUE was unaware of the attack then being made on DUMANQUILAS by the ORANGE expeditionary force. BLUE was uncertain of the exact composition and location of ORANGE Main Body.

So at the time of contact each side had failed to completely accomplish its stated decision:- ORANGE has failed to cause a dispersal of BLUE forces while BLUE has failed to secure his base from ORANGE attack.

From this background we take up the tactical playing of Operations Problem III.

ORANGE Commander had deduced a battle plan based on the assumption that BLUE fleet operating against him had probably 8 battleships, 2 aircraft carriers, probably 2 divisions of cruisers, and 2 squadrons of destroyers. This plan called for a decisive daylight action; initially directed at BLUE light forces, then an attack on BLUE battle line by all forces.

BLUE Commander estimated ORANGE to have six battleships, one carrier, at least five heavy cruisers, light cruisers and numerous destroyers. No knowledge was had as to battle cruisers and submarines. BLUE Commander estimated ORANGE would seek to avoid decisive action.

BLUE decided to attack ORANGE fleet engaging at ranges under 20,000 yards, using light forces initially in defense of own battle line, and by air attacks. BLUE realized the superior speed of

ORANGE battle line and had estimated that ORANGE would avoid decisive action, yet other than the possible slowing of ORANGE battle line by air attack, no plans had been made to insure forcing ORANGE to a decisive action.

DIAGRAM I.

This diagram shows the situation as of 0530 - 24 January. BLUE Main Body on course 255, still in cruising formation with 3 CL and 1 CA in advance, going out to search the area ahead of BLUE Main Body. This was the force which shortly after 0430 made contact with ORANGE screen. A modern 8,450-ton ORANGE CL (CL-42) met and sank BLUE CL-11.

ORANGE, with screen disposed to the Eastward, is on course South and is concentrating into approach disposition.

Note the positions of the carriers of both sides, BLUE CV-4 50 miles to the Eastward, and CV-3 50 miles to Southeastward of BLUE Main Body. Also, ORANGE Crudiv 5 (3 CL, returning from a scouting mission) is in the same area.

ORANGE carrier, CV-3, is about 100 miles WNW of ORANGE Main Body. This puts a distance of 150 miles between the nearest enemy carriers, yet all near enough to the battle area to be effective.

No submarines are present; ORANGE has a large concentration some 300 miles to the Eastward, while BLUE has 5 in the area around BILLITON ISLAND to the Northwest of ORANGE Main Body.

DIAGRAM 2.. Moves 1 & 2.

DIAGRAM 2-A.. Air Activities Moves 1 - 9.

Diagram 2 (on the left) covers the period 0530 to 0600 (dawn) while Diagram 2-A covers air activities 0530 to 0703. This latter diagram will run concurrently with Diagrams 2, 3 and 4.

As stated before BLUE CLs 5, 6 and 7 & BLUE CA-30 (30% damaged in action with ORANGE CA-39 sometime about 0430), are to the West-

ward of BLUE Main Body, on a scouting line North and South. At about 0530 CLs 5 & 6 launch one VS each to scout to the Westward.

At about 0545 CA-30 and CL-5 make contact with ORANGE Crudiv 9 (4 CA) then concentrating to the southward. The latter engage two to one and force BLUE cruisers to retire towards their own Main Body.

As the ORANGE CAs pursue the BLUE ships, they in turn see a concentration of heavier ships to the eastward - they turn and retire southwest at high speed. In this brush BLUE CL-5 gets heavily punished (60%) while BLUE CA-30 damage mounts to 40%. Visibility is increasing rapidly and ORANGE CAs are not clear of BLUE battle line fire at 0600 (broad daylight).

BLUE Main Body, on seeing the gun action to the westward, go into approach disposition, standing on course 270, speed 15, until 0545 then changed course to 225. BLUE CL-7, to the northward and CL-6 to the south, retire towards their Main Body. At 0600, BLUE CA-30 joins in with BLUE heavy cruiser division directly ahead of BLUE Main Body. The other BLUE cruisers are in positions as shown in DIAGRAM 2.

ORANGE cruisers proceed to their stations for approach except CA division 9, which has the brush with BLUE scouts and then retires towards its position.

ORANGE Main Body continues south, increasing speed from 10 to 15 knots.

Now, looking at the air activities (Diagram 2-A), at 0530 BLUE CV-4 sent out 3 VS armed with 2 - 116-lb. bombs each, to search the area in the vicinity. Also, at 0530, 11 VP, each armed with 4-500-lb. bombs, took off from SAURI ROADS (some 500 miles away) with orders to bomb enemy fleet if and when they could reach them.

At 0530 ORANGE CV-3 launched 8 VS, to scout to the Southeastward in pairs. At 0545 BLUE CV-3 launched 3 VS to scout to the westward.

At 0530, ORANGE Crudiv 5, near BLUE carriers, launch 6 VS to scout from North to East and at 0600 one of these scouts locates

BLUE carrier CV-4. Shortly thereafter, all are recalled to the ships. Shortly before 0600 ORANGE carrier launched 16 VT equipped with smoke and protected by 7 VF, to report to ORANGE O.T.C. for such duty as he may direct.

At 0600 these various flights of planes are at the positions marked (2) on Diagram 2-A.

DIAGRAM 3. Moves 3 - 6. (0600 - 0630).

DIAGRAM 2-A continued.

Sunrise at 0600. By this time ORANGE cruisers have sighted practically the whole BLUE fleet. CV-4 has been located by a VS from ORANGE Crudiv 5 but BLUE CV-3 is still unlocated.

BLUE has located all ORANGE light forces except ORANGE Crudiv 5 to the eastward. At 0604 BLUE air scouts report the number and position of ORANGE capital ships. ORANGE carrier is unlocated.

Each commander has, then, a fairly accurate idea of the surface forces opposed to him. Each should now bring his battle plan up to date.

Shortly after 0600 BLUE C-in-C receives word from DUMANQUILAS that an ORANGE landing force holds a beach head between CULASIAN and TAYBOB rivers. At about the same time ORANGE C-in-C receives word that ORANGE expeditionary force expects to capture BLUE base at DUMANQUILAS by 1 February if BLUE Fleet and BLUE Army reinforcements are prevented from arriving before that time.

With this background each commander must make a decision as to his attitude in situation now confronting him.

ORANGE had previously estimated that the capture of DUMANQUILAS satisfied his mission. He now has the problem of preventing BLUE force reinforcing DUMANQUILAS before 3 February. He decides to fight a retiring action, withdrawing into the CHINA SEA. Finding himself inferior in capital ships and destroyers and probably in the air and with his submarines some 300 miles away, he feels a

decisive action would probably result in defeat of the ORANGE fleet and wisely decides to contain the BLUE fleet, using retiring tactics.

But was he wise in staying so close to BLUE? Should he not have made an effort to drive BLUE further back so that although he was in contact, BLUE battle line gun fire could not be brought to bear to support BLUE light forces which might oppose ORANGE retirement? ORANGE cruisers were superior to BLUE and could frustrate BLUE light forces as long as that superiority was maintained.

From the BLUE standpoint, the fall of DUMANQUILAS would leave BLUE without a base and base facilities. Drydock DEWEY and several important train units were badly damaged by an ORANGE air attack preceding ORANGE landing at DUMANQUILAS.

BLUE had one and only one thing to do; destroy the ORANGE Fleet which was close at hand. In order to accomplish this it was necessary to hold the ORANGE Fleet which had superior speed. With the forces available, BLUE was distinctly superior except in cruisers. If BLUE could reduce ORANGE cruiser superiority, then BLUE light forces would have freedom of movement as long as they kept clear of ORANGE battle line gun fire.

Could BLUE slow ORANGE battle line by air attack? Possibly, but no certainly.

Here was a point where BLUE had to make a decision as to the objective of his air attack. If BLUE had used his air bombing against ORANGE cruisers it is believed that he could have destroyed practically every ORANGE cruiser. This would have left 63 BLUE destroyers superior to 12 ORANGE DL and 8 DD. BLUE could have sent a couple of squadrons of destroyers, escorted by cruisers, to detour and get on the disengaged side of ORANGE battle line. These would have been able to delay ORANGE long enough to bring BLUE battle line into action.

In other words, BLUE's big problem was to find a way to hold ORANGE battle line. BLUE torpedo planes attacking ORANGE capital

ships and BLUE bombers attacking ORANGE cruisers would have served to not only slow down ORANGE battle line, but would also have brought BLUE destroyer superiority to bear, something which was not done during the whole ensuing action. BLUE destroyers were utterly ineffective. We cannot afford to waste such an important weapon.

Now returning to Diagram 3. ORANGE Crudiv 9 (4 CA) had pushed in towards BLUE Main Body in their chase of BLUE cruisers. ORANGE cruisers to the northward, CLs 8 & 9 had also closed in. Both came under fire of BLUE battle line. These cruisers turned away at high speed but before they could get clear had suffered considerable damage: CL-8, 30%, speed reduced to 29.7 knots; CL-9, 40%, speed reduced to 29.7; CA-36, 70%, speed reduced to 16.5; and CA-37, 40%, speed reduced to 29.7. The damage to CA-36 was to lead to a chain of events disastrous to ORANGE. During this run away, ORANGE heavy cruisers fired for 3 minutes ineffectively on BLUE cruisers CA-32 & 34, total damage 10% on CA-34.

ORANGE battle line increased speed to 19 knots and took course 150 to support his cruisers, but as information came in indicating the strength of BLUE fleet, at about 0612 ORANGE batteline turned away on course 240.

BLUE battle line changed to southerly and then southwest courses and at the end of this diagram are almost astern of ORANGE battle line, distant 32,000 yards. Visibility 28,000 yards.

Looking at the air activities, Diagram 2-A, by 0630, the various air groups are in the positions marked (6) on Diagram 2-A. BLUE battleships had launched their spotting planes about 0545.

Each side have scouts observing the enemy forces. At about 0606 BLUE CV-4 began launching bombers, all of these bombers are equipped with 1000-lb. bombs and the bombers are escorted by fighting planes. CV-4 launched first, 16 VB protected by 9 VF and then 18 VB protected by 9 VF. CV-3 launched 18 bombers pro-



tected by 18 VF. These bombers have as their objective the ORANGE capital ships and/or ORANGE carrier.

ORANGE fighters (8 VF) arrive over their battle line about 0630.

At 0606 ORANGE carrier began launching bombers, one group of 16 equipped with 1000-lb. bombs and protected by 14 VF, with orders to rendezvous near ORANGE Main Body. ORANGE carrier then moves toward a rendezvous appointed for 0830. BLUE carrier CV-4 moves to the Eastward at high speed after launching her planes, while BLUE CV-3 moves SW.

At about 0615 ORANGE Crudiv 5 standing West to join ORANGE Main Body suddenly finds the BLUE Fleet in its path. She launched planes to search to the North and Eastward, opened fire on three BLUE destroyers, then beat a hasty retreat to the Eastward and is seen<sup>no</sup>/more in this action. However, one of the VS discovered and reported a flight of BLUE bombers and also sighted BLUE CV-4 at 0624 and held contact.

DIAGRAM 4. Moves 7 - 9. (0630 - 0703)

DIAGRAM 2-A (continued)

During the last diagram, ORANGE Crudiv 5 appeared from the Eastward, fired at some BLUE destroyers. BLUE heavy cruisers to the south of BLUE battle line were pursuing ORANGE heavy cruisers to the Westward. ORANGE CA-37 was damaged and dropping behind and into the lap of these cruisers. ORANGE C-in-C directed CC-4 to drive off the BLUE cruisers. CC-4 turned back to the Southeast and BLUE cruisers turned south. They then opened on Crudiv 5 to the Eastward damaging CLs-27 & 26 each 10% before they could get away to the Eastward.

ORANGE CL-43, a modern 8500-ton 6-inch cruiser, got careless and fluttered too close to the BLUE heavy cruiser division and received damage which brought her total up to 20% before she could escape to the Westward.

Of still greater moment was the situation of CC-4. She had underestimated her situation. After driving BLUE CAs to the Eastward, she herself turned casually to the Eastward and found herself under the gunfire of BLUE battle line. This was to end disastrously.

On the Northern flank there was light gunfire between BLUE and ORANGE CLs.

Serious things were happening in the air. Two BLUE bombing attacks were approaching ORANGE battle line from the Eastward. These sighted each other and joined up, the total attack force then being 34 bombers, these guarded by 27 fighters.

Over the ORANGE battle line were 14 VT equipped for smoking, and 8 VF previously guarding ORANGE battle line. These latter VF had been joined by 15 VF originally dispatched to guard ORANGE bombing flight, but deflected to guard the battle line, probably on word of the bombing flight sent from the scout of ORANGE Cru-div 5.

On sighting the BLUE attack group, ORANGE VT retired to the Westward and the 23 ORANGE fighters attacked the BLUE formation. The 27 BLUE fighters met this attack. Eventually 4 BLUE fighters emerged. The 34 bombers pushed in with their attack and were met with heavy anti-aircraft fire. ORANGE BBs 1, 3 and 4 were each damaged about 22% while their speeds were reduced to 21.5 knots. Four BLUE VF and 24 BLUE bombers escaped after the attack.

At the end of this period an ORANGE bombing group of 16 planes is just North of the battle area bound to attack BLUE CV-4, while a BLUE bombing group of 9 VF and 18 VB are 40 miles Northeast of BLUE Main Body.

At 0700 BLUE receives a report of an ORANGE submarine from BLUE patrol planes some 250 miles to the Eastward, which are on their way to join in the battle.

Flight Officer in charge of ORANGE bombing group decides he cannot reach BLUE carrier and prepares to attack BLUE battle line.

DIAGRAM 5. (Moves 10 - 12) 0703 - 0754

DIAGRAM 5-A. (Air activities) Moves 10 - 18) 0703 - 0912.

During this period ORANGE C-in-C begins a definite retirement, first to the Westward and then Northwestward. BLUE follows this retirement keeping his light forces well back on his battle line.

And from now on ORANGE C-in-C realizes that a retiring action commits him to losing any ship that is slowed down materially either from gun or underwater damage, or to engine failure.

CC-4 finds herself under a triple concentration from BLUE battleships. By 0718 she is 60% damaged. She in turn fires on CL-5, which is 80% damaged by 0718 and slowed to 5 knots. CLs 6 and 7 retire Northwestward at high speed and avoid damage.

ORANGE bombing group to the Northward of the battle area, stand South, pass the BLUE battle line and attack the leading cruiser of Crudiv 6 (CA-30) with bombs. This ship, already 30% damaged in the earlier engagement with ORANGE cruisers, sank from this attack. The objective of the bombers in this attack was in accordance with ORANGE C-in-C battle plan. The 13 surviving ORANGE bombers retire towards their carrier.

At about 0715 BLUE CV-3 started a torpedo attack group consisting of 18 VF, 9 VS and 18 VT towards enemy battle line.

At 0720 BLUE C-in-C gets another report of ORANGE submarines from BLUE patrol planes.

ORANGE heavy cruiser CA-36 is dropping astern and into the hands of pursuing BLUE cruisers, each being careful of ammunition expenditure, are waiting to finish her off at close range.

At 0734 BLUE gets his first information of ORANGE carrier from a BLUE scout from CV-4.

At 0742 BLUE bombing attack group from CV-3, bombed CC-4, preceding the attack with a strafing from 9 VF. CC-4, already 60% damaged, sank from this attack.

DIAGRAM 6. (Moves 13 - 15) 0754 - 0845.

DIAGRAM 5-A (continued).

In Move 13 (0754 to 0815) both battle lines suffered severely from air torpedo attacks, the attacks occurring almost simultaneously. ORANGE battle line was on course 308 in line of bearing. BLUE torpedo plane attack of 18 VT, 9 VS and 18 VF approached ORANGE battle line. 3 BLUE VS on either bow laid a smoke curtain about 4000 yards off. Two heavy smokers backed up this screen with additional smoke. The 18 VF came through the curtain and strafed enemy anti-aircraft guns crews while 8 VT on either bow attacked the center of enemy battle line. Two hits were made on ORANGE BB-5 slowing her to 19 knots while one torpedo hit BB-6 slowing her to 21 knots. BLUE lost 6 VT, 7 VF and 2 VS in this attack. The remaining planes headed back for CV-3 some 70 miles to the Southeast.

Seven ORANGE VT smokers joined ORANGE attack group of 16 VT and 9 VF, and this flight approached BLUE battle line, with destroyer screen disposed across its van, distant 4000 yards.

ORANGE smokers laid a smoke curtain to the Westward of the destroyers. As the smoke of the screen drifted across the destroyers, the attack crossed the destroyer line, fairly immune from destroyer gunfire. The VF planes strafed BLUE BB and aircraft guns and the torpedo attack got home.

BLUE BB-34 and 35 were each hit by two torpedoes and each slowed to 16 knots. So the relative speeds of the two battle lines remained unchanged.

ORANGE lost 6 VT, 3 VF and 3 VT smokers, the remaining planes heading back to the carrier nearly 100 miles ahead.

All carriers are operating a long distance from enemy carriers, but close enough for effective operations against enemy battle line. The carriers are thus able to keep continuing their attacks and are not one-shot ships.

BLUE BBs 34 and 35 fall behind their battle line and BB-44,

slowed to 17 knots by a torpedo hit received some days previously, is closing these two ships. BLUE has now 5 BBs with 21 knot speed and 3 with about 16 knots.

BLUE changed course to 285 and increased speed to 19.5 knots, hoping to close the injured ORANGE BBs which are almost within BLUE battleship gun range.

ORANGE CA-36 turns away to the Southwest hoping to escape BLUE CAs. ORANGE CLs 42 and 43 take station on ORANGE left flank to the northward of ORANGE battle line.

At about 0830 BLUE battleships bring ORANGE battle line under fire, BB-5 (3 ships), BB-6 (2 ships). By 0845, BB-5 is damaged 10% by gunfire.

ORANGE battle line joins in this action concentrating fire, three on BB-40, one on BB-46, and two on BB-38. ORANGE line of bearing formation is interfering with his gun fire. At 0845 ORANGE CA-36 is sunk by gunfire.

In the air, generally speaking, the various attack groups are returning to their carriers. However, at about 0830 BLUE CV-4 launched 10 bombers to proceed to attack ORANGE carrier which is being observed by a scouting plane from CV-4.

DIAGRAM 7. (Moves 16 - 18) 0845 - 0912.

DIAGRAM 5-A (continued).

BLUE fire on ORANGE BBs 5 and 6 raised havoc. By 0900 BB-5 was sinking and BB-6 was 50% damaged. BLUE then brought all ORANGE BBs under fire, a double concentration on BB-4 and divided fire on BBs 2 and 3. BB-4 came under enfilade for 3 minutes as BB-5 dropped back due to damage.

But BLUE battle line was also getting severely punished. In 15 minutes BBs 38, 40 and 46 had each received 30% damage.

At about 0900 ORANGE smokers laid a smoke screen so as to cut off all but the two northern BLUE BBs and permit concentration on them.

This resulted in cutting off all but indirect fire for as

quickly as possible all BLUE battleships took shelter behind the smoke, continuing indirect fire.

However, by 0912 BLUE BB-38 was 50% damaged, BB-40 was 40% damaged and BB-46 was 40% damaged.

ORANGE BB-6 damage mounted to 65% and speed was reduced to 16.4 knots; BB-4 was damaged 30% while BB-1 and 3 were undamaged by gunfire.

This practically broke off the gun action at a time that it was entirely favorable to ORANGE and caused a movement of BLUE to the Southwest.

BLUE CLs 6 and 7 to the Northward were having to maneuver to keep clear of ORANGE CLs 42 and 43, much more powerful ships. At 0845 ORANGE CL division 1, to the northward of ORANGE battle line, laid a line of mines from the outboard cruisers, 80 mines in each line. About 15 minutes later ORANGE XCA-1 passed within 50 yards to the leeward of the plotted position of this drifting mine field. She struck a mine and sank. BLUE destroyers, which had this division of ORANGE ships in sight, saw one of them blow up turn over and sink. They reported to their C-in-C. Shortly before 0900, CV-3 launched another bombing attack consisting of 14 VB with 1000-lb. bombs, 4 VF and 7 VS to attack enemy battle line.

BLUE bombing flight returning to CV-4 sight ORANGE CL division 5 at 0912 and a VS is sent to keep contact with these cruisers.

DIAGRAM 8. (Moves 19 - 22) 0915 - 0945.

DIAGRAM 8-A. (Air activities) 0915 - 1215.

ORANGE retires Northwest with cruisers disposed on either flank and with DLs and DDs screening Main Body. BBs 6 and 4 are dropping behind due to damage.

BLUE battle line takes course West in column formation, advancing two battleships at high speed to engage enemy damaged ships. BLUE light forces conform to battle line movement.

ORANGE orders his 12 DLs to take station across the rear of battle line formation. These DL each carry 47 mines. They are ordered to lay mines and do so, but DLs 4 and 5, on the northern flank, run over ORANGE mine field previously laid and are sunk. BLUE does not see the sinking of these two vessels.

The gunfire between the battle lines is at ranges of 25 to 27,000 yards. Five BLUE battleships are the only ones within range of ORANGE so it is five ORANGE ships against 5 BLUE BBs, but the BLUE battleships are very little damaged.

ORANGE puts a triple concentration on BLUE BB-38 and a double on BB-40. BLUE puts a double on BB-4 and divides fire on 2 & 3, two ships fire ship for ship.

By 0918 ORANGE BB-4 is 50% damaged, and 6 minutes later is 70% damaged. By 0930 ORANGE BB-6 is stopped and sinking while BB-4 is stopped with over 80% damage.

BLUE BBs 38 and 40 are each 50% damaged by 0930.

ORANGE now has three effective battleships remaining. BLUE has two ships undamaged, one with normal speed and 40% gun damage; two ships 50% damaged with speed of 16.8 knots; two ships each with two torpedo hits, no gun damage and speed of 16 knots; one ship with no gun damage, one torpedo hit and 17 knots speed.

As the battle lines open beyond 28,000 yards each side stops firing although each had plane spot and could have done considerable additional damage by indirect fire.

At about 0930 a BLUE bombing flight arrives in ORANGE battle area and at the end of this diagram are seen approaching ORANGE CA division 9. BLUE scouting plane squadron chase ORANGE spotting planes back to their own battle line.

At about 0930 ORANGE CV-3 launched 13 VB with 1000-lb. bombs to attack BLUE battle line. ORANGE still has 4 VT smokers near own battle line while two that recently smoked off BLUE battleships are heading back to their carrier.

ORANGE VT smokers were ordered to blank off enemy gun fire,

but by the time they got in position ORANGE BBs 4 and 6 had been destroyed and gun fire had stopped so the smokers returned to their stations.

DIAGRAM 9. (Moves 23 - 25) 0945 - 1115.

DIAGRAM 8-A. (continued).

During this period other than the final gunfire from BLUE BBs 34 and 35 used to sink BB-4 there was no gunfire. However, the air was still at work.

BLUE Fleet formed up in an approach disposition, with two squadrons of destroyers screening the van of the battle line, with cruisers and destroyer squadrons on either flank.

ORANGE Fleet retires toward the Straits to the Westward of BILLITON ISLAND, intending to pass through them to the CHINA SEA.

BLUE bombing flight attack ORANGE CA division 9 with 1000-lb. bombs, preceded by a strafing attack. Both CA-38 and 39 were seriously damaged. CA-39 was stopped and sinking; CA-38 was 70% damaged and slowed to 23 knots, while CA-37 already was damaged 60% by gunfire.

Unfortunately for BLUE, BLUE CAs stopped about this time to pick up planes. ORANGE CAs 37 and 38 were thus allowed to escape at least for the time being.

At about 0950 BLUE CV-4 launched 17 VB and 8 VF with orders to attack enemy battle line.

Shortly after 1000 BLUE destroyers on the right flank of BLUE battle line passed through the mine field laid by ORANGE DLs and four were sunk by mines. BLUE CLs 6 and 7 saw these destroyers in trouble and detoured to the left, but grudgingly, and passed over the field. By good luck they did not hit any mines.

About 1015 an ORANGE bombing flight attacked the leading BLUE battleship, BB-36, damaging her considerably above water and slowed her to 19.5 knots. Of the 13 VB in the attack 10 survived. 3 ORANGE scouting planes are obliged to land on the water out of gas. Their personnel were picked up.



Two BLUE scouts run out of gas and land near BLUE CL-5 slowed to 5 knots and miles behind BLUE Fleet.

At 1015 BLUE battle line stopped to pick up planes, then got underway on course 290, speed 15.5. All BLUE cruisers stopped and picked up planes.

Shortly before 1100 an ORANGE torpedo plane squadron accompanied by smokers and fighters started to attack enemy battle line. They used the same smoke tactics as before, but this time BLUE destroyer screen were happily so placed that by laying a heavy smoke screen themselves, they were able to so blind the attacking planes that they had to haul out. They then directed their attack against BLUE CA division and CA-34 was sunk by torpedo fire.

At about this same time a BLUE bombing attack reached ORANGE CV-3. Four bombers were shot down but the others got in their attack, destroying her decks and slowing her to  $22\frac{1}{2}$  knots. At the same time a BLUE bombing attack reached ORANGE battle line. There were 17 VB and 8 VF in this attack. 3 VB and 3 VF were lost but BB-1 damage mounted to 50% and she was slowed to 20 knots by underwater damage.

It is worthy of note that both the BLUE and ORANGE carriers have now been operating continuously for nearly six hours. They have kept up a succession of attacks. Only after six hours has the ORANGE carrier been rendered ineffective. One BLUE carrier was located, but ORANGE flight commanders felt the range too great for them to reach her. Yet all carriers have been in effective range of the battle area. This is something to think about.

DIAGRAM 10. (Move 26) 1115 - 1215.

DIAGRAM 8-A (continued).

This diagram marks the end of the game board maneuver. There is no gun fire and BLUE surface forces have practically abandoned the chase. But other BLUE forces are in the area.

At about 1120, a BLUE torpedo plane group of 12 VT with 11 VF and 7 VS smokers make an attack on the enemy battleships. BLUE smokers were ineffective. ORANGE destroyer screen laid smoke but the attack of the VTs followed so closely on their VS planes that the smoke failed to close and hide the ORANGE battleships. As a result of this attack ORANGE BB-2 was hit by two torpedoes.

The eleven patrol planes from SAURI ROADS arrive over ORANGE BBs at 1230 and bomb BB-2. This, with her torpedo damage, slows her to 16 knots with 44% damage.

BLUE submarine SS-169 failed to reach attack position but SS-168 is directly ahead of ORANGE BBs at 1215 and may get an opportunity to attack. Three more BLUE submarines are further along in CASPAR STRAIT.

ORANGE BB-1 is 51% damaged, 20 knots speed; BB-2 is 44% damaged with 16 knots speed; and BB-3 is 16% damaged, 21.6 knot speed, from a bombing attack at 0900. ORANGE has 2 CAs remaining, one 70% damaged. ORANGE carrier decks are gone and she is slowed to 22 knots. ORANGE light crudiv 5 (3 CL) received 10% damage in two of its ships for the short time it was in action. One of the modern ORANGE CLs is 20% damaged and two of the CLs of Crudiv 1 are damaged an average of 35%.

ORANGE still has to submit to air attack for six hours till dark and BLUE submarines are lying in wait. The picture is dark for ORANGE.

BLUE has lost two CAs one CL and 4 DDs. His battle line is badly damaged, but afloat, with its slowest ships having 16 knots speed. The average damage is 28%.

#### CONCLUSIONS.

This game was intensely interesting as it portrayed what may usually be expected in war, a superior force meets and tries to impose this superiority on an inferior force. In this case the action was a pursuit.

Did BLUE do his utmost to round up and hold the ORANGE Fleet? Did he depend too much on his air to accomplish this purpose? Certainly BLUE destroyers played a most unimportant role. Could they have been employed more effectively? I believe, that by using the air bombing attacks against ORANGE cruisers, BLUE destroyers would have been released for offensive purposes. BLUE battle line could handle ORANGE battle line, if it could get hold of it.

Did ORANGE use positive enough measures to break BLUE hold? Once committed to a retirement it would seem ORANGE should have driven BLUE off far enough so that BLUE could not so easily destroy injured ORANGE ships. The slightest slowing down of an ORANGE ship and it falls into the hands of the pursuing BLUE ships.

Moreover, is a retiring action, on the borderland of decisive ranges, a proper course of action? Certainly it is apt to be costly. Retirement for a time to create a favorable situation seems warranted, but the sort of a retirement conducted by ORANGE was bound to result in heavy losses without adequate returns.

At one time ORANGE has the five advanced battleships in a really bad way. If ORANGE had held BLUE at that time, it might have been a turning point. At least ORANGE would have exacted payment for his lost ships.

Nelson had a theory that even if defeated by a superior force, he would so maul the enemy that they would be of no further use for some time to come.

If ORANGE had stood his ground at this stage of the battle, he might possibly have accounted for six BLUE battleships even if he had lost all his own. The remaining BLUE ships would have been scarcely sufficient for extensive operations against ORANGE.

Comment has been made on the efficient operations of the air forces on each side. A good deal of this was due to the fact that the carriers were preserved intact. That is one of the problems of today, and this game may point to an answer.

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ORANGE mine effort was not particularly effective. Possibly some of this is due to the difficulty of maintaining secrecy on the game board. However, the ORANGE cruisers laid a line of mines uncomfortably close to the area in which ORANGE was operating. Mine fields should certainly not restrict the operations of one's own forces. The destroyer mine field was more effective and caused the loss of four BLUE destroyers.

ORANGE mines, used offensively against BLUE earlier in the action would probably have permitted ORANGE capital ships to withdraw in comparative safety.

BLUE submarines were in position to attack just as the game ended. Their effect will be problematical, although only 12 ORANGE destroyers are equipped with depth charges. ORANGE submarines have been reported to BLUE a long distance to the Eastward of the battle area. BLUE will probably avoid that area.

Surface forces generally employed their gunfire effectively. Both sides inclined to stopping gunfire at the range of visibility and failed to take advantage of indirect fire with plane spot.

To me the big lesson of the game is that retiring tactics to create a favorable situation for strong offensive measures may produce victory; retiring tactics for the sole purpose of escape are apt to prove disastrous, for a ship damaged is a ship lost.