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BATTLE EXPERIENCE; SOLOMON ISLANDS  
ACTIONS, OCTOBER 1942.

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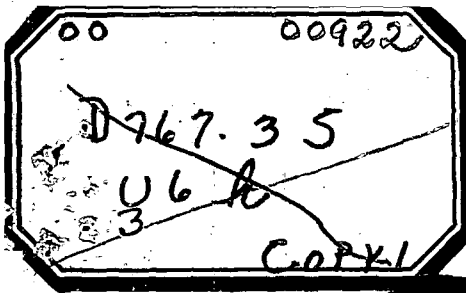
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# Report Documentation Page

Form Approved  
OMB No. 0704-0188

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1. REPORT DATE <b>1942</b>		2. REPORT TYPE <b>N/A</b>		3. DATES COVERED <b>-</b>	
4. TITLE AND SUBTITLE <b>Battle Experience Solomon Islands Actions Information Bulletin No. 3</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>United States Fleet</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release, distribution unlimited</b>					
13. SUPPLEMENTARY NOTES <b>JFSC WWII Declassified Records.</b>					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>SAR</b>	18. NUMBER OF PAGES <b>121</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			



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INFORMATION BULLETIN NO. 3

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# BATTLE EXPERIENCE

# SOLOMON ISLANDS ACTIONS

OCTOBER 1942

## CAUTION

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UNITED STATES FLEET  
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## UNITED STATES FLEET

HEADQUARTERS OF THE COMMANDER IN CHIEF

NAVY DEPARTMENT, WASHINGTON, D. C.

March 15, 1943

These Bulletins on "Battle Experience" during the first year of the War are issued for the general information of officers.

They are planned to promulgate reliable information concerning actual War experience. Any adverse comment made, is not intended to reflect criticism on any individual but to assist officers in appreciating the best line of action in many circumstances.

It is inevitable that there would be considerable delay if complete analysis were made before issue to the Fleet. Comments that are made in these bulletins represent those expressions of opinion from responsible sources that were available at the time the particular operation under discussion was completed.

Studies are continuing to the end that divergent views may be reconciled and complete analysis made.

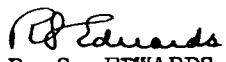
Encounters with the enemy discussed in these Bulletins, are presented in their chronological order. It will be apparent that "lessons learned" during the earlier part of the war were put to good advantage in subsequent engagements.

Air combat actions, anti-submarine experiences, submarine patrol experiences, and technical gunnery experiences are covered in various Cominch Information Bulletins issued during the past year. These include Bulletins #15 to 21, inclusive, "Instructions for Anti-Submarine Warfare - Surface Craft - 1942," and "Characteristics of Enemy Submarines, 1943."

Material contained in these Bulletins was drawn largely from War Diaries, and Battle Reports of various Commanders and ships.

These Bulletins are SECRET and shall be safeguarded in accordance with the provisions of Article 76, U.S. Navy Regulations, 1920. They should be widely circulated among commissioned personnel.

When no longer required they shall be destroyed by burning. No report of destruction need be submitted.

  
R. S. EDWARDS,  
Chief of Staff.

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CHAPTER XIX

SOLOMON ISLANDS, CARRIER TASK FORCE

ENCOUNTER OFF SHORTLAND ISLAND

OCTOBER 5, 1942.

On October 5 Task Force 17 carried out a successful well conducted carrier raid on Buin-Faisi-Tonolei Area and achieved the following results:

- 1 - 1000-lb. bomb hit on CA (NACHI Class.)
- 1 - 1000-lb. bomb hit on AP.
- 1 - 500-lb bomb hit on AK (10,000 tons.)
- 1 - 500-lb bomb hit on AK.
- 1 - 500-lb bomb hit on AV.
- 1 - 1000-lb and 3 - 500-lb near misses on CA (NACHI Class.)
- 3 - 1000-lb hits on runways and buildings at Kieta airfield.

The task force included the following ships: HORNET, NORTHAMPTON, PENSACOLA, SAN DIEGO, JUNEAU and six destroyers.

Information available indicated that there was a large concentration of enemy vessels in the Buin-Faisi-Tonolei Area which was a threat to the security of the forces at Guadalcanal. Based on this information Task Force 17 was ordered to attack enemy objectives in this area with carrier air groups on October 5th supported by air reconnaissance of target area by Southwest Pacific Force and northern approaches on D-minus one and D-minus two and Southwest Pacific air striking force attacks at Rabaul on D-day and AirSoPac B-17 attack on Buka-Kieta Area at the same time. Their supporting attacks were designed to contain the enemy air force to prevent a counter attack by them on Task Force 17 during its retirement.

The general plan for the raid, as outlined by ComSoPac the evening of October 1st, was for the Task Force to leave Noumea about noon the following day and proceed to the initial point, Lat. 15° 00' S., Long. 162° 00' E. It was estimated this should be reached about noon, October 4th. From this point it was proposed to regulate the approach at such speed as to reach the launching position in time to permit the air attack to strike at sunrise the following morning. After the recovery of the air group, the plan was to retire at high speed during that day in a southeasterly direction.

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Arrangements were made for complete reconnaissance of the target area by ComSowestPac and ComAirSoPac on D-2 and D-1 days, and for coordinated attacks by aircraft of their forces, against enemy airfields in the New Guinea and Bougainville Areas, at sunrise on D-day.

After departure of the force, a careful examination of the logistic situation with respect to fuel requirements was made in connection with the speeds required to carry out the operation. This led to the following decisions:

(a) The Task Force should reach the initial position at 1000, October 4th, instead of noon, in order to gain a launching position as far to the westward as possible on the 120 mile circle from the target area. This involved an increase in the distance run-in of about 50 miles and required the heavy ships to make 28 knots from 1000 on the 4th until 0400 on the 5th.

WITH THE LIMITED RANGE OF OUR PRESENT AIR-CRAFT, IT IS NECESSARY FOR THE CARRIER TO APPROACH OBJECTIVE WITHIN 125 MILES IN ORDER TO INSURE HITTING OBJECTIVE AND RECOVERING AIRCRAFT WHILE RETIRING AT HIGH SPEED.

(b) The destroyers would continue with the force until 1000, October 4th, then proceed independently at 19 knots along the line of advance of the heavy ships.

THE CRUISING RADIUS OF DESTROYERS SHOULD BE INCREASED RATHER THAN DECREASED.

(c) The destroyers would rejoin about 0800 the 5th, when it was anticipated that the recovery of the air group would be in progress, so as to increase AA fire power should an enemy attack follow the returning air group.

Flight operations for October 3rd consisted of an early morning search ahead to 200 miles, an inner air patrol until completion of the morning search - thereafter, an intermediate air patrol for the remainder of the day, a continuous combat patrol, and an afternoon search ahead.

At 1653 October 3rd, ANDERSON was ordered to investigate a reported plane crash on the port quarter of the formation. Afterwards she was unable to overtake the Task Force and returned to Noumea.

Flight operations on October 4th were similar to those of October 3rd, except that these operations were completed by noon.

At 0830 LOVE, October 4th, a despatch was intercepted announcing a Tokyo broadcast of the presence of eight ships and four carrier type planes, position undecodeable. At the time of the announcement the task force was in Lat. 15° 30' S., Long. 159° 55' E., course 325° T., speed 20, search sector 310° - 340° to 200 miles, with a combat patrol and intermediate air patrol in the air. Lack of knowledge of the reported position of the force, its course and speed, as well as inaccuracy regarding its composition, influenced the Task Force Commander to discard it so far as his own movements were concerned. It was also believed that the enemy's deduction might well be that such a force was en route to the Guadalcanal Area, and in any case, they would not assume that the force would be able to reach the Buin-Faisi Area in time to make an air attack on their forces in that area at sunrise the following morning. Except for radar contacts with enemy aircraft the following day, resulting in the destruction of two twin-engine enemy bombers, no contacts were made with enemy units by ships of the task force.

At 1000, October 4th, speed of the heavy ships was increased to 28 knots and destroyers were ordered to continue along the line of advance at 19 knots and rendezvous with the remainder of the task force at approximately 0800 the following morning.

A signal was sent to the units of the task force present, directing that Condition Two be set at 1400 and that lookouts be increased as much as practicable. At sunset, Condition One was set with instructions to rest crews on station as much as practicable throughout the night and to maintain Condition Afirm with minimum modifications. Although crews were kept at general quarters from sunset October 4th until one hour after sunset October 5th, the nature of the operation admitted no other alternative.

PERSONNEL WILLINGLY ACCEPT THESE LONG HOURS  
WHEN THEY CAN SEE THE LOGICAL REASONS THEREFOR.  
THEY MUST BE KEPT INFORMED OF THE GENERAL SITUATION.

At sunset, October 4th, the heavy ships were formed in column open order, distance 1,500 yards, in the following order from ahead: JUNEAU (Guide), SAN DIEGO, HORNET,

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PENSACOLA, NORTHAMPTON. JUNEAU was stationed ahead in order to obtain maximum benefit from her SG radar.

WITH VERY HIGH SPEED, SG RADAR AND REASONABLE ZIGZAG, THIS DISPOSITION APPEARS ADEQUATE.

Cruiser VOS aircraft had been left at Noumea and during the night of the final approach, the cruisers jettisoned all aviation gasoline, thus eliminating that possible fire hazard.

The night orders provided for a reduction in speed to 20 knots a few minutes before 0400, followed by a course change of 60° to the right and a simultaneous change of disposition, as previously arranged in conference, from column open order to a circular disposition with the axis in the direction of the predicted course for launching, 120° T. This was followed by a further course change of 60° to the right and shortly thereafter, at 0424, following the movements of HORNET, the disposition turned into the wind, 149° T., and launching was begun at 0430.

PREARRANGED CHANGES OF COURSE AND SPEED ON TIME DURING DARKNESS THUS AVOIDING UNNECESSARY SIGNALLING APPEAR VERY SOUND.

A study of the weather maps during the preceding two days, and particularly the night prior to the attack, indicated somewhat unsettled weather in the launching area but with a promise of improved conditions in the target area the following morning. Moonrise was at 0227 (phase last quarter.)

A MORE EXTENSIVE WEATHER REPORTING SERVICE IS NEEDED IN OPERATING AREAS.

The wind at 0430 was from 149° T., force 16 knots. At this time there were about .3 - .4 light cumulus clouds at 2-3,000 feet and a fairly well defined horizon from the light of the moon, to port, and stars which showed through low broken clouds.

The attack group was divided into two waves. The first wave consisted of 8 VF and 18 VSB, and the second wave of 8 VF and 15 VTB.

The launching plan provided for continuous launching of all planes on deck, followed by a short interval for the second wave to be brought up from the hangar to the flight deck and launched as soon as possible. The time

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for these launchings was less, by a few minutes, than anticipated, since the take-offs were conducted without delay or difficulties. It should be noted that conditions surrounding this night take-off were far from ideal, and as it was the first night operation conducted by HORNET air group, it demonstrated a very high degree of skill on the part of the pilots as well as a high state of training of HORNET flight deck personnel.

After a few planes of the first group had been launched, dimmed truck lights were turned on by HORNET, PENSACOLA and NORTHAMPTON. Except for these lights no other ship lights were used during the entire operation. The use of the truck lights served two purposes; first, it permitted PENSACOLA to take and maintain accurate station ahead for the take-off, which in turn afforded the pilots a point of reference for their take-off, and second, the lights provided a reference point for the air groups to rendezvous more readily before taking departure.

The time required for the two groups to rendezvous, each independently, and proceed toward the target area separately, was as scheduled, and therefore they reached their objective at the appointed time.

The first wave was routed to the westward of the direct line of approach with the intention of having them make their final approach on the Tonolei Harbor Area, (the most distant objective,) from the westward at the same time that the second wave was scheduled to reach the Faisi Area by proceeding on a direct line from the carrier.

About half way to the target area the weather became steadily worse, instead of improving as anticipated. The ceiling lowered, heavy rains were encountered over considerable areas and the ceiling at the target became a solid overcast with some clouds as low as 2 -300 feet, prohibiting dive bombing against any objective.

En route to the area, VSB's of the first wave became separated and the combat escort also lost touch, but all proceeded independently. One section of VSB's, upon reaching the coast, over-ran the target area and in following the coast line arrived over Kieta, mistaking the landing field there for the landing strip near Buin. One plane dropped a 1,000-lb bomb at the intersection of the landing strips and the other two planes bombed the buildings adjoining the runways. One group of 9 VSB's after flying through rain and overcast for a considerable period, found neither land nor enemy ships and returned

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to the carrier with their bombs. Another group of 5 VSB's finally reached their objective after considerable difficulty and delivered their attack. One VSB became completely separated from the squadron and finally identified Gizo. It was believed for some time after the rest of the air group returned that this plane was lost, but fortunately, about one-half hour later, when on the retirement course at high speed, the plane showed up and was recovered without incident.

In view of the extremely bad weather in the target area, which made it impossible for several of the land-based bombers to reach their objectives to support this attack, that the group inflicted as much damage on enemy as it did is considered highly commendable.

The Task Force Commander made the following remarks after this operation:

COMMENTS AND CONCLUSIONS.

WEATHER.

An interesting commentary on an important phase of modern naval warfare is that, in the employment of a carrier task force in raids on enemy objectives, the state of the weather is one of the most important, if not the most important, consideration that confronts the commander responsible for the operation.

A MORE EXTENSIVE WEATHER REPORTING SERVICE  
IS NEEDED IN OPERATING AREAS.

In this operation, detailed study of the weather conditions in the general area led to the conclusion that winds of about 15 knots out of the southeast could be expected on the morning of the 5th. Thus the decision was made to reach a position as far as practicable to the westward from the target area. The forecast for the 24 hours preceding the raid indicated unsettled conditions in the launching area, with promise of improvement and possibly clear weather at sunrise at the target area. This led to the decision to equip TBF's with bombs instead of torpedoes. Actually, weather conditions were the reverse of those predicted; that is, at 0430 the weather in the launching area was generally favorable and that at the target area at sunrise was solid overcast, with heavy rains over practically the entire area.

The choice of weapons for the VTB's, whether bombs or torpedoes, was based upon the best estimate that could be made of the anticipated weather conditions at the target. Had the assumption been that the ceiling at the target would be so low as to prohibit dive bombing, at least six, and possibly all of the VTB's would have carried torpedoes. The damage which might have been inflicted upon enemy vessels had torpedoes been carried instead of bombs is, of course, a matter of conjecture.

UNDER THE WEATHER CONDITIONS PREVAILING,  
THE ARMING OF TBF'S WITH TORPEDOES WOULD POSSIBLY  
HAVE INCREASED THEIR EFFECTIVENESS.

The foregoing points to the necessity of developing a more extensive weather service, particularly in advanced combat areas. Surface craft of a variety of types, equipped as weather reporting stations, should be brought into these areas as opportunity permits. Also, it might be possible to add to some coast watchers' activities a weather reporting code.

#### LOGISTICS.

Except for the successful execution of the raid itself, the major concern of the Task Force Commander is the logistic problem. The point from which the "run-in" should start, the speeds required for a period of at least 24 hours prior to the raid and the sustained high speed required during daylight hours of the day of the retirement, practically eliminate the possibility of the destroyers remaining with the task force throughout the entire period.

The logistic problem also becomes the controlling factor in determining the distance at which the carrier air group can be launched from the objective, conduct the attack and return to the carrier.

#### INTELLIGENCE.

No anti-submarine or anti-torpedo nets are used at Tonolei and Shortland Harbors at present.

Enemy ships at advanced anchorages are prepared to slip their cables and get underway almost immediately.

No radar installations were noted on Japanese ships. Our aircraft flew over and near some enemy ships for several minutes before sighting the ships, yet, on the initial attack, they were not fired on.

Anti-aircraft fire encountered appeared to be ineffective and lacked proper control. Volume and rapidity of fire was below what was expected.

At Faisi, anti-aircraft fire was withheld until a CL, presumably the ship of the SOP, fired a red rocket or Very's star, whereupon all ships commenced firing. Cruisers fired 3" and 40mm. guns and did not open with main batteries. Salvo fire was used by cruisers and destroyers with about a 15 second interval between salvos.

Information concerning nets, defenses, etc., which may be obtained from aerial photographs should be furnished, whenever available, prior to raids of this kind.

#### RADAR:

During the night preceding the raid, radar silence was prescribed except for the SG radar installed in JUNEAU. This precaution seems to have been successful as it is believed the enemy was entirely unaware of the near approach of the carrier task force. It is particularly important that complete radar silence be observed for the final run-in, reinforced by listening watches on all ships, as possibility of night action or detection by enemy air or surface craft is relatively remote. Under these circumstances night operation of radar only implements Japanese high frequency receivers and therefore gives them warning of the presence of enemy forces in the area.

Shortly after recovery of the attack group radar contacts were repeatedly made with aircraft which later proved to be B-17's of ComAirSoPac's force. Support of these B-17's was expected, yet their lack of IFF equipment, failure to have it turned on, or improper calibration, was a source of considerable concern to the Task Force Commander until the planes withdrew.

COMMUNICATIONS WITH ARMY PLANES SHOULD  
BE IMPROVED AND IFF EQUIPMENT PROVIDED AND  
MAINTAINED TO IMPROVE JOINT OPERATIONS.

An attempt to establish communication with these planes by voice radio was unsuccessful. In this connection the desirability of the development of a reliable super-high frequency aircraft radio for fighter direction is stressed. Since direction finder bearings can be taken on the present frequencies, there must always be reluctance to use this circuit except in case of absolute necessity, particularly in possible submarine waters.

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## CARRIER TASK FORCES.

For raids such as that conducted on October 5th, a carrier task force consisting of two 8" gun cruisers, two CL/AA's, and a squadron of destroyers, constitutes a powerful, fast and highly effective unit. The efficiency of such a force should constantly increase in direct ratio to the performance of the organization. While it is believed that an almost ideal task force would exist if it were composed of three 6" gun cruisers, three CL/AA's, and fourteen destroyers, i.e. two destroyers per heavy ship, on the basis of "doing the best with what you have," I recommend that, lacking the availability of ships to provide the ideal organization, every possible effort be made to achieve permanence in the assignment of ships to carrier task forces.

PERMANENCE IN THE ASSIGNMENT OF SHIPS TO  
CARRIER TASK FORCES IS ESSENTIAL IF MAXIMUM  
EFFICIENCY AND EFFECTIVENESS IS TO BE ATTAINED.

It is further believed that the assignment of a fast battleship to a carrier task force offers many advantages in spite of its lack of speed and maneuverability. For raids, when invariably it is necessary to leave destroyers behind because of fuel endurance, it would be necessary for the battleship to remain behind because of lack of speed. Except for this situation however, I believe the battleship, equipped as it is with a very powerful anti-aircraft battery, can fill a useful role in the carrier task force organization, particularly in view of the fact that the requisite number of CL/AA's will not be available for the many carrier task forces to be formed in the near future.

## RECOMMENDATIONS.

Every opportunity should be seized to assign offensive missions to carrier task forces. In view of the capabilities

CARRIER BEST EMPLOYMENT IS ON OFFENSIVE  
MISSIONS.

of carrier task forces to strike powerful offensive blows against the enemy, such missions, in which full advantage is taken of the element of surprise, are certain to yield big dividends.

## CHAPTER XX

## SOLOMON ISLANDS, SECOND SAVO ISLAND NIGHT BATTLE

OCTOBER 11-12, 1942.

Task Group 64.2 attacked and defeated a Japanese task force composed of cruisers and destroyers off Cape Esperance, Guadalcanal, Solomon Islands, between 2330, October 11, 1942, and 0030 October 12, 1942.

The engagement was fought at ranges from 2,000 to 9,500 yards, dark night, clear atmosphere, no moon, wind 7 knots from 120°. Calm sea with moderate swells from east-north-east, clouds cumulus, 70% coverage.

Task Group 64.2 sortied from Espiritu Santo on October 7, 1942 to be in a position to southward of Guadalcanal outside of enemy air search, ready to proceed to the attack on October 9th.

It was the Task Force Commander's intention to keep outside the range of enemy bombers each day until about 1200. By 1600 a position would be assumed which would allow the force to reach the vicinity of Savo Island at 25 knots by 2300. It was expected, and it proved to be true, that enemy information would be obtained by 1800.

On the nights of 9 and 10 October, preliminary approaches were made, but these were discontinued in the absence of early information of suitable objectives. During 11 October however, three contact reports from search aircraft showed the approach of an enemy task group composed of two cruisers and six destroyers, and indicated that the Guadalcanal Area was otherwise clear. Task Group 64.2 prepared to attack this force, and proceeded south and west of Guadalcanal toward the contact.

The enemy force reported by the aircraft was proceeding toward the northeast point of Guadalcanal at high speed, on course about 120° T.

While time and place of interception substantiated the contact reports, the force actually engaged was considerably more powerful than that reported.

Wind on the evening of the 11th was 7 knots from 120° T. Sea was calm with moderate swell. Ceiling was at 1000 feet, made up of broken cumulo-nimbus clouds. The night

was dark. Horizontal visibility was 4,000-5,000 yards. Temperature was 81° F., and barometer 29".90.

The task group started the approach at about 1600, from position Lat. 11° 30' S, Long. 161° 45' E., at 29 knots. It was estimated from the enemy contact report that they might reach the landing area by 2300.

An enemy force of two cruisers and six destroyers was reported bearing 305° T., distant 210 miles, course 120°, from Guadalcanal Island, by ComAirWing ONE at 1347. This force was again seen by search planes and reported as follows: "Six destroyers two cruisers reported previously distance 110, bearing 310, speed 20, course 120 at 1810."

GOOD RECONNAISSANCE. TO HAVE SHADOWED THIS FORCE CONTINUOUSLY MAKING PERIODIC REPORTS TO THE TASK GROUP COMMANDER, WOULD HAVE BEEN OF GREAT HELP. IN ADDITION, SHADOWING PLANE MIGHT HAVE BEEN ABLE TO ILLUMINATE THE ENEMY BY FLARES WHEN CONTACT WAS MADE. THIS, OF COURSE, WOULD HAVE REQUIRED RELIABLE DIRECT COMMUNICATIONS BETWEEN PLANE AND TASK GROUP COMMANDER.

The cruisers were in column, SAN FRANCISCO, BOISE, SALT LAKE CITY, HELENA, screened by the FARENHOLT (Commander Destroyer Squadron TWELVE,) LAFFEY, DUNCAN, BUCHANAN, McCALLA.

The following two memorandums were issued by the Task Group Commander to the ships of the Task Group giving them the Commander's general intention and plan of battle:

October 9, 1942.

MEMORANDUM FOR TASK GROUP SIXTY-FOUR POINT TWO.

1. Following notes are being passed out in the interest of coordination, limited time together, and for the information of late arrivals or those who did not attend the conference in Button:

(a) Enemy landing operations taking place NW coast Cactus with DD's and landing boats inshore; probably with offshore supporting force of cruisers. Japs have also used subs and motor torpedo boats this area at night. All Jap ships this area therefore probably equipped with torpedoes.

(b) We will search for and destroy enemy ships and landing craft.

(c) If horizon is visible each cruiser launch two planes to scout shore line for landing operations and offshore for supporting forces. Attempt maintain contact with enemy until approach of own ships then drop bombs and float lights to indicate position. Any enemy information including negative is desired. Pilots handicap is appreciated. Do not use flares unless ordered by CTF 64. When mission completed or if tactical scouting not possible planes proceed Ringbolt, fuel at daybreak, report readiness via ComGen. Cactus. Buoys are located northwest Beach Tanambogo. Use radio for essential messages. Rendezvous point will be sent via ComGen. Cactus.

(d) Cruisers form dog approximately to facilitate signals, DD's divided three ahead remainder astern rear cruiser. DD's illuminate as soon after radar contact as possible, fire torpedoes at large ships and gun DD's and small craft.

IT IS QUESTIONABLE THE SOUNDNESS OF ILLUMINATING THE ENEMY, PARTICULARLY WITH SEARCH-LIGHTS THUS ELIMINATING SURPRISE AND INDICATING YOUR POSITION TO ENEMY. THE ENEMY GUNFIRE IS PROMPT AND ACCURATE.

CA's maintain continuous fire at short ranges on small ship targets instead of full gun salvos with long intervals. #3 and #4 cruisers and rear DD's keep watch on disengaged flank, open fire without order. DD's in van keep alert to cruiser change of course in event TBS fails. Changes of course may be numerous. Be alert for turn signals by TBS or blinker. Keep TBS adequately manned and circuit clear as possible.

CHANGING COURSE BY OTHER THAN HEAD OF COLUMN MOVEMENT OR SIMULTANEOUS TURNS TENDS TOWARDS CONFUSION AND EMBARRASSING SITUATION. PROVISION SHOULD BE MADE FOR REVERSING THE VAN AND REAR DD'S WHEN A CHANGE OF COURSE OF MORE THAN 120° IS MADE BY THE HEAVY SHIPS.

(e) Be prepared to use counter illumination and open fire without delay. Enemy gunfire follows searchlight very quickly. Do not overlook danger of silhouetting own ships.

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SEARCHLIGHTS SHOULD BE USED WITH EXTREME CAUTION. THEY PROVIDE EXCELLENT POINT OF AIM FOR THE ENEMY.

(f) It will be my plan to approach on following route point dog  $9^{\circ} 48' S.$ ,  $159^{\circ} 26' E.$ , thence, north to Lat.  $9^{\circ} 20'$ , then course  $043^{\circ}$  for ten miles, then slow to 15 knots course  $081^{\circ}$  for twelve miles, then north for about four miles at which time reverse course by column movement to left and return over same track. This is approximate. We may approach west of Russell Island.

IT APPEARS THAT SIMULTANEOUS TURNS WOULD HAVE BEEN BETTER AND QUICKER.

(g) Insure that blinker tubes are dimmed and that they will show blue or red light. Use blinker tube with white light only when necessary.

(h) TBS silence will be maintained as long as practicable, but any ship may use it to report contacts. Insure continuous watch on undivided task force frequency and warning net.

(i) Any ship forced to fall out of formation do so on disengaged side. If unable make 15 knots proceed in toward Ringbolt Area. DD screen will be provided if consistent with task. All ships be prepared tow or be towed. Ships becoming separated from formation do not rejoin until permission is requested giving bearing in voice code of approach. Failing to contact own formation proceed to point Baker which will be 0800 rendezvous.

(j) All ships be alert for challenges and show night fighting lights with discretion. Identification of own ships will be greatly facilitated by maintaining the formation. Rejoin soon as possible after dodging torpedoes.

(k) As the second in command is in the flagship, I will also keep SALT LAKE CITY informed of the situation.

NORMAN SCOTT,  
Rear Admiral, U.S. Navy,  
Commander Task Force Sixty-Four"

October 10, 1942.

MEMORANDUM NUMBER TWO.

1. Propose sending in planes to Cactus to deliver despatch for Admiral Wright in CHESTER at Button to deliver Lieutenant Thomas, R.A.N.R., by destroyer to point Cast in my mailgram of 7 October on 12 October and repeat on 13 October if necessary.

2. Second Section SALT LAKE CITY, HELENA, BUCHANAN, McCALLA, be prepared to act as a Support Force. If indications continue that Japs are using one CL and 4 or 5 DD's, I may use the First Section with 3 DD's as Advance Force to reduce torpedo hazard.

3. At 1600 launch one plane from each cruiser proceed Cactus. Deliver message for despatch noted in paragraph 1 above. Notify Cactus of the possible arrival four other cruiser planes between 2200 and 2400 tonight. All planes rendezvous point Easy Lat.  $11^{\circ} 36'$  Long.  $160^{\circ} 55'$  October 11.

4. It is probable that we have been sighted.

NORMAN SCOTT,  
Rear Admiral, U. S. Navy,  
Commander Task Force Sixty-Four. "

At 1815 set condition of readiness one. Sundown was at 1815 LOVE.

At 2115 course was changed to  $000^{\circ}$  T., upon passing through position Lat.  $09^{\circ} 43'$ , Long.  $159^{\circ} 26'$ . At 2145 reduced speed to 25 knots.

At 2200 speed was changed to 20 knots and one aircraft was launched from each ship. The SALT LAKE CITY plane crashed after making a normal catapult shot. The plane burst into flames in the after part of the fuselage, immediately upon leaving the catapult. It is believed that a flare became ignited upon catapulting. The plane landed and became a mass of flame immediately.

At 2228 the course was changed to  $073^{\circ}$  T., to round the northwest point of Guadalcanal.

It was the Task Force Commander's intention to skirt the coast and turn north, leaving Savo Island on the starboard hand. If no interception was made on this course, he intended to double back to the southward and make another run along the coast. Closing the coastline he considered necessary in order to locate any enemy landing forces which might have eluded him. The disadvantage of being unable to use radar effectively, and the enemy's advantage in the use of radar and of having a dark background for torpedo attack **was** realized. The principal desideratum was to contact the enemy, if possible, before he could effect a landing, but at any rate contact him.

A battle disposition was assumed at 2233, three destroyers in column were ahead of the SAN FRANCISCO, and two astern of the HELENA. It was planned that upon opening fire that the third and fourth cruisers (second section) and the two destroyers astern, were specifically charged with guarding the disengaged flank. This did not preclude their opening fire on the engaged flank. In the latter part of the action the HELENA sank a destroyer on the disengaged side.

A division of forces and dispositions other than column **was** considered by the Task Force Commander but he believed that the column formation is most practicable for night action.

IT APPEARS THAT THIS DISPOSITION WHERE DESTROYERS WERE DIVIDED WAS MORE DEFENSIVE THAN OFFENSIVE. COULD NOT THE DESTROYERS HAVE BEEN FORMED INTO STRIKING GROUPS TO ATTACK THE ENEMY FROM THE FLANK WITH TORPEDOES AND/OR MAKE A TORPEDO ATTACK ON ENEMY SHIPS CLOSE INSHORE? OR WAS IT MORE DESIRABLE TO KEEP CONCENTRATED IN ORDER NOT TO INADVERTANTLY HAVE OWN CRUISERS FIRING AT OWN DESTROYERS RETIRING FROM TORPEDO ATTACK ON APPROACHING ENEMY FORCE?

A CAREFUL STUDY OF PACIFIC FLEET TACTICAL BULLETIN NO. 5TB-42 IS INDICATED. THE INSTALLATION OF IFF IN ALL SHIPS IS URGENT. OUR CRUISERS DID IN FACT FIRE ON OWN DESTROYERS DURING THIS ACTION.

The following report was received at 2250, from the SAN FRANCISCO'S plane, "One large, two small vessels, one six miles from Savo off northern beach, Guadalcanal." "Will investigate closer." This report was not well understood. It was also thought possible that the ships

might be friendly. Visibility from the plane at this time was very poor.

This force was not engaged by Task Group 64.2, but was subsequently sighted by BOISE's plane at 0230.

COMPOSITE CHRONOLOGICAL LOG OF BATTLE -(ALL TIMES LOVE).

<u>Time</u>	<u>Event</u>
2100	HELENA - Radar contact - surface - bearing 328° T. Distance 10,500 yards.
2105	HELENA - range decreased to 8,400 yards, bearing 328° T.
2107	HELENA lost contact.
2205	HELENA - surface radar contact 346° T., range 27,600 yards.
2250	Contact report from SAN FRANCISCO's plane.
2310	Changed course 050° T., speed 20.
2323	SALT LAKE CITY radar contact 335° T.
2325	HELENA - definite contact on SAIL GEORGE radar, 315° T., 27,700 yards and tracking commenced in radar plot and in plotting room.
2330	HELENA - radar contact bearing 315° T., distance 29,000 yards.
2330	SAN FRANCISCO's plane reported that force previously reported at 2250 was 16 miles east of Savo Island and about one mile off beach of Guadalcanal.
2332	HELENA - SG radar operator reported at about 22,000 yards that there were at least three ships in the target formation and later at about 18,000 yards reported at least five ships in target formation.
2332	HELENA - target course 140° T., speed 20 knots. Radar solution.
2333	HELENA - three targets on course 315° T., ranges 20,500 and 18,700 yards, by radar.

Time

Event

2333 Task Force Commander ordered cruisers column left to 230° thus requiring destroyers in van to counter-march and increase speed to regain position ahead passing to starboard of cruisers. Task Force Commander had no knowledge of actual radar contacts of enemy at this time.

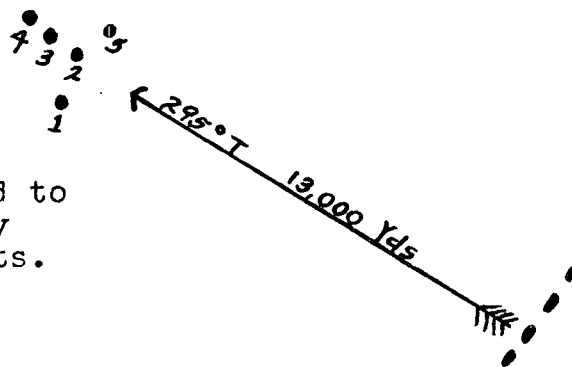
THE FLAGSHIP (SAN FRANCISCO) HAD NO SG RADAR AND AS A RESULT TASK FORCE COMMANDER HAD TO DEPEND ON OTHER SHIPS WHICH WERE EQUIPPED TO GET BETTER INFORMATION.

VAN AND REAR DESTROYERS SHOULD INTER-CHANGE POSITIONS ON A COLUMN REVERSAL OF 120° OR MORE.

2335 HELENA - target bearing 290° T., distance 18,500 yards.

2336 Changed course left to 230° T. Two rear destroyers speeded up and took positions between cruisers and the target.

2339 BOISE radar plot gave contact of 5 ships bearing 065° Rel. 295° T., range 13,300 yards. SG screen showed:



#2 believed to be actually two targets.

- ~~SECRET~~
- | <u>Time</u> | <u>Event</u>  |
|-------------|---|
| 2340        | HELENA reported radar contact 298° T. by TBS.   |
| 2341        | SAN FRANCISCO - one of own FC radars ordered train out of its previously assigned search sector to pick up this target.   |
| 2342        | BOISE had continuous radar track of approaching enemy force on course 140° T, speed 20 knots and was completely distinct from tracks of own ships.  |
| 2342        | HELENA - target bearing 285° T., distance 12,000 yards. (Reported via TBS to CTG 64.2)  |
| 2343        | BOISE reported five unidentified radar contacts, calling them "boogies" which were interpreted as meaning aircraft. The bearing was not received as relative by most of the ships but as a true bearing, (065° Rel. 295° T.) There was also doubt in Commander Task Group's mind at this time as to the radar reports because of our destroyers coming up on that side.   |
|             | HAD THE FLAGSHIP THE RADAR FACILITIES OF THE HELENA AND BOISE, THE TASK FORCE COMMANDER WOULD HAVE BEEN BETTER INFORMED.  |
| 2344        | SAN FRANCISCO after FC radar made contact on unidentified surface ship bearing 300° T., distance 5,000 yards.   |
| 2345        | Ships visible to naked eye from HELENA. Requested permission from CTG 64.2 to open fire (via TBS), and "Roger" received. HELENA had asked permission to open fire using the General Signal Procedure over TBS. This was misinterpreted as a request for Task Force Commander to acknowledge for HELENA's last transmission of a radar contact. When "Roger" was given as the acknowledgement of her last transmission, the HELENA opened fire (interpreting "Roger" as the General Signal for commence firing). |

IT IS ESSENTIAL THAT THE OTC HAVE THE BEST AND MOST COMPLETE INFORMATION AVAILABLE AT ALL TIMES, OTHERWISE HE IS AT A GREAT DISADVANTAGE AND HIS CHANCES OF SUCCESS ARE GREATLY REDUCED. THE FLAGSHIP IN THIS BATTLE WAS NOT EQUIPPED AS WELL IN RADAR AS OTHER SHIPS IN COMPANY. IT MIGHT HAVE BEEN ADVISABLE FOR THE TASK GROUP COMMANDER TO HAVE SHIFTED HIS FLAG TO ONE OF THE SHIPS WHICH WERE

BETTER EQUIPPED IN THIS RESPECT. THE TBS IS A  
SPLENDID COMMUNICATION CHANNEL BUT WITH CONTINU-  
OUS REPORTS COMING IN FROM VARIOUS SHIPS, A CON-  
FUSED AND UNCERTAIN SITUATION IS PRESENTED TO THE  
OTC. HE DOES NOT HAVE THE BEST PICTURE. IT IS  
DOUBTFUL THAT AN ADEQUATE TACTICAL PLOT WAS MAIN-  
TAINED SHOWING OWN TRACK, ENEMY CONTACTS AND TRACKS  
FROM WHICH THE OTC COULD OBTAIN A CLEAR AND ACCURATE  
PICTURE OF THE SITUATION. IF THIS TYPE OF TACTICAL  
PLOT IS NOT MAINTAINED BY ALL SHIPS, IMMEDIATE STEPS  
SHOULD BE TAKEN TO DO SO. NIGHT ACTIONS AT BEST, ARE  
CONFUSED AND EVERY EFFORT SHOULD BE MADE TO KEEP THE  
SITUATION AS CLEAR AS POSSIBLE. COMPLETE DEPENDENCE  
SHOULD NOT BE PLACED ON TBS, RADAR, DRT AND OTHER  
MECHANICAL CONVENIENCES. KEEPING OWN TRACK ONLY  
IS NOT SUFFICIENT.

<u>Time</u>	<u>Event</u>
2345	SAN FRANCISCO's log shows: "Sighted unidentified destroyer to starboard. This was first visual contact made by this ship." Inasmuch as position of own destroyers were not known with certainty, there was some reluctance to open fire on ships whose hostile characters were not clearly known. FARENHOLT, DUNCAN, and LAFFEY were known to be proceeding up the starboard side of the cruiser column but it was not known how far they had progressed nor their distance from the cruiser column.
2346	HELENA commenced firing to starboard on ship, distance about 4,000 yards, 100° Rel. over own DD's.
2346	SALT LAKE CITY opened fire to starboard with main battery on enemy light cruiser range 4,000 yards bearing 050° Rel., enemy course 120°, speed 20, on radar setup. Secondary battery illuminated with starshell. Enemy wake visible.
2346	BOISE commenced firing with both batteries immediately following SALT LAKE CITY on leading enemy heavy ship, in continuous fire, using radar train and ranges, at a range of approximately 4,500 yards, bearing 324° T. Hits were observed on the first salvo, which was a short straddle.

EXCELLENT RADAR CONTROLLED FIRE.

Fire was maintained, with a spot of "up 100", and in a relatively short time the target was lighted up by a fire amidships. She was tentatively identified by several officers as a NATI class heavy cruiser. BOISE gunfire was apparently very effective at this short range, and the target was hit almost continuously. The AA battery opened fire on the center ship in the enemy van, approximate initial range 3,550 yards, bearing slightly to the left of the main battery target. Fire control was with radar ranging and training, and shortly after fire opened, splashes were observed on either side of the target ship in the range notch. At about 2350 the target disappeared from both screens, leaving own splashes still showing. Fire was ceased, after expending approximately 120 rounds. Reports from other stations indicated this target was a destroyer, which broke in two and sank.

2346 SAN FRANCISCO's log shows: "At about 2347 commenced firing with main and secondary batteries on an unidentified enemy ship bearing 300° T., range 4,800 yards. In accordance with doctrine, this was the left hand ship that had been located. After several salvos the target ship and another ship close to it were observed to be on fire, one burning severely. Fire was shifted to a destroyer thought to be of the AMAGIRI class, which was approaching the ship from the starboard beam. This destroyer suffered one or more hits from our 5" and a glow from the damage continued between his stacks."

2347 Commander Task Group ordered cease firing because he thought that the cruisers were firing at own destroyers, not only because of their position, but because of a similarity in the silhouettes. Commander Destroyer Squadron TWELVE was asked if any of his ships had been fired on. He replied that he was all right and that none of his ships, so far as he knew, had been fired at. It took some time to stop the firing. It never did completely stop. BOISE and other ships continued to fire on two burning ships on starboard bow.

HAD THE FLAGSHIP THE RADAR FACILITIES OF THE HELENA AND BOISE, THE TASK FORCE COMMANDER WOULD HAVE BEEN BETTER INFORMED.

<u>Time</u>	<u>Event</u>
2348½	HELENA checked fire. Explosion and fires seen on starboard beam. Target disappeared completely from FC and SG radar screens.
2349	HELENA resumed firing.
2349½	HELENA checked fire.
2350	BOISE ceased firing main battery having observed her target sink, going down by the bows with her screws still turning and her turrets apparently still trained in.
2350	SAN FRANCISCO's log shows: "Cease firing was ordered by Commander Task Group 64.2 who felt it was our own destroyer (the general appearance and camouflage was similar to our two-stackers.) This order was delivered by word of mouth as well as by the TBS. Firing was ceased and destroyer closed into about 1,400 yards and paralleled this ship to starboard. Destroyer flashed a blinker gun or floodlight on the water in direction of this ship and made some undistinguishable characters. One white over one red lights were turned on."
2350	BOISE log shows: "Commander Task Group ordered destroyers to turn on recognition lights as he was still uncertain whether or not they had been fired upon by our cruisers."
	CONSIDERABLE CONFUSION AND UNCERTAINTY APPARENTLY EXISTED AT THIS TIME.
2351	SAN FRANCISCO - After running parallel to us for about one or two minutes, destroyer turned away and was then illuminated by searchlight, and two white bands around forward stack could be clearly seen, along with a lattice type formast and other definitely Japanese characteristics. Fire was resumed with main and secondary batteries, but only after destroyer had succeeded in turning about 90° to starboard opening the range to 2,600 yards and gone to high speed (estimated 26 to 30 knots). We were making 20 at the time and while parallel to us he seemed to be making same speed. The target angle at commence firing was 180°. The second 8" salvo straddled. The destroyer stopped, burned violently for a few minutes, exploded, turned on its side and sank."

TimeEvent

- 2351 BOISE log shows: "Commence firing ordered by Commander Task Group, there being no doubt in his mind now about the presence of the enemy and the fact that own destroyers were clear. During this period very little fire was received from enemy." BOISE fired on a target, believed to be another destroyer, in the vicinity of the first AA battery target, with both batteries and ceased firing when an explosion was observed on the target, and it disappeared from the radar screens. At least three enemy ships were observed on fire in the target area at this time.
- 2351½ Cruiser (SAN FRANCISCO) illuminated large Jap destroyer.
- 2352 An enemy heavy cruiser was seen at 2352 to be burning fiercely, and was then observed to sink. This is believed to have been a ship of the NACHI class. SALT LAKE CITY opened fire on heavy cruiser range 5,000 yards bearing 100° Rel., course 120, speed 20. Two salvos fired, both hit. This target was tracked in from 9,000 to 5,000 yards using FC radar during lull in firing. SALT LAKE CITY secondary battery illuminated target before main battery resumed firing.
- 2353 LAFFEY reported over TBS that she was coming up on starboard quarter. BOISE commenced firing at a ship to the right of previous target. Firing was in full radar control without illumination. Fires breaking out on the bow of this ship illuminated her mid-section for a short time. She was observed to be a two-stacked cruiser, unmistakably Japanese, with trunked forward stacks and latticed tripod mainmast close to after stack. This ship was returning the fire. Reports indicate that she may have been firing some "overs," as the whistling of projectiles overhead was observed. Later, she straddled BOISE and splashes were observed 50 feet short, as well as to port. Shorts threw considerable water over starboard AA battery and after superstructure of BOISE. This target burst into flames and burned very brightly. Toward the latter part of BOISE firing she was enveloped in smoke.

Time

Event

2354 SAN FRANCISCO's log shows: Changed course to 280°. Faint white light was seen broad on the starboard bow closing rapidly. As it approached, it could be identified as on the mast of a destroyer and underneath it was seen a red light. Some character or series of characters was rapidly flashed at this ship on a blinker gun of brilliant intensity. This destroyer was believed to be hostile and commence firing on it was ordered. One partial 8" salvo and several 5" rounds were fired at it, all of which appeared to go over. Signal bridge reported "Its the LAFHEY and she's calling the FARENHOLT - she's making D491 V D459." This destroyer (a two-stacker) passed ahead from starboard to port and when about 30° or more on the port bow several small flashes like torpedo impulse charges were observed in the vicinity of her torpedo mounts. Hard left rudder was given and the ship headed directly at the destroyer. Destroyer drew aft rapidly at high speed (variously estimated at from 25 to 30 knots) and passed down the port hand of the cruiser column on approximately reverse course. Course was resumed." Subsequent conversations of the commanding officer of the LAFHEY showed that the LAFHEY was not in that vicinity and did not use her blinker guns all night. The 8" salvo fired at her may have scared her into firing while sharp on the bow. No torpedo wakes were seen, but the change of course to left may have paralleled the torpedoes. On returning to course 280° (and by 0003 to 310°) fire on unidentified targets on starboard hand was resumed. These were damaged Jap ships that had already been badly damaged and were burning. At this time at least four enemy ships were burning or smoking very heavily (others had already sunk).

2358 HELENA checked fire.

2358 BUCHANAN made two torpedo hits on a heavy cruiser of the KINUGASA class which sank almost immediately.

2400 HELENA - Enemy off port quarter.

2400 Commander Task Group ordered cease firing in order to shake down and rectify the formation which had become badly broken up. Battle lights were flashed and course altered to the northwest approximately 310° T. BOISE observed fires burning on an enemy destroyer and fired on her for two minutes in radar control. Hits

Time

Event

were observed and BOISE ceased firing when target disappeared from radar screen. Cruisers of the formation turned on searchlights and one destroyer in the rear fired starshell spread.

TURNING ON SEARCHLIGHTS GAVE THE ENEMY A POINT OF AIM. UP TO THIS TIME NONE OF OUR SHIPS HAD BEEN HIT.

One of our destroyers was illuminated bearing 45° Rel., distant 2,000 - 3,000 yards from the formation. This destroyer was definitely identified as one of our own destroyers. It may have been the DUNCAN who during the early stage of the action made a torpedo attack and fired torpedoes at an enemy cruiser and observed two hits. It is quite possible that own forces fired on the DUNCAN who later that night was found abandoned and gutted by fire.

- 0001 Changed speed to 20 knots. Cease firing all ships by TBS .
- 0004 Ships commenced firing again.
- 0005 HELENA - two destroyers hit badly and burning.
- 0005 Column changed course to the right 60° resulting in a cross-fire.
- 0006 HELENA - Ship on starboard beam just blew up.
- 0006 Torpedo track sighted passing about 50 - 75 feet ahead of HELENA from starboard to port at right angles to course.
- 0006 BOISE sighted a torpedo wake ahead. Ship was brought right with hard rudder to parallel its track and apparently the port bow just cleared the torpedo. A second torpedo was observed passing aft along the starboard side, and the stern swung clear of it about 30 yards.
- 0006½ Ship at 285° without lights. Four ships burning. TBS report: Three ships 18 miles - 1 mile off Guadalcanal.

TimeEvent

0008 BOISE left with hard rudder and resumed station in column.

0009 BOISE radar search of the enemy area disclosed a target bearing about 100° Rel., which was taken under effective continuous fire using searchlight illumination.

SEARCHLIGHT ILLUMINATION BY BOISE APPARENTLY RESULTED IN HER BEING HIT BY ENEMY.

Fires were observed to break out in the target. The target returned the fire and made four known hits on BOISE, two just above the second deck at frame 59½ starboard at 0011, and two at frame 16½ starboard at 3rd deck at 0012 (plus). Almost simultaneously BOISE was engaged by a heavy cruiser firing from forward of the beam (about 045° Rel.) well separated from presumed enemy position. It is believed that this ship was not a part of the original enemy formation. Between 0009 and 0012 she fired at BOISE unopposed, shooting beautifully with twin 8" mounts. She straddled BOISE repeatedly along the forward half of the forecastle, and made two known hits, the first in the barbette of Turret #1 at 0010 and the second through the side below the armor, into the 6" magazine between Turrets #1 and #2 handling rooms at 0011 (plus.)

0009 HELENA observed fire on BOISE who sheered out of column to the left. HELENA observed her target on fire aft and to have several explosions. Shortly afterward this target burst wide open with one terrific explosion and disappeared.

0009 SAN FRANCISCO's log shows: Prior to this time various shells had landed on both sides of this ship but none very close. An 8" salvo now straddled our wake and others followed. Shortly the BOISE was heavily hit. Enemy firing from about 7,000 yards was noted and shortly a NACHI class cruiser, apparently not under fire, was sighted slightly abaft the beam. Starshells from other ships furnished the illumination. She was promptly brought under fire. (Our after station controlling as forward main battery director could not see the target.) First salvo missed, but second salvo hit aft and caused a tremendous explosion, the heaviest observed anywhere during the engagement. About the best positive indication that

TimeEvent

can be given of this ship is that it was a heavy cruiser. It was soon being fired on also by other ships. Some observers state that she was firing six gun salvos which might indicate a FUMUTAKA class, but other observers state that the firing seemed to have all come from her forward turret groups and that, if six gun salvos are correct, would indicate a NACHI or ATAGO class.

- 0010 HELENA commenced firing to starboard.
- 0011 SAN FRANCISCO observed an enemy cruiser - opened fire.
- 0012 SAN FRANCISCO observed BOISE heavily hit forward and set on fire and to fall out of formation to port but to continue firing with her after turrets.
- 0012 HELENA ceased firing.
- 0013 SALT LAKE CITY observed target hit by HELENA.
- 0013 HELENA - observed torpedo wake bearing 250° Rel.
- 0016 Changed course to 330° T., to close enemy. Firing became desultory, enemy fire was silenced and action broken off.
- 0015 SAN FRANCISCO's log shows: Changed course to 350°. The cruiser above mentioned (FUMUTAKA or NACHI class) was now being heavily fired on by other ships as well as ourselves, but about 1,000 yards beyond her and passing her another ship was briefly sighted through the smoke and the glare. This was believed to be a three-stack cruiser. It was picked up by radar and although never again sighted was taken under fire using radar control exclusively. Radar showed several straddles in range, but no observation could be made in deflection and no hits or explosions were observed.
- 0019 Enemy destroyer fired on bearing 220° Rel. and sank.
- 0020 SAN FRANCISCO's log states: Cease firing. Touch with all other of our ships had been momentarily lost and it appeared that all enemy had been sunk, were in sinking condition or had escaped, and that it was imperative to reform our own forces. From the limited viewpoint of the SAN FRANCISCO it was estimated at

TimeEvent

this time that two enemy cruisers and at least three destroyers had sunk and several other enemy ships, type undetermined, were in sinking condition. It was known that the BOISE had been seriously damaged and that some of our destroyers were hurt.

- 0025 Fire ceased after ATAGO class cruiser observed to blow up and sink.
- 0106 Changed course right to 215° T. Explosion bearing 080° T.
- 0119 Two explosions bearing 220° Rel.
- 0120 SAN FRANCISCO set course 265°, speed 15 knots. to SALT LAKE CITY and HELENA thought astern and to port.
- 0200 Four ships sighted to port, distance several thousand yards, strung out, flashing proper identification signals. One of these identified as SALT LAKE CITY who fell in astern of SAN FRANCISCO.
- 0200 SAN FRANCISCO course 130°, speed 22 knots.
- 0220 SAN FRANCISCO speed 24 knots.
- 0257 SAN FRANCISCO speed 25 knots, course 160°.
- 0300 HELENA who had become separated joined formation. Course 140°.
- 0330 SAN FRANCISCO course 180°, speed 20 knots. BOISE joined formation. BUCHANAN screening ahead, LAFFEY following cruiser column. McCALLA remaining behind to search for survivors. FARENHOLT and DUNCAN whereabouts unknown (FARENHOLT later rejoined, damaged, and DUNCAN lost.)
- 0410 SAN FRANCISCO passed through rain squall.
- 0554 SAN FRANCISCO speed 19 knots.
- 0600 SAN FRANCISCO zigzagging in accordance with Plan #8.

## NARRATIVE.

At 0027 changed course to 220° T. An attempt was made at this time to establish communication with Commander Destroyer Squadron TWELVE in order to have him detail a destroyer to stand by the BOISE. Neither Commander Destroyer Squadron TWELVE in the FARENHOLT, nor the BOISE could be reached. The McCALLA was designated to remain in the area to assist them. During the initial stage of this retirement, the recognition lights were flashed from time to time. They proved to be of great value as they had proved to be during the action, although it is believed they were used too freely. Also all ships were directed to take course 205° T., to prevent collision and aid in identification.

The SALT LAKE CITY enlivened the occasion at 0050, by firing two starshells which illuminated the SAN FRANCISCO. All destroyers were ordered to close the SAN FRANCISCO. No acknowledgement could be obtained from the FARENHOLT and DUNCAN. It was impossible to establish TBS contact with the BOISE at this time.

The SALT LAKE CITY was contacted visually, by OTC at 0100 and reported that she could make 22 knots. This estimate was later increased to 25.

At 0230 three Japanese ships passed BOISE plane which had forced landed in the water. These ships were on course 320° T., speed 18 knots.

The ships passed at a distance of less than 300 yards and appeared to be a small cruiser similar to YUBARI, the ITUKUSIMA, and a destroyer, possibly of the HATUHARU class. The identification of ITUKUSIMA was considered particularly definite.

Commander Destroyer Squadron TWELVE reported as follows:

In the evening of October 11 Task Group 64.2 was steaming on course 000° T., at 28 knots. Word had been received from Group Commander that his intentions were to intercept enemy force of 2 heavy cruisers and 6 destroyers which air reconnaissance had reported approaching northwest coast of Guadalcanal from the northwest with the assumed objective of landing troops. Our cruisers, SAN FRANCISCO, HELENA, SALT LAKE CITY, and BOISE were in column with destroyers, FARENHOLT, DUNCAN, LAFPEY and McCALLA disposed in screen on 4,000 yard circle. The BUCHANAN, who had left formation in late afternoon to rescue cruiser aircraft personnel, rejoined and took station in screen at 2211. This force was approaching Savo Island from the south. Zone -11 time was in use, moderate sea, wind easterly about 12

knots, night dark and overcast. The Squadron Commander was embarked in FARENHOLT, Squadron flagship.

The following is a chronological sequence of events:

<u>Time</u>	<u>Event</u>
2145	Slowed to 25 knots.
2200	Sighted bright yellow flare astern of formation. Cruisers were launching aircraft at this time. Formation slowed to 20 knots.
2220	FARENHOLT obtained radar contact bearing 345° T., distance 13,000 yards, which was assumed to be Russell Island.
2223	Destroyers took approach disposition with FARENHOLT, DUNCAN, and LAFFEY in column in van and BUCHANAN leading McCALLA at rear of cruiser column.
2227	Disposition changed course to 075° T.
2245	Sighted two blue lights on beach at NW end of Guadalcanal which had the appearance of range lights and oriented such that they may have been intended as aids to the approaching enemy force.
2300	Sighted Savo Island dead ahead, distance approximately 6 miles.
2308	Force changed course to 050° T.
2332	Force reversed course left to 230° T., cruisers executing column movement immediately. FARENHOLT turned to left followed by DUNCAN and LAFFEY. Orders were given to the captain of the FARENHOLT to slow as necessary to remain astern of the cruisers until it could be ascertained whether DD's which had been in the rear were following cruisers in formation, or had turned to take new van positions. As soon as it was determined that they were following astern of the cruisers, I ordered the captain to speed up and take position ahead of cruisers, going up on their starboard flank. Up to this time there had been no contact of enemy forces in the vicinity, and from previously reported position of enemy forces, it was estimated that they would be southeastward of our forces, or on cruiser's port flank. DUNCAN and LAFFEY had been instructed previously to follow the course and speed of the FARENHOLT without signal.

<u>Time</u>	<u>Event</u>
2340	SAN FRANCISCO reported radar contact with surface craft, bearing 298° T., distance not given. At this time the FARENHOLT had gained position abreast the middle of the cruiser column. As this contact was about 68° on the starboard bow of FARENHOLT, the captain was instructed to slow, and give consideration to turning toward cruisers and attempting to take position astern of them. Just at this time CTG 64.2 inquired if my group was taking position ahead, to which it was replied "Affirmative; coming up on your starboard flank." This was done to acquaint all hands of our position.
2343	SAN FRANCISCO reported radar contact of unidentified aircraft 065° T., distance 5 miles, and another contact 284° T., no distance given. Before any action could be taken toward turning to take position astern of cruisers, fire was opened by our own forces, shells at first going over the top of this vessel, the fire being about abeam of the cruisers. Consideration was then given toward the best way to get out of this unfavorable position and decision was made to continue at best speed and pull out ahead as a turn to the left would throw us into our own cruisers and to the right into the enemy.
2347	Order for all ships to cease firing was heard over TBS voice radio. CTG 64.2 inquired if I was all right, reply being made in the affirmative. About 30 seconds later reported that our own units were firing on us. Fire of own units decreased in volume but continued.
2349	The FARENHOLT opened fire on enemy vessel, brilliantly illuminated by starshells, and orders were given to fire torpedoes at favorable targets, if any. Two vessels on the starboard hand, which appeared to be enemy heavy cruisers, were burning fiercely at this time.
2350	The FARENHOLT was hit on the fore yardarm and at the top of #2 stack. Fragments from latter hit jammed the torpedo mount amidships. At the same time or shortly thereafter, the FARENHOLT was struck at waterline on port side near frame 65 by one or more shells. This hit put the I.C. and plotting room out of commission. This hit and one at waterline, port side,

Time

Event

frame 85, disrupted all power, lighting, and communications in forward part of ship. At this time the FARENHOLT was about abreast of SAN FRANCISCO. Area was cleared, crossing ahead of SAN FRANCISCO, which cruiser was apparently turning to starboard to close the enemy. After clearing, a check on the damage sustained was made. The ship had a heavy list to port.

LESSONS LEARNED AND RECOMMENDATIONS.

The value of vertical fighting lights was thoroughly demonstrated. However, no arrangement is made for a suitable means of identification in case fighting lights are put out of commission as occurred in FARENHOLT. It is believed that a compact auxiliary set of vertical fighting lights installed on the mainmast would be highly desirable.

The use of "Roger" for receipt of a TBS message was apparently misunderstood as an order to commence firing. It is recommended that either the signal to commence firing be changed, or the manner of receipting for TBS messages be changed in order to avoid possible misinterpretation or confusion.

In the event that destroyers are disposed both in the van and the rear of heavy ships when deployed for action, and a column movement of 120° or more is executed by the heavy ships, it is recommended that those DD's which were originally in the rear take the van position upon the execution of the change of course. This would decrease the time that the heavy ships' fire would be masked by own destroyers.

NARRATIVE CONTINUED.

At 0305 the BOISE was contacted making 20 knots. Speed was consequently set at 20 knots. In the meantime, the HELENA had rejoined.

Having started the retirement, it was the CTG endeavor to continue at the maximum speed possible in order to increase the distance from enemy bomber bases. A radio report was made to Commander South Pacific Force and air coverage was requested. Commander South Pacific Force was informed that the McCALLA had remained behind. The air coverage was noted after daylight, and, in addition, Commander Aircraft South Pacific Force covered the approach

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from the northwestward of Button, all the way into the anchorage.

At 0055 McCALLA was ordered to stand by BOISE. McCALLA was unable to contact BOISE but at 0509 sighted the DUNCAN which had been abandoned and gutted by fire. McCALLA made every effort to salvage the DUNCAN but was forced to abandon her efforts and sink her after daylight on account of threatened enemy action. The loss of the DUNCAN was another example of fire being responsible for the loss of a ship.

**One commanding officer commented as follows:**

The outstanding event in this operation was the fact that this was a night action between light forces of apparently nearly equal strength. The target was picked up at about 28,000 yards by SAIL GEORGE radar and completely developed as to course, speed and probable composition. Fire was opened with what is believed to be a straddle using radar range and bearing, and this first enemy target was sunk or disappeared from sight and radar screen in about two minutes. Again the importance of an accurate opening fire on the enemy before he opens fire was emphasized and borne out.

UNFORTUNATELY THE FLAGSHIP WAS NOT EQUIPPED  
WITH AN SG RADAR. IF SHE HAD BEEN SO EQUIPPED,  
THE BATTLE MIGHT HAVE BEEN MORE SUCCESSFUL.

Ships using searchlight were the only heavy ones believed hit, and although perhaps not using them at the time of being hit, they could have previously furnished a point of aim for tracking.

USE OF SEARCHLIGHTS IS DISASTROUS.

The opening of fire in a night action is somewhat similar to an air attack, in that discretion must be used, but it is believed that individual ships must bear the burden of responsibility as to when to open fire (after the enemy is definitely known to be present.) Therefore, all ships must be loaded and ready when the contact is made (if within range), and join in the fire at the earliest opportunity using standard fire doctrine as to targets.

As radar equipment varies in efficiency in different ships and types, instructions should be clear as to the reporting of initial contacts and their further development. This is especially important to the destroyer screen, due to lack of certain facilities held by larger ships. Sectors should be assigned radars to avoid interference.

## RADAR INSTRUCTION AND DOCTRINE ESSENTIAL.

Ships suffering casualties reducing their speed or maneuverability should so inform others by TBS so that appropriate action may be taken by following ships. This should be followed by instructions from the OTC, if doctrine does not cover it.

Fighting lights were used to great advantage for identification, but some distinguishing mark for the guide or OTC would have been most useful in assisting separated ships to rejoin. Otherwise the flagship should make her call by blinker tube toward ships rejoining and showing proper fighting lights. The possibility of a ship being hit and both fighting lights and TBS being out of action is emphasized. What procedure is then possible to establish identity?

### EXPERIENCE SHOWS THAT SHIPS SHOULD HAVE AUXILIARY MEANS OF SHOWING FIGHTING LIGHTS.

The effectiveness of the SG radar was clearly shown in this action. The PPI scope gave a clear graphic picture of just what was ahead and where our own forces were at all times. The difficulty of handling a land background on the screen was overcome by having a chart of the area available and consulting it frequently. Due to this land background the bearing of every target on the search radars had to be checked. Designation of targets from radar plot was used by checking all probable targets and then giving plot the necessary information. This action was very important due to the presence of land. Due to this coordination no trouble was experienced in defining targets as was evidently had by a force of our cruisers who had been in action in the same area on August 8-9.

The primary cause of the unequal losses was due to surprise.

### SURPRISE IS ESSENTIAL IN A NIGHT ACTION.

The Japs were caught unawares. The individual ship handling by the captains was the next largest factor in the victory. Throughout the battleline both cruiser and destroyer captains were faced with individual problems of ship handling and night gun and torpedo fire. Even maintaining an approximate position and formation under such conditions was a feat in itself. The gun flashes continually blinded the captains and ship control parties. After the lull

following the first phase the formation was reorganized quickly and a heavy and accurate fire was again delivered against the enemy, which effectively stopped him. At the conclusion of the second phase and the action, all ships were quickly formed up, with the exception of the damaged ones, with lack of confusion.

The column formation proved to be very satisfactory for this type of action at night but the method of changing course is not considered sound, nor is the dispersal of destroyer strength. An extremely embarrassing situation existed while the three leading destroyers were regaining station by passing between the enemy and our forces. This complicated the fire control in that there was a constant possibility of hitting own ships. Extreme care had to be taken in target designation which was further complicated by employing radar controlled fire. It is fortunate that the consequences were not more disastrous. When action is eminent as it was here, it should be possible for ships in simple formation of column to carry out a simultaneous turn of 180° without undue hazard and confusion. The Task Group Commander had three days and nights before the action to exercise at such a maneuver.

Enemy tactics noted, included rapid closing of range until hit and a high speed withdrawal when damaged. Three enemy destroyers were observed to form up and approach the rear ship of our formation at high speed in an endeavor to launch a torpedo attack. These ships apparently approached on a line of bearing. The enemy was very slow in opening fire, believed due to surprise. However, once he got the range he hit often on the BOISE. Ships firing on the SALT LAKE CITY were hit so soon after opening fire little comment on their gunnery is available. For reasons unknown, enemy did not fire during the four minute interval. Apparently the enemy did not use salvo fire with his major calibre weapons, which conclusion is discerned from specific observation from the heavy cruiser which fired at the BOISE. Gun flashes were rapid and intermittent such as would come from partial salvo firing or local control. The enemy made no attempt at illumination by searchlight. Two starshells were noted bursting on disengaged side of BOISE. Not known by whom fired but illumination was effective. Enemy heavy cruisers seemed to concentrate their fire on ships of our force which persisted in continuous searchlight illumination and on our light cruisers which used rapid continuous fire.

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The SAN FRANCISCO commented as follows:

COMMUNICATIONS, RDF.

No Japanese "TBS" or its equivalent was heard, or was any interference experienced with ours.

No enemy pyrotechnics were noted. No enemy tactical signalling by blinker gun, searchlight, or yard-arm blinker was observed. No radar interference was experienced. ACHGIRI class destroyer observed at 1100 yards did not appear to have radar antenna. It is not known whether or not either enemy units had radar. Fire of enemy cruisers, about 20 minutes after action opened, was so accurate that radar range could easily have been a contributing factor. It appears that our force was undetected until it opened fire and even then enemy appears to have been in some doubt as to our hostile character for at least a few minutes. Perhaps junction with other forces had been arranged about that time.

No Japanese radio was heard.

ENEMY RECOGNITION.

Fighting lights were observed on two destroyers as follows: Two lights in a vertical row, upper one white, high on foremast, lower one red, near bridge. On bridge level or below a small floodlight or bright blinker gun was observed. Some character or combination of characters was made on this light apparently for identification by other vessels. In one instance (from the AMAGIRI class destroyer) it was pointed in the water. In the case of the destroyer which came in from ahead, it was pointed directly at the ship. The upper two lights were not blinked, but were left on for periods of one or two minutes, possibly longer. Both these ships were seen from the port hand only and it is possible that these were running lights turned on to avoid collision with apparently own forces.

The white bands on the stacks are considered worthy of note because they were quite conspicuous in poor illumination and were the first definite indications of hostile character in the case of one of the destroyers.

No Japanese smoke screens, either from stacks, containers, floats, etc., were noted. Two Japanese cruisers were first detected emerging from behind smoke caused by burning Japanese vessels, but it is believed that this use of smoke cover was coincidental rather than intended.

One incident of deception was noted: A Japanese destroyer which came in at high speed, sharp on starboard bow, had on the white over red lights previously described. Firing was commenced on it and the destroyer rapidly made a series of characters at this ship with a brilliant blinker gun. Several signalmen on the signal bridge said this destroyer was making "D491 V D456" and report was received from signal bridge "She's one of ours, it's the LAFFEY calling the FARENHOLT." It is possible that Japanese destroyer actually made such a transmission, whether or not that is true, it caused a cessation of fire which gave the destroyer the needed additional few seconds to attain a good firing position (this destroyer believed later sunk by our forces.)

The failure of the Japanese destroyers first contacted to return fire in any manner caused some misgivings as to their hostile character.

### LESSONS LEARNED AND RECOMMENDATIONS..

#### GUNNERY.

5" battery had great difficulty in loading due to the night being very dark and to blindness of loaders resulting from flash of gunfire. Enclosed gun mounts would have obviated this difficulty.

5" battery would have been more effective if it had had FD radars installed. Recommended earliest possible installation.

More starshell illumination was needed. The starshell ammunition on this vessel was not used at all since recent tests indicated that less than 30% could be expected to function. Ships who were firing starshells seemed to do so sporadically. It is believed that had the whole area containing enemy ships been kept well illuminated, all enemy ships could have been sunk before they had an opportunity to damage any of our ships. Illumination by searchlights permitted some enemy ships to be hidden in dark spots. On a clear night with a fair ceiling in an action such as this one, the primary function of heavy cruiser's 5" might well be to furnish illumination.

That night action requires location of own forces be positively known by all ships at all times.

That IFF equipment be installed on surface vessels to assist in radar identification.

That efficient FC radar in hands of well trained personnel is invaluable at night. All ships had a hitting set-up on rangekeeper before opening fire.

The element of surprise cannot be over emphasized.

That after action has joined full freedom to select targets and shift fire proved invaluable.

That in night action the primary function of the 5" battery of cruisers is to provide the illumination for the 8" and 6" guns.

That under conditions similar to those of this action starshells properly used provide perfect illumination for directors. Used with radar can get hits and fire started quickly after which ranges can be taken on fires by using astigmatizers.

That search lights should be used with extreme caution either to illuminate an enemy or provide counter-illumination. Searchlights provide excellent point of aim for the enemy.

That hits at night at short ranges are easy to distinguish from flashes.

That when a target is in flames or obviously damaged shift to another quickly. The lame ducks can be picked off later.

That the most effective use of the weapons at hand is obtained by rigid adherence to and common sense application of the doctrines formulated by careful study during the preparatory years of peace such as Chapter 14 of Cruisers Scouting Force Tactical Bulletin. To illustrate, consideration had been given to rapid partial salvo fire for the purpose of decreasing salvo interval periods. This night action demonstrated that rapid salvo fire is most effective against enemy targets with a minimum expenditure of ammunition and permits an accurate control of the fall of shot.

That in likely enemy territory at night use turn movements to counter march, not column.

That if column movements are required have leading ship regardless of type start same unless action is already joined or immanent.

THE OPERATION ORDER OR INSTRUCTIONS SHOULD PROVIDE FOR THE MANNER OF MAKING A COLUMN MOVEMENT WHEN DD's ARE DISPOSED IN THE VAN AND REAR.

That destroyers must not be required to re-orient themselves in likely enemy territory at night. On counter march if destroyers do not lead column movement put van destroyers in new rear, rear destroyers in new van.

That all unidentified radar contacts must be reported immediately to Task Group Commander. Better to send false reports than miss a real one. Use true bearing and range.

That if possible, parallel TBS orders on warning net circuit, if one goes out the other may get through. Lack of voice communication after melee can be fatal. More than one voice transmitter should be provided to parallel all communications between ships.

The Commander in Chief, Pacific Fleet commented on this action as follows:

On the night of October 11, Task Group 64.2 (SAN FRANCISCO, SALT LAKE CITY, BOISE, HELENA, BUCHANAN, DUNCAN, FARENHOLT, LAFFEY, and McCALLA), under Rear Admiral Norman Scott, engaged a numerically stronger force of cruisers and destroyers. Careful preparation, seamanship, and gunnery of a high order and resolute and aggressive leadership produced a notable victory.

The exact number of enemy ships engaged is difficult to ascertain. In this connection the reports of the Task Force Commander have not been received and are presumed to be lost in the ATLANTA during a later engagement. It appears probable that there were two groups of Japanese ships present in the battle; the first of three CA and three DD (by count of captured survivors which checks with our ships' radar contacts); the second of two cruisers and six destroyers (tracked en route to Guadalcanal during the afternoon by aircraft). There may also have been two auxiliaries and other destroyers between the two cruiser groups. A coast watcher reported on this date that two NACHI, one KAKO, six destroyers and two "Mystery Ships" (believed new type destroyers or TSUGARU class CM) disappeared to the westward. At least one other smaller

force was in the Savo Island Area.

Since their serious defeat of August 24, the Japanese had been assembling strength for a major attack on Guadalcanal, and had, using light forces, been bombarding our position and reinforcing their own. On October 7, Task Group 64.2, composed of the cruisers and destroyers previously listed, had left Espiritu Santo for the purpose of destroying enemy forces engaged in these activities. On the 9th this force reached a position south of Rennell Island outside enemy air search, ready to proceed toward Guadalcanal for attack that night, should aircraft contacts reveal likelihood of Japanese ships being in the area. An approach was made that afternoon; and again on October 10, to a 1600 position that permitted reaching the vicinity of Savo Island at 20-25 knots by 2300. Air search did not reveal suitable objectives, and on both days the force retired.

During the same period we were moving a large convoy with strong Army reinforcements into Guadalcanal from Noumea. Task Force 17, with HORNET, was supporting the movement to the westward, and a battleship-cruiser force, built around the WASHINGTON, was en route to a position east of Malaita to oppose possible enemy surface forces striking from that direction.

On October 11 our transport group was about 250 miles west of Espiritu Santo proceeding toward Guadalcanal with Task Force 17 supporting to the westward. Our battleship group was in its position east of Malaita; Rear Admiral Scott's force, according to plan, again headed at noon for a favorable striking position. Three successive contacts by search aircraft tracked two enemy cruisers and six destroyers steaming at high speed down to the inland waterway from Buin to Guadalcanal. Their estimated arrival at the landing point was 2300.

During the afternoon, while the enemy cruiser-destroyer force was approaching, about 75 enemy planes attacked Guadalcanal in four waves. Of these, **eight** bombers and four fighters were shot down at the cost of two of our own fighters. These attacks prevented our air groups from bombing the oncoming force and were probably a factor in preventing the air search from locating other approaching Japanese forces.

At 1600, Task Group 64.2, started the approach from Lat. 11° 30' S., Long. 161° 45' E., speed 20 knots. At sunset, 1815, ships set condition of readiness one.

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Three hours later, in Lat. 09° 43' S., Long. 159° 25' E., course 000° T., was taken. The ships were in column, FARENHOLT (DesRon 12), DUNCAN, and LAFHEY preceded the cruisers, SAN FRANCISCO, BOISE, SALT LAKE CITY and HELENA in order, BUCHANAN and McCALLA were astern.

Each cruiser had retained one plane for night operations, the others having been flown to Tulagi. At 2100 three of the remaining planes were launched for search of area of probable contact, and for tactical scouting after locating the enemy. The SALT LAKE CITY plane burst into flames when catapulted and crashed, flares aboard being ignited. There was a bright fire for a few minutes which caused concern on board the ships that their approach had been revealed. The order to launch was not received by HELENA and a few minutes later she jettisoned her ready plane.

At 2228, course was changed to round the northwest point of Guadalcanal. The force commander was skirting the coastline seeking to intercept enemy ships attempting to effect landings. Soon thereafter the SAN FRANCISCO plane reported one large and two small vessels sixteen miles from Savo Island, just off the beach of Guadalcanal. At 2308 our force went column left to 050° T., paralleling Savo Island which was close aboard to starboard.

At 2333, about four miles from Savo Island, course was reversed to 230°. When the cruisers executed the column movement, the three leading destroyers were left astern and the two originally astern followed the **cruisers** around in column. When aware of this, Commander Destroyer Squadron TWELVE increased the speed of the three destroyers and began hauling ahead on the starboard flank to regain the van.

It appears that up to this time, and for a few minutes afterward, the Group Commander had received no radar contacts. Apparently SAN FRANCISCO's SC search set was not reliable at ranges above about 10,000 yards. Whether this lack of contacts was known to other cruisers, or whether each ship was covering only a fixed sector, is not clear. In any event, definite radar contacts, made by at least two cruisers before the turn, were not made known to the Group Commander.

Between 2326 and 2342, there were several radar contacts received by the SALT LAKE CITY, HELENA, and BOISE. Enemy course was estimated to be 140°, speed 26 knots. At 2342, the HELENA announced over the TBS "Radar contact bearing 285, distant 12,000 yards," and at 2344 the BOISE

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announced "Contact, bearing 065<sup>0</sup>, five unidentified ships." The BOISE bearing was assumed to be true by the other ships, but was in fact relative. This gave the Task Group Commander some concern for fear it was our own five destroyers astern. This was cleared up by questioning Commander Destroyer Squadron TWELVE.

The SAN FRANCISCO opened fire on the leading ship. This ship also was under fire by the main battery of the BOISE. It was tentatively identified as a NACHI class cruiser. It was riddled and sunk at 2350. The secondary battery of the BOISE was trained on the center destroyer, probably the SHIRAYUKI, which was also under fire of the secondary battery of the HELENA. This destroyer was sunk at 2350. Meanwhile, the main battery of the HELENA was firing at the easternmost destroyer, probably the SHIRAKUMO, which was demolished. At this time the SALT LAKE CITY was firing on a ship, identified as a NATORI class light cruiser, with a good fire control solution.

The batteries of the ships in the Task Force were then shifted to other enemy ships as follows: The HELENA to a burning heavy cruiser which was sunk; the BOISE to a destroyer which was sunk in one minute; the SALT LAKE CITY to a heavy cruiser, which was wrecked (possibly the burning cruiser the HELENA claimed sunk); the SAN FRANCISCO to a destroyer on her starboard beam which was immediately sunk.

The HELENA then opened fire with both batteries on a ship bearing north. Her attention was thus held for the remainder of the engagement. She claims the ship to be a cruiser, which was sunk. The SAN FRANCISCO directed her fire to a NACHI class cruiser 7,000 yards and left it burning fiercely. Her fire was then shifted to a cruiser 1,000 yards beyond. No hits were observed. (These two enemy cruisers probably inflicted the damage on the BOISE and the SALT LAKE CITY referred to below). The latter cruiser was reported as sunk by the combined fire of the SALT LAKE CITY and SAN FRANCISCO.

After sinking the destroyer, the BOISE shifted fire to a heavy cruiser, and at the same time received the first hit on our forces at 2354. She then opened fire on a burning destroyer, with full radar control, and it disappeared from the screen. At 0009, she illuminated and fired on a destroyer. The destroyer and an 8" cruiser fired on the BOISE obtaining seven hits in three minutes, and forced her from the action.

At 2356, the SALT LAKE CITY sank an auxiliary and at 2358, a destroyer. During this period, the DUNCAN obtained two torpedo hits on a cruiser, and the BUCHANAN got two torpedo hits on a KONGO class heavy cruiser, which was sunk.

By this time the enemy had been crushed. Except for several ships burning (two of these were the CA and DD that ultimately blew up) radar screens showed no targets. The only enemy formation known to be in the vicinity was the possible mine laying group sighted off the northern coast of Guadalcanal by one of the cruiser planes. Our force had received indeterminate damage, the formation was disorganized after a half-hour of heavy action, and the destroyers were still out of position, so that there was danger of our ships engaging each other.

Therefore, after remaining in the general battle area for a few minutes longer, the Task Group Commander decided to retire. Course 220° was set at 0027. Shortly thereafter, to prevent collision and to aid identification, all ships were ordered to course 205°. After considerable uncertainty, frequent use of recognition lights and TBS, and several incidents in which our ships might have fired on each other had there been any excitement or errors in judgement, the force was finally united, with BOISE joining at 0305.

The following damage was sustained by Task Group 64.2: BOISE seriously damaged, SALT LAKE CITY and FARENHOLT moderately damaged, and DUNCAN sunk, with most of her crew saved.

The following damage was inflicted on the enemy:

(a) Sunk: 2 CA - 1 of which was the FURUTAKA.  
1 CL.  
1 Auxiliary, possibly an AV.  
5 DD's - 1 of which was the SHIRAKUMO.

(b) Damaged:

1 CA - the AOBA, was badly damaged.  
Other DD's.

In addition, on the following day, planes from Guadalcanal attacked two CA, one already damaged, and several DD, probably sinking one CA and one DD.

It is possible that the enemy losses amounted to 4 CA, 1-2 CL, 1 Aux., and 7 DD.

## COMMENTS AND CONCLUSIONS.

Damage control readiness, and removal of fire hazards were satisfactory. It is noted that in spite of heavy hits on two cruisers, neither had serious fires except for the explosion in BOISE's handling room. That the BOISE and SALT LAKE CITY were able to isolate flooded compartments and to maintain position in formation after action, and that both of them put out fires quickly and **efficiently**, indicates excellent training and damage control organization.

SG radar and fire control radars performed splendidly. With the SG radar it was possible to distinguish the number and formation of enemy ships. Ships opened fire a number of times with only radar ranges and bearings. This was an important advantage in permitting prompt and accurate fire.

Reversal of course a few minutes before opening fire was accompanied by the only serious mischance of the engagement. When the cruisers executed the column movement, the destroyers ahead of the cruisers were left on the quarter while those astern followed the cruisers. The destroyers originally in the van were coming up on the engaged flank, seeking to regain position when the battle started. This situation would have been prevented by a column movement by station units or by a simultaneous turn. Also had the destroyers received radar contacts they would have passed on the opposite side from which the enemy were expected. The doubt as to location of own ships caused the Task Group Commander to order "cease firing."

Gunnery was excellent. First salvos usually hit. Patterns were small, rate of fire was high.

Ceiling permitting, illumination should be by starshell, except at very close ranges, since searchlights provide a good point of aim for enemy fire control. Starshells in this action performed excellently, especially for the SALT LAKE CITY which had trained in night starshell duels against other ships, and had replaced bad lots of starshells. Once fires are started on the enemy, ranges can be taken on these and no other illumination on the enemy is necessary. When the situation requires turning on searchlights, shutters should be opened only intermittently.

High frequency radio identification equipment for ships now being installed will prove to be extremely valuable in night operations.

Destroyer employment. Destroyers do not appear to have been employed to the limit of their combined capabilities. Their disposition in such close proximity to and in a single long column with the cruisers is questionable. The 180° change of course initiated by the cruisers placed the van destroyers in an extremely disadvantageous position. Their efforts to regain the van created confusion as to their identity and placed them between our cruisers and the enemy. There is no evidence available to show the employment planned for the destroyers. Their diverse division and squadron origins precluded coordinated action by indoctrination. As individual ships they did well; their influence as a unit was small. The use of one of the formations for night search and attack, available in current fleet tactical bulletins, might have avoided for both cruisers and destroyers the confusion which unquestionably existed, and might have made possible a greater application of potential power against the enemy.

Surprise is perhaps the prime factor in night action. The alert force, seeking the enemy, with all stations manned, guns trained on and ready to fire at an instant's notice, has an enormous advantage. With well trained personnel, hits will come almost immediately. The opponent's fire control will be damaged, further reducing his effectiveness, and in many instances the enemy ships will be sunk before they can open fire.

Since the Japanese were coming in for an offensive operation it is presumed that their crews were at least **reasonably** alert. Radar plot shows that the enemy ships were making 20 knots. Their state of readiness may be compared with that of our ships in the first battle of Savo Island in which our ships were in condition two and had just finished several days of operations with frequent long periods at general quarters. On that occasion we probably placed too much confidence in an advanced radar screen and were not sufficiently alert on each ship of the screening force. Even though the Japanese in this second engagement of Savo Island were probably in better readiness for action at the moment of contact than were our ships in the first Savo battle, we administered as severe a defeat to them as they did to us in the earlier battle. The first enemy cruiser sank in four minutes with her turrets still trained in. It was apparently six to seven minutes before the first Japanese ship opened fire with main battery and eight minutes before the first hit was obtained. In the first Savo action, as in the second, the Japanese began to hit after about one minute of firing, generally on the fourth salvo. In the second action, firing without initial

illumination, tracking with radar bearings and ranges, our ships generally hit with the first salvo.

Personnel. The superior performance of our personnel in this action, and the small number of the errors that inevitably appear under fire, are gratifying. Against an able and hard hitting enemy, our ships showed that with the same advantage of surprise the Japanese enjoyed at the first Savo battle, our light forces are equal or superior. This clear cut victory resulted from an aggressive commander leading well trained, alert and determined men into battle.

The double meaning of "Roger" requires a change in our Communication Instructions. Action has been taken.

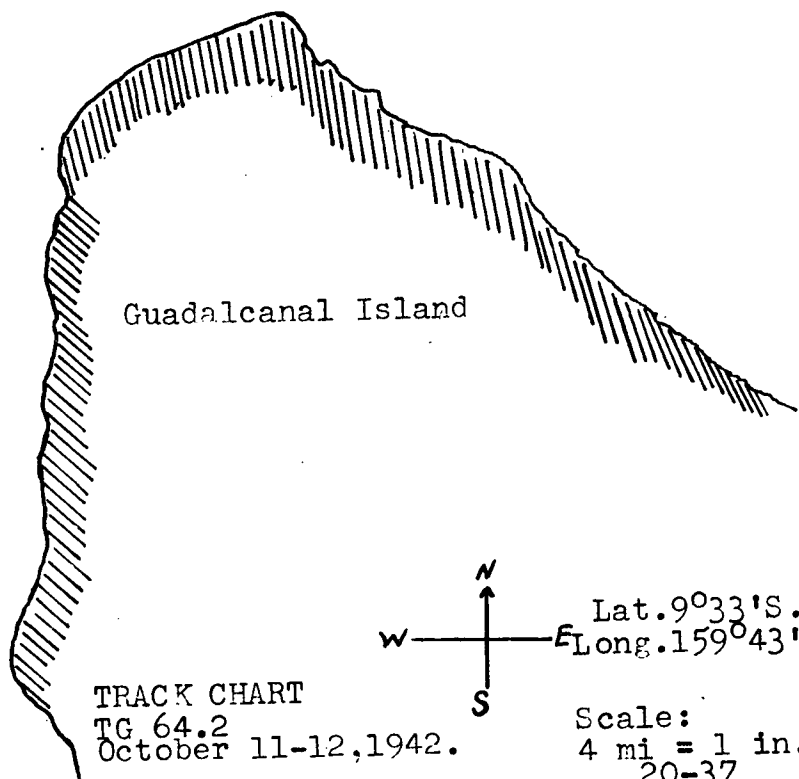
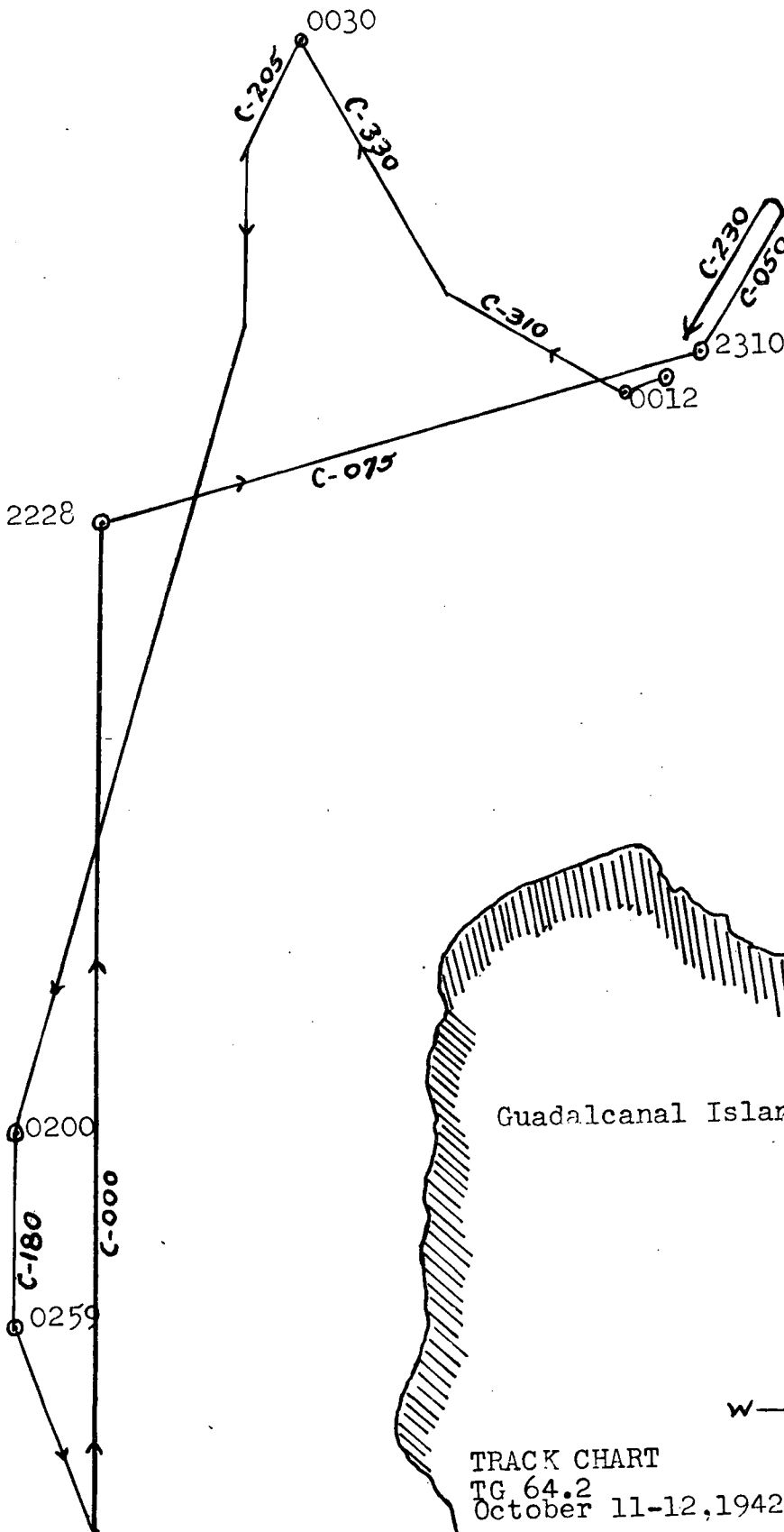
Radar reports must give true bearing. BOISE's report, just before opening fire, of radar contacts on five unidentified objects, was assumed to be true bearing, whereas the bearing sent out was relative. It so happened that the true bearing of our destroyers was not far from that given as the bearing of the radar contact. There was thus created in the Task Group Commander's mind the question whether or not the radar contact was on our own destroyers. The whole question of radar searching, plotting, and reporting has been under thorough study and a revised fleet doctrine has been issued. Relative bearings should never be transmitted to another ship.

Every action has shown the need for dispersed auxiliary power units for fire and damage control. It is essential that these units be installed in all combatant ships as soon as possible.

Fire can and should be opened with radar control, illuminating as necessary afterwards.

Radar contacts must be transmitted immediately to OTC, whatever radars may be on his ship.

The plan of battle must take into account every element of strength in our forces and in the subsequent action all full strength factors should be brought into play. In the action just described it is possible that our destroyers' destructive capacity was not completely utilized.



TRACK CHART  
 TG 64.2  
 October 11-12, 1942.

CHAPTER XXI  
SOLOMON ISLANDS, CARRIER TASK FORCE ENCOUNTER  
OFF  
SANTA CRUZ ISLANDS  
OCTOBER 25-26, 1942.

Task Force 61, consisting of Task Forces 16 and 17, was operating in the Solomon Island Area in accordance with the following directive:

"Proceed around the Santa Cruz Islands to the north, thence proceed southwesterly and east of San Cristobal to area in Coral Sea and be in position to intercept enemy forces approaching the Guadalcanal - Tulagi Area. There are many enemy submarines concentrated southwest of San Cristobal."

The mission of the force was to support Guadalcanal against an expected large scale attack and occupation, and to destroy any enemy surface forces taking part in the attack.

Ships composing Task Force 61 in the carrier action north of the Santa Cruz Islands on October 26, 1942:

TASK FORCE SIXTY-ONE

TASK FORCE SIXTEEN

ENTERPRISE (R.Ad.Kinkaid)  
PORTLAND (R.Ad. Tisdale)  
SOUTH DAKOTA  
SAN JUAN  
PORTER (Capt. Cecil)  
SMITH  
CUSHING  
PRESTON  
MAURY  
SHAW  
MAHAN  
CONYNGHAM

TASK FORCE SEVENTEEN

HORNET (R.Ad. Murray)  
NORTHAMPTON (R.Ad.Good)  
PENSACOLA  
JUNEAU  
SAN DIEGO  
MUSTIN (Comdr. True)  
HUGHES  
RUSSELL  
ANDERSON  
MORRIS  
BARTON

~~SECRET~~

At 1315/24 a "bogie" bearing 300° T., distant 140 miles was observed on the radar screen. It was tracked in to 65 miles by 1406 and then disappeared.

Task Force 61 proceeded to the northwestward to round the Santa Cruz Islands prior to a southwesterly passage east of San Cristobal (Solomons) in support of our forces in the Guadalcanal-Tulagi area against a threatened attack by large Japanese naval forces known to be to the north-eastward of the Solomons.

At 1125/25 an enemy force of 2 BB, 4 CA, and 7 DD was reported by a shore-based patrol plane. After carefully considering the advisability of searching for and attacking this force, Commander Task Force 61 decided to wait until contact reports of enemy CV's were received.

THIS FORCE SHOULD HAVE BEEN SHADOWED CONTINUOUSLY.

At 1250 October 25, 1942 (Zone minus 12) a despatch was received from CURTISS reporting 2 enemy CV's in Lat. 08° 51' S., Long. 164° 30' E., course 145° T., speed 25. Our task force position was Lat. 10° 04' S., Long. 170° 18' E., course 295° T., speed 22 knots. A distance of 360 miles separated the force from the enemy CV's.

Course was changed toward the contact and speed was increased to 27 knots. No further reports were received and it became evident that the patrol plane was not tracking.

#### ONE OF OUR GREAT WEAKNESSES.

If the enemy continued on the reported course and speed the two forces would approach each other rapidly and would be within striking distance in a very short time. Therefore, it was decided to combine a striking group with the afternoon search.

Task Force 61 continued course and speed, and at 1430 launched 12 VSB for a 200 mile search in sector 280° T., to 010° T., and at 1520 launched 11 VF, 12 VSB, and 6 VTB with the Group Commander as an attack group to follow up the search. This group did not make contact. It was late returning to the carrier and experienced difficulty in landing aboard after dark. One VF pilot crashed about 40 miles from the ship on the return trip, cause unknown. Six additional planes were lost as a result of water landings around the ship due to fuel exhaustion or in crashes

incident to landing on board. With the exception of the VF pilot first mentioned, no lives were lost.

In this connection, the course and speed of Point Option (i.e. the course and speed that the carrier expected to make good while the search and attack group was away from the ship) was down wind; numerous launchings and recoveries while necessarily steaming into the wind resulted in making good only a small fraction of the expected speed in the direction of Point Option's theoretical movement, which resulted, in turn, in the search and attack group having to fly back to the ship a great deal further than they had anticipated. This fact gives basis to what should probably be an axiom for carrier task forces: When the course of Point Option is down wind, during actual attack operations or while in close proximity to the enemy, the speed of advance should be radically under-estimated, as experience has shown the normal advance will not be made good. This is particularly applicable to two carrier task forces operating together.

IN CONNECTION WITH THESE REMARKS ON POINT OPTION COMMANDER SOUTH PACIFIC COMMENTED AS FOLLOWS:

"EVIDENCE HAS CONSTANTLY MOUNTED THAT CARRIER TASK FORCE COMMANDERS HAVE PERMITTED POINT OPTION TO BECOME THE TAIL THAT WAGS THE DOG. THE ORIGINAL CONCEPTION OF POINT OPTION ENVISAGED IT AS A CONVENIENCE AND A SECURITY MEANS. IT HAS CEASED TO BE EITHER. IT IS IMPERATIVE THAT ALL CONCERNED WITH CARRIER OPERATIONS RECOGNIZE THE FACT THAT POINT OPTION CONSISTS OF NOTHING MORE OR LESS THAN THE BEST GUESS WHICH CAN BE MADE AS TO THE CARRIER'S (TASK FORCE'S) MOVEMENTS DURING ANY GIVEN PERIOD. THAT IT WILL FREQUENTLY TURN OUT TO HAVE BEEN A BAD GUESS MUST BE RECOGNIZED BY EVERYONE. WHEN THIS OCCURS, IF CONDITIONS PERMIT, AIRCRAFT IN THE AIR ARE INFORMED AS CHANGES BECOME NECESSARY. WHEN CONDITIONS DO NOT PERMIT THAT THEY BE SO INFORMED, THEY ARE NOT. THE BEST POSSIBLE NAVIGATING EQUIPMENT, HOMING EQUIPMENT, AND PERSONAL SKILL IN THE PILOTS IS OBVIOUSLY NEEDED TO MEET THIS LATTER SITUATION. IT IS NOT CONSIDERED THAT THERE IS ANY AVAILABLE CURE FOR THE DIFFICULTIES OUTLINED IN BRINGING CARRIER AIRCRAFT BACK TO THE CARRIER IN WAR ZONES. BETTER MATERIAL AND BETTER TRAINING WILL HELP; THEY CANNOT CHANGE THE BASIC FEATURES. THE CATEGORICAL STATEMENT MADE BY COMMANDER CRUISERS, PACIFIC FLEET, THAT THE 'ONLY PRACTICABLE COURSE (FOR POINT

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OPTION) IS INTO THE WIND' IS NOT CONCURRED IN."

MONDAY, OCTOBER 26, 1942.

Task Force 61 proceeded to the north of Santa Cruz Islands to engage the enemy task force reported to be in that area.

The weather was clear, with scattered clouds, visibility 15 miles. The moon was full. The wind throughout the night and day was from the south of east from 4 to 8 knots.

Task Force 61 steamed at 23 knots zigzagging throughout the night to avoid the many submarines reported in these waters.

The tactical situation was as follows: Contact reports received the previous day from our shore-based patrol planes had placed an enemy task force about 250 miles to the north-east of Guadalcanal. This force comprised two groups. A battleship group of 2 BB's, 2 CA, 2 CL and 7 DD was about 80 miles to the south of a carrier group reported to contain 2 CV's and a screen of light vessels.

THIS IS A COMMON DISPOSITION EMPLOYED BY  
THE ENEMY NOW.

Information received from CincPac indicated that the mission of this force was to support a large scale landing of troops embarked at the northwestern Solomon Islands and headed for Guadalcanal.

It was apparent that Task Force 61 would be within striking range of the enemy force during the day. The HORNET air group stood by throughout the night to make an attack in bright moonlight when and if another contact report on the enemy CV force was received from our shore-based patrol planes. No report was received.

OUR TRACKING AND REPORTING SHOULD BE PERFECTED IN ORDER NOT TO LOSE AN OPPORTUNITY TO STRIKE THE ENEMY.

At 0111 October 26, a contact report by tender-based planes was received: "Enemy position Lat. 07° 14' S., Long. 164° 15' E." Task Force 61's position was Lat. 09° 46' S., Long. 168° 40' E; separation 300 miles.

No course or speed was given, nor was the composition of enemy forces stated.

INCOMPLETE CONTACT REPORT. INDICATES POOR TRAINING AND INDOCTRINATION. THERE SHOULD BE NO QUESTION IN A SCOUT'S MIND AS TO THE INFORMATION THAT SHOULD BE INCLUDED IN A CONTACT REPORT.

At 0600 ENTERPRISE launched a 16 plane search group carrying 500-lb bombs, an inner air patrol of 6 VSB for the combined task force, and a combat air patrol of 8 VF. Planes of this search made contact with two enemy forces; one comprising 2 BB, 1 CA, 7 DD at 170 miles on bearing 275° T; the other, 2 CV at 200 miles on bearing 300° T. The contact reports were in proper order giving latitude, longitude, composition, course and speed. The battleship contact report was received at 0730 and the CV contact report at 0750.

Of this search group of 16 planes, 8 made contact, 4 attacked and two 500-lb bomb hits were made on a CV of the SHOKAKU class.

At 0847 ENTERPRISE attack group of 8 VF, 8 VTB (armed with torpedoes), 3 VSB (armed with 1000-lb bombs) and 1 VTB (the Group Commander) was launched. HORNET launched her attack group in two waves, the first of which started taking off at approximately 0832.

At about 0930, while proceeding on its mission, our attack group was surprised by enemy VF approximately 60 miles from our forces. Three of our VTB and two VF were shot down, and two VF and one VTB were damaged so badly they were forced to return to ENTERPRISE. It appears that these enemy VF were escorts for the Japanese air group which shortly thereafter attacked the HORNET.

PILOTS MUST BE ALWAYS VIGILANT.

Our attack group continued on and at 1030 sighted the enemy battleship force interposed between our forces and the enemy CV's which were not sighted as they were 60 to 80 miles beyond the enemy battleships.

AN INTERESTING DISPOSITION EMPLOYED BY THE ENEMY.

Our planes searched beyond this force but did not sight the CV's, and as considerable fuel had been consumed in the combat on the approach they returned and attacked this group. The VF strafed in order to assist; the VSB attacked a battleship and made two 1000-lb bomb hits on a battleship of the KONGO class; the VTB attacked a cruiser, no hits were observed.

At 0940 HORNET aircraft reported 24 enemy dive bombers approaching from 280° T., at 12,000 feet. The ENTERPRISE launched all remaining planes and prepared to repel air attack. The attack was made on HORNET at 1011. There were at that time 15 fighters over Task Force 17. At 1026 the ENTERPRISE turned into the wind (110° T.) to land returning aircraft low on gas, and immediate reservicing and rearming were commenced in order to send these planes out to attack. Enemy air attacks interfered with servicing and prevented launching.

Task Forces 16 and 17 were separated by about 15 miles when all planes, including remaining VF for a combat air patrol, were launched.

TOO FAR APART FOR MUTUAL COOPERATION AND NOT FAR ENOUGH APART FOR DECEPTION. FIGHTER DIRECTION BY ENTERPRISE FIFTEEN MILES AWAY NOT EFFICIENT FOR HORNET PARTICULARLY IN VIEW OF AIR ATTACK TAKING PLACE AND AIR OPERATIONS IN PROGRESS. THE ATTACK ON HORNET WAS BEGUN BY DIVE BOMBERS ABOUT 1010, AND WAS CLOSELY FOLLOWED BY AND COORDINATED WITH TORPEDO PLANE ATTACK. AS THE FIRST ATTACK PROGRESSED SEPARATION OF THE TWO TASK FORCES INCREASED UNTIL AT THE END OF THE ATTACK TASK FORCE SIXTEEN WAS BEYOND VISUAL DISTANCE. WHILE THREE BOMB HITS WERE RECEIVED, DAMAGE WAS NOT SERIOUS UNTIL TWO TORPEDO HITS WERE MADE. AS A RESULT OF THESE TORPEDO HITS THE SHIP BECAME COMPLETELY IMMOBILIZED; ALL STEAM AND ELECTRIC POWER, WATER, LIGHT AND VENTILATION WAS LOST AND COULD NOT BE RE-ESTABLISHED THEREAFTER. IN ADDITION, VISUAL SIGNAL FACILITIES WERE DISRUPTED DUE TO A DIVE BOMBER CRASHING INTO THE SIGNAL BRIDGE AND FALLING TO THE FLIGHT DECK, KILLING SEVEN SIGNALMEN, CARRYING AWAY THE SIGNAL HALYARDS AND BURNING THE SIGNAL FLAGS. DUE TO LACK OF COMMUNICATION FACILITIES, IT BECAME NECESSARY TO TRANSMIT ALL SIGNALS VIA COMMANDER TASK GROUP 17.2. LATER, COMMANDER TASK GROUP 17.2 WAS ORDERED TO TAKE CHARGE OF ALL COMMUNICATIONS. IN ORDER TO FIGHT FIRES CAUSED BY BOMB HITS, DESTROYERS WERE PLACED ALONGSIDE, STARBOARD AND PORT, AND THEIR FIRE HOSES WERE PASSED TO HORNET. IN ADDITION,

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BUCKET BRIGADES WERE FORMED ALONG THE FLIGHT DECK TO FIGHT FIRES. AT ABOUT THE SAME TIME, PENSACOLA WAS ORDERED TO TAKE CHARGE OF THE SCREEN. FIRES WERE BROUGHT UNDER CONTROL, AFTER SOME DELAY CAUSED BY AN ATTACK BY ONE DIVE BOMBER AT ABOUT 1115. IN ORDER TO EXERCISE COMMAND OF THE TASK FORCE AND COORDINATE TACTICAL AND SALVAGE OPERATIONS, COMMANDER TASK FORCE SEVENTEEN TRANSFERRED WITH PART OF HIS STAFF TO PENSACOLA AT 1245. COMMANDER TASK FORCE SEVENTEEN STATED: "COMPLETE COORDINATION BETWEEN CARRIER TASK FORCES, LAND-BASED AIRCRAFT, SUBMARINES AND SURFACE FORCES IN THE COMBAT ZONE MUST BE CENTERED IN A SUPREME TACTICAL COMMAND ASHORE IF MAXIMUM RESULTS IN OFFENSIVE OPERATIONS ARE TO BE ACHIEVED. COORDINATION OF THE OPERATIONS OF TWO OR MORE CARRIER TASK FORCES IN THE SAME GENERAL COMBAT ZONE SHOULD BE EXERCISED FROM THE SAME CONTROL ASHORE WHERE ALL TACTICAL INFORMATION AND COMMUNICATIONS ARE CENTERED."

#### ATTACKS ON ENTERPRISE.

From the time of the first radar report of enemy planes at 0957 (when they were reported coming in, distance 45 miles) until 1100, there were almost continuous reports of "bogies" coming in and going out. At 1100 radar reported large groups of enemy planes coming in distant 23 miles, but the fire control radars did not pick them up.

At 1115 the first dive bombing attack on ENTERPRISE commenced. The attacking planes were not seen until in their dives when they were quickly opposed by dense AA fire, and the ship maneuvered radically in evasion. Of an estimated 24 attacking planes, 7 were observed to be shot down and crashed in the sea, and others were harrassed into making wide releases. The attack lasted about four minutes and was pressed home with determination. One bomb hit and pierced the flight deck 20 feet from the forward end. One of the aircraft spotted forward caught fire and was pushed over the side. Another was blown overboard by the blast. The bomb passed through the forecastle deck and the skin of the ship, exploding just outside of the extreme bow. Bomb fragments pierced the hull in 160 places between the waterline and forecastle deck level.

At 1135 radar reported possible torpedo planes coming in from astern, and shortly afterward one was seen to burst into flames and crash while still about five miles from the ship. An estimated 14 additional torpedo planes were then seen to divide into two groups which attempted to gain a favorable approach position forward on both sides, outside our screen. Heavy AA was brought to bear from ENTERPRISE as well as from vessels of the screen, but approximately 9 torpedoes were launched, 5 from the starboard side and probably 4 from the port side. They were dropped from heights of about 75 feet at ranges of 1,000 to 2,000 yards. Three torpedo tracks close together were observed coming at the ship from 20° forward of the starboard beam. The rudder was immediately put over hard right and the ship passed inside the three tracks by an estimated 50 yards (from the bridge, the tracks were obscured by the flight deck forward as the ship turned.) The rudder was reversed to avoid collision with SMITH which was aflame forward.

JAPANESE PLANE CRASHED ON FORECASTLE OF  
SMITH CAUSING AN INTENSIVE FIRE.

ENTERPRISE was turning left when a plane was observed to drop its torpedo from ahead. The track of this torpedo was not seen until it was less than 800 yards away. It appeared that ENTERPRISE bow would be past the torpedo track, so hard right rudder was put on and the stern swung left. The torpedo passed the ship to starboard almost parallel to it and within 100 feet. The plane that dropped this torpedo was shot down shortly after the drop, and two of its occupants were clinging to its wreckage as the ship passed by close enough to see their faces. Five torpedo planes approached from dead astern and then tried to gain favorable launching positions on the port beam. The initial turn to starboard kept the stern pointed toward these planes as they swung out to port, with the result that their approach was prolonged after they had come within effective range of the 20mm. batteries.

A LUCKY ESCAPE FOR THE ENTERPRISE CON-  
SIDERING THE NUMBER OF ATTACKING PLANES WHICH  
SUCCEEDED IN PENETRATING THE SCREEN.

AA fire against them was very heavy and accurate. Three were shot down close aboard, one pulled up, released his torpedo in a climbing turn, then crashed, and the remaining plane made an aimed release from an angle of about 20° on the port quarter, but the torpedo missed to port as the ship paralleled its track.

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THE SOUTH DAKOTA BY MAINTAINING STATION ON  
ENTERPRISE INSIDE 1,000 YARDS CONTRIBUTED GREATLY  
TO THE DEFENSE OF THE CARRIER.

At 1220 radar reported that the screen was clear, but at 1221 enemy planes were observed in their dives, attacking ENTERPRISE.

POOR RADAR OPERATING.

Fire was opened upon them immediately. The shallow angle of dive of planes of this attack (45°) made them particularly vulnerable. The attack was short, of about two minutes' duration. Eight planes were seen to crash. Several were seen to release their bombs after obviously being hit; the bombs fell 500 yards short and the planes spun down in flames. Approximately 20 planes are thought to have made this attack.

Five minutes later radar reported a group of planes coming in. Fire control radar again failed to get on, but the rangefinder in Sky Forward picked them up at 35,000 yards.

GOOD RANGEFINDER WORK.

They were identified as two groups of dive bombers, nine in one and six in the other, accompanied by nine fighters above them. These enemy planes were tracked in to 22,000 yards and the altitude determined to be 17,000 feet. Before fire could be opened with the 5" the enemy planes disappeared in a rain cloud and were not seen again until about two minutes later when they were in their dives.

GOOD USE OF CLOUD COVER.

Ten planes of this attack group are believed to have been shot down. No bomb hits were made.

There were no further attacks, and ENTERPRISE resumed landing aircraft, all of which were low on gas. Numerous planes had to land in the water when they ran out of fuel. HORNET and ENTERPRISE planes were landed indiscriminately until the deck would hold no more. Fighters and dive bombers were given preference. Number 1 elevator was damaged and out of commission so none could be struck below until the respot. 13 VS were reserviced and sent to Espiritu Santo, and others reserviced and launched as patrols. Landings were then resumed and the remaining planes taken aboard.

BY HAVING TWO CARRIERS OPERATING TOGETHER  
IT PERMITTED SAVING HORNET'S PLANES. HOWEVER,  
DUE TO THE WIDE SEPARATION OF THE CARRIERS  
COMMUNICATIONS COLLAPSED AND FIGHTER DIRECTING  
FAILED.

Commander Cruisers, Pacific Fleet states:

"Carrier task forces operating on the same mission should remain together in order to afford mutual support and protection. Unless there is some strong tactical reason for separating the carrier task forces, they should be kept together so that each is protected by the total fighter strength in the air rather than only that from its own carrier. At the battle of Midway, the carrier forces became separated and as a consequence only 12 VF from the YORKTOWN were in position to repel the enemy's first attack instead of the total combat air patrol of about 30-36 planes. In like manner the second attack was met by only the fighters over the YORKTOWN, they representing less than one third of the fighter strength then in the air."

Commander Airforce Pacific Fleet commented as follows.

"I am of the opinion that if the context of this paragraph is accepted as a tactical principle for normal employment of carrier task forces it is fraught with grave danger. The files of the War College, the Department, and the Fleet, contain many thousands of pages of discussion of the merits of separation of carriers vs their concentration. I consider that there are times when concentration will prove more effective than dispersion; but that there are more frequent occasions when dispersion is the sounder course. I do not believe that an attempt to rehash this controversy can serve any useful purpose here. It is my conviction that the following statement has been demonstrated as the guiding principle which should be employed in the operation of carrier task forces: ['The ideal carrier task force comprises two carriers tactically concentrated until air attack is actually approaching and tactically re-concentrated immediately the attack has withdrawn. More than one carrier task force should not normally be operated in close proximity; the general thumb rule being that at least twice the visibility separate the forces at all times.'] The above statement of principle has been arrived at after experience with, and careful weighing of, the following factors: (1) Facility vs difficulty in visual communications, (2) Protection from combat patrols and other screens and security measures, vs dispersion as a means of defense, (3) Tactical

flexibility with particular regard to emergency maneuvers and surprise contacts at night and in low visibility. Melees among own forces must be avoided. (At Midway Task Force 16 experienced considerable hazard and even more discomfort during the night June 4-5 as a result of task forces in too close proximity), (4) The principle of flank attack. Separated carrier task forces are in a position to strike the flanks of their objectives while themselves providing the most cover effectively for their own."

Commander Task Force 17 stated:

["When two carrier task forces are operated in company, the coordination of the movements of one to conform to the operations of the other introduces unacceptable delays when the offensive action against the enemy is of paramount importance."] When two or more carrier task forces are operating in the same general combat zone, each task force commander must have knowledge of the tasks assigned other task force commanders. [Each task force commander must exercise direct control of combat air patrols and carrier air groups of own task force.] All of the foregoing observations and recommendations are based on experience with carriers and carrier task forces from the outbreak of the war and have been confirmed during operations just completed."

Commander Task Force 61 commented as follows:

"I do not concur in the categorical statements made that the operation of two carrier task forces within visual touch causes delays or reduces battle efficiency. On the contrary, by having two carriers together one carrier can take care of all routine flying while the other maintains her full striking group spotted and ready to launch on short notice. If the carriers are separated, then each must fly its own inner air patrol and combat air patrol and make its own search. Exactly the same number of turns into the wind are required, the spot must be frequently broken and the maximum striking force is not available. However, the delays involved can and must be reduced by having all scouting and tracking done by shore-based aircraft. Separate control of combat air patrols and carrier air groups of carriers in close proximity would fail to achieve the maximum of effectiveness that results from coordination by one command."

Commander Task Force 17 in addition stated:

["In the operations of October 26, control of the combat air patrol of both carrier task forces was exer-

cised by the OTC. The results were very disappointing. I believe better results would have been obtained had each task force commander exercised direct control of his own combat air patrol. It is too much to expect that a combat air patrol of one task force can be controlled and coordinated with the same degree of efficiency by the fighter direction officer of another task force. The teamwork between the fighter direction officer and his own combat air patrol is such an intimate one, because of constantly working together, much of the efficiency of this combination is lost when the fighter direction is taken over by an entirely separate organization."

#### ATTACK ON THE HORNET.

At 1002 CTG 61 ordered CTF 17 to close; the former had changed course to the northeastward and had opened to a range of about 25,000 yards. Accordingly, course was changed to 040° T. By this time, radar showed that the enemy groups were about 20-30 miles from the ship, and were approaching from 230° T. At 1006 our fighters were observed to be attacking the enemy about 15 miles from the ship, and some unidentified planes were seen to fall in flames. Task Force 17 was in a position about midway between the attacking planes and Task Force 16. The ship was at general quarters, in Condition Afirm, and fully ready for attack, with no planes on deck. Task Force 17 was formed in a 2,000 yard circle AA screen. At 1008 radical evasive maneuvering at 28 knots was commenced. At 1010 enemy planes commenced a well coordinated dive bombing and torpedo attack on the HORNET from several directions. At the same time, the 5" battery commenced firing, followed successively by the 1.1 and 20mm. batteries as the planes came within range. It is estimated that 12 torpedo planes and 15 dive bombers took part in this attack.

THE LARGE NUMBER OF PLANES WHICH MANAGED TO GET IN THEIR ATTACK INDICATES POOR FIGHTER DIRECTING.

At 1015 the ship was struck by two torpedoes in quick succession (about 20 seconds apart), both hitting the starboard side in the neighborhood of the engineering spaces.

During this attack, at about 1017, an unarmed torpedo plane made a deliberate dive into the ship from dead ahead. He apparently miscalculated his approach to some extent, and was in a shallow dive by the time he reached the ship; he crashed into the port forward gun gallery, and plane exploding just outboard of #1 elevator shaft, in which a

bad fire was started. This attack left the HORNET dead in the water and burning, with no main propulsion power, no lights, and no water for fighting fires. Destroyers came alongside to assist fire fighting. The NORTHAMPTON twice attempted to tow the HORNET without success.

At 1025 there were major fires on the signal bridge, flight deck and #2 ready room, CPO quarters, GSK storeroom, forward messing compartment, O2 deck (port side), #1 elevator pit, hangar deck amidships and hangar deck aft in two places, these in addition to several small fires about the ship which were extinguished easily by non-repair party men stationed in those localities. There were many bucket brigades which carried Foamite and water to the fires; it is estimated that about 1,000 men were engaged in fighting fires. At 1100 all fires were under control, although the fires in the flight deck, O2 deck and CPO quarters were still requiring great attention.

Commencing at about 1555, reports of unidentified aircraft were received on the voice warning net (a battery-powered TBY set was in use), and by flaghoist.

HORNET reported she was being attacked again and requested air coverage. The planes aboard the ENTERPRISE had not been gassed, and the fires below decks were not completely extinguished. Fighters, bombers, and torpedo planes were all mixed together on flight and hangar decks in whatever order they landed. With the number of planes aboard and #1 elevator out of commission it was not possible to respot the fighters until the excess planes were flown off the ship. Under the circumstances the HORNET's request for fighter coverage could not be complied with. During the afternoon the JUNEAU received a message with no heading but intended for HORNET planes "Go to ENTERPRISE." The JUNEAU proceeded to the ENTERPRISE and took station in the AA screen of Task Force 16.

A SITUATION THAT MUST BE ANTICIPATED AND A SOLUTION FOUND. THE ENTERPRISE WAS UNABLE TO COMPLY DUE TO CONGESTION ON THE FLIGHT DECK WITH ALL TYPES OF PLANES. THE COMMANDING OFFICER OF THE HORNET STATES: "AS HAS BEEN PREVIOUSLY EXPERIENCED OUR CARRIERS BECAME WELL SEPARATED, LOST TBS COMMUNICATION, FIGHTER DIRECTION EFFICIENCY AND VISUAL CONTACT. THE NUMBER OF THE VESSELS IN THE SCREEN WAS TOO SMALL FOR DEFENSE AGAINST AIR ATTACK. TO BE WELL PROTECTED AGAINST SUBMARINE ATTACK, A CARRIER SHOULD BE SURROUNDED BY A CIRCULAR SCREEN OF AT LEAST 10 DESTROYERS, PREFERABLY 12.

IT IS RECOMMENDED THAT CARRIER TASK FORCES OPERATE SINGLY OR AT LEAST WELL SEPARATED. WHEN ENEMY CONTACT IS MADE, COMMUNICATION CAN BE ESTABLISHED ON NORMAL RADIO FREQUENCY CHANNELS. IT IS FIRMLY BELIEVED THAT EACH CARRIER SHOULD CONDUCT ITS OWN FIGHTER DIRECTION AT ALL TIMES. IT IS BELIEVED THAT SINGLE CARRIER TASK FORCES OPERATING SEPARATELY ARE MORE EFFICIENT THAN WHEN TWO OR MORE ARE OPERATING TOGETHER AS ONE FORCE."

At 1620 a group of four to six torpedo planes approached from the starboard beam in a fast weaving glide, commencing at about 6,000 feet. The NORTHAMPTON immediately cast off the tow line and turned hard left; one or two of the four planes attacked the NORTHAMPTON, missing. The remainder (2 or 3) attacked the HORNET, and at 1623 one torpedo hit the starboard side, at about frame 100. The ship immediately began taking on a progressive list; when the list reached  $14\frac{1}{2}^{\circ}$  all hands were ordered from the bridge and island structure with the exception of the navigator, tactical officer and gunnery control group. Orders were given to be ready to abandon ship but not to cast loose the life rafts or to go over the side.

At 1655 a horizontal bombing attack of six planes in perfect closed Vee formation were seen approaching at about 8,000 or 9,000 feet. These planes were opposed by two of our 1.1 batteries and by one .30 calibre gun manned by a radioman who was on his way down to the hangar deck, as well as by moderate AA fire from the screen. The formation dropped its bombs while obscured by clouds.

#### APPARENTLY AN UNOPPOSED ATTACK.

The navigator and tactical officer, on the flight deck, saw the bombs come out of the clouds, one bomb striking the after starboard corner of the flight deck, the others being very near misses in a pattern so small that it appeared as one splash. The concussion effect of these six bombs, probably armor-piercing, was about equal to that of one torpedo.

THERE WERE SEVEN SEPARATE ATTACKS, THE FIRST AT ABOUT 1010 AND THE LAST AT ABOUT 1800. ON EACH ATTACK SHIPS OF THE SCREEN OPENED FIRE WITH 5" AND 20mm. BATTERIES ON ONE OR MORE PLANES. EXCEPT FOR THE FIRST DIVE BOMBING ATTACK, ALL ATTACKS WERE UNOPPOSED BY FRIENDLY FIGHTERS. THE JAPANESE ENJOYED COMPLETE CONTROL OF THE AIR OVER THE HORNET.

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ALL ATTACKS WERE PRESSED HOME WITH VIGOR. ATTACKING PLANES APPEARED TO BE CARRIER BASED OF TWO TYPES, FIRST AICHI TYPE 99 DIVE BOMBERS AND MITSUBISHI TYPE 97 TORPEDO PLANES.

During the period of air attacks on the Task Forces several vessels reported having sighted submarine periscopes and several destroyers reported asdic contacts.

JAPANESE SHOW ABILITY TO COORDINATE SUBMARINE OPERATION WITH AIR AND SURFACE SHIP OPERATION.

SOUTH DAKOTA, PORTLAND and SAN JUAN experienced steering casualties causing tense moments during high speed maneuvering to avoid bombs and torpedoes.

THIS SERIOUS CASUALTY APPEARS TO OCCUR TOO FREQUENTLY.

PORTLAND reported being hit by three torpedoes which failed to explode. The SOUTH DAKOTA was hit by one bomb. An enemy plane crashed on board the forecastle of the SMITH causing a large fire.

At 1102 the PORTER stopped to rescue a pilot who had landed in the water. She was hit amidships by a torpedo and settled rapidly. She was abandoned and later sunk by the SHAW.

THIS INCIDENT EMPHASIZES THE DANGER OF STOPPING IN ENEMY SUBMARINE WATERS. NO ATTEMPT WAS MADE TO SAVE THE PORTER.

With the HORNET out of action, the extent of damage to the ENTERPRISE not fully determined, and the probability that there were one or two undamaged enemy carriers in the battle area which had not been sighted by our forces the decision of Commander Task Force 61 to retire at high speed to the southeast was made without hesitation. Task Force 17 was ordered to rendezvous with Task Force 16 in this general direction.

Task Force 16 retired to southeastward leaving Fataka on the starboard hand, then to southward. Rendezvous with Task Force 17 was effected the next day. During the night vessels of Task Force 17 were shadowed by enemy planes. The enemy surface force of battleships, cruisers, and destroyers, assisted by planes dropping flares, searched for the HORNET in the position where that vessel had been seen last.

COMMENT ON SEVERAL PHASES OF THE ACTION.

The first dive bombing attack on Task Force 16 lasted about six minutes. During the attack the visibility was good and the ceiling was fairly high, giving a good opportunity to take the planes under fire at fairly long ranges. As a result, this attack appeared to have been repelled with less damage to the ships of the task force than was sustained in the last dive bombing attack where visibility conditions were much poorer.

The torpedo attack only lasted two or three minutes but due to the dark low lying clouds on the horizon, the planes were able to approach quite close to their targets before being taken under fire. It was during this attack that the SMITH had a burning plane fall on its fore-castle and explode.

The second dive bombing attack lasted about nine minutes. During this attack the task force was under a ceiling of low lying clouds. At the start of the attack the force was in a slight rain squall, ceiling about 500 feet. The rain stopped almost as the attack began and the ceiling raised to between 1,000 and 1,500 feet during the action. As a result of this low ceiling, the 5" AA batteries were quite ineffective, since with a fuze setting of 1.2 seconds the shells were bursting about 3,000 feet overhead, many of them above the clouds. The enemy planes dove through the clouds, picked up their targets, dove in and dropped their bombs in a matter of only a few seconds. As a result, even the machine gun fire was quite handicapped due to the short time available for picking up and shooting at targets. The attack came from all directions so that each group of guns had to select its individual targets with little assistance from the forward and after control stations. Probably as a result of the visibility conditions, the attack was spread over the whole formation instead of being concentrated on the carrier. This undoubtedly had the effect of saving the carrier from more serious damage.

In each carrier action to date the enemy has employed a strong surface force operating 25 to 50 miles or more in advance of its carriers. In this occasion that force actually closed the position of the HORNET which was known to have been crippled. A similar but stronger force of our own might find valuable opportunities for attacks.

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As has been previously experienced our carriers became well separated, lost TBS communication, fighter direction efficiency and visual contact.

It was the firm conviction of one commanding officer that the fighter director on each carrier should direct the fighters belonging to that carrier. Had the HORNET been directing it's own fighters they might well have broken up these attacks. The ENTERPRISE was too far away and too intimately concerned with an attack falling near them, resulting in the HORNET fighters being too late to break up the HORNET attack and yet not being available when most needed for the ENTERPRISE attacks.

THERE IS AN URGENT NEED FOR A POSITIVE DECISION BASED ON CAREFUL STUDY AS TO HOW TO OPERATE CARRIER TASK FORCES. UNTIL THAT IS DONE WE WILL CONTINUE TO SUFFER LOSSES. TASK FORCE COMMANDERS MUST HAVE GUIDANCE IN THIS MATTER. THIS IS NOW UNDER STUDY BY CINCPAC'S STAFF.

RED TWO flight was the only flight from ENTERPRISE with sufficient altitude to be of much help to the HORNET against dive bombers. Had they not been out of position and too late, considerable damage could have been done to the dive bombers.

THERE IS AN URGENT NEED FOR IMPROVEMENT IN FIGHTER DIRECTING. A BOARD SHOULD MAKE A THOROUGH STUDY OF THIS AND ADEQUATE TRAINING INITIATED TO IMPROVE THIS IMPORTANT ACTIVITY.

It was recommended by one commander that carrier task forces operate singly or at least well separated. When enemy contact is made, communication can be established on normal radio frequency channels. It is firmly believed that each carrier should conduct its own fighter direction at all times. It is believed that single carrier task forces operating separately are more efficient than when two or more are operating together as one force.

NOTE: SEE DISCUSSION AT THE END OF THIS CHAPTER ON CARRIER TASK FORCES.

Indefinite and inconclusive mention by more than one pilot of a seaplane tender being sighted during the action suggests a tactical angle that the Japanese may be using. Float planes have previously been observed and in the vicinity of the third attack on the ENTERPRISE a PBY (US

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Navy markings) was not proved conclusively friendly. The general tactical situation plus translated radio logs of the Japanese OTC in the air indicate that our forces leading to the day of action and during the battle were well trailed and positions accurately known to the enemy.

Continued improvement in shore-based search, tracking and reporting of contacts is essential until the point is reached which will permit our carriers to withhold their search and utilize all available planes in the striking groups.

At all times the enemy, as indicated by radar, seemed to have no difficulty in finding our force. Their reconnaissance and communication of contact reports by submarines or patrol planes must have been excellent. They launched well before we did.

WE LACK THIS ADVANTAGE AND UNTIL WE ARE AS EFFICIENT AS THE ENEMY IN THIS REGARD, OUR TASK FORCES WILL CONTINUE TO OPERATE UNDER GREAT HANDICAP.

The enemy communications and means of observation must be excellent. Whether we were observed by submarines or planes is not known but the enemy had accurate information as to our location and was able to launch his attack long before we were though our shore-based planes were scouting the area in our approved fashion.

Efficient radar operation, which is of such vital importance, is possible only with highly trained operators and highly expert upkeep personnel. The best available personnel should be in the carriers. Changes of personnel must stop.

RADAR SHOULD HAVE HIGHEST PRIORITY.

Anti-aircraft gunnery seemed as good or better than expected, but the 20mm. gun is of doubtful value in defeating planes other than those which have already delivered their bombs or torpedoes. A large number of planes were shot down in the action, but too many of them were retiring; a torpedo plane is the easiest of all aircraft targets to hit.

20mm. GUN HAS GREAT VALUE. THE COMMANDER TASK FORCE 61 STATED: "COMMANDER TASK FORCE 61 DOES NOT AGREE THAT THE 40mm. GUN IS THE ONLY WEAPON WHICH HAS GIVEN PROMISE OF BREAKING UP DIVE BOMBING AND TORPEDO ATTACKS. THE 20mm. BATTERIES ON THE ENTERPRISE HAVE BEEN REMARKABLY EFFECTIVE IN THIS AND PREVIOUS ATTACKS. IN THIS ATTACK 40mm. GUNS, WHICH HAD JUST BEEN INSTALLED ON THE ENTERPRISE GAVE A FINE ACCOUNT OF THEMSELVES BUT THE NUMBER THAT CAN BE INSTALLED IS LIMITED. THEY CAN REACH OUT TO TAKE ATTACKING PLANES UNDER FIRE BEFORE THEY ARRIVE AT THE RELEASE POINT FOR BOMBS OR TORPEDOES, BUT AFTER THE PLANES REACH A CERTAIN POINT VOLUME OF FIRE IS OF PARAMOUNT IMPORTANCE AND THAT IS SUPPLIED BY 20mm. GUNS. THE ANSWER TO THIS PROBLEM IS TO INSTALL AS MANY 40mm. GUNS AS PRACTICABLE AND TO FILL UP EVERY AVAILABLE REMAINING SPACE WITH 20mm. GUNS."

There can not be too many 40mm. and 20mm. guns on any type of ship. They knock down planes.

The number of the vessels in the screen was too small for defense against air attack; to be well protected against submarine attack, a carrier should be surrounded by a circular screen of at least ten destroyers, preferably twelve.

THIS SITUATION IS ANOTHER EXAMPLE OF TOO FEW FORCES TOO WIDELY SCATTERED OVER THE GLOBE.

The Commander in Chief, Pacific Fleet commented on this action as follows:

On October 26 our forces in the South Pacific turned back the first large scale enemy carrier supported movement since the severe defeat administered to the Japanese Fleet in the battle of August 23 - 25. In this engagement, at heavier loss than in the earlier one, we put out of action a large part of the Japanese carrier air groups, thus not only assisting in checking the immediate movement against Guadalcanal but paving the way for the decisive battle of November 13 - 15 which the Japanese were forced to enter with a much reduced or no carrier air strength.

In this battle the carrier air groups damaged the following enemy ships:

SHOKAKU - 4 1000-lb. bomb hits.  
 ZUIKAKU - 2 500-lb. bomb hits.  
 1 BB (KONGO class) - 2 1000-lb bomb hits.  
 1 CA (TONE) - 5 500-lb. bomb hits.  
 1 CA (CHIKUMA) - 4 1000-lb. bomb hits.  
 1 CA (NACHI class) - 2-3 torpedo hits.  
 1 CL - 1 500-lb. bomb hit.

In addition, Commander Task Force 61 reports that air and anti-aircraft together destroyed 123 enemy carrier planes. A captured enemy document states that ORANGE losses were 49 planes. Japanese ship damage given in this document was two carriers and one cruiser lightly damaged, fighting power and maneuverability unimpaired.

Other losses inflicted on the enemy during the period October 24 - 27 include:

1 CA - 2 1000-lb. and 1 500-lb. bomb hits by Guadalcanal planes.  
 1 CA - 2 500-lb. bomb hits by PBV from Espiritu Santo.  
 1 CL - 2 500-lb. bomb hits by B-17 from Espiritu Santo.  
 1 CL - 1 torpedo hit by PBV from Espiritu Santo.

About ten ships, including one CL and one DD and eight merchantmen or auxiliaries damaged and some possibly sunk at Rabaul by B-17's from Soweatpac.

Our own losses in the engagement were:

HORNET - Sunk by enemy air attack and our forces.

ENTERPRISE - Two bomb hits. Damage substantially repaired by forces afloat before the next action.

SOUTH DAKOTA - One bomb hit on Turret #1. Fragments from this bomb put two guns of Turret #2 out of action and inflicted other damage which was repaired in time for the SOUTH DAKOTA to participate in the battleship action on November 14-15.

SAN JUAN - One bomb hit, repaired in Australia.

PORTER - Torpedoed by a submarine, and sunk by our forces.

SMITH - Damaged forward by a torpedo plane crashing into #1 gun mount setting heavy fires.

Seventy-four carrier planes were lost, with 23 officers and 10 men. About 20 of these planes were shot down in combat. Loss of ship personnel was: 29 officers and 254 men.

By the same captured document previously mentioned, ORANGE claims (through various aircraft and air group reports) the following BLUE losses: "In the enemy force consisting of four CV, four BB, some ten cruisers and destroyers which appeared off Santa Cruz Islands: One carrier sunk, three carriers were heavily damaged, two battleships blew up and sank, one battleship was slightly damaged, three cruisers were moderately damaged. These enemy aircraft were shot down: over the enemy more than 54 planes; over our forces 10 planes by aircraft and 15 planes by AA."

Enemy forces involved in this action were four carriers (SHOKAKU, ZUIKAKU, ZUIHO and HAYATAKA) supported by land aircraft, four or more battleships, ten-fifteen cruisers, and twenty-thirty destroyers, plus a number of transports and other auxiliaries. The carrier KITAKA was present until 21 October when she departed for Truk because of an engine-room fire that reduced her speed.

Our forces were:

TASK FORCE SIXTEEN  
 R.Adm. T.C. Kinkaid.  
 CV ENTERPRISE  
 BB SOUTH DAKOTA  
 CA PORTLAND  
  
 CL SAN JUAN  
  
 DD 8

TASK FORCE SEVENTEEN  
 R.Adm. G.D. Murray.  
 HORNET  
  
 NORTHAMPTON  
 PENSACOLA  
 SAN DIEGO  
 JUNEAU  
 6

In addition Task Force 64, composed of WASHINGTON, three cruisers and ten destroyers, under Rear Admiral W.A. Lee, Jr, at the time was operating to westward of Guadalcanal available to strike enemy forces supporting landings.

NARRATIVE - PRELIMINARY OPERATIONS.

All times in this report are Zone Minus 12.

The Japanese had been intensifying their attacks in the Solomons throughout August, and especially so after our victory of the Second Battle of Savo on the night of 11-12 October. Two nights afterward a powerful Japanese force of two battleships, one light cruiser, and eight destroyers, bombarded Guadalcanal for an hour and twenty minutes, destroying or damaging a large number of planes. On the two succeeding nights, heavy cruisers and destroyers bombarded with less effect. There was numerous aircraft attacks which caused some damage but were generally disastrous to the Japanese planes. Of a total of some 600 planes attacking from 1 through 27 October, approximately 200 were reported shot down by aircraft and AA fire from Guadalcanal. By Japanese records the number is one half to two thirds this figure.

Before dawn on 15 October the enemy began landing troops from six transports and cargo vessels west of Kokumbona. A supporting group of one CA, two CL and four DD was nearby off Savo Island. These ships, discovered by the dawn search, were attacked by SBD dive bombers and B-17's (heavy bombers). The CA was damaged and three or possibly four of the transports sunk. The Japanese were nevertheless able to land much equipment and possibly 10,000 troops. Smaller reinforcements were landed subsequently. The enemy was preparing for a full scale assault to regain the airfield on Guadalcanal.

Meanwhile numbers of ships were assembling in the Shortlands and the Rabaul-Kavieng Areas, while Japanese ground activity increased on Guadalcanal. Troops and aircraft were steadily moved from the N.E.I. Philippines, and elsewhere to the Bismarck-Solomon Area. Submarine concentration continued on our supply line and on 20 October one succeeded in torpedoing the CHESTER, requiring extensive repairs. On 15 October, supporting the landing of that date, carrier division two (HAYATAKA, HITAKA) was operating on the flank of our supply line with planes as far down as 13° S. On that day its air group attacked BELLATRIX and other ships and sank MEREDITH, en route to Guadalcanal. The enemy's zero day appeared to be 23 October. As soon as his troops captured the airfield, ships with supplies and planes of carrier division two were scheduled to come in. A carrier and battleship striking force was to contain and destroy any BLUE force that approached. The zero date

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was repeatedly postponed due to the magnificent defense by our ground forces on Guadalcanal.

To oppose these forces we concentrated submarines in the Bismarcks, increased the number of patrol and heavy land-based bombers under Commander Air Force, South Pacific, to about 85, and on 26 October had ready for action at Guadalcanal 23 VF, 16 VB, and 1 VT. On 13 October we landed the 164th Infantry US Army, as reinforcements. On 23 October TREVER and ZANE sailed towing four PT boats, and arrived Tulagi at dawn on 25 October. Meanwhile, in support of South Pacific Forces, aircraft from the Southwest Pacific intensified night attacks on Rabaul and airdromes of the Bismarcks. On the three nights before the 26th, they report hitting about ten ships in Rabaul Harbor including one cruiser and one destroyer. Some of these were possibly destroyed.

Available surface forces in the operating area, as given above, were two battleships, WASHINGTON and SOUTH DAKOTA, two carriers, HORNET and ENTERPRISE, with their accompanying cruisers and destroyers. ENTERPRISE, which had been under repair at Pearl Harbor for battle damage received in August, by proceeding at high speed from the yard with SOUTH DAKOTA and destroyers of her task force, and through the enforced delay in the enemy's zero day, was able to arrive in the area just in time. She joined Task Force 17 at 1500 on 24 October in Lat.  $13^{\circ} 45' S.$ , Long.  $171^{\circ} 30' E.$  The force combined as Task Force 61 commanded by Rear Admiral Kinkaid.

At 1250, 25 October, a contact report from search plane was received, placing 2 CV's and escort at  $08^{\circ} 51' S.$ ,  $164^{\circ} 30' E.$ , on course  $145^{\circ} T.$ , speed 25 knots. At this time Task Force 61 was 360 miles from the contact, in position Lat.  $10^{\circ} 04' S.$ ,  $170^{\circ} 18' E.$ , on course  $295^{\circ} T.$ , speed 22 knots.

At 1430, 12 VSB were launched from the ENTERPRISE for a 200 miles search of sector  $280^{\circ} - 010^{\circ} T.$ , and at 1520 an attack group of 11 VF, 12 VSB and 6 VTB. Neither the attack group nor the search group succeeded in reaching the enemy which had reversed course to the north. It was dark when the planes returned; 7 planes and 1 pilot were lost during the night landings.

The Japanese were now ready to strike. Some 40 vessels had got underway from the Shortland Area during the night of 24-25 October. Another considerable number had come from Rabaul. On the 25th there were at least three large and some smaller groups of Japanese ships operating under the protection of a weather front to the northeast of Malaita. Part of these were transports and auxiliaries maneuvering out of range of our attack until after the carrier battle. The remainder constituted the main Japanese striking force with the mission of destroying our surface and air forces while the Japanese attacked our positions on Guadalcanal.

Ground operations on Guadalcanal began as scheduled. On the evening of the 23rd, after a heavy artillery bombardment on our lines, the Japanese attacked along the Matanikau river, crossing in force with tanks and massed infantry. Repeated attacks on this front and elsewhere were thrown back but the assaults continued throughout the 24th. During daylight of the 25th they were supported by cruiser and destroyer gunfire as well as by bombers. During that night they broke through our lines but after hard fighting were driven back with heavy losses.

In addition to bombarding Guadalcanal, the Japanese ships sank the SEMINOLE and a YP off Lunga Point. Heavy rains had made Henderson Field unserviceable.

Later in the morning of 25 October the field improved so that SBD's could take off. They located a Japanese force of 1 CA, 1 CL and 4 DD's and attacked them several times from about noon until 1700, resulting in two bomb hits on the CA. At 1710 six B-17's bombed this same force obtaining two 500-lb. bomb hits on the CL. These ships were again attacked at 0700 on the 26th by SBD's and P-39's which gained an additional 500-lb. bomb hit on the CA. Guadalcanal was thereafter kept so busy by enemy air concentrations in support of the Japanese army offensive that the ships were not again bombed. They were last seen at 1600 on the 26th going away at 5 knots smoking badly.

#### NARRATIVE - CARRIER ACTION 26 OCTOBER.

During the night of the 25-26 October, Task Force 61 closed the enemy. At 0111 a shore-based search plane reported "Enemy position Lat. 07° 14' S., Long. 164° - 15' E." At this time Task Force 61 was about 300 miles to the southeast closing at 20 knots. A striking group was kept ready on HORNET for a moonlight attack.

At 0410, 26 October, a PBY reported contact on a large CV and six other vessels in Lat. 07° 55' S., Long. 164° 05' E., about 200 miles from Task Force 61's position. Some ships of the Task Force received the contact direct and apparently assumed that Commander Task Force 61 had also. Actually, he first received it relayed at 0612.

At about 0612, ENTERPRISE, the duty carrier, launched a 16 plane search group loaded with 500-lb. bombs, an inner air patrol, and a combat air patrol. The section of two planes searching sector 266° - 282° T., when about 85 miles from ENTERPRISE encountered a Mitsubishi Type 97 flying on reverse course. They did not attack and apparently did not report the contact. Some 3 hours later, between 0930 and 1000, on their return leg they encountered apparently the same plane returning to its force. Again they did not attack.

The search group made two contacts: The first, made at 0717 and transmitted to ENTERPRISE at 0730, was of two battleships, one heavy cruiser, seven destroyers, distant 170 miles, bearing 275° T., course north, speed 20 knots. The second, received at 0750, was of two carriers and escort, distant 200 miles, bearing 300° T., course 330° speed 15 knots. At 0840, two of the search planes obtained two 500-lb. bomb hits on a carrier of the SHOKAKU class. Two others probably got one hit on the stern of a cruiser.

Task Force 61 was in approximate position Lat. 08° 45' S., Long. 166° 38' E., on base course 270°, speed 23 knots, at 0800. Both carrier groups were in disposition One Victor with the HORNET force 8-10 miles southeast of the ENTERPRISE. Attack groups were launched as follows:

#### HORNET

First wave beginning at 0832: 8 VF, 15 VSB (1000-lb. bombs), and 6 VT (torpedoes).

Second wave completed at 0910: 7 VF, 9 VSB (1000-lb. bombs), 9 VT (4 500-lb. bombs each).

#### ENTERPRISE

From 0847 to 0902: 8 VF, 3 VSB (1000-lb bombs), 8 VT (torpedoes) and 1 VT with Group Commander.

From captured documents it is known that a Japanese search plane sighted part of Task Force 61 at 0750 giving its position as Lat. 08° 25' S., Long. 166° 45' E. At least one of the enemy carriers launched an attack group prior to 0826. At 0930, some 60 miles from Task Force 61 fighters with this group surprised ENTERPRISE attack group and shot down two VTB and two VF. Two other VTB and two VF were so damaged that they returned to the ENTERPRISE, making water landings.

The remainder of ENTERPRISE group proceeded. They sighted a battleship group but went on in search of the carrier. Not finding it, they returned to the first contact. At 1040 the dive bombers attacked an enemy KONGO class battleship, obtaining two 1000-lb. bomb hits. The torpedo planes attacked a cruiser of the ATAGO class, but missed. Fighter planes diverted enemy AA fire from the attacking planes by strafing. ENTERPRISE attack group shot down about 16 planes en route and over the enemy.

HORNET planes at 1050 attacked an enemy force containing a large and a small carrier. The dive bombers secured four 1000-lb. bomb hits on the large carrier (SHOKAKU) and two hits on the heavy cruiser CHIKUMA, leaving both smoking and burning badly. The torpedo planes got hits on a NACHI heavy cruiser and 500-lb. bomb hits on a TONE class cruiser.

Meanwhile enemy planes had attacked HORNET. Her outgoing attack group soon after 0920 had reported two large groups of enemy planes, including 24 dive bombers and fighters. The enemy planes had been picked up about the same time by radar, approaching from 280° T., some 60 miles away. Task Force 17 was then in approximate position 08° 38' S., 166° 43' E., with Task Force 16 8-10 miles to the northeast, concealed from time to time by rain squalls. There were 15 fighters over Task Force 17. These engaged the enemy planes shortly before 1000 shooting down a number of them.

At 1010, about 15 of the enemy dive bombers that had got past our fighters attacked HORNET. There were two near misses at 1012. One minute later a dive bomber loaded with one 500-lb. bomb and two 100-lb. bombs dove into the ship, glancing off the stack, and started a large fire on the signal bridge, rendering it uninhabitable. A 100-lb. bomb exploded there. The plane and probably the other 100-lb. bomb exploded on piercing the flight deck, starting a fire that burned for two

hours. The 500-lb. bomb was a dud. Twelve of these planes were shot down by AA fire.

This attack was accompanied by 12 or more torpedo planes delivering a well coordinated attack from several directions. PENSACOLA estimated that there were 20 planes in the attack and that over half were shot down before releasing torpedoes. The planes were not opposed by our fighters. At 1015 HORNET was hit by two torpedoes on the starboard side. Two firerooms and the forward engine room were flooded; all propulsion, power, and communications were lost. The ship listed 7-8° to starboard. At the same time one 500-lb. bomb hit at about frame 155, piercing the 4th deck; another at frame 153 exploding on contact; and a third at frame 80, piercing to 3rd or 4th deck, exploding in the general location of forward messing compartment.

Two minutes later, an unarmed torpedo plane dove into the carrier, and exploded just outboard of #1 elevator shaft, starting a bad fire. About 12 of the dive bombers and 8 or more of the torpedo planes were shot down by our AA fire, many before releasing their missiles.

The carrier was now dead in the water and a circular screen, 2,500 - 3,000 yards, was formed about her by the cruisers and part of the destroyers. Others went alongside to fight the numerous fires aboard and did an excellent job despite a heavy roll that caused all of them to suffer topside damage. MORRIS was on the starboard side, RUSSELL on the port bow and MUSTIN on the port quarter with fire hoses over to the carrier. By 1100, all fires were under control. NORTHAMPTON commenced towing operations.

When this attack was made on Task Force 17, Task Force 16 turned to the north to take advantage of a rain squall. Visual contact was lost by 1045, not to be regained that day. ENTERPRISE recovered her search group between 1031 and 1048. These planes had shot down 7 Japanese fighters and 1 torpedo bomber.

At 1107, PORTER, while stopped to recover survivors of a friendly TBF, was torpedoed between the firerooms and lost all power. An ENTERPRISE VF pilot reports that he sighted a torpedo circling the PORTER and SHAW, strafed it, and was himself fired on by one of the destroyers, and that the torpedo hit the PORTER. PORTLAND mentions the strafing. SHAW reports that a second torpedo just missed her, and

some time later sighted a periscope. She conducted two attacks, both on good sound contacts, with no apparent results. By direction of Commander Task Force 61 she rescued the crew of the PORTER and sank her with gunfire. SHAW fired four gun salvos and two torpedoes at the disabled vessel; one torpedo missed, the other passed under without exploding. PORTER sank, after the 17th 5" salvo, at 1308, soon after the last air attack on ENTERPRISE.

At 1027 on learning from voice radio transmission of the presence of our second carrier, the Japanese launched the following attacks on ENTERPRISE:

(a) From 1115-1119 - 24 dive bombers attacked ENTERPRISE, securing two hits and one near miss. Because of 5/10 to 7/10 broken clouds, and confusion at this time with numbers of "bogies" and our own planes on the radar, the enemy aircraft were not seen until well in their dives, which were determined and well executed. The first hit pierced the flight deck forward, went through the skin of the ship and exploded just outside the bow. The second bomb hit just abaft the forward elevator, put it out of commission and caused heavy general damage. A near miss opened seams to three fuel tanks, cracked a HP turbine bearing, and did other damage. About 10 of the planes making this attack were shot down.

(b) At about 1145, 15 torpedo planes, accompanied by fighters, commenced a drawn out attack. This was immediately followed by 12 dive bombers, most of which dived on ships other than the carrier. There were no torpedo hits and no bomb hits during the main attack, but some two or three minutes afterwards a plane slipped through the clouds and dropped a bomb on SOUTH DAKOTA's #1 turret. Fragments put two guns of #2 turret out of commission. During the attack a torpedo plane crashed on SMITH damaging her forward 5" mount and starting fires. Although ablaze, the destroyer maintained her position in the screen. By steering his ship under the stern of SOUTH DAKOTA and using the spray from the high speed wake to help bring the fire under control, the captain of the SMITH probably saved her from being damaged more severely. ENTERPRISE was saved from torpedo hits by excellent ship handling and well directed AA fire. About 12 torpedo planes and five or more dive bombers were shot down.

(c) From 1221-1233, one group of 20 dive bombers attacked ENTERPRISE in shallow glides. There were no hits; one near miss caused moderate shock damage and

flooding. About 9 of the planes were shot down. Soon afterwards 15 dive bombers and 9 fighters attacked. These got five near misses and one hit on SAN JUAN, resulting in considerable damage aft and temporary loss of steering control. These planes made a glide attack exposing themselves for a long period to AA fire, especially 40mm. Ten were shot down.

In these attacks ENTERPRISE fighters shot down about 18 enemy planes, ten of these being torpedo planes. The number shot down by HORNET fighters is not known. On only one occasion did the fighters get into position to attack dive bombers before they were in their dives. AA fire was effective against the dive bombers, many of them being set afire in their dives and others turning away at high altitudes. Total planes shot down by fighters and AA over Task Force 16 was at least 60.

At 1155 a submarine fired four torpedoes at PORTLAND. One passed ahead; the other three were probably dud hits. It is possible the torpedoes had not run far enough to arm as the origin of the wakes appeared within 300 yards of the cruiser.

At 1205 SAN JUAN sighted a periscope on the starboard bow and turning to starboard about three minutes later cleared torpedo tracks coming from that direction.

After the last attack ENTERPRISE resumed landing aircraft, which were now very low on gas. Many ran out and landed on the water while ENTERPRISE was reservicing and launching the first ones.

With the exception of an attack by a lone plane at 1109, which caused no damage, Task Force 17 was not molested during this period. NORTHAMPTON had taken HORNET in tow soon after noon and was proceeding slowly when at 1240 her 1-3/4" tow line parted. HORNET's 2" tow wire was rigged by 1420 and towing was underway ten minutes later at 3 knots. HORNET's engineering force was making progress in regaining power so at this time the possibility of saving her was favorable.

Meanwhile destroyers removed crew members not required for handling and fighting the ship. Destroyers and cruisers formed anti-submarine screen, 4,000 - 5,000 yards from HORNET, and maintained this general disposition until HORNET was abandoned.

At 1620, a third attack on Task Force 17 was made by 9 torpedo bombers and 6 dive bombers. NORTHAMPTON cast loose as the torpedo planes came in, and maneuvered just in time to avoid torpedoes launched at her. Three or four of these planes were shot down. One additional torpedo hit HORNET at frame 100 flooding the remaining engine room, and causing the starboard list to go to  $14\frac{1}{2}^{\circ}$ . This gradually increased to  $18-20^{\circ}$  and the order was given to abandon ship.

Before this order could be carried out, at about 1655 9 horizontal twin-engine bombers attacked from an altitude of 8,000 feet. One section's bombs, apparently AP, missed astern of HORNET in a small pattern, except for one that struck the after starboard corner of the flight deck but continued on into the water before exploding. The other section dropped four-six bombs which missed just astern of SAN DIEGO. These planes were not detected in the broken clouds and were not taken under fire until close to their release points.

The survivors were being picked up by destroyers when at 1802, with all but two rafts and two boatloads having been picked up, a fifth attack was made by four dive bombers. One bomb exploded in the hangar just forward of the island. Two of the enemy planes were shot down.

Japanese air reconnaissance had sighted Task Force 64 south of Guadalcanal. Estimating that this force would move east to cover the damaged carrier, HORNET, the Japanese Commander (Cinc Combined Fleet) ordered a cruiser-destroyer night attack on our ships in the Santa Cruz Area. A strong battleship supporting force was in reserve.

Realizing that attack was imminent, Commander Task Force 17 ordered HORNET destroyed. Beginning at 1905 MUSTIN fired eight torpedoes at HORNET. Of these, three hit, one was a premature, one ran erratically, and three were misses or unexplained. Later ANDERSON fired eight more torpedoes of which six hit, one was a premature, and one missed. All torpedoes were fired at the port or high side so that the early effect of hits was to counterflood. Responsibility for the failure of seven torpedoes, covered in a separate report, seems to be equally divided between personnel and material.

In addition, the two destroyers fired a total of 369 rounds of 5"/38 at the HORNET. When they ceased fire at 2140 she was burning fiercely and sinking.

The remainder of Task Force 17 had meanwhile retired to the southeast. ANDERSON and MUSTIN followed at high speed. While firing at HORNET they had noted Japanese shadowing planes nearby. These planes continued to shadow the destroyers during their retirement, periodically dropping float lights and flares until about 0100. Unknown to MUSTIN and ANDERSON they were being pursued by a Japanese force of two CA, one CL and eight destroyers, probably less than 40 miles away. The pursuit was abandoned at midnight.

NARRATIVE - SUBSEQUENT EVENTS.

B-17's and PBY's operating out of Espiritu Santo were of great service in search. They also conducted a number of offensive strikes. These were unsuccessful in locating the enemy in some instances, and made no hits in others, except for the attack on the 25th, previously recounted, and well conducted night attacks by two PBY's on the 26th. Soon after midnight on the 26th one of these launched a torpedo from 500 yards at a large carrier; at this close distance the torpedo probably did not have sufficient run to arm. About the same time a second PBY attacked another enemy force and from a low altitude made two 500-lb. bomb hits on a heavy cruiser.

On the night of the 26th, Task Force 64 made an offensive sweep through the assigned area west of Guadalcanal, without contact on surface forces. Twice in the early morning submarines fired torpedoes at WASHINGTON, flagship of this force. All missed.

Task Forces 16 and 17 retired independently and effected a rendezvous for refueling on 27 October about 185 miles southeast of Espiritu Santo. Japanese aircraft searched for our units on the 27th, while their surface forces retired to their usual striking position northeast of Guadalcanal. Late on the 27th, the offensive on Guadalcanal having failed, many ships having been damaged, and their carrier aircraft depleted, enemy retirement to port was ordered.

The total number of aircraft that got through to deliver attacks on Task Force 17 was about 49. If we add those shot down by fighters on various contacts up to 60 miles out, this number increases to about 65, not including all protecting fighters. About 80 planes attacked Task Force 16. The search and attack group met many fighters in the vicinity of the enemy of which ENTERPRISE attack group shot down about 15. There were

thus about 200 Japanese planes in the area of operations which is approximately the normal air strength of the four carriers at present. Some of the planes that made later afternoon attacks on the HORNET could have been making a second trip but the possible number is less than 20. In fact, the small groups in these attacks probably indicated that few torpedo planes and bombers were left to attack.

#### COMMENTS AND CONCLUSIONS.

Insufficient and incomplete contact and tracking reports remain one of our deficiencies, despite many good contacts by shore and tender-based planes. With prompt and continuous information it should have been possible for Task Force 61 to have launched air attacks with more despatch and more favorable chance of success. Continuing effort is being made to improve contact and tracking procedure from shore and tender-based planes.

Ships making or receiving a contact must insure, regardless of repetition, that the Force Commander has also received it. The contact report at 0410, 26 October, on an enemy carrier group was received direct by some units of Task Force 61 but not by Commander Task Force 61 until 0612.

The enemy was able to attack our carrier some 30 minutes earlier than our air group attacked his. That the Japanese were able to do this even though he had approximate knowledge of their position for a day previous, and direct plane contacts on the 26th, demonstrates the need for study and possible revision of our search and attack methods. Commander Air Force, Pacific Fleet, is being requested to make this study.

When contact is highly probable, as it was on 26 October after our forces had closed the enemy during the night, economy of effort and conservation of force dictate the use of single planes for search. In this action, as in the previous carrier battle in August, the use of two planes for search where one would have sufficed seriously reduced ENTERPRISE's striking group.

It is possible that smoke might have been used profitably to screen the HORNET during the afternoon attacks of 26 October when she was damaged and lying to or moving ahead slowly under tow.

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Japanese planes outside gun range, but showing on our radar screens, shadowed Task Force 17 all afternoon of 26 October. Had fighters been with the force they might have destroyed the shadowers who unquestionably directed the afternoon attacks to the target. As in previous actions, the Japanese profited from outstanding scouting and tracking.

Our fighter direction was less effective than in previous actions. Enemy planes were not picked up until they were at close range, radar screen was clogged by our own planes, and voice radio discipline was poor. These are faults that have appeared repeatedly but can be eliminated by sufficient drill. In this engagement the two carriers joined only two days before the action. Our fighter direction both in practice and in action against small groups has been good; but fighter direction against a number of enemy groups, with many of own planes in the air, is a problem not yet solved. The discussion of this problem on page 11 of ENTERPRISE's report, already distributed to interested commanders, is pertinent. Commander Air Force, Pacific Fleet, will coordinate experiments seeking a solution to this grave problem.

In these attacks Japanese pilots as a whole were not as resolute or skilled as in previous actions. Less than half the dive bombers made steep dives, a glide of 45° or less being characteristic of many of the attacks. Some torpedo and dive bomber pilots pressed their attacks home, especially in attacking the HORNET, but even these often missed widely. In attacks on the ENTERPRISE group our fighter pilots report seeing some dive bombers turn away from AA fire at ranges as great as 7,000 feet. Torpedo planes used both the usual Japanese methods of approach; viz, a long weaving glide over the screen, levelling off just before dropping, or a long low level approach close to the water. Some got in close before dropping. Many released outside 1,500 yards.

A valuable training exercise for all carrier task forces is simulated attack on the formation by the carrier air group. Ship's reports speak of lack of experience in this training and the desire for it. Task Force Commanders are expected to make opportunities to provide this training which is essential for ships and planes.

When attacking surface forces, TBF planes should normally carry torpedoes and not bombs as was the case with one of the striking groups in this action. As the Commander South Pacific Force states in his endorsement

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to ENTERPRISE's report, the torpedo plane remains our most lethal weapon against ships, we should employ it whenever there is reasonable chance of getting in without prohibitive losses.

Except for some lack of discipline on combat air patrol circuits and on scouting frequencies, communications were generally good. There is still too much of a tendency to depend entirely on TBS for communication. Ships must be prepared to use bridge keyed radio or flags whenever necessary to maintain communication.

A TBY pack set should be issued each heavy ship for emergency communications. Auxiliary power batteries and generators should also be supplied to a certain number of radio receivers and transmitters.

Damaged ships extinguished fires quickly and efficiently. The Commander in Chief, Pacific Fleet, notes with satisfaction the improvement in fire prevention by removal of inflammables and is especially gratified that the carriers were able to prevent fire from getting into the gasoline systems.

Except for the LEXINGTON and SARATOGA, our carriers have proven especially vulnerable to torpedo hits. Although carriers are not supposed to withstand the same amount of punishment as our modern battleships, they should still be as tough as possible. Their machinery spaces should have greater protection.

The need for auxiliary power units in separated parts of the ship has been shown repeatedly in action. Installation of dispersed units is proceeding in our ships but HORNET had not been completely equipped. In addition to the present electric submersible pumps which are valuable, but clog readily from debris, carriers and other large ships should be provided with portable salvage pumps of about 2,000 gallons per minute capacity.

The engineer officer and first lieutenant of HORNET have included in the HORNET's report a number of recommendations that should be of value to the Bureau of Ships.

The following comments are of interest in connection with individual clothing and equipment:

(a) Kapok life jackets protect against flying fragments but burn readily. They should be fire proofed.

(b) Flash clothing for ships in the tropics should be of a light material. A simple cotton coverall with hood is satisfactory.

(c) Ordinary gas masks are valuable in fighting fires topside.

(d) Heavier asbestos gloves are needed for fire fighters.

During action when it is impracticable to stop for picking up personnel from our planes down in the water, ships should drop life rafts. Commander Air Force, Pacific Fleet, has arranged issue of rubber rafts to ships.

The Commander in Chief, U. S. Pacific Fleet, is pleased with the ship handling proficiency exhibited on 26 October. The ships of Task Force 16 not only avoided all torpedo plane attacks but skilfully avoided collision during the several occasions, while steaming at about 30 knots in close screen, when steering control went out. As on previous occasions, destroyers of both Task Forces exhibited a high order of seamanship in rescuing survivors. The seamanship of the destroyers was particularly notable in fighting fires on the HORNET and rescuing personnel.

Anti-aircraft fire continues to grow in effectiveness. In this action for the first time AA fire from carrier forces shot down more planes than did our fighters. This gratifying advance results from increased experience and training, from improved guns (40mm. and 20mm.) and fire control equipment, and from the greater number of automatic weapons installed. The 40mm. was highly effective in its first baptism of fire. It is to date, the best answer to the need for a gun to cover the middle ranges between the 5"/38 and 20mm.

When heeling in a turn, ENTERPRISE discovered that the 40mm. shields were too high to permit fire at low flying torpedo planes. Shields are being lowered in Pacific Fleet installations and firing cams altered to give greater depression. Automatic weapons may require as much as 10° depression.

SAN JUAN reports an unusual casualty with the l.l. When cartridges are retained loaded in clips for extended periods, ship and firing vibration causes the convex lug on the feed plate of the clip to dent the last round which then jams when loaded into the gun. This difficulty was met primarily on after mounts. Pending redesign of the

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feed plate lug, the casualty can be prevented by periodic removal of the ammunition from the clips. Rotation of loading and empty clips is desirable to prevent weakening clip springs by continued compression.

The Ford electric power drive of the 1.1 mounts continues to give an excessive number of casualties. Other power drives have been satisfactory.

It is noted in RUSSELL's report that depth charges had settings jarred from "safe" to about "300 feet" by vibration, attributed to gunfire. This may explain the explosion of depth charges, presumably set on safe, aboard some of our destroyers that have been lost by enemy action. The Bureau of Ordnance in separate correspondence is being requested to investigate this important point.

Volume of fire is such a vital factor in repelling air attack that the Bureau of Ordnance will be requested to develop a twin cradle for the 20mm. gun. Several multiple gun cradles have been manufactured experimentally by the Fleet, one containing three 20mm., and have functioned satisfactorily during limited firing from the Mark 4 mount.

The Mark 14 sight on 20mm. guns or on the Mark 51 director is generally satisfactory. Suggestions for minor mechanical improvements are being forwarded to the Bureau of Ordnance. Before the experience of this battle, some ships were not convinced of the need for a large amount of training. As gunners become proficient by frequent training in operating the sight, it will materially improve AA fire, especially in extending the effective hitting range of the 20mm. and larger automatic weapons.

The well executed dive bombing attacks on the SHOKAKU might have resulted in the destruction of this vessel had the bombs been armor piercing. The 1000-lb. AP bomb now available in the South Pacific should improve our aircraft striking power.

All 5"/25 guns should be equipped with power drives as soon as possible. The associated fire control equipment on these guns installed in cruisers should be modernized whenever a ship is in a navy yard for extended repairs.

For some ships the 5"/38 battery performed excellently, for others very disappointingly. As one of the ships with the latter experience states: "It appeared evident that nothing was wrong that experience in firing the

battery could not correct ----- the fault did not lie with the equipment. The machine gunners had had continued training in actual firing against high speed targets and their performance showed it." The 5" had seldom fired. It is the responsibility of unit and task force commanders to conduct frequent firing with all batteries against suitable targets.

The failure of gunnery radars in ENTERPRISE and other ships to pick up and range on attacking enemy aircraft was partly caused by the large number of own and enemy planes on many bearings. Another cause was inadequate training in transfer of the target from a search radar to gunnery sets. This is a difficult problem, especially on a carrier busy with fighter direction, but it can be solved by careful organization and training along the line suggested in the standard radar organization doctrine recently issued in Pacific Fleet Tactical Bulletin 4TB-42.

It appears from some of the reports that only certain ships were allowed to use search radar. However desirable this may be initially, once the attacking planes have committed themselves to the approach each ship must use its search radar in order to get the fire control radar sets on the targets in time. In the case of the HORNET task force particularly, this procedure would have permitted earlier firing on torpedo planes and therefore greater utilization of the fire power of the 5" battery.

In this action the Japanese employed carrier as well as other planes for search. The single aircraft sighted by a section of two of our scouts, en route to and retiring from search, was probably from a carrier. It seems to be the enemy's policy to have a small number of planes on a carrier designated for search and tracking, fitted with special radio equipment and gas tanks for a 300 mile search. These planes limit their search to a narrow arc on the expected contact bearing. The fast cruisers that operate with carriers are generally placed in advance, along the line of probable contact, in position for launching their own planes to assist in search, for early warning of the approach of our planes, and for attack on our damaged ships.

The magnificent spirit of our personnel was again exhibited throughout this action. Wounded men refused to leave their battle stations. Others after treatment for severe injuries, returned. Following hits, many risked their lives freely to extinguish fires and to save their ship. A thorough purusal of the action can lead to no other conclusion than that expressed by the Chaplain of the HORNET: "My general impression was that rather than a few outstanding heroes the entire ship's company

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revealed a true heroic spirit as though sticking to their post at any cost, fighting and dying, was just another part of their day's duty."

This battle cost us the lives of many gallant men, many planes, and two ships that could ill be spared. Despite the loss of about three carrier air groups and damage to a number of ships, the enemy retired with all his ships. We nevertheless turned back the Japanese again in their offensive to regain Guadalcanal, and shattered their carrier air strength on the eve of the critical days of mid-November.

The commanding officer of the ENTERPRISE comments as a result of this action are quoted for information, study and consideration:

#### AIR DEPARTMENT.

It is very evident that in this action, as apparently was the case in the action of August 24, the fighter direction was a disappointment. Some errors in judgement on the part of the fighter director officer were undoubtedly made, the most apparent of which were the stationing of fighters at altitudes generally too low and the frequent use of relative bearings which under the circumstances were meaningless to pilots in the air. However, fighter direction having fallen short of expectations in two successive actions, a careful re-examination and analysis of the problem is required. It is not sufficient simply to charge the failure to lack of training, inexperience, or similar causes. It is a fact that when the problem is simple, that is, when one group is to be intercepted, little difficulty is experienced in effecting the interception. This was done repeatedly while en route to the South Pacific Area in drills wherein our dive bombers or torpedo planes represented the enemy and came in from an un-announced direction and altitude. As soon, however, as the problem becomes complicated, as it did on October 26, with some 38 of our fighters in the air, and with enemy planes in large numbers coming in from various directions and altitudes, and with friendly planes complicating the situation, then the system breaks down. Two conditions of attack must be considered. In the first condition the attack group is located well out. Here precise interception pursuant to detailed instructions from the fighter direction, is practicable and should be effected. In the second condition, the attack group has arrived in the immediate vicinity of

our formation and probably has separated into groups at various positions and altitudes. In the second case the multiplicity of planes, the amount of radio traffic which has to go through the air, and the numerous radar reports received (reports on friendly planes complicated the picture) present such a complicated picture, that it may be the problem is not solvable if we attempt to give detailed instructions to all fighters. Possibly in the latter case a plan whereby the combat patrol is stationed in definite localities and at selected altitudes, and wherein the fighter director gives out general information, and undertakes detailed interception only in case of large groups or in special cases is the answer. Certainly the positioning of fighters both as to location and altitudes must receive the most careful thought. It is imperative that operating carriers continue to exert every effort to improve their fighter direction and to reach a satisfactory solution of the problem. Permanency of personnel is important and in the past has been lacking. This can be corrected. Further, there is good reason to believe that the material condition of the radar on ENTERPRISE has been improved. However, what is urgently needed is a sound doctrine.

THIS HAS BEEN RECOGNIZED FOR SOME MONTHS  
AND SHOULD BE WELL UNDERWAY BY NOW.

This can only be arrived at by extensive trials and experiments. Therefore it is a problem the solution of which may well be undertaken concurrently by the Carrier Replacement Groups both as training for themselves and the fighter director officers, and in order to formulate doctrine. These trials even though they start on a modest scale, must work up to full scale exercises wherein a very large number of fighters is employed, and wherein a number of attack planes on the order of two or more carrier groups are brought in from various directions, at various altitudes, and in several groups. The duration of the attacks should be varied. Thus there will be simulated a condition such as may be expected to be encountered in a large scale engagement such as that of the Santa Cruz Islands.

THE MOTION PICTURE INDUSTRY MIGHT BE ABLE  
TO DEVELOP A REALISTIC LABORATORY SET-UP WHERE  
SOUND DOCTRINE COULD BE DEVELOPED.

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The ENTERPRISE air group went into action some ten days after departure from Pearl Harbor. It had never before been embarked as a group in a carrier and its carrier experience as a group consisted only of the qualification and refresher exercises conducted over a period of some five days immediately prior to departure. The fast passage to this area did not permit as much training as was desirable. Considering the inexperience of many of the group, their performance was in general very good and in some cases excellent. In courage, zeal, and determination they were outstanding.

THIS IS A CHALLENGE TO ALL EXPERIENCED SENIOR OFFICERS.

However, it is very evident we must never let up in the training of our groups, especially replacement groups. They must be expert in communications and gunnery (including bombing), navigation must be stressed continuously, both for homing (radio silence and breakdown of ZB equipment must be considered) and, more important still, because it is only by good navigation that accurate contact reports can be made, and attack groups led to their objectives. Groups should be thoroughly indoctrinated in night landing procedure.

THIS IS ABSOLUTELY ESSENTIAL IF WE ARE TO STRIKE THE ENEMY WHEREEVER AND WHENEVER OPPORTUNITY OFFERS.

If possible the pilots should be qualified on board, and in any event they should be carefully checked out ashore in night carrier landings by a qualified carrier signal officer. This checking out should include the full procedure required when a group returns to a carrier after nightfall. When night landings became necessary on the evening of October 25, results were disappointing, especially during the short period between dusk and moonrise. As soon as the moon rose sufficiently to clear some low clouds on the horizon, landings improved materially. However, had it not been for landing crashes which tied up the deck for considerable periods, there is no doubt that several planes which landed in the water due to fuel exhaustion, would have gotten on board. Further, such night training should include, in addition to landings and take-offs, thorough exercise with the weapons of the various carrier-based squadrons.

THIS IS ABSOLUTELY ESSENTIAL IF WE ARE TO STRIKE THE ENEMY WHENEVER AND WHEREVER OPPORTUNITY OFFERS.

While night dive bombing may not be generally feasible at the present time, surely night operations for fighting and torpedo planes, employing radar planes for locating the enemy, would be most useful. A fighter strafing attack on a plane laden carrier at night would probably cripple the air group and resulting fires could easily put the carrier out of action.

The limitations in the use of torpedo planes, which have repeatedly been set forth in reports of previous actions, were again amply demonstrated.

THIS QUESTION REQUIRES CAREFUL STUDY AND DISCUSSION CONCERNING PROPER EMPLOYMENT OF THIS TYPE OF PLANE. THE TORPEDO IS A VALUABLE OFFENSIVE WEAPON AND IT CANNOT BE PUSHED ASIDE. ATTACK TECHNIQUE CAN BE DEVELOPED.

Although the attack of the enemy torpedo squadron (probably 18 planes) against the ENTERPRISE was executed with obvious skill and great determination, only about 9 planes reached a proper release point, and no hits were made. The harassing effect on the Japanese pilots of the extremely heavy and accurate fire of the combined task force and the maneuvers of the ship in combing the wakes of the torpedoes launched were the prime factors in nullifying the attack. The results of the attacks of our own torpedo planes, while not nil, were disappointing. It has been proven time and again that the probability of success of a torpedo plane attack in good visibility against a formation properly defended by fighters and anti-aircraft fire is small and out of all proportion to the losses in planes and men. The conclusion is obvious - that in the present state of the art, torpedo plane operations should if practicable be limited to attacks delivered under conditions of low visibility or in mopping up operations after the defensive power of the enemy formation has been reduced. Thus limited, the torpedo plane is not as valuable, plane for plane, in day operations as is the dive bomber. Accordingly it is recommended that for the present, the air groups of our large carriers include not more than 12 torpedo planes. Only when torpedo squadron personnel are fully trained and planes are equipped for all aspects of night operations will torpedo planes reach their full effectiveness. We should not abandon them for carrier use; after all, they

were the decisive factor in the HORNET attack.

Once again the enemy has shown himself superior in locating our forces and in keeping himself informed of our movements. He does this, apparently, without daily carrier plane searches as we know them. Perhaps we over-emphasize our carrier plane searches. On occasions in the past, even though we have had contact reports from shore and tender-based aircraft followed by substantiating reports from the same sources, we have considered it necessary to send out a large carrier-based search. At such crucial times, we sacrifice much of the power of an attack troupe for these searches and for inner air and intermediate air patrols. When under the umbrella of our own shore-based scouts, it might pay greater dividends if we were to send out a powerful attack group immediately behind a search covering only a 20-30° sector whose median passes through a position of the enemy based on reports by shore-based scouts or trackers. It is not intended to imply that our search is useless and should be done away with. It is suggested that, when enemy carriers are reliably reported where we can hit them; we deliver a full strength attack upon them rather than reducing our striking force to search for possible additional carriers or other forces which if found could not be attacked.

WELL COORDINATED AND REPEATED ATTACKS  
ARE NEEDED.

Greater tenacity on the part of our tracking planes must be developed.

THE NAVY IS GETTING B-17's.

The procurement of B-17 type aircraft by the Navy for long range scouting and extended tracking is urgently recommended.

When preparing for an attack mission against enemy carriers, it has been the practice to use .01 second delay fuzes in the noses and tails of 1000-lb. and 500-lb. demolition bombs. The striking velocity of a heavy bomb released in a dive-bombing attack can be expected to be on the order of 600 feet per second. With the .01 second fuze delay, the explosion takes place about six feet below the point of initial impact. The normal expectancy is that a bomb so fuzed striking the flight deck of a Japanese carrier will detonate about six feet below the hangar overhead, an area which is particularly well vented. A fairly large hole in the flight deck will probably result, but this can be

readily bridged. A close miss of a bomb so fuzed will detonate about five feet below the surface of the water, deep enough to smother the fragments but not deep enough for a good mining effect. Thus, with our present policy of fuzing bombs, there is little likelihood of one of our bombs reaching a really vital area in an enemy carrier such as the firerooms, enginerooms, magazines, or gasoline stowages. Our bombs will be temporarily crippling and may start fires which may get out of control, but there is not the proper expectancy that a small number of bomb hits will put down or stop an enemy carrier. Considerable thought has been given to this subject and it is recommended that the bombs of approximately the leading 20 or 30% of the attacking dive bombers be equipped with instantaneous fuzes for maximum effect against AA guns' crews and planes on deck, and that the bombs of the remaining planes be equipped with fuzes having a delay of .08 or .10 seconds in order to reach the vital areas of the ship in case of a direct hit or to obtain better mining effect in the case of a close miss.

THIS QUESTION SHOULD HAVE BEEN SOLVED BY TECHNICAL BUREAUS LONG AGO. THEY SHOULD HAVE THE ANSWER NOW AND RELIEVE THE OPERATING PERSONNEL FROM ADDITIONAL WORRY AND NON-CONFIDENCE IN THEIR TOOLS.

#### GUNNERY.

The information obtained from the search radars was not sufficient to coach the FS radar on. It is strongly recommended that at every opportunity a group be tracked in without IFF and with fighter interception, in other words as realistically as possible, for training of FS radar operators. The FD radar is almost useless for search and cannot pick up the target unless coached on by accurate and prompt information from the search radar. The FD radar cannot pick up the present IFF and that adds greatly to the problem. With friendly VF and enemy attackers at the same ranges, the FD radar cannot distinguish between the two. It is believed that with proper coordination between the search radars and the FD, and with practice, the 5" guns can open fire on planes before they can be seen and long before they can reach their dive points or bomb release points.

It is believed that the 5" guns of screening vessels might best be employed in shooting at enemy planes that have not yet pushed over into their dives. Their problem in this respect is identical to our own. The fire of 5" at diving planes other than a barrage fired by the ship

being attacked is ineffective, but it should be possible to hit them before they start their dives. All supporting ships should direct their 5" fire accordingly.

DOCTRINE IS NECESSARY HERE. IT SHOULD BE PRESCRIBED NOW.

The 5" guns should be equipped with a single man control, either a Mark 51 director or a joy stick similar to that of the 40mm. for use against dive bombers. The 5" gun can hit, but it is most difficult to get the pointer and the trainer on the same plane. This is important and must be done if we are to stop dive bombers before they release their bombs.

Each 5" gun group should be equipped with its own auxiliary power supply if only sufficient to provide rammer power. It is understood that small diesel driven generators, which would be suitable, are available. In every action we have lost power on some of the 5" guns. The loss of power on the rammer slows the rate of fire to about half and will make the gun useless against horizontal bombers as the "dead time" becomes unpredictable. The gun cannot be rammed by hand at high elevation and must be depressed for each shot. This takes time and requires cutting out the firing circuit between shots, making the director almost useless.

#### GENERAL.

The advantages of operating two carriers in close proximity, if the operations are in areas where air attack is to be expected, are numerous. One carrier alone under such conditions, forced to conduct morning and evening searches, combat patrols, inner and possibly intermediate air patrols, has nothing much left with which to strike, and if long continued is likely to suffer considerable weakening of its air strength due to exhaustion of personnel and deterioration of material. If, of course, an "air umbrella" is furnished from other sources, and if it is reliable, then the picture changes. However, at present it is doubtful if such an umbrella exists in this area and certainly a task force commander will be under considerable apprehension as to its reliability. Other advantages include availability of an additional carrier deck to receive planes from a damaged carrier; retention of one carrier's planes as a striking force ready for immediate launching; the institution of a "duty" system whereby in normal cruising each carrier has days for upkeep and training of its group and other essential work. These and others have been discussed before and it is not necessary to go into details here.

When two carriers are operating together, each should have its own screen and supporting vessels, and should be organized as an independent task force or group (this applies to large carriers.) The separation used in the operations now being discussed, about five miles, appeared very satisfactory. The distance permitted each group to maneuver independently while at the same time maintaining good visual contact for signalling, and facilitated patrols. The precise separation when air attack is imminent is a question. The problem is how much separation will prevent sighting of both carriers if one is picked up.

THIS QUESTION HAS YET TO BE SOLVED. IT SHOULD BE GIVEN A HIGH PRIORITY AND A SOUND DECISION POSITIVELY STATED IN THE VERY NEAR FUTURE. SEE DISCUSSION AT THE END OF THIS CHAPTER.

In the areas where we are now operating five miles will not do it, neither will ten. It must be a really wide separation on the order of some 30 to 50 miles, and even this will not guarantee it. Therefore unless conditions permit a separation in advance whereby the above can be achieved, it cannot be effected on short notice when attack is imminent. We must make our choice based on conditions present and likely to be encountered, weighing the advantages of close operation, such as ease of control, and of communications, economy of effort in air patrols and surface protection including that against submarines, against the insurance against discovery resulting from relatively wide separation. Again the air coverage of the area to be expected from sources other than the carriers is a large factor.

We know the PBY's have been captured by the Japanese. On more than one occasion, the actions of PBY's sighted in the vicinity of our formations, and subsequent events which have occurred, have given rise to the possibility that the Japs are using a few PBY's as shadowing planes. It is recommended that a doctrine be adopted wherein fighters approaching for identification of friendly types in visual contact with our formations, be required to insure complete identification by flying close alongside and identifying the flight crews as Americans by visual inspection of their faces. The cooperation of our own shore-based planes would be necessary.

NOTES ON CARRIER MANEUVERS WHILE UNDERGOING AIR ATTACK  
BY COMMANDING OFFICER, U.S.S. ENTERPRISE.

1. The attack on ENTERPRISE on October 26 lasted from about 1115 to 1234, during which time the ENTERPRISE was attacked by some 80 planes, the larger part of which were dive bombers but approximately 15 to 20 were torpedo planes. No horizontal bombing attack was observed. By reason of the size and duration of the air attack unusual opportunity was afforded for drawing conclusions as to the effectiveness of various ship maneuvers. Plans for maneuvers to counter various forms of air attacks had received careful study in advance, and the views of numerous officers on this ship and elsewhere had been obtained. A brief description of methods employed and an enumeration of conclusions reached follow.

2. The ENTERPRISE was the center of a ring of ships, 2,000 yards radius, which included the vessels of Task Force 16, that is the SOUTH DAKOTA, PORTLAND, SAN JUAN and 7 destroyers (destroyers slightly inside cruisers.) The ENTERPRISE maneuvered at high speed (27 knots) using full rudder angles, and the screening vessels followed her motions without signal. This they did in the most skillful manner. The ship was conned from the bridge wings where an unobstructed overhead view could be obtained, and steered from the bridge steering station.

3. Dive Bombing Attacks.

(a) If the direction of approach permitted, and if accurate advance information was at hand, which it seldom was, initial turns were made toward dive bombers approaching down wind to steepen dives, away from those approaching up wind to flatten dives, and right turns were favored when possible. In any event a turn in some direction was started and the turn was continued on around, and was not stopped until the particular attack was completed, unless other factors forced a change. Factors which did force changes in direction were:

(1) Avoidance of other ships in the screen. At one time or another each heavy ship of the screen lost steering control and on at least one occasion two ships (SOUTH DAKOTA and PORTLAND) lost steering control at the same time. The SMITH was steaming in the screen with flames from a crashed enemy plane on her forecastle rising to her yardarm, and it was feared she was out of control also. At least one

turn was made to avoid her.

(2) Submarines in the area. Constant reports of submarine sightings and contacts complicated the situation and forced changes. Obviously all submarine reports were not true, but the torpedoing of the PORTER and the PORTLAND's report of torpedo hits was taken as evidence of their presence, and it was not possible at the time to analyze these reports for accuracy. Immediate action had to be taken.

(3) Scattered clouds were present but visibility was excellent, and there was no cover for the carrier in the area except a few small local showers. As opportunity offered the ship was headed so as to pass through these. Due to their small size, and the brief time the carrier was in them, very limited advantage could be obtained therefrom. In fact from a gunnery standpoint unless the cover is extensive, it is of very doubtful value.

(b) It was planned to commence maneuvers when the position angle of the planes was such as to indicate that they were committed to their attack and while time remained for the ship to effect a radical change of course before the bomb struck. In the case of dive bombers a position angle of about 30 - 35° was taken as a good mean at which to commence maneuvers. However, in point of fact in almost no case were planes sighted during approach sufficiently far in advance to permit any careful checking of position angles, and in almost every case turns were started as soon as the planes were actually sighted from the ship. The continuation of the turn is believed to have been particularly effective, and to have taken care of cases where the attack was drawn out and where, had our course been steadied or reversed, late planes would have had excellent opportunity to catch the ship in a favorable position. Further, and this is important, all attacking planes were by no means sighted in advance, and the determination of the end of one attack and the beginning of another could not be made with confidence.

#### 4. Torpedo Plane Attacks.

Maneuvers to counter torpedo plane attacks were aimed at heading toward those attacks forward of the beam, unless they were so far out as to afford opportunity to turn away, and at turning away from attacks from abaft the beam. This served the dual purpose of combing the torpedo tracks, and in cases where turn away was practicable, of forcing the

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attacking plane to accept a stern drop on a high speed target, or else to maneuver for a position a long time under heavy gunfire. The turn away afforded the maximum opportunity to the anti-aircraft guns, and would have done the same for defending fighters had they been in action. Simultaneous attacks from several angles could have partially defeated these maneuvers, but fortunately such attacks were not made. The maneuvers against torpedo planes, and against the actual torpedoes, were very successful. About seven torpedo wakes were combed, and in the case of one attack on the starboard bow, into which the ship turned, three torpedoes almost abreast, passed close aboard to starboard, all of which would probably have been hits had the ship not turned. Altogether about nine torpedoes were sighted close aboard. In the case of one group which came up from astern, the ship was turned so as to keep the stern continuously toward them as they came around attempting to reach a launching position on the bow. Practically all of this group were either shot down or forced to drop at a position or altitude such that no hits were obtained. Ship maneuvers may be executed more exactly against torpedo planes, than against any other type of planes.

#### 5. Coordination of Ship Control and Fire Control.

The most effective defense for a ship against air attack once the attack has passed the screening fighters, lies in its own anti-aircraft fire. The ship's maneuvers must be planned with the idea of aiding the gunfire, while at the same time presenting a difficult target. For example, against dive bombing attacks right turns, which on this vessel increase the volume of fire, and reduce somewhat the danger area due to the consequent tilt of the island structure, are preferable other things being equal. The most effective way of forcing torpedo planes to expose themselves to gunfire for a maximum time, or else to fire from a disadvantageous position, lies in turning away from these attacks where possible. The team work between the ship control and ship's battery must be close and continuous. Results of this attack prove that a well trained and powerful anti-aircraft battery can do an amazing amount of execution, provided only it is given a chance. Except for a group of torpedo planes there were few interceptions of hostile planes prior to their attacks on the ships.

#### 6. Conclusions drawn may be summarized as follows:

(a) Turn toward dive bombers approaching down wind, and away from those approaching up wind.

(b) The exact position of the attacking planes relative to wind may not be known. In any event start a turn.

(c) Use very high speed and extreme rudder angles. To use an aviation expression make "flipper turns."

(d) Against dive bombers, having commenced a turn, continue it on around until the attack is completed. Unquestionably a vessel turning at high speed in a circle confuses bombers.

(e) Turn toward torpedo planes close aboard approaching from a position forward of the beam, and away from those approaching from abaft the beam. Turn away from all torpedo planes, if sighted at sufficient distance to permit this to be done.

(f) In this as in prior actions it was demonstrated that the ship must be conned from a position in the open where an overhead view can be obtained, and steered from the bridge station. The steersman must be at hand where the captain's orders can be received instantaneously, and their immediate execution checked.

(g) A well spaced screen, trained to maneuver with its carrier, is of tremendous help in defense.

(h) Needless to say, protective fighters constitute the primary and the best defense against air attacks. But provided a carrier has a strong and efficient anti-aircraft battery, and this is supported and assisted by intelligent maneuvering of the ship, and by a strong, well positioned screen, regardless of air support, the carrier has a real chance against even the strongest air attacks.

POSSIBLE EMPLOYMENT DOCTRINE  
FOR  
CARRIER TASK FORCES.

The present war has demonstrated that victories cannot be won unless command of the air has been achieved. This applies at sea as well as on land. Command of the air is the decisive factor in Naval engagements and consequently Carrier Task Forces must be employed to that end. However, we must not lose sight of the value of submarines, destroyers, cruisers and battleships as well as shore-based aircraft, all operating in support of Carrier Task Forces. These operations must be closely coordinated by a supreme tactical commander ashore who exercises reasonably close tactical command in the combat area. Communications are of utmost importance and must be one hundred percent efficient.

Set forth below are certain fundamental principles based on the many lessons and new ideas gained from war experience.

A. Proper Employment.

— (1) Carriers must not be advanced into combat areas without a specific objective toward which they thrust at high speed, deliver their attack, and retire as swiftly and directly as possible.

— (2) Carriers should operate on the offensive rather than the defensive.

(3) Carriers must operate at high speed.

— (4) Carriers must not remain during a given day or period in the same general area or vicinity.

B. Joint Operations.

(1) The ideal carrier task force comprises two carriers tactically concentrated until an attack becomes imminent and tactically re-concentrated immediately the attack has withdrawn. When air attack becomes imminent, carriers with their designated heavy units, and destroyers, should separate as soon as possible to at least 25-30 miles and operate independently of each other.

(2) Carrier task forces should not operate in close proximity to each other under a single OTC. They should be separated by at least 50-100 miles and the coordination of their operations should be effected from a tactical command ashore. Joint support causes joint exposure when separation is small.

(3) Coordination of the operations of Carrier Task Forces and between Carrier Task Forces and other forces (shore-based air, surface and submarines) in the combat zone must be centered in a supreme tactical command ashore.

C. Shore-based Reconnaissance and Shadowing Planes.

(1) Carrier based planes should be reserved for local combat air patrols, limited search and striking forces.

(2) Long range high performance shore-based land planes should be used for searching, shadowing, long range air cover and long range strikes.

(3) Shore-based aircraft should be manned by the Navy and controlled by the Naval supreme tactical commander ashore.

D. Evasive Action.

(1) Carrier Task Forces should take evasive action:

(a) When sighted by enemy scouts, patrol planes and/or submarines.

(b) When within possible range of enemy shore or carrier-based aircraft.

(c) When suspicious aircraft are picked up by radar.

(d) When enemy patrol plane is shot down if force has been sighted by enemy patrol plane.

(e) When air attack is impending (turn away at high speed.)

(2) The tactical situation and the mission of the Carrier Task Force must determine whether or not evasive action can be taken and to what degree.

E. Fighter Direction.

(1) The Carrier Task Force Commander who is also OTC and Commander Air, should exercise direct control of combat air patrol and carrier air groups including fighter direction when carriers are operating together within convenient visual touch.

(2) When carriers separate beyond convenient visual touch, each carrier should conduct its own fighter direction keeping each other informed. Separate frequencies should be assigned each carrier for its fighter direction.

F. Screen.

(1) Carrier Task Force screen should consist of 10-12 destroyers and 3 CA per carrier or 10-12 destroyers and 1 BB(new), 2 CL/AA or combination of each.

(2) Screening ships must be permanently assigned each carrier in a Carrier Task Force and suitably stationed in relation to the carrier.

(3) Destroyers should be stationed on the 15 or 2,500 yard circle for anti-aircraft defense.

(4) CA, BB and CL/AA should be stationed on the 2,500 yard circle.

(5) Heavy ships should be stationed on the side of the carrier from which air attack is expected.

G. Point Option.

Point Option method of navigation is nothing more or less than the best guess which can be made as to the carrier's movements during any given period. In war time it frequently turns out to be a bad guess.

Under war conditions the best possible navigating equipment, homing equipment and personal skill in pilots is obviously the only means of meeting the situation.

H. Advance Bases.

Advance bases for land-based aircraft within shortest possible distance of objective, must be established prior

to an overseas landing operation. Land-based and operating units must be in supporting distance and Carrier Task Forces retired as soon as possible.

I. Replacement Air Groups.

There should be advance bases for carrier replacement air groups and planes established within a reasonable distance of the area in which carriers are expected to operate. Replacement air groups must be ready for combat, fully trained and prepared to relieve carrier air groups which have been in action and suffered heavy losses.

## CHAPTER XXII

### OCCUPATION OF FUNAFUTI ISLAND

OCTOBER 2, 1942.

Task Force 62.6 occupied Funafuti Atoll in the Ellice Island group on October 2, 1942 in order to deny the Ellice Islands to the enemy and to prepare the position as an air base. Funafuti Atoll was not in enemy hands, but is 730 miles from Ocean Island, 890 miles from Nauru Island and 625 miles from Abe Ama Island, which islands are occupied by the Japanese.

Task Force 62.6 consisted of: MINNEAPOLIS, CHESTER, CRESCENT CITY, HEYWOOD, LIBRA and 6 destroyers.

This operation was carried out successfully as planned with no enemy opposition encountered and it emphasized the value of completeness of planning and preparation, including preliminary reconnaissance and thorough indoctrination of all commanders involved which contributes to the efficient execution of an operation.

The following pertinent comments on this operation are made to the end that they might be of some value in planning for or executing a similar mission in the future.

#### PLANNING.

The McFARLAND made a survey of these islands during 1941, the results of which assisted the units in this operation. Representatives of the Transport Unit and the Landing Unit reconnoitered and made a reconnaissance of Funafuti immediately prior to this operation. The information obtained was of inestimable value and assistance.

#### COMMAND.

The Task Force Commander (Commander Occupation Force) passed direct command of the Landing Unit and Transport Unit to the Commander Transport Unit when these units entered the lagoon. This was necessitated by the fact that Commander Occupation Force would be at such a distance from the vessels engaged in the landing operation that he would be unable to exercise command expeditiously due to communication difficulties particularly in regards to anchoring, debarkation, unloading, discontinuance of

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unloading and departure.

DEFENSE.

Only three destroyers were sent into the lagoon. These patrolled throughout the day, and anchored at night near the transports. The cruisers and the remaining three destroyers remained outside the lagoon and operated in the general vicinity of Funafuti Atoll to provide protection against surface or air attack. This group closed Funafuti at intervals for the purpose of communicating with the ships inside. The Operation Order stated:

"(a) Cruisers and two accompanying destroyers will remain outside the lagoon, unless the depth of water observed by the first entering group indicates that cruisers can leave the lagoon at any stage of the tide, to meet approaching enemy surface vessels.

(b) If approach of enemy surface vessels be detected in sufficient time, two of the destroyers from within the lagoon will be directed to join cruisers.

(c) Cruisers and destroyers outside the lagoon will cruise in such locations that their AA fire can assist in meeting an air attack on transports during daylight.

(d) Cruisers will be within visual signalling distance of transports at about 0600, 0800, 1200, 1600 and 1800. Because of coconut trees it may be necessary to relay visual signals through destroyers which are within the lagoon.

(e) Communications from you to me may also be transmitted via BALLARD and planes. Patrol planes based on BALLARD can transmit to me by visual; or cruiser planes, similarly based, can make message drops."

Commander Destroyer Squadron TWELVE maintained protective anti-submarine and anti-aircraft screen with three destroyers within the lagoon. Destroyers patrolled during the daytime and anchored close to transports during the night. Anchoring at night was necessary because of the many coral heads within the lagoon which made safe navigation during darkness improbable.

Despite the excellent service of the BALLARD, much difficulty was experienced in obtaining a satisfactory inner air patrol for vessels outside the lagoon. When operational failures occurred, such as a flat calm during

which planes could not take off, or through the inability to start an engine, lack of adequate communications again prevented a complete understanding of the problem by both parties.

#### COMMUNICATIONS.

Strict radio silence was maintained throughout the operation. The Communication Plan prescribed:

"Except for enemy contacts or other grave emergency, maintain strict radio silence throughout this operation including approach, landing, and retirement. This applies to ships (including TBS circuit), landing boats, beach party and landing force. Officer in Tactical Command may authorize limited use of TBS for battle exercises, when distant from probable enemy locations.

Commander Transport Unit establish a visual signal station on shore immediately upon arrival, for ship-shore communication."

It was found to be extraordinarily difficult to avoid keeping the cruisers in one particular spot while still maintaining such positions that anti-aircraft protection could be provided and that communication by visual means was possible. Although both cruisers had rigged signal searchlights in their tops, attempts to signal to the CRESCENT CITY over the intervening cocoanut trees were unsuccessful. It is believed that this was due to the light sky background which prevented the 12" signal searchlights being seen at the distances involved.

It should have been possible to communicate by means of the 24" lights, since a man in an elevated position on each ship could see this searchlight on the other ship. Attempts to communicate by this means were unsuccessful because necessary provisions had not been made in advance. It is believed that this is a possible means of communication under such circumstances, provided it has been thoroughly studied and prepared for in advance. Quick and accurate communication between the aloft observer on each ship and the 24" searchlight on that ship would be essential. Coordination between these stations would be equally necessary.

Communication was accomplished only with extreme difficulty. Absolute radio silence was maintained. The presence of high trees intervening between the transports and vessels outside the lagoon made communication by

flashing light very slow and unsatisfactory. It was impossible for the Commander Transports Unit to keep the Task Group Commander adequately advised of the progress being made by vessels within the lagoon.

#### NAVIGATION.

The McFARLAND stated in her report as a result of her survey in 1941 as follows and was found of great value:

"The navigation of the McFARLAND and her boats in the subject place emphasized several points:

(a) The value of conning the ship from as high a place as practicable.

(b) The value of entering or leaving when the sun was high. Coral patches stand out much better with the sun high.

(c) The enormous benefit conferred by use of polarized dark glasses for officers conning ships and for boat coxswains. These glasses give pretty much the same effect as height and are a prime necessity when operating from poorly charted atolls."

The soundings taken by the McFARLAND were of much less value than would at first appear, because the McFARLAND's report contained no information as to the stage of the tide at which the individual soundings were taken. The soundings which were obtained by the transports upon departure from the lagoon, at a time approximately two hours before low water, indicate that less than four fathoms of water in Te Ava Mateika may be encountered.

Comment by vessels which entered the lagoon was unanimously to the effect that the cruiser planes were of value in confirming charted information and in pointing out uncharted shoals. In one case when a cruiser plane noted a destroyer heading directly for a shoal, and when there was insufficient time to drop a smoke bomb on the spot, the plane pilot showed commendable presence of mind and pointed out the danger by a burst of fire from his machine gun. Instructions for future operations might well include provisions for this being done.

The Operation Order prescribed:

"Display at port yardarm numeral flag indicating present depth of water, in fathoms, to the nearest one-

half fathom.

Cruiser planes, furnished by MINNEAPOLIS, drop marker signals on coral heads which are near "Track Recommended," as heavy ships approach those dangers.

Each ship keep exact record of track made good, together with corresponding sounds. Upon completion of operation submit track charts to Commander Occupation Group."

GENERAL.

A submarine was sighted by LANSLOWNE as the MINNEAPOLIS group passed through Selwyn Strait about 1145, September 28. The LANSLOWNE dropped two depth charges as an embarrassing barrage and remained in the vicinity of the contact for a half hour. No further contact was made. A plane was launched by the MINNEAPOLIS to report the sighting to Commander Aircraft South Pacific Force. On the return trip, at about 1400, the plane sighted a submarine, probably the same, about 12 miles west of the Strait. The submarine submerged before it could be attacked.

TOO MANY OPPORTUNITIES TO ATTACK ENEMY SUBMARINES VIGOROUSLY ARE BEING LOST. UNLESS A POSITIVE, CONTINUOUS AND EFFECTIVE OFFENSIVE IS CARRIED OUT AGAINST ENEMY SUBMARINES, THEY WILL CONTINUE TO ENJOY UNRESTRICTED SUCCESS.

CHAPTER XXIII

TORPEDOING OF U.S.S. CHESTER

OCTOBER 20, 1942.

Task Group 64.2 was cruising east of the Solomon Islands on base course 137° T., speed 19 knots, zigzag Plan #8, on October 20, 1942, when the U.S.S. CHESTER was torpedoed at 2120 (-11.)

ZIGZAG PLAN #8 SHOULD BE USED WITH CAUTION. IT IS NOT PARTICULARLY RADICAL. NO ZIGZAG PLAN SHOULD BE USED REPEATEDLY AND CONTINUOUSLY. PLAN #8 APPEARS TO BE THE ONLY PLAN FOLLOWED IN THIS AREA AND IT IS ONLY REASONABLE TO ASSUME THAT THE ENEMY KNOWS THIS PLAN AND ATTACKS ACCORDINGLY.

Ships in company were: SAN FRANCISCO (Guide), HELENA, CHESTER, BUCHANAN, LAFFEY, WALKE and McCALLA.

Formation as shown in accompanying sketch. Task Group was on course 122° T., when CHESTER was hit. The weather was calm, 4 miles visibility and bright moon light.

The approach of the torpedo was not seen but the line of the wake was 140° Rel. A second torpedo passed about 20 yards ahead of the ship from the same direction and broached 700 yards on the port bow.

A careful consideration of the feature of the torpedo hit led to the belief that it was a "luck" shot. The ship was zigzagging at high speed and had not been long on its course. The angle of approach of the torpedo was abaft the beam.

IT IS DOUBTFUL IF THIS HIT WAS ANY MORE A "LUCK" SHOT THAN ANY OTHER. THE SCREEN WAS STATIONED ON 3,000 YARD CIRCLE WHEREAS 5,000 - 6,000 YARD CIRCLE MIGHT HAVE BEEN BETTER. ZIGZAG PLAN #8 IS NOT PARTICULARLY RADICAL.

It should be noted however, that it was moon light and that after the torpedo hit, its wake was clearly visible. This emphasizes the necessity of having adequate lookouts posted, alert and properly stationed at all times particularly during moon light nights and on bearings not covered by destroyer anti-submarine screen.

The torpedo that struck the CHESTER was probably fired at a range of over 6,000 yards since a second torpedo broached about 700 yards away. In other attacks by Japanese submarine the torpedo run has been observed to be about 7,000 yards, speed about 30 knots.

The distance between destroyers, as shown on the sketch of approximate positions, was about 3,000 yards as a maximum, with the destroyers about the same distance from the leading cruiser. For average sound conditions this disposition was satisfactory, though it might have been desirable for the destroyers to be on the 4,000 yard circle.

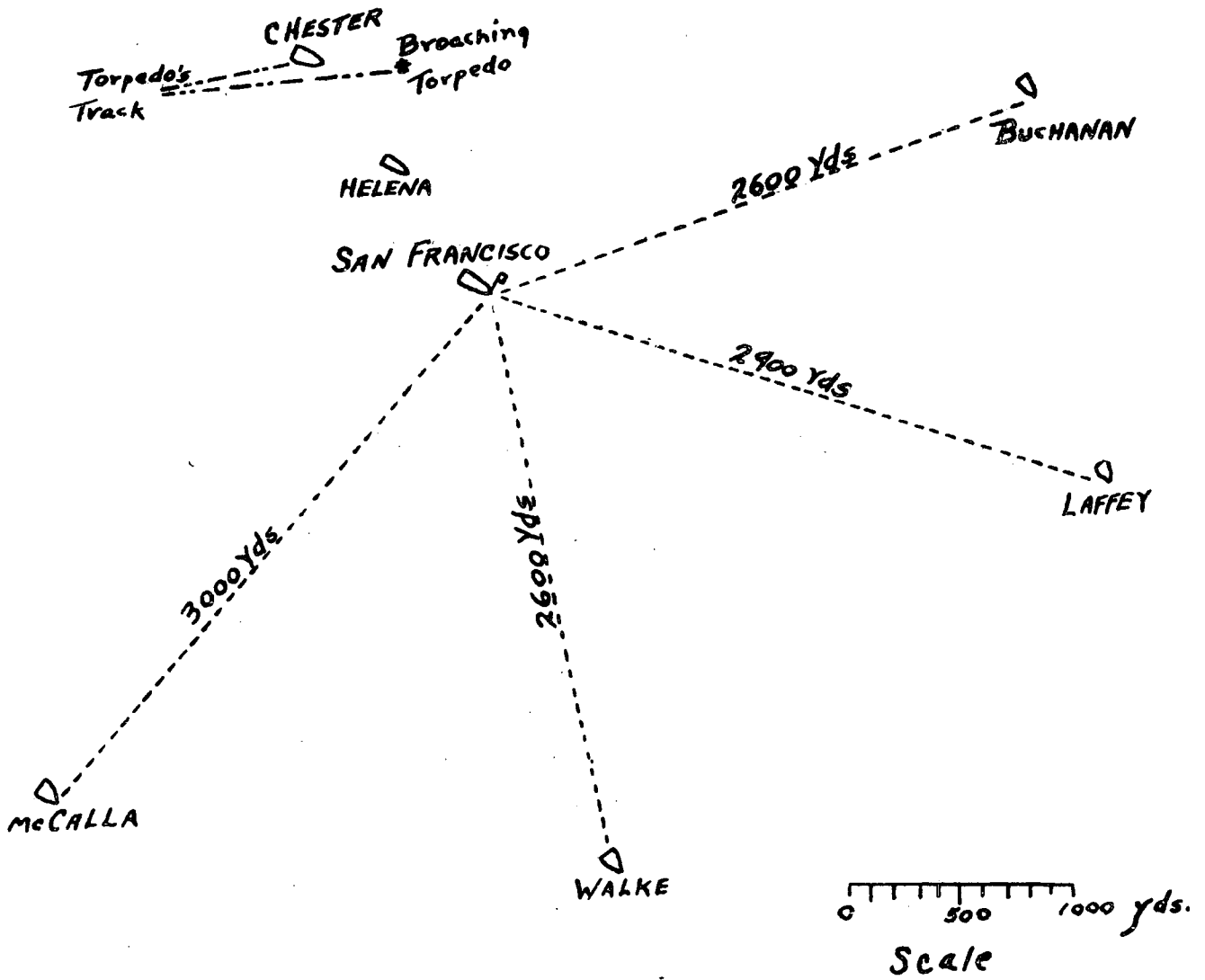
AN ANTI-SUBMARINE SCREEN WOULD BE BETTER STATIONED ON 5,000 - 6,000 YARD CIRCLE RATHER THAN THE 3,000 YARD CIRCLE.

The hit appears to have been the result of a combination of careful approach, good torpedo control, and good luck.

The commanding officer of the CHESTER remarked that:

"A careful consideration of the features of the torpedo hit leads me to believe that it was a "luck" shot. The ship was zigzagging at high speed and had not been long on its course. The angle of approach of the torpedo was abaft the beam. If such is not the case then Japanese submarine torpedo fire technic has wonderfully improved and we should investigate all the existing protective measures, with the idea of improvement."

The attacking submarine apparently had an ideal position just outside the effective anti-submarine screen and probably in the wake of a screening destroyer with no ship in a position to counter attack. This attack emphasizes the necessity for more screening vessels, stationed at a greater interval and making wide patrols. Adequate, sufficient and alert lookouts suitably stationed, is mandatory.



## CHAPTER XXIV

### RAID ON JAPANESE PATROL LINE

OCTOBER 22, 1942.

Commander Destroyer Division NINE (LAMSON and MAHAN) en route from Pearl Harbor to the southwest as escort for Task Force 16 was ordered to destroy the Japanese patrol line of four ships in the approximate positions  $03^{\circ} 20' S.$ ,  $04^{\circ} 40' S.$ , and  $05^{\circ} 20' S.$ , all on longitude  $175^{\circ} 00' E.$ , and to pick up prisoners if possible.

The MAHAN sank the northernmost patrol boat, a wooden schooner, with gas propulsion, of 75 - 100 tons. By combined action they sank the second patrol boat, a 9,000 ton armed naval auxiliary of the NOJIMA type, armed with four 4" guns; one forward, one aft and two amidships, to port and starboard.

About ten to fifteen members of the armed auxiliary's crew were seen to escape in small boats. No prisoners were taken.

The ships were attacked by four KAWANISHI 4-engine flying boats, but only one plane dropped its bombs which landed about 2,500 yards off the starboard beam of the LAMSON.

The raid was well planned and executed according to plan. The Task Unit passed 70 miles south of Baker Island and arrived at the 175th east meridian shortly after 0100/Z October 22 in Lat.  $03^{\circ} 20' S.$  During passage from south of Baker Island to the action area, radar (SC-1) was used constantly. At regular intervals disturbances similar to static on the TBS receivers were observed and these increased in intensity as the task unit approached the Gilbert Group.

IT APPEARS THAT THE TASK UNIT WAS TRACKED BY HIGH FREQUENCY RDF USING EMISSIONS FROM THE SC-1 RADAR TO OBTAIN BEARINGS.

At 1000 scouting line was formed course  $270^{\circ} T.$ , speed 22 knots, scouting distance 8,000 yards.

THIS APPEARS TO BE A VERY GOOD FORMATION FOR THIS TYPE OF WORK.

At 1302 two tall masts of a patrol schooner were sighted bearing 240° T., distant 17 miles and task unit proceeded to close the enemy. The MAHAN opened fire at 1325 and obtained a direct hit at 1328 causing the enemy ship to blow up and sink. This ship was identified as a patrol schooner about 100 tons similar to an inter-island schooner employed in carrying gasoline for refueling large seaplanes which apparently were in the area.

The task unit continued its sweep in this area at high speed on various courses. An enemy 4-engine bomber was sighted shadowing the task unit. Several unsuccessful attacks were made by this plane.

At 1355 an enemy auxiliary vessel was sighted bearing 105° T., distant 19 miles. The task unit closed at once and identified the ship as the MOJIMA, 7,189 tons. The enemy was on a northerly course, within patrol area, speed 16 - 18 knots, two guns visible, one forward, one aft, both on gun mount platforms, rangefinder above bridge, a large white number 92 painted amidships on each side of black hull. Upon approach enemy changed course to 340° and appeared to be running at full speed toward the Gilberts. Task unit closed and engaged the enemy. MAHAN maneuvered to take station on port side, LAMSON to starboard. As enemy withdrew the situation developed into a stern chase.

At 1424 LAMSON fired three salvos (ranging ladder) at 14,500 yards. Fire was opened at this range to feel out the enemy as it was impossible by visual means to determine the calibre of his battery but believed to be 4". LAMSON checked fire. Salvos fell to right but on in range. At this point enemy maneuvered radically by changes of course, hoisted the Japanese ensign, and at 1427 commenced firing with a three gun broadside thereby revealing the fact that he had guns amidships. Salvo fell about 1,000 yards short. In the meantime MAHAN had opened fire and LAMSON had resumed fire remaining just outside of range. LAMSON's second salvo hit just abaft the bridge starting a fire. The hitting range now established, LAMSON went to rapid salvo fire. The next four salvos hit the forward gun putting it out of action and also the well deck aft where a heavy oil fire was started. From later observation the auxiliary carried fuel oil drums on the well deck. The cross-fire of the LAMSON and MAHAN was most effective.

At 1440 the enemy was badly damaged and on fire. LAMSON and MAHAN taking full advantage of this, closed rapidly "for the kill." Enemy fire slowed down but occasionally he fired from his guns amidships.

At 1450 the enemy ceased fire, the range being 3,000 - 4,000 yards. He was on fire forward and aft and gradually sinking by the bow, but still continued to steam ahead at about five knots.

At 1455 the enemy sank in Lat. 03° 30' S., Long. 175° 15' E.

The Task Unit Commander made the following comments:

The Naval auxiliary maneuvered by radical course changes attempting at all times to keep his stern in the direction of the most devastating fire. His salvo fire was good at first but soon became ragged as he was being hit. His extreme range appeared to be about 13,500 yards. His deflection was excellent. It appeared to me that he was using smoke to cover his retreat when we approached from the stern.

At all times during the raid, I kept the two ships separated by 8,000 yards, close enough for support in case of attack, but giving the commanding officers room enough to fight their ships without thought of position in formation. When the signal was given to engage, the LAMSON and MAHAN separated, the MAHAN going to the port quarter of the enemy and LAMSON the starboard quarter. By prearrangement and having fought a simulated "Graf Spee" engagement, the commanding officers conducted their attacks similar to the British cruisers on the "Graf Spee." Not knowing the calibre of the enemy's guns the LAMSON closed to 14,700 yards and opened fire with a ranging ladder of three salvos. As these landed, the enemy changed course and after spot the LAMSON resumed fire hitting on the second salvo and continued to hit setting him on fire. The MAHAN having crossed to the port side had commenced firing and was closing the range. The enemy commenced firing with three guns on the LAMSON, his salvos were short. He maneuvered to put his stern to the LAMSON's damaging fire which put him broadside to the MAHAN. The MAHAN was then under fire from the enemy's broadside.

THIS INDICATES THOUGHT AND STUDY BY THE  
TASK UNIT COMMANDER TO THE END THAT GOOD  
ADVANTAGE WAS TAKEN OF PREVIOUS ACTIONS.

The MAHAN returned fire, while LAMSON raked him fore and aft. The two ships continued to close the enemy with these tactics until he was silenced when they closed rapidly to finish him which was done expeditiously. During this period of closing the enemy's fire was very erratic and the MAHAN was straddled three times but without damage or casualties.

## CHAPTER XXV

## U.S.S. TREVER AND ZANE ENGAGEMENT

OCTOBER 25, 1942.

At 0530, October 25, 1942, TREVER and ZANE towing two motor torpedo boats each, and carrying torpedoes, ammunition, stores and aviation gasoline, entered Tulagi Harbor. TREVER moored alongside the station wharf and proceeded to unload, completing operations at 0700.

At 0809 the general air raid alarm was sounded and at 0815 TREVER cast off from the dock and stood out into Tulagi Harbor where she lay to awaiting further orders relative to embarking a company of marines for operations on Guadalcanal Island. ZANE got underway at the same time and lay to about 700 yards ahead of TREVER in the shelter of Tulagi, Kokotambu, and Songoangona Islands.

At 0955 the signal station at Tulagi informed the ships that three enemy ships had been sighted in the straits meaning between Savo and Florida Islands, and recommended that the ships seek shelter up the Maliala River. At approximately 1000 ZANE reported she saw the tops of three ships to the westward.

The commanding officer TREVER, in command of the task unit, stated that he had no wish to be trapped like rats and ordered ZANE and TREVER to proceed out of the harbor and retire to the eastward.

He informed the Tulagi signal station that he was standing out and to inform him when to return to carry out the scheduled operation with the marine unit.

ZANE and TREVER stood out at maximum speed on a southerly course and cleared the channel out of Tulagi at 1014. At this time the stacks and tops of three enemy ships were sighted 21,000 yards distant bearing 250° T., on a slightly converging course. At 1018 they appeared to change course to 070° T., and headed towards the ZANE and TREVER on a collision course.

The range at this time had closed to approximately 18,000 yards. This unit's course at this time was approximately 168° T. At 1020, enemy formation changed to 110° T., apparently to further close the range and to bring

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port batteries to bear. At this time ZANE and TREVER were skirting the shoal waters endeavoring to reach the Sealark Channel.

At 1030 enemy opened fire at a range of approximately 9,200 yards and TREVER and ZANE immediately replied, TREVER opening fire with guns #1, #3 and #4. TREVER zigzagged and at this time maneuvered to port of ZANE. Enemy fire was landing in small patterns of three splashes, and was rather accurate. ZANE observed one salvo of three splashes which seemed to land in the water one just forward of the ZANE's bow and the other two just aft of this point, seemingly one on each side of her bows. At 1034 gun #4 was reported out of commission due to the locking screw holding the breech block operating spring case into the housing collar shearing, and allowing the spring case to come forward and disengage from the housing. This gun was being operated in the semi-automatic condition, and in the heat of battle this casualty was not at first observed. Four or five additional shots were fired before the rod connecting chain chewed itself off up on the edge of the housing collar and put the breech mechanism out of commission. At 1035 the range had closed to about 8,500 yards. As gun #1 could not bear, gun #3 continued to fire at what proved to be a rate of one shot every four seconds.

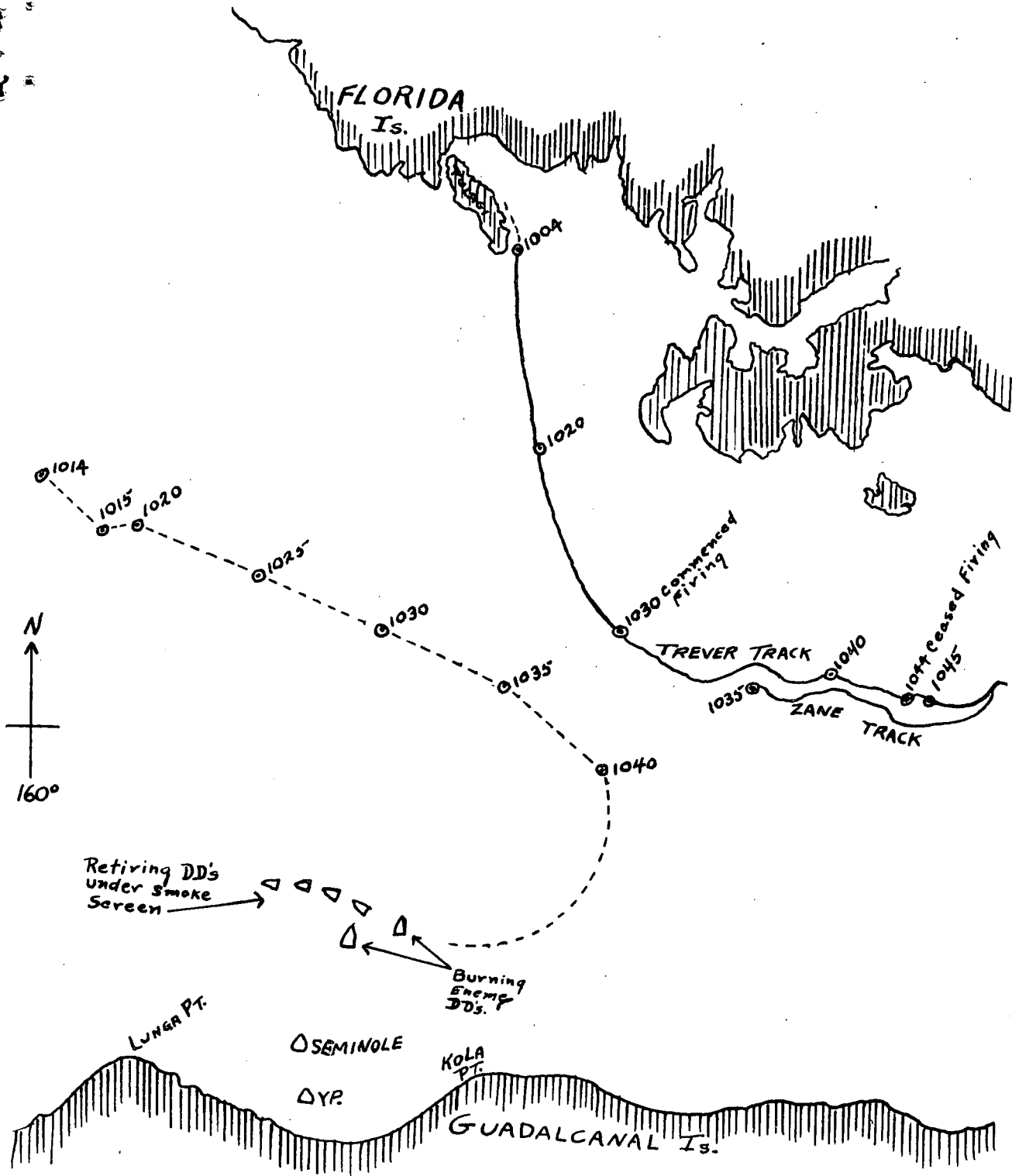
At 1040 enemy ceased fire and turned south to engage SEMINOLE and were shortly attacked by our aircraft. At this time at least four columns of black smoke were noted rising which indicated that at least two of the enemy destroyers had been hit by the aircraft. It is believed that two of the columns of smoke were from the SEMINOLE and a small YP which were in the Lunga Area. This unit continued to retire to the eastward as there were reports of further enemy heavy units in the area. At 1049 TREVER ceased firing, the enemy being well out of range.

A verification by one of the aviators who made the attack stated that one of the enemy was afire before their attack.

At 1055, having cleared the channel, course was changed to 118° T. Retirement was made to the south and west of San Cristobal Island.

Identification by silhouette, salvo size, and shell fragments recovered by ZANE indicate that at least the first two ships were of either the HATSU HARU or the HIBIKI class. The third ship may have been an older type.

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CHAPTER XXVI

TORPEDOING OF U.S.S. PORTER

OCTOBER 25, 1942.

On October 25, 1942, the U.S.S. PORTER was operating with Task Force 16 when she was hit by a torpedo and was subsequently sunk.

The PORTER was on station on the port quarter of the ENTERPRISE, distance 1,800 yards, (See Sketch). Task Force 16 was on base course  $115^{\circ}$  T., speed 27 knots, engaged in recovering aircraft.

At 1102 a TBF plane landed on the water about 1,200 yards ahead of the PORTER, (See Sketch).

The PORTER maneuvered to rescue personnel, and hove to about 100 yards short of the desired spot. While in the process of picking up personnel, intending to use swimmers to assist them to gain the ship's side and climb aboard over life nets, a torpedo was sighted close aboard on the port bow (track angle  $260^{\circ}$ , distance about 60 yards).

Full speed ahead, right rudder and "Tare Emergency" were ordered immediately. The torpedo was observed to cross PORTER's bow. The Task Force turned to starboard. Shortly thereafter the PORTER observed a second torpedo close aboard (200 yards) making a straight run for PORTER at 30 knots, track angle  $100^{\circ}$ . Flank speed was ordered but little or no headway had been gained. The torpedo hit the PORTER on the port side. Shortly thereafter the SHAW was directed to remove personnel from PORTER and sink her.

Weather was clear, wind from  $110^{\circ}$  T., force 12 knots. Barometer 29.83, Temperature  $89^{\circ}$  F., Sea was calm.

The Destroyer Squadron Commander commented as follows:

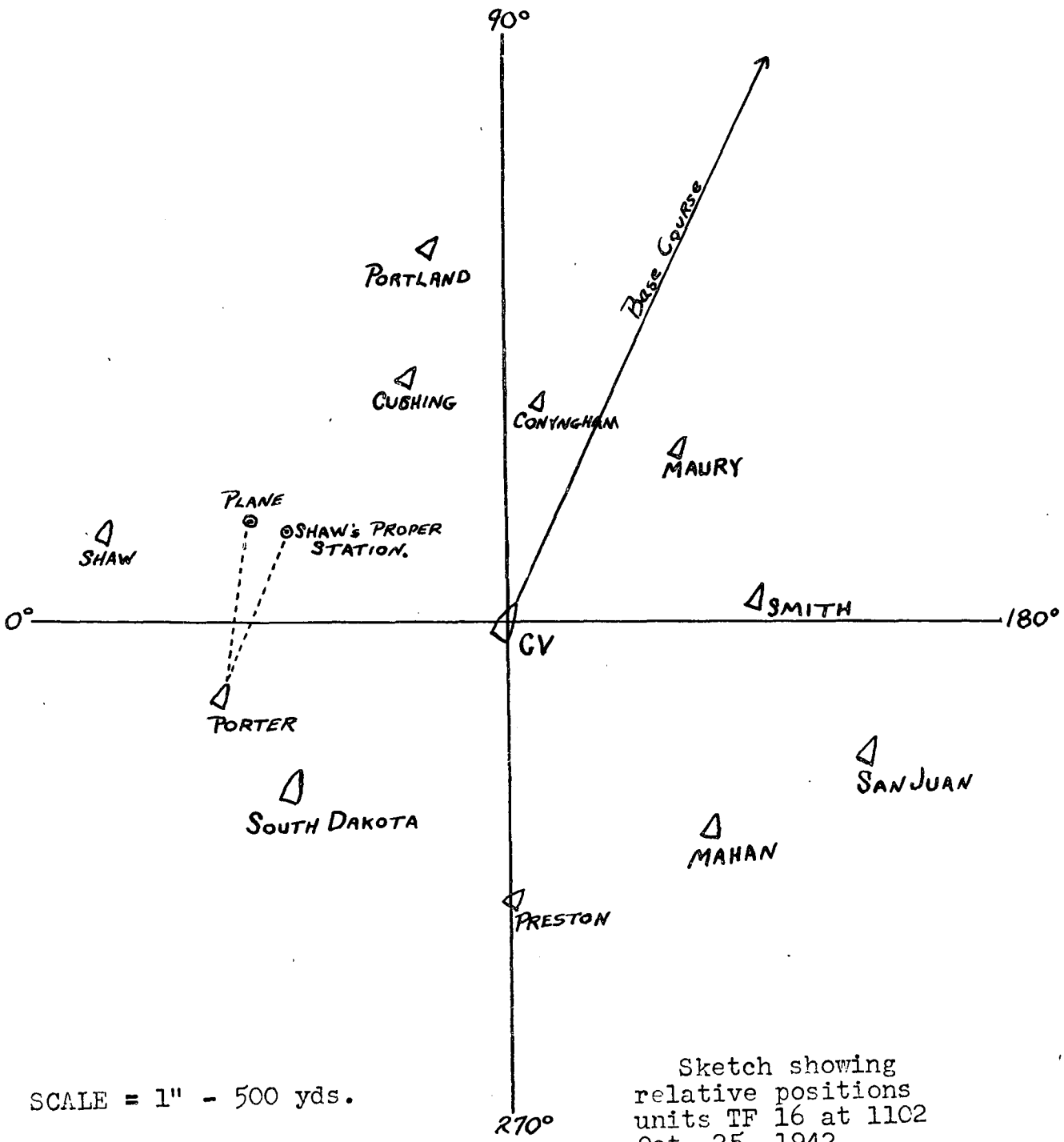
In my opinion a submarine had been lurking in a position only about 1,000 yards displaced to the left of the track of the disposition, and fired a torpedo at the SOUTH DAKOTA. While preparing to fire a second torpedo, the submarine possibly observed that all substantial targets meanwhile had turned away to starboard and the PORTER, while stopped to rescue plane personnel presented a suitable

target of opportunity.

The PORTER was a sitting target for the submarine attack. This incident emphasizes the danger to a ship when she stops while in enemy submarine waters. Also, the screen in effect at this time is not considered adequate or efficient for anti-submarine protection. Consideration should be given to anti-submarine protection when the screen has been drawn in for defense against air attack such as sweeping patrols by destroyers at 6,000 yards from center of formation. This of course is predicated on sufficient destroyers in the Task Force. The danger of air attack on unsupported destroyers is not considered great in view of experience to date of difficulty of hitting a single destroyer maneuvering at high speed.

No attempt was apparently made to counter attack the submarine nor were steps taken to tow the PORTER to port.

~~SECRET~~



SCALE = 1" - 500 yds.

Sketch showing  
relative positions  
units TF 16 at 1102  
Oct. 25, 1942.