

**UNITED STATES PACIFIC FLEET
AND OVERSEAS AREAS
HEADQUARTERS OF THE COMMANDER IN CHIEF**

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PACIFIC FLEET CONFIDENTIAL LETTER 14CL-45

From: Commander in Chief, U.S. Pacific Fleet.

To: PACIFIC FLEET and NAVAL SHORE ACTIVITIES, Pacific Ocean Areas.

Subject: Damage in Typhoon, Lessons of.

1. On 18 December 1944, vessels of the Pacific Fleet, operating in support of the invasion of the Philippines in an area about 300 miles east of Luzon, were caught near the center of a typhoon of extreme violence. Three destroyers, the HULL, MONAGHAN, and SPENCE, capsized and went down with practically all hands; serious damage was sustained by the CL MIAMI, the CVLs MONTEREY, COWPENS, and SAN JACINTO, the CVEs CAPE ESPERANCE and ALTAMAHA, and the DDs AYLWIN, DEWEY, and HICKOX. Lesser damage was sustained by at least 19 other vessels, from CAs down to DEs. Fires occurred on three carriers when planes were smashed in their hangars; and some 146 planes on various ships were lost or damaged beyond economical repair by the fires, by being smashed up, or by being swept overboard. About 790 officers and men were lost or killed, and 80 were injured. Several surviving destroyers reported rolling 70 or more; and we can only surmise how close this was to capsizing completely for some of them. It was the greatest loss that we have taken in the Pacific without compensatory return since the First Battle of Savo.

2. In the light of hindsight it is easy to see how any of several measures might have prevented this catastrophe, but it was far less easy a problem at the time for the men who were out there under the heaviest of conflicting responsibilities. The important thing is for it never to happen again; and hence, while it is impracticable herein to go into all the factors involved and the experiences undergone, some of the outstanding lessons will be discussed.

3. Possibly, too much reliance was placed on the analysis broadcast from the Fleet Weather Central, Pearl Harbor. Weather data was lacking from an area some 240 to 300 miles in diameter (where the storm was actually centered); and the immediate signs of it in the operating area were not heeded early enough. Groups of the Third Fleet tried to avoid the storm center, but neither radically enough nor to best advantage, since their information as to its location and path was meager. Fleet damage and losses were accentuated by the efforts of vessels and subordinate commanders to maintain fleet courses, speeds, and formations during the storm. Commanding officers failed to realize sufficiently in advance of the fact that it was necessary for them to give up the attempt, and give all their attention to saving their ships. There was a lack of appreciation by subordinate commanders and commanding officers that really dangerous weather conditions existed, until it was too late to make the preparations for security

that might have been helpful.

4. The following conditions were typical during the typhoon:

- (a) Visibility zero to a thousand yards.
- (b) Ships not merely rolling, but heeled far over continually by the force of the wind, thus leaving them very little margin for further rolling to leeward.
- (c) Water being taken in quantity through ventilators, blower intakes, and every topside opening.
- (d) Switchboards and electrical machinery of all kinds shorted and drowned out, with fires from short circuits. Main distribution board in engine room shorted by steam moisture when all topside openings were closed to keep out water.
- (e) Free water up to two or three feet over engines or fireroom floor plates, and in many other compartments. It apparently all came in from above; there is no evidence of ships' seams parting.
- (f) Loss of steering control, failure of power and lighting, and stoppage of main propulsion plant. Loss of radar and of all ability to communicate.
- (g) Planes on carriers going adrift, crashing into each other, and starting fires.
- (h) Wind velocities and seas that carried away masts, stacks, boats, davits, and deck structures generally, and made it impossible for men to secure gear that had gone adrift, or to jettison or strike below topside weights when the necessity had become apparent. Men could not even stay up where they would have a chance of getting clear of the ship.
- (i) Maneuvering up to the time of sinking, in the attempt to maintain station, by all ships that were lost. DEWEY, saved by apparently a narrow margin, had given up the attempt.
- (j) The storm "taking charge" and making impossible various evasive and security measures which might have been effective at an earlier stage.
- (k) Testimony that the ships lost took a long roll to leeward, varying from 50 to 80, hung there a little while, and then went completely over, floating a short time before going down.

5. The following tabulation does not purport to be the whole story, either for the ships mentioned or for the Fleet as a whole. It does, however, show that some ships, although of the same class as those lost, and undergoing the same punishment from the weather, survived nevertheless. It also indicates some differences in their condition and in the measures taken. Nobody can say, however, how far the outcome was due to these conditions and measures (or lack of them) and how far to blind chance.

6.

Class	All of FARRAGUT Class				Both FLETCHER Class	
	Hull	Monaghan	Dewey	Aylwin	Spence	Hickox
Outcome	Sunk	Sunk	Survived	Survived	Sunk	Survived
Fuel on hand	70%	76%	?	80%	15%	14%
Water Ballast	No	No	Yes	?	Very little	Fully Ballasted
Fuel to high side	No	No	Yes	Yes	No	?

Conf. "A" taken	Yes	?	Yes	?	No	?
Top weight removed	No	?	Yes	?	?	?
Free Water in Ship	Yes	?	Some	Yes	Yes	Some
Rolled and Recovered	70 degrees	?	75 degrees	70 degrees	Hung at 50 degrees, capsized	70 degrees

7. Various weaknesses were brought to light in our forecasting and dissemination of weather information, in structural details which permitted flooding with consequent loss of power, short circuiting, etc., and in the stability of some of our destroyers. Measures to correct these faults are being taken as far as possible. Yet the Commander in Chief, Pacific Fleet wishes to emphasize that to insure safety at sea, the best that science can devise and that naval organization can provide must be regarded only as an aid, and never as a substitute for the good seamanship, self-reliance, and sense of ultimate responsibility which are the first requisites in a seaman and naval officer.

8. A hundred years ago, a ship's survival depended almost solely on the competence of her master and on his constant alertness to every hint of change in the weather. To be taken aback or caught in full sail on by even a passing squall might mean the loss of spars or canvas; and to come close to the center of a genuine hurricane or typhoon was synonymous with disaster. While to be taken by surprise was thus serious, the facilities for avoiding it were meager. Each master was dependent wholly on himself for detecting the first symptoms of bad weather, for predicting its seriousness and movement, and for taking the appropriate measures to, to evade it if possible and to battle through it if it passed near to him. There was no radio by which weather data could be collected from all over the oceans and the resulting forecasts by expert aerologists broadcasted to him and to all afloat. There was no one to tell him that the time had now come to strike his light sails and spars, and snug her down under close reefs and storm trysails. His own barometer, the force and direction of the wind, and the appearance of sea and sky were all that he had for information. Ceaseless vigilance in watching and interpreting signs, plus a philosophy of taking no risk in which there was little to gain and much to be lost, was what enabled him to survive.

9. Seamen of the present day should be better at forecasting weather at sea, independently of the radio, than were their predecessors. The general laws of storms and the weather expectancy for all months of the year in all parts of the world are now more thoroughly understood, more completely catalogued, and more readily available in various publications. An intensive study of typhoons and Western Pacific weather was made over a period of many years by Father Depperman at the Manila observatory, and his conclusions have been embodied in the material available to all aerologists. What Knight and Bowditch have to say on the subject is exactly as true during this war as it was in time of peace or before the days of the radio. Familiarity with these authorities is something that no captain or navigator can do without. The monthly pilot charts, issued to all ships, give excellent information as to the probable incidence and movements of typhoons. Stress on the foregoing is no belittlement of our aerological centers and weather broadcasts. But just as a navigator is held culpable if he neglects "Log, Lead, and Lookout" through blind faith in his radio fixes, so is the seaman culpable who regards personal weather estimates as obsolete and assumes that if no radio storm warning has been received,

then all is well, and no local weather signs need cause him concern.

10. It is possible that too much reliance is being placed on outside sources for warnings of dangerous weather, and on the ability of our splendid ships to come through anything that wind and wave can do. If this be so, there is need for a revival of the age-old habits of self-reliance and caution in regard to the hazard from storms, and for officers in all echelons of command to take their personal responsibilities in this respect more seriously.

11. The most difficult part of the whole heavy-weather problem is of course the conflict between the military necessity for carrying out an operation as scheduled, and the possibility of damage or loss to our ships in doing so. For this no possible rule can be laid down. The decision must be a matter of "calculated risk" either way. It should be kept in mind, however, that a ship which founders or is badly damaged is a dead loss not only to the current operation but to future ones, that the weather which hinders us may be hindering the enemy equally, and that ships which, to prevent probable damage and possible loss, are allowed to drop behind, or to maneuver independently, may by that very measure be able to rejoin later and be of use in the operation.

12. The safety of a ship against perils from storm, as well as from those of navigation and maneuvering, is always the primary responsibility of her commanding officer; but this responsibility is also shared by his immediate superiors in operational command since by the very fact of such command the individual commanding officer is not free to do at any time what his own judgment might indicate. Obviously no rational captain will permit his ship to be lost fruitlessly through blind obedience to plan or order, since by no chance could that be the intention of his superior. But the degree of a ship's danger is progressive and at the same time indefinite. It is one thing for a commanding officer, acting independently in time of peace, to pick a course and speed which may save him a beating from the weather, and quite another for him, in time of war, to disregard his mission and his orders and leave his station and duty.

13. It is here that the responsibility rests on unit, group, and force commanders, and that their judgment and authority must be exercised. They are of course the ones best qualified to weigh the situation and the relative urgency of safety measures versus carrying on with the job in hand. They frequently guard circuits and possess weather codes not available to all ships; and it goes without saying that any storm warnings or important weather information which they are not sure everybody has received should be re-transmitted as far as practicable. More than this, they must be conscious of the relative inexperience in seamanship, and particularly hurricane seamanship, of many of their commanding officers, despite their superb fighting qualities. One division commander reports that his captains averaged eight years or less out of the Naval Academy, and this is probably typical.

14. It is most definitely part of the senior officer's responsibility to think in terms of the smallest ship and most inexperienced commanding officer under him. He cannot take them for granted, give them tasks and stations, and assume either that they will be able to keep up and come through any weather that his own big ship can; or that they will be wise enough to gauge the exact moment when their tasks must be abandoned in order for them to keep afloat. The order for ships to be handled and navigated wholly for their own preservation should be originated early enough by the seniors, and not be necessarily withheld until the juniors request it. The very gallantry and determination of our young commanding officers need to be taken into account here as a danger factor, since their urge to keep on, to keep up, to keep station, and to carry out their mission in the face of any difficulty, may deter them from doing what is actually wisest and most profitable in the long run.

15. Yet if the O.T.C. is to be held responsible for his smaller vessels, he must be kept aware of their conditions, and the onus of this rests on the commanding officers themselves. Each of them must not only do whatever he is free and able to do for his ship's safety, but must also keep his superiors in the chain of command fully informed as to his situation. If there is anything in his ship's particular condition or in the way she is taking the weather that worries him, he should not hesitate to pass the information to his seniors. To let this be regarded as a sign of faint-heartedness is to invite disaster, and seniors should indoctrinate their commanding officers accordingly. Going still further, it has been shown that at sea the severity of the weather may develop to a point where, regardless of combat commitments of the high command, the situation will require independent action by a junior without reference to his senior. This becomes mandatory if grave doubts arise in the mind of the junior as to the safety of his vessel, the lives of its crew, and the loss of valuable government property and equipment.

16. The commanders of all echelons in the Pacific Fleet will impress upon their subordinates the necessity for giving full consideration to the adverse weather likely to be encountered in the Western Pacific, particularly the presence of tropical disturbances and the formation and movement of typhoons. In this connection, each commanding officer should refresh himself on Knight and Bowditch, not only as to the "Laws of Storms", but also as to ship-handling in heavy weather. In order to know what outside weather reports are broadcast and what he should be getting, each commanding officer should be familiar with **Radio Weather Aids to Navigation** (H.O. 206), and its confidential supplement H.O. 206-C-S (A). This publication, as well as the Navy **Weather Forecast Code No. 1** (CSP-946) should be on all DDs and DEs, etc. Even more important, a commanding officer should check up on his own ship's system of handling dispatches, to make sure that every incoming dispatch about prospective weather is viewed and understood by himself or some other officer with experience enough to grasp its significance. It should by no chance get buried in files and overlooked. This applies even more strongly to local observations. Preoccupation with the job in hand, or a desire not to disturb the skipper, should never result in disregard of a rapidly falling barometer.

17. Steps must be taken to insure that commanding officers of all vessels, particularly destroyers and smaller craft, are fully aware of the stability characteristics of their ships; that adequate security measures regarding water-tight integrity are enforced; and that effect upon stability of free liquid surfaces is thoroughly understood. Fore preparing the ship against expected heavy weather, the basic written authorities are:

- (a) **Damage Control Book** for ship concerned.
- (b) **Ballasting Instructions** issued by the Type Maintenance Administration concerned.
- (c) **Notes on Stability of Ships in a Seaway**, (Pacific Fleet Maintenance Confidential Letter No. 7-44)
- (d) **Booklet of Inclining Experiment Data** for either ship or class. Issued by BuShips.
- (e) **Damage Control Instructions** (FTP 170-B)
- (f) "Derangement of Electrical Equipment caused by Ventilation Conditions", **BuShips Bulletin of Information**, No. 12, p. 9.
- (g) **Stability and Compartmentation of Ships** (C&R Bulletin No. 14).

18. In conclusion, both seniors and juniors alike must realize that in bad weather, as in most other situations, safety and fatal hazard are not separated by any sharp boundary line, but shade gradually from one into the other. There is no little red light which is going to flash on and inform commanding officers or higher commanders that from then on there is extreme danger from the weather, and that measures for ships' safety must now take precedence over further efforts to keep up with the formation or to execute the assigned task. This time will always be a matter of personal judgment. Naturally no commander is going to cut thin the margin between staying afloat and foundering, but he may nevertheless unwittingly pass the danger point even though no ship is yet **in extremis**. Ships that keep

on going as long as the severity of wind and sea has not yet come close to capsizing them or breaking them in two, may nevertheless become helpless to avoid these catastrophes later if things get worse. By then they may be unable to steer any heading but in the trough of the sea, or may have their steering control, lighting, communications, and main propulsion disabled, or may be helpless to secure things on deck or to jettison topside weights. The time for taking all measures for a ship's safety is while still able to do so. Nothing is more dangerous than for a seaman to be grudging in taking precautions lest they turn out to have been unnecessary. Safety at sea for a thousand years has depended on exactly the opposite philosophy.

C.W. NIMITZ

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