



DEPARTMENT OF THE NAVY
OFFICE OF THE COMMANDANT OF MIDSHIPMEN
UNITED STATES NAVAL ACADEMY
101 BUCHANAN ROAD
ANNAPOLIS MARYLAND 21402-5100

DIVPRODEVINST 3140.2C
05 Nov 2021

DIVISION OF PROFESSIONAL DEVELOPMENT INSTRUCTION 3140.2C

From: Deputy Commandant for Professional Development

Subj: HEAVY WEATHER EARLY WARNING REQUIREMENTS AND ACTIONS

Ref: (a) NATO STANAG 4194, Standardized Wave and Wind Environments
and Shipboard Reporting of Sea Conditions
(b) DIVPRODEVINST 3140.1(series) Hurricane Sortie and Mooring Procedures for
Hazardous or Destructive Weather

1. Purpose. To promulgate the duties and responsibilities for personnel when the Division of Professional Development (PRODEV) receives warning of heavy weather.
2. Cancellation. DIVPRODEVINST 3140.2B.
3. Discussion. Heavy weather at sea and in port is a formidable adversary to fleet operations. The policies in this instruction are designed to minimize the probability of personnel casualties and material damage to small craft and facilities due to weather.
4. Action. Use the following guidelines to take prompt and adequate safety measures are taken for all small craft assigned to PRODEV. Proactively move to put mitigations in place when heavy weather conditions are forecasted.
5. Heavy Weather Warnings
 - a. Sources
 - (1) United States Naval Academy (USNA) Oceanography Department.
 - (2) USNA Hazardous Weather Hotline at (410) 293-0032.
 - (3) National Oceanic and Atmospheric Administration (NOAA) National Weather Service Baltimore/Washington Forecast Office at (571) 888-3500 or <http://w1.weather.gov/obhistory/KBWI.html>.
 - (4) Fleet advisory forecast message traffic.
 - (5) Local weather broadcast (i.e., weather channel).

(6) NOAA active watches, warnings, or advisories at <https://alerts.weather.gov/cap/wwaatmget.php?x=MDC003&y=1>

b. Procedures. When the Waterfront Readiness (WFR) Yard Patrol (YP) Craft Operations Department receives early heavy weather warnings, including small craft and gale warnings, the initial action shall be to call and relay all information, including expected time of arrival and duration of heavy weather, to the following personnel at a minimum:

- (1) Deputy Commandant, PRODEV, at (410) 293-6002.
- (2) Director, Waterfront Readiness, at (410) 293-9009.
- (3) Waterfront Readiness YP Operations Officer at (410) 293-9167.
- (4) Seamanship and Navigation (SEANAV) Operations Officer at (410) 293-6060.
- (5) Deputy Director, Waterfront Readiness, at (410) 293-9139.
- (6) Waterfront Readiness Command Duty Officer (WRDO) at (410) 320-9716.

6. Operating Limits

a. Wind, sea state/wave height, or visibility can affect small craft operations conducted by small craft. Adverse conditions beyond a certain limit will make training operations counter-productive and dangerous to personnel or equipment. If at any time the Officer-In-Charge (OIC) or Craftmaster (CM) of any USNA training vessel recognizes a situation is developing that presents a danger to Midshipmen or the crew, the OIC or CM shall immediately suspend underway training, return to USNA, and notify the appropriate department chairman (Seamanship and Navigation for YPs, Sailing for sail training craft [STCs]).

b. It is difficult geographically to match a wind speed to a set sea state in the majority of areas in which YP craft or STC operate due to the dramatically increased and decreased fetch relative to the direction of the wind. Personnel must evaluate each situation on its own merits. The following table is a guideline to drive discussions, recognizing that any single element of the stated limits may be enough to call off training operations.

YP-676 Class Operational Limits

Evolution	Sea State¹ STANAG 4194	Significant Wave Height² (feet)	Wind Speed (knots)	Visibility (nautical miles)
Oceanographic Data Collection (YP-686)	3	3	20-25	1.0
Shiphandling & Navigation Training	3	4	20-25	1.0
Sheltered Transit ³	3	4	32	1.0
Open Ocean Transit	4	6	25-30	1.0

YP-703 Class Operational Limits

Evolution	Sea State¹ STANAG 4194	Significant Wave Height² (feet)	Wind Speed (knots)	Visibility (nautical miles)
Oceanographic Data Collection (YP-703)	3	3	15-20	1.0
Shiphandling & Navigation Training	3	4	15-20	1.0
Sheltered Transit ³	3	4	25	1.0
Open Ocean Transit	4	6	20-25	1.0

(1) Sea State as defined in reference (a) is not the same as the Beaufort Scale Force numbers. Using wind speed values, Sea State 3 (STANAG 4194) is equal to Force 4 on the Beaufort Scale (moderate breeze, small waves becoming larger, fairly frequent white horses). Sea State 4 is equal to Force 5 (fresh breeze, moderate waves, taking a more pronounced long form, many white horses, chance of some spray).

(2) Significant wave height is defined as the average of the highest 1/3 of all waves present. Routine wave height observations recorded by Quartermasters and Aeroographer's Mates are assumed to represent significant wave height.

(3) Wind limits for sheltered transits depend upon available fetch which may vary considerably with wind direction. In the Chesapeake Bay for example, higher wind limits (35-40 knots) may be acceptable for easterly and westerly winds since the east-west fetch is limited, and the resulting seas will be less energetic than would be the case for northerly or southerly winds.

c. Cold-weather conditions can be equally dangerous and dramatically reduce the effectiveness of training. Wind chill will rapidly reduce core body temperature and cause frostbite on extremities. Personnel conducting training must be aware of these dangers and ensure persons under their care are correctly dressed and position changes are sufficiently frequent to reduce the danger. The following table shows the effect of wind chill in reducing temperature.

Wind Chill Table

Wind (knots)	Temperature (Fahrenheit)									
	-5	0	5	10	15	20	25	30	35	40
5	-17	-12	-6	0	6	12	18	24	30	36
10	-23	-17	-11	-5	2	8	14	20	27	33
15	-27	-21	-14	-8	-1	5	12	18	25	31
20	-30	-23	-17	-10	-3	3	10	17	23	30
25	-32	-25	-19	-12	-5	2	8	15	22	29
30	-34	-27	-20	-14	-7	0	7	14	21	28
35	-36	-29	-22	-15	-8	-1	6	13	20	27
40	-37	-30	-23	-16	-9	-2	5	12	19	26
Frostbite Times:		10 minutes				30 minutes				

d. Ice build-up is an issue with any vessel. A covering of ¼ inch of ice on most exterior surfaces of a YP craft will add 8,000 pounds of weight high above the keel. This would give an expected increase in roll on the order of 30 percent. Take care to reduce ice build-up. This reduction in stability must be taken into consideration when deciding if operations are to continue.

7. Actions. Take the following actions during periods of actual or forecasted high winds and seas, tornado warnings, seismic sea wave (tsunami) or storm surge, severe thunderstorms, hail, or shipboard icing.

a. Safety Precautions. When heavy weather procedures are in effect:

(1) No personnel shall be permitted on weather decks without permission of the OIC/CM. On STC, all topside personnel shall wear a safety harness that is attached at all times to the vessel.

(2) Personnel working or standing watch on weather decks during heavy weather, even when proceeding briefly from one station to another, shall wear a life jacket (YP craft) or inflatable personal flotation device (STC).

(3) Personnel working in the weather shall wear a standard Navy safety harness attached to the life line by means of the harness “D” rings. A life jacket shall be worn over the safety harness.

b. Duties and Responsibilities

(1) The SEANAV Operations Officer shall:

(a) Report and recommend setting of material and heavy weather conditions to Chairman, Seamanship and Navigation.

(b) Cancel underway training, either prior to or during classes, if weather conditions prevent safe underway operations or exceed limits mandated in paragraph 6 of this instruction.

(c) Inform the SEANAV Academic Officer and all SEANAV course coordinators to ensure all classes are aware of the suspension of YP operations and make alternative arrangements for classes.

(2) The Navy Sailing Duty Officer shall:

(a) Report and recommend setting of material and heavy weather conditions to Director, Naval Academy Sailing.

(b) Consult with Sailing Program Managers for OSTs, BST, VOST, and IC on training achievable in the forecasted conditions and cancellation/recall of STCs.

(c) Direct general recall of STC to Santee basin or designated safe havens.

(d) Notify Vandergrift Cutter Shed of heavy weather condition in effect and ensure they make proper preparations.

(e) Track and report weather and sea-state conditions for STC deployed out of the surrounding Chesapeake Bay area.

(3) The WFR YP Operations Officer shall:

(a) Report and recommend setting of material and heavy weather conditions to Director, Waterfront Readiness.

(b) Supervise overall preparations of the Heavy Weather Bill.

(c) Report expected weather conditions and preparations taken or needed to the WRDO and chain of command.

(d) Consult with scheduling authority on training achievable in the forecasted conditions and cancellation/recall of vessels.

(e) Direct general recall of YP craft to YP basin or designated safe havens.

(f) Track and report weather and sea-state conditions for YP craft deployed out of USNA waterways.

(4) The WRDO shall:

(a) Assume responsibilities of WFR YP Operations Officer in their absence.

(b) Notify Director, Waterfront Readiness, Deputy Director, Waterfront Readiness, and Department Heads of degrading weather conditions, change in forecast, or severe unexpected degrading weather conditions.

(c) Supervise general recall for vessels operating within local operations area, when directed by WFR YP Operations Officer.

(d) Keep informed of the heavy weather condition in effect and make proper preparations.

(e) Station duty personnel to tend lines as appropriate.

(f) Remove all service lines not required from the YP or small craft.

(g) Supervise setting of material and heavy weather conditions.

(h) Secure unnecessary ventilation and power.

(i) Coordinate security patrols.

(j) Regulate trim and list of all craft. Make recommendations to Director, Waterfront Readiness, for ballasting and ballast as ordered. (NOTE: There are no installed ballast systems aboard YP craft or Navy 44-foot STC.)

(k) Consolidate liquid cargo as feasible to reduce surface effects.

(l) Keep all bilges and voids as dry as possible.

(m) Keep Director, Waterfront Readiness, and WFR YP Operations Officer informed as to watertight integrity.

(n) Ensure all doors, hatches, manhole covers, and tank tops are secure.

(o) Maintain every precaution against fire.

(p) Set steaming watch as prescribed.

(5) YP Craftmasters shall:

(a) In Port

1 Run additional mooring lines.

2 At anchor, prepare to veer, slip the moor, and/or drop another anchor as directed.

3 If moored to a buoy, prepare to veer, slip the moor, or drop an anchor.

4 If possible, clear any boats from alongside or rig fenders between the boats.

(b) At Sea

1 Put preventers on the anchors.

2 Secure all hatches, covers, and equipment, striking below all moveable equipment.

(c) At Sea or In Port

1 Lower and lash fueling rigs to the deck.

2 Run any span wire to padeyes on the deck.

3 Double lashings on equipment stowed on the main deck and weather decks.

4 Check stowage of all storerooms, lockers, and living spaces under their cognizance.

5 Secure all lifeboats and inflatable life rafts.

6 Check closure of all hatches and doors.

7 Rig heavy weather life lines.

8 Keep informed of the condition in effect and make proper preparations.

9 Station personnel to tend lines as appropriate.

10 Remove all service lines not actually required from the ship.

11 Ensure personnel on watch are adequately protected and if advisable, move watches to sheltered areas while maintaining safety of the ship.

12 Minimize number of personnel on weather decks and if necessary, restrict movements on weather decks except by direct permission of WFR YP Operations Officer or WRDO.

13 Ensure personnel on weather decks wear life jackets (also safety lines if working where they may be swept over the side).

14 Be alert for impending material damage to the ship and take appropriate steps to prevent or minimize it.

15 Keep Director, Waterfront Readiness, Deputy Director, Waterfront Readiness, Repair Officer, WFR YP Operations Officer, and WRDO informed of the status of preparations to get underway or cope with the storm when remaining in port.

16 If expecting a seismic sea wave (tsunami) or storm surge, have additional mooring lines run out, leaving considerable slack in regular mooring lines. If necessary, place fenders between the boat and pier.

(6) Officer in Tactical Command (OTC)/OIC shall:

(a) When within local operating area, follow orders promulgated by Chairman, SEANAV, or DNAS.

(b) When outside the local operating area, consult with the Chairman of SEANAV or the Director of Naval Academy Sailing, and scheduling authority to ensure the safest and most appropriate course of action while keeping the Director of Waterfront Readiness and the WFR YP Operations Officer informed of any decisions. Consider the following actions: return to Annapolis, proceed to nearest available harbor, proceed to sheltered anchorage and heaving to.

(7) Craftmasters, OTCs, and OICs shall be conversant with the dangers inherent in operating in heavy weather and methods of avoiding dangers, including slamming, broaching, pooping, and turning a vessel in high seas.

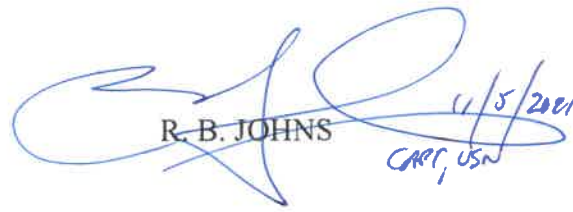
(8) Secondary responses for YP basin/Santee basin security watches shall be to start and complete an entire round of all small craft in YP and Santee basins, with special attention paid to moorings and topside equipment as described in reference (b). Mooring lines shall be adjusted as required and topside equipment shall be stowed below decks. Both basin security watches are also required to make continuous rounds of all vessels in the basins for the heavy weather duration. Additional watch procedures shall be followed under heavy weather YP standard operating procedures directives.

(9) Deputy Director, Waterfront Readiness, shall ensure all dry-docked craft are secured and prepared for heavy weather at all times.

(10) YP Communications Watch shall inform WRDO at (410) 320-9716, and Director, Waterfront Readiness, at (410) 293-9009 when the Heavy Weather Bill has been completed.

(11) Reference (b) shall be placed in effect in the event hazardous or destructive weather should strike the Annapolis area.

8. Review and Effective Date. Per OPNAVINST 5215.17A, the WFR YP Operations Officer will review this instruction annually around the anniversary of its issuance date to ensure applicability, currency, and consistency with Federal, Department of Defense, Secretary of the Navy, and Navy policy and statutory authority using OPNAV 5215/40 Review of Instruction. This instruction will be in effect for 10 years, unless revised or cancelled in the interim, and will be reissued by the 10-year anniversary date if it is still required, unless it meets one of the exceptions in OPNAVINST 5215.17 A, paragraph 9. Otherwise, if the instruction is no longer required, it will be processed for cancellation as soon as the need for cancellation is known following the guidance in OPNAV Manual 5215.1 of May 2016.



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11/5/2021
CAPT, USN

Distribution:

All Waterfront Readiness (electronically)
Chairman, SEANAV (electronically)
SEANAV Operations Officer (electronically)
Dir, Naval Academy Sailing (electronically)
Deputy Director, Naval Academy Sailing (electronically)
U.S. Navy Sailing Association (electronically)
NSA Annapolis Security Officer (electronically)