

NATIONAL WEATHER SERVICE INSTRUCTION 10-315

***Operations and Services
Marine Weather Services, NWSPD 10-3***

MARINE WEATHER WARNING PRODUCT SPECIFICATION

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Marine Weather Warning Product Specification

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1. Introduction. This procedural directive describes the marine weather warning product issued by National Weather Service (NWS) Weather Forecast Offices (WFOs), guidelines associated with this product, and detailed content and format.
2. Marine Weather Event. A marine weather event is a meteorological phenomenon that impacts public safety, transportation, and/or commerce.
 - 2.1 Marine Weather Event Beginning Time. A marine weather event begins either when either the issuance criteria are forecast to be initially met or exceeded, or when public safety, transportation and/or commerce are adversely affected as a direct result of the expected or occurring meteorological conditions before criteria are met.
 - 2.2 Marine Weather Event Ending Time. A marine weather event ends when the issuance criteria are forecast to no longer be met, when meteorological conditions are expected to no longer pose a threat to public safety, transportation and/or commerce, or when such conditions are forecast to end.
3. Multitiered Concept. The NWS marine weather warning program will use, when appropriate, the multitiered concept to increase public awareness and promote a proper response to the impending hazardous marine weather event. Generically, the multitiered concept is:
 - a. **Outlook** – An outlook is used to indicate that a hazardous marine weather event may develop. It is intended to provide information to those who need considerable lead time to prepare for the event.
 - b. **Watch** – A watch is used when the risk of a hazardous marine weather event has increased, but its occurrence, location, and/or timing is still uncertain. It is intended to provide enough lead time so those who need to set their plans in motion can do so.
 - c. **Warning/Advisory** – These products are issued when a hazardous marine weather event is occurring, is imminent, or has a very high probability of occurrence. A warning is used for conditions posing a threat to life or property. An advisory is for less serious conditions that cause significant inconvenience and, if caution is not exercised, could lead to situations that may threaten life and/or property.

To properly apply the multitiered concept, it is important to have agreement between the forecast staff and other affected WFOs to reach a forecast consensus. This will reduce the on-again, off-again syndrome and geographical/time discontinuities, especially for the longer duration products like outlooks and watches. Proper coordination will enable the NWS to speak with one voice when alerting users to the potential for such an event.

4. Marine Weather Outlook (product category HWO).

4.1 Mission Connection. Marine weather outlooks provide our users and partners three to seven day (3-7) advance notice of a hazardous marine weather event which has the potential to threaten life or property. The primary goal of this product is to provide information to those who need considerable lead time to prepare for the event.

4.2 Issuance Guidelines. WFOs should use the Hazardous Weather Outlook (HWO) to issue marine weather outlooks

4.3 Technical Description. Marine outlooks should follow the format and content described in NWSI 10-517, section 4.3.

5. Marine Watches (product category MWW).

5.1 Mission Connection. Marine watches provide our users and partners 12-to-48 hour advance notice of hazardous marine weather events which have the potential to threaten life or property. The primary goal of this product is to provide enough lead time for mariners who may wish to consider altering their plans.

5.2 Issuance Guidelines.

5.2.1 Creation Software. WFOs will use the AWIPS Graphical Hazard Generator (GHG) as the primary software to create and issue marine watches.

5.2.2 Issuance Criteria. WFOs will issue a marine watch when conditions are favorable for a hazardous marine weather event to develop over part or all of the marine forecast area, but the occurrence is uncertain. WFOs should issue a marine watch for the second, third, or occasionally fourth forecast periods, when there is a 50 percent or greater chance of a hazardous marine weather event meeting or exceeding local warning criteria.

5.2.2.1 Marine Watch Products. WFOs will issue the following marine watch products:

Marine Watch Product Name	Issuance Criteria
Gale Watch	Conditions are favorable for a gale force wind event to meet the Gale Warning criteria of 34 to 47 knots in the next 12 to 48 hours.
Storm Watch	Conditions are favorable for a storm force wind event to meet Storm Warning criteria of 48 to 63 knots in the next 12 to 48 hours.

Hurricane Force Wind Watch	Conditions are favorable for a hurricane force wind event to meet or exceed Hurricane Force Wind Warning criteria of 64 knots or greater in the next 12 to 48 hours.
Heavy Freezing Spray Watch	Conditions are favorable for a heavy freezing spray event to meet local Heavy Freezing Spray Warning criteria in the next 12 to 48 hours.
Hazardous Seas Watch	Conditions are favorable for a hazardous seas event to meet or exceed Hazardous Seas Warning criteria in the next 12 to 24 hours.
Hurricane Watch	Conditions are favorable for a tropical cyclone to spread tropical storm force winds over the coastal zones in the next 12 to 24 hours.
Tropical Storm Watch	Conditions are favorable for a tropical cyclone to spread tropical storm force winds over the coastal zones in the next 12 to 24 hours.

Table 1. Marine watch product table.

5.2.3 Issuance Time. The marine watch is an event-driven product. WFOs should issue the initial watch when the watch issuance criteria is met. Subsequent updates are issued at least once every 12 hours until a warning or advisory is issued or the watch is cancelled.

5.2.4 Valid Time. A marine watch is valid for 12 to 48 hours after the issuance time. The valid time (event start and end time) is placed in the P-VTEC line and described in the watch headline.

5.2.5 Product Expiration Time. The product expiration time is generally 12 hours after the issuance time and is placed at the end of the UGC string. The product expiration time is the time when users can expect to receive an updated MWW.

5.2.6 Event Ending Time. The event ending time is when the marine hazardous event is expected to end. The event ending time is placed in the P-VTEC line and described in the watch headline (e.g., GALE WATCH IN EFFECT FROM LATE SUNDAY NIGHT TO MONDAY MORNING).

5.3 Technical Description. Marine watches will follow the format and content described in this section.

5.3.1 Universal Geographic Code Type. Marine watches will use the (Z) form of the UGC.

5.3.2 Mass News Disseminator Broadcast Instruction Line. Not applicable.

5.3.3 Mass News Disseminator Product Type Line. The marine watch MND line is “URGENT - MARINE WEATHER MESSAGE.”

5.3.4 Marine Watch Content. The marine watch may contain an overview section, but will include segmented forecast information.

5.3.4.1 Overview Section. The marine watch overview section is optional. If included, it should contain at least one of the following items:

- a. Overview Headline - a general headline statement that summarizes the hazardous weather threat, area affected and expected time of development. The overview headline will begin and end with three periods “...”

Example:

...STORM FORCE WINDS POSSIBLE TUESDAY AND TUESDAY NIGHT...

- b. Overview - a brief, non-technical description of the developing marine event. The description may include the location and movement of large scale weather features (e.g., fronts, low pressure systems). The first line of this descriptive information will be preceded by a period “.”.

5.3.4.2 Segmented Forecast Information. Each segment of the marine watch will include a watch headline followed by a descriptive text describing why the watch was issued. Each segment describes a specific hazardous marine weather event(s) for the same geographical area.

- a. Watch Headline. The watch headline will include the following elements in the order shown:

- (1) Leading ellipsis (...)
- (2) Valid watch product name listed in Table 1.
- (3) Event action phrase defined in Table 2.
- (4) General event beginning day and time phrase defined in Appendix C (when applicable)
- (5) General event ending day and time phrase defined in Appendix C (when applicable)
- (6) Trailing ellipsis (...)

Exception: When necessary (e.g., mountainous terrain), areal descriptive terms and elevation indicators are permitted after the ending day and time phrase and before the trailing ellipsis.

Generic Watch Headline Format:

(1) Used when watch product is in effect:
...<watch product name> <event action phrase> FROM <event beginning date and time phrase> THROUGH <event ending date and time phrase>...

(2) Used to cancel a watch prior to event beginning date and time:
...<watch product name> <event action phrase>...

Event Action Phrase. The event action phrase in the watch headline corresponds with the VTEC action code. Only the following event action phrases in Table 2 will be used in non-precipitation weatherwatch headlines:

VTEC Action Code	Description	Required Event Action Phrase	Include Time/Date phrase?
NEW	Initial Issuance	IN EFFECT	Yes
EXA	Expansion of watch area	IN EFFECT	Yes
EXB	Expansion of watch area and change to watch valid time	IN EFFECT	Yes
CON	Continuation or update of event	REMAINS IN EFFECT	Yes
EXT	Extend/shorten event start and/or ending date/time	NOW IN EFFECT	Yes
CAN	Product cancelled prior to event end time	IS CANCELLED	No
UPG	Upgrade watch - no headline		

Table 2. Event action phrases for MWW watch headlines.

a. Watch Headline Examples:

(1) Initial issuance:
 ...GALE WATCH IN EFFECT FROM SUNDAY MORNING THROUGH MONDAY MORNING...

(2) Update:
 ...GALE WATCH REMAINS IN EFFECT FROM SUNDAY MORNING THROUGH MONDAY MORNING...

(3) Extended event end time:
 ...GALE WATCH NOW IN EFFECT FROM SUNDAY MORNING THROUGH MONDAY AFTERNOON...

(4) Expansion of watch area and shortened event start and end time:
...GALE WATCH IN EFFECT FROM SATURDAY EVENING THROUGH
SUNDAY EVENING...

(5) Watch cancelled prior to event end time/date:
...GALE WATCH IS CANCELLED...

b. Watch descriptive Text. This section will provide the following watch information:

(1) National Weather Service attribution line. For the **initial** watch, include the following phrase to begin the text of a watch:

THE NATIONAL WEATHER SERVICE IN [WFO NAME or LOCATION] HAS ISSUED A (e.g., GALE/STORM/HURRICANE FORCE WIND) WATCH.

The attribution line is optional for subsequent issuances.

(2) Reason watch was issued.

(3) Generalized quantitative wind speed amounts based upon warning criteria (e.g., when the risk of gale force winds of 34 to 47 knots has significantly increased).

(4) Explanation of a watch and uncertainty involved. Include the following phrase to define a marine watch:

A (e.g., GALE/STORM/HURRICANE FORCE WIND) WATCH IS ISSUED WHEN THE RISK OF (e.g., GALE/STORM/HURRICANE FORCE WINDS) HAS SIGNIFICANTLY INCREASED, BUT THE SPECIFIC TIMING AND/OR LOCATION IS STILL UNCERTAIN.

(5) Brief potential impact or Call To Action (CTA) statements. CTAs can be effective in reminding people what actions to take in preparing themselves for the potential hazardous marine weather event.

c. Order of Segments. Marine watches are usually placed last in the order of segments. This order was designed to place the most important and/or time sensitive information near the beginning of the message. The order of segments is:

- (1) Cancellation
- (2) Warnings
- (3) Advisories
- (4) Watches**

- d. Order of Headlines. More than one headline is required in a segment when two or more marine weather events are forecast to occur for the same UGC or geographical area.

The order of headlines will follow the order of segments.

Example:

Small Craft Advisory and Gale Watch in effect for the same geographical area.

...SMALL CRAFT ADVISORY IN EFFECT UNTIL 9 AM EST THIS MORNING...

...GALE WATCH IN EFFECT FROM THURSDAY AFTERNOON THROUGH FRIDAY AFTERNOON...

Draft

5.3.5 Format.

<u>Product Format</u>	<u>Description of Entry</u>
WHaaii cccc ddhhmm MWW _{xxx}	(WMO Heading) (AWIPS ID)
URGENT - MARINE WEATHER MESSAGE NATIONAL WEATHER SERVICE city state time am/pm time_zone day mon dd yyyy	(Product Name or MND) (Issuing Office) (Issuance time/date)
...<Overview headline statement>...	(Optional)
.<General marine weather synopsis>	(Optional - one to three paragraphs)
mmZ001-005>015-ddhhmm- /k.aaa.cccc.pp.s.#####.yymmddThhnnZ _B -yymmddThhnnZ _E / zone-zone-zone- time am/pm time_zone day mon dd yyyy	(UGC: <u>Z</u> & expiration time) (P-VTEC Line(s)) (Zone Names) (Issuance time/date)
...WATCH HEADLINE...	
<Descriptive Text>	(Two to three paragraphs)
{Includes the following information: 1. NWS attribution line (Optional after initial issuance) 2. Why watch was issued 3. Potential Impact 4. Definition of a watch with uncertainty 5. Call to Action statements}	
\$\$	(UGC Delimiter)
Name/Initials/Forecaster ID	(Optional after last segment)

Figure 1. Generic format for a marine watch.

5.4 Updates, Cancellations, and Corrections. WFOs will update marine watches at least once every 12 hours, or when there is a change in timing, areal extent, or expected conditions. WFOs should issue the updated MWW before the product expiration time is reached.

Marine watches are either upgraded into warnings or advisories, or cancelled.

WFOs will issue a MWW to cancel a watch when the forecaster believes the threat of hazardous marine weather will not develop.

WFOs will issue correction statements for format or grammatical errors as required. To reduce format or grammatical errors, forecasters should proofread the product before transmission.

5.5 Upgrade Watch to Warning or Advisory. When a marine weather watch is upgraded to a marine weather warning or marine weather advisory for the same geographical area, the MWW segment will contain one headline and two P-VTEC lines. The headline will list the new warning or advisory only. The first P-VTEC line will use the UPG action code to show the old marine weather watch is being upgraded. The second P-VTEC line will either use the NEW action code to start the new marine weather warning or advisory, or use the EXA or EXB action code to extend an existing marine weather warning or advisory into this geographical area.

5.5.1 Upgrade Watch to Warning Segment Example.

ANZ050-050245-

/E.UPG.KCAR.SR.A.0001.060804T0800Z-060805T2300Z/ (P-VTEC line 1)

/E.NEW.KCAR.SR.W.0001.060804T0800Z-060805T2300Z/ (P-VTEC line 2)

COASTAL WATERS FROM EASTPORT ME TO STONINGTON ME OUT 25 NM-
237 PM EDT FRI AUG 4 2006

...STORM WARNING IN EFFECT FROM 4 AM TO 7 PM EDT SATURDAY...

(Only one headline used - lists active marine weather warning)

<descriptive text>

\$\$

6. Marine Weather Warnings (product category MWW).

6.1 Mission Connection. Marine weather warnings provide our users and partners advance notice of hazardous marine weather events that threaten life or property.

6.2 Issuance Guidelines.

6.2.1 Creation Software. WFOs will use AWIPS GHG as the primary software to create and issue marine warnings.

6.2.2 Issuance Criteria. WFOs will issue marine weather warnings when hazardous marine weather is imminent, occurring or highly likely over part or all of the forecast area. WFOs should issue a marine weather warning for the first, second, or occasionally third forecast periods, when there is an 80 percent or greater chance of a hazardous marine weather event meeting or exceeding local warning criteria.

6.2.2.1 Marine Weather Warning Products. WFOs will issue the following marine weather warning products using the issuance criteria defined in Table 3 for each product:

Warning Product Name	Issuance Criteria
Gale Warning	Sustained surface winds, or frequent gusts, in the range of 34 knots (39 mph) to 47 knots (54 mph) inclusive, either predicted or occurring, and not directly associated with a tropical cyclone.
Storm Warning	Sustained surface winds, or frequent gusts, in the range of 48 knots (55 mph) to 63 knots (73 mph) inclusive, either predicted or occurring, and not directly associated with a tropical cyclone.
Hurricane Force Wind Warning	Sustained winds, or frequent gusts, of 64 knots (74 mph) or greater, either predicted or occurring, and not directly associated with a tropical cyclone.
Heavy Freezing Spray Warning	An accumulation of freezing water droplets on a vessel at a rate of 2 cm per hour or greater caused by some appropriate combination of cold water, wind, cold air temperature, and vessel movement.
Hazardous Seas Warning	Wave heights and/or wave steepness values meeting or exceeding locally defined warning criteria.
Hurricane Warning	Sustained surface winds of 64 knots (74 mph) or higher associated with a hurricane are expected in a specified coastal area within 24 hours or less. A hurricane can remain in effect when dangerously high water or a combination of dangerously high water and exceptionally high waves continue even though winds may be less than hurricane force.
Tropical Storm Warning	Sustained surface winds, associated with a tropical cyclone, within the range of 34 to 63 knots (39 to 73 mph), expected in a specified coastal area within 24 hours.

Table 3. Marine Warning product table.

6.2.3 Issuance Time. A marine weather warning is an event-driven product and is initially issued when a hazardous marine weather event is expected to meet or exceed local warning criteria. WFOs should issue updated warnings at least once every six to eight hours until the event ends or is canceled.

6.2.4 Valid Time. A marine weather warning is valid up to 36 hours after the issuance time. The valid time (event start and end times) is placed in the P-VTEC line(s) and is described in the warning headline. In extreme cases, the valid time may exceed 36 hours from the time of issuance.

6.2.5 Product Expiration Time. The product expiration time is generally 6 to 8 hours after the issuance time and should coincide with the next expected update or when the event is forecast to end. The product expiration time is placed in the UGC line.

6.2.6 Event Ending Time. The event ending time is when the hazardous marine weather event is expected to end. The event ending time can match the product expiration time if the warning is in effect for eight hours or less. The event ending time is placed in the P-VTEC line and is described in the warning headline (e.g., STORM WARNING IN EFFECT UNTIL 9 AM EST TODAY). The event ending time should generally not exceed 36 hours from the time of issuance.

6.3 Technical Description. Marine weather warnings will follow the format and content described in this section.

6.3.1 Universal Geographic Code Type. Marine weather warnings will use the (Z) form of the UGC.

6.3.2 Mass News Disseminator Broadcast Instruction Line. Not applicable.

6.3.3 Mass News Disseminator Product Type Line. The marine weather warning MND line is "URGENT - MARINE WEATHER MESSAGE."

6.3.4 Content. The marine weather warning may contain an overview section, but will include segmented forecast information.

6.3.4.1 Overview Section. The marine weather warning overview section is optional. If included, it should contain at least one of the following items:

- a. Overview Headline - a general headline statement that summarizes the hazardous weather threat, area affected and expected time of development. The overview headline will begin and end with three periods "...".

Examples:

...STORM FORCE WINDS DEVELOPING THIS AFTERNOON AND TONIGHT...

...A MAJOR HIGH WIND EVENT WILL IMPACT THE PACIFIC NORTHWEST COASTAL AREA TONIGHT...

- b. Overview - a brief, non-technical description of the developing marine event. The description may include the location and movement of large scale weather features (e.g., fronts, low pressure systems). The first line of this descriptive information will be preceded by a period “.”.

6.3.4.2 Segmented Forecast Information. Each segment of a marine weather warning will include a warning headline followed by a descriptive text describing why the warning was issued. Each segment describes a specific hazardous marine weather event(s) for the same geographical area.

- a. Warning Headline. The warning headline will include the following elements in the order shown:

- (1) Leading ellipsis (...)
- (2) Valid marine weather warning product name listed in Table 3.
- (3) Event action phrase defined in Table 4.
- (4) Specific event beginning day and time phrase defined in Appendix C (when applicable)
- (5) Specific event ending day and time phrase defined in Appendix C (when applicable)
- (6) Elevation or area phrase (optional)
- (7) Trailing ellipsis (...)

Generic Warning Headline Format.

- (1) Warning product issuance time prior to event beginning time:
...<warning product name> <event action phrase> FROM <event beginning date and time phrase> TO <event ending date and time phrase>...
- (2) Warning product issuance time equals event beginning time:
...<warning product name> <event action phrase> UNTIL <event ending date and time phrase>...
- (3) Warning product cancellation or expiration statement:
...<warning product name> <event action phrase>...

Event Action Phrase. The event action phrase in the warning headline corresponds with the VTEC action code. Only the following event action phrases in Table 4 will be used in marine weather warning headlines:

VTEC Action Code	Description	Required Event Action Phrase	Include Time/Date ?
NEW	Initial warning issuance	IN EFFECT	Yes

EXA	Expansion of warning area	IN EFFECT	Yes
EXB	Expansion of warning area and change to warning valid time	IN EFFECT	Yes
CON	Continuation or update of warning	REMAINS IN EFFECT	Yes
EXT	Extend/shorten warning start and/or ending date/time	NOW IN EFFECT	Yes
CAN	Warning cancelled prior to event end time	IS CANCELLED	No
EXP	Advisory approaching the expiration time. Used up to 30 minutes prior to advisory end time.	WILL EXPIRE AT	Yes
	Advisory has expired. Used up to 30 minutes after advisory expiration has passed.	HAS EXPIRED	No
UPG	Upgrade - Not applicable		

Table 4. Event action phrases for MWW warning headlines.

a. Warning Headline Examples:

- (1) Initial issuance or expansion in area:
...STORM WARNING **IN EFFECT** FROM 7 AM THIS MORNING TO 11 AM EST WEDNESDAY...
- (2) Update:
...STORM WARNING **REMAINS IN EFFECT** UNTIL 11 AM EST WEDNESDAY...
- (3) Change to event end time:
...STORM WARNING **NOW IN EFFECT** UNTIL 5 PM EST WEDNESDAY...
- (4) Cancelled prior to event end time/date:
...STORM WARNING **IS CANCELLED**...
- (5) Expiration statement up to 30 minutes prior to event end time:
...STORM WARNING **WILL EXPIRE** AT 5 PM EST WEDNESDAY..
- (6) Expiration statement up to 30 minutes after event end time:
...STORM WARNING **HAS EXPIRED**...

b. Warning descriptive Text. This section will include the following warning information:

- (1) National Weather Service attribution line. For the **initial** warning, include the following phrase to begin the text of a warning:

THE NATIONAL WEATHER SERVICE IN [WFO NAME or LOCATION] HAS ISSUED A (e.g., GALE/STORM/HURRICANE FORCE WIND) WARNING.

The attribution line is optional for subsequent issuances.

- (2) Reason warning was issued. Include marine weather element(s) prompting the warning.
- (3) Quantitative wind speed amounts.
- (4) Definition of a warning when event has not yet begun. Use the following phrase to define a warning:

A (GALE/STORM/HURRICANE FORCE WIND, etc.) WARNING MEANS (HAZARDOUS WEATHER CONDITIONS) ARE IMMINENT OR OCCURRING.

- (5) Brief CTA statements, safety rules.

c. Order of Segments. Marine weather warnings are placed second in the order of segments. This order was designed to place the most important and/or time sensitive information near the beginning of the message. The order of segments is:

- (1) Cancellation
- (2) Warnings**
- (3) Advisories
- (4) Watches

d. Order of Headlines. More than one headline is required in a segment when two or more marine weather events are forecast to occur for the same UGC or geographical area.

The order of headlines will follow the order of segments.

Example:

Gale Warning and Storm Watch in effect for the same geographical area.

...GALE WARNING IN EFFECT UNTIL 9 AM EST THIS MORNING...
 ...STORM WATCH IN EFFECT FROM THURSDAY AFTERNOON
 THROUGH FRIDAY AFTERNOON...

6.3.5 Format.

<u>Product Format</u>	<u>Description of Entry</u>
WHaaii cccc ddhhmm MWWxxx	(WMO Heading) (AWIPS ID)
URGENT - MARINE WEATHER MESSAGE NATIONAL WEATHER SERVICE city state time am/pm time_zone day mon dd yyyy	(Product Name or MND) (Issuing Office) (Issuance time/date)
...<Overview headline statement>...	(Optional)
.<General marine weather synopsis>	(Optional - one to three paragraphs)
mmZ001-005>015-ddhhmm- /k.aaa.cccc.pp.s#####.yymmddThhnnZ _B -yymmddThhnnZ _E / zone-zone-zone- time am/pm time_zone day mon dd yyyy	(UGC: <u>Z</u> & expiration time) (P-VTEC Line(s)) (Zone Names) (Issuance time/date)
...WARNING HEADLINE...	
<Descriptive Text> {Includes the following information: 1. NWS attribution line (Optional after initial issuance) 2. Why warning was issued (marine weather element(s) prompting the warning) 3. Detailed wind speed amounts 4. Timing of the event (beginning, ending, timing of worst conditions, duration) 5. Definition of a warning (before event begins) 6. Potential impact, call to action statement.	(Two to three paragraphs)
\$\$	(UGC Delimiter)
Name/Initials/Forecaster ID	(Optional after last segment)

Figure 2. Generic format for a marine weather warning.

6.4 Updates, Cancellations, and Corrections. WFOs will update marine weather warnings at least once every six to eight hours until the event ends or is canceled. WFOs should issue the updated MWW before the product expiration time is reached. The frequent updates will keep our users and partners informed on the current and short term aspects of the hazardous weather event. Update warnings whenever there is a change in timing, areal extent, or expected conditions.

WFOs will issue a MWW to cancel a warning when the forecaster believes the weather threat has diminished before the valid time expires.

WFOs will issue correction statements for format or grammatical errors as required. To reduce format or grammatical errors, forecasters should proofread the product before transmission.

6.5 Downgrade Warning to Advisory. When a marine weather warning is downgraded to a marine weather advisory for the same geographical area, the MWW segment will contain two headlines and two P-VTEC lines. The first headline and P-VTEC line are used to cancel the warning, and the second headline and P-VTEC line is used to issue the new advisory.

6.5.1 Downgrade Warning to Advisory Segment Example.

LHZ421-422-441>443-280345-
 /E.CAN.KDTX.GL.W.0003.000000T0000Z-040103T2300Z/ (P-VTEC line 1)
 /E.NEW.KDTX.SC.Y.0050.040103T0900Z-040103T2300Z/ (P-VTEC line 2)
 OUTER SAGINAW BAY-INNER SAGINAW BAY-
 PORT AUSTIN TO HARBOR BEACH MI-HARBOR BEACH TO PORT SANILAC MI-
 PORT SANILAC TO PORT HURON MI-
 400 AM EST SAT JAN 3 2004

...GALE WARNING IS CANCELLED...

...SMALL CRAFT ADVISORY IN EFFECT UNTIL 6 PM EST THIS EVENING...

(Two headlines used - lists cancelled warning, then new advisory)

<descriptive text>

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7. Marine Weather Advisories (product category MWW).

7.1 Mission Connection. Marine weather advisories provide our users and partners advance notice of hazardous marine weather events which could lead to life-threatening situations if caution is not exercised.

7.2 Issuance Guidelines.

7.2.1 Creation Software. WFOs will use AWIPS GHG as the primary software to create and issue marine advisories.

7.2.2 Issuance Criteria. WFOs should issue marine weather advisories for hazardous marine weather events that cause significant inconveniences, and if caution is not exercised, could lead to life-threatening situations over part or all of the forecast area.

WFOs should issue marine weather advisories for the first, second, or occasionally third forecast periods, when there is an 80 percent or greater chance of a hazardous marine weather event meeting or exceeding local advisory criteria.

7.2.2.1 Marine Weather Advisory Products. WFOs should issue the following marine weather advisory products using the issuance criteria defined in Table 5 for each product:

Advisory Product Name	Issuance Criteria
Ashfall Advisory	Airborne ash plume resulting in ongoing deposition at the surface. Ashfall may originate directly from a volcanic eruption or from the resuspension (by wind) of a significant amount of relic ash.
Brisk Wind Advisory	Small Craft Advisory winds expected for ice-covered waters.
Dense Fog Advisory	Widespread or localized fog reducing visibilities to 1/4 mile or less.
Dense Smoke Advisory	Widespread or localized smoke reducing visibilities to 1/4 mile or less.
Freezing Spray Advisory	Light to moderate accumulation of ice is expected on vessels.
Low Water Advisory	Water levels are significantly below average and may cause impact to safe marine navigation. The need for this product is locally determined.
Small Craft Advisory	Sustained wind speeds or frequent gusts of 20 to 33 knots (locally defined) and/or seas or waves 4 feet and greater (locally defined).

Small Craft Advisory for Hazardous Seas	Wind speeds are lower than small craft advisory criteria, yet waves or seas are potentially hazardous due to wave period, steepness, or swell direction. The criteria is locally defined.
Small Craft Advisory for Rough Bar	Waves in or near bars are hazardous to mariners due to the interaction of swell, tidal or river currents in relatively shallow water. Threshold criteria are locally defined and are specific to local geographic areas, and are based upon parameters such as wave steepness, wind speed and direction, and local bathymetry.
Small Craft Advisory for Wind	When wave heights are lower than Small Craft Advisory criteria, yet wind speeds are similar to Small Craft Advisory criteria.

Table 5. Marine advisory product table.

7.2.3 Issuance Time. Advisories are event-driven products and are initially issued when a hazardous marine weather event is expected to meet or exceed local advisory criteria. WFOs should issue updated advisories at least once every six to eight hours until the event ends or is canceled.

7.2.4 Valid Time. A marine weather advisory is valid up to 36 hours after the issuance time. The valid time (event start and end times) is placed in the P-VTEC line(s) and is described in the warning headline. In extreme cases, the valid time may exceed 36 hours from the time of issuance.

7.2.5 Product Expiration Time. The product expiration time should be 6 to 8 hours after the issuance time and should coincide with the next expected update or when the event is forecast to end. The product expiration time is placed in the UGC line.

7.2.6 Event Ending Time. The event ending time is when the hazardous marine weather event is expected to end. The event ending time can match the product expiration time if the warning is in effect for eight hours or less. The event ending time is placed in the P-VTEC line and is described in the advisory headline (e.g., SMALL CRAFT ADVISORY IN EFFECT UNTIL 9 AM EST MONDAY). The event ending time should generally not exceed 36 hours from the time of issuance.

7.3 Technical Description. Marine weather advisories will follow the format and content described in this section.

7.3.1 Universal Geographic Code Type. Marine weather advisories will use the (Z) form of the UGC.

7.3.2 Mass News Disseminator Broadcast Instruction Line. Not applicable.

7.3.3 Mass News Disseminator Product Type Line. The advisory MND line is “URGENT - MARINE WEATHER MESSAGE.”

7.3.4 Content. The marine weather advisory may contain an overview section, but will include segmented forecast information.

7.3.4.1 Overview Section. The advisory overview section is optional. If included, it should contain at least one of the following items:

- a. Overview Headline - a general headline statement that summarizes the hazardous weather threat, area affected and estimated time of development. The overview headline will begin and end with three periods “...”.

For example:

...DENSE FOG EXPECTED ACROSS PARTS OF SOUTHERN LAKE MICHIGAN SHORELINE TONIGHT...

- b. Overview - a brief, non-technical description of the developing marine weather event. The description may include the location and movement of large scale weather features (e.g., fronts, low pressure systems). The first line of this descriptive information will be preceded by a period “.”.

7.3.4.2 Segmented Forecast Information. Each segment of a marine weather advisory will include the advisory headline followed by a descriptive text describing why the advisory was issued. Each segment describes a specific hazardous marine weather event(s) for the same geographical area.

- a. Advisory Headline. The advisory headline will include the following elements in the order shown:

- (1) Leading ellipsis (...)
- (2) Valid marine weather advisory product name listed in Table 5
- (3) Event action phrase defined in Table 6
- (4) Specific event beginning day and time phrase defined in Appendix C (when applicable)
- (5) Specific event ending day and time phrase defined in Appendix C (when applicable)
- (6) Trailing ellipsis (...)

Generic Advisory Headline Format.

- (1) Advisory product issuance time prior to event beginning time:

...<advisory product name> <event action phrase> FROM <event beginning date and time phrase> TO <event ending date and time phrase>...

(2) Advisory product issuance time equals event beginning time:
...<advisory product name> <event action phrase> UNTIL <event ending date and time phrase>...

(3) Advisory product cancellation or expiration statement:
...<advisory product name> <event action phrase>...

Event Action Phrase. The event action phrase in the advisory headline corresponds with the VTEC action code. Only the following event action phrases in Table 6 will be used in marine weather advisory headlines:

VTEC Action Code	Description	Required Event Action Phrase	Include Time/Date ?
NEW	Initial advisory issuance	IN EFFECT	Yes
EXA	Expansion of advisory area	IN EFFECT	Yes
EXB	Expansion of advisory area and change to advisory valid time	IN EFFECT	Yes
CON	Continuation or update of advisory	REMAINS IN EFFECT	Yes
EXT	Extend/shorten advisory start and/or ending date/time	NOW IN EFFECT	Yes
CAN	Advisory cancelled prior to event end time	IS CANCELLED	No
EXP	Advisory approaching the expiration time. Used up to 30 minutes prior to advisory end time.	WILL EXPIRE AT	Yes
	Advisory has expired. Used up to 30 minutes after advisory expiration has passed.	HAS EXPIRED	No
UPG	Upgrade to warning - no headline		

Table 6. Event action phrases for MWW advisory headlines.

a. Advisory Headline Examples:

(1) Initial issuance or expansion in area:

...SMALL CRAFT ADVISORY **IN EFFECT** FROM 7 AM THIS MORNING TO 11 AM EST WEDNESDAY...

- (2) Update:
...SMALL CRAFT ADVISORY **REMAINS IN EFFECT** UNTIL 11 AM EST WEDNESDAY...
- (3) Extend event end time:
...SMALL CRAFT ADVISORY **NOW IN EFFECT** UNTIL 5 PM EST WEDNESDAY...
- (4) Cancelled prior to event end time/date:
...SMALL CRAFT ADVISORY **IS CANCELLED**...
- (5) Expiration statement up to 30 minutes prior to event end time:
...SMALL CRAFT ADVISORY WILL EXPIRE AT 5 PM EST WEDNESDAY..
- (6) Expiration statement up to 30 minutes after event end time:
...SMALL CRAFT ADVISORY HAS EXPIRED...

Draft

b. Advisory descriptive Text. This section will include the following advisory information:

- (1) National Weather Service attribution line. For the **initial** advisory, include the following phrase to begin the text of the advisory:

THE NATIONAL WEATHER SERVICE IN [WFO NAME or LOCATION] HAS ISSUED A (e.g., DENSE FOG/SMALL CRAFT) ADVISORY.

The attribution line is optional for subsequent issuances.

- (2) Reason advisory was issued. Include marine weather element(s) prompting the advisory.
- (3) Quantitative wind speed amounts.
- (4) Brief call to action statements, safety rules.

- c. Order of Segments. Advisories are placed third in the order of segments. This order was designed to place the most important and/or time sensitive information near the beginning of the message. The order of segments is:
- (1) Cancellation
 - (2) Warnings
 - (3) Advisories**
 - (4) Watches
- d. Order of Headlines. More than one headline is required in a segment when two or more marine weather events are forecast to occur for the same UGC or geographical area.

The order of headlines will follow the order of segments.

Example: Dense Fog Advisory and Storm Watch in effect for the same geographical area.

...DENSE FOG ADVISORY IN EFFECT UNTIL 9 AM EST THIS MORNING...
...GALE WATCH IN EFFECT FROM THURSDAY AFTERNOON TO
FRIDAY AFTERNOON...

Draft

7.3.5 Format.

<u>Product Format</u>	<u>Description of Entry</u>
WHaaii cccc ddhhmm MWW _{xxx}	(WMO Heading) (AWIPS ID)
URGENT - MARINE WEATHER MESSAGE NATIONAL WEATHER SERVICE city state time am/pm time_zone day mon dd yyyy	(Product Name or MND) (Issuing Office) (Issuance time/date)
...<Overview headline statement>...	(Optional)
.<General marine weather synopsis>	(Optional - one to three paragraphs)
mmZ001-005>015-ddhhmm- /k.aaa.cccc.pp.s.#####.yymmddThhnnZ _B -yymmddThhnnZ _E / zone-zone-zone- time am/pm time_zone day mon dd yyyy	(UGC: <u>Z</u> & expiration time) (P-VTEC Line(s)) (Zone Names) (Issuance time/date)
...ADVISORY HEADLINE...	
<Descriptive text> {Includes the following information: 1. NWS attribution line (Optional after initial issuance) 2. Why advisory was issued (marine weather element(s) prompting the advisory) 3. Detailed wind speed amounts 4. Timing of the event (beginning, ending, timing of worst conditions, duration) 5. Potential impact, call to action statements}	(Two to three paragraphs)
\$\$	(UGC Delimiter)
Name/Initials/Forecaster ID	(Optional after last segment)

Figure 3. Generic format for a marine weather advisory.

7.4 Updates, Amendments, and Corrections. WFOs will update advisories at least once every six to eight hours until the event ends or is canceled. WFOs should issue the updated MWW before the product expiration time is reached. The frequent updates will keep our users and partners informed on the current and short term aspects of the marine weather event. Update advisories whenever there is a change in timing, areal extent, or expected conditions. WFOs will issue a MWW to cancel an advisory when the forecaster believes the weather threat has diminished before the valid time expires.

WFOs will issue correction statements for format or grammatical errors as required. To reduce format or grammatical errors, forecasters should proofread the product before transmission.

7.5 Upgrade Advisory to Warning. When a marine weather advisory is upgraded to a marine weather warning for the same geographical area, the MWW segment will contain one headline and two P-VTEC lines. The headline will list the new warning only. The first P-VTEC line will use the UPG action code to show the old advisory is being upgraded. The second P-VTEC line will either use the NEW action code to start the new advisory, or use the EXA or EXB action code to extend an existing advisory into this geographical area.

7.5.1 Upgrade Advisory to Warning Segment Example.

PZZ350-356-370-376-092300-

/E.UPG.KMFR.SW.Y.0051.000000T0000Z-070310T0500Z/ (P-VTEC line 1)

/E.NEW.KMFR.GL.W.0003.070309T1600Z-070310T0500Z/ (P-VTEC line 2)

COASTAL WATERS FROM FLORENCE TO CAPE BLANCO OR OUT 20 NM-
 COASTAL WATERS FROM CAPE BLANCO OR TO PT. ST. GEORGE CA OUT 20 NM-
 WATERS FROM FLORENCE TO CAPE BLANCO OR FROM 20 TO 60 NM-
 WATERS FROM CAPE BLANCO OR TO PT. ST. GEORGE CA FROM 20 TO 60 NM-
 705 AM PST FRI MAR 9 2007

...GALE WARNING IN EFFECT UNTIL 9 PM PST THIS EVENING...

(One headline used - lists new warning only)

<descriptive text>

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APPENDIX A - Marine Weather Product Examples

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Draft

1. Introduction. This section contains guidelines and examples of MWW products.
2. Marine Weather Warning Examples.
 - 2.1 Gale Warning. An example of a Gale Warning, first issuance. NWS attribution line is mandatory.

WHUS76 KMFR 091500
MWWMFR

EXPERIMENTAL...URGENT – MARINE WEATHER MESSAGE
NATIONAL WEATHER SERVICE MEDFORD OR
700 AM PST FRI MAR 9 2007

...GALE WARNING IN EFFECT UNTIL 9 PM PST THIS EVENING...

.WINDS WILL INCREASE LATE THIS MORNING AHEAD OF AN APPROACHING STRONG COLD FRONT THAT WILL REACH THE COAST BY LATE AFTERNOON. SOUTH WINDS WILL INCREASE TO GALES LATE THIS MORNING. AFTER THE FRONT PASSES THROUGH THE WATERS WINDS WILL BECOME NORTHWEST AND DIMINISH BELOW GALES TO SMALL CRAFT ADVISORY WINDS.

PZZ350-356-370-376-092300-
/E.NEW.KMFR.GL.W.0001.070309T1600Z-070310T0500Z/
COASTAL WATERS FROM FLORENCE TO CAPE BLANCO OR OUT 20 NM-
COASTAL WATERS FROM CAPE BLANCO OR TO PT. ST. GEORGE CA OUT 20 NM-
WATERS FROM FLORENCE TO CAPE BLANCO OR FROM 20 TO 60 NM-
WATERS FROM CAPE BLANCO OR TO PT. ST. GEORGE CA FROM 20 TO 60 NM-
705 AM PST FRI MAR 9 2007

...GALE WARNING IN EFFECT UNTIL 9 PM PST THIS EVENING...

THE NATIONAL WEATHER SERVICE IN MEDFORD HAS ISSUED A GALE WARNING...WHICH IS IN EFFECT UNTIL 9 PM THIS EVENING. SOUTH WINDS WILL INCREASE LATE THIS MORNING AHEAD OF A COLD FRONT...WITH EXPECTED WINDS OF 35 TO 40 KT WITH GUSTS TO 45 KT. WINDS WILL BECOME NORTHWEST AND DIMINISH BELOW GALES BEHIND THE FRONT LATE THIS EVENING.

A GALE WARNING MEANS WINDS OF 34 TO 47 KNOTS ARE IMMINENT OR OCCURRING. OPERATING A VESSEL IN GALE CONDITIONS REQUIRES EXPERIENCE AND PROPERLY EQUIPPED VESSELS. IT IS HIGHLY RECOMMENDED THAT MARINERS WITHOUT THE PROPER EXPERIENCE SEEK SAFE HARBOR PRIOR TO THE ONSET OF GALE CONDITIONS.

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2.2 Gale Warning. An example of a Gale Warning, first issuance. NWS attribution line is mandatory.

WHUS73 KCAR 041837
MWWCAR

EXPERIMENTAL...URGENT - MARINE WEATHER MESSAGE
NATIONAL WEATHER SERVICE CARIBOU ME
237 PM EDT FRI AUG 4 2006

...STORM FORCE WINDS DEVELOPING THIS AFTERNOON AND TONIGHT...

.A RAPIDLY INTENSIFYING LOW NEAR NANTUCKET WILL MOVE NORTHWARD THROUGH THE GULF OF MAINE TONIGHT. STORM FORCE WINDS OUT OF THE EAST THIS AFTERNOON WILL BACK INTO THE NORTH THIS EVENING AS THE LOW CENTER PASSES TO THE EAST OF THE COASTAL WATERS. WINDS WILL DIMINISH TOWARDS DAYBREAK SATURDAY AS THE LOW CONTINUES TO MOVE NORTH INTO THE MARITIMES.

ANZ050-050245-
/E.NEW.KCAR.SR.W.0001.060804T1837Z-060805T0600Z/
COASTAL WATERS FROM EASTPORT ME TO STONINGTON ME OUT 25 NM-
237 PM EDT FRI AUG 4 2006

...STORM WARNING IN EFFECT UNTIL 2 AM EDT SATURDAY...

THE NATIONAL WEATHER SERVICE IN CARIBOU HAS ISSUED A STORM WARNING...WHICH IS IN EFFECT UNTIL 2 AM EDT SATURDAY.

WINDS ARE EXPECTED TO INCREASE TO 50 TO 55 KNOTS WITH GUSTS TO 60 KNOTS LATER THIS AFTERNOON AND THIS EVENING. SEAS ARE EXPECTED TO REACH A MAXIMUM HEIGHT OF 25 FEET BY LATE THIS EVENING.

A STORM WARNING MEANS WINDS OF 48 TO 63 KNOTS ARE IMMINENT OR OCCURRING. RECREATIONAL BOATERS SHOULD REMAIN IN PORT...OR TAKE SHELTER UNTIL WINDS AND WAVES SUBSIDE. COMMERCIAL VESSELS SHOULD PREPARE FOR VERY STRONG WINDS AND DANGEROUS SEA CONDITIONS...AND CONSIDER REMAINING IN PORT OR TAKING SHELTER IN PORT UNTIL WINDS

AND WAVES SUBSIDE.

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3. Marine Weather Advisory Examples.

3.1 Small Craft Advisory. An example of a Small Craft Advisory, first issuance. The NWS attribution line is mandatory.

WHUS73 KDTX 271938
MWWDTX

EXPERIMENTAL...URGENT - MARINE WEATHER MESSAGE
NATIONAL WEATHER SERVICE DETROIT/PONTIAC MI
338 PM EDT FRI JUL 27 2007

...SMALL CRAFT ADVISORY IN EFFECT FROM 3 AM TO 10 PM SATURDAY FOR
PORTIONS OF SOUTHERN LAKE HURON AND SAGINAW BAY...

...A COLD FRONT OVER THE UPPER GREAT LAKES WILL SLIP SOUTH
INTO THE NORTHERN OHIO VALLEY TONIGHT. HIGH PRESSURE WILL THEN
BUILD INTO THE GREAT LAKES REGION BEHIND THE FRONT BRINGING BRISK
NORTHERLY WINDS INTO THE REGION FOR SATURDAY.

LHZ421-422-441>443-280345-
/E.NEW.KDTX.SC.Y.0139.070728T0700Z-070729T0200Z/
OUTER SAGINAW BAY-INNER SAGINAW BAY-
PORT AUSTIN TO HARBOR BEACH MI-HARBOR BEACH TO PORT SANILAC MI-
PORT SANILAC TO PORT HURON MI-
338 PM EDT FRI JUL 27 2007

...SMALL CRAFT ADVISORY IN EFFECT FROM 3 AM TO 10 PM EDT
SATURDAY...

THE NATIONAL WEATHER SERVICE IN DETROIT/PONTIAC HAS ISSUED A
SMALL CRAFT ADVISORY...WHICH IS IN EFFECT FROM 3 AM TO 10 PM EDT
SATURDAY.

AS A COLD FRONT PASSES THROUGH LAKE HURON TONIGHT WINDS WILL
BECOME NORTHERLY AND INCREASE TO NEAR 20 KNOTS SATURDAY IN PARTS

OF SOUTHERN LAKE HURON AND SAGINAW BAY. WAVE HEIGHTS DURING THIS TIME WILL ALSO GRADUALLY BUILD TO AS HIGH AS 3 TO 5 FEET.

A SMALL CRAFT ADVISORY MEANS THAT WIND SPEEDS OF NEAR 20 KNOTS ARE EXPECTED TO PRODUCE HAZARDOUS WAVE CONDITIONS TO SMALL CRAFT. INEXPERIENCED MARINERS... ESPECIALLY THOSE OPERATING SMALLER VESSELS SHOULD AVOID NAVIGATING IN THESE CONDITIONS.

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4. Cancellation Product Examples.

4.1 Cancelled Small Craft Advisory. An example of a cancelled Small Craft Advisory.

WHUS73 KDTX 290120
MWWDTX

EXPERIMENTAL...URGENT - MARINE WEATHER MESSAGE
NATIONAL WEATHER SERVICE DETROIT/PONTIAC MI
920 PM EDT SAT JUL 28 2007

LHZ421-422-441>443-290230-
/E.CAN.KDTX.SC.Y.0139.000000T0000Z-070729T0200Z/
OUTER SAGINAW BAY-INNER SAGINAW BAY-
PORT AUSTIN TO HARBOR BEACH MI-HARBOR BEACH TO PORT SANILAC MI-
PORT SANILAC TO PORT HURON MI-
920 PM EDT SAT JUL 28 2007

...SMALL CRAFT ADVISORY IS CANCELLED...

THE NATIONAL WEATHER SERVICE IN DETROIT/PONTIAC HAS CANCELED THE SMALL CRAFT ADVISORY.

NORTHERLY WINDS HAVE SUBSIDED TO 10 TO 15 KNOTS...WITH WAVES DECREASING TO 2 TO 4 FEET OR LESS. THEREFORE THE SMALL CRAFT ADVISORY HAS BEEN CANCELED.

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