Marine Forecast Matrix

Product/Service Description Document (PDD)

Part I – Mission Connection

a. Product Description – The National Weather Service (NWS) Marine Forecast Matrix (MFM) is an alphanumeric text product that provides a tabular forecast of wind direction and speed, wind gust, swell direction, swell height, swell period, wind wave height, significant wave height, cloud cover, probability of precipitation, and precipitation type.

b. Purpose – The MFM is derived from forecast weather parameters produced with the Graphical Forecast Editor. It is a marine version of the public Point Forecast Matrices and provides a point forecast for locations (i.e., buoys, Fish Aggregation Devices - FADs) of interest/concern to mariners.

c. Audience – The primary target audience for the product is the marine community, and also includes: ocean going vessels, barge and tug boat operators; private maritime organizations; recreational mariners; national, state, and local emergency managers; military and government agencies; media; and the general public.

d. Presentation Format – The MFM is an alphanumeric text product that is presented in tabular form. It will be made available to customers from standardized interactive web pages.

e. Feedback Method – Continuous feedback is available via an Internet page email link to the program managers in the Marine and Coastal Weather Services, or to the e-mail address on the web page containing the product. Feedback on this product is also obtained at Focus Group meetings, from Boat Shows, and Customer Surveys.

Technical and policy questions and comments for the MFM may be addressed to:

National Weather Service
2525 Correa Road Suite 250
Honolulu, HI 96822
Attn: Raymond Tanabe

or e-mail questions and comments to: raymond.tanabe@noaa.gov

f. Example of product

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PHZ111-041345-
EK FAD BUOY HANALEI KAUAI
22.30N 159.43W
1238 PM HST FRI FEB 3 2012

DATE                          SAT 02/04/12            SUN 02/05/12            MON
UTC 3HRLY     01 04 07 10 13 16 19 22 01 04 07 10 13 16 19 22 01 04 07 10 13 16
HST 3HRLY     15 18 21 00 03 06 09 12 15 18 21 00 03 06 09 12 15 18 21 00 03 06

WIND DIR       E SW SW SW SW  W NW NW NW  W  W  W  W  W  W  W  W SW SW SW SW SW
WIND SPD      13  4  6  6  6  5  8  8  8  5  6  6  6  6  8  8  8  4  4  4  4  4
WIND GUST     19  6  9  9  9  8 12 12 12  8  9  9  9  9 12 12 12  6  6  6  6  6
-------------------------------------------------------------------------------
SWELL DIR     NW NW NW NW NW NW NW NW NW NW NW NW NW NW NW NW NW NW NW NW NW NW
SWELL HGT      8  7  7  7  7  6  6  6  6  5  5  5  5  5  5  5  5  5  5 12 12 13
PERIOD        13 12 12 12 12 12 12 12 12 11 11 11 11 11 11 11 11 19 19 18 18 17
-------------------------------------------------------------------------------
SWELL DIR                    N  N  N  N  N  N  N  N  N  N  N  N  N  N  N  N  N
SWELL HGT                    3  3  3  4  4  4  4  4  4  3  3  3  3  3  3  3  3
PERIOD                      15 15 15 15 15 15 14 14 14 13 13 13 13 13 13 13 13
-------------------------------------------------------------------------------
WIND WAVE HGT  4  0  0  0  0  0  1  1  1  0  0  0  0  0  1  1  1  0  0  0  0  0
SIG WAVE HGT   9  7  7  8  8  7  7  7  7  6  6  6  6  6  6  6  6  6 12 12 14
CLOUDS        FW FW FW FW FW FW FW FW FW SC SC SC SC SC SC SC SC SC SC SC SC SC
POP 12HR                    10          10          30          50          30
RAIN SHWRS                               S  S  C  C  C  C  C  C  C  C  C  C

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Part II – Technical Description

a. Format & Science Basis – The MFM is a forecast for the next 60 hours, in 3 hourly increments, displayed in both Universal Time Coordinated (UTC) and Hawaiian Standard Time (HST) of the following weather elements:

Wind Direction (WIND DIR) - prevailing direction from which the wind is blowing from for that hour using 8 standard compass directions

Wind Speed (WIND SPD) – average sustained wind speed in knots

Wind Gust (WIND GUST) – peak wind gust in knots

Swell Direction (SWELL DIR) – direction from which the dominant ocean swell is coming from using 8 standard compass directions
Swell Height (SWELL HGT) – open ocean swell height, in feet, measured from trough to crest

Swell Period (PERIOD) – difference, in seconds, between consecutive wave crests

Wind Wave Height (WIND WAVE HT) – height of waves, in feet, that are generated from the action of wind on the local water surface

Significant Wave Height (SIG WAVE HT) - average height, in feet, from trough to crest of the one-third highest waves

Cloud Cover (CLOUDS) – Average Sky cover for that period using the following codes:
CL = Clear (0-5% cloud coverage)
FW = Few Clouds (5-30% cloud coverage)
SC = Scattered Clouds (30-70% cloud coverage)
BK = Broken Clouds (70-95% cloud coverage)
OV = Overcast (95-100% cloud coverage)

Probability of Precipitation (POP 12 HR) - Chance of precipitation in the 12 hours ***ending*** at the hour listed

If forecast, these elements will also appear:
Obstruction to Visibility (OBVIS) – if fog (F), haze (H), smoke (K), volcanic ash (VA) and/or blowing sand (BN) is forecast to occur, the code will be listed in the appropriate column

Weather Types - These codes will only appear if at some point during the time of the forecast they are expected to occur. If they do appear, a letter code will provide information about the forecast likelihood of that precipitation type

Weather Codes:
- RAIN
- RAIN SHWRS (Rain Showers)
- SPRINKLES
- TSTMS (Thunderstorms)
- DRIZZLE
- SNOW
- SNOWSHWRS (Snow Showers)
- SLEET

Probability Codes:
- S = Slight Chance (0-20%)
- C = Chance (30%-50%)
- L = Likely (60%-70%)
- O = Occasional/Periods of (80%-100%)
- D = Definite (80%-100%)

b. Product Availability – The MFM is routinely issued in conjunction with the mandatory coastal waters forecasts, however, updates may be issued at any time as conditions warrant.

The product can be seen on-line at http://www.prh.noaa.gov/hnl/pages/MFM.php

c. Additional Information - Forecast data from this experimental product is not intended to substitute for the official Coastal Waters Forecast (CWF) text forecast, or Marine Weather Warning (MWW) text forecast, which will also convey all marine advisory and warnings in effect (i.e. Gale Warnings). Rather, it is intended to supplement the official forecast with higher resolution data at pre-determined locations.