

Mountain Wave Forecast Model (MWFM)

PROGRAM/PROJECT: Mountain Wave Forecast Model (MWFM)

LEAD AGENCY: United States Navy (USN – Naval Research Laboratory)

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SERVICE AREA (S)/INITIATIVE (S)

- *National Aviation Weather Initiatives:*
7: 10

FUNDING

- *Programmed/Planned (\$'s/FY):* Funded through FY04

TYPE OF PROGRAM/APPLICATION

Research and Development

SCOPE OF PROGRAM/PROJECT

- *What's being developed, procured, etc:* a numerical model that uses developmental algorithms to forecast fine-scale zones of turbulence caused by breaking wind flow waves due to mountainous terrain. The current model, MWFM 2.0, includes better descriptions of 3D wave propagation, breakdown, and improved wave field descriptions near the topographic source.
- *How operations will be changed/improved:* fine scale turbulence forecasts will enable aircraft to avoid turbulent areas with greater accuracy. The success of this program is expected to result in significant reductions in personal injury and aircraft damage attributed to turbulence encounters.

PROGRAM/PROJECT MANAGEMENT

- *Basic guidance document for this program:* Information not available.
- *Program/Project verification process:* Information not available.
- *Method used for end product validation:* Post-analysis of forecast case studies using data collected from aircraft and satellites. Also, conducting comparisons of forecasts with reports of turbulence from selected flights.
- *Operational training for the user:* Naval Research Laboratory (NRL) web-site provides details on interpreting the test forecasts for the continental U.S. Operational training will be addressed when and if the product transitions to operations.

SCHEDULE/IMPLEMENTATION

- *Next major program milestone:* TBD.
- *Program becomes operational:* MWFM is currently being considered as a possible NRL project to develop and fully assess its potential for operational applications for naval aviation. If approved, the project would span FY02-04 with possible transition to operations in FY05.
- *Plans for further improvements:* Incorporate better topography using digital elevation data.