

Proposed  
Automated Weather Information System  
(AWIS)  
Training Plan

U.S. Department of Commerce  
National Oceanic and Atmospheric Administration  
Environmental Research Laboratories  
Forecast Systems Laboratory  
325 Broadway  
Boulder, CO 80303

# AWIS TRAINING PLAN

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## 1. Overview

The Automated Weather Information System (AWIS) will be a sophisticated computer system requiring qualified, trained personnel to manage, operate, and maintain it. MEPA has a number of employees with the required educational qualifications, and, through the ongoing efforts of the MEPA Training Department, more employees are upgrading their educational qualifications each year. This training plan does not address the issue of MEPA's long-term educational plans, other than to suggest the educational qualifications of the personnel required. It addresses instead the short-term training required to prepare existing qualified personnel to manage, operate, and maintain the system. This training differs from education in focus as well as duration. Mastery rather than criterion-referenced learning of the material presented is the objective, and efficient presentation of the necessary information is essential to achieve the objective within the time limits.

In order to assess AWIS training requirements, current MEPA personnel statistics have been compiled (Section 2.) and compared to estimated staffing requirements for implementing AWIS (Section 3.). Requirements for three types of meteorological systems training (Section 5.), several computer operation and maintenance courses (Section 11.), and subsequent upgrade and refresher courses (Section 12.) have been identified. Requirements for a training staff consisting of course developers to develop course curricula and materials, course instructors to deliver the courses, and an AWIS Training Coordinator to manage the training staff and coordinate the various training activities have also been identified (Section 9.).

MEPA managers, technical supervisors, and operational forecasters will need to become familiar with the concepts behind large automated data systems in order to participate in the ongoing development of AWIS and to use and manage the system effectively. The AWIS Training Coordinator will be responsible for organizing Management, Engineering, and Forecaster Training Courses to meet those needs. Discussions of the content, scheduling, evaluation, selection of trainees, and logistics for these courses make up the bulk of this plan.

MEPA and/or contract system managers, analysts, programmers, technicians, and operators will require operation and maintenance training to manage, operate and maintain the specific hardware to be installed. This training should be provided by the contractor selected to install the system. Descriptions of the courses which the contractor should be expected to provide are included in this plan.

Subsequent upgrade and refresher training will also be required; this will be provided by MEPA and the contractor at a MEPA AWIS training facility to be established with the help of NOAA and the contractor. Suggestions for upgrade training and a description of the proposed MEPA AWIS training facility are also included in this plan.

Wherever practicable, the courses described here should consist of existing classes offered by U.S. or Saudi Arabian agencies, institutions or companies, or adaptations of such classes. In some areas, such as forecaster training, PROFS may be uniquely qualified to provide the expertise required for course development.

The Management, Engineering, and initial Forecaster Training Courses described herein were planned to be offered in the United States for three reasons. First, the expertise required to develop and present these courses can be obtained more easily and at less expense in the U.S. Nevertheless, a major goal of these AWIS training activities in the U.S. will be the transfer of course development materials and instructional expertise to the MEPA AWIS training facility in Jeddah for subsequent forecaster, upgrade, and refresher course training. The second reason is the importance of separating the participants from the pressures of their daily jobs. Candidates will be better able to concentrate and do their best in courses offered outside of the workplace. Finally, the incentive that training outside of Saudi Arabia holds for MEPA personnel will encourage qualified personnel to try harder to become candidates than if the courses were offered in Saudi Arabia.

## AWIS TRAINING TASKS

### 1. Prepare an AWIS Training Plan 5/88-4/89 AWIS Training Coordinator (11 pm) PROFS (2 pm)

**Total: 13 pm\***

- 1.1. Course content subtasks
  - 1.1.1. Compile preliminary course outlines 5/88-8/88 (AWIS Training Coordinator)
  - 1.1.2. Identify courses to be developed/suitable existing courses 8/88-12/88 (AWIS Training Coordinator/PROFS)
  - 1.1.3. Suggest appropriate hardware-specific training to be responsibility of vendor (e.g., maintenance, system operation) 1/89-3/89 (AWIS Training Coordinator)
  - 1.1.4. Prepare preliminary course schedules 1/89-3/89 (AWIS Training Coordinator)
- 1.2. Course participant selection subtasks
  - 1.2.1. Obtain MEPA personnel data 9/88 (AWIS Training Coordinator)
  - 1.2.2. Prepare profiles of potential training participants 10/88-12/88 (AWIS Training Coordinator)
  - 1.2.3. Suggest selection criteria 2/89-3/89 (AWIS Training Coordinator)
- 1.3. Course evaluation
  - 1.3.1. Identify how participants' success in mastering course content will be measured 1/89-3/89 (AWIS Training Coordinator)
  - 1.3.2. Suggest means of remediation for unsuccessful participants 2/89-3/89 (AWIS Training Coordinator)
  - 1.3.3. Identify how courses will be evaluated and improved based on the evaluation 3/89 (AWIS Training Coordinator)
- 1.4 Submit completed training plan to MEPA 4/89 (AWIS Training Coordinator)

### 2. Organize Training Courses 5/89-12/89, AWIS Training Coordinator (7 pm) PROFS (.5 pm)

**Total: 7.5 pm**

- 2.1. Participant selection subtasks
  - 2.1.1. Assist MEPA Training Department with participant selection 5/89-6/89 (AWIS Training Coordinator)
  - 2.1.2. Coordinate AWIS training schedule with SSOC and other scheduled training 7/89-8/89 (AWIS Training Coordinator)
- 2.2. Instructor selection subtasks
  - 2.2.1. Survey available instructors and course developers 9/89 (AWIS Training Coordinator/PROFS)
  - 2.2.2. Match instructors/course developers with courses 10/89 (AWIS Training Coordinator)
  - 2.2.3. Select instructors and course developers 11/89 (AWIS Training Coordinator)
- 2.3. Assist MEPA in evaluating vendor training proposals 7/89-8/89 (AWIS Training Coordinator)

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\* pm = person months

**3. Develop Management Training Course 12/89-5/90, AWIS Training Coordinator (5 pm) PROFS (5 pm)**

**Total: 10 pm**

- 3.1. Curriculum development subtasks
  - 3.1.1. Outline course objectives, content and sequence 12/89-1/90 (AWIS Training Coordinator)
  - 3.1.2. Determine available materials/materials to be developed 2/90 (AWIS Training Coordinator)
- 3.2. Materials development subtasks
  - 3.2.1. Obtain equipment required for materials development 2/90-4/90 (AWIS Training Coordinator)
  - 3.2.2. Prepare necessary course materials 3/90-4/90 (AWIS Training Coordinator/PROFS)
- 3.3. Evaluation subtasks
  - 3.3.1. Identify criteria for participant/course evaluation 1/90 (AWIS Training Coordinator)
  - 3.3.2. Develop preliminary evaluation materials 4/90 (AWIS Training Coordinator, PROFS)

**4. Deliver Management Training Course 5/90-8/90 AWIS Training Coordinator (3 pm) 3 Instructors (3 pm)**

**Total 6 pm**

- 4.1. Participant support subtasks
  - 4.1.1. Coordinate participants' international transportation/per diem with MEPA 5/90 (AWIS Training Coordinator)
  - 4.1.2. Arrange housing/local transportation for participants 5/90 (AWIS Training Coordinator)
- 4.2. Facility preparation subtasks
  - 4.2.1. Allocate classroom/office space as required 5/90 (AWIS Training Coordinator)
  - 4.2.2. Provide necessary materials and secretarial support 5/90-7/90 (AWIS Training Coordinator)
- 4.3. Instruction subtasks
  - 4.3.1. Provide formal classroom instruction 6/90 (Instructors)
  - 4.3.2. Provide informal tutorial support as needed 6/90 (Instructors)
- 4.4. Evaluation subtasks
  - 4.4.1. Evaluate participants' progress through pre- and post-tests 6/90 (Instructors)
  - 4.4.2. Evaluate participants' success in mastering course modules 6/90 (Instructors)
  - 4.4.3. Provide remedial help for unsuccessful participants 7/90 (Instructors)
  - 4.4.4. Evaluate effectiveness of training course and modify as necessary to improve 7/90 (Instructors/AWIS Training Coordinator)

**5. Develop Engineering and Forecaster Training Courses 8/90-8/91, AWIS Training Coordinator (12 pm), 3 Course Developers (36 pm)**

**Total: 48 pm**

- 5.1. Curriculum development subtasks
  - 5.1.1. Outline course objectives, content and sequence 8/90-10/90 (Course Developers)
  - 5.1.2. Determine available materials/materials to be developed 11/90-12/90 (Course Developers)
- 5.2. Materials development subtasks

- 5.2.1. Obtain equipment required for materials development 1/91-4/91 (AWIS Training Coordinator)
- 5.2.2. Prepare necessary course materials 5/91-8/91 (Course developers)
- 5.3. Evaluation subtasks
  - 5.3.1. Identify criteria for participant/course evaluation 10/90 (Course developers/AWIS Training Coordinator)
  - 5.3.2. Develop preliminary evaluation materials 5/91-8/91 (Course developers)

**6. Deliver Engineering Training Courses 9/91-2/92 AWIS Training Coordinator (3 pm)  
3 Instructors (15 pm)**

**Total 18 pm**

- 6.1. Participant support subtasks
  - 6.1.1. Coordinate participants' international transportation/per diem with MEPA 9/91 (AWIS Training Coordinator)
  - 6.1.2. Arrange housing/local transportation for participants 10/91 (AWIS Training Coordinator)
- 6.2. Facility preparation subtasks
  - 6.2.1. Allocate classroom/office space as required 10/91 (AWIS Training Coordinator)
  - 6.2.2. Provide necessary materials and secretarial support 10/91-2/92 (AWIS Training Coordinator)
- 6.3. Instruction subtasks
  - 6.3.1. Provide formal classroom instruction 10/91-1/92 (Instructors)
  - 6.3.2. Provide informal tutorial support as needed 10/91-1/92 (Instructors)
- 6.4. Evaluation subtasks
  - 6.4.1. Evaluate participants' progress through pre- and post-tests 10/91-1/92 (Instructors)
  - 6.4.2. Evaluate participants' success in mastering course modules 1/92 (Instructors)
  - 6.4.3. Provide remedial help for unsuccessful participants 2/92 (Instructors)
  - 6.4.4. Evaluate effectiveness of training course and modify as necessary to improve 2/92 (Instructors/AWIS Training Coordinator)

**7. Deliver Forecaster Training Course 11/91-1/92 AWIS Training Coordinator (3 pm) Instructors (6 pm)**

**Total 9 pm**

- 7.1. Participant support subtasks
  - 7.1.1. Coordinate participants' international transportation/per diem with MEPA 11/91 (AWIS Training Coordinator)
  - 7.1.2. Arrange housing/local transportation for participants 11/91 (AWIS Training Coordinator)
- 7.2. Facility preparation subtasks
  - 7.2.1. Allocate classroom/office space as required 11/91 (AWIS Training Coordinator)
  - 7.2.2. Provide necessary materials and secretarial support 11/91-1/92 (AWIS Training Coordinator)
- 7.3. Instruction subtasks
  - 7.3.1. Provide formal classroom instruction 12/91 (Instructors)
  - 7.3.2. Provide informal tutorial support as needed 12/91 (Instructors)
- 7.4. Evaluation subtasks
  - 7.4.1. Evaluate participants' progress through pre- and post-tests 12/91 (Instructors)

- 7.4.2. Evaluate participants' success in mastering course modules 12/91 (Instructors)
- 7.4.3. Provide remedial help for unsuccessful participants 1/92 (Instructors)
- 7.4.4. Evaluate effectiveness of training course and modify as necessary to improve 1/92 (Instructors/AWIS Training Coordinator)

**8. Transfer AWIS Training to Jeddah 3/92-9/92 AWIS Training Coordinator (6 pm)**

**Total: 6 pm**

**8.1. Training materials subtasks**

- 8.1.1. Ensure that all materials developed for AWIS training are handed over to the MEPA training facility in Jeddah 3/92 (AWIS Training Coordinator)
- 8.1.2. Assist MEPA in the adaptation of these materials to the Jeddah teaching situation 4/92 (AWIS Training Coordinator)

**8.2. Training facility subtasks**

- 8.2.1. Suggest equipment necessary to deliver AWIS training courses 3/92-5/92 (AWIS Training Coordinator)
- 8.2.2. Help MEPA establish AWIS training facility in Jeddah 6/92-7/92 (AWIS Training Coordinator)
- 8.2.3. Assist MEPA Training Department in selecting instructors and existing courses 8/92-9/92 (AWIS Training Coordinator)

**9. Deliver Forecaster Training Course in Jeddah 10/92-12/92 AWIS Training Coordinator (3 pm)**

**9.1. Facility preparation subtasks**

- 9.1.1. Allocate classroom/office space as required 10/92 (MEPA)
- 9.1.2. Provide necessary materials and secretarial support 10/92-12/92 (MEPA)

**9.2. Instruction subtasks**

- 9.2.1. Provide formal classroom instruction 11/92 (Instructors)
- 9.2.2. Provide informal tutorial support as needed 11/92 (Instructors)

**9.3. Evaluation subtasks**

- 9.3.1. Evaluate participants' progress through pre- and post-tests 11/92 (Instructors)
- 9.3.2. Evaluate participants' success in mastering course modules 11/92 (Instructors)
- 9.3.3. Provide remedial help for unsuccessful participants 12/92 (Instructors)
- 9.3.4. Evaluate effectiveness of training course and modify as necessary to improve 12/92 (Instructors/AWIS Training Coordinator)