Fixed Base Automatic Meteorological Station (AN/FMQ-22). FAC: 1341

CATCODE: 149XX2
OPR: AFWA/A5/A8, MAJCOM/A3W
OCR: MAJCOM/A6

1.1. **Description.** A weather system consisting of an integrated suite of meteorological instruments and information technology assets designed to automatically gather surface weather observations, which can be augmented by trained weather personnel. The system is capable of collecting, measuring, and reporting the following parameters: Wind speed and direction, temperature and dew point, visibility, cloud height, present weather, precipitation amount, and lightning detection for air traffic control operations, weather observations, and forecasting.

1.2. **Requirements Determination.** One sensor suite is authorized at each facility. If an airfield requires two or more sensor suites, or if the aerodrome has two or more instrumented approaches or has terrain anomalies, then this system may not be appropriate. One Observation personal computer (PC) is needed for each location requiring weather information. Typical locations are the weather station or the Air Traffic Control Tower. Obtain further information through AFWA/A5/8 or MAJCOM/A3 weather staff.

1.3. **Scope Determination.** Site the weather system where it best measures vital weather data representative of the touchdown area of a runway or helipad. Locate the sensor suite approximately 152 m (500 ft) from centerline of the runway and approximately 229 m to 305 m (750 ft to 1,000 ft) from the designated runway threshold. Locating the system more than 152 m (500 ft) from the centerline of the runway provides data less representative of the runway and therefore could have a negative effect on aviation operations. Concrete pads and underground cabling and conduit are needed to support the mounting masts for the equipment, communication/power requirements and anchoring pads for the guy wires. The Observation PC is located in the Weather Station (**CATCODE 141629**, **141453**, or **149962)**. The Observation PC provides a permanent record of all weather data reported from the sensor suite.

1.4. **Dimensions.** Quantitative requirements are determined through the results of site surveys and coordinated with the use of PSA. The standard facility requirement should also be outlined and coordinated through the PSA vehicle. A typical site location needs an area of 36 ft x 36 ft long to accommodate concrete pads, guy wire anchoring pads, and grounding system.

1.5. **Design Considerations.**

1.5.1. **Communications Requirements.** Underground cabling, either copper twisted or fiber optics, which connects the sensor suite to the Observation PC.

1.5.2. **Power Requirements (includes backup power and UPS).** Reliable/stable, dedicated 120 VAC, 60 Hz, 20 A service for the outdoor sensor suite. The Observation PC requires a 120 VAC load circuit. The requirement for emergency power is determined under AFI 32-1063.

1.5.3. **Special Features.** Locate equipment to comply with airfield/aviation safety

and explosive safety standards.