BACKUP WEATHER EQUIPMENT IS REQUIRED BY THE FAA (ORDER JO 7900.5E) FOR ALL AIRPORTS WITH ASOS OPERATING AT SERVICE STANDARD LEVELS A, B, OR C. PART 135 AND PART 191 FLIGHT OPERATIONS REQUIRE CERTIFIED WEATHER INFORMATION DERIVED FROM APPROVED EQUIPMENT SUCH AS A MESOTECH AWOS.

FLIGHTS MAY NEED TO BE CANCELLED, DELAYED, OR DIVERTED IF CERTIFIED WEATHER INFORMATION IS NOT AVAILABLE.

REDEFINING BACKUP WEATHER EQUIPMENT

MESOTECH'S BACKUP AWOS FOR CIVILIAN AND MILITARY AIRPORTS CASE STUDY

Clients:
Beale Air force Base
California, USA

Miami-Opa Locka Executive Airport
Florida, USA

Mesotech provided:
Backup AWOS Equipment

Military and civilian aircraft all rely on accurate weather data. Modern-day airports provide this data through automated weather systems supplemented, when necessary, by human observers.

The Problem: Weather system outages are guaranteed

Whether an airport has an Automated Weather Observing System (AWOS), Automated Surface Observing System (ASOS), or military equivalent system (FMQ-23, FMQ-22, or FMQ-19), the reports they produce for pilots and other aviation personnel are crucial to the safety and efficiency of an airport.

Even the best aviation weather systems have downtime: unexpected damage, power failures, routine maintenance, equipment failures, etc. These outages are rarely scheduled and they can put pilots and air traffic controllers in a bind in inclement weather.

Airports with traditional backup equipment in place rely on analog instruments that may not be regularly maintained.

When switching to backup equipment, automated reports (METAR, SPECI) are replaced with raw data displayed on analog displays in the ATC cab.

The antiquated backup equipment is the sole, primary source of weather data. The stresses of aviation in inclement weather are compounded by losing access to critical weather technology.

Reliable, accurate, well-maintained redundant systems are a hallmark of aviation safety and the traditional approach to backup weather equipment falls short.

The Solution: Airport Weather Advisor® Backup AWOS

Airport Weather Advisor® (AWA) is Mesotech's flagship product: an ICAO compliant, US Air Force qualified, FAA certified Automated Weather Observing System (AWOS). AWA systems are available in the AWOS capability levels defined by the FAA from AWOS level I through level IV Z.

Each Airport Weather Advisor® system has a set of common components for data collection and processing and the level defines what sensing and reporting capabilities it has.

These capabilities include: wind speed and direction, temperature, dew point, altimeter setting, density altitude, visibility, precipitation accumulation, cloud height, sky condition, present weather, thunderstorm/lightning, and freezing rain.

Mesotech's backup AWOS uses the same hardware, software, and sensors as a standard AWA system but is specifically tailored as a backup system to include options such as: customizable ATC displays, cloud-based data display, factory remote maintenance monitoring, VHF transmitter, dial-in phone capability, redundant communication, uninterruptible power supplies, and solar power.

Choosing an Airport Weather Advisor® backup AWOS ensures that when a primary observing system goes down, it is backed up by a system that is fully capable of serving as a primary observing system as well.

The Benefits: Always Live!

Mesotech's systems can come tailored to your airport's requirements and features can be added or expanded as your requirements grow.

For civilian airports, the cloud-based AWOS Live display and monitoring platform provides an unmatched level of assurance in with constant factory monitoring.

In military systems various data delivery options are available and configured to meet DISA cybersecurity requirements.

WITH MESOTECH'S BACKUP AWOS, YOU'LL NEVER FACE GAPS IN YOUR WEATHER DATA AGAIN.

RELIABLE, ACCURATE, AUTOMATED AVIATION WEATHER SOLUTIONS

LEARN MORE AT MESOTECH.COM

MESOTECH INTERNATIONAL

SCAN THE CODE FOR MORE INFORMATION

Beale Air Force Base

Beale Air Force Base is home to the 9th Reconnaissance Wing and a fleet of Lockheed U-2 "Dragon Lady."

These aircraft are notoriously difficult to land due to their sensitivity to crosswinds, a lightweight airframe, and a pronounced ground effect caused by the U-2's high-lift wings.

The complicated landing process for the U-2 involves a chase car following the aircraft down the runway with a second pilot providing altitude, attitude, and crosswind information from the car via radio.

The Problem: The pilot needs accurate, live crosswind information to ensure a safe landing.

Mesotech met the critical needs of the U-2 flying mission by installing an Airport Weather Advisor® backup system tailored to the needs of the 9th Reconnaissance Wing. Wind sensors installed on the glideslope antenna towers at each end of the runway feed live data to displays monitored by the weather squadron and the Supervisor of Flying in the ATC cab.

The system calculates and displays crosswinds every 5 seconds to ensure pilots have accurate, real-time information.

Each sensor and its data collection platform is redundantly powered by both AC mains and solar power and communicates with the central processing station using single mode optical fiber.

The system has provided mission critical weather data supporting the Beale AFB flying mission since 2018.

Miami-Opa Locka Executive Airport

Miami-Opa Locka Executive Airport is a joint civil-military airport that averages over 404 operations per day and over 145,000 a year.

Located 11 miles from downtown Miami, the airport has a manned tower that operates from 7:00 am to 11:00 pm and often finds itself in the direct path of hurricanes and other inclement weather.

In 1992 it was hit by the third costliest natural disaster in US history when Hurricane Andrew struck the city.

Accurate, reliable weather data is crucial to flight safety at Miami-Opa Locka with so much air traffic daily and a high risk of rapidly changing weather.

In Miami, Mesotech revitalized an existing 30ft. tilting mast and installed an AWOS Level I system as a backup system for the ASOS primary observing system. The system includes:

- Temperature and Relative Humidity Sensor
- Dual Barometers
- Mechanical Wind Sensor
- Data Collection Platform and Central Processing Station
- UHF data link
- Dual ATC displays

The system streams data to Mesotech's AWOS Live cloud-based display that allows users to view real-time weather data from computers and mobile devices anywhere in the world.

Built-in test and maintenance data is streamed to Mesotech's factory monitoring team, allowing the support team to begin resolving issues before the users at Opa-Locka notice a problem.

Along with the factory monitoring, an ongoing scheduled maintenance program ensures that the equipment is always ready to take over as the primary observing system.

AIRPORT WEATHER ADVISOR® VS STANDALONE EQUIPMENT

FEATURES	AWA® BACKUP AWOS	STANDALONE EQUIPMENT
MEETS FAA MINIMUM REQUIREMENTS	✔	✔
UNLIMITED INTEGRATED DISPLAYS	✔	
FACTORY MAINTENANCE MONITORING	✔	
AWOS LIVE INTERNET DATA DISPLAY	✔	
MAY BE CERTIFIED AS PRIMARY AWOS	✔	
GENERATES AUTOMATED REPORTS	✔	
UPGRADEABLE VISIBILITY, PRESENT WEATHER, LIGHTNING	✔	

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