

e-MTWR System

(Enav mobile control tower systems)

A transportable full-featured operational tower, quickly and easily deployable in multiple scenarios.



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» MISSION

Enav has produced and delivered the e-MTWR System, a mobile control tower for ground-to-air traffic control (ATC) communications, transportable with any Air Carrier aircraft and rapidly deployable for out-of-area operations.

Operational scenario:

The Mobile Control Tower system is specifically designed to ensure the coverage of air traffic in areas without fixed systems, to support any temporary deficiencies within an operational structure, for tactical operations of civil or military type and for situations of natural disasters. In particular, it is a perfect solution to:

- support any temporary deficiencies within an operational structure;
- support civil on military tactical operations;
- quickly resume ATS in case of natural disasters,
- provide ATC facilities in case of public events (e.g.: sports) where a controlled airspace must be set-up.

Key benefits:

e-MTWR is an ideal solution for disadvantaged areas and operating theaters or for emergency situations where it is necessary to promptly provide aeronautical communications services for the activities of Air Traffic Control Transportable Centre (as a gap filler) and for Emergency and Armed Forces in the different operational contexts, in particular to manage the critical phases of flight, i.e. take-off, approach and landing operations.

EASY AND READY TO GO

The e-MTWR system is designed to be carried on an air carrier or towed on the road. Housed on a trolley, it can be extended through mechanical arms.

The Control Tower system is designed to be operational in less than 2 hours by 2 suitably trained technicians.

WORKING IN EXTREME CONDITION

Rain, snow, ice, dust, sand, extreme thermal and humidity parameters do not affect the performance of the e-MTWR and the effectiveness of communications, guaranteed even in difficult weather and environmental conditions. The system is, in fact, able to operate at an altitude of up to 3000 meters above sea level and with gusts



of wind up to 50 kilometers or up to 120 kilometers per hour depending on whether it has no supports or is anchored to the ground.

Main Technical Features and advantages

The Mobile Tower provides the following basic equipment:

- VCS and full redundant of VHF with recording of communications
- Meteorological observation by means of a dedicated weather station
- Airport Lighting: rotating beacon and signalling equipment
- External interfaces for terrestrial communications: network and telephone lines
- Autonomous power source: Diesel Generator and UPS, where mains is not available
- Hydraulic self stabilization and lifting system.

Additional optional equipment can be included:

- Basic Nav aids by means of a VDF
- HF communication
- ATIS System
- CWP with basic ADS-B surveillance

Communication Equipment

Includes a set of transceivers that allow to operate on 3 VHF frequency + 1 HF frequency. The equipment includes all required filtering devices and antennas, installed on top of the operations room. The transceivers are managed by a digital VCS that allows the ATCO to operate using a single HMI. In case of fault of the main communication equipment, a set of emergency transceivers is available, to operate on 2 VHF frequencies. All communication lines, both RF and terrestrial, are recorded by a digital voice recorder.

Meteorological observation

The mobile tower is equipped with a standard meteorological weather station, that can measure Wind speed/direction, Temperature and Humidity , Barometric Pressure and display average data according to ICAO and WMO.

Airport Lighting

Mobile tower will be equipped with rotating beacon compliant with Standards- FAA: L-801 AC 150/5345-12 (Current Edition) and ICAO Annex 14. Moreover obstruction lights are installed on the edges of the structure. The operational room is also equipped with Light Signal Gun and nightvision binoculars.

External interfaces for terrestrial communications

When available, the Mobile Tower can be interfaced with terrestrial communication networks such as telephone lines of LAN connections. Once interfaced, these lines will be immediately available for ATC operations.

Power source

In case mains connection is not available, the mobile tower is able to operate using power generated by the on-board diesel engine . In addition, all equipment are powered by UPS for seamless operations.

Idraulic self stabilization and lifting system.

The hydraulic lifting system allows the lifting of the compartment up to 6m operating height. It is operated by two telescopic cylinders with multiple extensions positioned between the two arms. MTWR is also equipped with a stabilization system based on 4 telescopic arms that allow leveling and positioning on harsh grounds.

Operations Room

The operation room, once lifted, allows a panoramic view of 360°. The interior of the cabin is air conditioned for heat and cold by means of a suitable and redundant air conditioning system . The minimum useful internal dimensions of the operations room are 4600mm x 1610mm x 2050mm.



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