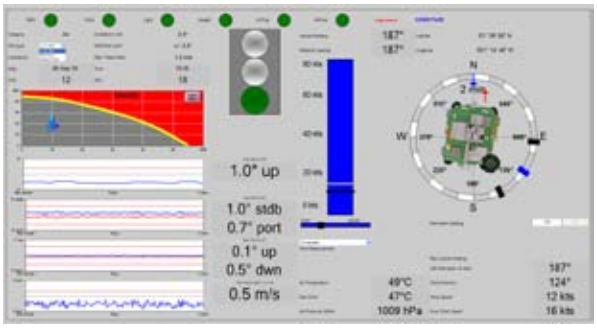
Helideck Monitoring System (HMS)

Safety and cost are keywords in all offshore helicopter operations; these become all the more critical when assessing the criteria for safe landing.

Reliable information on helideck motion and weather is required during pre-flight planning and continually during the flight to give maximum opportunity for the flight to be completed safely and efficiently.

Fugro engineers have worked for many years to provide accurate helideck motion and weather information for helicopter operations. The Fugro HMS software and system design has proven to be ideal for integrating differing inputs from a wide range of sources and managing data to suit a vast number of applications.

Meteorological and oceanographic sensors are combined in the system to ensure real-time, clear, accurate and relevant measurements of the prevailing conditions are provided to all who require them. These measurements can be viewed offshore, as well as onshore at the heliport, and used to compare environmental trends with forecasts to improve planning accuracy.



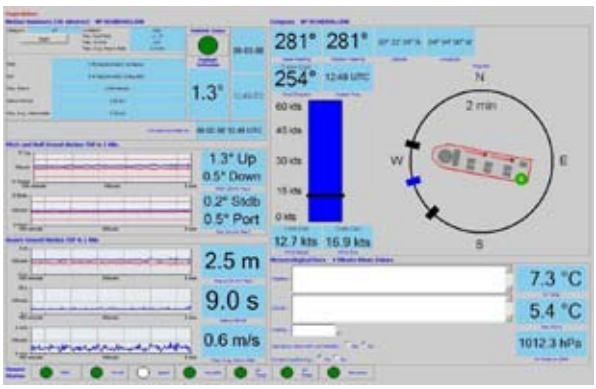
Helideck motion monitoring platform display

Real-time monitoring of helideck platform

Regulation and Certification

The software is designed to meet the latest regulations and certification standards required by helideck monitoring systems for offshore installations. The system complies with:

- UK Civil Aviation Authority (CAA), CAA-N, UKOOA/ OGUK, Brazilian, Canadian regulations and UK helicopter operators'
- Helideck Certification Agency (HCA) guidelines
- Standard Measuring Equipment for Helideck Monitoring System (HMS) and Weather Data guidelines issued by Bristow Group, Bond Offshore and CHC.
- Certified by the Norwegian Civil Aviation Authorities NORSOK (CAA-N) to conform to the regulations stated under BSL D 5-1 and BSL G 7-1 for the supply of HMS.
- CAP437 Civil Aviation Authority (CAA) required for HMS and can also be ATEX certified under EN13980.
- World Meteorological Organization (WMO)



Helideck motion monitoring vessel display

Helideck Monitoring System (HMS)

Features

- Clear displays and reports of helideck conditions for flight planning (local network or Internet)
- Integrates existing sensors with the option to add new sensors for waves, currents, cloud, visibility and other parameters easily with minimal alterations to the core system
- Remote diagnostics and software upgrades to keep up-to-date with regulation changes
- Provides offline data reporting and summary statistics available for incidents, operational downtime, graphical displays, etc
- User definable audible and visual alarm warnings
- Optional data outputs to third party systems (e.g. Modbus, DP, DVR, ICSS)
- 24/7 System Support
- Compliant to the MSI/WSI future standards
- Outputs to Norwegian Standard (NORSOK), DF22 data output to DNMI, Automatic, semi-automatic or manual METARS and MANMARS, and to National Marine Electronics Association NMEA 0183 standard

System Specification

Displays

Clear, precise displays provide easy access to the data that is needed for operational decision-making and pre-flight planning. They allow the helideck motion, wind and meteorological trends to be examined for expected conditions on arrival and thus avoid unnecessary flights. Any adverse weather working policy can be included in the displays, to help maximise the operational window for helideck operations.

LAN / WAN Network

HMS data can be viewed locally on the data acquisition computer as well as remotely across Local and Wide Area Networks using a internet browser such as Internet Explorer.

Data can also be viewed through the Fugro web display service (www.fugroweather.com) that allows direct access to helideck motion and weather information by offshore and onshore support personnel. Internet distribution options are available including Fugro's own XML transmitting format for onshore web display hosting.

Measured Parameters

- Heave, pitch, roll, surge, sway, yaw
- Heave rate, heave acceleration, heave period
- Helideck inclination
- Motion and wind severity index
- Barometric pressure (QNH, QFE)
- Wind speed and direction
- Air temperature, dew point and relative humidity
- Visibility and present weather WMO and NWS Code
- Cloud height
- Sea water temperature, waves (directional/non-directional)
- Sea currents
- Lightning detection

Helideck Motion

Helideck motion can become particularly significant at the bow or stern of a vessel, where the vertical heave motion is added to the pitch that is further amplified by the length of the vessel. The impact is most severe when a vessel has significantly changing "dynamic" properties due to heavy load transfers or metocean conditions. This can have serious consequences for helicopter operations; this is where accurate measurements of helideck motion can be invaluable to undertaking safe helicopter operations.

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