Helicopter Take-Off and Landing System

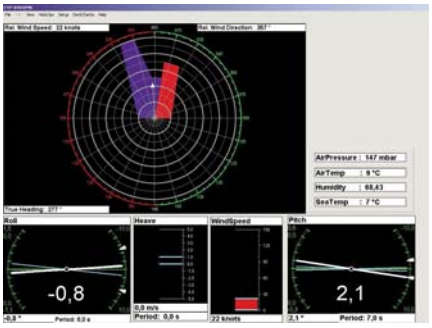
The Helicopter Take-Off and Landing System (HTLS) assists in the take-off, landing and flying operations of the ship-borne helicopter by measuring and displaying weather conditions and ship's motion data. The HTLS allows the operator to set maximum values for the parameters of roll, pitch and heave and determines when it is safe for the helicopter to take-off and land, also accounting for the combat situation. It displays live video from cameras on the flight deck to aid the operator in landing the helicopter. The HTLS also provides for recording of data as well as for training of the helicopter landing crew.

The HTLS may be used in a stand-alone configuration or integrated within a surface combat suite by means of a computer network.

Features

The HTLS features are as follows :

- Monitor and display of roll, pitch, heave and speed of the ship
- Monitor and display of weather conditions including wind speed and direction, ambient temperature and barometric pressure
- Display and control of glide path indicator to aid landing of the helicopter
- Display of radar picture with *friendly*, *unknown* and *enemy* designations as well as flight paths, waypoints, special zones and helicopter approach lanes to own ship
- Control of flight deck and hangar lights
- Display of helicopter status and position on the ship and while flying (range, azimuth, height, heading and speed)
- Display of flight deck personnel status
- Display of landing and take-off criteria polar plots
- Day/night operations, normal or maximum helicopter load and red/green approach sectors
- Display of video from flight deck camera
- Fully configurable with built-in self-tests
- On-line health monitoring



Design

The software is designed using the latest in Object Orientated Design (OOD) methodologies and implemented using an Object-Orientated Programming (OOP) language, C++.

Applications

- Naval Ships
- Fisheries Patrol Vessels
- Oil Drilling Platforms
- Survey Ships
- Ships with Helicopter Operations

Helicopter Take-Off and Landing System

Motion Monitoring

Parameter	Range	Accuracy	Accuracy Low	Accuracy High
Roll	-30° to 30°		0,3°	0,1°
Pitch	-10° to 10°		0,3°	0,1°
Heave Rate	-5 ms-¹ to +5 ms-¹	0,1 ms-¹		
Heading	0° to 360°		0,5°	0,2°
Speed	0 to 40 knots	0,5 knots		
Displayed History	15 minutes			
Recorded Video and Data	up to 500 hours			

Environmental Monitoring

Parameter	Range	Accuracy
Wind Speed	0 to 80 knots	0,5 knots
Wind Direction	0° to 360°	1°
Air Temperature	-60 C to +70 C	0,1°
Barometric Pressure	600 to 1 200 mBar	1 mBar
Sea Temperature	-10 C to +50 C	0,1 C
Relative Humidity	0% to 100%	1%

Compliances

- CAA CAP437 Offshore Helicopter Landing Areas - Guidance on Standards
- Norwegian Standard Measuring Equipment for Helideck Monitoring System (HMS) and Weather Data [Category B+ (high accuracy deck motion sensor) and Category B (low cost deck motion sensor)]

HTLS

Product