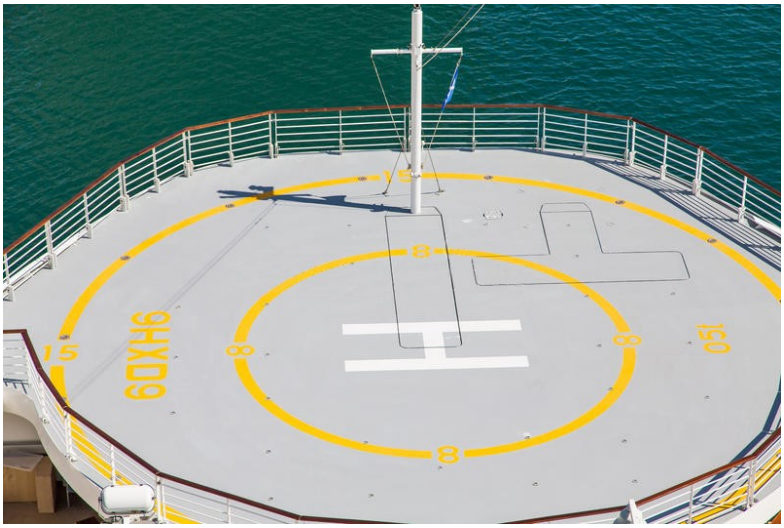
Watson Industries Application Notes

Helicopter Approach Path Indicator



On land, the aviation industry has developed the technology to aid helicopter pilots on their approach to a landing pad. It is a system that projects a lighted indication which provides the pilot with important information about their position with respect to the landing pad. The HAPI (Helicopter Approach Path Indicator) is a very useful device that improves the safety of the pilot, helicopter, cargo and any potential passengers.

To stabilize the HAPI system against wave motion on sea-going vessels, a vertical reference which drives a stabilized platform needs to be integrated into the existing HAPI system.

Watson Industries manufactures the Stabilized Mount System (SMS) product line which combines a vertical reference into a stabilized platform that provides a level surface on which to mount the path indicator device regardless of vessel motion.

Technical Challenges:

In a ground-based HAPI setup, the device is typically mounted in a fixed location, aligned toward the desired approach vector, and then carefully leveled so that the lighted indications are projected towards landing aircraft such that they can be seen at the proper approach angles.

A fixed-location setup is not very useful for sea-based landing pads because wave action will cause potentially large variations in the angles of the projected path indication lighting. The solution to these issues is to mount the HAPI device on a dual axis stabilized platform that can keep the indicator device level at all times.

The payload capacity of the stabilized platform may also present issues in this application. The Watson SMS devices can allow for up to a 25Kg payload if appropriately counterweighted.

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Watson Experience:

Watson Industries has been involved in the development and production of vertical reference products since 1982. We have been manufacturing the SMS product line since 2012.

Requirements:

- Level: ±1.5°
- Payload: 25Kg or less

Applicable Products:

Standalone product:

- SMS-P233

With a customer-supplied platform:

- VRS-E232-1AD
- VRS-S232-1AD
- ADS-C232-1AD
- ADS-C232-3AD

Typical Options:

We are able to accommodate your custom needs. Shown below is a listing of our most common custom modifications.

- Digital velocity input – Watson can support digital velocity inputs in many formats such as GPS and Airspeed Indicators.
- External GPS reference – We have built custom units that utilize GPS data as a reference.
- Custom specifications – For certain applications, customers require specifications that are different from our standard units. Watson Industries engineering can accommodate these needs.
- Input Voltage – Many different input voltages can be accommodated.
- Output Format – Communications Protocols RS-232, RS-422, USB, Syncro.
- Data Format – We have made many products with custom formatted data outputs.
- Sensor Ranges – The ranges for most of our sensors can be expanded or reduced to meet your requirements.

Options specific to this application:

- Customized counterweight and balancing based on your payload

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