At traffic-dense airports, LLZ/GP measurements at runways must be rapidly executed in order to avoid unnecessary delays in traffic.

This is achieved quickly and safely, thanks to the new telescopic aerial from Thomas Schmidt.

"Newly developed hydraulic telescopic aerial for measurement of runway LLZ/GP signals at Copenhagen Airport.

The Hydraulics.

The hydraulic equipment is placed on top of the system's oil tank at the back of the vehicle.

All valves are flanged directly on a specially designed manifold to reduce demand on space to a minimum. The hydraulic pump is placed underneath the vehicle, and drawn by the vehicle's engine.

The computer.

All mast functions are controlled by a micro processor. This enables the electric installation to be kept to a minimum. The system can be programmed with 9 fixed altitudes and the analog output signal can be gained according to wish. The divided display shows both the desired- and current position.

Console.

Information display emanating from ILS signals is provided here, besides a slightly modified aircraft receiver. Signals from the receiver are fed to both a cross pointer (as in a cockpit) and an x-y recorder.

X-Y-Recorder.

The location of the measuring aerial (height or horizontal distance from a given point) is plotted on the one grid.

Signals received from the GP or LLZ are plotted on the other grid.

Telescope mast.

The speed of the mast is controlled by a closed loop digital system, to provide height position accuracy of ± 2 cm. The digital control system receives information on the position of the masthead via a dual channel pulse counter, mounted on the shaft end of the downhaul winch. This signal is also used as one of the grides on the x-y recorder.

The mast's eight joints are mutually locked to ensure a maximum turn of ± 1°, during the raising stage. The system is thus most suitable for a directional aerial. The mast console can, however, be turned ± 90° around its own axis.

The aerial.

The LLZ/GP-signals are received by the aerial on the masthead, and then transmitted to the receiver via a plug-in 50 ohm coax cable. The cable is fed inside the mast and wound on a hydraulic winch, from where it runs through a rotating connector to the receiver.

The cable is equipped with a double shield, to enable power to be fed to other equipment such as a light sensor positioned on the masthead.

The mobile aerial is both reliable and tough. It was also designed in accordance with international demands.

Full height during measurement is 23 metres. It can also be reduced to 3,9 metres above ground, to permit transport on public roads.

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