SHIPBORNE ROLLING VERTICAL LANDING

Benefits of SRVL

- **Increased operational safety provided by an all-weather, day and night assessment of aircraft approach path.**
- **Reduced through-life costs of munitions as F-35B can recover with its unused weapons.**
- **Reduced fuel costs as the manoeuvre uses less thrust than a vertical landing so is more fuel efficient.**
- **Reduced aircraft maintenance costs due to reduced "wear and tear" on aircraft engines.**
- **Reduced ship/platform maintenance and repair costs as the landing deck is less exposed to exhaust heat and thrust compared to a vertical landing.**
- **SRVL camera can be fitted to any maritime platform intended for F-35B operations.**

The Shipborne Rolling Vertical Landing (SRVL) is a manoeuvre that was developed by the UK Ministry of Defence to increase weapon and fuel "Bring Back" capability compared to that of a Vertical Landing (VL) for F-35B Lightning II aircraft aboard the Royal Navy's Queen Elizabeth Class Aircraft Carriers.

Ultra has developed and integrated an all-weather, day/night-capable Situation Awareness Aid (SAA) to assist the Landing Signal Officer (LSO) in making "GO / NO GO" decisions for aircraft executing the SRVL manoeuvre.

On approach to the carrier, the aircraft has a low overtake speed and uses lift from air speed to augment the F-35B's vectored thrust lift. There is no need for arrestor gear as the aircraft uses its own brakes to come to a halt after landing. The Situational Awareness Aid camera system and sub-systems can be fitted to any maritime landing platform intended for F-35B Lightning II operations.

SRVL Glideslope Monitoring

The Situation Awareness Aid system uses two camera systems to provide the Landing Signal Officer (LSO) with an accurate picture of the approaching aircraft relative to the ideal SRVL approach path. This enables the LSO to communicate the appropriate GO / NO GO decision to the incoming aircraft. The system also supports vertical landing modes.

A Centre Line Camera, positioned at the stern of the ship and aligned to the ship's flight deck centre line, is used to monitor the azimuth of the F-35B's approach, while the Offset Camera provides height and range information.

Electro optic and/or thermal imagery of the approaching aircraft is presented to the LSO's display screen, superimposed with stabilised glideslope and centreline references generated by Ultra's software algorithms.

Each camera syste--m has integrated wash/wipe.

ALL WEATHER, DAY AND NIGHT-CAPABLE SITUATION AWARENESS AID FOR AIRCRAFT EXECUTING SHIPBORNE ROLLING VERTICAL LANDING MANOEUVRES

System Components & Subsystems

Offset Camera (OSC). Daylight and thermal cameras monitor the height and range of the approaching aircraft.

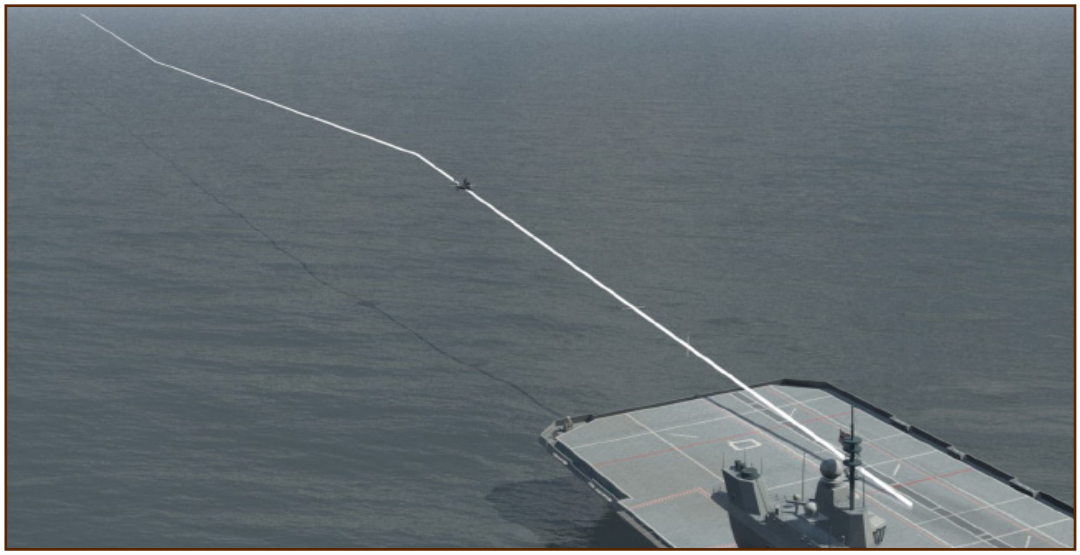
Centre Line Camera (CLC). Daylight and thermal cameras monitor the azimuth of the approaching aircraft. A third camera at the rear of the unit is used to align the CLC to the flight deck centreline.

Video Distribution and Recording Cabinet (VDRC). For display, recording and playback of SRVL approaches. Digitises video for transmission over the ship's network. Processes, controls and verifies OSC symbology.

Platform Control Cabinet (PCC). Stabilises the OSC head; processes, controls and verifies OSC symbology.

HCI Software. Provides user-friendly interface between operator and display and monitoring equipment.

Safety and diagnostic equipment. Includes a "Man Aloft" switch to disable movement of OSC head while under maintenance; and a Maintenance PC for diagnostics, system set-up and configuration. The PC can also be used for remote control of the system.



Offset camera head

making a difference

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