VIRTUAL
SIMULATION SYSTEMS

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VIRTUAL
MARSHALLING SIMULATOR

*VMS is used by the **Royal Australian Air Force**, the **Royal Australian Navy**, and **Australian Army Aviation***

The Virtual Marshalling Simulator (VMS) is an innovative stand-alone training system, as well as an important complement to the VSS Complete Aircrew Training System (CATS).

Aircraft Marshalling is a crucial skill for both land and sea operations, and one that can be costly to train with any amount of realism. VMS bridges the gap between resource-hungry live training and classroom learning by using a synthetic apparatus that can place trainees in any situation imaginable to bolster their real-life judgment and skills.

The virtual world of VMS, using COTS simulation software with custom modifications, presents a wealth of scenarios, environments and conditions to the trainee. From ship landings in stormy weather to sun-blind airstrips and foggy helo pads, environmental customisation is limitless - in any part of the world at any time of day or night.

Realistic lighting and water effects, dust particles and NVG are all catered for. Helicopters can perform underslung loads and faults can be scripted or triggered dynamically.

Complex training scenarios can be quickly developed, from routine procedures to emergency situations. After Action Review capabilities allow all virtual sessions to be recorded for immediate feedback or archived for later retrieval.

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With VMS, the Marshaller's gloves/hands or replica wands are tracked realistically in 6-Degree-of-Freedom virtual space, which the student sees though High-Definition Virtual Reality Goggles. Marshallers can turn and move freely in any direction, in 360º.

An instructor at an operator station sees these movements in the virtual world from a pilot's or FLYCO's viewpoint, and controls the aircraft dynamically or issues commands based on the student's signals, which the aircraft follows automatically.

Multiple marshallers can be linked in the same scenario and operate simultaneously, including hand-offs or marshalling of multiple aircraft.

The VMS system allows ground and deck crews to learn, practise and be assessed in the skills required to marshal aircraft whilst dramatically reducing the time and cost of training.

VMS in use by RAN to train up to 4 simultaneous marshallers directing multiple aircraft on an LHD. This system also links directly with the RAN's VSS deck officer simulator for FLYCO, FDO and POD.

VMS Features Include:

Wireless version with 4 x Marshallers in 6DOF free-roaming 360º space

Dynamic weather effects with a range of settings, including wind, rain, fog, lightning

High-fidelity virtual simulation with authentic graphics and sound

After Action Review capabilities to record and play back virtual scenarios

Real-time scenario editor with vast control

Trigger aircraft emergencies such as engine fires, hydraulic leaks, hot brakes on fighter planes, and tarmac incursions by personnel or vehicles

Stand-alone training or link into a wider simulated environment such as an aircrew, convoy, or ship training system

Aircraft can be controlled manually or in a semi-automated system

Simulated procedures include pilot signals, refueling, HIFR, deck lashing, power, take-off and landing, and many others

VMS Reduces:

Rate of effort on already scarce resources

Reliance on pilot availability

Expenditure on fuel and other consumables

Logistic setup for FARP marshalling exercises