



## Next Generation Helicopter Simulation.

Reiser's Full Flight Simulators (FFS) are ready to be certified up to Level D by the European Aviation Safety Agency (EASA) and Federal Aviation Administration (FAA) authorities and set a new standard in the world of helicopter simulation.

The cockpits are full-scale replica of the original helicopter, built to the respective certification requirements. Motion systems generate realistic training conditions for the crews. A high resolution visual system displays the environment during daylight, night and NVIS conditions, paired with various weather effects and animations. The sound system resembles the helicopter sound at high fidelity.

All the hardware is brought to life by a state-of-the-art software package. This includes a flight model to reproduce the helicopters's flight dynamics, worldwide models from atmosphere to terrain and the helicopter functionality.

### Visual System

- Worldwide database with customer specific high level insets
- Dual-channel projectors
- Night Vision Goggles compliant with use of original NVG
- Hardware blending for perfect visualization of dark scenes
- 240° x 80° FoV
- Optional integration of additional crew member with VR goggles

### Full-Scale Replica Cockpit

- CANaerospace based I/O system
- Modular architecture
- Cockpit equipment fully NVIS compatible

### Intuitive IOS with Touch Display

- Computer generated entities
- Global and local weather settings
- Realtime scenarios
- Customizable scenarios
- Stealth view
- Recording and replay of flight
- Optional Remote IOS



### Maintainability

- State-of-the-art hardware and COTS items
- Plug & Play system

### Optional Briefing / Debriefing Station

- 3 Crews in action

### Motion System

- 6 Degrees of freedom
- Elektro-mechanical actuators

### Vibration System

- 3 Degrees of freedom
- Elektro-mechanical actuators

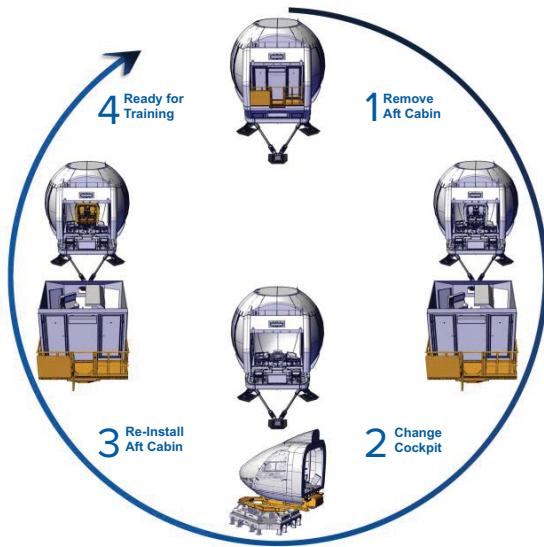
## Mothership Concept for High Fidelity Simulation.

The Dome houses a fully equipped cockpit and is made from light weight carbon fiber reinforced plastic elements. The Aft Cabin houses the internal IOS with seats for the instructor, one observer and guests.

For mission training, the additional crew member stations are supported by 3D Virtual Reality (VR) goggles which simulate the outside view through the side/rear doors. Crew members can thus perform their tasks e.g. winch operations, external cargo, FLIR operations, etc.

The Full Flight Simulator allows the instructor to create more complex compound malfunctions scenarios that closely mirror the progression of real-world emergencies. The visual system, resolution and graphic fidelity give profound visual reference to provide unprecedented immersion.

## ROLL-ON/ROLL-OFF



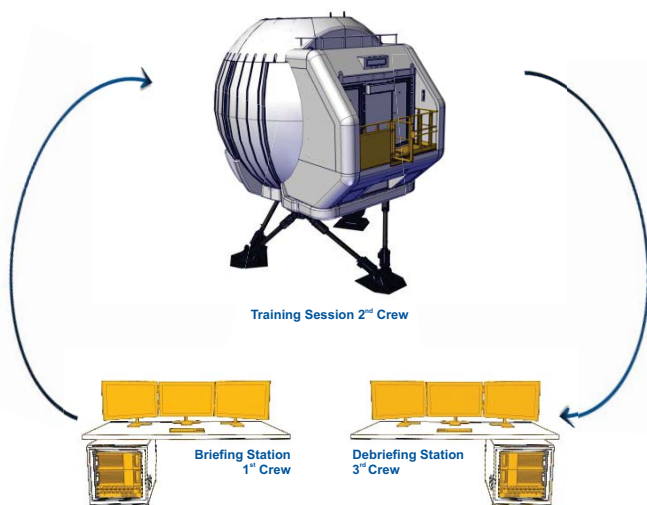
## Keep Moving.

The Roll-On/Roll-Off (RoRo) concept provides the option to use two or more cockpit modules within one mothership. RoRo cockpit interchanges are possible in less than two hours.

The interchangeable cockpit allows training centers scaling their business by adding one or more aircraft cockpits to their offering without investing directly in another simulator bay. Several aircraft types are currently available as FFS and FTD, all with the RoRo capability as a standard.

As the cockpits of a FTD and a FFS are identical, your FTD cockpit can be used for a Full Flight Simulator. In addition, a variety of different helicopters can be trained in one mothership.

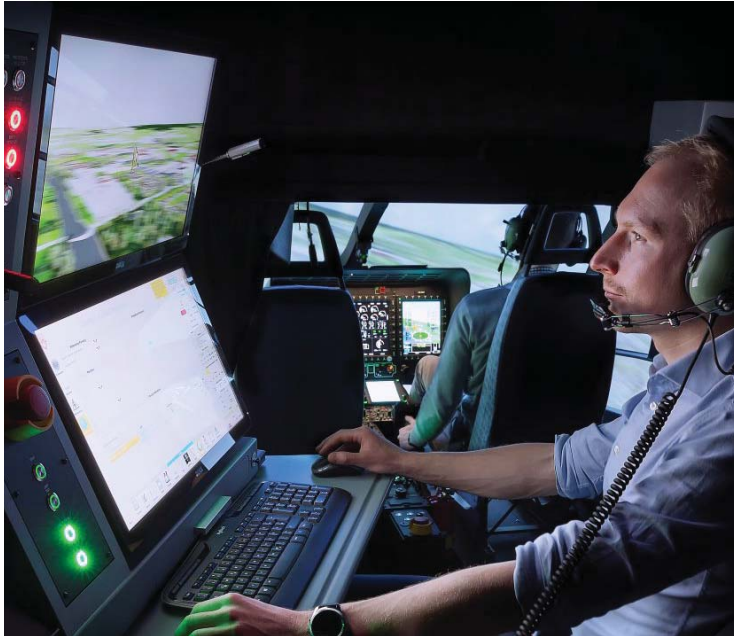
## TRAINING EFFICIENCY



## Perform Multitasking.

For optimum training efficiency and optimum utilization rate of the simulator, we suggest to install one briefing and one debriefing room per simulator. Hence, while one crew conducts debriefing, the second crew trains in the simulator and the third crew runs their briefing. Optionally we offer the possibility of simultaneous creating scenarios and replaying recorded flights during a training lesson, thus allowing briefing and training of 3 crews at the same time.

The Instructor Operator Station (IOS) Software consists of a software suite running on a conventional computer. Intuitive structure and touch technology make it easy for the instructor to set up specific scenarios for training. The monitors display the IOS graphical user interface, sections of the cockpit displays, virtual images of the helicopter and the surrounding environment (stealth view) or images from any of the observation cameras (e.g. installed in the cockpit). Cameras can of course be switched off, if desired. The cockpit view allows the instructor to observe the student's actions.



IOS

## Focus on your Mission.

The Instructor Operator Station (IOS) is located in the aft cabin behind the cockpit and allows observation of the cockpit and the instrument panel. It provides seating for one instructor, one observer and a guest on a jump seat. All seats are equipped with safety harnesses. For training with night vision goggles, the IOS is completely isolated from the cockpit, so that no lights can disturb the NVG operation. The IOS consists of two vertically aligned touch screen monitors with full-HD resolution.

### Options:

The remote IOS consists of a handheld computer (tablet) which is connected to the simulation network via WLAN. In general, the same functionality is available on the internal IOS.

An external IOS may provide identical features as the internal IOS. This setup is the perfect solution, if the customer's training concept allows the instructor to operate outside the simulator.



Day



Night



Night  
Vision  
Goggles

NIGHT VISION

## Go for Ultimate Realism.

The projection screen of our multi-channel direct projection system is an integral part of the mothership structure and painted with 0,6 gain factor. The number of projectors may vary depending on your requirements and infrastructure.

Optionally a separate Infrared (IR) channel for Night Vision Goggles flying, allows the usage of the pilot's own NVG for a maximum degree of realism. One channel is used for the Out-The-Window (OTW) view on the Red-Green-Blue (RGB) channel and one for the night scene on the IR channel. This allows independent brightness control of both channels. Therefore the visual system night vision projection as well as the cockpit equipment lighting are compatible with real NVG according to MIL-STD 3009 and Mil-L-85762A.

The brightness of the projector LEDs is automatically controlled by the simulation to optimize daytime, night and NVG trainings as well as gradual transitions between them. Hardware blending is used for good visualization of dark scenes and an optimized night view.

## FLIGHT MODEL

### We Gather your Data.

A rigorous flight data gathering program was set up by Reiser's Flight Systems business unit.

The flight test instrumentation is an in-house development and can easily be adapted to any kind of aircraft.

Flight testing is planned and accompanied by an experienced team of test engineers. The quality of data is directly evaluated in flight to give the pilot immediate feedback and improve maneuvers adapted to the specific requirements of the data's applicaton.

Data collected is used to generate a physical flight model and for validation of the model during qualification of the simulator. The levels of flight simulation fidelity incorporate a vast array of criteria, which must be met within narrow tolerances to achieve Level D certification.



## AVIONIC DESKTOP TRAINER

### Gain Procedural Perfection.

The Avionic Desktop Trainer (ADT) replicates avionics and aircraft systems to prepare pilots and flight personnel for simulator sessions at a premier stage of training. A classroom solution for realistic and cost-efficient mission-training and familiarization, with high fidelity flight dynamics, engine and AFCS model for all normal and emergency procedures, providing instrument procedures in both manual and AFCS modes including VOR, NDB, ILS, RNAV, GPS approaches.

Also provided is a Garmin „Lite“, with virtual panel, adjustable frequencies and loadable flight approaches with the option of a EuroNav 7 navigation kit or a hardware version of an original Garmin GTN 750 navigation kit. Also implemented are a sound model including warning and caution tones and an Instructor Operator Station (IOS), a 100 % derivative of the IOS from the FFS, with mission planning, re-positioning, fuel management, wind/weather simulation and malfunction capabilities. Further options are simulations of an Automatic Terminal Information System ATIS and an Automatic Collision Avoidance System ACAS.

