

STEP – BY – STEP TRAINING

OPERATING PRINCIPLE

ADVANCED SIMULATORS
FOR
IMPROVED SURVIVAL TRAINING

New Generation Helicopter Underwater Escape Simulator

Multiway Huet

MWH-6



The initial part of Multiway HUET training involves the theory when the trainers go through the helicopter/aircraft emergency landing and escape topics.

A separate section will deal with the use of air or air pocket devices, in case these are included in the course.

- After the theoretical part, trainees' capability of holding breath will be measured and recorded before entering the pool.
- Trainees will be given wetsuits and trainees' capability of holding breath will be measured and recorded when underwater in the pool.
- Trainees will be taught the correct use of air regulator and mouthpiece under water.

Practical part of the training will start with introduction to the MWH-6 next to the training pool. After wetsuit selection the trainees will be tested for their capability to hold breath underwater and taught to use air regulators. Trainees will enter the MWH-6 simulator when it is in upright position in water before each individual training cycle. When all trainees are securely seated and safety belts attached, the instructor gives the signal and the simulator is hoisted out of the water above the training pool. The practical training to learn how to escape from a submerged helicopter/aircraft will depend on course requirements and trainee skills. MWH-6 is the best device available for step-by-step training, where it can be employed for easy and simple training for beginners all the way to most demanding crash landing training for professionals.

The training team will be trained to operate the MWH-6 simulator and its safety functions to provide highest level of operational safety. Training for operators is always included in the delivery of the MWH-6, either in Finland or at end users site.

Minimum training and operating personnel requirement

Surface personnel

- Crane operator

Pool personnel

- Training director as instructor (can also operate as rescue diver)
- Rescue divers (preferred minimum two in addition to training instructor/diver)

We recommend that the instructor sits inside the simulator (where either two rows of three or three rows of two seats are configured) and the rescue divers are on both sides of the simulator.

MWH-6 STEP-BY-STEP HELICOPTER UNDERWATER ESCAPE TRAINING

STEP 1

The simulator is lowered in water in upright position. The trainees are taught how to escape from submerged aircraft when it is upright in water.

STEP 2

The simulator is lowered in water and the simulator turns around its horizontal axis. The simulator settles in upside down position. The trainees are taught how to orientate under water and escape from submerged aircraft after it has capsized.

STEP 3

The simulator is lowered in water and the simulator turns around its vertical axis. The simulator settles in upside down position. The trainees are taught how to orientate under water and escape from submerged aircraft after it has capsized.

STEP 4

The simulator is lowered in water and the simulator turns around its vertical and horizontal axis. The simulator settles in upside down position. The trainees are taught how to orientate under water and escape from submerged aircraft after it has capsized.

STEP 5

The simulator is dropped in the water and it submerges. The simulator settles in upside down position. The trainees are taught how to orientate under water and escape from submerged aircraft after it has capsized.

ADDITIONAL

Training can be modified to suit the specific needs of trainee's skills and course requirements. Additional training can include simulation of bad weather and visibility with the help of light, wind and sound systems.

MWH-6 simulates the movements of ditched aircraft regardless of type. MWH-6 also simulates fixed wing aircraft.

MOST ADVANCED HUET TRAINING SIMULATOR

The MWH 6 simulator is unique when compared to other existing HUET simulators.

MWH 6 is the only simulator that allows the trainees to experience the true simulation of what takes place during and after emergency landing in water.

- The MWH 6 rotates omni directionally, around the dual vertical and horizontal axis.
- The MWH 6 can be dropped in the water from a height of two (2) meters.

The simulator body rotates along the longitudinal axis in relation to the seat rows. During training the simulator settles in upside (180 degrees) position where escape from inside the body cannot be hindered.

- Horizontal rotation is controlled by pneumatic break acting on the fixed bearing.
- Vertical rotation is controlled by pneumatic break acting on the lifting point.

The turning ring can be quickly dismantled to transform MWH into free fall training simulator. The hoist cable is attached directly to the lifting point of the MWH body. The MWH body is lifted out of turning ring and moved in the training pool.

- MWH is lifted out of the water to maximum 1.8 meter height and dropped in water using remote release mechanism. A safety rope, which is attached between crane and lower part of the MWH body, hinders the simulator to sink below desired depth in the water.

The MWH-6 can be customised for the simulation of many different types of helicopters, such as such as Bell, Eurocopter, Agusta, Kamov, Hughes, Sikorsky and several other types of military and civil helicopters. The locations of doors, windows, seats and exits can be easily modified and replaced according to specific model.

MWH SAFETY

MWH incorporates a variety of safety measures that make the training with MWH safe for all trainees', regardless of their ability to cope with the underwater environment and loss of orientation.

- Side panels can be completely removed (with doors) by activating emergency triggers located both inside and outside of the simulator body. The quick release enables unobstructed entry and exit from the MWH 6.
- Windows and doors are also equipped with emergency quick release system, where they can be individually completely removed to allow unobstructed entry and exit from the MWH 6.
- Image from inside the MWH 6 is recorded. Each trainee's behaviour and skills can be monitored and the video footage can also be later analysed to assist in training.¹
- Radio communication with rescue/emergency divers (team of two divers, including instructor) and surface personnel (team of two, crane operator and training instructor/director). Emergency divers and surface personnel can communicate to direct each other and enable quick actions in case any of the trainee's requires assistance.
- MWH 6 has integrated air containers with emergency breathing regulators for each of the trainees. The breathing system can be activated and used immediately by the trainee, without the need to notify the instructor. This will provide markedly increased safety margins.
- Simulator can be equipped with panic button which, when pressed, immediately activates both light and sound signal. This will be a sign for emergency lifting. The emergency lifting usually takes two (2) seconds and increases the safety during training.
- MWH 6 body incorporates air and water tanks, which are controlled by pneumatic valves (similar to what are used in submarines). The amount of air and/or water in the tanks makes the simulator to turn and rotate in predetermined direction and manner once it is submerged in water.
- All six seats are equipped with 2,4,5 point seat belts with quick emergency release

¹ Additional underwater camera can be used to provide image from outside the simulator