Helicopter Underwater Escape Training (HUET) with Compressed Air Emergency Breathing System (CA-EBS) (6hrs)

Description Training

OPITO has been setting standards for the oil and gas industry since 1991 to help improve workforce safety and competence - over 350,000 people per year train to OPITO Standards across the globe.

In partnership with industry stakeholders, OPITO identifies the needs and requirements for new and improved training and competence standards for both onshore and offshore. O Opito produce world-class, industry-driven standards that are recognised globally and we ensure that your approved training providers deliver training in compliance with these standards.

Learning outcomes of the HUET (with CA-EBS)

Program content / Workload

Unit Code	Unit Title
OIS-78	Helicopter Safety and Escape CA-EBS

Unit Code	OIS-78
Title	Helicopter Safety and Escape CA-EBS
Guided Learning Hours	6 hours
OUTCOMES 1 **Outcome: Helicopter Travel** **The learner will understand:**	
CRITERIA	
1.1 Pre-flight briefings 1.2 The procedures and requirements for pre-boarding, safe boarding, in-flight and safe disembarkation including: 1.1.1 Arrival time 1.1.2 Correct dress 1.1.3 Documentation	

1.1.4 Prohibited articles

1.1.5 Check-in procedures

1.1.6 Safe boarding

1.1.7 Pre-flight video

1.3 *Learners must be made aware that they should ensure they familiarise themselves with the aviation transit suit they are expected to use before boarding a helicopter.

*This is in addition to the information detailedduring pre-flight briefings. *Note: There are various types of aviation transit suits being used in the industry. Although one type of aviation transit suit will be used in the training centre where the learner is trained, it is important that the learner is made aware thatother types will be used in other regions/areas

Note 2: This criteria should be omitted when delivering as part of Product 5754.

OUTCOMES

2. Outcome:Helicopter Emergencies
The learner will understand:

CRITERIA

2.1 Informing the crew of suspected or observed helicopter emergencies, to include:

2.1.1 Discovering a fire

2.1.2 Smoke

2.1.3 Fuel leaks

2.1.4 Abnormal conditions which the crewmay not be aware of

2.2 In-flight procedures to include:

2.2.1 Don hood – ensure survival suit iszipped up

2.2.2 Check seat belt is tight, and lifejacketis secure

2.2.3 Following crew instructions

Note: Criteria 2.2.1 should be omitted when delivering as part of Product 5754.

2.3 Aircraft basic flotation characteristics

2.4 Aircraft escape routes for ditching and emergency landing

2.5 Independent action

2.6	Survival techniques following ditching and emergency landing either on land or inwater
2.7	How to don an aviation transit suit (of a type typically used in the region/area of operations) compressed air breathing system (CA-EBS) and an aviation lifejacket Note: This criteria should be omitted when delivering as part of Product 5754.
2.8	Actions in preparation for a helicopter ditching and emergency landing, incluing brace positions for the range of seating locations and harness types
2.9	Helicopter evacuation, to include: 2.9.1 Locate 2.9.2 Release (on-command) 2.9.3 Evacuating through nominated exitsand push-out windows: on-water, underwater and capsize. 2.9.4 Impact attenuating seats, to includepurpose and operation of seat and evacuation technique (demonstration not required, this will be achieved by the use of video Or slides)
2.10	Emergency equipment onboard the helicopter, including stowage location ofaviation liferaft, operation and entry
2.11	Initial actions on boarding the aviation liferaft i.e. how to use mooring lines, deploying the sea anchor, raising the canopy and raft maintenance
2.12	Use of aviation liferaft equipment and secondary actions on boarding the aviationliferaft, to include e.g. posting lookouts, activating the radio beacons and first aid

Note: Secondary actions do not need todemonstrated

OUTCOMES
3. Outcome: Use of Compressed Air Emergency Breathing System (CA-EBS) **The learner will understand:**
CRITERIA
3.1 The principles of compressed air emergency breathing systems (CA-EBS)
3.2 The principles of other typical emergency breathing systems (EBS) used in the oil andgas industry (i.e. re-breather systems)

Helicopter Underwater Escape Training (HUET) with Compressed Air Emergency Breathing System (CA-EBS) (6hrs)

3.3 The principles of compressed air emergency breathing systems (CA-EBS)

3.4 The principles of other typical emergency breathing systems (EBS) used in the oil andgas industry (i.e. re-breather systems)

3.5 The components and elements of the CA-EBS, including:
3.5.1 Hose (if fitted)
3.5.2 Mouthpiece
3.5.3 Cylinder
3.5.4 Demand Valve
3.5.5 Pressure indicator
3.5.6 On/Off ratchet/knob (if fitted)
3.5.7 On/Off Status Indicator (if fitted)
3.5.8 Purge button
3.5.9 Nose clip (if fitted)
3.5.10 Charging Port

3.4 The operation of the compressed air EBS equipment in conjunction with other survival equipment:

3.4.1 Life jacket

3.4.2 Survival suit (including importance ofcorrectly sized suit)

3.4.3 Personal Locator Beacon (PLB)
Note: Criteria 3.4.2 should be omitted when delivering as part of Product 5754.

3.5 The hazards associated with compressed airEBS:
3.5.1 Medical hazards associated with lung over-expansion injuries
3.5.2 Gasp reflex associated with cold water entry shock
3.5.3 Coughing
3.5.4 Dislodged mouthpiece (accidental or intentional)
3.5.5 Accidental or deliberate loss of air including purging and hazards of incorrect purging
3.5.6 Running out of air

3.6 The pre-donning checks on the life jacketand compressed air EBS, including:
3.6.1 Pressure indicator reading
3.6.2 Appropriate on/off status indicator (if fitted)
3.6.3 Ratchet knob on/off (if fitted)

3.7 How to don the life jacket complete withcompressed air EBS:
3.7.1 Ensuring life jacket waist belt is nottwisted (if fitted)
3.7.2 Fastening of life jacket

3.7.3	Adjustment of waist belt to ensurecorrect fit
3.7.4	Engagement of crotch strap ensuring acorrect fit and roll away and securing of excess webbing (if fitted)
3.7.5	Ensure CA-EBS mouthpiece iscorrectly fitted
3.7.6	Ensure CA-EBS hose is correctly fitted(where appropriate)
3.8	Deployment of CA-EBS, including:
3.8.1	One handed deployment of the mouthpiece and nose clip in accordance with manufacturers' guidelines
3.8.2	How to achieve a good seal aroundmouthpiece
3.8.3	How to purge water from themouthpiece
3.8.4	How to recover a dislodgedmouthpiece
3.8.5	Use of demand valve

OUTCOMES

4. Outcome: Use of Compressed Air Emergency Breathing System (CA-EBS)
The learner will perform:

CRITERIA

4.1	The pre-donning checks on the life jacketand compressed air EBS, including:
4.1.1	Pressure indicator reading
4.1.2	Appropriate on/off status indicator (iffitted)
4.1.3	Ratchet knob on/off (if fitted)
4.2	How to don the life jacket complete with compressed air EBS:
4.2.1	Ensuring life jacket waist belt is nottwisted (if fitted)
4.2.2	Fastening of life jacket
4.2.3	Adjustment of waist belt to ensure correct fit
4.2.4	Engagement of crotch strap ensuring acorrect fit and roll away and securing of excess webbing (if fitted)
4.2.5	Ensure CA-EBS mouthpiece iscorrectly fitted
4.2.6	Ensure CA-EBS hose is correctly fitted(where appropriate)
4.3	Deployment of CA-EBS, including:

4.3.1 One handed deployment of the mouthpiece and nose clip in accordance with manufacturers' guidelines 4.3.2 How to achieve a good seal around mouthpiece 4.3.3 How to purge water from the mouthpiece 4.3.4 How to recover a dislodged mouthpiece 4.2.5 Use of demand valve
OUTCOMES **5. Outcome: Practical Helicopter EscapeTechniques** **The learner will perform:**
CRITERIA
5.1 Donning of an aviation transit suit, anaviation lifejacket, compressed air emergency breathing system (CA-EBS) equipment and conducting integrity checks of the CA-EBS equipment, including buddychecks Note: This criteria should be omitted when delivering as part of Product 5754. 5.2 Deploying (left and right hand) and breathing from CA-EBS equipment at atmospheric pressure in dry conditions 5.3 Actions to take in preparing for a helicopteremergency landing 5.4Following instruction from the crew, locationof CA-EBS equipment and evacuation from a helicopter using a nominated exit, following a controlled emergency descent to a dry landing (conducted in helicoptersimulator at poolside on dry land) 5.5 Actions to be taken in preparing for an in-water ditching including location of exit, deploying and breathing from CA-EBS equipment at atmospheric pressure in dry conditions (conducted in helicopter simulator at poolside on dry land) 5.6 Dry evacuation, using a nominated exit, to an aviation life raft from a helicopter ditched on water (and, on instructions from theaircrew, operation of a push out window), assisting others where possible and carrying out initial actions on boarding the aviation life raft, to include: mooring lines, deploying the sea anchor, raising the canopy and raft maintenance 5.7 Escaping through a window opening which is underwater, from a partially submerged helicopter (without operation of a push outwindow) 5.8 Escaping through a window opening which is underwater, from a partially submerged helicopter (with operation of a push out window) 5.9 Escaping through a window opening which is underwater, from a capsized helicopter

(without operation of a push out window) 5.10 Inflation of an aviation lifejacket, deployment of a spray visor and boarding ofan aviation life raft from the water
OUTCOMES **6. Outcome: Additional CA-EBSTraining (In-Water)** **The learner will perform:**
CRITERIA
6.1 Deploying CA-EBS (above the water surface) and breathing from the CA-EBS in a pool, face down in shallow water (at a maximum depth of 0.7m, measured at the chest) 6.2 Deploying CA-EBS (below the water surface,face down in a pool in shallow water) and clearing the mouthpiece by exhaling underthe water surface (at a maximum depth of 0.7m, measured at the chest) 6.3 Deploying CA-EBS (below the water surface,face down in a pool in shallow water, using opposite hand to previous exercise) and clearing with purge button under the water surface (at a maximum depth of 0.7m,measured at the chest) 6.4 Deploying CA-EBS (above water surface), ina pool and breathing from CA-EBS underwater in a vertical position (at a maximum depth of 0.7m, measured at thechest) 6.5 Deploying CA-EBS (underwater), in a pool and breathing from CA-EBS underwater in avertical position (at a maximum depth of 0.7m, measured at the chest) 6.6 Deploying CA-EBS (underwater), in a pool, breathing from CA-EBS underwater, and moving along a horizontal rail for a period ofno less than 30 seconds, including a changein direction (at a maximum depth of 0.7m, measured at the chest)

Practical training

Practical training areas designed to enable each learner to individually, or as part of a team, to view, hear and practise the following:

1) Dry evacuation into an aviation liferaft on water from a helicopter trainer.
2) Escape from a partially submerged helicopter trainer through an exit that is underwater.
3) Escape from a capsized helicopter trainer and use of a lifejacket.
4) Evacuate from a helicopter trainer following an emergency dry landing.
5) Operation of emergency exits and push-out windows of a type currently found on helicoptersoperating offshore.

6)	Donning of compressed air emergency breathing system equipment and an aviation lifejacket
7)	Operation and use of compressed air emergency breathing system
8)	Operation of an aviation liferaft.
9)	The donning of a permanent buoyancy life jacket.
10)	The use of a helicopter lifting device and winching to a simulated rescue aircraft.
11)	The boarding of a marine life raft from the water
12)	In-water procedures, including individual and group survival techniques, followed by rescue byone of the recognised methods available offshore.
13)	Mustering, boarding and strapping in as a TEMPSC passenger (the craft then to be loweredinto water to float and be released).
14)	The use of portable fire extinguishers on a range of fires of surface area 0.1 m2 to 1.0 m2against the following: a) Class A fire b) Class B contained spill.
15)	The donning and wearing of a smoke hood in an area that can be smoke logged usingcosmetic smoke.
16)	Dedicated concreted area with adequate drainage to allow the delivery of all firefightingexercises for 16 learners, instructors and support staff.

Training Organization Form

Face to Face Presential

Training Methodologies

The methods to be used will be expository, demonstrative and participatory / active.

Learning Assessment Methodologies

Learning outcomes of the HUET (with CA-EBS)

Unit Code	Unit Title	Assessment Methodologies
OIS-78	Helicopter Safety and Escape CA-EBS	**Assessment Guidance for Outcomes 1-3** Students will take a written test at the end of the Unit OIS-78 as a method of verifying that they have achieved all learning outcomes. The test will be "open book" and the questions must be clearly referenced in relation to the specific learning outcomes of the Unit

		in question. **Assessment Guidance for Outcome 4-6** The practical evaluation of the training is carried out by carrying out the practical exercises, covering all the specific criteria. Students must successfully complete the practical exercises. The assessment method will be practical observation using the observation grid used to record the individual learning of each trainee. **Note 1:** CA-EBS equipment must not be worn during exercises 5.6 thru 5.10 **Note 2:** In addition to theoretical learning, demonstrations for HUET Exercises detailed in criteria 5.6 to 5.9, must be provided using video footage.

Pedagogical resources / Spaces and equipment

Audiovisual and technical material to be made available in each action: room with adequate furniture; video projector; blackboard and others.

Each learner will be given a Training Support Manual.

According to the needs detected at the level of specific resources to be used by the trainers, these will be requested by the same.

Equipment

The following equipment, of a type in use regionally on offshore oil and gas installations and helicopters involved in offshore operations, is required to meet the needs of the training programme.

1) Aviation and marine lifejackets
2) Cosmetic smoke generator
3) Sufficient Compressed Air Emergency Breathing System (CA-EBS) Equipment or life jackets/ transit suitswith integrated CA-EBS.
4) O2
5) Method of charging compressed air cylinders
6) Fire blanket
7) First Aid Equipment
8) Fuels and props (Class A and B fires)
9) Helicopter rescue device (of a type used regionally offshore)
10) Helicopter Underwater Escape Trainer(s) c/w removable exits

11) Hose reel
12) Health and safety figures on accident statistics
13) Installation emergency organisation chart (examples)
14) Location aids suitable for training purposes (e.g. dummy radio beacons and pyrotechnics)
15) Mannequins and cleaning equipment
16) Marine liferaft and ancillary equipment
17) Permit to Work (examples)
18) Personal Protective Equipment (PPE)
19) Portable Extinguishers – water/foam, CO2 and dry chemical
20) Rescue equipment
21) Aviation liferaft and ancillary equipment
22) Smoke hoods (plus a different type of smoke hood for demonstration purposes)
23) Products on task-based risk assessment, lifting and mechanical handling, PRfS, and Permit to Work
24) STOP/START/TOFS information
25) Marine survival suit (also known as immersion suit or abandonment suit). This suit is insulated.
26) An aviation transit suit: to include actual transit suits used in region/area for helicopter transfers
27) Pool training suits
28) TEMPSC and ancillary equipment
29) One actual Tertiary Escape System and video/slide presentation of others
30) Torches
31) Video – Pyrotechnics
32) Video – Hypothermia
33) Winch for use during simulated helicopter rescue
34) Sufficient diving equipment for HUET safety divers
35) PLB Video – where applicable

Target Group:

This programme is designed to meet the offshore safety and emergency response training requirements for personnel working in the offshore oil and gas industry who will be supplied with a compressed air emergency breathing system (CA-EBS) during offshore helicopter travel.

Total Training Duration: (6hrs and 10min)

Specific characteristics of training

a) Registration process

Helicopter Underwater Escape Training (HUET) with Compressed Air Emergency Breathing System (CA-EBS) (6hrs)

• **Place / time of the training** - The training takes place at the CEDROS facilities in Palmela (Rua Vale de Craveiros CCI 8807 2950-731 Quinta do Anjo). Training will take place between 9:00 am and 6:00 pm, any changes will be communicated. The learner should consult his email, where he will receive confirmation of his registration and details of the training.

• **Prerequisites** - The learner must consider the fulfillment of the prerequisites according to the training program of the course, when applicable.

• **Medical requirements** - Trainings can be physically demanding, all participants who participate in this training must be able to participate fully. It is the trainee's responsibility to notify CEDROS if they have any medical condition or disability that we need to be aware of, for the safety of the trainee and CEDROS.
In the registration phase, trainees must ensure that they send the medical certificate or declaration, before participating in the training:

- ✓ Valid and updated offshore medical certificate; or
- ✓ Medical certificate approved by the employer equivalent to the offshore medical certificate; or
- ✓ Medical screening - by filling in a form provided by CEDROS and approved by Opito.

On the day of the training, learners have to fill in the medical declaration, before the start of the training, to self-assess their physical and mental health status and indicating they have read and understood a written statement regarding the physical and potentially stressful nature of the programme, and the need for learners to be in good health.

• **Photographic Record Identification Document** - The learner must make sure that on the training day he / she brings with him a valid identification document (e.g.: citizen card, passport, etc.) to show the trainer at the beginning of the training and to do the recognition of the learner.

• **Equipment** - Most of the equipment used in the training is provided by CEDROS, however thelearner must bring some Personal Protective Equipment, including safety boots, gloves and appropriate clothing. Other equipment can be considered in the confirmation email of the training action. If the trainee does not have any equipment, he must communicate to CEDROS, in order to solve the situation.

• **Hygiene** - The learner has changing rooms at his disposal, where he can change his clothes and have a bath. We recommend that you bring a change of clothes, slippers, towel and hygiene products.

• **Overnight / Meals** - CEDROS has a partnership with local accommodation close to the training center (http://www.casadaspipas.pt/), where the learner can stay (meals not included).
On the training day, CEDROS offers coffee breaks to learners. Lunch is the trainee's responsibility, there are several local restaurants, on the day of the training more information will be given to the trainee´s about the nearby restaurants.

b) Equal training opportunities

CEDROS is committed to provide all learners with equal opportunity with regard to access to training, regardless of gender, nationality, ethnicity, religious belief, political affiliation, marital status, age or disability.
The following clarifies some conditions for access to training, considering particular situations.

• **Disability** - When a learner has some type of disability / physical limitation, he / she must inform CEDROS upon registration, so that we can provide the necessary support and follow-up during the training. However, there are courses in which some physical strength is required to carry out the practical component of the course, in which case the criteria must be analyzed and the effective possibility of compliance with the CEDROS technical team must be verified for health and safety reasons.

• **Literacy** - Learners who have difficulties in terms of language / literacy, must communicate to CEDROS at the time of registration, so that it verifies the possibility of guaranteeing, during the training, the support through the presence of a designated person which will assist in terms of reading and / or writing, during the training and in carrying out the evaluation process.

• **Language / Language** - If the learner's mother tongue is not the same as the one in which the training is given, they must have a minimum level of understanding and conversation to integrate the training.
We recommend that the trainee has a B1 level, according to the Common European Framework of Reference for Languages (Levels: A1 / A2 Basic User | B1 / B2 Independent User | C1 / C2 Advanced User).

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Evaluation review process:
The learner's evaluation process can be revised whenever justified, it can occur at the trainee's request or if any non-conformity is detected. The review of the learner's evaluation process is carried out as follows: the evaluation test is reviewed by another OPITO trainer of the respective course, and there may be the need to repeat the practical component, through the reassessment of the exercises with another trainer.