



**C-NLOPB Safety Forum
Presentation
April 27th, 2016**

Introduction

- **Loss of Cougar Flight 491 in Mar 2009 was tragic reminder that open-ocean helicopter transit is not without risk**
- **17 of 18 on board died**
- **No fatal injuries on impact, all drowned**
- **Drowning is primary cause of death during a helicopter ditching – *Brooks et al, 2008; Clifford, 1996***
- **Impact injuries often minor – *Shanahan***



Background

- Fatalities often a combination of inability to breath-hold during escape, and disorientation – *Brooks et al., 2001.*
- Canadian Aviation Regulations require HUEBA be provided for each person on board.
- Training and flying offshore Atl. Canada with the HUEBA since May 2009 with no recorded training injuries.
- Currently not training with the HUEBA in the HUET due to perceived risk of air embolism.
- Based on the outcomes of a HUEBA in HUET Risk Assessment, it was shown that the risk of training actually decrease as students now have the ability to better process underwater surroundings and have more time to escape.

Background

- **The use of the HUEBA in HUET is designed to provide the user with an additional capacity of breathable compressed air while underwater so that he or she has more time to escape from a partially or totally submerged helicopter.**
- **Key features of compressed air use in HUET:**
 - Increase the likelihood of passengers surviving helicopter ditching events while travelling to and from offshore installations.
 - Calming effect knowing that the compressed air unit will allow you to breath underwater.
 - Ability to better process your underwater surroundings and more time to escape.
 - Retain training competencies as no longer focused on breath hold.

Background

- **Only one published report of an AGE following Helicopter Underwater Escape Training (HUET) using similar device in healthy Royal Navy pilot – *Benton et al, 1996.***
 - Follow-up investigations could find no underlying pathology
 - Full recovery following recompression
- **Even under controlled conditions of HUET, difficult to breath-hold >15 seconds.**
- **During an accident in the frigid, choppy Atlantic Ocean, cold shock response and panic would significantly reduce breath-hold time.**

Background

- **The CAPP Safety Committee requested that a Terms of Reference be developed to determine whether the HUEBA could be combined and delivered as part of the HUET course.**
 - HUEBA in HUET Task Group (TG) established.
- **Independent consultant was selected to lead a risk assessment (RA).**
- **A Risk Matrix and Risk Register completed via a RA session.**
 - Industry, regulators, dive medicine doctor and offshore workforce representation to develop the risk matrix and risk register.
 - All aspects of the medical advice received has been considered and addressed by the Task Group.
- **Based on the outcomes of the RA the CAPP Safety Committee and operators' executive approved proceeding with implementing HUEBA in HUET training.**

HUEBA in HUET Implementation Plan

- A revised medical prepared by Dr. D. Pestell with five additional medical screening questions pertaining to compressed air.
- The use of HUEBA in HUET medical seminar have been delivered by Dr. D. Pestell to some physicians administering offshore medicals in Halifax and St. John's, NL during Q1 2016.
 - A list of those physicians who have completed the training have been compiled by CAPP and distributed to operators.
 - Additional sessions will be held to train physicians in May 2016.
- Roll out of updated medical by operators to offshore medical providers for implementation and offshore regulators notified.
- Training plans from training providers are currently being reviewed by the CAPP HUEBA in HUET Task Group for consistency of training.
- The training competencies will be reviewed by the Training and Qualifications Committee (TQC) for implementation into the *Standard Practice for the Training and Qualifications of Offshore Personnel*.

Additional Medical Screening Questions

Compressed Air Breathing Questions (Appendix to existing Atlantic Canada Offshore Medical)

Specifically is there any history of:	Yes	No
1. Asthma or RAD (reactive airway disease) including any history of childhood asthma	<input type="checkbox"/>	<input type="checkbox"/>
2. A history of COPD or emphysema	<input type="checkbox"/>	<input type="checkbox"/>
3. Current or past use of inhalers/puffers for asthma, COPD or respiratory infections	<input type="checkbox"/>	<input type="checkbox"/>
4. Spontaneous or traumatic pneumothorax	<input type="checkbox"/>	<input type="checkbox"/>
5. Tuberculosis, sarcoidosis or pulmonary fibrosis	<input type="checkbox"/>	<input type="checkbox"/>

HUEBA in HUET Implementation Plan

- **Training Providers will begin training all personnel who have received the revised medical with the compressed air screening questions on the use of HUEBA in HUET in regularly scheduled BST, BST-R, OSI courses.**
- **Workforce personnel arriving from other jurisdictions who have a valid OPITO BOSIET certificate or a Norwegian Oil and Gas Association approved Basic Safety and Emergency Training will be required to complete the BST-R.**
- **A HUEBA in HUET Implementation Guide has been developed by the HUEBA in HUET Task Group to support the implementation of HUEBA in HUET training.**

HUEBA in HUET Training- Frequently Asked Questions

- **Why has industry introduced the use of HUEBA in the HUET?**
 - The HUET training will be more realistic and will provide the offshore workforce the ability to become comfortable with and use the HUEBA while conducting HUET training.
 - Research has shown that training in realistic conditions enables personnel to complete the task more readily in a real scenario.
 - Research has shown that in cold water breath hold abilities are limited and the HUEBA increases escape times.
- **With the implementation of HUEBA in HUET will a different type of HUEBA device be employed in Atlantic Canada?**
 - No. The HUEBA compressed air system, will be the same system that has been used over the last 6 years.

HUEBA in HUET Training - Frequently Asked Questions

- **Will it be a requirement to carry out HUEBA in HUET training for all Atlantic Canada offshore workers?**
 - Yes. Prior to completing the training, all Atlantic Canada offshore workers must undergo a compressed medical screening as part of his or her offshore medical.
- **What happens if I do not pass the compressed air portion of the offshore medical?**
 - Workers presently working offshore who do not pass the compressed air medical screening and are deemed medically fit to fly offshore by a recognized physician will be permitted to take the HUEBA and HUET training as currently offered.
 - Individuals would be trained to use the HUEBA in the shallow end of the pool and would not be permitted to use the HUEBA in the HUET.

HUEBA in HUET Training - Frequently Asked Questions

- **What training will be available for offshore personnel, and when will it be available?**
 - HUEBA in HUET training for workforce personnel will commence on June 1st, 2016.
- **Are there any risks arising from the use of HUEBA in HUET in the training?**
 - The risk mitigations put in place after the risk assessment (medical update) have reduced the risk to as low as reasonably practical (ALARP).
- **What is the medical risk?**
 - Medical risks were identified as part of the HUEBA in HUET risk assessment, this resulted in the update to the offshore medical.
 - With the updated medical the use of the HUEBA in the HUET is ALARP.

HUEBA in HUET Training - Frequently Asked Questions

- **How will the training providers identify who is eligible to use the HUEBA in the HUET?**
 - Trainees will be required to bring their proof of medical card with them to the training provider
 - The trainees will be screened at the beginning of course to determine who is eligible and who is not.
 - In the pool trainees who are eligible will be identified by a green Velcro tab attached to the buddyline “D” ring on the left should of the helicopter suit.
 - A red tab will mean the trainee is NOT eligible to use HUEBA in HUET. If there is no tab the trainee must be stopped until the proper tab is in place.
 - People with a red tab will still have to complete the HUET training using breath hold only

HUEBA in HUET Training - Frequently Asked Questions

- **How will the training providers identify who is eligible to use the HUEBA in the HUET?**
 - Each trainee will have to present a valid medical certificate. If the certificate states cleared for use of HUEBA in HUET the individual will use the HUEBA in the HUET. If they present a medical that does NOT state including HUEBA in HUET they will only be allowed to use the HUEBA in the shallow end of the pool as is done presently.
 - The trainees will be screened at the beginning of course to determine who is eligible and who is not. In the pool trainees who are eligible will be identified by a green Velcro tab attached to the buddyline “D” ring on the left should of the helicopter suit. A red tab will mean the trainee is NOT eligible to use HUEBA in HUET. If there is no tab the trainee must be stopped until the proper tab is in place.

HUEBA in HUET Training - Frequently Asked Questions

- **What if I am an occasional offshore contractor, specialty contractor or an employee who primarily works in the office?**
 - HUEBA use is mandatory as per the *Canadian Aviation Regulations*. Occasional offshore contractors, specialty contractors and employees who primarily work in the office will be required to complete the HUEBA in HUET training providing they are medically cleared to do the training.