



GLOBAL WIND
ORGANISATION
STAKEHOLDER FORUM

Hamburg – 26 September
2018



Welcome

Eloy Jaurequi, Chairman Global Wind Organisation
Jakob Lau Holst, CEO, Global Wind Organisation

Advanced Rescue Training

Hamburg, WindEurope 2018

Agenda



Speakers and GWO working group



Why Advanced Rescue?



Modular set-up



Training Providers and Pilot tests



Demonstration by Skylotec



Q/A

Speakers



TRAINING STANDARDS FOR SAFETY

Mats van Amen

- HSE specialist at MHI Vestas
- Master environment and resource management
- In depth knowledge within fire and rescue services



Per Sigmann Rasmussen

- Senior Training Development Specialist at Ørsted
- Electrical Contractor: Diploma in Vocational Education and Training
- Technical Instructor (training technicians onshore/offshore globally in the Wind, Oil & Gas and Maritime sector)



Claus Lundgaard Ernstsen

- Global Head Vertical Rescue, Skylotec
- Falck - Paramedic
- Training Manager - Safety Training (Siemens)
- Safety Instructor



GWO Working Group members



Broad representation of GWO members:



Why Advanced Rescue?

- Turbines are becoming increasingly large and remote. As a consequence:
 - Working in remote areas will create longer response times by professional emergency response teams.
 - Professional responders won't always have the resources readily available to climb a turbine and perform a rescue.
- The training elevates rescuer self-reliance and enables successful transport of a colleague who cannot self-evacuate, to an assembly point where professional emergency responders can provide care.
- The training aims to control the risks associated with rescue operations, ensuring a more efficient rescue operation from a wind turbine.



Advanced Rescue Training



Purpose

The aim of ART course is to enable the delegates to perform casualty rescue operations using standard wind turbine industry rescue and fall protection equipment, and predefined rescue methods and techniques, exceeding those of GWO Working at Height.

Objectives

On completion of training, a delegate shall be able to:

- Assess and determine rescue strategy for various rescue scenarios
- Perform rescue operations, in/on a WTG, using safe and suitable (certified or structural) anchor points, lifting angles, deviation, and edge protection for the rescue equipment
- Perform rescue operations using personal fall protection equipment on the casualty

Modular set-up

Hub rescue

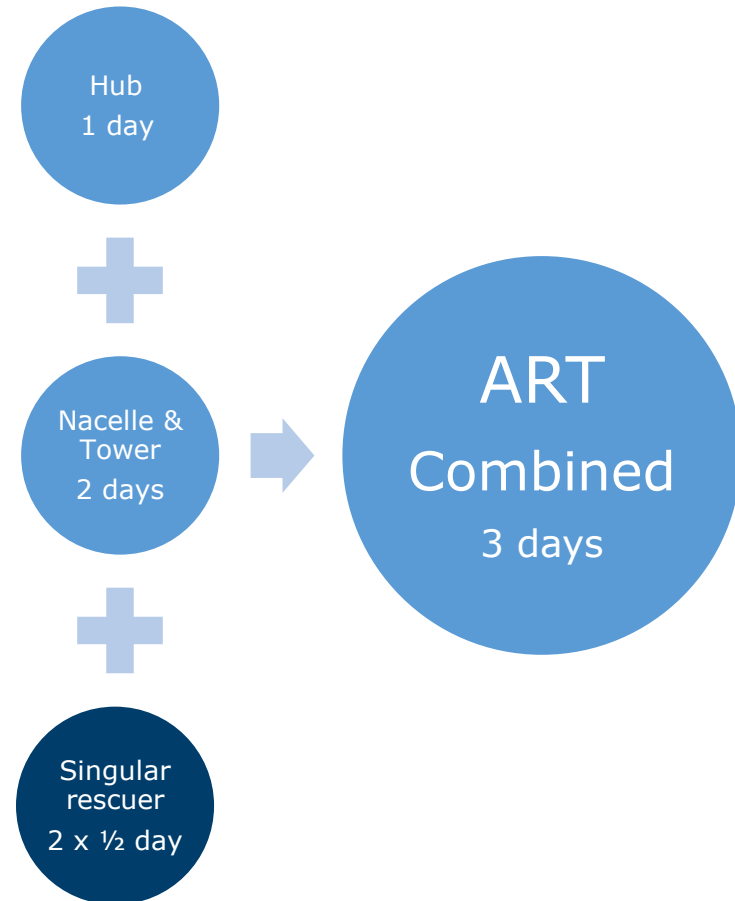
- Blade to hub to ground
- Outside evacuation (including measures to mitigate interfering elements)

Nacelle, Tower, Basement rescue

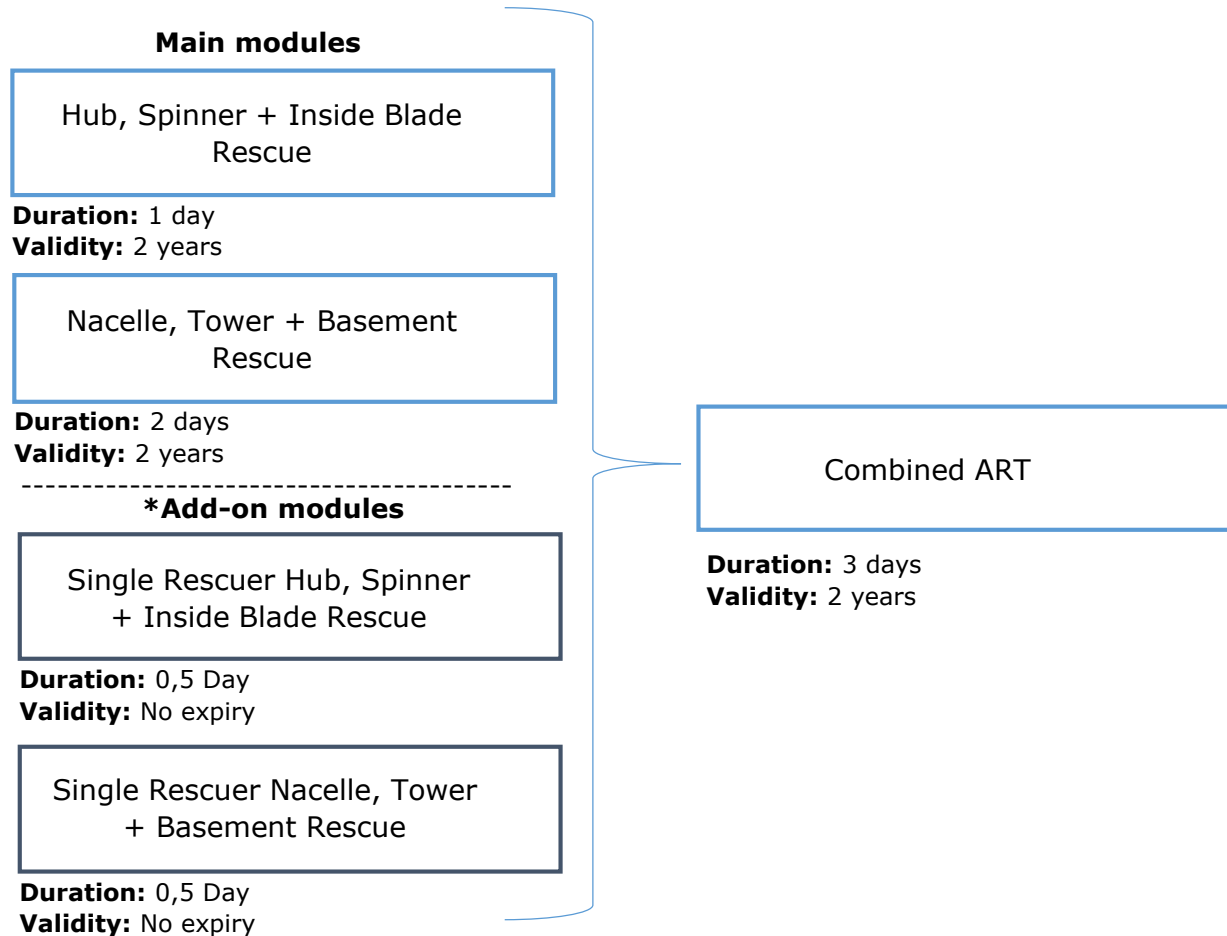
- Enclosed space to ground (under gearbox, inside and/or behind generator, under the floor, incl. zip line in nacelle)
- Transformer room to nacelle
- Basement to ground floor (manually operated rescue up)
- Inside and outside evacuation (including measures to mitigate interfering elements)
- Rescue up e.g for helicopter extraction

Single rescuer

- Mindset
- Rescue strategy, planning and techniques for alone rescuer

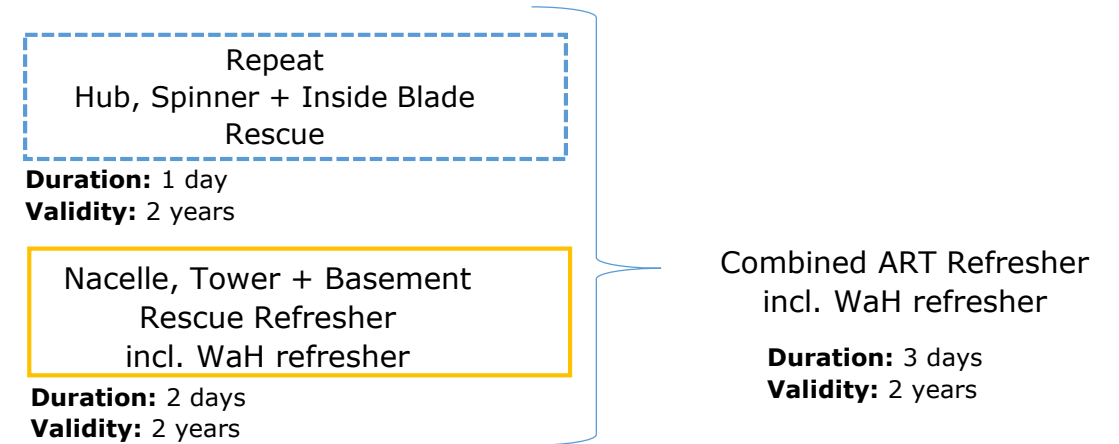


Modules of ART



*Additional non-mandatory modules for technicians working in teams of two who may not be able to organize work to have a third trained person close by.

Modules of ART Refresher



Entry prerequisites for main modules: Valid GWO BST Working at Heights, First Aid and Manual Handling certificates required

Training Providers and Pilot tests



Contribution and feedback from:



windhunter_academy
training and study camp



Pilot tests conducted by:



Falck Hub, Nacelle & Tower module



Tesicnor Hub, Nacelle & Tower module

SIEMENS Gamesa ART combined including single rescuer modules



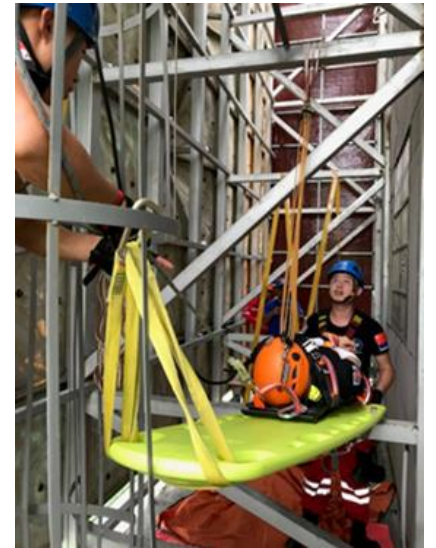
SKYLOTEC Refresher: Nacelle & Tower incl. WaHR

Skylotec - demonstration

Claus Lundgaard Ernstsén

Introduction

1. Advanced Rescue in general
2. GWO pilot test: ART Refresher inc. WaHR – 2 days
3. Demonstration of Advanced Rescue principals, techniques and equipment



Advanced Rescue General

1. Several industries
2. Higher demand of rescue plans/procedures/equipment and training
3. Positive focus
4. Important focus
5. Demand for equipment and training setup



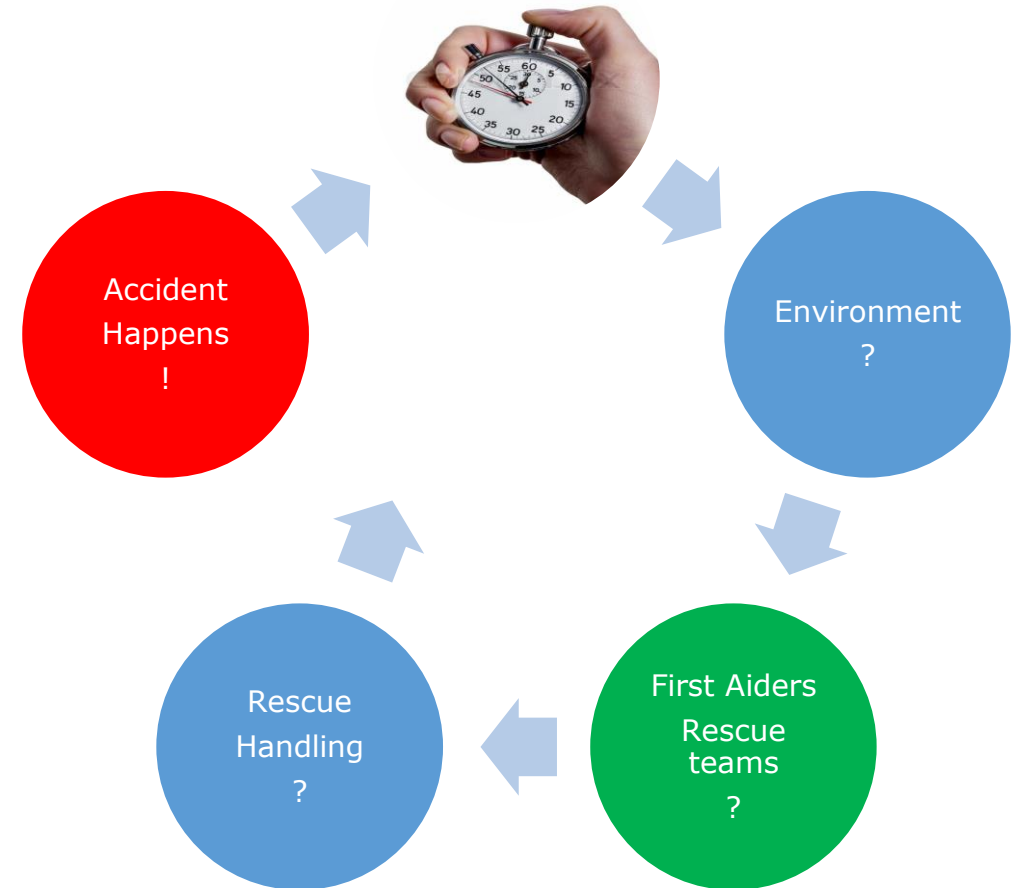
Advanced Rescue General



SETTING STANDARDS FOR SAFETY

ACCIDENT !

- Environment
- Qualifications of the people present
- Rescue equipment available



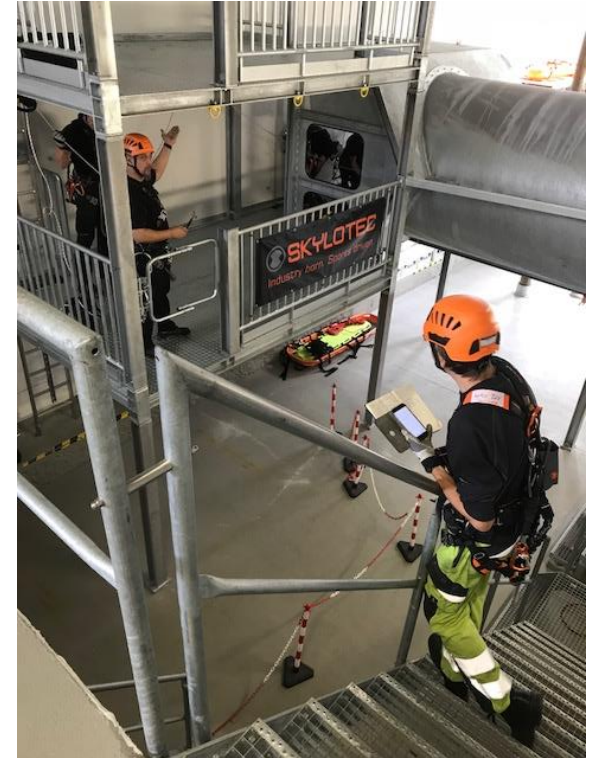
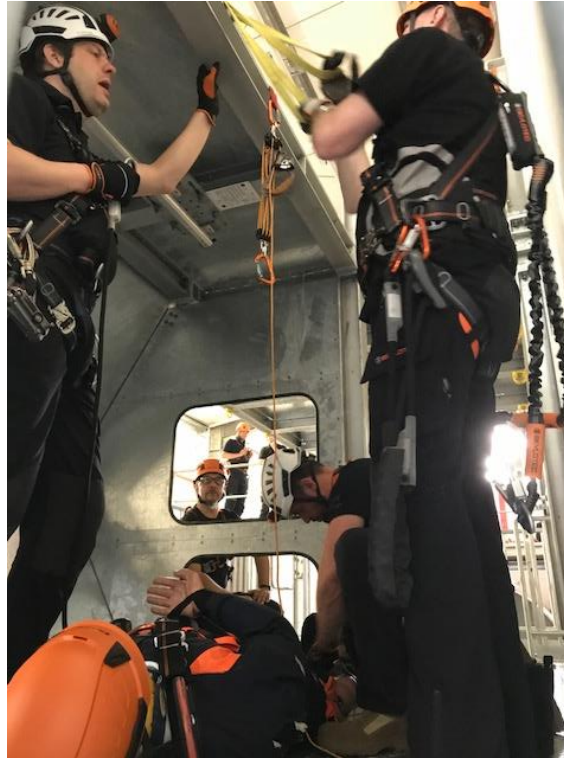
Pilot Training: ART Refresher

SKYLOTEC Vertical Rescue college Germany



- Positive pilot test course for 2 days
- Master instructor as lead
- Participants SKYLOTEC employees
- Positive dialog, discussions, evaluations and outcome

Advanced Rescue Refresher



GWO Advanced Rescue - Demonstration



- Demonstration of Advanced Rescue Principals
- Demonstration of Advanced Rescue Equipment
- Demonstration of Advanced Rescue Techniques

COMING SOON

Coming soon at a Training facility near you

- ART release October 1, 2018
- ART webinar October 10th

Enhanced First Aid (EFA) Training Standard

Agenda



Speakers and GWO working group



Why Enhanced First Aid?



Modular set-up



Training Providers and Pilot tests



Demonstration of EFA equipment



Q/A

Speakers and Work group members



BENTE BOA

Head of Learning &
Development
Ørsted



GERHARD KRAUS

MD & PhD
EFA Medical consultant

EVA-SABINE NEUHOEFER

Medical Doctor (MD)
Siemens AG

MARK JENKINS

Risk Manager
Siemens-Gamesa



Nils Weinrich

PhD in natural sciences
Senior Research Manager



MARION WILLIAMS

Lead Instructor/Paramedic
Advanced Industrial Solutions



VOLKER H. SEIBERT

Managing Director
ISC Training & Assembly



Why Enhanced First Aid?

- Wind turbines are placed in increasingly remote areas, away from established medical facilities – both offshore and onshore
- This can increase the time interval between the placing of an emergency/distress call and the arrival of professional emergency responders
- The GWO Enhanced First Aid (EFA) Standard has been developed so that wind turbine technicians have an additional level of first aid training focused on stabilising and keeping a casualty alive until they are rescued



Enhanced First Aid Training



Purpose

The Enhanced First training combines elements from the GWO First Aid and Enhanced First Aid - qualifying technicians with skills and knowledge to stabilize a casualty in the event of an accident/life threatening trauma/ illness and allowing the transfer of the casualty from a remote location to a place of safety and sustained medical attention e.g. hospital.

Objectives

On completion of training, a Delegate shall be able to:

- Lead in the delivery of basic first aid to save life
- Demonstrate incident and casualty management
- Demonstrate immediate emergency lifesaving first aid
- Conduct telemedical consultation and medical/rescue assistance providing a concise and relevant report of the casualties condition

Different levels of FA skills

Company First Aider

- Laymen
- Basic First Aid training (simple FA skills)
- Not allowed to dispense medication

Enhanced First Aider

- Laymen
- Enhanced First Aid training
- Possible to administer analgesics (medical telecommunication and according to company reg.)
- Advanced First Aid equipment

Paramedic/Rescue Service Professional

- Professional
- Licenced and registered to administer medication

Teleconsultation with all parties involved by emergency-call physician via medical telecommunication, offering advice, monitoring and support of enhanced First Aid measures

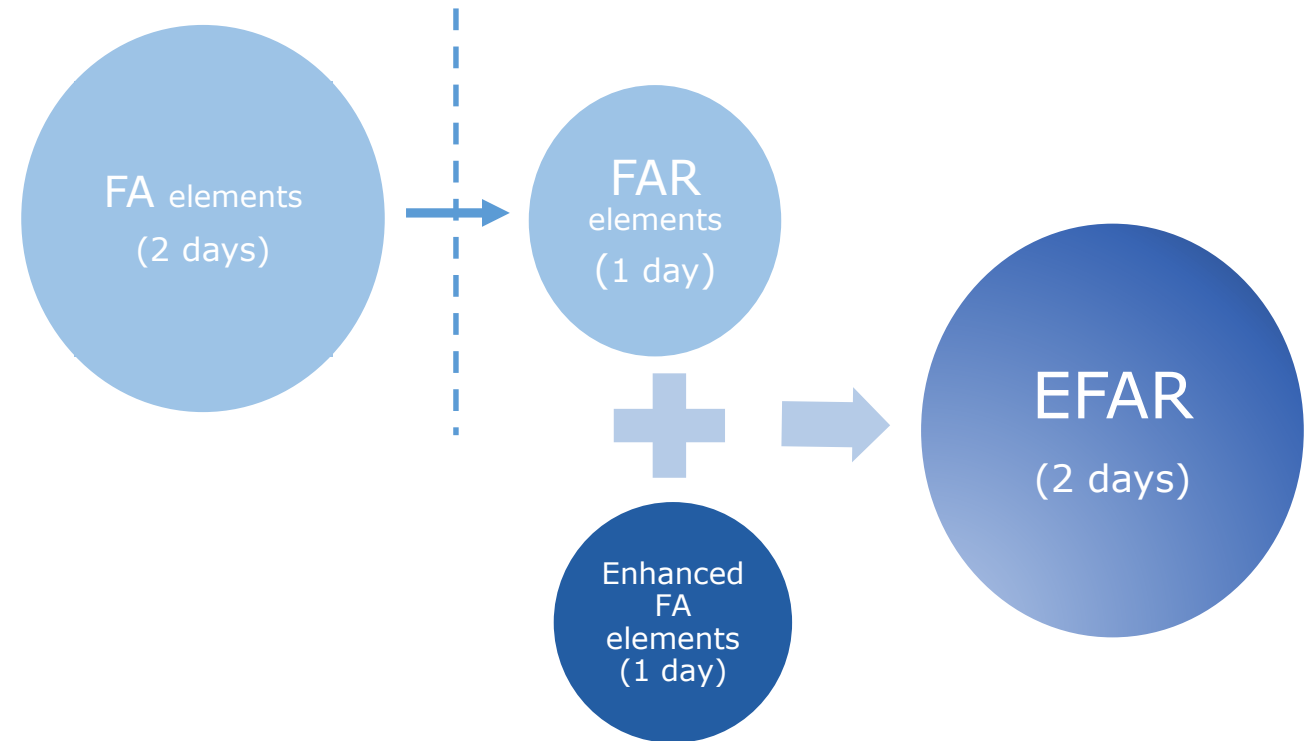
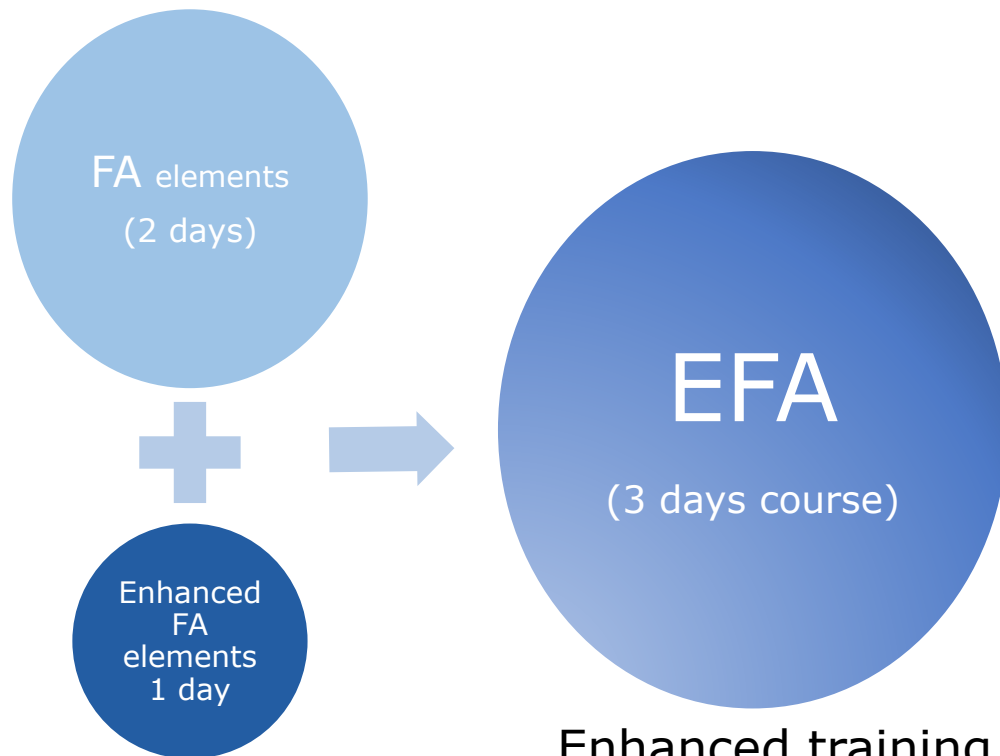
EFA and EFAR Training Elements



TRAINING STANDARDS FOR SAFETY

EFA for participant without basic FA certificate

EFAR for participant with valid basic FA (or FAR) certificate



Enhanced training EFA or EFAR includes all elements of the Basic First Aid training

EFA guideline

Recommendations on:

- When to implement the EFA training
- Medical teleconsultation support system as a basic principle
- Advanced first aid equipment
- Drills and Exercises

Training Providers and Pilot tests



Active member of the EFA working group:



Conducted pilot test

Feedback and contribution to the development of EFA standard



Conducted pilot test



Conducted pilot test

RESCUE
CENTER
DENMARK

Demonstration of Advanced First Aid equipment

- Airway management devices
- Vital signs/monitoring
- [Medical telecommunication](#)



COMING SOON

Coming soon at a Training facility near you

- **EFA release October 1, 2018**
- **EFA Webinar October 10th**

Training Standards Review

Revision process, Sea Survival

01

Revision
process

02

Consultation
findings

03

BST Sea
Survival

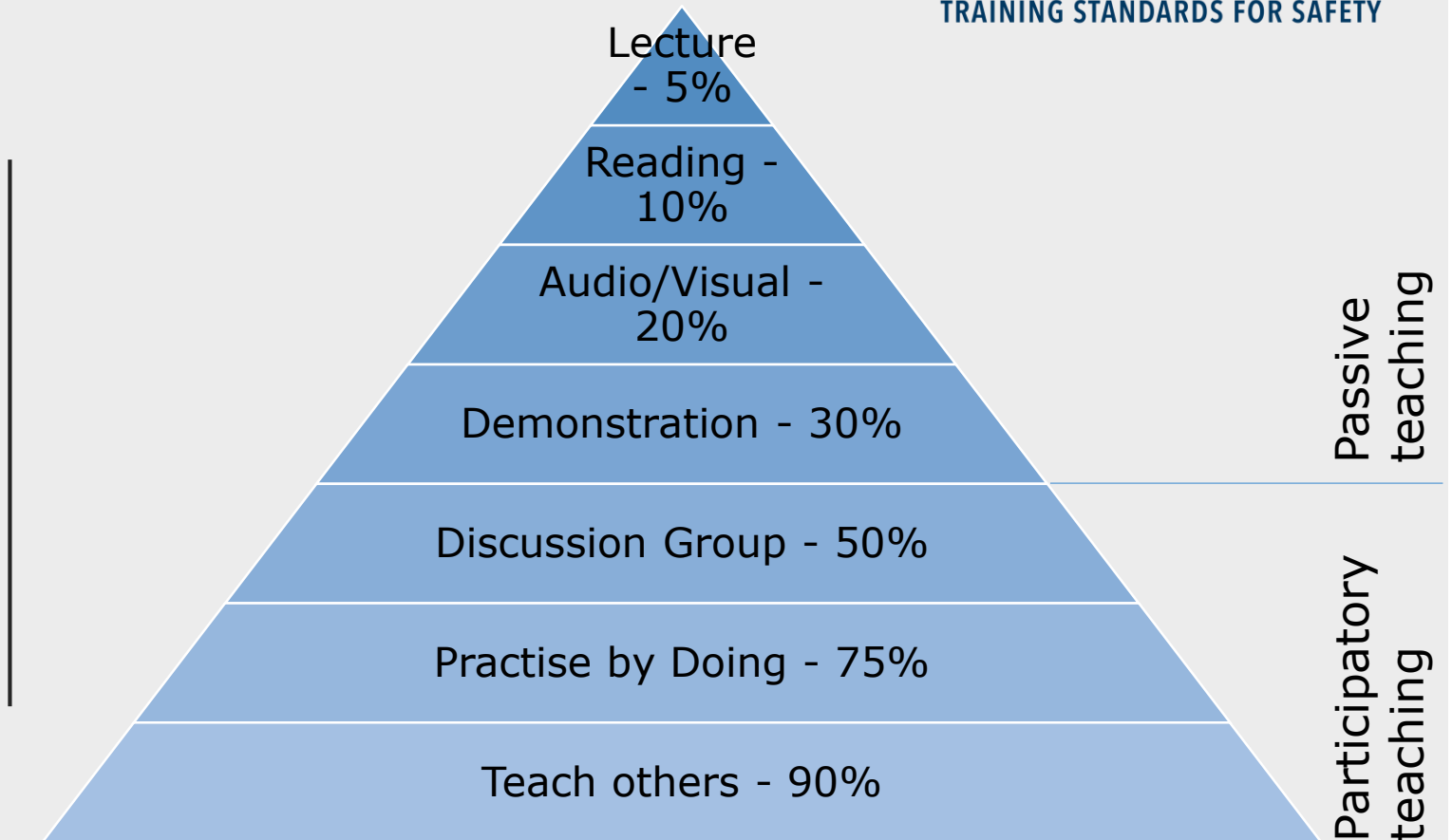
Transfer

Transfer of learning occurs when learning in one context or with one set of materials impacts on performance in another context or with other related materials (Perkins and Salomon, 2012)

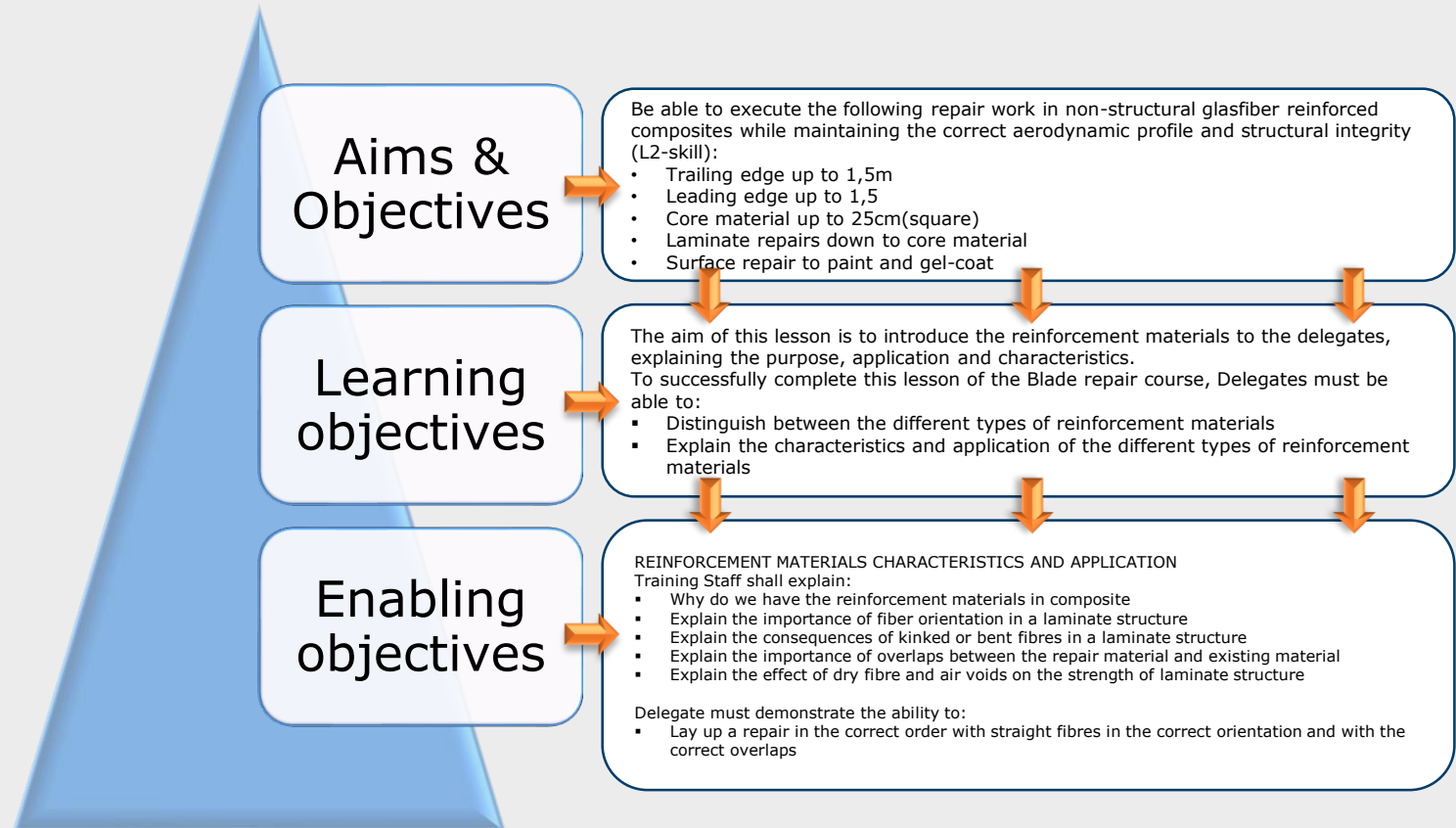
Train as you work:

- Transferable
 - Hazards → Risks → Mitigation
 - Environment
 - Tools

Learning retention rate



Taxonomy



Theory vs. practical

Learning retention rate theories supports a strong focus on practical exercises but there needs to be a theoretical foundation to train from

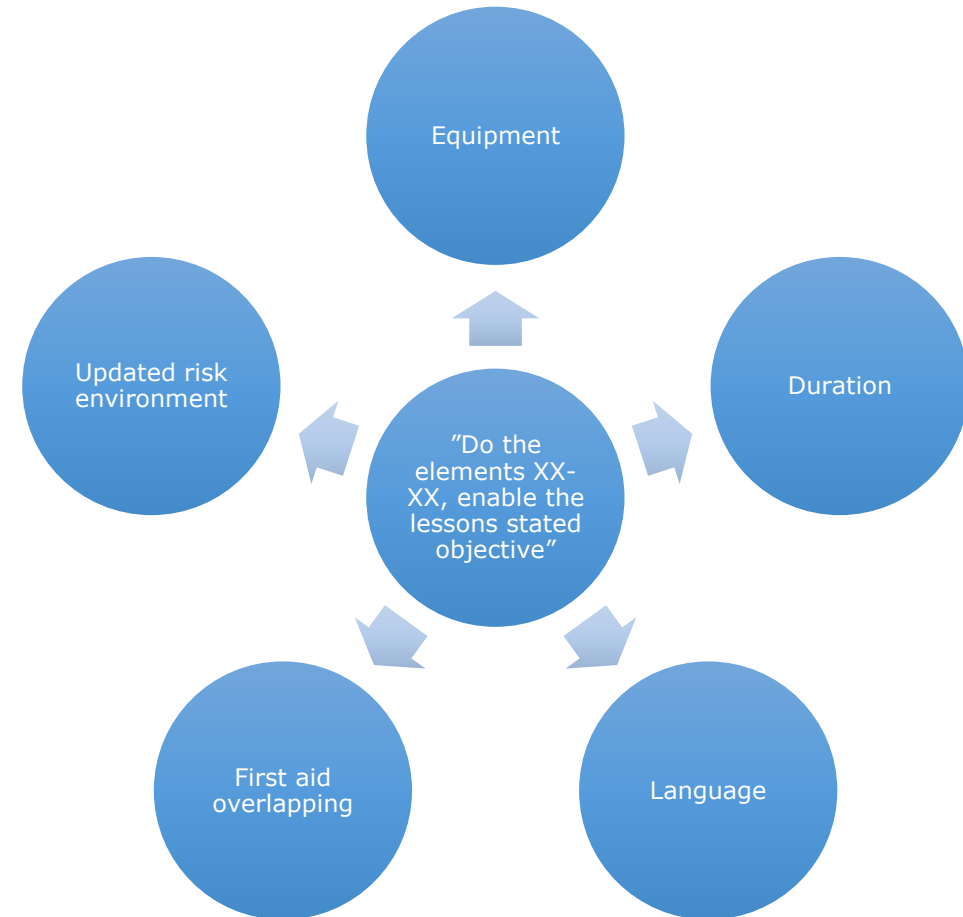


Methodology



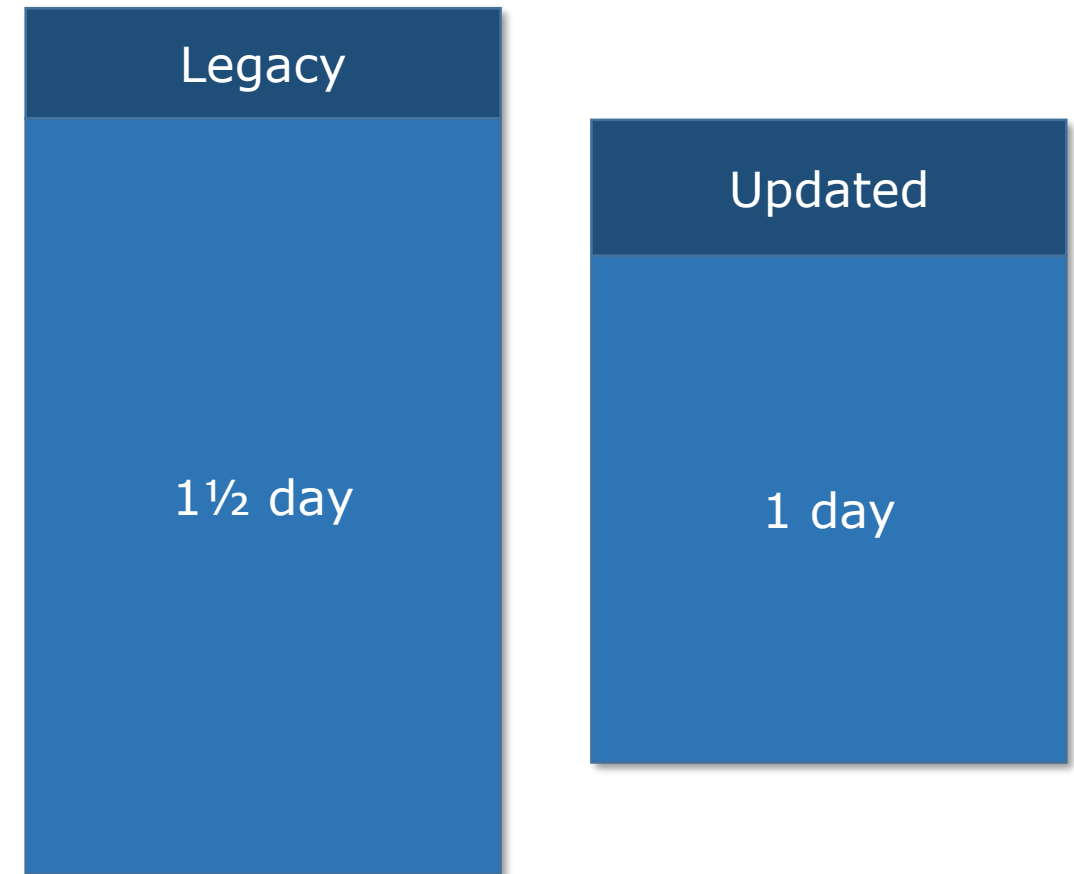
Survey

- "Open" questions and a general feedback section
- Good engagement from the training provider community
- +80% satisfaction with the module
- Strong data foundation provided for a constructive review



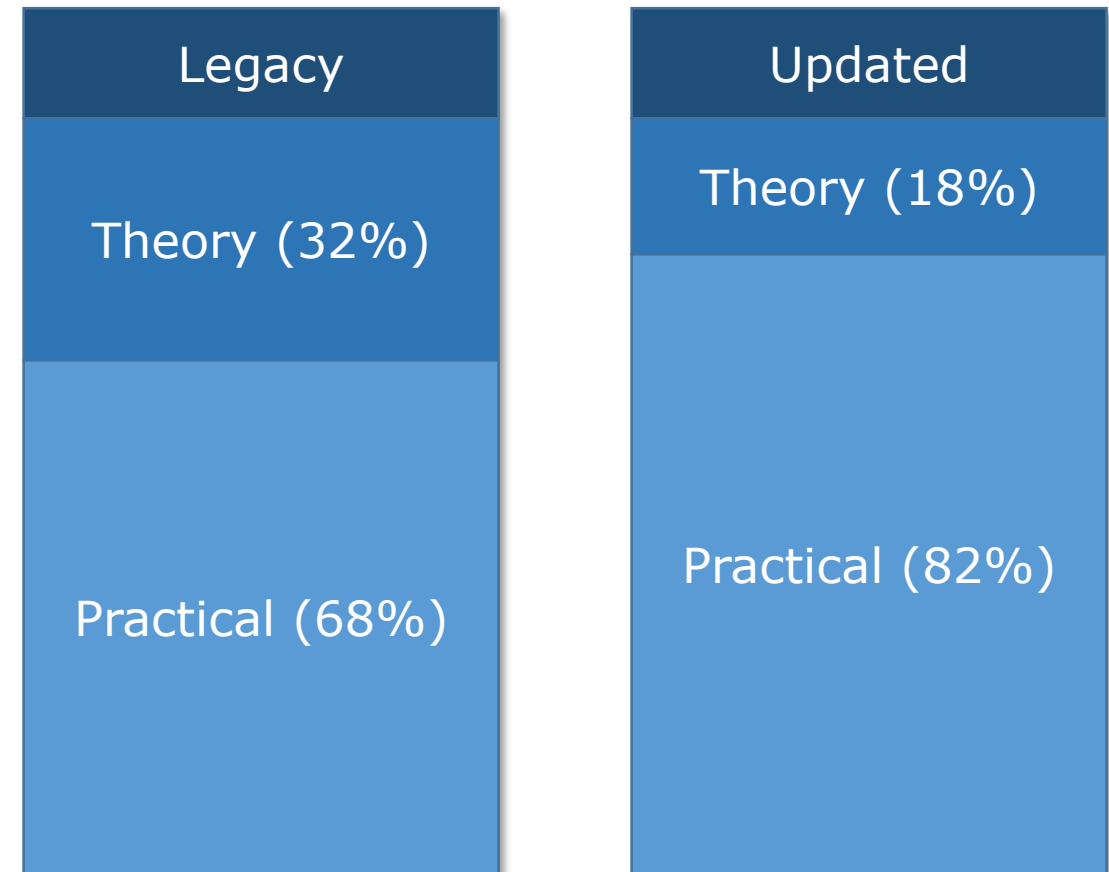
BST Sea Survival, duration

- Decrease in duration by moving theory elements into the practical lessons
- Shifted to a more direct (transfer) scope in the theory elements
- Changed the sequence of the lessons to support a better flow
- Reduced certain practical elements



BST Sea Survival, content

- Moved theory elements into the practical lessons
- Updated content based on changed risk environment
- Added requirement for practical exercises pr. delegate
- Changes in practical exercises
 - Increased transfer exercises
 - Reduced helicopter rescue exercises
 - Updated life raft exercises



BST Sea Survival, credits



Working group contributors



Pilot testing

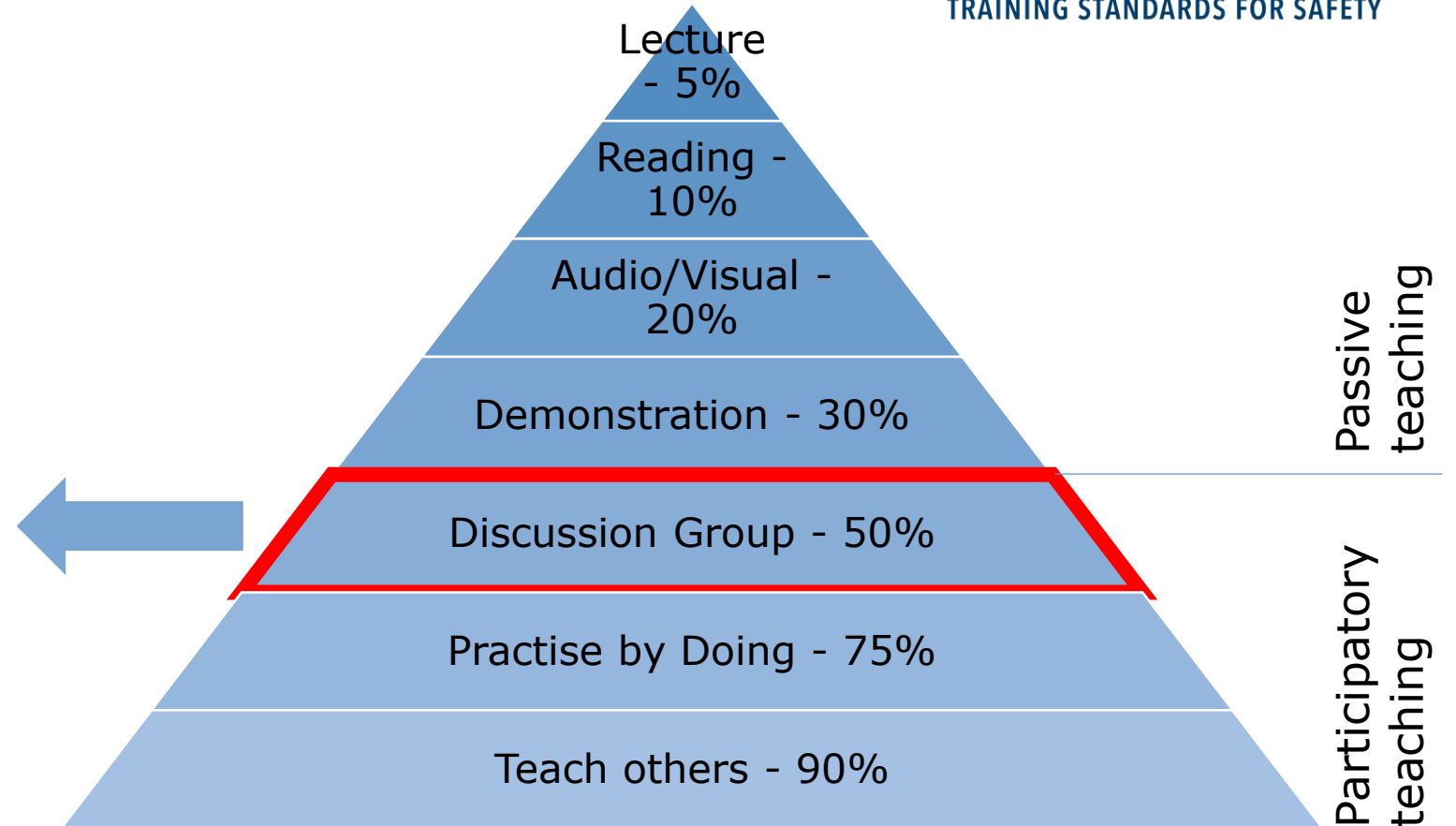




1st of October

2nd of October

4th of October



Improving governance of our network

Jan Laugesen, EHS Senior Specialist, SGRE – Member,
GWO Audit & Compliance Committee

Audit & Compliance committee

Our mandate:



- Adequate governance, consistent quality in delivery of training by all providers
- How have we done this?
 - Criteria for Certification Bodies
 - Criteria for Training Providers
 - Standards

Feedback from you: "It works ok, but assumption is auditor knows GWO training standards"

A better way: Criteria for Certification Bodies v5



FROM 1.10.2018

- New Auditor Workshops
- Auditor/Certification Body must:
 - Document/demonstrate to GWO their attendance at workshops or trainings participated in/witnessed
 - Information listed on GWO web site
- Allowance for audit on basis of ISO 17065 (service provider) and/or 17021 (management systems)
- 'Man-Day' estimates: updated and easier to understand

'Man-Day' requirements: Criteria Version 5

Man-day estimation table	QMS	On-site training
Stage 1	0,5-1	0,3 X duration of modules
Stage 2	0,5-1	0,3 X duration of modules

Improvements for 2019



CB Criteria from 1.4.2019

- Becoming hard requirement: Document/demonstrate to GWO CB/auditor's attendance at workshops or trainings participated in/witnessed
- Template/checklist to guide auditors – usage optional, but may become requirement as of 1.10.2019

Survey function – Training providers able to evaluate CBs and send feedback to GWO

In conclusion

- We've been listening to your feedback
- Greater transparency
 - Publication of compliance list
- Improving quality assurance of audits
 - Workshops
 - Templates/checklists
 - Survey

Compliance Case Study

Curro Violero Pérez de Madrid
HSQE Manager Ingeteam Service

GWO in 2019

Results of TC/SC strategy session
September 18-20th

What we're doing in 2019

- Review existing standards
- Develop new modules and standards
- Quality Assurance
- Develop supporting material



- WINDA - Maintain Operations
- Governance of Certification Bodies

- New website
- WINDA statistics
- Stakeholder events

Safety Training Standards

Agreed Reviews:

BTT: all modules, release April 2019

BST: WAH, MH reviewed modules, release April 2019

EFA and ART review to begin in Q3

Agreed development:

BTT, installation module, April 2019

Blade repair, April 2019

Potential new w current staff:

1 new training standard project: Slinger Banksman

1 cross cutting quality assurance project

Develop Supporting Training Material

Video instruction guides

Governance & compliance

WINDA

- Maintain Operations, 99,9% availability

Governance (mitigate risk) of Certification Bodies

- Develop auditor qualification and training workshops
- Develop checklist for Auditors as Annex to CB Criteria

Communication & engagement



New website

Improved UX, support standards development, improve member profiling, training providers and certification bodies

WINDA statistics

Annual report, with more data throughout the year and accessible on new website

Content

Increased production of content + training provider news for own media industry media and business relevant social media.

EVENTS

- Stakeholder Forum@ WindEurope Bilbao (2 April)
- Stakeholder Forum @ AWEA OM&S (25 Feb)
- IPF2019 (8 April)
- AWEA WindPower (20 May)
- WindEurope Offshore Copenhagen (26 Nov)
- China Wind Power (16 Oct)
- Auditor qualification and training workshops in US, Europe and China (Feb, June, October)