



**GLOBAL WIND ORGANISATION
STANDARD**

**Basic Safety Training Refresher (BSTR)
(Onshore/Offshore)**

**Version 2
21 November, 2013**

Foreword

The Global Wind Organisation (GWO) is an association of Wind Turbine owners and manufacturers with the aim of supporting an injury free work environment in the wind industry.

This Standard has been developed in response to the demand for recognisable Basic Safety Training (BST) in the industry. The development of this Standard has been prepared in co-operation between the members of GWO. This work is based on risk assessments and factual incident/accident statistics within the industry pertaining to the installation, service and maintenance of wind turbine generators.

The objective of this Standard is to develop common industry training and best practise Standards for health and safety as a vital and necessary way forward to reducing risks for personnel in the wind industry working on site and to reducing environmental risks across Europe and the globe.

This Standard describes the requirements for Basic Safety Training in the wind industry that are recommended by GWO. Where national legislation sets higher requirements for the training, the Training Provider shall incorporate these requirements in the training programme.

The GWO Basic Safety Training does not include any Technical Safety Training such as working with electricity, equipment with stored energy etc.. Additional training may be required due to company or country specific requirements.

GWO recommends a company specific Basic Safety Introduction and Technical Safety Training as additional training.

Editorial and approval

The final editorial and approval of this Standard has been conducted by the GWO Steering Committee.

Acknowledgement

The members of the Global Wind Organisation (GWO) recognise that training according to this Standard covers the requirements for Basic Safety Training for wind turbine technicians and personnel.

GWO members agree that everyone working on one of their properties (Wind Turbine Generators, sub stations, etc.) shall complete Basic Safety Training courses relevant for their assignments. All work shall be done in teams of at least 2 Competent Persons. Exemptions from the above can be made based on internal company rules, thereby allowing untrained persons to work with Competent Personnel or to work on a specific task.

The holder of a GWO certificate is considered competent within Basic Safety in the wind industry and the members of GWO accept the holder of this certificate as possessing the required knowledge to stop an unsafe work situation.

Table of contents

FOREWORD	2
EDITORIAL AND APPROVAL	3
ACKNOWLEDGEMENT	3
LIST OF ABBREVIATIONS	9
INTRODUCTION	10
TARGET GROUP	10
OVERVIEW	10
DURATION OF BSTR MODULES	11
LEGAL REQUIREMENTS	11
VALIDITY PERIOD	11
DELEGATE PREREQUISITES FOR THE BSTR	12
PHYSICAL DEMANDS	12
AIMS AND OBJECTIVES	13
RESOURCES FOR THE BSTR MODULE	13
STAFF	13
FACILITIES	13
THEORY TRAINING FACILITIES	14
PRACTICAL TRAINING FACILITIES	14
EQUIPMENT	14
ADMINISTRATION AND CERTIFICATION	14
ADMINISTRATIVE ARRANGEMENTS	14
DELEGATE PERFORMANCE ASSESSMENT	15
CERTIFICATION	15
RECORDS	15
BSTR MODULES	15
FIRST AID	17
FOREWORD	18
EDITORIAL AND APPROVAL	19
ACKNOWLEDGEMENT	19

TABLE OF CONTENTS	20
LIST OF ABBREVIATIONS.....	22
INTRODUCTION.....	23
SECTION 1 - THE BSTR FIRST AID MODULE	23
1.1 DURATION OF THE BSTR FIRST AID MODULE.....	23
1.2 TARGET GROUP	24
1.3 DELEGATE PREREQUISITES FOR THE BSTR FIRST AID MODULE	24
1.4 PHYSICAL DEMANDS OF THE BSTR FIRST AID MODULE.....	24
1.5 AIMS AND OBJECTIVES OF THE BSTR FIRST AID MODULE	25
1.6 LEARNING OUTCOMES OF THE BSTR FIRST AID MODULE	25
1.7 DELEGATE PERFORMANCE ASSESSMENT	30
BSTR FIRST AID MODULE TIME TABLE	31
1.9 ELEMENTS, BSTR FIRST AID MODULE.....	33
SECTION 2 - RESOURCES FOR BSTR FIRST AID.....	48
2.1 STAFF	48
2.2 TRAINER/DELEGATE RATIO	48
2.3 FACILITIES	49
2.4 THEORY TRAINING FACILITIES	49
2.5 PRACTICAL TRAINING FACILITIES	49
2.6 EQUIPMENT	49
SECTION 3 - ADMINISTRATION AND CERTIFICATION	50
3.1 DELEGATE PERFORMANCE ASSESSMENT	50
3.2 VALIDITY	50
3.3 CERTIFICATION	50
3.4 RECORDS.....	51
3.5 MEASURES.....	51
3.6 CONTROL MEASURES.....	51
CONTROL MEASURES	52
MANUAL HANDLING	55
FOREWORD.....	56
EDITORIAL AND APPROVAL	57
ACKNOWLEDGEMENT	57
TABLE OF CONTENTS	58

LIST OF ABBREVIATIONS	60
INTRODUCTION	61
SECTION 1 - THE BSTR MANUAL HANDLING MODULE	61
1.1 DURATION OF THE BSTR MANUAL HANDLING MODULE	61
1.2 TARGET GROUP	62
1.3 DELEGATE PREREQUISITES FOR THE BSTR MANUAL HANDLING MODULE	62
1.4 PHYSICAL DEMANDS OF THE BSTR MANUAL HANDLING MODULE	62
1.5 AIMS AND OBJECTIVES OF THE BSTR MANUAL HANDLING MODULE	63
1.6 LEARNING OUTCOMES OF THE BSTR MANUAL HANDLING MODULE	63
1.7 DELEGATE PERFORMANCE ASSESSMENT	67
BSTR MANUAL HANDLING MODULE TIME TABLE	68
1.9 ELEMENTS, BSTR MANUAL HANDLING MODULE	69
SECTION 2 - RESOURCES FOR BSTR MANUAL HANDLING	76
2.1 STAFF	76
2.2 TRAINER/DELEGATE RATIO	76
2.3 FACILITIES	77
2.4 THEORY TRAINING FACILITIES	77
2.5 PRACTICAL TRAINING FACILITIES	77
2.6 EQUIPMENT	77
SECTION 3 - ADMINISTRATION AND CERTIFICATION	78
3.1 DELEGATE PERFORMANCE ASSESSMENT	78
3.2 VALIDITY	78
3.3 CERTIFICATION	78
3.4 RECORDS	79
3.5 MEASURES	79
3.6 CONTROL MEASURES	79
CONTROL MEASURES	80
FIRE AWARENESS	83
FOREWORD	84
EDITORIAL AND APPROVAL	85
ACKNOWLEDGEMENT	85
TABLE OF CONTENTS	86
LIST OF ABBREVIATIONS	88

INTRODUCTION.....	89
SECTION 1 - THE BSTR FIRE AWARENESS	89
1.1 DURATION OF THE BSTR FIRE AWARENESS MODULE.....	89
1.2 TARGET GROUP	90
1.3 DELEGATE PREREQUISITES FOR THE BSTR FIRE AWARENESS MODULE	90
1.4 PHYSICAL DEMANDS OF THE BSTR FIRE AWARENESS MODULE	90
1.5 AIMS AND OBJECTIVES OF THE BSTR FIRE AWARENESS MODULE	91
1.6 LEARNING OUTCOMES OF THE BSTR FIRE AWARENESS MODULE.....	91
1.7 DELEGATE PERFORMANCE ASSESSMENT	95
BSTR FIRE AWARENESS MODULE TIME TABLE.....	96
1.9 ELEMENTS, BSTR FIRE AWARENESS MODULE	97
SECTION 2 - RESOURCES FOR BSTR FIRE AWARENESS MODULE	104
2.1 STAFF	104
2.2 TRAINER/DELEGATE RATIO	104
2.3 FACILITIES.....	105
2.4 THEORY TRAINING FACILITIES	105
2.5 PRACTICAL TRAINING FACILITIES.....	105
2.6 EQUIPMENT	105
SECTION 3 - ADMINISTRATION AND CERTIFICATION	106
3.1 DELEGATE PERFORMANCE ASSESSMENT	106
3.2 VALIDITY	106
3.3 CERTIFICATION	106
3.4 RECORDS.....	107
3.5 MEASURES.....	107
3.6 CONTROL MEASURES	107
CONTROL MEASURES	108
WORKING AT HEIGHTS	111
FOREWORD.....	112
EDITORIAL AND APPROVAL	113
ACKNOWLEDGEMENT	113
LIST OF ABBREVIATIONS.....	116
INTRODUCTION.....	117
SECTION 1 - THE BSTR WORKING AT HEIGHTS MODULE	117

1.1	DURATION OF THE BSTR WORKING AT HEIGHTS MODULE	117
1.2	TARGET GROUP	118
1.3	DELEGATE PREREQUISITES FOR THE BSTR WORKING AT HEIGHTS MODULE.....	118
1.4	PHYSICAL DEMANDS OF THE BSTR WORKING AT HEIGHTS MODULE	118
1.5	AIMS AND OBJECTIVES OF THE BSTR WORKING AT HEIGHTS MODULE.....	119
1.6	LEARNING OUTCOMES OF THE BSTR WORKING AT HEIGHTS MODULE	119
1.7	DELEGATE PERFORMANCE ASSESSMENT	122
BSTR WORKING AT HEIGHTS MODULE TIME TABLE.....		123
ELEMENTS, BSTR WORKING AT HEIGHTS MODULE		125
<i>TRAINING STAFF SHALL USE THE PRACTICAL REVIEW LESSON AS A BASIS FOR THIS LESSON.</i>		<i>128</i>
SECTION 2 - RESOURCES FOR BSTR WORKING AT HEIGHTS.....		133
2.1	STAFF	133
2.2	TRAINER/DELEGATE RATIO	133
2.3	FACILITIES	134
2.4	THEORY TRAINING FACILITIES	134
2.5	PRACTICAL TRAINING FACILITIES	134
2.6	EQUIPMENT	134
SECTION 3 - ADMINISTRATION AND CERTIFICATION		137
3.1	DELEGATE PERFORMANCE ASSESSMENT	137
3.2	VALIDITY	137
3.3	CERTIFICATION	137
3.4	RECORDS.....	138
3.5	MEASURES.....	138
3.6	CONTROL MEASURES.....	138
CONTROL MEASURES		139
SEA SURVIVAL.....		142
EDITORIAL AND APPROVAL		144
ACKNOWLEDGEMENT		144
TABLE OF CONTENTS		145
LIST OF ABBREVIATIONS.....		147
INTRODUCTION.....		148
SECTION 1 - THE BSTR SEA SURVIVAL MODULE		148
1.1	DURATION OF THE BSTR SEA SURVIVAL MODULE.....	148
1.2	TARGET GROUP	149

1.3	DELEGATE PREREQUISITES FOR THE BSTR SEA SURVIVAL MODULE	149
1.4	PHYSICAL DEMANDS OF THE BSTR SEA SURVIVAL MODULE	149
1.5	AIMS AND OBJECTIVES OF THE BSTR SEA SURVIVAL MODULE	150
1.6	LEARNING OUTCOMES OF THE BSTR SEA SURVIVAL MODULE.....	150
1.7	DELEGATE PERFORMANCE ASSESSMENT.....	153
BSTR SEA SURVIVAL MODULE TIME TABLE.....		154
1.9	ELEMENTS, BSTR SEA SURVIVAL MODULE	155
SECTION 2 - RESOURCES FOR BSTR SEA SURVIVAL		163
2.1	STAFF	163
2.2	TRAINER/DELEGATE RATIO	163
2.3	FACILITIES	164
2.4	THEORY TRAINING FACILITIES	164
2.5	PRACTICAL TRAINING FACILITIES	164
2.6	EQUIPMENT	164
SECTION 3 - ADMINISTRATION AND CERTIFICATION		165
3.1	DELEGATE PERFORMANCE ASSESSMENT	165
3.2	VALIDITY	165
3.3	CERTIFICATION	165
3.4	RECORDS	166
3.5	MEASURES.....	166
3.6	CONTROL MEASURES.....	166
CONTROL MEASURES		167
APPENDIX		170
CHANGE LOG.....		170

List of abbreviations

GWO	Global Wind Organisation
BST	Basic Safety Training
BSTR	Basic Safety Training Refresher
WTG	Wind Turbine Generator



Introduction

Upon completion of the Global Wind Organisation (GWO) Basic Safety Training (BST) Delegates will possess an awareness of the hazards encountered when working within the wind industry and how to control and mitigate these hazards.

The BST will also equip participants with the knowledge, skills and confidence to appropriately respond in the event of an emergency and to increase their safety through proper use of Personal Protective Equipment (PPE), emergency equipment and procedures.

The approved GWO Basic Safety Training Refresher (BSTR) provides Delegates with, reviews and builds on a range of important skills and tools obtained during BST courses, which include Fire Awareness, First Aid, Working at Heights and Manual Handling. To enable Delegates to work in the offshore environment, an additional GWO Sea Survival training shall be completed.

Target group

Personnel working in the wind industry or related fields needing to refresh their GWO BSTR.

Overview

The GWO Basic Safety Training Refresher is divided into the following five Modules:

- First Aid Refresher
- Manual Handling Refresher
- Fire Awareness Refresher
- Working at Heights Refresher
- Sea Survival Refresher

Duration of BSTR Modules

Modules	Duration
First Aid Refresher	8 hours
Manual Handling Refresher	4 hours
Fire Awareness Refresher	4 hours
Working at Heights Refresher	8 hours
Sea Survival Refresher	8 hours

Legal requirements

The Training Provider shall identify whether national legislation sets other requirements for Basic Safety Training. If so, the Training Provider shall incorporate these identified requirements in the training.

Validity period

The Basic Safety Refresher Training Modules are valid for the period stated in the table below. Certificates shall be renewed before the end of a given validity period. The validity period is found by adding the number of months stated in the table below to the issue date of the certificate.

Modules	Certificate Validity (Months)
First Aid Refresher	24
Manual Handling Refresher	24
Fire Awareness Refresher	24
Working at Heights Refresher	24
Sea Survival Refresher	48

Delegate prerequisites for the BSTR

All personnel participating in Refresher Training shall be medically fit and capable of fully participating.

Training providers shall have a procedure that requires Delegates to sign a statement (see Appendix 1A, Suggestion for Medical Statement from GWO) stating that they are medically fit to participate in the safety training and that they do not suffer from any medical illness or are under influence of any narcotic substance or alcohol.

Delegates' signatures shall be collected prior to the start of the safety training course.

Furthermore, Delegates shall possess valid BST/ BSTR certificates for the relevant Modules prior to attending BSTR training.

Physical demands

BSTR Modules may potentially be physically demanding.

If there is any doubt regarding the medical fitness of any Delegate, the Training Provider shall stop training the Delegate and seek a physician's advice.

Note: Practical exercises shall be designed and delivered solely to meet this Standard and shall not place any physical or mental demands on the Delegates other than those required to meet this Standard.

Aims and objectives

This BSTR Training shall enable Delegates to support and care for themselves and others working in the industry by possessing the knowledge and skills of First Aid, Working at Heights, Manual Handling, Fire Awareness, Sea Survival and in case of an emergency, to be able to evacuate, rescue and provide appropriate First Aid to casualties.

Resources for the BSTR Module

The Training Provider shall ensure that staff, facilities and equipment are in place to support the training of Delegates.

Staff

Training Staff shall possess appropriate qualifications and experience to ensure that all training and supportive activities are carried out in accordance with current legislation.

Training Staff shall be:

- (1) Trained in instructional/ lecture techniques and/ or have documented instructional/ teaching experience.
- (2) Included in an on-going training programme, which includes visits to onshore and/ or offshore WTGs (tower, nacelle, hub) prior to instructing BSTR Modules, to enable them to maintain and update skills related to the BSTR Modules they instruct. Training staff shall physically visit the tower, nacelle and hub of WTGs.

A person with First Aid qualifications shall be present during all practical training.

All staff shall possess the appropriate competencies to conduct/ assist the elements of training they have been assigned to.

Facilities

The full range of facilities shall be available during the training. The following facilities criteria shall be adhered to.



Theory training facilities

Facilities shall be designed to enable each Delegate to see, hear and fully participate in the taught subject matter.

Practical training facilities

Facilities shall be designed to enable each Delegate to individually and/ or as part of a team, see, hear and practise the taught subject matter.

Note:

All facilities shall be maintained and where appropriate, inspected and tested in accordance with current national legislation and manufacturers' recommendations.

Risk assessments shall be conducted and documented for all training facilities.

The Training Provider shall hold the required permits to operate the facilities.

Equipment

The required equipment for training shall be available and shall fulfil national legal requirements.

The equipment shall be maintained, inspected and tested in accordance with current national legislation and manufacturers' recommendations.

Risk assessments shall be conducted and documented for all training equipment.

The Training Provider shall hold the required permits to operate relevant equipment.

Administration and certification

Administrative arrangements

Appropriate for the enrolment and certification of Delegates and all aspects of the delivery of training shall be in accordance with this Standard.

Delegate performance assessment

Delegates shall be assessed according to the learning outcomes by means of direct observation and oral and/or written questions, where appropriate.

Training Providers shall have a documented procedure in place for dealing with Delegates not meeting the stated learning outcomes.

Certification

Training Providers are responsible for issuing a certificate directly to the Delegate upon completion of the training programme and to the sponsoring company where required. Each certificate shall indicate that the Delegate has been assessed according to the learning outcomes and shall contain the following:

- (1) Training Provider's name
- (2) Full BSTR Module title stating the Module is GWO approved
- (3) Type of equipment used in the course and maximum training height (BSTR Working at Heights only)
- (4) Course dates
- (5) Expiry date
- (6) Training Provider's signature

Note: The BSTR Module Working at Heights does not test a Delegate's fear of heights (vertigo).

Records

The Training Provider shall keep a record of Delegates that have completed the GWO training.

Upon request from GWO or any of the members of GWO, the Training Provider shall be able to verify the training and competence records of any specific personnel by name.

BSTR Modules

The requirements for each of the Basic Safety Training Refresher Modules are outlined in the following chapters.



Document type:

Appendix 1 A

Number M.S.A.
Date 21-11-2013
Page 16 of 170

Title:

Medical Self-Assessment

Issued by:



Unrestricted

YOUR PERSONAL HEALTH IS YOUR OWN RESPONSIBILITY. YOUR TRAINING PROVIDER SHALL NOT BE HELD RESPONSIBLE FOR ANY ILLNESS WHATSOEVER DURING OR AFTER THE TRAINING.

This signed Medical Self-Assessment must be returned to the Training Provider's Representative/Responsible prior to the start of the training course.

Full name as stated in passport	Company
---------------------------------	---------

The following conditions could pose a risk, when you actively participate in GWO training
Asthma or other respiratory disorders
Epilepsy, blackouts or other fits
Angina or other heart complaints
Vertigo or inner ear problems (difficulty with balance)
Claustrophobia/Acrophobia (fear of enclosed area/height)
Blood pressure disorder
Diabetes
Pacemaker or implanted defibrillator
Arthritis, osteoarthritis or other muscular/ skeletal disorders affecting mobility
Known allergies (E.g. bee, wasps or spider stings / bites)
Recent surgery
Any other medical condition or medication dependency that could affect climbing or physical impact of climbing

I hereby confirm that I have read and understood the above listed risks and potentially life-threatening medical conditions and that I am physically and medically fit to participate in GWO Training.

I hereby confirm that there is no factor that will inhibit or affect my participation in GWO Training.

I agree to follow all instructions from the appointed Instructor for the duration of the GWO Training.

I hereby agree: should there be any doubt regarding my medical fitness, the training provider will stop the training and seek a physician's advice.

Signature _____ **Date** _____



GLOBAL WIND ORGANISATION STANDARD

Basic Safety Training Refresher (BSTR) (Onshore/Offshore)

FIRST AID

**Version 2
21 November, 2013**

Foreword

The Global Wind Organisation (GWO) is an association of Wind Turbine owners and manufacturers with the aim of supporting an injury free work environment in the wind industry.

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Table of contents

FOREWORD.....	18
EDITORIAL AND APPROVAL	19
ACKNOWLEDGEMENT	19
TABLE OF CONTENTS	20
LIST OF ABBREVIATIONS.....	22
INTRODUCTION.....	23
SECTION 1 - THE BSTR FIRST AID MODULE	23
1.1 DURATION OF THE BSTR FIRST AID MODULE.....	23
1.2 TARGET GROUP	24
1.3 DELEGATE PREREQUISITES FOR THE BSTR FIRST AID MODULE	24
1.4 PHYSICAL DEMANDS OF THE BSTR FIRST AID MODULE.....	24
1.5 AIMS AND OBJECTIVES OF THE BSTR FIRST AID MODULE	25
1.6 LEARNING OUTCOMES OF THE BSTR FIRST AID MODULE	25
<i>Lesson 1 Introduction.....</i>	<i>26</i>
<i>Lesson 2 Legislation/Risks/Hazards</i>	<i>26</i>
<i>Lesson 3 Anatomy.....</i>	<i>27</i>
<i>Lesson 4 Lifesaving First Aid Primary Survey A-B-C.....</i>	<i>27</i>
<i>Lesson 5 Themes</i>	<i>28</i>
<i>Lesson 6 Scenario-based training</i>	<i>29</i>
<i>Lesson 7 Evaluation</i>	<i>30</i>
1.7 DELEGATE PERFORMANCE ASSESSMENT	30
BSTR FIRST AID MODULE TIME TABLE	31
1.9 ELEMENTS, BSTR FIRST AID MODULE.....	33
<i>Lesson 1 Introduction.....</i>	<i>33</i>
ELEMENT 1.1 Safety instructions and emergency procedures.....	33
ELEMENT 1.2 Facilities	33
ELEMENT 1.3 Introduction	33
ELEMENT 1.4 Scope and main objectives.....	33
ELEMENT 1.5 On-going assessments.....	34
ELEMENT 1.6 Motivation	34
<i>Lesson 2 Legislation/Risks/Hazards</i>	<i>34</i>
ELEMENT 2.1 Global legislation.....	34
ELEMENT 2.2 National legislation	34
ELEMENT 2.3 Risk and Hazards	35
ELEMENT 2.4 First Aid guidelines.....	35
<i>Lesson 3 Anatomy.....</i>	<i>35</i>

ELEMENT 3.1	The human body's life conditions, structures, functions and signs	35
ELEMENT 3.2	Use of anatomy and First Aid in emergency situations	36
ELEMENT 3.3	Understanding of personal hygiene	37
Lesson 4	<i>Lifesaving First Aid and A-B-C</i>	37
ELEMENT 4.1	Primary Survey (A - B - C)	37
ELEMENT 4.2	Unresponsive	37
ELEMENT 4.3	Unresponsive, not breathing.....	38
ELEMENT 4.4	CPR	38
ELEMENT 4.5	Obstruction of airways.....	38
ELEMENT 4.6	Bleeding, internal and external	39
ELEMENT 4.7	Shock.....	39
Lesson 5	<i>Themes</i>	40
ELEMENT 5.1	Theme 1: Psychological effects of First Aid	40
ELEMENT 5.2	Theme 2: Sudden sickness and environmental factors	41
ELEMENT 5.3	Theme 3: Types of trauma	42
ELEMENT 5.4	Theme 4: Incident management and situational awareness	42
ELEMENT 5.5	Theme 5: Complex incidents with several (2-5) casualties	43
Lesson 6	<i>Scenario - based training</i>	45
ELEMENT 6.1	Practise First Aid techniques	45
Lesson 7	<i>Evaluation</i>	46
ELEMENT 7.1	Summary	46
ELEMENT 7.2	Evaluation	46
ELEMENT 7.3	Certificates	47
SECTION 2 - RESOURCES FOR BSTR FIRST AID		48
2.1	STAFF	48
2.2	TRAINER/DELEGATE RATIO	48
2.3	FACILITIES	49
2.4	THEORY TRAINING FACILITIES	49
2.5	PRACTICAL TRAINING FACILITIES	49
2.6	EQUIPMENT	49
SECTION 3 - ADMINISTRATION AND CERTIFICATION		50
3.1	DELEGATE PERFORMANCE ASSESSMENT	50
3.2	VALIDITY	50
3.3	CERTIFICATION	50
3.4	RECORDS.....	51
3.5	MEASURES.....	51
3.6	CONTROL MEASURES.....	51
CONTROL MEASURES		52

List of abbreviations

AED	Automatic External Defibrillator
AHA	American Heart Association
BST	Basic Safety Training
BSTR	Basic Safety Training Refresher
CPR	Cardiopulmonary Resuscitation
CO₂	Carbon Dioxide
ERC	European Resuscitation Council
GWO	Global Wind Organisation
WTG	Wind Turbine Generator
PTSD	Post-Traumatic Stress Disorder

Introduction

Upon completion of the Global Wind Organisation (GWO) Basic Safety Training (BST) Delegates will possess an awareness of the hazards encountered when working within the wind industry and how to control and mitigate these hazards.

The BST will also equip participants with the knowledge, skills and confidence to appropriately respond in the event of an emergency and to increase their safety through proper use of Personal Protective Equipment (PPE), emergency equipment and procedures.

The approved GWO Basic Safety Training Refresher (BSTR) provides Delegates with, reviews and builds on a range of important skills and tools obtained during BST courses, which include Fire Awareness, First Aid, Working at Heights and Manual Handling. To enable Delegates to work in the offshore environment, an additional GWO Sea Survival training shall be completed.

Section 1 - The BSTR First Aid Module

1.1 Duration of the BSTR First Aid Module

The optimal total time for completing this BSTR First Aid Module is estimated to be **8 hours**, including meals and breaks.

This BSTR training shall focus on the access and egress conditions encountered in wind turbine environments. The practical skills shall be trained and demonstrated in a restricted area of movement and all elements of the course shall be covered by demonstration and practical exercises, where possible.

If this training is part of a programme of longer duration, the total contact time per day shall not exceed **8 hours** and the total training day shall not exceed **10 hours**. The total training day includes contact time, refreshment and meal breaks and travel between training sites, where applicable. It shall be ensured that everyone is given the opportunity to share their opinions and experiences, where possible.

Ensure that Delegates with prior experience share their experiences related to First Aid in a way that is constructive for the entire class.

1.2 Target group

Personnel working in the wind industry or related fields needing to refresh their GWO BSTR First Aid Module.

1.3 Delegate prerequisites for the BSTR First Aid Module

All personnel participating in Refresher Training shall be medically fit and capable of fully participating.

Training providers shall have a procedure that requires Delegates to sign a statement (see Appendix 1A, Suggestion for Medical Statement from GWO) stating that they are medically fit to participate in the safety training and that they do not suffer from any medical illness or are under influence of any narcotic substance or alcohol.

Delegates' signatures shall be collected prior to the start of the safety training course.

Furthermore, Delegates shall possess valid BST/ BSTR certificates for the relevant Modules prior to attending BSTR training.

1.4 Physical demands of the BSTR First Aid Module

BSTR Modules may potentially be physically demanding.

If there is any doubt regarding the medical fitness of any Delegate, the Training Provider shall stop training the Delegate and seek a physician's advice.

Note: Practical exercises shall be designed and delivered solely to meet this Standard and shall not place any physical or mental demands on the Delegates other than those required to meet this Standard.

1.5 Aims and objectives of the BSTR First Aid Module

The aim of this BSTR First Aid Module is to review and build on previously gained knowledge and skills from BST First Aid through theoretical and practical training so that Delegates can administer safe and effective First Aid in the wind industry in accordance with GWO BST/BSTR First Aid training.

This BSTR First Aid Module shall ensure that:

- (1) Delegates are able to demonstrate understanding of the importance of safely and correctly carrying out First Aid in accordance with the legislative requirements of their geographic location and according to European Resuscitation Council (ERC) and American Heart Association (AHA) guidelines
- (2) Delegates are able to identify and explain normal function, normal signs and symptoms of serious and minor injuries and illness related to the human body
- (3) Delegates are able to demonstrate understanding and correct order of management in emergency situations in a wind turbine work environment
- (4) Delegates are able to demonstrate correct use of lifesaving First Aid using the Primary Survey, Airways - Breathing - Circulation (A - B - C)
- (5) Delegates are able to demonstrate correct use of an Automatic External Defibrillator (AED)
- (6) Delegates are able to demonstrate correct use of Ordinary First Aid, the Secondary Survey
- (7) Delegates are able to demonstrate correct use of First Aid equipment in First Aid scenarios

1.6 Learning outcomes of the BSTR First Aid Module

The learning outcomes specified for the First Aid Refresher Module are:

Lesson 1 Introduction

15 min.

The aim of this lesson is to give the Delegates the needed awareness of the Refresher Course content and the facilities involved in order to ensure that all Delegates are aware of what to expect and what is expected of them during the course.

To successfully complete this BSTR First Aid Module, Delegates shall be aware of:

- (1) Safety instructions and emergency procedures
- (2) Facilities
- (3) Who the instructor and other Delegates are
- (4) Aims and primary learning objectives
- (5) On-going assessment according to GWO Control Measures
- (6) Motivation for this BSTR course

Note: The administrative part of the registration shall be completed before the course commences.

Lesson 2 Legislation/Risks/Hazards

15 min.

The aim of this lesson is to refresh and increase Delegates' previously acquired knowledge of the relevant legislation/risks/hazards and demands of First Aid in order to improve their awareness of the roles, responsibilities and rules that apply to First Aid.

To successfully complete this BSTR Module, Delegates shall demonstrate:

- (1) Understanding of global legislation relevant to First Aid
- (2) Understanding of national and regional legislation relevant to First Aid
- (3) Understanding of risks and hazards related to First Aid in a Wind Turbine Generator (WTG) environment
- (4) Understanding of different First Aid guidelines - ERC and AHA

Lesson 3 Anatomy

75 min.

The aim of this lesson is to refresh and increase Delegates' previously acquired knowledge and skills regarding the human body. Delegates will be able to identify and explain normal bodily function, signs, symptoms and functions of major and minor injuries and illness related to the human body.

To successfully complete this BSTR Module, Delegates shall be able to demonstrate:

- (1) Understanding of the human body's life conditions, structures, functions and signs
- (2) Knowledge and skills for detecting abnormal signs, symptoms and functions of serious and minor injuries
- (3) Knowledge and skills for detecting abnormal signs, symptoms and functions of serious and minor illness related to the human body
- (4) Understanding of anatomy and First Aid in emergency situations
- (5) Understanding of personal hygiene

Lesson 4 Lifesaving First Aid Primary Survey A-B-C

60 min.

The aim of this lesson is to refresh and enhance Delegates' previously acquired knowledge of and skills for following a systematic sequence for establishing techniques so that each life threatening condition can be identified in a priority order and dealt with on a "find and treat" basis in emergency situations.

To successfully complete this BSTR Module, Delegates shall be able to demonstrate:

- (1) Immediate First Aid actions using the Primary Survey (A - B - C)
- (2) Correct First Aid to an unresponsive and *breathing* casualty
- (3) Correct First Aid to an unresponsive and *not breathing* casualty
- (4) Knowledge and skills regarding Cardiopulmonary Resuscitation (CPR)
- (5) Correct First Aid for obstruction of airways
- (6) Correct First Aid for bleeding - externally and internally
- (7) Correct First Aid for shock

Lesson 5 **Themes**

120 min.

This lesson presents **5 themes** (situations or factors) that may significantly affect the response and management of First Aid incidents in Wind Turbine environments.

The aim of this lesson is to give the Delegates the knowledge, skills and understanding presented in one of the **5 themes**.

The course Instructor shall **select one of the 5 themes** to teach during the Refresher First Aid Training.

Theme 1: To successfully complete this BSTR First Aid Module Theme 1, Delegates shall be able to demonstrate:

- (1) Knowledge of how administering First Aid during an incident psychologically affects the First Aider
- (2) Knowledge of how to give psychological First Aid to the First Aider (Person administering First Aid)
 - a. Immediately after an incident (short-term impacts on the First Aider)
 - b. After an incident (long-term impacts on the First Aider)
- (3) Knowledge of tools a First Aider can use to evaluate whether they can give psychological First Aid or if they need to contact professional help
- (4) Knowledge of where First Aiders can receive psychological help (company-specific internal and external psychological help)

Theme 2: To successfully complete this BSTR First Aid Module Theme 2, Delegates shall be able to demonstrate:

- (1) Knowledge of and skills for responding to sudden sickness and environmental factors, that affect the central nervous system
- (2) Knowledge of and skills for responding to sudden sickness and environmental factors that affect the respiratory system
- (3) Knowledge of and skills for responding to sudden sickness and environmental factors that affect the circulatory system

Theme 3: To successfully complete this BSTR First Aid Module Theme 3, Delegates shall be able to demonstrate:

- (1) Knowledge of and skills for managing and responding to trauma incidents that affect the central nervous system
- (2) Knowledge of and skills for managing and responding to trauma incidents that affect the respiratory system
- (3) Knowledge of and skills for managing and responding to trauma incidents that affect the circulatory system

Theme 4: To successfully complete this BSTR First Aid Module Theme 4, Delegates shall be able to demonstrate:

- (1) Knowledge, skills for and understanding of incident management and situational awareness in a wind turbine environment, *onshore*
- (2) Knowledge, skills for and understanding of incident management and situational awareness in a wind turbine environment, *offshore*

Theme 5: To successfully complete this BSTR First Aid Module Theme 5, Delegates shall be able to demonstrate:

- (1) Knowledge of and understanding for managing and effectively carrying out First Aid during complex incidents with several (2 - 5) casualties in a wind turbine work environment
- (2) Knowledge of and understanding of situational awareness and psychological effects of managing and administering First Aid during complex incidents with several (2 - 5) casualties in a wind turbine work environment

Lesson 6 Scenario-based training

120 min.

The aim of this lesson is to refresh and build on Delegates' previously acquired knowledge and skills to be able to assess, assist and provide correct First Aid during an incident.

To successfully complete this BSTR Module, Delegates shall, through different scenarios, be able to demonstrate:

- (1) Managing incidents - approaching and assessing incidents
- (2) Providing the necessary life-saving First Aid in an incident
- (3) Correct use of First Aid equipment
- (4) Knowledge and skills for AED safety procedures
- (5) Correct use of an AED

Lesson 7 Evaluation

15 min.

The aim of this lesson is to summarise the BSTR Module and give the Delegates the opportunity to conduct an open minded review of the training and the instructor.

To successfully complete this BSTR Module, Delegates shall be able to demonstrate:

- (1) Active participation in the evaluation

1.7 Delegate performance assessment

Assessment of learning outcomes:

Delegates will be assessed according to the learning outcomes stated in Section 1.6 by means of direct observation and supplementary oral questions, where appropriate.

The assessment shall be conducted during practical scenarios based on the wind turbine work environment. Each Delegate shall demonstrate the ability to deal with a casualty that is:

- (1) Unconscious
- (2) Requires CPR
- (3) A scenario as detailed in Section 1.9 - Lesson 6

The formal evaluation of knowledge of above scenarios shall be in accordance with the Practical Assessment Measures in Section - 3 (Measures).

Training Providers shall have a documented procedure in place for dealing with Delegates not meeting the stated learning outcomes.

BSTR First Aid Module time table

The order in which the elements of this BSTR training Module are delivered may vary.

Lesson		Element		Approximate Duration
1	Introduction	1.1	Safety instructions and emergency procedures	
		1.2	Facilities	
		1.3	Introduction	
		1.4	Scope and main objectives	
		1.5	On-going assessments (Control Measures)	
		1.6	Motivation	
2	Legislation/ Risks/ Hazards	2.1	Global legislation	
		2.2	National legislation	
		2.3	Risks and hazards	
		2.4	First Aid guidelines	
3	Anatomy	3.1	The human body's life conditions, structure, function and signs	
		3.2	Use of anatomy and First Aid in emergency situations	
		3.3	Understanding of personal hygiene	
4	Life-saving First Aid and Primary Survey (A - B - C)	4.1	Primary Survey (A - B - C)	
		4.2	Unresponsive	
		4.3	Unresponsive, not breathing	
		4.4	CPR	
		4.5	Obstruction of airways	
		4.6	Bleeding, internal and external	
		4.7	Shock	
5	Themes	Choose one of the following 5 themes for instruction:		
		5.1	Theme 1: • Psychological effects of First Aid	
		5.2	Theme 2: • Sudden sickness and environmental factors	
		5.3	Theme 3:	

		5.4	• Types of trauma Theme 4:	
		5.5	• Incident management and situational awareness Theme 5: • Complex incidents with several (2-5) casualties	
			TOTAL	120 min.
6	Scenario-based training	6.1	Practice First Aid techniques	
			TOTAL	120 min.
7	Evaluation	7.1	Summary	
		7.2	Evaluation	
		7.3	Certificates	
			TOTAL	15 min.
GRAND TOTAL				420 min.

1.9 Elements, BSTR First Aid Module

Lesson 1 Introduction

ELEMENT 1.1 Safety instructions and emergency procedures

Training Staff shall **explain**:

- 1.1.1 Safety instructions according to internal procedures
- 1.1.2 Emergency procedures and emergency exits for the areas the Delegates will be located during the course

ELEMENT 1.2 Facilities

Training Staff shall **explain**:

- 1.2.1 General description of the facilities at the training location (Administration, dining area, restrooms, toilets, etc.)

ELEMENT 1.3 Introduction

Training Staff shall **give**:

- 1.3.1 A short introduction, including their backgrounds as instructors

Delegates shall **give**:

- 1.3.2 A short introduction, including job function and expected primary geographic work location

Training Staff shall **explain**:

- 1.3.3 The programme of the BSTR Module, including breaks and meal times

ELEMENT 1.4 Scope and main objectives

Training Staff shall **explain**:

- 1.4.1 Scope and main objectives of this BSTR Module

ELEMENT 1.5 On-going assessments

Training Staff shall **explain**:

- 1.5.1 The reasons for the on-going assessment
- 1.5.2 GWO Control Measures and their use

ELEMENT 1.6 Motivation

Training Staff shall **explain**:

- 1.6.1 The importance of personal involvement in the course
- 1.6.2 The definition and need for correct First Aid
- 1.6.3 Chain of survival
- 1.6.4 The importance of refreshing and building on previously acquired understanding, knowledge and skills in First Aid

Lesson 2 Legislation/Risks/Hazards

ELEMENT 2.1 Global legislation

Training Staff shall **explain**:

- 2.1.1 Refreshing site organisation and types of units on a site and using of the Delegates' personal practical experiences
- 2.1.2 Recent changes/updates to global legislation
- 2.1.3 Recent changes/updates to global legal responsibilities

ELEMENT 2.2 National legislation

Training Staff shall **explain**:

- 2.2.1 Recent changes/updates to national legislation
- 2.2.2 Recent changes/updates to national legal requirements
- 2.2.3 Recent changes/updates to national legal responsibilities
- 2.2.4 Recent changes/updates to the role of First Aid in the wind industry

ELEMENT 2.3 Risk and Hazards

Training Staff shall **lead the discussion on:**

- 2.3.1. Risks and hazards involved in an incident relevant for job functions within the wind industry, based on participants' practical experiences since the previous GWO BST First Aid Training
- (1) Onshore
 - (2) Offshore
 - (3) Group discussions

ELEMENT 2.4 First Aid guidelines

Training Staff shall **explain:**

- 2.4.1. Recent changes/updates to guidelines from ERC and AHA*
- *If ERC and/or AHA guidelines have changed, these changes shall be discussed during this BSTR First Aid Module

Lesson 3 Anatomy

ELEMENT 3.1 The human body's life conditions, structures, functions and signs

Delegates shall **explain and demonstrate:**

- 3.1.1 Normal life conditions for the human body
- (1) Human cells and life conditions
 - (2) Cells and oxygen (O₂)
 - (3) Cells and carbon dioxide (CO₂) toxin
 - (4) Vital organs and their needs
- 3.1.2 Vital systems of the human body
- Nervous system
- (1) Anatomy of the nervous system
 - (2) Structure, functions and normal signs
 - (3) Threats to the nervous system (signs and symptoms of minor and serious injuries and illnesses)
- Respiratory system
- (1) Anatomy of the respiratory system

- (2) Structure, functions and normal signs
- (3) Threats to the respiratory system (signs and symptoms of minor and serious injuries and illnesses)

Circulatory system

- (1) Anatomy of the circulatory system
- (2) Structure, functions and normal signs
- (3) Threats to the circulatory system (signs and symptoms of minor and serious injuries and illnesses)

Other systems and vital organs of the human body

- (1) Anatomy of vital organs
- (2) Structure and functions
- (3) Threats to vital organs (signs and symptoms of minor and serious injuries and illnesses)

Training Staff shall **explain and demonstrate**:

- 3.1.3 If Delegates do not cover all points during their review, Training Staff shall *ensure* that following topics are covered
- (1) Life conditions, structure, function and signs of the human body
 - (2) Serious and minor injuries - signs, symptoms and function
 - (3) Serious and minor illness - signs symptoms and function
 - (4) Use of anatomy and First Aid in emergency situations
 - (5) Understanding of personal hygiene

ELEMENT 3.2 Use of anatomy and First Aid in emergency situations

Training Staff shall **explain and demonstrate**:

- 3.2.1 Assessments of a casualty
- (1) From structure, function and symptoms to correct First Aid treatment of a casualty
 - (2) A-B-C: Airway - Breathing - Circulation

ELEMENT 3.3 Understanding of personal hygiene

Training Staff shall **explain**:

- 3.3.1 Personal hygiene
- (1) As a First Aider
 - (2) Protection and use of barriers in emergency situations

Lesson 4 Lifesaving First Aid and A-B-C

ELEMENT 4.1 Primary Survey (A - B - C)

Delegates shall **explain and demonstrate**:

- 4.1.1 How to use the Primary Survey (A - B - C) in an incident
- (1) A - Airway
 - (2) B - Breathing
 - (3) C - Circulation

ELEMENT 4.2 Unresponsive

Training Staff shall **explain**:

- 4.2.1 First Aid for an unresponsive casualty
- (1) Reasons for unresponsiveness
 - (2) Threats
 - (3) Primary Survey (A - B - C)
 - (4) Recovery position - Single First Aider
 - (5) Recovery position - Two First Aiders
 - (6) First Aid equipment

Delegates shall **practise and demonstrate**:

- 4.2.2 First Aid for an unresponsive casualty
- (1) Threats
 - (2) Primary Survey (A - B - C)
 - (3) Recovery position - Single First Aider
 - (4) Recovery position - Two First Aiders
 - (5) Use of First Aid equipment

ELEMENT 4.3 Unresponsive, not breathing

Training Staff shall **explain**:

- 4.3.1 First Aid for unresponsive, not breathing casualty
- (1) Reasons for unresponsiveness and not breathing
 - (2) Threats
 - (3) Primary Survey (A - B - C)
 - (4) Performing CPR on adults - Single First Aider
 - (5) Performing CPR on adults - Two First Aiders
 - (6) Performing CPR on children
 - (7) Use of First Aid equipment

ELEMENT 4.4 CPR

Delegates shall **practise and demonstrate**:

- 4.4.1 First Aid for unresponsive, not breathing casualty
- (1) Primary Survey (A - B - C)
 - (2) Performing CPR on adults
 - (3) Performing CPR on children
 - (4) Use of First Aid equipment

ELEMENT 4.5 Obstruction of airways

Training Staff shall **explain**:

- 4.5.1 Obstruction of airways
- (1) Reasons for obstruction of airways
 - (2) Threats
 - (3) Primary Survey (A - B - C)
 - (4) Adults and children

Delegates shall **practise and demonstrate**:

- 4.5.2 First Aid in case of obstruction of airways
- (1) Primary Survey (A - B - C)
 - (2) Adults
 - (3) Children

ELEMENT 4.6 Bleeding, internal and external

Training Staff shall **explain**:

- 4.6.1 Bleeding, external
- (1) Reasons for external bleeding
 - (2) Threats
 - (3) Primary Survey (A - B - C)
 - (4) Use of First Aid equipment
 - (5) Use of other equipment

Delegates shall **practise and demonstrate**:

- 4.6.2 First Aid where a casualty is bleeding externally
- (1) Primary Survey (A - B - C)
 - (2) Use of First Aid equipment
 - (3) Use of other equipment

Training Staff shall **explain**:

- 4.6.3 Bleeding, internal
- (1) Reasons for internal bleeding
 - (2) Threats
 - (3) Primary Survey (A - B - C)
 - (4) Use of First Aid equipment

Delegates shall **practise and demonstrate**:

- 4.6.4 First Aid when a casualty is internally bleeding
- (1) Primary Survey (A - B - C)
 - (2) Use of First Aid equipment

ELEMENT 4.7 Shock

Training Staff shall **explain**:

- 4.7.1 Shock
- (1) Reasons for shock
 - (2) Types of shock
 - (3) Threats
 - (4) Primary Survey (A - B - C)

- (5) Use of First Aid equipment
- (6) Psychological First Aid

Delegates shall **practise and demonstrate:**

- 4.7.2 First Aid for Shock
- (1) Primary Survey (A - B - C)
 - (2) Use of First Aid equipment
 - (3) Psychological First Aid

Lesson 5 Themes

ELEMENT 5.1 Theme 1: Psychological effects of First Aid

Training Staff shall **explain and demonstrate:**

- 5.1.1 Psychological effects of administering First Aid for First Aider (person administering First Aid)
- (1) Psychological consequences of administering First Aid
 - (2) Post-Traumatic Stress Disorder (PTSD) after administering First Aid
 - (3) Tools First Aiders can use to minimise psychological impacts of administering First Aid
 - (4) Where First Aiders can receive help for coping with psychological effects (including PTSD) of administering First Aid
 - (5) How First Aiders can evaluate whether they can administer psychological First Aid or if they need to contact professional help

Delegates shall **explain and demonstrate:**

- 5.1.2 Psychological effects of administering First Aid for First Aider
- (1) Psychological consequences of administering First Aid
 - (2) PTSD after administering First Aid
 - (3) Tools First Aiders can use to minimise psychological impacts of administering First Aid
 - (4) Where First Aiders can receive help for coping with psychological effects (including PTSD) of administering First Aid
 - (5) How First Aiders can evaluate whether they can administer psychological First Aid or if they need to contact professional help

Training Staff shall **facilitate debriefing:**

- 5.1.3 Psychological effects of administering First Aid for First Aider
- (1) Review positive actions observed during exercise
 - (2) Suggest points for improvement

ELEMENT 5.2 Theme 2: Sudden sickness and environmental factors

Training Staff shall **explain and demonstrate:**

- 5.2.1 Sudden sickness and environmental factors (e.g. chemical, air quality, dust, pollen, gases, poisonous animals, etc.)
- (1) Most common First Aid conditions *caused* by local environmental factors found at the specific geographic work locations and workplace related hazards
 - (2) Most common First Aid conditions *worsened* by local environmental factors found at the specific geographic work locations
 - (3) Effects of alcohol and other medication/narcotics on physical and psychological performance

Delegates shall **explain and demonstrate:**

- 5.2.2 Sudden sickness and environmental factors (e.g. chemical, air quality, dust, pollen, gases, poisonous animals, etc.)
- (1) How to respond to sudden sickness *caused* and *worsened* by environmental factors that affect the *central nervous system*
 - (2) How to respond to sudden sickness *caused* and *worsened* by environmental factors that affect the *respiratory system*
 - (3) How to respond to sudden sickness *caused* and *worsened* by environmental factors that affect the *circulatory system*

Training Staff shall **facilitate debriefing:**

- 5.2.3 Sudden sickness and environmental factors (e.g. chemical, air quality, dust, pollen, gases, poisonous animals, etc.)
- (1) Review positive actions observed during exercise
 - (2) Suggest points for improvement

ELEMENT 5.3 Theme 3: Types of trauma

Training Staff shall **explain and demonstrate**:

- 5.3.1 Types of trauma
- (1) Most common trauma conditions caused by accidents at *construction sites* onshore and offshore
 - (2) Most common trauma conditions caused by accidents at *service sites during operation and maintenance* onshore and offshore

Delegates shall **explain and demonstrate**:

- 5.3.2 Types of trauma
- (1) How to respond to trauma incidents that affect the *central nervous system*
 - (2) How to respond to trauma incidents that affect the *respiratory system*
 - (3) How to respond to trauma incidents that affect the *circulatory system*

Training Staff shall **facilitate debriefing**:

- 5.3.3 Types of trauma
- (1) Review positive actions observed during exercise
 - (2) Suggest points for improvement

ELEMENT 5.4 Theme 4: Incident management and situational awareness

Training Staff shall **explain and demonstrate**:

- 5.4.1 Incident management and situational awareness
- (1) How lacking situational awareness can *worsen* First Aid incidents and cause further harm
 - (2) How to manage First Aid incidents and preserve situational awareness *offshore and onshore*

Delegates shall **explain and demonstrate**:

- 5.4.2 Incident management and situational awareness
- (1) How lacking situational awareness can *worsen* First Aid incidents and cause further harm
 - (2) How to manage First Aid incidents and preserve situational awareness *offshore and onshore*

Training Staff shall **facilitate debriefing**:

- 5.4.3 Incident management and situational awareness
- (1) Review positive actions observed during exercise
 - (2) Suggest points for improvement

ELEMENT 5.5 Theme 5: Complex incidents with several (2-5) casualties

This theme allows Delegates to gain knowledge, skills and practical experience with managing and administering First Aid during complex incidents with several (2-5) casualties. For this theme the Course Instructor shall divide their Delegates into three (3) different groups with roles shown in the table below:

During this exercise the following shall occur:

- The Observational, First Aid and Casualty Groups give each other feedback on the incident management, First Aid performance and situational awareness during this exercise
- The instructor leads and supports the group discussion and gives personal feedback on the incident management, First Aid performance and situational awareness during this exercise
- The exercise is repeated, switching the participants of each group. Each Delegate shall participate at least once as a member of the Observational, First Aid and Casualty groups

Training Staff shall **explain and demonstrate**:

- 5.5.1 Complex incidents with several (2-5) casualties in wind turbine working environments
- (1) Difficulties and challenges of managing and administering First Aid during complex incidents with several (2-5) casualties
 - (2) Situational awareness and psychological effects of managing and administering First Aid during complex incidents with several (2-5) casualties
 - (3) Systematically and effectively managing complex First Aid scenarios during complex incidents with several (2-5) casualties

Training Staff shall **lead the discussion on**:



- 5.5.2 Complex incidents with several (2-5) casualties in wind turbine working environments
- (1) Positive observations and constructive criticism for Delegates' performance during this exercise with several (2-5) casualties
 - (2) How Delegates can manage and administer First Aid more effectively and efficiently during complex incidents with several (2-5) casualties

Delegates shall **explain and demonstrate**:

- 5.5.3 Complex incidents with several (2-5) casualties in wind turbine working environments
- (1) How to manage and administer First Aid during complex incidents with several (2-5) casualties
 - (2) Situational awareness, knowledge and understanding of psychological effects of managing and administering First Aid during complex incidents with several (2-5) casualties
 - (3) How to systematically and effectively manage complex First Aid scenarios during complex incidents with several (2-5) casualties

Delegates shall **explain and discuss**:

- 5.5.4 Complex incidents with several (2-5) casualties in wind turbine working environments
- (1) Positive and negative points of the Observational, First Aid and Casualty Groups' performance and incident management during these complex incident exercises with several (2-5) casualties
 - (2) How to improve the First Aid Groups' performance with regards to administering First Aid, situational awareness and incident management for complex incidents with several (2-5) casualties using their background knowledge of First Aid

Training Staff shall **facilitate debriefing**:

- 5.5.5 Complex incidents with several (2-5) casualties in wind turbine working environments
- (1) Review positive actions observed during exercise
 - (2) Suggest points for improvement

Lesson 6 Scenario - based training

ELEMENT 6.1 Practise First Aid techniques

Training Staff shall **explain**:

- 6.1.1 Safety procedures in the training area

Delegates shall **practise and demonstrate**:

- 6.1.2 Safe life - saving First Aid techniques through relevant scenarios according to the Control Measures Form

Training Staff shall *ensure* that the following topics are covered during scenario-based training:

- 6.1.3
- (1) Managing incidents
 - (2) Providing necessary life-saving First Aid
 - (3) Correct use of First Aid equipment
 - (4) Knowledge of and skills for AED safety procedures
 - (5) Correct use of an AED

This scenario-based training shall be conducted as group work with one or more Delegates as First Aiders, while the other Delegates act as casualty/casualties or observer/s. Each Delegate shall, as a minimum, act as First Aider at least one time. Relevant First Aid equipment shall be available and used at all times during scenario-based training.

To ensure all of the above mentioned points are covered during scenario-based training, Training Providers shall combine several of the following First Aid situations mentioned below.

- 6.1.4 First Aid situations
- (1) Dropped object - serious head injury, unresponsive, breathing
 - (2) Fall from heights - external bleeding, unresponsive, breathing
 - (3) Serious internal bleeding
 - (4) Serious external bleeding
 - (5) Unresponsive with normal breathing
 - (6) Unresponsive, not breathing
 - (7) CPR using an AED
 - (8) Epileptic seizure
 - (9) Diabetes - type one
 - (10) Asthma
 - (11) Stroke (circulatory, respiratory, central nervous system, includes heat stroke)

- (12) Serious burn
- (13) Hypothermia
- (14) Hyperthermia
- (15) Crush injury
- (16) Eye injury
- (17) Electrical accidents minor/serious
- (18) Amputation
- (19) Minor incident escalating to a serious incident

Training Staff shall **facilitate debriefing**:

- 6.1.5 First Aid situations
 - (1) Review positive actions observed during exercise
 - (2) Suggest points for improvement

Training Staff shall **facilitate debriefing**:

- 6.1.6 Complex incidents with several (2-5) casualties in wind turbine working environments
 - (1) Review positive actions observed during exercise
 - (2) Suggest points for improvement

Lesson 7 Evaluation

ELEMENT 7.1 Summary

Training Staff shall:

- 7.1.1 Summarise the BSTR Module and give the Delegates final feedback

ELEMENT 7.2 Evaluation

Delegates shall:

- 7.2.1 Conduct a written evaluation

Training Staff shall:

- 7.2.2 Give necessary feedback on the written evaluations

ELEMENT 7.3 Certificates

Training Staff shall:

- 7.3.1 Hand out certificates and ensure that all Delegates are registered with the correct personal information on the certificate

Section 2 - Resources for BSTR First Aid

The Training Provider shall ensure that staff, facilities and equipment are in place to support the training of the Delegates.

2.1 Staff

Training staff shall possess appropriate qualifications and experience to ensure that all training and supportive activities are carried out in accordance with current legislation.

Training Staff shall be:

- (1) Trained in instructional/ lecture techniques and/ or have documented instructional/ teaching experience.
- (2) Included in an on-going training programme, which includes visits to onshore and/ or offshore WTGs (tower, nacelle, hub) prior to instructing BSTR Modules, to enable them to maintain and update skills related to the BSTR Modules they instruct.

A person with First Aid qualifications shall be present during all practical training.

All staff shall possess the appropriate competencies to conduct/ assist the elements of training they have been assigned to.

2.2 Trainer/Delegate Ratio

- (1) The ratio shown for theory sessions indicates the maximum number of Delegates that can attend the course.
- (2) Other ratios indicate the maximum number of Delegates to be supervised by (an) instructor(s) during each activity.

Module	Session	Trainer - Delegate Ratio
BSTR First Aid Module	Theory	2:12
	Practical	2:12

2.3 Facilities

The full range of facilities shall be available during the training. The following facilities criteria shall be adhered to.

2.4 Theory training facilities

Facilities shall be designed to enable each Delegate to see, hear and fully participate in the taught subject matter.

2.5 Practical training facilities

Shall be designed to enable each Delegate to individually and/ or as part of a team, see, hear and practise the taught material.

Note:

All facilities shall be maintained and where appropriate, inspected and tested in accordance with current national legislation and manufacturers' recommendations.

Risk assessments shall be conducted and documented for all training facilities.

The Training Provider shall hold the required permits to operate the facilities.

2.6 Equipment

The following equipment is required during the entire duration of this BSTR First Aid Training to meet the needs of the BSTR First Aid Training Module

- (1) Torso anatomy dummy
- (2) Airway model
- (3) Resuscitation dummies - adult and child
- (4) First Aid equipment
- (5) First Aid bag
- (6) Make - up kit for First Aid scenarios
- (7) AED Trainers
- (8) Blankets

In order to comply with national legislation and Standards, the equipment supplied and used by staff and Delegates shall follow the appropriate guidelines, e. g.:

Europe - EN

UK - BS

USA - ANSI

Canada - CSA

Australia and New Zealand - AS/NZS

Asia - ANSI / EN

Note: All equipment shall be maintained and where appropriate, inspected and tested in accordance with current national Standards/legislation and manufacturers' recommendations.

Section 3 - Administration and certification

3.1 Delegate performance assessment

Delegates shall be assessed according to the learning outcomes by means of direct observation and oral and/ or written questions, where appropriate.

Training Providers shall have a documented procedure in place for dealing with Delegates not meeting the stated learning outcomes.

3.2 Validity

The maximum interval between successful completion of the BSTR First Aid Module is **24 months**.

3.3 Certification

Training Providers are responsible for issuing a certificate directly to the Delegate upon completion of the training programme and to the sponsoring company when required. Each certificate shall indicate that the Delegate has been assessed according to the learning outcomes and shall contain the following:

- (1) Training Provider's name
- (2) Full GWO course title stating that it is GWO approved
- (3) Delegate's name
- (4) Course dates
- (5) Expiry date
- (6) Training Provider's signature



3.4 Records

The Training Provider shall keep a record of the Delegates that have completed the BSTR First Aid Module for a minimum period of **5 years**.

Upon request from GWO or any of the members of GWO, the Training Provider shall be able to verify the training and competence records of any Delegate by name.

3.5 Measures

The Trainer keeps the Control Measures Forms until the completion/ evaluation of the BSTR Module. If a Delegate fails to meet the demands, they shall attend a new BSTR Module First Aid or a BST First Aid Module.

If a Delegate fails this BSTR First Aid Module it is the Training Staff's decision, based on factual observations, to recommend the Delegate attends either a BST First Aid or another BSTR First Aid Module.

3.6 Control Measures

Please find the Control Measures Form on next page.

Control Measures

Name: _____

Course: BSTR First Aid Module

Date: _____

Training Provider: _____

Scenario Organisation	Violation of Assessment Measures			0-2 passed/ 3 failed	Instructor Remarks
Aware of personal and group safety at all times					
Organises and utilises correct equipment for given scenario					
Organises individuals and groups as required					
Scenario Management					
Establishes and maintains control of the exercise scenario at all times					
Fully participates in the exercise scenario					
Follows instructions when required					

Demonstrates correct and safe Manual Handling in exercise scenario					
Knowledge and Understanding					
Applies subject knowledge correctly in given scenario					
Demonstrates understanding of subject					
Total Marks 0-9 Pass 10-27 Fail					

Instructor: _____

<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL
--------------------------------------	--------------------------------------

The Practical Assessment Measures Form is a final evaluation tool for the instructors to assess Delegates during practical elements. It allows measurement of the number of violations in regard to safety, competency, or attitude. It can be used as a progressive evaluation tool to discuss the performance of a Delegate in guiding them to success and it also serves as supporting documentation when a Delegate fails the Module.



Document type:

Appendix 1 A

Number M.S.A.
 Date 21-11-2013
 Page 54 of 170

Title:

Medical Self-Assessment

Issued by:



Unrestricted

YOUR PERSONAL HEALTH IS YOUR OWN RESPONSIBILITY. YOUR TRAINING PROVIDER SHALL NOT BE HELD RESPONSIBLE FOR ANY ILLNESS WHATSOEVER DURING OR AFTER THE TRAINING.

This signed Medical Self-Assessment must be returned to the Training Provider's Representative/Responsible prior to the start of the training course.

Full name as stated in passport	Company
---------------------------------	---------

The following conditions could pose a risk, when you actively participate in GWO training
Asthma or other respiratory disorders
Epilepsy, blackouts or other fits
Angina or other heart complaints
Vertigo or inner ear problems (difficulty with balance)
Claustrophobia/Acrophobia (fear of enclosed area/height)
Blood pressure disorder
Diabetes
Pacemaker or implanted defibrillator
Arthritis, osteoarthritis or other muscular/ skeletal disorders affecting mobility
Known allergies (E.g. bee, wasps or spider stings / bites)
Recent surgery
Any other medical condition or medication dependency that could affect climbing or physical impact of climbing

I hereby confirm that I have read and understood the above listed risks and potentially life-threatening medical conditions and that I am physically and medically fit to participate in GWO Training.

I hereby confirm that there is no factor that will inhibit or affect my participation in GWO Training.

I agree to follow all instructions from the appointed Instructor for the duration of the GWO Training.

I hereby agree: should there be any doubt regarding my medical fitness, the training provider will stop the training and seek a physician's advice.

Signature _____ **Date** _____



**GLOBAL WIND ORGANISATION
STANDARD**

**Basic Safety Training Refresher (BSTR)
(Onshore/Offshore)**

MANUAL HANDLING

**Version 2
21 November, 2013**

Foreword

The Global Wind Organisation (GWO) is an association of Wind Turbine owners and manufacturers with the aim of supporting an injury free work environment in the wind industry.

This Standard has been developed in response to the demand for recognisable Basic Safety Training (BST) in the industry. The development of this Standard has been prepared in co-operation between the members of GWO. This work is based on risk assessments and factual incident/accident statistics within the industry pertaining to the installation, service and maintenance of wind turbine generators.

The objective of this Standard is to develop common industry training and best practise Standards for health and safety as a vital and necessary way forward to reducing risks for personnel in the wind industry working on site and to reducing environmental risks across Europe and the globe.

This Standard describes the requirements for Basic Safety Training in the wind industry that are recommended by GWO. Where national legislation sets higher requirements for the training, the Training Provider shall incorporate these requirements in the training programme.

The GWO Basic Safety Training does not include any Technical Safety Training such as working with electricity, equipment with stored energy etc.. Additional training may be required due to company or country specific requirements.

GWO recommends a company specific Basic Safety Introduction and Technical Safety Training as additional training.

Editorial and Approval

The final editorial and approval of this Standard has been conducted by the GWO Steering Committee.

Acknowledgement

The members of the Global Wind Organisation (GWO) recognise that training according to this Standard covers the requirements for Basic Safety Training for wind turbine technicians and personnel.

GWO members agree that everyone working on one of their properties (Wind Turbine Generators, sub stations, etc.) shall complete Basic Safety Training courses relevant for their assignments. All work shall be done in teams of at least 2 Competent Persons. Exemptions from the above can be made based on internal company rules, thereby allowing untrained persons to work with Competent Personnel or to work on a specific task.

The holder of a GWO certificate is considered competent within Basic Safety in the wind industry and the members of GWO accept the holder of this certificate as possessing the required knowledge to stop an unsafe work situation.

Table of contents

FOREWORD.....	56
EDITORIAL AND APPROVAL	57
ACKNOWLEDGEMENT	57
TABLE OF CONTENTS	58
LIST OF ABBREVIATIONS.....	60
INTRODUCTION.....	61
SECTION 1 - THE BSTR MANUAL HANDLING MODULE	61
1.1 DURATION OF THE BSTR MANUAL HANDLING MODULE.....	61
1.2 TARGET GROUP	62
1.3 DELEGATE PREREQUISITES FOR THE BSTR MANUAL HANDLING MODULE	62
1.4 PHYSICAL DEMANDS OF THE BSTR MANUAL HANDLING MODULE.....	62
1.5 AIMS AND OBJECTIVES OF THE BSTR MANUAL HANDLING MODULE	63
1.6 LEARNING OUTCOMES OF THE BSTR MANUAL HANDLING MODULE.....	63
<i>Lesson 1 Introduction.....</i>	<i>64</i>
<i>Lesson 2 Legislation</i>	<i>64</i>
<i>Lesson 3 Risks and Hazards.....</i>	<i>65</i>
<i>Lesson 4 Behavioural Safety</i>	<i>65</i>
<i>Lesson 5 Spinal anatomy and posture</i>	<i>65</i>
<i>Lesson 6 Planning lifts.....</i>	<i>66</i>
<i>Lesson 7 Scenario-based training</i>	<i>66</i>
<i>Lesson 8 Evaluation</i>	<i>66</i>
1.7 DELEGATE PERFORMANCE ASSESSMENT	67
BSTR MANUAL HANDLING MODULE TIME TABLE.....	68
1.9 ELEMENTS, BSTR MANUAL HANDLING MODULE.....	69
<i>Lesson 1 Introduction.....</i>	<i>69</i>
ELEMENT 1.1 Safety instructions and emergency procedures.....	69
ELEMENT 1.2 Facilities	69
ELEMENT 1.3 Introduction	69
ELEMENT 1.4 Scope and main objectives.....	70
ELEMENT 1.5 On-going assessments.....	70
ELEMENT 1.6 Motivation	70
<i>Lesson 2 Legislation</i>	<i>70</i>
ELEMENT 2.1 Global legislation.....	70
ELEMENT 2.2 National legislation	70
<i>Lesson 3 Risk and Hazards</i>	<i>71</i>
ELEMENT 3.1 Risk and hazards in the wind turbine industry	71

<i>Lesson 4</i>	<i>Behavioural safety</i>	71
ELEMENT	4.1 Consequences of incorrect Manual Handling	71
ELEMENT	4.2 Causes of injuries	72
<i>Lesson 5</i>	<i>Spinal anatomy and posture</i>	72
ELEMENT	5.1 Muscular and skeletal injuries.....	72
ELEMENT	5.2 Spinal anatomy and posture	72
ELEMENT	5.3 Shoulder anatomy.....	73
ELEMENT	5.4 Symptom awareness	73
ELEMENT	5.5 Reporting methods	73
<i>Lesson 6</i>	<i>Planning lifts</i>	73
ELEMENT	6.1 T.I.L.E. principles	73
<i>Lesson 7</i>	<i>Scenario-based training</i>	74
ELEMENT	7.1 Practise in safe lifting techniques.....	74
<i>Lesson 8</i>	<i>Evaluation</i>	75
ELEMENT	8.1 Summary	75
ELEMENT	8.2 Evaluation	75
ELEMENT	8.3 Certificates	75

SECTION 2 - RESOURCES FOR BSTR MANUAL HANDLING..... 76

2.1	STAFF	76
2.2	TRAINER/DELEGATE RATIO	76
2.3	FACILITIES	77
2.4	THEORY TRAINING FACILITIES	77
2.5	PRACTICAL TRAINING FACILITIES	77
2.6	EQUIPMENT	77

SECTION 3 - ADMINISTRATION AND CERTIFICATION 78

3.1	DELEGATE PERFORMANCE ASSESSMENT	78
3.2	VALIDITY	78
3.3	CERTIFICATION	78
3.4	RECORDS	79
3.5	MEASURES	79
3.6	CONTROL MEASURES	79

CONTROL MEASURES 80



List of abbreviations

BST	Basic Safety Training
BSTR	Basic Safety Training Refresher
GWO	Global Wind Organisation
PPE	Personal Protective Equipment
WTG	Wind Turbine Generator
T.I.L.E.	Task Individual Load Environment

Introduction

Upon completion of the Global Wind Organisation (GWO) Basic Safety Training (BST) Delegates will possess an awareness of the hazards encountered when working within the wind industry and how to control and mitigate these hazards.

The BST will also equip participants with the knowledge, skills and confidence to appropriately respond in the event of an emergency and to increase their safety through proper use of Personal Protective Equipment (PPE), emergency equipment and procedures.

The approved GWO Basic Safety Training Refresher (BSTR) provides Delegates with, reviews and builds on a range of important skills and tools obtained during BST courses, which include Fire Awareness, First Aid, Working at Heights and Manual Handling. To enable Delegates to work in the offshore environment, an additional GWO Sea Survival training shall be completed.

Section 1 - The BSTR Manual Handling Module

1.1 Duration of the BSTR Manual Handling Module

The optimal total time for completing this BSTR Manual Handling Module is estimated to be **4 hours**, including meals and breaks.

This BSTR training shall focus on the access and egress conditions encountered in wind turbine environments. The practical skills shall be trained and demonstrated in a restricted area of movement and all elements of the course shall be covered by demonstration and practical exercises, where possible.

If this training is part of a programme of longer duration, the total contact time per day shall not exceed **8 hours** and the total training day shall not exceed **10 hours**. The total training day includes contact time, refreshment and meal breaks and travel between training sites, where applicable. It shall be ensured that everyone is given the opportunity to share their opinions and experiences, where possible.

Ensure that Delegates with prior experience share their experiences related to Manual Handling in a way that is constructive for the entire class.

1.2 Target group

Personnel working in the wind industry or related fields needing to refresh their GWO BSTR Manual Handling Module.

1.3 Delegate prerequisites for the BSTR Manual Handling Module

All personnel participating in Refresher Training shall be medically fit and capable of fully participating.

Training providers shall have a procedure that requires Delegates to sign a statement (see Appendix 1A, Suggestion for Medical Statement from GWO) stating that they are medically fit to participate in the safety training and that they do not suffer from any medical illness or are under influence of any narcotic substance or alcohol.

Delegates' signatures shall be collected prior to the start of the safety training course.

Furthermore, Delegates shall possess valid BST/ BSTR certificates for the relevant Modules prior to attending BSTR training.

1.4 Physical demands of the BSTR Manual Handling Module

BSTR Modules may potentially be physically demanding.

If there is any doubt regarding the medical fitness of any Delegate, the Training Provider shall stop training the Delegate and seek a physician's advice.

Note: Practical exercises shall be designed and delivered solely to meet this Standard and shall not place any physical or mental demands on the Delegates other than those required to meet this Standard.

1.5 Aims and objectives of the BSTR Manual Handling Module

This BSTR Manual Handling Module shall improve and refresh Delegates' awareness through theoretical and practical training to encourage positive Manual Handling behaviour and perform Manual Handling activities in a safe manner in a wind turbine industry/environment, in accordance with GWO BST/BSTR Manual Handling. The main focus of this BSTR is to practise the correct Manual Handling techniques and the theoretical lectures will be reduced compared to the GWO BST Manual Handling Module.

This BSTR Manual Handling Module shall ensure that:

- (1) Delegates are able to demonstrate a problem solving approach to Manual Handling in wind turbine environments
- (2) Delegates are able to demonstrate Manual Handling risk reduction techniques
- (3) Delegates are able to demonstrate understanding of safe practises for Manual Handling, including the correct handling of equipment
- (4) Delegates are able to identify signs and symptoms of injuries related to poor Manual Handling techniques and possess knowledge of reporting methods
- (5) Delegates are able to identify aspects of their job tasks that could increase a worker's risk of developing muscular/ skeletal injuries

1.6 Learning outcomes of the BSTR Manual Handling Module

The learning outcomes specified for the BSTR Manual Handling Module are:

Lesson 1 Introduction

15 min.

The aim of this lesson is to give the Delegates the needed awareness of the BSTR course content and the facilities involved in order to ensure that all Delegates are aware of what to expect and what is expected of them during the course.

To successfully complete this BSTR Module, Delegates shall be aware of:

- (1) Safety instructions and emergency procedures
- (2) Facilities
- (3) Who the instructor and other Delegates are
- (4) Aims and primary learning objectives
- (5) On-going assessment according to GWO Control Measures
- (6) Motivation for this BSTR course

Note: The administrative part of the registration shall be completed before the course commences.

Lesson 2 Legislation

10 min.

The aim of the lesson is to refresh the Delegates' awareness of relevant legislation. If new requirements or practises have been implemented during the last two years, these should be introduced. The aim is to ensure the Delegates' understanding of the roles, responsibilities and rules that apply to Manual Handling.

To successfully complete this BSTR Module, Delegates must be able to demonstrate:

- (1) Knowledge of global legislation relevant to Manual Handling
- (2) Knowledge of national legislation relevant to Manual Handling

Lesson 3 Risks and Hazards

15 min.

The aim of this lesson is to allow the Delegates to present their experience and challenges related to Manual Handling risk in the wind turbine environment. The discussion should be focused on how to avoid and control the risks.

- (1) Demonstrate knowledge of the work environment in a wind turbine
- (2) Explain the risks associated with Manual Handling

Lesson 4 Behavioural Safety

10 min.

The aim of the lesson is to refresh the Delegates' understanding of the importance of staying injury-free. This lesson could be combined with lesson 3.

To successfully complete this BSTR Module, Delegates must be able to demonstrate:

- (1) An understanding of the consequences of injuries
- (2) An understanding of the possible causes of injuries

Lesson 5 Spinal anatomy and posture

20 min.

The aim of the lesson is to refresh the Delegates' knowledge of spinal anatomy and the importance of the neutral spine and shoulder posture in work-related situations.

To successfully complete this BSTR Module, Delegates must be able to demonstrate:

- (1) Knowledge of muscular and skeletal injuries
- (2) Understanding of spinal anatomy including - prolapsed disc and the importance of the neutral posture
- (3) Understanding of shoulder anatomy, including common injuries
- (4) Understanding of symptom awareness and the importance of early detection and treatment
- (5) Knowledge of reporting methods

- (6) The use of different practical exercises for training the back and shoulder

Lesson 6 Planning lifts

10 min.

The aim of the lesson is to briefly refresh the basis of a Manual Handling risk assessment including how to identify and implement correct precautions.

To successfully complete this BSTR Module, Delegates must be able to demonstrate:

- (1) Understanding of the Task Individual Load Environment (T.I.L.E.) Principle

Lesson 7 Scenario-based training

120 min.

The aim of the lesson is to train safe lifting techniques in a variety of scenarios in wind turbine work environments. To the greatest possible extent, the scenarios should include the challenges that were mentioned by Delegates during lesson 3.

The key learning from the BSTR Manual Handling Module lessons 3, 4, 5 and 6 shall be practised during scenario-based training.

To successfully complete this BSTR Module, Delegates must be able to demonstrate:

- (1) Safe lifting techniques

Lesson 8 Evaluation

15 min.

The aim of this lesson is to summarise the BSTR Module and give the Delegates the opportunity to conduct an open minded review of the training and the instructor.

To successfully complete this BSTR Module, Delegates shall be able to demonstrate:



- (1) Active participation in the evaluation

1.7 Delegate performance assessment

Assessment of learning outcomes:

Delegates will be assessed according to the learning outcomes stated in Section 1.6 by means of direct observation and supplementary oral questions, where appropriate.

The formal evaluation of knowledge of above scenarios shall be in accordance with the Control Measures in Section - 3 (Measures).

Training Providers shall have a documented procedure in place for dealing with Delegates not meeting the stated learning outcomes.

BSTR Manual Handling Module time table

The order in which the elements of this BSTR training Module are delivered may vary.

Lesson		Element		Approximate Duration
1	Introduction	1.1	Safety instructions and emergency procedures	
		1.2	Facilities	
		1.3	Introduction	
		1.4	Scope and main objectives	
		1.5	On-going assessments (Control Measures)	
		1.6	Motivation	
2	Legislation	2.1	Global legislation	
		2.2	National legislation	
		TOTAL		
3	Risks and hazards	3.1	Risk and hazards in the wind turbine industry	
		TOTAL		
4	Behavioural safety	4.1	Consequences of incorrect Manual Handling	
		4.2	Causes of injuries	
		TOTAL		
5	Spinal anatomy and posture	5.1	Muscular and skeletal injuries	
		5.2	Spinal anatomy and posture	
		5.3	Shoulder anatomy	
		5.4	Symptom awareness	
		5.5	Reporting methods	
6	Planning lifts	6.1	T.I.L.E. principle	
		TOTAL		
7	Scenario-based training	7.1	Practise in safe lifting techniques	
		TOTAL		
8	Evaluation	8.1	Summary	
		8.2	Evaluation	
		8.3	Certificates	
		TOTAL		
GRAND TOTAL				215 min.

1.9 Elements, BSTR Manual Handling Module

Lesson 1 Introduction

ELEMENT 1.1 Safety instructions and emergency procedures

Training Staff shall **explain**:

- 1.1.1 Safety instructions according to internal procedures
- 1.1.2 Emergency procedures and emergency exits for the areas the Delegates will be located during the course

ELEMENT 1.2 Facilities

Training Staff shall **explain**:

- 1.2.1 General description of the facilities at the training location
(Administration, dining area, restrooms, toilets, etc.)

ELEMENT 1.3 Introduction

Training Staff shall **give**:

- 1.3.1 A short introduction, including their backgrounds as instructors

Delegates shall **give**:

- 1.3.2 A short introduction, including job function and expected primary geographic work location

Training Staff shall **explain**:

- 1.3.3 The program of the BSTR Module, including breaks and meal times

ELEMENT 1.4 Scope and main objectives

Training Staff shall **explain**:

- 1.4.1 Scope and main objectives of this BSTR Module

ELEMENT 1.5 On-going assessments

Training Staff shall **explain**:

- 1.5.1 The reasons for the on-going assessment
- 1.5.2 GWO Control Measures and their use

ELEMENT 1.6 Motivation

Training Staff shall **explain**:

- 1.6.1 The importance of personal involvement in the course
- 1.6.2 The definition and need for correct Manual Handling

Lesson 2 Legislation

ELEMENT 2.1 Global legislation

Training Staff shall **explain**:

- 2.1.1 Applicable legislation
- 2.1.2 Legal responsibilities

ELEMENT 2.2 National legislation

Training Staff shall **explain**:

- 2.2.1 Applicable legislation
- 2.2.2 Legislative requirements
- 2.2.3 Legal responsibilities
- 2.2.4 Role of industry organisations

Lesson 3 Risk and Hazards

ELEMENT 3.1 Risk and hazards in the wind turbine industry

During this lesson the Delegates' experience and their observations shall be included and to the greatest possible extent this should be driving the discussion. When relevant, behavioural safety shall further be drawn into the discussion. The Delegates are motivated to mention any specific situations where they find it hard to appropriately use correct Manual Handling techniques.

Based on Delegates' experience, the training staff shall **lead discussions on:**

- 3.1.1 Risks and hazards of Manual Handling relevant to the job functions within the wind industry such as
 - (1) Awkward positions
 - (2) Forceful exertions
 - (3) Repetitive motions
 - (4) Contact stress
 - (5) Exposure of local body parts and entire body to mechanical vibrations
 - (6) Duration of exposure
 - (7) Frequency of exposure
 - (8) Intensity of exposure

- 3.1.2 How to avoid the risks and hazards and improve safety while executing Manual Handling related tasks

Lesson 4 Behavioural safety

ELEMENT 4.1 Consequences of incorrect Manual Handling

Delegates shall **explain:**

- 4.1.1 Consequences of incorrect Manual Handling

Training Staff shall **ensure:**

- 4.1.2 Correct understanding of the consequences of incorrect Manual Handling

ELEMENT 4.2 Causes of injuries

Delegates shall **explain**:

- 4.2.1 Causes of injuries, e.g. time versus effort/ conditions/ risk, putting job before oneself, negative habits, previous injuries, etc.

Training Staff shall **ensure**:

- 4.2.2 Correct understanding of the causes of injuries

Lesson 5 Spinal anatomy and posture

ELEMENT 5.1 Muscular and skeletal injuries

Delegates shall **explain**:

- 5.1.1 Muscular and skeletal injuries related to Manual Handling, including back injuries, e.g. prolapsed disc, muscle strains, etc.

Training Staff shall **ensure**:

- 5.1.2 Correct understanding of muscular and skeletal injuries

ELEMENT 5.2 Spinal anatomy and posture

Delegates shall **explain**:

- 5.2.1 Spinal anatomy and posture

Training Staff shall **ensure**:

- 5.2.2 Correct understanding of spinal anatomy and posture

ELEMENT 5.3 Shoulder anatomy

Delegates shall **explain**:

- 5.3.1 Shoulder anatomy and common injuries if working above shoulder height
e.g. tendinitis, bursitis

Training Staff shall **ensure**:

- 5.3.2 Correct understanding of shoulder anatomy

ELEMENT 5.4 Symptom awareness

Delegates shall **explain**:

- 5.4.1 Symptom awareness and the importance of early detection and treatment

Training Staff shall **ensure**:

- 5.4.2 Correct understanding of symptom awareness

ELEMENT 5.5 Reporting methods

Delegates shall **explain**:

- 5.5.1 Reporting methods and procedures in case of injuries
(1) National requirements
(2) Company specifics

Training Staff shall **ensure**:

- 5.5.2 Correct understanding of reporting methods

Lesson 6 Planning lifts

ELEMENT 6.1 T.I.L.E. principles

Delegates shall briefly **explain**:



- 6.1.1 Planning Manual Handling correctly, by using the T.I.L.E. principle
- (1) Task (repetition, duration, location, distance, hazards, stairs, pace)
 - (2) Individual (posture, capability, height, size)
 - (3) Load (weight, handles, size, temperature, texture)
 - (4) Environment (rain, wind, obstacles, floor conditions)

Training Staff shall **ensure**:

- 6.1.2 Correct understanding of the T.I.L.E. principles

Lesson 7 Scenario-based training

ELEMENT 7.1 Practise in safe lifting techniques

During the practical training the Trainer shall re-introduce material from lesson 6, "Risk control and lifting techniques" from the GWO BST Manual Handling Module, as well as apply the theoretical key learning from lesson 3, "Risk and Hazards, Behavioural safety," from lesson 5, "Spinal anatomy and posture" and from lesson 6, "Planning the lift." The practical training shall be based on this learning material so that Delegates gain practical understanding of the theoretical lessons.

Experiences and challenges that were discussed during lesson 2 should be reviewed and applied during this scenario-based training.

Training Staff shall **explain**:

- 7.1.1 Safety procedures in the training area

Delegates shall **practise and demonstrate**:

- 7.1.2 Safe lifting techniques in scenarios relevant to the industry, according to the Control Measures Form (*see Lesson 7 Notes*)

Training Staff shall **facilitate debriefing**:



- 7.1.3 Scenario-based training
- (1) Review positive actions observed during exercise
 - (2) Suggest points for improvement

Formal assessment of knowledge (see Section 1.7)

Lesson 7 Notes:

- (1) Each Delegate would benefit most if they participate in a practise scenario based on a wind turbine work environment.*
- (2) Lifting various objects in the correct and proper manner. These can be of different shapes and sizes, but shall not weigh more than 15 Kg.*
- (3) In teams of 2 to perform a correct lift of a rescue dummy that weighs no more than 30 Kg.*

Lesson 8 Evaluation

ELEMENT 8.1 Summary

Training Staff shall:

- 8.1.1 Summarise the BSTR Module and give the Delegates final feedback

ELEMENT 8.2 Evaluation

Delegates shall:

- 8.2.1 Conduct a written evaluation

Training Staff shall:

- 8.2.2 Give necessary feedback on the written evaluations

ELEMENT 8.3 Certificates

Training Staff shall:

- 8.3.1 Hand out certificates and ensure that all Delegates are registered with the correct personal information on the certificate

Section 2 - Resources for BSTR Manual Handling

The Training Provider shall ensure that staff, facilities and equipment are in place to support the training of the Delegates.

2.1 Staff

Training Staff shall possess appropriate qualifications and experience to ensure that all training and supportive activities are carried out in accordance with current legislation.

Training Staff shall be:

- (1) Trained in instructional/ lecture techniques and/ or have documented instructional/ teaching experience.
- (2) Included in an on-going training programme, which includes visits to onshore and/ or offshore WTGs (tower, nacelle, hub) prior to instructing BSTR Modules, to enable them to maintain and update skills related to the BSTR Modules they instruct.

A person with First Aid qualifications shall be present during all practical training.

All staff shall possess the appropriate competencies to conduct/ assist the elements of training they have been assigned to.

2.2 Trainer/Delegate Ratio

- (1) The ratio shown for theory sessions indicates the maximum number of Delegates that shall attend the course.
- (2) Other ratios indicate the maximum number of Delegates to be supervised by (an) instructor(s) during each activity.

Module	Session	Trainer - Delegate Ratio
BSTR Manual Handling Module	Theory	1:12
	Practical	1:12

2.3 Facilities

The full range of facilities shall be available during the training. The following facilities criteria shall be adhered to.

2.4 Theory training facilities

Facilities shall be designed to enable each Delegate to see, hear and fully participate in the taught subject matter.

2.5 Practical training facilities

Shall be designed to enable each Delegate to individually and/or as part of a team, see, hear and practise the taught material.

Note:

All facilities shall be maintained and where appropriate, inspected and tested in accordance with current national legislation and manufacturers' recommendations.

Risk assessments shall be conducted and documented for all training facilities.

The Training Provider shall hold the required permits to operate the facilities.

2.6 Equipment

The following equipment is required during the entire duration of this BSTR Manual Handling Training to meet the needs of the BSTR Manual Handling Module

- (1) A Lumbar Vertebrae model for educational purposes
- (2) A model of a shoulder for educational purposes
- (3) Rescue dummy, weighing 30 Kg
- (4) Lifting props for Manual Handling, weighing maximum 15 Kg
- (5) Personal Protective Equipment (PPE)

In order to comply with national legislation and Standards, the equipment supplied and used by staff and Delegates shall follow the appropriate guidelines, e. g.:

Europe - EN

UK - BS

USA - ANSI

Canada - CSA

Australia and New Zealand - AS/NZS

Asia - ANSI / EN

Note: All equipment shall be maintained and where appropriate, inspected and tested in accordance with current national Standards/ legislation and manufacturers' instructions.

Section 3 - Administration and certification

3.1 Delegate performance assessment

Delegates shall be assessed according to the learning outcomes by means of direct observation and oral and/ or written questions, where appropriate.

Training Providers shall have a documented procedure in place for dealing with Delegates not meeting the stated learning outcomes.

3.2 Validity

The maximum interval between successful completion of this BSTR Manual Handling Module is **24 months**.

3.3 Certification

Training Providers are responsible for issuing a certificate directly to the Delegate upon completion of the training programme and to the sponsoring company when required. Each certificate shall indicate that the Delegate has been assessed according to the learning outcomes and shall contain the following:

- (1) Training Provider's name
- (2) Full GWO course title stating that it is GWO approved
- (3) Delegate's name
- (4) Course dates
- (5) Expiry date



(6) Training Provider's signature

3.4 Records

The Training Provider shall keep a record of the Delegates that have completed the BSTR Manual Handling Module for a minimum period of **5 years**.

Upon request from GWO or any of the members of GWO, the Training Provider shall be able to verify the training and competence records of any Delegate by name.

3.5 Measures

The Trainer keeps the Control Measures Forms until the completion/ evaluation of the BSTR Module. If a Delegate fails to meet the demands, they shall attend another BSTR Manual Handling Module or a BST Manual Handling Module.

If a Delegate fails this BSTR Manual Handling Module it is the Training Staff's decision, based on factual observations, to recommend the Delegate attends either a BST Manual Handling or another BSTR Manual Handling Module.

3.6 Control Measures

Please find the Control Measures Form on next page.

Control Measures

Name: _____

Course: BSTR Manual Handling Module

Date: _____

Training Provider: _____

Scenario Organisation	Violation of Assessment Measures			0-2 passed/ 3 failed	Instructor Remarks
Aware of personal and group safety at all times					
Organises and utilises correct equipment for given scenario					
Organises individuals and groups as required					
Scenario Management					
Establishes and maintains control of the exercise scenario at all times					
Fully participates in the exercise scenario					
Follows instructions when required					

Demonstrates correct and safe Manual Handling in exercise scenario					
Knowledge and Understanding					
Applies subject knowledge correctly in given scenario					
Demonstrates understanding of subject					
Total Marks 0-9 Pass 10-27 Fail					

Instructor: _____

<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL
--------------------------------------	--------------------------------------

The Practical Assessment Measures Form is a final evaluation tool for the instructors to assess Delegates during practical elements. It allows measurement of the number of violations in regard to safety, competency, or attitude. It can be used as a progressive evaluation tool to discuss the performance of a Delegate in guiding them to success and it also serves as supporting documentation when a Delegate fails the Module.



Document type:

Appendix 1 A

Number M.S.A.
Date 21-11-2013
Page 82 of 170

Title:

Medical Self-Assessment

Issued by:



Unrestricted

YOUR PERSONAL HEALTH IS YOUR OWN RESPONSIBILITY. YOUR TRAINING PROVIDER SHALL NOT BE HELD RESPONSIBLE FOR ANY ILLNESS WHATSOEVER DURING OR AFTER THE TRAINING.

This signed Medical Self-Assessment must be returned to the Training Provider's Representative/Responsible prior to the start of the training course.

Full name as stated in passport	Company
---------------------------------	---------

The following conditions could pose a risk, when you actively participate in GWO training
Asthma or other respiratory disorders
Epilepsy, blackouts or other fits
Angina or other heart complaints
Vertigo or inner ear problems (difficulty with balance)
Claustrophobia/Acrophobia (fear of enclosed area/height)
Blood pressure disorder
Diabetes
Pacemaker or implanted defibrillator
Arthritis, osteoarthritis or other muscular/ skeletal disorders affecting mobility
Known allergies (E.g. bee, wasps or spider stings / bites)
Recent surgery
Any other medical condition or medication dependency that could affect climbing or physical impact of climbing

I hereby confirm that I have read and understood the above listed risks and potentially life-threatening medical conditions and that I am physically and medically fit to participate in GWO Training.

I hereby confirm that there is no factor that will inhibit or affect my participation in GWO Training.

I agree to follow all instructions from the appointed Instructor for the duration of the GWO Training.

I hereby agree: should there be any doubt regarding my medical fitness, the training provider will stop the training and seek a physician's advice.

Signature _____ **Date** _____



GLOBAL WIND ORGANISATION STANDARD

Basic Safety Training Refresher (BSTR) (Onshore/Offshore)

FIRE AWARENESS

**Version 2
21 November, 2013**

Foreword

The Global Wind Organisation (GWO) is an association of Wind Turbine owners and manufacturers with the aim of supporting an injury free work environment in the wind industry.

This Standard has been developed in response to the demand for recognisable Basic Safety Training (BST) in the industry. The development of this Standard has been prepared in co-operation between the members of GWO. This work is based on risk assessments and factual incident/accident statistics within the industry pertaining to the installation, service and maintenance of wind turbine generators.

The objective of this Standard is to develop common industry training and best practise Standards for health and safety as a vital and necessary way forward to reducing risks for personnel in the wind industry working on site and to reducing environmental risks across Europe and the globe.

This Standard describes the requirements for Basic Safety Training in the wind industry that are recommended by GWO. Where national legislation sets higher requirements for the training, the Training Provider shall incorporate these requirements in the training programme.

The GWO Basic Safety Training does not include any Technical Safety Training such as working with electricity, equipment with stored energy etc.. Additional training may be required due to company or country specific requirements.

GWO recommends a company specific Basic Safety Introduction and Technical Safety Training as additional training.

Editorial and approval

The final editorial and approval of this Standard has been conducted by the GWO Steering Committee.

Acknowledgement

The members of the Global Wind Organisation (GWO) recognise that training according to this Standard covers the requirements for Basic Safety Training for wind turbine technicians and personnel.

GWO members agree that everyone working on one of their properties (Wind Turbine Generators, sub stations, etc.) shall complete Basic Safety Training courses relevant for their assignments. All work shall be done in teams of at least 2 Competent Persons. Exemptions from the above can be made based on internal company rules, thereby allowing untrained persons to work with Competent Personnel or to work on a specific task.

The holder of a GWO certificate is considered competent within Basic Safety in the wind industry and the members of GWO accept the holder of this certificate as possessing the required knowledge to stop an unsafe work situation.

Table of contents

FOREWORD.....	84
EDITORIAL AND APPROVAL	85
ACKNOWLEDGEMENT	85
TABLE OF CONTENTS	86
LIST OF ABBREVIATIONS.....	88
INTRODUCTION.....	89
SECTION 1 - THE BSTR FIRE AWARENESS	89
1.1 DURATION OF THE BSTR FIRE AWARENESS MODULE.....	89
1.2 TARGET GROUP	90
1.3 DELEGATE PREREQUISITES FOR THE BSTR FIRE AWARENESS MODULE	90
1.4 PHYSICAL DEMANDS OF THE BSTR FIRE AWARENESS MODULE	90
1.5 AIMS AND OBJECTIVES OF THE BSTR FIRE AWARENESS MODULE	91
1.6 LEARNING OUTCOMES OF THE BSTR FIRE AWARENESS MODULE.....	91
<i>Lesson 1 Introduction.....</i>	<i>92</i>
<i>Lesson 2 Legislation</i>	<i>92</i>
<i>Lesson 3 Fire combustion and fire spread.....</i>	<i>93</i>
<i>Lesson 4 Fire extinguishing</i>	<i>93</i>
<i>Lesson 5 Fire Prevention</i>	<i>93</i>
<i>Lesson 6 Fire fighting equipment in a WTG</i>	<i>94</i>
<i>Lesson 7 Practise and scenario-based training.....</i>	<i>94</i>
<i>Lesson 8 Evaluation</i>	<i>94</i>
1.7 DELEGATE PERFORMANCE ASSESSMENT	95
BSTR FIRE AWARENESS MODULE TIME TABLE.....	96
1.9 ELEMENTS, BSTR FIRE AWARENESS MODULE	97
<i>Lesson 1 Introduction.....</i>	<i>97</i>
ELEMENT 1.1 Safety instructions and emergency procedures.....	97
ELEMENT 1.2 Facilities	97
ELEMENT 1.3 Introduction	97
ELEMENT 1.4 Scope and main objectives.....	97
ELEMENT 1.5 On-going assessments.....	98
ELEMENT 1.6 Motivation	98
<i>Lesson 2 Legislation</i>	<i>98</i>
ELEMENT 2.1 Global legislation.....	98
ELEMENT 2.2 National legislation	98
<i>Lesson 3 Fire combustion and fire spread.....</i>	<i>98</i>
ELEMENT 3.1 Types of fires	98

ELEMENT 3.2	Square of combustion	99
ELEMENT 3.3	Fire Spread	99
ELEMENT 3.4	Smoke gases.....	99
Lesson 4	Fire extinguishing	100
ELEMENT 4.1	Contingency plan	100
ELEMENT 4.2	Assessing the fire	100
ELEMENT 4.3	Fire classes	100
Lesson 5	Fire prevention	101
ELEMENT 5.1	Fire hazards.....	101
ELEMENT 5.2	Fire prevention measures	101
Lesson 6	Fire fighting equipment in a WTG	101
ELEMENT 6.1	Pre-use inspection.....	101
ELEMENT 6.2	Correct use of fire fighting equipment.....	102
Lesson 7	Practise and scenario-based training	102
ELEMENT 7.1	Practise.....	102
ELEMENT 7.2	Scenario-based training	102
Lesson 8	Evaluation	103
ELEMENT 8.1	Summary.....	103
ELEMENT 8.2	Evaluation	103
ELEMENT 8.3	Certificates.....	103

SECTION 2 - RESOURCES FOR BSTR FIRE AWARENESS MODULE 104

2.1	STAFF	104
2.2	TRAINER/DELEGATE RATIO	104
2.3	FACILITIES	105
2.4	THEORY TRAINING FACILITIES	105
2.5	PRACTICAL TRAINING FACILITIES	105
2.6	EQUIPMENT	105

SECTION 3 - ADMINISTRATION AND CERTIFICATION 106

3.1	DELEGATE PERFORMANCE ASSESSMENT	106
3.2	VALIDITY	106
3.3	CERTIFICATION	106
3.4	RECORDS.....	107
3.5	MEASURES.....	107
3.6	CONTROL MEASURES	107

CONTROL MEASURES 108



List of abbreviations

BST	Basic Safety Training
BSTR	Basic Safety Training Refresher
CO₂	Carbon Dioxide
GWO	Global Wind Organisation
PPE	Personal Protective Equipment
WTG	Wind Turbine Generator

Introduction

Upon completion of the Global Wind Organisation (GWO) Basic Safety Training (BST) Delegates will possess an awareness of the hazards encountered when working within the wind industry and how to control and mitigate these hazards.

The BST will also equip participants with the knowledge, skills and confidence to appropriately respond in the event of an emergency and to increase their safety through proper use of Personal Protective Equipment (PPE), emergency equipment and procedures.

The approved GWO Basic Safety Training Refresher (BSTR) provides Delegates with, reviews and builds on a range of important skills and tools obtained during BST courses, which include Fire Awareness, First Aid, Working at Heights and Manual Handling. To enable Delegates to work in the offshore environment, an additional GWO Sea Survival training shall be completed.

Section 1 - The BSTR Fire Awareness

1.1 Duration of the BSTR Fire Awareness Module

The optimal total time for completing this BSTR Fire Awareness Module is estimated to be **4 hours**, including meals and breaks.

This BSTR training shall focus on the access and egress conditions encountered in wind turbine environments. The practical skills shall be trained and demonstrated in a restricted area of movement and all elements of the course shall be covered by demonstration and practical exercises, where possible.

If this training is part of a programme of longer duration, the total contact time per day shall not exceed **8 hours** and the total training day shall not exceed **10 hours**. The total training day includes contact time, refreshment and meal breaks and travel between training sites, where applicable. It shall be ensured that everyone is given the opportunity to share their opinions and experiences, where possible.

Ensure that Delegates with prior experience share their experiences related to Fire Awareness in a way that is constructive for the entire class.



1.2 Target group

Personnel working in the wind industry or related fields needing to refresh their GWO BST/ BSTR Fire Awareness Module.

1.3 Delegate prerequisites for the BSTR Fire Awareness Module

All personnel participating in Refresher Training shall be medically fit and capable of fully participating.

Training providers shall have a procedure that requires Delegates to sign a statement (see Appendix 1A, Suggestion for Medical Statement from GWO) stating that they are medically fit to participate in the safety training and that they do not suffer from any medical illness or are under influence of any narcotic substance or alcohol.

Delegates' signatures shall be collected prior to the start of the safety training course.

Furthermore, Delegates shall possess valid BST/ BSTR certificates for the relevant Modules prior to attending BSTR training.

1.4 Physical demands of the BSTR Fire Awareness Module

BSTR Modules may potentially be physically demanding.

If there is any doubt regarding the medical fitness of any Delegate, the Training Provider shall stop training the Delegate and seek a physician's advice.

Note: Practical exercises shall be designed and delivered solely to meet this Standard and shall not place any physical or mental demands on the Delegates other than those required to meet this Standard.

1.5 Aims and objectives of the BSTR Fire Awareness Module

The aim of this BSTR Fire Awareness Module is to review and build on previously gained knowledge and skills through theoretical and practical training so that Delegates can prevent fires, make initial and appropriate judgement when evaluating fire, and, if it is judged to be safe, to efficiently extinguish an initial fire by using basic hand held fire fighting equipment in accordance with GWO Refresher Fire Awareness training.

This BSTR Fire Awareness Module shall ensure that:

- (1) Delegates are able to demonstrate knowledge of the development and spread of fire
- (2) Delegates are able to identify knowledge of the causes of fires in wind turbines and the dangers related to this
- (3) Delegates are able to identify any sign of a fire in a wind turbine environment
- (4) Delegates are able to demonstrate knowledge of the contingency plans in a wind turbine environment, including smoke detection and emergency escape procedures
- (5) Delegates are able to demonstrate correct actions to discover a fire including, correct operation and fire extinguishing by means of the fire fighting equipment in a WTG

1.6 Learning outcomes of the BSTR Fire Awareness Module

The learning outcomes specified for the BSTR Fire Awareness Module are:

Lesson 1 Introduction

15 min.

The aim of this lesson is to give the Delegates the needed awareness of the Refresher Course content and the facilities involved in order to ensure that all Delegates are aware of what to expect and what is expected of them during the course.

To successfully complete this BSTR Fire Awareness Module, Delegates shall be aware of:

- (1) Safety instructions and emergency procedures
- (2) Facilities
- (3) Who the instructor and other Delegates are
- (4) Aims and primary learning objectives
- (5) On-going assessment according to GWO Control Measures
- (6) Motivation for this Refresher course

Note: The administrative part of the registration shall be completed before the course commences.

Lesson 2 Legislation

5 min.

The aim of the lesson is to refresh the Delegates' awareness of relevant legislation and requirements that apply to fire prevention and fire fighting equipment in relation to the industry.

To successfully complete this Refresher Module, Delegates shall demonstrate:

- (1) Knowledge of global legislation relevant to fire prevention and fire fighting equipment in relation to the industry
- (2) Fire fighting equipment in relation to the industry
- (3) Knowledge of national legislation relevant to fire prevention and fire fighting equipment in relation to the industry

Lesson 3 Fire combustion and fire spread

20 min.

The aim of the lesson is to refresh the Delegates' general awareness of combustion, fire spread, the different types of fire and the composition of smoke in order to understand the elements needed for a fire to occur and more importantly, how to extinguish it, as well as an understanding of how fire spreads and the dangers of the smoke.

To successfully complete this BSTR Module, Delegates shall demonstrate:

- (1) Knowledge of the different types of fires and the material state, including the type of material surface
- (2) Knowledge of the "square of combustion"
- (3) Understanding of fire spread and the dangers of smoke gases

Lesson 4 Fire extinguishing

25 min.

The aim of the lesson is to refresh the Delegates' knowledge and understanding of assessing a fire and if needed to be able to identify the right extinguishing media according to the fire classes. Furthermore, Delegates must obtain the needed knowledge and understanding to act according to the contingency plans in a WTG.

To successfully complete this BSTR Module, Delegates shall be able to:

- (1) Demonstrate knowledge and understanding of contingency plans and the importance of knowing what to do in an emergency
- (2) Demonstrate knowledge and understanding of how to assess a fire and know how to act in a given situation
- (3) Identify the right fire extinguishing media according to the fire classes

Lesson 5 Fire Prevention

20 min.

The aim of the lesson is to refresh the Delegates' knowledge and understanding of taking preventive measures to improve fire safety in a WTG.

To successfully complete this BSTR Module, Delegates shall demonstrate:

- (1) Knowledge of hazards relating to fires within the wind industry

- (2) Knowledge and understanding of the importance of personal behaviour as a fire prevention measure and how to improve fire safety during daily work

Lesson 6 Fire fighting equipment in a WTG

20 min.

The aim of the lesson is to refresh the Delegates' knowledge and skills to be able to use the fire fighting equipment in a WTG efficiently and without the risk of injuries.

To successfully complete this BSTR Module, Delegates shall demonstrate:

- (1) Knowledge and understanding of pre-use inspection of the various fire fighting equipment in a WTG
- (2) Knowledge and understanding of safe distances and correct, efficient and safe use of the various fire fighting equipment in a WTG
- (3) Knowledge and understanding of advantages and disadvantages of the various fire fighting equipment in a WTG

Lesson 7 Practise and scenario-based training

60 min.

The aim of the lesson is to refresh the Delegates skills to assess a fire and if needed, efficiently extinguish a small fire without the risk of injuries

To successfully complete this BSTR Module, Delegates shall demonstrate:

- (1) Efficient and safe use of the fire fighting equipment in a WTG
- (2) The ability to assess the fire and show correct approach when discovering a fire in a WTG

Lesson 8 Evaluation

15 min.

The aim of the lesson is to summarise this BSTR Module and give the Delegates the opportunity to make an open minded review of the training and the instructor.

To successfully complete this BSTR Module, Delegates shall demonstrate:

- (1) Active participation in the evaluation

1.7 Delegate performance assessment

Assessment of learning outcomes:

Delegates will be assessed according to the learning outcomes stated in Section 1.6 by means of direct observation and supplementary oral questions, where appropriate.

The formal evaluation of knowledge of above scenarios shall be in accordance with the Practical Assessment Measures in Section – 3 (Measures).

Training Providers shall have a documented procedure in place for dealing with Delegates not meeting the stated learning outcomes.

BSTR Fire Awareness Module time table

The order in which the elements of this BSTR training Module are delivered may vary.

Lesson		Element		Approximate Duration
1	Introduction	1.1	Safety instructions and emergency procedures	
		1.2	Facilities	
		1.3	Introduction	
		1.4	Aims and main learning objectives	
		1.5	On-going assessment (Control Measures)	
		1.6	Motivation	
2	Legislation	2.1	Global legislation	
		2.2	National legislation	
		TOTAL		
3	Fire combustion and fire spread	3.1	Types of fires	
		3.2	Square of combustion	
		3.3	Fire Spread	
		3.4	Smoke gases	
4	Fire extinguishing	4.1	Contingency plan	
		4.2	Assessing the fire	
		4.3	Fire classes	
5	Fire prevention	5.1	Fire hazards	
		5.2	Fire prevention measures	
6	Fire fighting equipment in a WTG	6.1	Pre-use inspection	
		6.2	Correct use of firefighting equipment	
7	Practise and scenario-based training	7.1	Practise	
		7.2	Scenario-based training	
8	Evaluation	8.1	Summary	
		8.2	Evaluation	
		8.3	Certificates	
GRAND TOTAL				180 min.

1.9 Elements, BSTR Fire Awareness Module

Lesson 1 Introduction

ELEMENT 1.1 Safety instructions and emergency procedures

Training Staff shall **explain**:

- 1.1.1 Safety instructions, according to internal procedures
- 1.1.2 Emergency procedures and emergency exits for the areas the Delegates will be located during the course

ELEMENT 1.2 Facilities

Training Staff shall **explain**:

- 1.2.1 General description of the facilities at the training location
(Administration, dining area, restrooms, toilets, etc.)

ELEMENT 1.3 Introduction

Training Staff shall **give**:

- 1.3.1 A short introduction, including their backgrounds as instructors

Delegates shall **give**:

- 1.3.2 A short introduction, including job function and expected primary geographic work location

Training Staff shall **explain**:

- 1.3.3 The programme of this BSTR Fire Awareness Module, including breaks and meal times

ELEMENT 1.4 Scope and main objectives

Training Staff shall **explain**:

- 1.4.1 Scope and main objectives of this BSTR Fire Awareness Module

ELEMENT 1.5 On-going assessments

Training Staff shall **explain**:

- 1.5.1 The reasons for the on-going assessment
- 1.5.2 GWO Control Measures and their use

ELEMENT 1.6 Motivation

Training Staff shall **explain**:

- 1.6.1 The importance of personal involvement in the course
- 1.6.2 The definition and need for correct Fire Awareness

Lesson 2 Legislation

ELEMENT 2.1 Global legislation

Training Staff shall **explain**:

- 2.1.1 Relevant legislation and requirements that apply to fire prevention and fire fighting equipment in relation to the industry *onshore*
- 2.1.2 Relevant legislation and requirements that apply to fire prevention and fire fighting equipment in relation to the industry *offshore*

ELEMENT 2.2 National legislation

Training Staff shall **explain**:

- 2.2.1 Applicable legislation
- 2.2.2 National legislative requirements
- 2.2.3 Legal responsibilities
- 2.2.4 Local authorities

Lesson 3 Fire combustion and fire spread

ELEMENT 3.1 Types of fires

Delegates shall **explain**:

- 3.1.1 Types of fires (solid, liquid, gas)
- 3.1.2 Material state, including how surface size influences combustion

Training Staff shall **ensure**:

- 3.1.3 Correct understanding of the types of fires and the state of material including the influence of the size of the surface

ELEMENT 3.2 Square of combustion

Delegates shall **explain**:

- 3.2.1 The elements needed for a fire to occur by means of the 4 sides of the square of combustion (oxygen, material, temperature and chemical reaction)

Training Staff shall **ensure**:

- 3.2.2 Correct understanding of the square of combustion

ELEMENT 3.3 Fire Spread

Delegates shall **explain**:

- 3.3.1 Fire spread by (in relation to the wind energy industry)
(1) Conduction
(2) Convection
(3) Radiation
(4) Direct Burning

Training Staff shall **ensure**:

- 3.3.2 Correct understanding of fire spread

ELEMENT 3.4 Smoke gases

Delegates shall **explain**:

- 3.4.1 The composition and hazards of smoke gases based on the materials in a WTG

Training Staff shall **ensure**:

- 3.4.2 Correct understanding of the composition and hazards of smoke gases based on the materials in a WTG

Lesson 4 **Fire extinguishing**

ELEMENT 4.1 **Contingency plan**

Delegates shall **explain**:

- 4.1.1 An example of a contingency plan in a wind turbine
- 4.1.2 Examples of the importance of knowing beforehand what to do in an emergency

Training Staff shall **ensure**:

- 4.1.3 Correct understanding of a contingency plan in a wind turbine and examples of the importance of knowing what to do beforehand in an emergency

ELEMENT 4.2 **Assessing the fire**

Delegates shall **explain**:

- 4.2.1 Fire intensity curve
- 4.2.2 How to assess the fire and how to act based on the assessment of the fire

Training Staff shall **ensure**:

- 4.2.3 Correct understanding of the fire intensity curve, how to assess the fire and what to do based on the assessment of the fire

ELEMENT 4.3 **Fire classes**

Delegates shall **explain**:

- 4.3.1 Methods of extinguishing fires with reference to the combustion square
- 4.3.2 Fire classes A, B, C, D, F
- 4.3.3 Which extinguishing media found in a WTG can be used for various fire classes

Training Staff shall **ensure**:

- 4.3.4 Correct understanding of the fire classes and the various fire extinguishers available for extinguishing various fire types



Lesson 5 Fire prevention

ELEMENT 5.1 Fire hazards

Delegates shall **explain**:

- 5.1.1 Fire hazards and risks in a WTG (manned/unmanned)

Training Staff shall **ensure**:

- 5.1.2 Correct understanding of fire hazards and risks in WTGs (manned/unmanned)

ELEMENT 5.2 Fire prevention measures

Delegates shall **explain**:

- 5.2.1 How to improve fire safety in the daily work
- 5.2.2 Fixed systems in a WTG

Training Staff shall **ensure**:

- 5.2.3 Correct understanding of how to improve fire safety and fixed systems in WTGs
- 5.2.4 Awareness of fixed systems in WTGs, including requirements for special training for entering WTGs with fixed systems

Lesson 6 Fire fighting equipment in a WTG

ELEMENT 6.1 Pre-use inspection

Delegates shall **explain and demonstrate**:

- 6.1.1 The importance of pre-use inspection of fire fighting equipment
- 6.1.2 How to perform pre-use inspection of fire fighting equipment

Training Staff shall **ensure**:

- 6.1.3 Correct understanding of the importance of and how to perform pre-use inspection of fire fighting equipment

ELEMENT 6.2 Correct use of fire fighting equipment

Training Staff shall **explain and demonstrate**:

- 6.2.1 Advantages and disadvantages of various fire fighting equipment in WTGs
- 6.2.2 Safe distance and precautions with various fire fighting equipment (handheld carbon dioxide (CO₂), dry chemical - and water extinguisher, including fire blankets)
- 6.2.3 Correct, efficient and safe use of various fire fighting equipment in WTGs

Lesson 7 Practise and scenario-based training

ELEMENT 7.1 Practise

Delegates shall **practise and demonstrate**:

- 7.1.1 Efficient and safe use of CO₂ and dry chemical extinguishers
- 7.1.2 Efficient and safe use of the fire blanket

Formal assessment of knowledge (see Section 1.7)

ELEMENT 7.2 Scenario-based training

Training Staff shall **explain and demonstrate**:

- 7.2.1 Safety procedures and emergency exits in WTG mock scenarios
- 7.2.2 Smoke development in an enclosed area and the correct reaction to such a situation

Delegates shall **demonstrate**:

- 7.2.3 Safe evacuation from a smoke filled area
- 7.2.4 Correct action of discovering fire or smoke in a WTG (various mock scenarios in WTGs)

Lesson 7 Notes:

(1) *Each Delegate would benefit most if they practise the operation and use of **each** of the following types of fire extinguishers:*

- (a) *CO₂*
- (b) *Dry chemical*
- (c) *Fire blanket*

(2) *The Element in 7.2 must be carried out in a WTG mock scenario*

Lesson 8 Evaluation

ELEMENT 8.1 Summary

Training Staff shall:

- 8.1.1 Summarise the BSTR Module and give the Delegates final feedback

ELEMENT 8.2 Evaluation

Delegates shall:

- 8.2.1 Conduct a written evaluation

Training Staff shall:

- 8.2.2 Give necessary feedback on the written evaluations

ELEMENT 8.3 Certificates

Training Staff shall:

- 8.3.1 Hand out certificates and ensure that all Delegates are registered with the correct personal information on the certificate

Section 2 - Resources for BSTR Fire Awareness Module

The Training Provider shall ensure that staff, facilities and equipment are in place to support the training of the Delegates.

2.1 Staff

Training Staff shall possess appropriate qualifications and experience to ensure that all training and supportive activities are carried out in accordance with current legislation.

Training Staff shall be:

- (1) Trained in instructional/ lecture techniques and/ or have documented instructional/ teaching experience.
- (2) Included in an on-going training programme, which includes visits to onshore and/ or offshore WTGs (tower, nacelle, hub) prior to instructing BSTR Modules, to enable them to maintain and update skills related to the BSTR Modules they instruct.

A person with First Aid qualifications shall be present during all practical training.

All staff shall possess the appropriate competencies to conduct/ assist the elements of training they have been assigned to.

2.2 Trainer/Delegate Ratio

- (1) The ratio shown for theory sessions indicates the maximum number of Delegates that can attend the course.
- (2) Other ratios indicate the maximum number of Delegates to be supervised by (an) instructor(s) during each activity.

Module	Session	Trainer - Delegate Ratio
BSTR Fire Awareness Module	Theory	1:12
	Practical	2:12

2.3 Facilities

The full range of facilities shall be available during the training. The following facilities criteria shall be adhered to.

2.4 Theory training facilities

Facilities shall be designed to enable each Delegate to see, hear and fully participate in the taught subject matter.

2.5 Practical training facilities

Shall be designed to enable each Delegate to individually and/ or as part of a team, see, hear and practise the taught material.

Note:

All facilities shall be maintained and where appropriate, inspected and tested in accordance with current national legislation and manufacturers' recommendations.

Risk assessments shall be conducted and documented for all training facilities.

The Training Provider shall hold the required permits to operate the facilities.

2.6 Equipment

The following equipment is required to meet the needs for the Fire Awareness Module

- (1) Handheld CO₂ -, dry chemical- and water extinguishers
- (2) Fire blankets
- (3) Dummies
- (4) Personal Protective Equipment (PPE)

In order to comply with national legislation and Standards, the equipment supplied and used by staff and Delegates shall follow the appropriate guidelines, e. g.:

Europe - EN

UK - BS

USA - ANSI

Canada - CSA

Australia and New Zealand - AS/NZS

Asia - ANSI / EN

Note: All equipment shall be maintained and where appropriate, inspected and tested in accordance with current national Standards/legislation and manufacturers' recommendations.

Section 3 - Administration and certification

3.1 Delegate performance assessment

Delegates must be assessed according to the learning outcomes by means of direct observation and oral and/ or written questions, where appropriate.

Training providers must have a documented procedure in place for dealing with persons not meeting the stated learning outcomes.

3.2 Validity

The maximum interval between successful completions of the BSTR Fire Awareness Module is **24 months**.

3.3 Certification

Training providers are responsible for issuing a certificate directly to the Delegate upon completing the training programme and to the sponsoring company (when required). Each certificate must indicate that the Delegate has been assessed according to the learning outcomes and must contain the following:

- (1) Training Provider's name
- (2) Full GWO course title stating that it is GWO approved
- (3) Delegate's name and date of birth
- (4) Course dates
- (5) Expiry date



(6) Training Provider's signature

3.4 Records

The training provider must keep a register of the Delegates who have completed the BSTR Fire Awareness Module.

Upon request from GWO or any of the members of GWO, the training provider must be able to verify the training and competence records of any specific Delegate by name for a minimum period of **5 years**.

3.5 Measures

The trainer keeps the control measure forms until completion/ evaluation of the BSTR Module. If a Delegate fails to meet the demands, they shall attend a new BSTR Fire Awareness Module or a BST Fire Awareness Module.

If a Delegate fails this BSTR Fire Awareness Module it is the Training Staff's decision, based on factual observations, to recommend the Delegate attends either a GWO BST First Aid or another BSTR Fire Awareness Module.

3.6 Control measures

Find Control Measures Form on next page.

Control Measures

Name: _____

Course: BSTR Fire Awareness Module

Date: _____

Training Provider: _____

Scenario Organisation	Violation of Assessment Measures			0-2 passed/ 3 failed	Instructor Remarks
Aware of personal and group safety at all times					
Organises and utilises correct equipment for given scenario					
Organises individuals and groups as required					
Scenario Management					
Establishes and maintains control of the exercise scenario at all times					
Fully participates in the exercise scenario					
Follows instructions when required					

Demonstrates correct and safe Manual Handling in exercise scenario					
Knowledge and Understanding					
Applies subject knowledge correctly in given scenario					
Demonstrates understanding of subject					
Total Marks 0-9 Pass 10-27 Fail					

Instructor: _____

<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL
--------------------------------------	--------------------------------------

The Practical Assessment Measures Form is a final evaluation tool for the instructors to assess Delegates during practical elements. It allows measurement of the number of violations in regard to safety, competency, or attitude. It can be used as a progressive evaluation tool to discuss the performance of a Delegate in guiding them to success and it also serves as supporting documentation when a Delegate fails the Module.



Document type:

Appendix 1 A

Number M.S.A.
Date 21-11-2013
Page 110 of 170

Title:

Medical Self-Assessment

Issued by:



Unrestricted

YOUR PERSONAL HEALTH IS YOUR OWN RESPONSIBILITY. YOUR TRAINING PROVIDER SHALL NOT BE HELD RESPONSIBLE FOR ANY ILLNESS WHATSOEVER DURING OR AFTER THE TRAINING.

This signed Medical Self-Assessment must be returned to the Training Provider's Representative/Responsible prior to the start of the training course.

Full name as stated in passport	Company
---------------------------------	---------

The following conditions could pose a risk, when you actively participate in GWO training
Asthma or other respiratory disorders
Epilepsy, blackouts or other fits
Angina or other heart complaints
Vertigo or inner ear problems (difficulty with balance)
Claustrophobia/Acrophobia (fear of enclosed area/height)
Blood pressure disorder
Diabetes
Pacemaker or implanted defibrillator
Arthritis, osteoarthritis or other muscular/ skeletal disorders affecting mobility
Known allergies (E.g. bee, wasps or spider stings / bites)
Recent surgery
Any other medical condition or medication dependency that could affect climbing or physical impact of climbing

I hereby confirm that I have read and understood the above listed risks and potentially life-threatening medical conditions and that I am physically and medically fit to participate in GWO Training.

I hereby confirm that there is no factor that will inhibit or affect my participation in GWO Training.

I agree to follow all instructions from the appointed Instructor for the duration of the GWO Training.

I hereby agree: should there be any doubt regarding my medical fitness, the training provider will stop the training and seek a physician's advice.

Signature _____ **Date** _____



**GLOBAL WIND ORGANISATION
STANDARD**

**Basic Safety Training Refresher (BSTR)
(Onshore/Offshore)**

WORKING AT HEIGHTS

**Version 2
21 November, 2013**

Foreword

The Global Wind Organisation (GWO) is an association of Wind Turbine owners and manufacturers with the aim of supporting an injury free work environment in the wind industry.

This Standard has been developed in response to the demand for recognisable Basic Safety Training (BST) in the industry. The development of this Standard has been prepared in co-operation between the members of GWO. This work is based on risk assessments and factual incident/accident statistics within the industry pertaining to the installation, service and maintenance of wind turbine generators.

The objective of this Standard is to develop common industry training and best practise Standards for health and safety as a vital and necessary way forward to reducing risks for personnel in the wind industry working on site and to reducing environmental risks across Europe and the globe.

This Standard describes the requirements for Basic Safety Training in the wind industry that are recommended by GWO. Where national legislation sets higher requirements for the training, the Training Provider shall incorporate these requirements in the training programme.

The GWO Basic Safety Training does not include any Technical Safety Training such as working with electricity, equipment with stored energy etc.. Additional training may be required due to company or country specific requirements.

GWO recommends a company specific Basic Safety Introduction and Technical Safety Training as additional training.

Editorial and approval

The final editorial and approval of this Standard has been conducted by the GWO Steering Committee.

Acknowledgement

The members of the Global Wind Organisation (GWO) recognise that training according to this Standard covers the requirements for Basic Safety Training for wind turbine technicians and personnel.

GWO members agree that everyone working on one of their properties (Wind Turbine Generators, sub stations, etc.) shall complete BST courses relevant for their assignments. All work shall be done in teams of at least 2 Competent Persons. Exemptions from the above can be made based on internal company rules thereby allowing untrained persons to work with Competent Personnel or to work on a specific task.

The holder of a GWO certificate is considered competent within Basic Safety in the wind industry and the members of GWO accept the holder of this certificate as possessing the required knowledge to stop an unsafe work situation.

Table of contents

FOREWORD.....	112
EDITORIAL AND APPROVAL	113
ACKNOWLEDGEMENT	113
LIST OF ABBREVIATIONS.....	116
INTRODUCTION.....	117
SECTION 1 - THE BSTR WORKING AT HEIGHTS MODULE	117
1.1 DURATION OF THE BSTR WORKING AT HEIGHTS MODULE	117
1.2 TARGET GROUP	118
1.3 DELEGATE PREREQUISITES FOR THE BSTR WORKING AT HEIGHTS MODULE.....	118
1.4 PHYSICAL DEMANDS OF THE BSTR WORKING AT HEIGHTS MODULE	118
1.5 AIMS AND OBJECTIVES OF THE BSTR WORKING AT HEIGHTS MODULE.....	119
1.6 LEARNING OUTCOMES OF THE BSTR WORKING AT HEIGHTS MODULE	119
<i>Lesson 1 Introduction.....</i>	<i>120</i>
<i>Lesson 2 Knowledge review</i>	<i>120</i>
<i>Lesson 3 Practical review exercises.....</i>	<i>120</i>
<i>Lesson 4 Theory</i>	<i>121</i>
<i>Lesson 5 Practical exercises, group.....</i>	<i>121</i>
<i>Lesson 6 Evaluation</i>	<i>122</i>
1.7 DELEGATE PERFORMANCE ASSESSMENT	122
BSTR WORKING AT HEIGHTS MODULE TIME TABLE.....	123
ELEMENTS, BSTR WORKING AT HEIGHTS MODULE	125
<i>Lesson 1 Introduction.....</i>	<i>125</i>
ELEMENT 1.1 Safety instructions and emergency procedures.....	125
ELEMENT 1.2 Facilities	125
ELEMENT 1.3 Introduction	125
ELEMENT 1.4 Scope and main objectives.....	125
ELEMENT 1.5 On-going assessments.....	126
ELEMENT 1.6 Motivation.....	126
<i>Lesson 2 Knowledge review</i>	<i>126</i>
ELEMENT 2.1 Knowledge of inspection of PFPE, rescue and evacuation device.....	126
ELEMENT 2.2 Knowledge of PFPE.....	126
ELEMENT 2.3 Knowledge of fall arrest systems and work positioning.....	126
ELEMENT 2.4 Knowledge of rescue and evacuation device	127
<i>Lesson 3 Practical review exercises.....</i>	<i>127</i>
ELEMENT 3.1 How to attach a guided type fall arrester	127
ELEMENT 3.2 How to attach the fall arrest lanyard correctly to the ladder system	127
ELEMENT 3.3 How to use work positioning lanyard in order to leave hands free for work.....	127

ELEMENT 3.4	Knowledge of certified and suitable anchor points.....	128
ELEMENT 3.5	Safe and correct use of a SRL for exercises.....	128
ELEMENT 3.6	Safe practises while working at height.....	128
Lesson 4	Theory	128
ELEMENT 4.1	Use of a SRL for exercises.....	128
ELEMENT 4.2	Safe and competent work and rescue at heights.....	128
ELEMENT 4.3	Correct fitting of a harness.....	128
ELEMENT 4.4	Attachment points	129
ELEMENT 4.5	Anchor points.....	129
ELEMENT 4.6	Loads and angles	129
ELEMENT 4.7	Falls	129
ELEMENT 4.8	Double versus twin fall arrest lanyard.....	129
ELEMENT 4.9	Rescue kit	129
Lesson 5	Practical exercises, group.....	130
ELEMENT 5.1	Safe and correct use of the personal fall protection equipment	130
ELEMENT 5.2	Accessing certified and suitable anchor points	130
ELEMENT 5.3	User inspections of the rescue and evacuation equipment	130
ELEMENT 5.4	Safe and correct use of rescue and evacuation equipment from ladder	130
ELEMENT 5.5	Safe and correct rescue and evacuation methods from an evacuation hatch	130
ELEMENT 5.6	Safe practises while working at heights	131
Lesson 6	Evaluation	131
ELEMENT 6.1	Summary.....	131
ELEMENT 6.2	Evaluation	131
ELEMENT 6.3	Certificates	131
SECTION 2 - RESOURCES FOR BSTR WORKING AT HEIGHTS.....		133
2.1	STAFF	133
2.2	TRAINER/DELEGATE RATIO	133
2.3	FACILITIES	134
2.4	THEORY TRAINING FACILITIES	134
2.5	PRACTICAL TRAINING FACILITIES	134
2.6	EQUIPMENT	134
SECTION 3 - ADMINISTRATION AND CERTIFICATION		137
3.1	DELEGATE PERFORMANCE ASSESSMENT	137
3.2	VALIDITY	137
3.3	CERTIFICATION	137
3.4	RECORDS.....	138
3.5	MEASURES.....	138
3.6	CONTROL MEASURES.....	138
CONTROL MEASURES		139

List of abbreviations

BST	Basic Safety Training
BWH	Basic Working at Height
BSTR	Basic Safety Training Refresher
GWO	Global Wind Organisation
PPE	Personal Protective Equipment
PFPE	Personal Fall Protective Equipment
WTG	Wind Turbine Generator
ANSI	American National Standards Institute
CSA	Canadian Standards Association
AS/NZS	Australia and New Zealand Standard
EN	European Standards
SRL	Self-Retractable Lifeline (SRL)

Introduction

Upon completion of the Global Wind Organisation (GWO) Basic Safety Training (BST) Delegates will possess an awareness of the hazards encountered when working within the wind industry and how to control and mitigate these hazards.

The BST will also equip participants with the knowledge, skills and confidence to appropriately respond in the event of an emergency and to increase their safety through proper use of Personal Protective Equipment (PPE), emergency equipment and procedures.

The approved GWO Basic Safety Training Refresher (BSTR) provides Delegates with, reviews and builds on a range of important skills and tools obtained during BST courses, which include Fire Awareness, First Aid, Working at Heights and Manual Handling. To enable Delegates to work in the offshore environment, an additional GWO Sea Survival training shall be completed.

Section 1 - The BSTR Working at Heights Module

1.1 Duration of the BSTR Working at Heights Module

The optimal total time for completing this BSTR Working at Heights Module is estimated to be **8 hours**, including meals and breaks.

This BSTR training shall focus on the access and egress conditions encountered in wind turbine environments. The practical skills shall be trained and demonstrated in a restricted area of movement and all elements of the course shall be covered by demonstration and practical exercises, where possible.

If this training is part of a programme of longer duration, the total contact time per day shall not exceed **8 hours** and the total training day shall not exceed **10 hours**. The total training day includes contact time, refreshment and meal breaks and travel between training sites, where applicable. It shall be ensured that everyone is given the opportunity to share their opinions and experiences, where possible.



Ensure that Delegates with prior experience share their experiences related to Working at Heights in a way that is constructive for the entire class.

1.2 Target group

Personnel working in the wind industry or related fields needing to refresh their GWO BST/ BSTR Working at Heights Module.

1.3 Delegate prerequisites for the BSTR Working at Heights Module

All personnel participating in Refresher Training shall be medically fit and capable of fully participating.

Training providers shall have a procedure that requires Delegates to sign a statement (see Appendix 1A, Suggestion for Medical Statement from GWO) stating that they are medically fit to participate in the safety training and that they do not suffer from any medical illness or are under influence of any narcotic substance or alcohol.

Delegates' signatures shall be collected prior to the start of the safety training course.

Furthermore, Delegates shall possess valid BST/ BSTR certificates for the relevant Modules prior to attending BSTR training.

1.4 Physical demands of the BSTR Working at Heights Module

BSTR Modules may potentially be physically demanding.

If there is any doubt regarding the medical fitness of any Delegate, the Training Provider shall stop training the Delegate and seek a physician's advice.

Note: Practical exercises shall be designed and delivered solely to meet this Standard and shall not place any physical or mental demands on the Delegates other than those required to meet this Standard.

1.5 Aims and objectives of the BSTR Working at Heights Module

The aim of this BSTR Working at Heights Module is to review and build on previously gained knowledge and skills through theoretical and practical training so that Delegates can administer safe and effective Working at Heights in the wind turbine industry/ WTG environment in accordance with GWO Refresher Working at Heights training.

This BSTR Working at Heights Module shall ensure that:

- (1) Delegates are able to demonstrate knowledge of hazards and risks associated with working at heights in a WTG.
- (2) Delegates are able to demonstrate correct identification of PPE, including identification of European/ Global Standard markings on harness, hard hats, lanyards and other PPE and PFPE.
- (3) Delegates are able to demonstrate the knowledge of and skills to correctly pre-use inspect, service, store and correct fitting of harnesses, fall arrest lanyards, work positioning lanyards and other PPE and PFPE.
- (4) Delegates are able to demonstrate correct use of the relevant PFPE, e.g. harnesses, fall arrest lanyards, guided type fall arresters and work positioning lanyards. These include correct identification of anchor points and correct ladder conduct.
- (5) Delegates are able to demonstrate correct use of evacuation devices.
- (6) Delegates are able to demonstrate how to approach rescue situations in WTGs and use rescue equipment efficiently.

1.6 Learning outcomes of the BSTR Working at Heights Module

The learning outcomes specified for this BSTR Working at Heights Module are:

Lesson 1 Introduction

15 min.

The aim of this lesson is to give the Delegates the needed awareness of the Refresher Course content and the facilities involved in order to ensure that all Delegates are aware of what to expect and what is expected of them during the course.

To successfully complete this BSTR Working at Heights Module, Delegates shall be aware of:

- (1) Safety instructions and emergency procedures
- (2) Facilities
- (3) Who the instructor and other Delegates are
- (4) Aims and primary learning objectives
- (5) On-going assessment according to GWO Control Measures
- (6) Motivation for this BSTR course

Note: The administrative part of the registration shall be completed before the course commences.

Lesson 2 Knowledge review

30 min.

The aim of the lesson is review and increase Delegates' knowledge of the following subjects.

To successfully complete this BSTR Module, Delegates shall be able to demonstrate:

- (1) Correct pre-use inspection and inspection of PFPE, rescue and evacuation devices
- (2) Knowledge of PFPE
- (3) Knowledge of Fall Arrest Systems and work positioning
- (4) Knowledge of various rescue and evacuation equipment

Lesson 3 Practical review exercises

60 min.

This lesson shall assess Delegates' knowledge, skills and competencies in Basic Height Rescue and emphasize the importance of being able to carry out a rescue at any time during training, as well as when working in WTGs on a daily basis.

To successfully complete this BSTR Module, Delegates shall be able to demonstrate:

- (1) How to attach a guided type fall arrester to the fall arrest system
- (2) How to correctly attach a fall arrest lanyard to the ladder system
- (3) How to use a work positioning lanyard in order to leave hands free for work
- (4) Knowledge of certified and suitable anchor points
- (5) Safe and correct use of a Self-Retractable Lifeline (SRL) for exercises
 - (a) Different types of Self-Retractable Lifeline (SRL) systems that exist and how they are used, what length they come in, and difference between wire - straps
 - (b) Different maximum angles that are allowed
 - (c) How to apply a Self-Retractable Lifeline (SRL) correctly to the harness, either to the attachment point (A - point) on the back or to the attachment point (A - point) in the front
 - (d) Different places a Self-Retractable Lifeline (SRL) is allowed to be secured
 - (e) Importance of using a Self-Retractable Lifeline (SRL)
 - (f) How to conduct a user inspection and see if a Self-Retractable Lifeline (SRL) is approved, possesses documentation and authorisation date

Lesson 4 Theory

60 min.

The aim of the lesson is to refresh the Delegates' knowledge about the following:

- (1) Use of backup systems for exercises
- (2) Safe and competent work and rescue at height
- (3) Correct fitting of a harness
- (4) Attachment points
- (5) Anchor points
- (6) Loads and angles
- (7) Falls
- (8) Double versus twin fall arrest lanyard
- (9) Rescue kit

Lesson 5 Practical exercises, group

225 min.

The aim of the lesson is to refresh the Delegates' knowledge and skills to be able to use the appropriate methods to control and reduce the risk of injuries when working and rescuing from heights.

To successfully complete this BSTR Module, Delegates must be able to demonstrate:

- (1) Safe & correct use of the PFPE
- (2) Accessing certified and suitable anchor points
- (3) User inspection of the rescue and evacuation equipment
- (4) Safe and correct use of rescue/ evacuation equipment from ladder
- (5) Safe and correct rescue and evacuation methods
- (6) Safe practises while working at heights

Lesson 6 Evaluation

30 min.

The aim of the lesson is to summarise the BSTR Module and give the Delegates the opportunity to conduct an open minded review of the training and the instructor.

To successfully complete this BSTR Module, Delegates must be able to demonstrate:

- (1) Active participation in the evaluation

1.7 Delegate performance assessment

Assessment of learning outcomes:

Delegates will be assessed according to the learning outcomes stated in Section 1.6 by means of direct observation and supplementary oral questions, where appropriate.

The formal evaluation of knowledge of above scenarios shall be in accordance with the Practical Assessment Measures in Section - 3 (Measures).

Training Providers shall have a documented procedure in place for dealing with Delegates not meeting the stated learning outcomes.

BSTR Working at Heights Module time table

The order in which the elements of this BSTR training Module are delivered may vary.

Lesson		Element		Approximate Duration
1	Introduction	1.1	Safety instructions and emergency procedures	
		1.2	Facilities	
		1.3	Introduction	
		1.4	Scope and main objectives	
		1.5	On-going assessment (Control Measures)	
		1.6	Motivation	
2	Knowledge review	2.1	Knowledge of inspection of PFPE, rescue and evacuation device	
		2.2	Knowledge of PFPE	
		2.3	Knowledge of fall arrest systems and work positioning	
		2.4	Knowledge of rescue and evacuation device	
3	Practical review exercises	3.1	How to attach a guided type fall arrester	
		3.2	How to attach the fall arrest lanyard correctly to the ladder system	
		3.3	How to use a work positioning lanyard in order to leave the hands free for work	
		3.4	Knowledge of certified and suitable anchor points	
		3.5	Safe and correct use of a Self-Retractable Lifeline (SRL) for exercises	
		3.6	Safe practices when working at heights	
4	Theory	4.1	Use of a SRL for exercises	
		4.2	Safe and competent work and rescue at heights	
		4.3	Correct fitting of a harness	
		4.4	Attachment points	
		4.5	Anchor points	
		4.6	Load and angles	
		4.7	Falls	
		4.8	Double versus twin fall arrest lanyard	
		4.9	Rescue Kit	

5	Practical exercises, group	5.1	Safe and correct use of personal fall protection equipment	
		5.2	Accessing suitable anchor points	
		5.3	User inspections of the rescue and evacuation equipment	
		5.4	Safe and correct use of rescue/ evacuation equipment from ladder	
		5.5	Safe and correct rescue and evacuation methods from an evacuation hatch	
		5.6	Safe practises while working at heights	
		TOTAL		
6	Evaluation	6.1	Summary	
		6.2	Evaluation	
		6.3	Certificates	
		TOTAL		
GRAND TOTAL				420 min.

Elements, BSTR Working at Heights Module

Lesson 1 Introduction

ELEMENT 1.1 Safety instructions and emergency procedures

Training Staff shall **explain**:

- 1.1.1 Safety instructions according to internal procedures
- 1.1.2 Emergency procedures and emergency exits in the areas where the Delegates can be expected to be located during the course

ELEMENT 1.2 Facilities

Training Staff shall **explain**:

- 1.2.1 General description of the on-site facilities
(Administration, dining area, restrooms, toilets, etc.)

ELEMENT 1.3 Introduction

Training Staff shall **give**:

- 1.3.1 A short introduction, including backgrounds as instructors

Delegates shall **give**:

- 1.3.2 A short introduction including job function and expected primary geographic work location

Training Staff shall **explain**:

- 1.3.3 The programme of the BSTR Module, including time for breaks and meals

ELEMENT 1.4 Scope and main objectives

Training Staff shall **explain**:

- 1.4.1 Scope and main objectives of this BSTR Module

ELEMENT 1.5 On-going assessments

Training Staff shall **explain**:

- 1.5.1 The reasons for the on-going assessment
- 1.5.2 GWO Control Measures and their use

ELEMENT 1.6 Motivation

Training Staff shall **explain**:

- 1.6.1 The importance of personal involvement in the course
- 1.6.2 The definition and need for correct working at heights

Lesson 2 Knowledge review

Training Staff shall ensure that knowledge gaps in Lesson 2 are covered either in Lessons 2, 3 or 4.

ELEMENT 2.1 Knowledge of inspection of PFPE, rescue and evacuation device

Delegates shall **explain and demonstrate**:

- 2.1.1 How to inspect PFPE
- 2.1.2 Requirements for certification of PFPE

ELEMENT 2.2 Knowledge of PFPE

Delegates shall **explain**:

- 2.2.1 When to use PFPE
- 2.2.2 Legislative requirements
- 2.2.3 Legal responsibilities

ELEMENT 2.3 Knowledge of fall arrest systems and work positioning

Delegates shall **explain and demonstrate**:



- 2.3.1 When to use Fall Arrest systems
- 2.3.2 Legislative requirements, inspection
- 2.3.3 Compliance of rail/ wire systems
- 2.3.4 How to achieve a good work positioning

ELEMENT 2.4 Knowledge of rescue and evacuation devices

Delegates shall **explain**:

- 2.4.1 When to use rescue and evacuation devices
- 2.4.2 Legislative requirements
- 2.4.3 Requirements for inspection/ certification (vacuum packed/ not vacuum packed)

Lesson 3 Practical review exercises

Training Staff shall ensure that knowledge gaps in Lesson 3 are covered in Lessons 3 or 4.

ELEMENT 3.1 How to attach a guided type fall arrester

Delegates shall **practise and demonstrate**:

- 3.1.1 Correct choice of equipment
- 3.1.2 Correct attachment to rail or wire
- 3.1.3 Correct attachment to harness

ELEMENT 3.2 How to attach the fall arrest lanyard correctly to the ladder system

Delegates shall **practise and demonstrate**:

- 3.2.1 How to attach the fall arrest lanyard to the ladder system in a safe way
- 3.2.2 Correct attachment to harness

ELEMENT 3.3 How to use work positioning lanyard in order to leave hands free for work

Delegates shall **practise and demonstrate**:

- 3.3.1 How to use the work positioning lanyard
- 3.3.2 Work with free hands, safely and securely

ELEMENT 3.4 Knowledge of certified and suitable anchor points

Delegates shall practise and demonstrate:

- 3.4.1 Use of certified anchor points
- 3.4.2 Use of suitable anchor points

ELEMENT 3.5 Safe and correct use of a SRL for exercises

Delegates shall be able to **demonstrate**:

- 3.5.1 Safe and correct use of a SRL

ELEMENT 3.6 Safe practises while working at height

Delegates shall be able to **demonstrate**:

- 3.6.1 Safe conduct and attitude while working at height

Lesson 4 Theory

Training Staff shall use the practical review lesson as a basis for this lesson.

ELEMENT 4.1 Use of a SRL for exercises

Training Staff shall **explain and demonstrate**:

- 4.1.1 Use of a SRL

ELEMENT 4.2 Safe and competent work and rescue at heights

Training Staff shall **explain and demonstrate**:

- 4.2.1 How to keep oneself and others safe during work and rescue situations

ELEMENT 4.3 Correct fitting of a harness

Training Staff shall **explain and demonstrate**:

- 4.3.1 Correct fitting of a harness

ELEMENT 4.4 Attachment points

Training Staff shall **explain and demonstrate**:

- 4.4.1 Correct use of attachment points
- 4.4.2 Difference between an anchor point and attachment point (approved/ non-approved)

ELEMENT 4.5 Anchor points

Training Staff shall **explain and demonstrate**:

- 4.5.1 How to recognize anchor points
- 4.5.2 Requirements for anchor points

ELEMENT 4.6 Loads and angles

Training Staff shall **explain and demonstrate**:

- 4.6.1 The difference between a static and dynamic load
- 4.6.2 How angles can influence the strength of e.g. a sling

ELEMENT 4.7 Falls

Training Staff shall **explain and demonstrate**:

- 4.7.1 Fall indicators on equipment
- 4.7.2 How different situations can influence the approach to the rescue, injuries/ no injuries
- 4.7.3 The risk of Suspension Traumas

ELEMENT 4.8 Double versus twin fall arrest lanyard

Training Staff shall **explain and demonstrate**:

- 4.8.1 The difference between a double and twin fall arrest lanyard
- 4.8.2 How to use double fall arrest lanyard
- 4.8.3 How to use twin fall arrest lanyard

ELEMENT 4.9 Rescue kit

Training Staff shall **explain and demonstrate**:

- 4.9.1 The content of rescue and evacuation kits

4.9.2 How to pre-use inspect rescue and evacuation kits

Lesson 5 Practical exercises, group

ELEMENT 5.1 Safe and correct use of the personal fall protection equipment

Delegates shall be able to **demonstrate**:

5.1.1 Safe and correct use of the personal fall protection equipment, including a SRL
(1) In a wind turbine environment

ELEMENT 5.2 Accessing certified and suitable anchor points

Delegates shall be able to **demonstrate**:

5.2.1 Correct use of certified and suitable anchor points

ELEMENT 5.3 User inspections of the rescue and evacuation equipment

Delegates shall be able to **demonstrate**:

5.3.1 How to inspect the rescue and evacuation devices

ELEMENT 5.4 Safe and correct use of rescue and evacuation equipment from ladder

Delegates shall be able to **demonstrate**:

5.4.1 How to perform safe basic rescue and evacuation

ELEMENT 5.5 Safe and correct rescue and evacuation methods from an evacuation hatch

Delegates shall be able to **demonstrate**:

5.5.1 How to perform safe basic rescue* and evacuation

***The height shall be a minimum of 6.75 m**

ELEMENT 5.6 Safe practises while working at heights

Delegates shall be able to **demonstrate**:

5.6.1 Safe conduct and attitude while working at heights

Notes:

- (1) An Instructor shall be at the height chosen to descend from
- (2) Instructor(s) and Delegates shall be secured to an anchor point while waiting to descend. This can be achieved by correct use of the fall arrest lanyard
- (3) When Delegates are demonstrating the evacuation, a safety line that is connected to the Delegate's harness shall be used. This will be set up and controlled by the Instructor and be secured to a different anchor point than the evacuation device
- (4) Although not a requirement of the Standard, Delegates may repeat the evacuation exercises should sufficient time be available

Lesson 6 Evaluation

ELEMENT 6.1 Summary

Training Staff shall:

6.1.1 Summarise the BSTR Module and give the Delegates final feedback

ELEMENT 6.2 Evaluation

Delegates shall:

6.2.1 Conduct a written evaluation

Training Staff shall:

6.2.2 Give necessary feedback on the written evaluations

ELEMENT 6.3 Certificates

Training Staff shall:

- 6.3.1 Hand out certificates and ensure that all Delegates are registered with the correct personal information on the certificate

Lesson 6 Notes:

The course is summarised and ended. At the end of the course the participants are asked to share their new knowledge, and to spread on the “GWO-rescue-spirit” to their colleagues.

Another purpose is to allow participants to both orally and in written form evaluate their teacher/ teachers and the content of the course. Finally the certificates are handed out.

Section 2 - Resources for BSTR Working at Heights

The Training Provider shall ensure that staff, facilities and equipment are in place to support the training of the Delegates.

2.1 Staff

Training Staff shall possess appropriate qualifications and experience to ensure that all training and supportive activities are carried out in accordance with current legislation.

Training Staff shall be:

- (1) Trained in instructional/ lecture techniques and/ or have documented instructional/ teaching experience.
- (2) Included in an on-going training programme, which includes visits to onshore and/ or offshore WTGs (tower, nacelle, hub) prior to instructing BSTR Modules, to enable them to maintain and update skills related to the BSTR Modules they instruct.

A person with First Aid qualifications shall be present during all practical training.

All staff shall possess the appropriate competencies to conduct/ assist the elements of training they have been assigned to.

2.2 Trainer/Delegate Ratio

- (1) The ratio shown for theory sessions indicates the maximum number of Delegates attending the course.
- (2) Other ratios indicate the maximum number of Delegates to be supervised by an instructor during each activity.

Module	Session	Trainer - Delegate Ratio
BSTR Working at Heights Module	Theory	1:12
	Practical	1:4

2.3 Facilities

The full range of facilities shall be available during the training. The following facilities criteria shall be adhered to.

2.4 Theory training facilities

Facilities shall be designed to enable each Delegate to see, hear and fully participate in the taught subject matter.

2.5 Practical training facilities

Shall be designed to enable each Delegate to individually and/ or as part of a team, see, hear and practise the taught material.

Note:

All facilities shall be maintained and where appropriate, inspected and tested in accordance with current national legislation and manufacturers' recommendations.

Risk assessments shall be conducted and documented for all training facilities.

The Training Provider shall hold the required permits to operate the facilities.

2.6 Equipment

The following equipment is required to meet the needs of the training BSTR Working at Heights Module.

Equipment norms must be in accordance with the legislative requirements of their geographic location.

Europe

(1) Harness, according to:

- EN361:2002 (Personal protective equipment against falls from a height - Full body harnesses)
- EN358:2000 (Personal protective equipment for work positioning and prevention of falls from a height - Belts for work positioning and restraint and work positioning lanyards)

- EN 813:2008 (Personal fall protection equipment - Sit harnesses)

(2) Work restraint lanyards, according to:

- EN358:2000 (Personal protective equipment for work positioning and prevention of falls from a height - Belts for work positioning and restraint and work positioning lanyards)

(3) Fall arrest, according to:

- EN355:2002 (Personal protective equipment against falls from a height - Energy absorbers)

(4) Helmets, according to:

- EN397 + A1:2012 (Industrial safety helmets)

(5) Vertical fall arrest system, according to:

- PrEN353-1:2012 (Personal fall protection equipment - Guided type fall arresters including an anchor line - Part 1: Guided type fall arresters including a rigid anchor line)
- Additional approval according to VG11 report CNB/P/11.073*
*Today there are no approved standards ensuring compliance with the PPE Directive, since prEN353-1 is not an approved standard and is not expected to be approved before 2015/16 during this transition period tests outlined by VG11 in report CNB/P/11.073 is the base for the Notified Bodies approval. With the new 2012 version of prEN353:2012, new test could be necessary.

(6) Vertical fall arrest system, according to:

- EN353-2:2002 (Personal protective equipment against falls from height - Part 2: Guided type fall arresters, including flexible anchor lines)
- EN1891:1998 (Personal protective equipment for the prevention of falls from height - Low stretch kern mantel ropes), or
- EN892:2012 (Mountaineering equipment - Dynamic mountaineering ropes - Safety requirements and test methods)

(7) Self-Retractable Lifeline (SRL), according to:

- EN360:2002 (Personal protective equipment against falls from a height - Retractable type fall arresters)

(8) Anchor points, according to:

- EN795:2012 (Personal fall protection equipment - Anchor devices)

(9) Slings, according to:

- EN566:2007 (Mountaineering equipment - Slings - Safety requirements and test methods)

*This European Standard specifies safety requirements and test methods for slings used for mountaineering including climbing, (slings are used as anchor points and since there are no industrial standard for slings, they must comply with the requirements in EN795:2012 type B, anchor devices)

(10) Karabiner with mandatory automatic locking system, according to:

- EN362:2005 (Personal protective equipment against falls from a height – Connectors)

(11) Evacuation/ Rescue devices, according to:

- EN 341:2011 (Personal fall protection equipment - Descending devices for rescue)
- EN1496:2006 (Personal fall protection equipment - Rescue lifting devices)

(12) Aluminium ladders, according to:

- EN131-2:2011 (Ladders - part2: Requirements, testing, marking)
- EN14122-4:2004 (Safety of Machinery - Permanent means of access to machinery part 4: fixed ladders)

In order to comply with national legislation and Standards, the equipment supplied and used by staff and Delegates shall follow the appropriate guidelines, e. g.:

Europe - EN	UK - BS
USA - ANSI	Canada - CSA
Australia and New Zealand - AS/NZS	Asia - ANSI / EN

Note: All equipment shall be maintained and where appropriate, inspected and tested in accordance with current national Standards/legislation and manufacturers' recommendations.

Section 3 - Administration and certification

3.1 Delegate performance assessment

Delegates shall be assessed according to the learning outcomes by means of direct observation and oral and/ or written questions, where appropriate.

Training Providers shall have a documented procedure in place for dealing with Delegates not meeting the stated learning outcomes.

3.2 Validity

The maximum interval between successful completions of the BSTR Working at Heights Module is **24 months**.

3.3 Certification

Training Providers are responsible for issuing a certificate directly to the Delegate upon completion of the training programme and to the sponsoring company when required. Each certificate shall indicate that the Delegate has been assessed according to the learning outcomes and shall contain the following:

- (1) Training Provider's name
- (2) Full GWO course title stating that it is GWO approved
- (3) Delegate's name
- (4) Type of equipment used in course and maximum training height
- (5) Course dates
- (6) Expiry date
- (7) Training Provider's signature

Note: This course is not designed to test the Delegate's capability and aptitude for working at heights. However, a climb to a higher height than the minimum height stated in this Standard can be an indicator of the Delegate's capability and aptitude to work at heights. The maximum height used during the training must be stated on the certificate.

3.4 Records

The Training Provider shall keep a record of the Delegates that have completed the BSTR Working at Heights Module for a minimum period of **5 years**.

Upon request from GWO or any of the members of GWO, the Training Provider shall be able to verify the training and competence records of any Delegate by name.

3.5 Measures

The Trainer keeps the Control Measures Forms until the completion/ evaluation of this BSTR Module. If a Delegate fails to meet the demands, they shall attend a new BSTR Working at Heights Module or a BST Working at Heights Module.

If a Delegate fails this BSTR Working at Heights Module it is the Training Staff's decision, based on factual observations, to recommend the Delegate attends either a BST Working at Heights or a BSTR Working at Heights Module.

3.6 Control Measures

Please find the Control Measures Form on next page.

Control Measures

Name: _____

Course: BSTR Working at Heights Module

Date: _____

Training Provider: _____

Scenario Organisation	Violation of Assessment Measures			0-2 passed/ 3 failed	Instructor Remarks
Aware of personal and group safety at all times					
Organises and utilises correct equipment for given scenario					
Organises individuals and groups as required					
Scenario Management					
Establishes and maintains control of the exercise scenario at all times					
Fully participates in the exercise scenario					
Follows instructions when required					

Demonstrates correct and safe Manual Handling in exercise scenario					
Knowledge and Understanding					
Applies subject knowledge correctly in given scenario					
Demonstrates understanding of subject					
Total Marks 0-9 Pass 10-27 Fail					

Instructor: _____

<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL
--------------------------------------	--------------------------------------

The Practical Assessment Measures Form is a final evaluation tool for the instructors to assess Delegates during practical elements. It allows measurement of the number of violations in regard to safety, competency, or attitude. It can be used as a progressive evaluation tool to discuss the performance of a Delegate in guiding them to success and it also serves as supporting documentation when a Delegate fails the Module.



Document type:

Appendix 1 A

Number M.S.A.
Date 21-11-2013
Page 141 of 170

Title:

Medical Self-Assessment

Issued by:



Unrestricted

YOUR PERSONAL HEALTH IS YOUR OWN RESPONSIBILITY. YOUR TRAINING PROVIDER SHALL NOT BE HELD RESPONSIBLE FOR ANY ILLNESS WHATSOEVER DURING OR AFTER THE TRAINING.

This signed Medical Self-Assessment must be returned to the Training Provider's Representative/Responsible prior to the start of the training course.

Full name as stated in passport	Company
---------------------------------	---------

The following conditions could pose a risk, when you actively participate in GWO training
Asthma or other respiratory disorders
Epilepsy, blackouts or other fits
Angina or other heart complaints
Vertigo or inner ear problems (difficulty with balance)
Claustrophobia/Acrophobia (fear of enclosed area/height)
Blood pressure disorder
Diabetes
Pacemaker or implanted defibrillator
Arthritis, osteoarthritis or other muscular/ skeletal disorders affecting mobility
Known allergies (E.g. bee, wasps or spider stings / bites)
Recent surgery
Any other medical condition or medication dependency that could affect climbing or physical impact of climbing

I hereby confirm that I have read and understood the above listed risks and potentially life-threatening medical conditions and that I am physically and medically fit to participate in GWO Training.

I hereby confirm that there is no factor that will inhibit or affect my participation in GWO Training.

I agree to follow all instructions from the appointed Instructor for the duration of the GWO Training.

I hereby agree: should there be any doubt regarding my medical fitness, the training provider will stop the training and seek a physician's advice.

Signature _____ **Date** _____



**GLOBAL WIND ORGANISATION
STANDARD**

**Basic Safety Training Refresher (BSTR)
(Offshore)**

Sea Survival

**Version 2
21 November, 2013**

Foreword

The Global Wind Organisation (GWO) is an association of Wind Turbine owners and manufacturers with the aim of supporting an injury free work environment in the wind industry.

This Standard has been developed in response to the demand for recognisable Basic Safety Training (BST) in the industry. The development of this Standard has been prepared in co-operation between the members of GWO. This work is based on risk assessments and factual incident/accident statistics within the industry pertaining to the installation, service and maintenance of wind turbine generators.

The objective of this Standard is to develop common industry training and best practise Standards for health and safety as a vital and necessary way forward to reducing risks for personnel in the wind industry working on site and to reducing environmental risks across Europe and the globe.

This Standard describes the requirements for Basic Safety Training in the wind industry that are recommended by GWO. Where national legislation sets higher requirements for the training, the Training Provider shall incorporate these requirements in the training programme.

The GWO Basic Safety Training does not include any Technical Safety Training such as working with electricity, equipment with stored energy etc.. Additional training may be required due to company or country specific requirements.

GWO recommends a company specific Basic Safety Introduction and Technical Safety Training as additional training.

Editorial and approval

The final editorial and approval of this Standard has been conducted by the GWO Steering Committee.

Acknowledgement

The members of the Global Wind Organisation (GWO) recognise that training according to this Standard covers the requirements for Basic Safety Training for wind turbine technicians and personnel.

GWO members agree that everyone working on one of their properties (Wind Turbine Generators, sub stations, etc.) shall complete Basic Safety Training courses relevant for their assignments. All work shall be done in teams of at least 2 Competent Persons. Exemptions from the above can be made based on internal company rules, thereby allowing untrained persons to work with Competent Personnel or to work on a specific task.

The holder of a GWO certificate is considered competent within Basic Safety in the wind industry and the members of GWO accept the holder of this certificate as possessing the required knowledge to stop an unsafe work situation.

Table of contents

FOREWORD.....	143
EDITORIAL AND APPROVAL	144
ACKNOWLEDGEMENT	144
TABLE OF CONTENTS	145
LIST OF ABBREVIATIONS.....	147
INTRODUCTION.....	148
SECTION 1 - THE BSTR SEA SURVIVAL MODULE	148
1.1 DURATION OF THE BSTR SEA SURVIVAL MODULE.....	148
1.2 TARGET GROUP	149
1.3 DELEGATE PREREQUISITES FOR THE BSTR SEA SURVIVAL MODULE	149
1.4 PHYSICAL DEMANDS OF THE BSTR SEA SURVIVAL MODULE	149
1.5 AIMS AND OBJECTIVES OF THE BSTR SEA SURVIVAL MODULE	150
1.6 LEARNING OUTCOMES OF THE BSTR SEA SURVIVAL MODULE.....	150
<i>Lesson 1 Introduction.....</i>	<i>151</i>
<i>Lesson 2 Life Saving Appliances and PPE.....</i>	<i>151</i>
<i>Lesson 3 Exposure, hypothermia and drowning</i>	<i>151</i>
<i>Lesson 4 Sea survival exercises</i>	<i>152</i>
<i>Lesson 5 Transfer exercises.....</i>	<i>152</i>
<i>Lesson 6 Evaluation</i>	<i>153</i>
1.7 DELEGATE PERFORMANCE ASSESSMENT.....	153
BSTR SEA SURVIVAL MODULE TIME TABLE.....	154
1.9 ELEMENTS, BSTR SEA SURVIVAL MODULE	155
<i>Lesson 1 Introduction.....</i>	<i>155</i>
ELEMENT 1.1 Safety instructions and emergency procedures.....	155
ELEMENT 1.2 Facilities	155
ELEMENT 1.3 Introduction	155
ELEMENT 1.4 Scope and main objectives.....	155
ELEMENT 1.5 On-going assessments.....	156
ELEMENT 1.6 Motivation	156
<i>Lesson 2 Personal Life Saving Appliances and PPE</i>	<i>156</i>
ELEMENT 2.1 Personal LSA and PPE.....	156
<i>Lesson 3 Exposure, hypothermia and drowning</i>	<i>156</i>
ELEMENT 3.1 Exposure	156
ELEMENT 3.2 Hypothermia	157
ELEMENT 3.3 Drowning.....	157
<i>Lesson 4 Sea Survival Exercises.....</i>	<i>157</i>

ELEMENT 4.1	Sea survival techniques	157
ELEMENT 4.2	Emergency descent	157
ELEMENT 4.3	Life raft	158
ELEMENT 4.4	Helicopter rescue from water	159
ELEMENT 4.5	Summary by exercise	159
<i>Lesson 5</i>	<i>Transfer exercises</i>	<i>160</i>
ELEMENT 5.1	Dock to vessel	160
ELEMENT 5.2	Vessel to WTG	160
ELEMENT 5.3	Vessel to vessel	161
ELEMENT 5.4	Man over board	161
<i>Lesson 6</i>	<i>Evaluation</i>	<i>161</i>
ELEMENT 6.1	Summary	161
ELEMENT 6.2	Evaluation	161
ELEMENT 6.3	Certificates	162
SECTION 2 - RESOURCES FOR BSTR SEA SURVIVAL		163
2.1	STAFF	163
2.2	TRAINER/DELEGATE RATIO	163
2.3	FACILITIES	164
2.4	THEORY TRAINING FACILITIES	164
2.5	PRACTICAL TRAINING FACILITIES	164
2.6	EQUIPMENT	164
SECTION 3 - ADMINISTRATION AND CERTIFICATION		165
3.1	DELEGATE PERFORMANCE ASSESSMENT	165
3.2	VALIDITY	165
3.3	CERTIFICATION	165
3.4	RECORDS	166
3.5	MEASURES	166
3.6	CONTROL MEASURES	166
CONTROL MEASURES		167

List of abbreviations

BST	Basic Safety Training
BSTR	Basic Safety Training Refresher
GWO	Global Wind Organisation
H.E.L.P.	Heat Escape Lessening Posture
LSA	Life Saving Appliances
MOB	Man Over Board
PPE	Personal Protective Equipment
PFPE	Personal Fall Protective Equipment
SAR	Search and Rescue
SRL	Self-Retractable Lifeline
WTG	Wind Turbine Generator

Introduction

Upon completion of the Global Wind Organisation (GWO) Basic Safety Training (BST) Delegates will possess an awareness of the hazards encountered when working within the wind industry and how to control and mitigate these hazards.

The BST will also equip participants with the knowledge, skills and confidence to appropriately respond in the event of an emergency and to increase their safety through proper use of Personal Protective Equipment (PPE), emergency equipment and procedures.

The approved GWO Basic Safety Training Refresher (BSTR) provides Delegates with, reviews and builds on a range of important skills and tools obtained during BST courses, which include Fire Awareness, First Aid, Working at Heights and Manual Handling. To enable Delegates to work in the offshore environment, an additional GWO Sea Survival training shall be completed.

Section 1 - The BSTR Sea Survival Module

1.1 Duration of the BSTR Sea Survival Module

The optimal total time for completing this BSTR Sea Survival Module is estimated to be **8 hours**, including meals and breaks.

This BSTR training shall focus on the access and egress conditions encountered in wind turbine environments. The practical skills shall be trained and demonstrated in a restricted area of movement and all elements of the course shall be covered by demonstration and practical exercises, where possible.

If this training is part of a programme of longer duration, the total contact time per day shall not exceed **8 hours** and the total training day shall not exceed **10 hours**. The total training day includes contact time, refreshment and meal breaks and travel between training sites where applicable. It shall be ensured that everyone is given the opportunity to share their opinions and experiences, where possible.

Ensure that Delegates with prior experience share their experiences related to Sea Survival in a way that is constructive for the entire class.



1.2 Target group

Personnel working offshore in the wind industry or related fields needing to refresh their GWO BST/ BSTR Sea Survival Module.

1.3 Delegate prerequisites for the BSTR Sea Survival Module

All personnel participating in Refresher Training shall be medically fit and capable of fully participating.

Training providers shall have a procedure that requires Delegates to sign a statement (see Appendix 1A, Suggestion for Medical Statement from GWO) stating that they are medically fit to participate in the safety training and that they do not suffer from any medical illness or are under influence of any narcotic substance or alcohol.

Delegates' signatures shall be collected prior to the start of the safety training course.

Furthermore, Delegates shall possess valid BST/ BSTR certificates for the relevant Modules prior to attending BSTR training.

1.4 Physical demands of the BSTR Sea Survival Module

BSTR Modules may potentially be physically demanding.

If there is any doubt regarding the medical fitness of any Delegate, the Training Provider shall stop training the Delegate and seek a physician's advice.

Note: Practical exercises shall be designed and delivered solely to meet this Standard and shall not place any physical or mental demands on the Delegates other than those required to meet this Standard.

1.5 Aims and objectives of the BSTR Sea Survival Module

This BSTR Sea Survival Module is to review and build on previously gained knowledge and skills through open questions and practical training. Delegates shall be able to act safely and take the correct preventive actions in all aspects of offshore operations from shore to installation vessel or WTG, and vice versa, both during normal operation and in an emergency in an offshore wind turbine environment.

This BSTR Sea Survival Module shall ensure that:

- (1) The Delegates are able to demonstrate knowledge of dangers and symptoms related to hypothermia and drowning.
- (2) Delegates are able to demonstrate understanding of the advantages and limitations of the different Life Saving Appliances (LSA), Personal Protective Equipment (PPE) and Personal Fall Protection Equipment (PFPE) commonly used offshore in the wind energy industry and are able to don and use them accordingly.
- (3) Delegates are able to demonstrate safe transfer from vessel to dock, vessel to foundation and vessel to vessel.
- (4) Delegates are able to demonstrate knowledge of the emergency and safety procedures on installations, vessels and WTGs.
- (5) Delegates are able to demonstrate recovery and First Aid treatment of a “man over board”.
- (6) Delegates are able to demonstrate evacuation from the mock WTG to the water by using a rescue device.
- (7) Delegates are able to demonstrate individual and collective survival techniques at sea.

1.6 Learning outcomes of the BSTR Sea Survival Module

The learning outcomes specified for the BSTR Sea Survival Module are:

Lesson 1 Introduction

15 min.

The aim of this lesson is to give the Delegates the needed awareness of the Refresher Course content and the facilities involved in order to ensure that all Delegates are aware of what to expect and what is expected of them during the course.

To successfully complete this BSTR First Aid Module, Delegates shall be aware of:

- (1) Safety instructions and emergency procedures
- (2) Facilities
- (3) Who the instructor and other Delegates are
- (4) Aims and primary learning objectives
- (5) On-going assessment according to GWO Control Measures
- (6) Motivation for this BSTR course

Note: The administrative part of the registration shall be completed before the course commences.

Lesson 2 Life Saving Appliances and PPE

10 min.

The aim of this lesson is to refresh and increase Delegates' previously acquired knowledge of recognizing the advantages and limitations of personal LSA and PPE. To successfully complete this BSTR Module, Delegates shall demonstrate:

- (1) Knowledge of advantages and limitations of personal LSA and PPE related to the industry

Lesson 3 Exposure, hypothermia and drowning

10 min.

The aims of this lesson are to refresh and increase Delegates' previously acquired knowledge of the importance of correct clothing and conduct related to the various elements the human body is exposed to when working in an offshore wind environment, as well as detect and treat the various stages of hypothermia and drowning.

To successfully complete this BSTR Module, Delegates shall:



Global Wind Organisation

- (1) Demonstrate understanding of the human body's reaction to the exposure to different offshore environments and which precautions to take
- (2) Demonstrate understanding of how to detect symptoms of drowning, including correct First Aid procedures
- (3) Demonstrate how to detect the symptoms of hypothermia at the various stages, including the correct First Aid procedures for each stage

Lesson 4 Sea survival exercises

165 min.

The aim of this lesson is to refresh and increase Delegates' previously acquired knowledge of the skills needed to enhance the chance of survival in an emergency at sea.

To successfully complete this BSTR Module, Delegates shall:

- (1) Demonstrate correct donning and use of LSA and PPE and by doing so, be able to perform an effective buddy check
- (2) Demonstrate safe evacuation from a mock WTG by descending into the water
- (3) Demonstrate the various techniques to enhance the individual and collective chances of survival and evacuation
- (4) Demonstrate the correct use of a life raft in order to enhance the chances of survival in an emergency at sea
- (5) Demonstrate correct behaviour related to own rescue from water to helicopter, without assistance from helicopter rescue swimmer
- (6) Demonstrate the needed skills to survive a given emergency at sea, both by own means and in cooperation with others

Lesson 5 Transfer exercises

190 min.

The aim of this lesson is to refresh and enhance Delegates' previously acquired knowledge of and skills to recognize the hazards during transfer and take the correct preventive measures into account by following procedures and using the personal LSA and PPE in a correct and safe manner.

To successfully complete this BSTR Module, Delegates shall:

- (1) Demonstrate safe transfer of oneself and equipment from dock to vessel
- (2) Demonstrate safe transfer of oneself and equipment from vessel to mock WTG and back
- (3) Demonstrate safe transfer from vessel to vessel while vessels are moving forward
- (4) Demonstrate skills to act accordingly in case of falling over board
 - (a) Demonstrate skills to assist in the recovery of others

Lesson 6 Evaluation

15 min.

The aim of this lesson is to summarise this BSTR Module and give the Delegates the opportunity to conduct an open minded review of the training and the instructor.

To successfully complete this BSTR Module, Delegates shall be able to demonstrate:

- (1) Active participation in the evaluation

1.7 Delegate Performance Assessment

Assessment of learning outcomes:

Delegates will be assessed according to the learning outcomes stated in Section 1.6 by means of direct observation and supplementary oral questions, where appropriate.

The formal evaluation of knowledge of above scenarios shall be in accordance with the Practical Assessment Measures in Section - 3 (Measures).

Training Providers shall have a documented procedure in place for dealing with Delegates not meeting the stated learning outcomes.

BSTR Sea Survival Module time table

The order in which the elements of this BSTR training Module are delivered may vary.

Lesson		Element		Approximate Duration
1	Introduction	1.1	Safety instructions and emergency procedures	
		1.2	Facilities	
		1.3	Introduction	
		1.4	Aims and main learning objectives	
		1.5	On-going assessment (Control Measures)	
		1.6	Motivation	
2	Personal Life Saving Appliances and PPE	2.1	Personal LSA and PPE	
		TOTAL		
3	Exposure, hypothermia and drowning	3.1	Exposure	
		3.2	Hypothermia	
		3.3	Drowning	
		TOTAL		
4	Sea survival exercises	4.1	Sea survival techniques	
		4.2	Emergency descent	
		4.3	Life raft	
		4.4	Helicopter rescue from water	
		4.5	Summary by exercise	
		TOTAL		
5	Transfer exercises	5.1	Dock to vessel	
		5.2	Vessel To WTG	
		5.3	Vessel to vessel	
		5.4	Man over board	
		TOTAL		
6	Evaluation	6.1	Summary	
		6.2	Evaluation	
		6.3	Certificates	
		TOTAL		
			GRAND TOTAL	405 min.

1.9 Elements, BSTR Sea Survival Module

Lesson 1 Introduction

ELEMENT 1.1 Safety instructions and emergency procedures

Training Staff shall **explain**:

- 1.1.1 Safety instructions according to internal procedures
- 1.1.2 Emergency procedures and emergency exits for the areas the Delegates will be located during the course

ELEMENT 1.2 Facilities

Training Staff shall **explain**:

- 1.2.1 General description of the facilities at the training location
(Administration, dining area, restrooms, toilets, etc.)

ELEMENT 1.3 Introduction

Training Staff shall **give**:

- 1.3.1 A short introduction, including their backgrounds as instructors

Delegates shall **give**:

- 1.3.2 A short introduction, including job function and expected primary geographic work location

Training Staff shall **explain**:

- 1.3.3 The programme of the Refresher Module including breaks and meal times

ELEMENT 1.4 Scope and main objectives

Training Staff shall **explain**:

- 1.4.1 Scope and main objectives of this BSTR Module

ELEMENT 1.5 On-going assessments

Training Staff shall **explain**:

- 1.5.1 The reasons for the on-going assessment
- 1.5.2 GWO Control Measures and their use

ELEMENT 1.6 Motivation

Training Staff shall **explain**:

- 1.6.1 The importance of personal involvement in the course
- 1.6.2 The importance of refreshing and building on previously acquired understanding, knowledge and skills

Lesson 2 Personal Life Saving Appliances and PPE

ELEMENT 2.1 Personal LSA and PPE

Delegates shall **explain & demonstrate**:

- 2.1.1 Advantages and limitations of the different personal LSA and PPE
- 2.1.2 The correct use of the different personal LSA and PPE
- 2.1.3 Correct maintenance and storage of personal LSA and PPE
- 2.1.4 Correct buddy check

Training Staff shall **explain & demonstrate**:

- 2.1.5 The right explanation, answers and missing information, as needed

Lesson 3 Exposure, hypothermia and drowning

ELEMENT 3.1 Exposure

Delegates shall **explain**:

- 3.1.1 Different elements one can be exposed to and precautionary measures

Training Staff shall **explain**:

- 3.1.2 The right explanation, answers and missing information, as needed

ELEMENT 3.2 Hypothermia

Delegates shall **explain and demonstrate**:

- 3.2.1 The various stages of hypothermia, the symptoms and the correct First Aid treatment for each stage

Training Staff shall **explain & demonstrate**:

- 3.2.2 The right explanation, answers and missing information as needed

ELEMENT 3.3 Drowning

Delegates shall **explain and demonstrate**:

- 3.3.1 Symptoms and correct First Aid treatment for drowning
3.3.2 Secondary drowning

Training Staff shall **explain & demonstrate**:

- 3.3.3 The right explanation, answers and missing information as needed

Lesson 4 Sea Survival Exercises

ELEMENT 4.1 Sea survival techniques

Delegates shall **explain and demonstrate**:

- 4.1.1 Sea survival techniques
(1) Safe entry into the water from height
(2) Heat Escape Lessening Posture (H.E.L.P.)
(3) Individual swimming techniques
(4) Collective swimming techniques
(5) Collective techniques to prevent hypothermia
(6) Techniques to enhance chances of being spotted

Training Staff shall **explain & demonstrate**:

- 4.1.2 The right explanation, answers and missing information, as needed

ELEMENT 4.2 Emergency descent

Delegates shall **explain**:



- 4.2.1 Evacuation from WTG by descent into the water, including
- (1) Pre-use inspection
 - (2) Correct fitting of harness
 - (3) Attachment
 - (4) Descent into water
 - (5) Inflation of lifejacket
 - (6) Detachment in the water

Training Staff shall **explain & demonstrate**:

- 4.2.2 The right explanation, answers and missing information, as needed
- 4.2.3 Training Staff must demonstrate Emergency descent before the Delegates are allowed to descend

Delegates shall **demonstrate**:

- 4.2.4 Evacuation from WTG by descent into the water, including
- (1) Pre-use inspection
 - (2) Correct fitting of harness
 - (3) Attachment
 - (4) Descent into water
 - (5) Inflation of lifejacket
 - (6) Detachment in the water

ELEMENT 4.3 Life raft

Delegates shall **explain**:

- 4.3.1 Inflation of a life raft
- 4.3.2 Methods of entering a life raft
- 4.3.3 Immediate and further actions in a life raft
- 4.3.4 The equipment in life rafts
- 4.3.5 How to right a capsized life raft

Training Staff shall **explain & demonstrate**:

- 4.3.6 The right explanation, answers and missing information, as needed
- 4.3.7 Training Staff must demonstrate methods of entering a life raft before the Delegates are allowed to do this

- 4.3.8 Training Staff must demonstrate how to right a life raft before the Delegates are allowed to do this

Delegates shall **demonstrate:**

- 4.3.9 Ability to enter a life raft
4.3.10 Ability to right a capsized life raft

ELEMENT 4.4 Helicopter rescue from water

Training Staff shall **explain and demonstrate:**

- 4.4.1 The fitting of a helicopter lifting sling, subsequent lifting and (simulated) entry into a rescue helicopter including:
(1) Single lift
(2) Body posture
(3) Aircraft entry

Delegates shall **demonstrate:**

- 4.4.2 Helicopter rescue from water, as demonstrated by the Training Staff

ELEMENT 4.5 Summary by exercise

Training Staff shall **explain:**

- 4.5.1 Safety procedures and briefing of the exercise

Delegates shall **demonstrate the following in one cohesive scenario:**

- 4.5.2 Safe entry into the water from a height
4.5.3 Individual swimming techniques
4.5.4 Correct use of collective techniques to prevent hypothermia
4.5.5 Collective swimming techniques
4.5.6 Entry into a life raft
4.5.7 Immediate actions in a life raft
4.5.8 Recovery of a nearby casualty in the water
4.5.9 Helicopter hoist from life raft*

* Minimum 1 Delegate shall be hoisted from the life raft

Lesson 5 Transfer exercises

ELEMENT 5.1 Dock to vessel

Delegates shall **explain**:

- 5.1.1 Safe transfer of oneself and equipment from dock to vessel

Training Staff shall **explain and demonstrate**:

- 5.1.2 The right explanation, answers and missing information, as needed
5.1.3 Training Staff must demonstrate the exercise before the Delegates are allowed to do this.

Delegates shall **demonstrate**:

- 5.1.4 Safe transfer of oneself and equipment from dock to vessel

ELEMENT 5.2 Vessel to WTG

Delegates shall **explain**:

- 5.2.1 Safe transfer of oneself and equipment from vessel to mock WTG and back by the means of
(1) Twin fall arrest lanyards
(2) Self - Retractable Lifeline (SRL)

Training Staff shall **explain and demonstrate**:

- 5.2.2 The right explanation, answers and missing information as needed
5.2.3 Training Staff must demonstrate the exercise before the Delegates are allowed to do this

Delegates shall **demonstrate**:

- 5.2.4 Two safe transfers of oneself and equipment from vessel to WTG and back

(1) First transfer by the means of twin fall arrest lanyards
(2) Second transfer by the means of a SRL

ELEMENT 5.3 Vessel to vessel

Training Staff shall **explain and demonstrate**:

- 5.3.1 Safe transfer from vessel to vessel while vessel is making way

Delegates shall **demonstrate**:

- 5.3.2 Safe transfer from vessel to vessel and back while vessels are moving forward

ELEMENT 5.4 Man over board

Training Staff shall **explain and demonstrate**:

- 5.4.1 Man Over Board (MOB) procedures
- 5.4.2 Recovery from water without assistance
- 5.4.3 Assisted recovery from water
- 5.4.4 Recovery from water by means of cradle and/ or rescue net

Delegates shall **demonstrate**:

- 5.4.5 MOB procedures
- 5.4.6 Recovery from water without assistance
- 5.4.7 Assisted recovery from water
- 5.4.8 Recovery from water by means of cradle and/ or rescue net

Lesson 6 Evaluation

ELEMENT 6.1 Summary

Training Staff shall:

- 6.1.1 Summarise the BSTR Module and give the Delegates final feedback

ELEMENT 6.2 Evaluation

Delegates shall:

- 6.2.1 Conduct a written evaluation

Training Staff shall:

- 6.2.2 Give necessary feedback on the written evaluations

ELEMENT 6.3 Certificates

Training Staff shall:

- 6.3.1 Hand out certificates and ensure that all Delegates are registered with the correct personal information on the certificate

Section 2 - Resources for BSTR Sea Survival

The Training Provider shall ensure that staff, facilities and equipment are in place to support the training of the Delegates.

2.1 Staff

Training Staff shall possess appropriate qualifications and experience to ensure that all training and supportive activities are carried out in accordance with current legislation.

Training Staff shall be:

- (1) Trained in instructional/ lecture techniques and/ or have documented instructional/ teaching experience.
- (2) Included in an on-going training programme, which includes visits to onshore and/ or offshore WTGs (tower, nacelle, hub) prior to instructing BSTR Modules, to enable them to maintain and update skills related to the BSTR Modules they instruct.

A person with First Aid qualifications shall be present during all practical training.

All Staff shall possess the appropriate competencies to conduct/ assist the elements of training they have been assigned to.

2.2 Trainer/Delegate Ratio

- (3) The ratio shown indicates the maximum number of Delegates that shall attend the course.
- (4) Other ratios indicate the maximum number of Delegates to be supervised by an instructor during each activity.

Module	Session	Trainer - Delegate Ratio
BSTR Sea Survival Module	Theory	1:12
	Practical	3:12

2.3 Facilities

The full range of facilities shall be available during the training. The following facilities criteria shall be adhered to.

2.4 Theory training facilities

Facilities shall be designed to enable each Delegate to see, hear and fully participate in the taught subject matter.

2.5 Practical training facilities

Shall be designed to enable each Delegate to individually and/ or as part of a team, see, hear and practise the taught material.

Note:

All facilities shall be maintained and where appropriate, inspected and tested in accordance with current national legislation and manufacturers' recommendations.

Risk assessments shall be conducted and documented for all training facilities.

The Training Provider shall hold the required permits to operate the facilities.

2.6 Equipment

The following equipment is required during the entire duration of this BSTR Sea Survival Training to meet the needs of the BSTR Module Sea Survival:

- (1) Rigid lifejackets
- (2) Inflatable lifejackets
- (3) Survival suits
- (4) Helmets
- (5) Inflatable life raft with equipment according to chapter 4.1.5 in the LSA code
- (6) Helicopter rescue sling
- (7) Cradle
- (8) Rescue net
- (9) Rescue device
- (10) Harness, according to EN361 and EN358
- (11) Twin fall arrest lanyards, according to EN355
- (12) SRL, according to EN360

(13) PPE

In order to comply with national legislation and Standards, the equipment supplied and used by staff and Delegates shall follow the appropriate guidelines, e. g.:

Europe - EN	UK - BS
USA - ANSI	Canada - CSA
Australia and New Zealand - AS/NZS	Asia - ANSI / EN

Note: All equipment shall be maintained and where appropriate, inspected and tested in accordance with current national Standards/ legislation and manufacturers' recommendations.

Section 3 - Administration and certification

3.1 Delegate performance assessment

Delegates shall be assessed according to the learning outcomes by means of direct observation and oral and/ or written questions, where appropriate.

Training Providers shall have a documented procedure in place for dealing with Delegates not meeting the stated learning outcomes.

3.2 Validity

The maximum interval between successful completions of the BSTR Sea Survival Module is **48 months**.

3.3 Certification

Training Providers are responsible for issuing a certificate directly to the Delegate upon completion of the training programme and to the sponsoring company when required. Each certificate shall indicate that the Delegate has been assessed according to the learning outcomes and shall contain the following:

- (1) Training Provider's name



- (2) Full GWO course title stating that it is GWO approved
- (3) Delegate's name
- (4) Course dates
- (5) Expiry date
- (6) Training Provider's signature

3.4 Records

The Training Provider shall keep a record of the Delegates that have completed the BSTR Sea Survival Module for a minimum period of **5 years**.

Upon request from GWO or any of the members of GWO, the Training Provider shall be able to verify the training and competence records of any Delegate by name.

3.5 Measures

The Trainer keeps the Control Measures Forms until the completion/ evaluation of this BSTR Module. If a Delegate fails to meet the demands, they shall attend a new BSTR Sea Survival Module or a BST Sea Survival Module.

If a Delegate fails this BSTR Sea Survival Module it is the Training Staff's decision, based on factual observations, to recommend the Delegate attends either a BST Sea Survival or another BSTR Sea Survival Module.

3.6 Control Measures

Please find the Control Measures Form on next page.

Control Measures

Name: _____

Course: BSTR Sea Survival Module

Date: _____

Training Provider: _____

Scenario Organisation	Violation of Assessment Measures			0-2 passed/ 3 failed	Instructor Remarks
Aware of personal and group safety at all times					
Organises and utilises correct equipment for given scenario					
Organises individuals and groups as required					
Scenario Management					
Establishes and maintains control of the exercise scenario at all times					
Fully participates in the exercise scenario					
Follows instructions when required					

Demonstrates correct and safe Manual Handling in exercise scenario					
Knowledge and Understanding					
Applies subject knowledge correctly in given scenario					
Demonstrates understanding of subject					
Total Marks 0-9 Pass 10-27 Fail					

Instructor: _____

<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL
--------------------------------------	--------------------------------------

The Practical Assessment Measures Form is a final evaluation tool for the instructors to assess Delegates during practical elements. It allows measurement of the number of violations in regard to safety, competency, or attitude. It can be used as a progressive evaluation tool to discuss the performance of a Delegate in guiding them to success and it also serves as supporting documentation when a Delegate fails the Module.



Document type:

Appendix 1 A

Number M.S.A.
Date 21-11-2013
Page 169 of 170

Title:

Medical Self-Assessment

Issued by:



Unrestricted

YOUR PERSONAL HEALTH IS YOUR OWN RESPONSIBILITY. YOUR TRAINING PROVIDER SHALL NOT BE HELD RESPONSIBLE FOR ANY ILLNESS WHATSOEVER DURING OR AFTER THE TRAINING.

This signed Medical Self-Assessment must be returned to the Training Provider's Representative/Responsible prior to the start of the training course.

Full name as stated in passport	Company
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The following conditions could pose a risk, when you actively participate in GWO training
Asthma or other respiratory disorders
Epilepsy, blackouts or other fits
Angina or other heart complaints
Vertigo or inner ear problems (difficulty with balance)
Claustrophobia/Acrophobia (fear of enclosed area/height)
Blood pressure disorder
Diabetes
Pacemaker or implanted defibrillator
Arthritis, osteoarthritis or other muscular/ skeletal disorders affecting mobility
Known allergies (E.g. bee, wasps or spider stings / bites)
Recent surgery
Any other medical condition or medication dependency that could affect climbing or physical impact of climbing

I hereby confirm that I have read and understood the above listed risks and potentially life-threatening medical conditions and that I am physically and medically fit to participate in GWO Training.

I hereby confirm that there is no factor that will inhibit or affect my participation in GWO Training.

I agree to follow all instructions from the appointed Instructor for the duration of the GWO Training.

I hereby agree: should there be any doubt regarding my medical fitness, the training provider will stop the training and seek a physician's advice.

Signature _____ **Date** _____

Appendix

Change Log

Amendments & Dates	Version	Changes	Approved by & Dates
21.11.2013	2	<p><u>Entire GWO Basic Safety Training Standard Document (All Modules)</u></p> <ul style="list-style-type: none"> • Correction of minor mistakes • Time tables aligned with Learning Outcomes (Section 1.6) • Time Tables aligned with Elements (Section 1.9) 	
04.11.2013	1	<p><u>Entire GWO Basic Safety Training Standard Document (All Modules)</u></p> <ul style="list-style-type: none"> • Spelling, grammar corrected (no meanings of sentences have been changed), format corrected • Delegate prerequisites updated for each Module (Section 1.3) • Physical Demands updated for each Module (Section 1.4) • Added Appendix 1A to each Module (GWO's suggestion for Medical Self-Assessment) <p><u>Working at Heights Module</u></p> <ul style="list-style-type: none"> • Information about Certification (EN, ANSI, etc.) has been added for equipment list for module (Section 2.3, p. 134) 	
15.04.2013	0	<ul style="list-style-type: none"> • Draft of Version 0 created 	
17.06.2013	0	<ul style="list-style-type: none"> • Draft of Version 0 finalised 	