TRAINING A GLOBAL WORKFORCE OF WIND ENERGY TECHNICIANS

WINDA Annual Report 2018

GWO WINDA

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A STRONG START

Welcome to the WINDA Annual Report 2018, reviewing data retrieved from the WINDA database for the 2017 calendar year.[1]

In these pages, we clarify the numbers behind the thousands of GWO safety training modules carried out by wind turbine technicians as the industry continues to expand its worldwide adoption of our standards.

Even at this early stage (WINDA was launched in October 2016), the data demonstrates the industry's commitment to reducing duplication, cutting costs and improving quality through the collective pursuit of standardized health and safety training.

We are confident the numbers speak for themselves. Our membership frequently reports that by adopting GWO standards they can make considerable improvements in the overall efficiency of their training programs. Anecdotal evidence from Wind Turbine Generator (WTG) manufacturers in GWO membership suggests this could be roughly equivalent to the time spent by technicians on their previous basic safety and technical programs. For global sub-contractors, the frequency of avoided duplication is reportedly much higher, as they tend to have more mobility across installation and service sites.

Assuming an average of one annual avoided training day per GWO certified training day, GWO certified technicians have potentially been available for an additional 121,744 days of work during 2017. WINDA has had a strong start. The straightforward verification of training records is helping employers avoid unnecessary spending on re-training, while training providers increasingly advocate GWO as the benchmark for safety training across the world.

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I hope you enjoy reading the report. If you have any feedback or advice on the development of the WINDA report, then we encourage you to let us know at info@globalwindsafety.org.

Jakob Lau Holst
CEO Global Wind Organisation

1) Data has been retrieved on the 15th of January 2018, allowing GWO Training Providers the standard 10 working days required to upload records into WINDA.

WINDA 2017 KEY FINDINGS

Since WINDA's launch in October 2016, a total of 137,372 records have been uploaded to the database, 121,744 of these during 2017 and 53,437 delegates have registered in total. Each individual delegate taking a GWO course has typically been certified in 3 modules, which we expect to increase to four or five as delegates return for refresher training during 2018.

During 2017, 156 training providers uploaded records on behalf of 44,418 delegates from 135 different countries. The top 15 nations represented on WINDA now includes three significant markets outside Europe, with Mexico, India and the USA all increasing their volumes of training. We expect this measurement to reflect an increasingly global picture next year as more training providers from other markets including China, Asia/Pacific and Latin America come on stream.

Almost half of WINDA's training records are being uploaded by just ten providers, with 43.2% of the total coming from this group. Meanwhile, almost two thirds (64.8%) of all training uploads were completed by training providers from a quartet of leading countries, The UK, Spain, Germany and Denmark.

The Global Wind Organisation currently has 233 certified training provider sites delivering its courses and modules to technicians around the world. 221 of these sites are currently registered on WINDA (the remainder are typically newly certified training providers yet to complete any courses).[2]

Many GWO certified training providers operate from multiple sites, with uploads completed by 156 unique training organisations at 211 sites during 2017.

"During 2017, 156 training providers uploaded records on behalf of 44,418 delegates from 135 different countries."

2) This report reviews data uploaded between 1 January 2017 and 31 December 2017. Data was extracted on the 15th of January 2018 to allow training providers the pre-requisite 10 working days to upload their training records.

A Top 10 of the largest training providers (see page 8) measured by number of records uploaded to WINDA shows a group of companies operating from 29 individual sites where 43.2% of all training was carried out during 2017.

Similarly, this quartet of nations comprised most of the nationalities trained. 59.7% of all delegates on WINDA came from one of the four leading countries.

30 providers accounted for consistently high volumes of training during the year, each providing at least 100 GWO certified trainings per month during 2017.

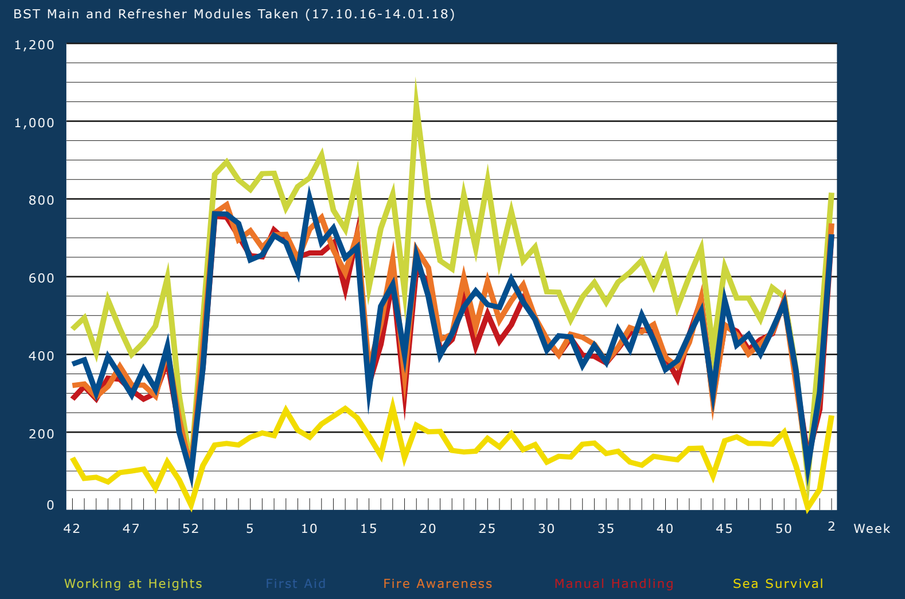
	2017 TOTAL	TOP 10	OTHERS
BST + BSTR training records added to WINDA 2017	121,744	52,537	69,207

	2017 TOTAL		
Basic Technical Training records (Currently 23 BTT training providers)	765		
Average number of trainings per training site	577	1,812	380
Average number of trainings per training provider	780	5,254	474
Number of training sites with +100 trainings per month	32		
Number of training providers with +100 trainings per month	30		

2017 PERCENTILE	RECORDS
The bottom 25% of GWO Training Providers in 2017 registered up to:	88.5
The bottom 50% of GWO Training Providers in 2017 registered up to:	294
The bottom 75% of GWO Training Providers in 2017 registered up to:	801.25

SEASONAL FLUCTUATIONS

– A TIME FOR TRAINING AND A TIME FOR WORKING



There is a clear seasonal bias towards greater volumes of training activity during the first quarter of the year. There is also a clear difference between the Working at Heights (WAH) module and its counterparts, First Aid, Fire Awareness and Manual Handling, the three of which are usually taken alongside WAH as a package.

Many possible interpretations can be applied to this data including:

A busy first quarter
Training is carried out in larger volumes during the 1st quarter because of the industry's installation calendar. The 'Weather Window' dictates that training is best taken during the coldest winter months before installations increase from March onward, with weekly averages approaching 800 in January, compared to 400-500 between weeks 30-50.

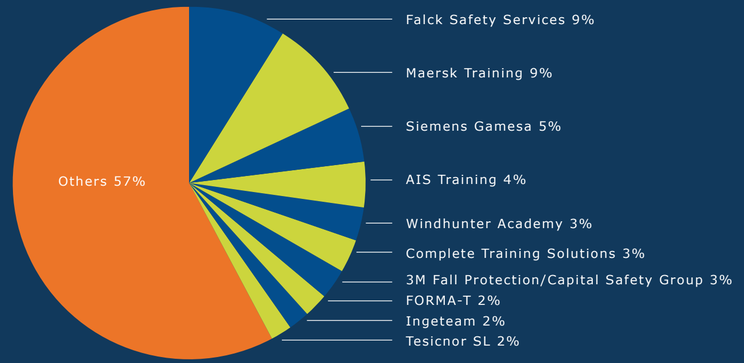
Why is there more working at height?
In some jurisdictions, notably Germany, WAH certification is required once a year, while others require only a bi-annual refresher. This may account for the roughly 15% higher number of WAH modules taken during 2017.

Why is sea survival almost 20% of the total?
As a proportion of global installations, offshore remains only a small fraction of onshore. It is possible that WINDA is demonstrating a bias towards the markets where GWO membership is currently strong.

1/3 increase from 2016-2017
During week 42-52 in 2017, 33.4% more training records were uploaded than in week 42-52 in 2016. It is too early to speculate in relation to significant patterns, but we do expect 2018 to demonstrate a further uplift as GWO modules are valid for two years and this trend may continue as more refreshers start being taken at the end of this year.

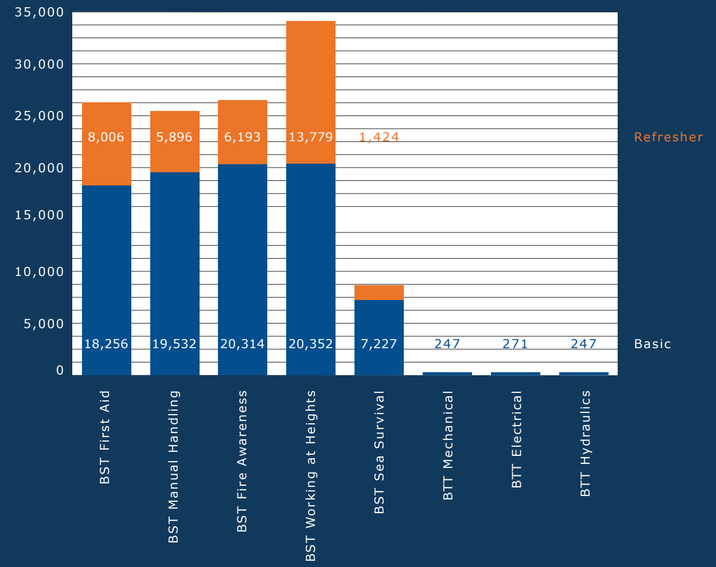
Although the BTT modules are not included, an increase in uploaded training records could reasonably be expected in Q2 2018 as GWO Members will require technicians to also complete BTT training from March 31st, 2018.

WHO WERE THE TOP 10 WIND TURBINE TECHNICIAN TRAINING PROVIDERS IN 2017?



The Top 3 training providers by volume of uploads accounted for 23.8% of all records, which is distributed among their 7% share of GWO registered training sites. In comparison, the Top 10 accounts for 43.2% of all uploaded training records, across a 14% share of GWO training sites.

WHICH GWO TRAINING MODULES WERE TAKEN MOST FREQUENTLY?

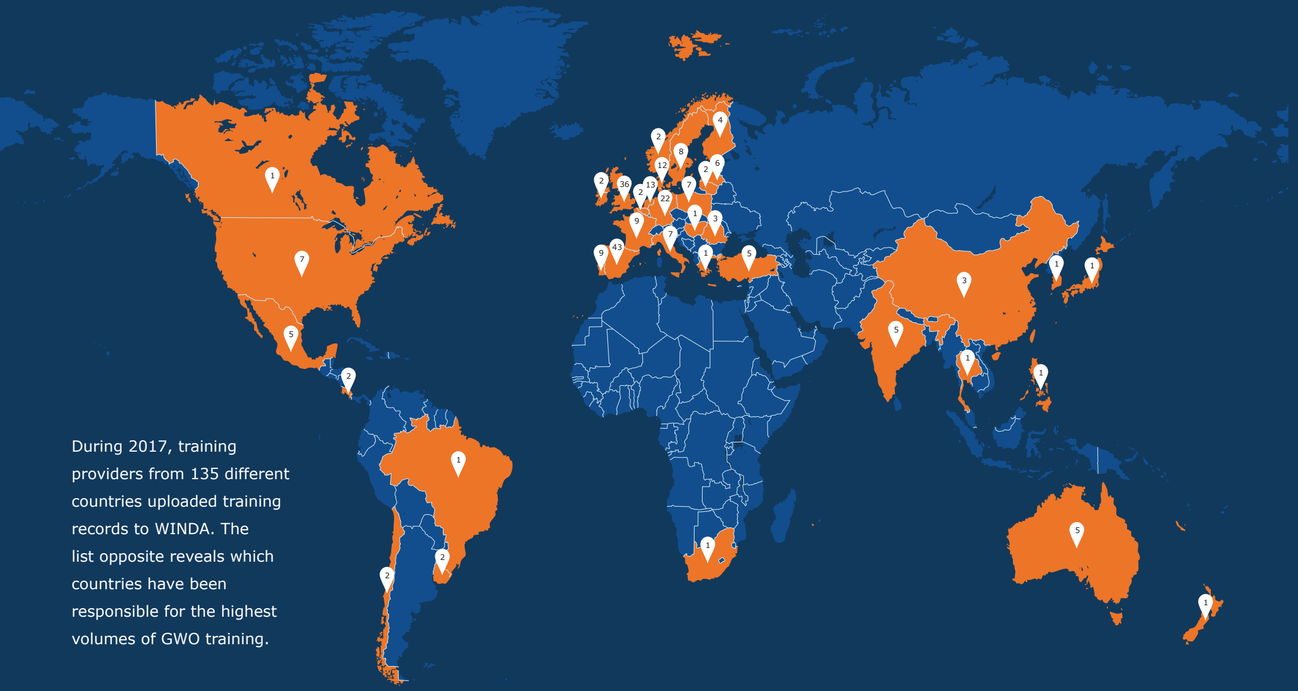


The distribution of GWO basic training and refresher modules taken in 2017 demonstrates that Sea Survival was the least frequently completed BST module.

The most common module is Working at Heights, both in basic training and refresher. Some countries, including Germany, require their WAH certifications to be refreshed annually, which may account for the high numbers in this module. Basic technical training modules become a requirement from 31st March 2018, so the three BTT modules will certainly increase in volume when the next WINDA data is published.

TRAINING PROVIDER NUMBERS EXPAND

AROUND THE WORLD IN 2017



During 2017, training providers from 135 different countries uploaded training records to WINDA. The list opposite reveals which countries have been responsible for the highest volumes of GWO training.

TOP 10 COUNTRIES

PROVIDING THE MOST TRAINING

1	United Kingdom	22.8 %
2	Germany	15.1 %
3	Spain	14.7 %
4	Denmark	12.1 %
5	Poland	5.9 %
6	Netherlands	4.3 %
7	USA	3.6 %
8	Portugal	3.1 %
9	Belgium	2.1 %
10	Sweden	1.9 %
	Others	14.3 %

The top three countries on the WINDA database account for over 50% of the total training records uploaded and have a total of 94 training sites between them.

In total GWO has certified training providers from 36 different countries, spread across 5 continents.

The ten countries training the most people remain largely the same as last year's report, but there has been growth in markets including the USA which has overtaken Portugal, and Germany which has overtaken Spain.

TOP 15 NATIONALITIES

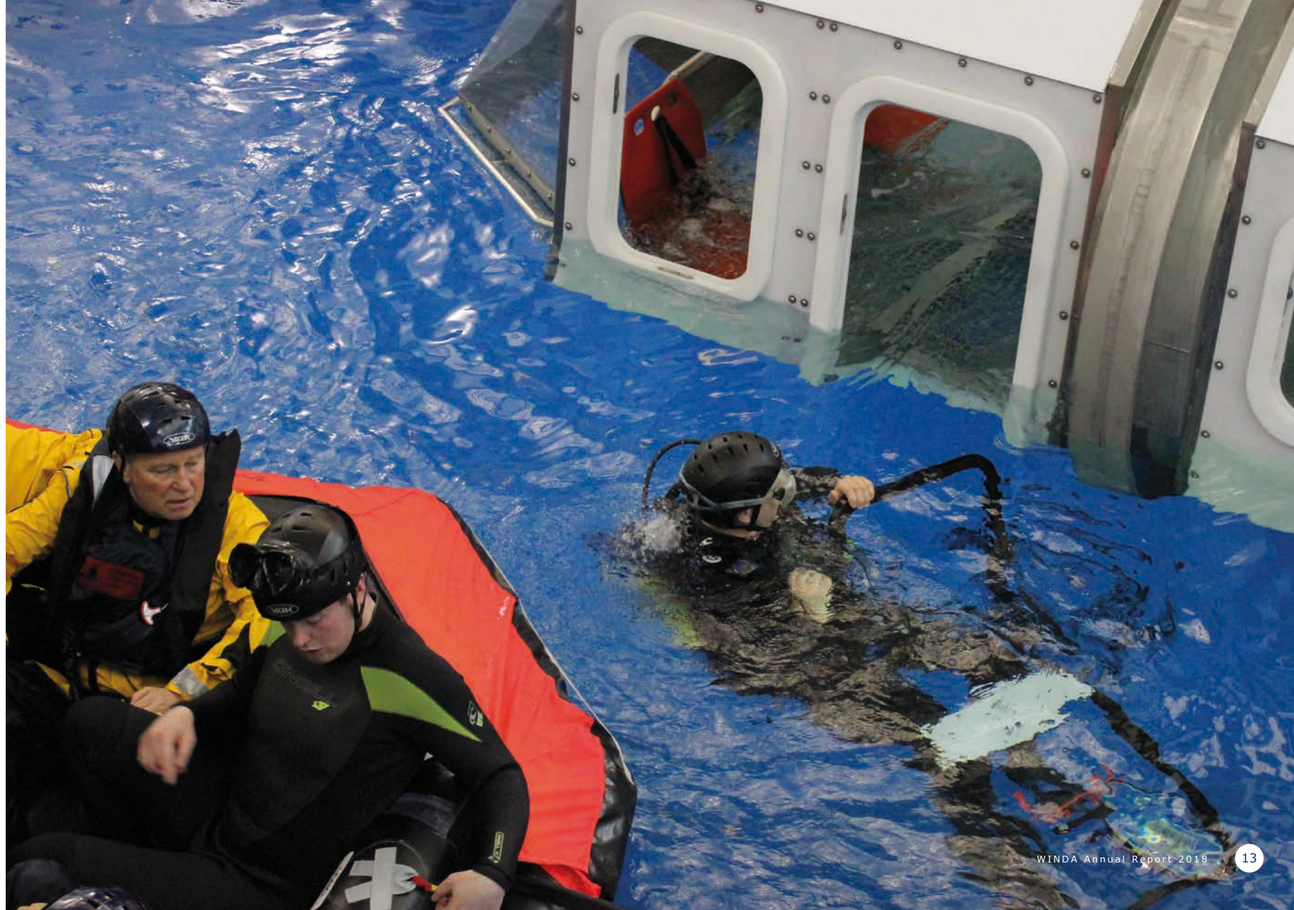
RECEIVING GWO TRAINING

1	United Kingdom	21.3 %
2	Spain	14.3 %
3	Germany	13.9 %
4	Denmark	10.2 %
5	Poland	6.2 %
6	USA	3.4 %
7	Netherlands	3.4 %
8	Portugal	3.3 %
9	Belgium	1.9 %
10	Romania	1.8 %
11	Sweden	1.7 %
12	Mexico	1.5 %
13	Ireland	1.5 %
14	India	1.4 %
15	Turkey	1.4 %
	Others	12.8 %

GWO training is now truly global delegates from four continents including fast growing regions like Mexico, India and the USA.

One of the most interesting dynamics is the volume of training modules completed by delegates from outside Europe. In 2017, technicians from 135 different countries have had their certificates uploaded to the WINDA database in 2017, a significant increase on our Q1 2017 report which saw 94 nationalities represented.

The top three nationalities account for 49% of uploads during 2017, however in our Q1 2017 report, the top 15 trained nationalities included only one country from outside Europe (USA).



ABOUT GLOBAL WIND ORGANISATION

Founded in 2012, GWO is a non-profit organisation of wind turbine owners and wind turbine manufacturers, committed to the creation and adoption of standardized safety training and emergency procedures.

THE BASIC SAFETY TRAINING STANDARD INCLUDES THE FOLLOWING MODULES:

- **First Aid**: upon completion of training delegates have acquired relevant knowledge of, and have in scenario-based training exercises demonstrated ability to administer life-saving first aid and the use of first aid equipment with an emphasis on injuries experienced by persons working in a WTG environment

- **Manual Handling**: upon completion of training, delegates can identify aspects of their job tasks that could lead to musculoskeletal injuries, have in scenario-based training demonstrated their understanding of safe practices, problem solving, risk reduction techniques and correct handling of loads.

- **Fire Awareness**: upon completion of training delegates understand the main causes of fire in a WTG environment, can identify signs of fire, and have knowledge of its spread. They have practiced fire extinguishing and emergency escape procedures.

- **Working at Heights**: upon completion, delegates demonstrate understanding of risks associated with working at heights in a WTG environment. They have demonstrated their ability to identify standard markings, anchor points, inspection of equipment, correct application of products including safety harnesses correct use of evacuation devices and how to approach rescue situations.

- **Sea Survival:** upon completion, delegates have demonstrated understanding of the dangers and symptoms relevant to hypothermia and drowning and have demonstrated safe use of different equipment for offshore activities. In addition, they will have demonstrated safe transfer from vessels to the WTG and back, evacuation from WTG to water, man-over-board, as well as individual and collective sea survival techniques.

THE BASIC TECHNICAL TRAINING STANDARD INCLUDES THE FOLLOWING MODULES:

- **Mechanical**: The BTT Mechanical Module provides delegates with the ability to explain and demonstrate the correct use of mechanical systems such as gearbox and yaw, basic operations of WTGs and an explanation of the risks and hazards associated with the mechanics of wind turbines.

- **Electrical**: The BTT Electrical Module provides the delegates with the ability to explain the basics of electricity within a WTG environment including; the risks and hazards associated with electrical work, interpretation of electrical diagrams, the functions and symbols of components and sensors, as well as how to make correct and safe measurements.

- **Hydraulics**: The BTT Hydraulic Module provides the delegates with the ability to explain the basics of hydraulics including the risks and hazards of hydraulic work within a WTG environment. In addition, the delegate shall be able to explain the functions of actuators, valves, accumulators and sensors and be able to identify fluid/oil transfer components, oil handling procedures, interpret hydraulic diagrams and accurately measure hydraulic pressure.

WHAT IS WINDA?

On October 17, 2016, GWO launched a Global Wind Industry Training Records Database. The database goes by the acronym – WINDA. WINDA is designed with the primary purpose of verifying the certification status of GWO Certified Training Providers and the training status of Delegates who have attended GWO certified training courses.

GWO Training records are uploaded and stored in the GWO WINDA database, allowing members to verify training records quickly and easily.

WINDA provides assurance and confidence in the status and validity of approved Training Providers and the training status of individuals (delegates).

The main benefits of WINDA include:

- Virtually eliminate the risk of fraud from non-certified training providers
- Increase trust in competence records and validity of training providers' certification status
- Enhance and complement existing company and site safety management systems
- Reduce compliance costs by avoiding repeated employee/contractor verification checks