



We Build Innovation

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The key role of risk in an innovation culture

Our CEO asks: do you have an innovation culture within your organisation?

Put it another way: how do you encourage a culture that involves vision, risk-taking and collaboration?

Innovation needs vision and commitment. As we push the boundaries of what is possible into the realm of what can be possible, the concept is key. You may not yet know whether the idea is achievable or how to bring it to life, but successful innovation needs that vision – and a willingness to commit the time and cash.

At MDL, we support visionaries, companies that are eager to innovate and improve the way things are done. They know that bringing a concept successfully to life is what will give them the edge in the market.

And at its core, innovation needs an understanding of risk. If it is truly something groundbreaking and new, choose a partner with a proven track record in delivering comparable projects. Everyone brings a unique set of knowledge and skills to the table. Working together and embracing these differences gives birth to new ideas through the blending of unique skillsets. That's how we create an innovation culture in - and across - our organisations.

Get the right people round the table and great things can – and do – happen. We have captured a few examples in this issue of the MariTimes and you can find more on our website under the Innovation Spotlight section.

We hope they will inspire you to think big and bold. We're here to bring that vision to life when you're ready.

DEREK SMITH, CEO

Recovering flexibles at higher loads

MDL's ingenious Wheeled Horizontal Lay System smooths the way towards cost-efficient decommissioning.

With Brazil gearing up for a large-scale decommissioning programme, a local offshore contractor saw an opportunity to carry out the SURF recovery operations in a cost-efficient way: using a modular spread on a vessel of opportunity.

However, there were no portable systems in the market - neither in Brazil nor globally - that could handle the required recovery loads.

They turned to MDL with this challenge. MDL used its portable Horizontal Lay System as the base case - already proven as a compact package for safe and efficient recovery of SURF with buoyancy modules.

However, engineering studies with the client's product specifications highlighted limitations on handling the recovered pipes over a chute.

Due to the friction between the flexible and the chute, the system's recovery capacity was dramatically reduced - even when using a high line pull-

capacity tensioner. The solution to reduce friction was to replace the chute with a wheel.

By incorporating a wheel into the design, the HLS recovery capacity increased to match the tensioner's capacity without additional space requirements or weight from additional steel structures.

The two-point contact on the product results in reduced MBR requirements, opening up the OD window for wider application.

The system incorporates a range of features facilitating recovery of various lengths and diameters of products.

These include: an integrated hang-off for handling end fittings; davits for overhead handling of products; integrated work platform for over the side or moonpool works and an adjustable wheel position to accommodate various product diameters.

The WHLS keeps true to the base HLS design, as the complete package is



MDL Wheeled Horizontal Lay System mobilisation



MDL WHLS mobilised outside

portable, compact, applicable on vessels of opportunity - in summary, a cost-effective way to kit out a locally available vessel to handle high loads and tackle recovery projects.




Wheeled Horizontal Lay System

Lay spread type: Portable Horizontal Lay System

Nominal line pull: 100Te

Nominal product range: 90 - 400mm

Max hang-off tension: 100Te

Outboard chute radius: 3.5m

Stephen McCaldin, Newbuild Equipment Business Lead at MDL said:

“The coming to life of the WHLS is a testament to MDL’s commitment to our work philosophy: ‘listen, design, deliver, support’. By working closely with our client, understanding their challenges and embracing their vision, we were able to deliver a truly bespoke enabler for their business and a game-changer for the industry.

“The WHLS will now go on to be an integral part of our clients’ decommissioning programme and MDL will be there to provide expert support and maintenance services to ensure its success.”

Brazil welcomes electric flex layers

The need for a portable spread with highly intuitive controls led to the delivery of this electric duo.



The 85-tonne 4-track tensioner and a 48.5-tonne deck winch were designed bespoke by MDL in-house, to complement the client's installation spread.

For the tensioner, MDL's patented TTS-4/140 Series Tensioner design was used as a base case.

The new system features a 5m track contact length and 305-tonne squeeze per track. Like any MDL TTS tensioner, it also features the Failsafe Grip System ensuring constant hold of the product in the event of a critical failure.

The tensioner was supplied with entry and exit rollers to facilitate the product's movement into the firing line.

The 48.5Te winch concept was also based on MDL's previous Lloyd's-approved designs and features variable speed control and automatic stop before drum emptying. The unit was modified to operate vertically on the client's A-frame with a reaving system which allowed the winch to work with a hook limit of 85Te to match tensioner capacity.

All systems run on MDL software developed in-house and are provided with remote Walk About Box for the most convenient personnel positioning during operations.

The equipment was fully function tested before load-out for shipment across the Atlantic. Andrew Blaquiere, Managing Director at MDL said:

"In a changing industry, we're proud to be leading the way in sustainable and innovative back-deck technology – the result of our client-driven mindset.

"We were early adopters of an in-house electrical department among our peers, which gives me the confidence to say we are experts in this space when it comes to efficient and – most importantly – safe lay and retrieval operations.

"To date we have delivered over 50 specialist electric systems, including 44 winches, 800-tonne reel drive system and 8 tensioners, which have been deployed across different energy markets globally.

"That's a testament to the adaptability of our offering and reliability of our designs, which have our customers come back to us with confidence to support their long-term campaigns."



MDL electric 85-tonne 4-track tensioner

Tale of two umbilicals leads to turnkey transpooling package

MDL AME and Rental teams have turned around Scotland-bound cables for PRIO's Brazilian campaign.

The two 141mm OD umbilicals - required as part of an imminent field redevelopment project offshore Brazil - had been located in Peterhead, Scotland on their original storage reel. Due to the passing of time, the client required a survey of the product reel to determine its condition.

MDL Asset Maintenance & Engineering (AME) team performed the inspection, which identified that the structure of the reel and pallets were compromised and unsuitable for offshore use. The survey also identified the product had slackened on the reel over time, reinforcing the requirement for transpooling under tension to ensure the product was ready for installation. The follow-on scope was a turnkey Project Management & Engineering (PM&E) package to relocate the umbilicals onto an installation reel which would be suitable for offshore deployment.

The location of the reel in Peterhead meant that MDL could cost-efficiently assemble a complete transpooling spread within its own quayside facility. This included an under-roller for handling the original reel; a level winder to guide the product into the MDL TTS-2/35 Series Tensioner which fed the product under tension onto an MDL 9.2m installation reel handled by a Generation 3 Reel Drive System.

Besides the provision of equipment and experienced personnel, the complete PM&E package included front-end engineering with development of a project execution schedule and transpooling procedure; site layout; load-in and load-out plans; lift plans; creation of packing arrangements on installation reel; followed by provision of all quayside services, risk assessments, HAZID and certification package.

Following the transpooling operation, MDL handled the transport of the fully-loaded reel to the quayside for collection by a cargo vessel as well as arranging the disposal of the old reel - relieving the client of the ongoing storage costs.

Andrew Blaquiere, MDL Managing Director, said:

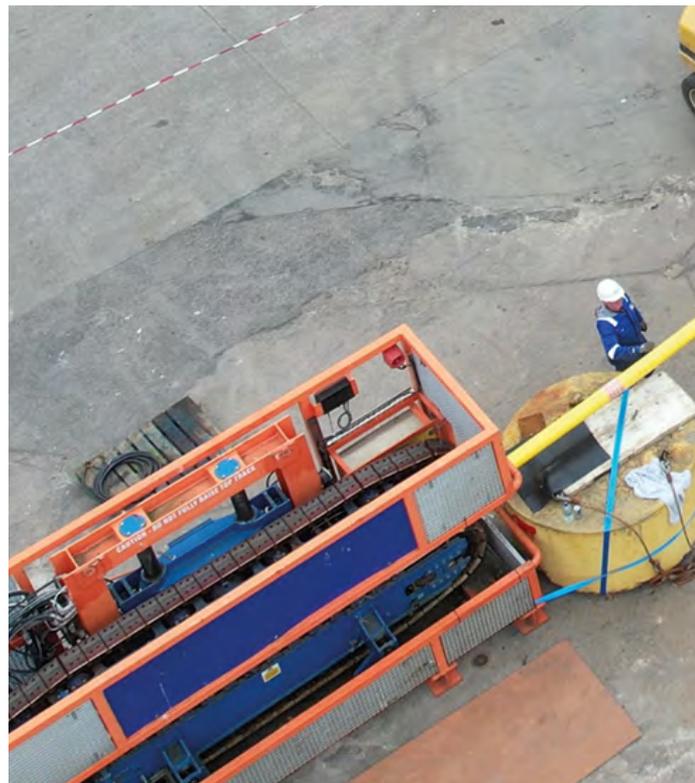
"Despite the client and their operations being located on the other side of the Atlantic, MDL was perfectly placed to assist with this scope, since the product was being stored in Peterhead, at our quayside facility.

"Besides that, over the last few years we have built up an enviable track record of transpooling projects, each MDL solution tailored individually to the client and challenge at hand.

"The portability of our equipment means that we are able to efficiently build up a handling spread at virtually any location in the world, including around the product reels themselves, which is so important when those reels are in any way compromised.

"The fleet complements our PM&E expertise developed through these projects, and through other challenging flex and rigid pipe handling scopes over the years.

"Our mission has always been to solve our customers' challenges, and our comprehensive in-house offering allows us to do that for clients globally, in the energy sector and beyond."





Transpooling spread at MDL's Peterhead quayside facility



SURF Decommissioning +

Survey & Inspection +

+ Mooring Rope Install and Pre-stretch

+ Dynamic and Static Cable Installation

Efficient Buoyancy Handling Aids +

+ Beach-pulls and Near-shore Operations

+ Expert Personnel

+ Crane Maintenance & Integrity

Asset Maintenance +

+ SURF / Pipelay

+ Transpooling

Spoolbase Upgrades +

+ Bespoke Manufacture

Successful launch for new rental tensioners

The latest addition to the “gold standard” for safety in pipe and flexible handling enables operations with a larger spectrum of product.

MDL has expanded its rental equipment range with not one but two new 4-track tensioners - both with increased handling capacity on their predecessor.

The TTS-4/180 Series Tensioner is based on MDL’s patented and DNV-approved TTS-4/140 tensioner.

The design upgrades include an extended track contact length of 4.074m, together with increased squeeze capability of 44.7-tonne per meter per track, which allows for an increased line pull capability of 51-tonne and an improved coefficient of friction (CoF) of 0.07.

This allows for a larger spectrum of product to be safely handled in horizontal or vertical orientation, or greater range of water depths and sea-state windows to be considered.

The patented cylindrical design allows for two tracks to open in vertical mode and a single track in horizontal or inclined mode, offering optimised clearance for product acceptance and abandonment.

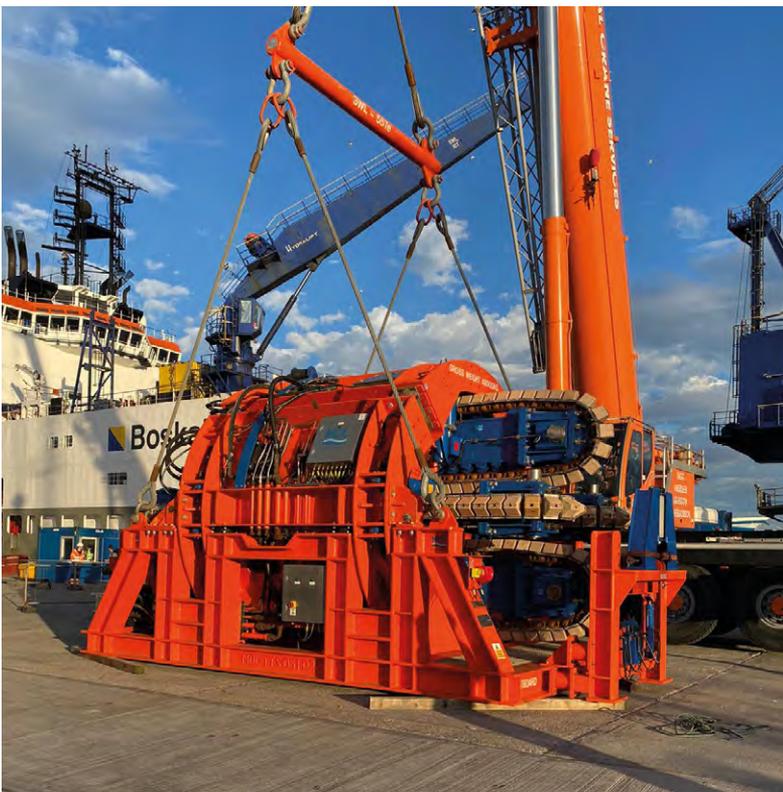
MDL released the original TTS-4 design into the market in 2014 with the delivery of 3 units in close succession – one of them into its then newly launched rental fleet.

The new unit retains all the key safety and operational features of its predecessor, including most notably MDL’s unique Failsafe Grip System, ensuring maintained grip on the handled product even in the event of critical failure or power loss. Like the rest of MDL’s rental back-deck equipment range, the system will be is road-transportable, allowing the most cost-efficient transit to the project.

Dave Gardiner, Vice President Global at MDL, said:

“The TTS-4 tensioner range is at the forefront of our offering, cited as the gold standard for safety in pipe and flexible handling operations. The high demand for our original 50-tonne system made it a clear choice as the next addition to our rental range.

“It complements our portfolio of reel drive systems, deck radius controllers and ancillary equipment to allow customisation of complete back-deck spreads – tailored by our engineering team specifically for the product and vessel.”



North Sea projects put kit through its paces

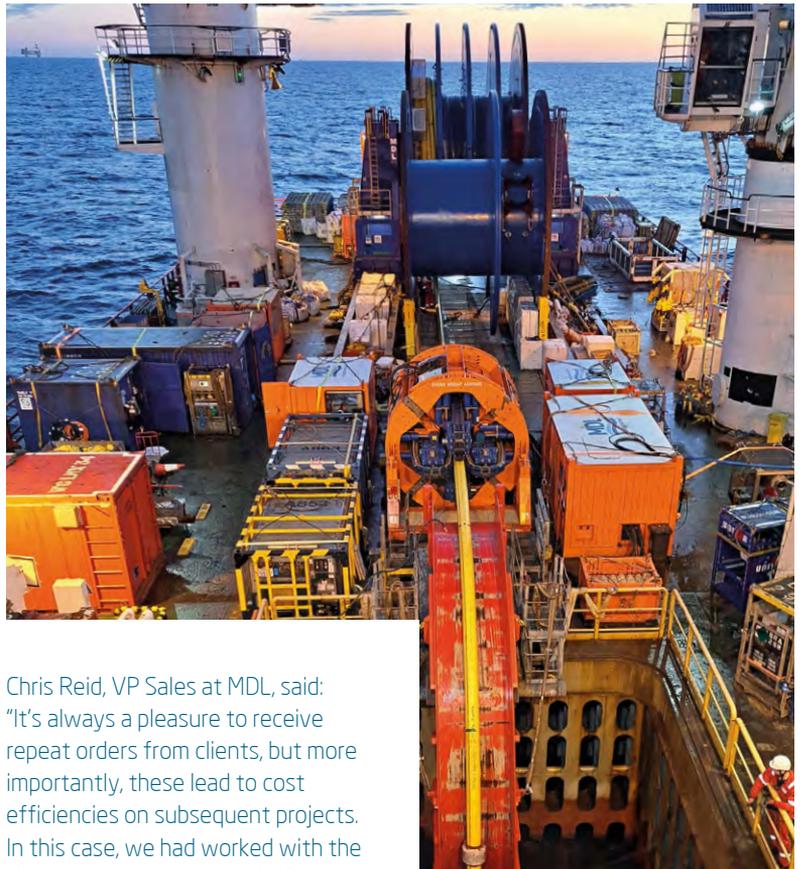
Two recent client projects show off the capacity of the new additions to the MDL TTS-4 Series Tensioner range.

The new TTS-4/180 Series Tensioners have shown their credentials in a successful flexible pipeline replacement as well as a cable installation, both in the North Sea.

On the first project, an MDL portable spread installed an electro-hydraulic cable (EHC) and four flexible jumpers from an offshore support vessel.

The 9.2m and 11.4m reels were handled using MDL's Generation 2 Reel Drive System integrated with the company's new 4-track tensioner. For this project, MDL also supplied a set of pads specifically to handle the small diameter umbilical (91.3mm).

While the Generation 2 RDS facilitated efficient deployment of multiple reels, the complete automation, including towers' skidding and clamping onto the tracks resulted in moving between reels four times quicker than market standard.



Chris Reid, VP Sales at MDL, said: "It's always a pleasure to receive repeat orders from clients, but more importantly, these lead to cost efficiencies on subsequent projects. In this case, we had worked with the client on the same vessel before.

"Our Generation 2 RDS was deployed in the same location on deck, which streamlined the pre-project engineering requirements.

"By holding open and honest communications, we can jointly identify opportunities for such efficiency improvements - where we can use a single mobilisation for a few back-to-back projects, for example - all in an effort to deliver maximum value to the Stakeholders, in the most responsible way."

Elsewhere in the UKCS, the new TTS-4/180 Tensioner was mobilised alongside a Generation 1 Reel Drive System and 2.8m overboarding chute on an offshore construction vessel to install a 103mm umbilical in 130m water depth.

Deploying the new tensioner ensured the correct squeeze parameters onto the product for optimal handling.

Thanks to its pinned hub connections, the Generation 1 RDS was the optimal solution to handle the 4m OD reels, delivering safe deployment through controls integrated with the tensioner.

Chris Reid said: "This project comes as another example of how versatile MDL rental fleet is for any flexible handling. The different systems integrate with one another to form an optimal spread for installation or retrieval of various types of products, but always delivering the same benefits of safety, efficient handling and complete control over the operation."





MDL spread offers optimal solution offshore Gabon

An ambitious project expands MDL's West African footprint against testing timescale.

A complete MDL flex-lay spread, consisting of a Horizontal Lay System (HLS) with the TTS-4/140 Series Tensioner, and a Generation 3 Reel Drive System (RDS), was mobilised on the Skandi Constructor.

The scope covered recovery and installation of umbilicals and flexibles as part of an FPSO replacement with an FSO.

The project was part of the field's infrastructure upgrade, aiming to reduce operational costs while increasing storage capacity and contributing to the extension of the field's producing life.



MDL horizontal lay spread on board the Skandi Constructor

The flexible products were handled through the vessel's moonpool, enabled by the MDL HLS.

The highly compact system allowed for efficient mid-line connections, by allowing safe and convenient hang-off for the products' end terminations. The multi-product project benefitted from MDL Integrated Track & Cradle System which enabled efficient handling and transit of the 4 reels.

The integration of reel cradles and lashing points within the RDS track system itself facilitated quick mobilisation and demobilisation of the reels, as it eliminated the requirement for welding down cradles and reduced the requirement for pad eyes on the vessel's deck.

The Reel Drive System was used to sea-fasten the first reel, removing the need for lashings on that reel.

As part of the scope MDL also delivered the full sea-fastening design for the client's back deck and provided all sea-fastening materials and fabrication support to complete the mobilisation.

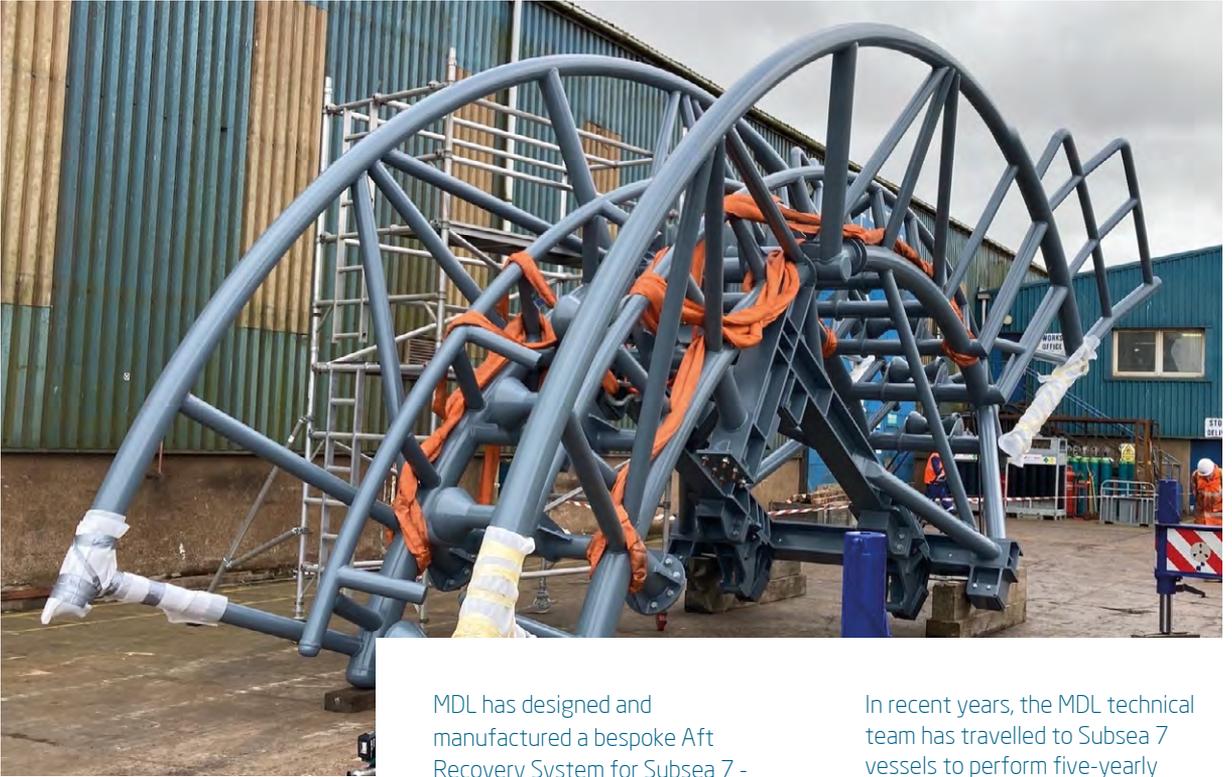
Euan Crichton, Project Manager at MDL said:

"This was an exciting project for MDL, partly due to the new location which further grows our West Africa track record, but also because of the short timescales the client was working to.

"For the Skandi Constructor our compact systems proved to be the optimal solution. The Horizontal Lay System, tensioner and Generation 3 Reel Drive System make up a highly capable spread, enabling multi-reel installations over the moonpool, which was the only lay option available on this back deck due to the space constraints.

"We are continuing our support to DOF in various global locations, configuring bespoke equipment spreads suitable to their vessels.

"So far, the open communications between the two companies have helped us zero in on the most efficient approaches to lay and retrieval scopes, to deliver maximum value."



New recovery system empowers Brazilian pipelayers

Latest bespoke recovery assembly for Subsea 7 reflects the full circle of MDL's integrated services portfolio.

MDL has designed and manufactured a bespoke Aft Recovery System for Subsea 7 - highlighting the continued relationship between the two companies.

The system is designed for Subsea 7 pipelay support vessels and can recover a range of product diameters without overbending the flexible or crushing the buoyancy modules.

The assembly - consisting of a chute, a removal device for buoyancy modules and a horizontal hang-off system - will be used on multiple Subsea 7 vessels operating in deep water.

MDL had previously provided a range of solutions to the Contractor, through design, manufacture, rental and operation of a range of back-deck equipment, including bespoke deliveries of reel drive systems, tensioners, deck radius controllers and turntables to global locations.

In recent years, the MDL technical team has travelled to Subsea 7 vessels to perform five-yearly maintenance works as well as winch load-cell upgrades in situ.

This latest recovery assembly system is designed to be fixed to the deck by sea-fastening brackets with a bolted connection for quick release.



The inboard angle of the chute arc extends over 90 degrees to facilitate buoyancy modules manoeuvring without using a crane and it is designed with a dedicated guide rail to support the modules through recovery.

The complete system will be mountable in different locations on the stern of the vessels, to facilitate safe replacement of lazy wave flexibles fitted with buoyancy modules.

To allow for the suspension of the catenary weight during recovery of a damaged lazy wave, the hang-off clamp is designed to be orientated in a horizontal position.

James Farquhar, MDL AME Key Account Manager, said: "I am pleased to see the relationship with Subsea7 continue and this latest delivery draws a full circle, reflecting the complete integrated services we can provide as a single-source partner to our clients.

"More than 23 years of back-deck engineering makes us the ideal partner to efficiently perform annual surveys and five-yearly maintenance programmes on lifting and pulling equipment, including cranes and third-party systems – a growing track record in our trusted services portfolio."



For a tailored solution to your project challenge...

Speak to James Farquhar and Shaun Cooper
- AME Key Account Managers.



James Farquhar



Shaun Cooper



Reaching new heights in Kilimanjaro charity trek

One Team MDL has again risen to the challenge - by targeting Africa's highest mountain.

MDL's Head of Strategic Marketing Aleks Jurczak trekked to the summit of Mount Kilimanjaro to raise funds for social care charity VSA.

Her seven-day expedition followed the 70km Lemosho route to the top of the world's largest free-standing mountain, at the imposing height of 5895m above sea level.

As well as completing the challenge, she raised £5,590 in the process.

Aleks said: "As a keen hiker who, unfortunately, spends too many hours at the desk, I decided to commit my passion to a worthy cause.

"I chose to fundraise for the VSA, a local charity with a 150-year heritage, because their mission resonates with me greatly: 'supporting individuals and communities to fulfill their potential'.

"I believe that everyone should get the chance to live their lives to the fullest, to follow the path before them - even if there are mountains to overcome along the way."

"Through personal circumstances or the turn of Lady Luck, some members of our communities find themselves in a vulnerable place.



"VSA provides the required support to those who need it: from healthcare, to living necessities, to having a soulmate to share the burden with.

"It was a tough challenge but such a feeling of achievement to 'be at the top of the world' in that moment. I'd like to thank every single person who donated so generously, as well as One Team MDL for cheering me on."



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