



MSA Fall Protection Solutions for Aviation

WE KNOW WHAT'S AT STAKE.

Safety Solutions for Aviation

Working at height is an inevitable requirement in the aerospace and defence industries. Whether in manufacture or maintenance, the necessity of working at height is a large part of everyday life.

Protecting the physical safety of your workforce is more than a legal requirement; it's integral to the safe and smooth running of operations. Incidents in the workplace delay operations, cost money, and have a negative impact on both production efficiencies and workforce morale.

MSA Safety has worked closely with technicians in the aerospace and defence sectors for over four decades, ensuring a comprehensive understanding of their evolving practical requirements.

Today, MSA's Latchways® fall protection systems enjoy unparalleled levels of trust within this industry. We have the experience to meet the procurement requirements and long-term service commitments demanded by military as well as civil organisations.

A great testament to our standing is that fact that Latchways WinGrip® solutions are specified by both Airbus and Boeing for use in aircraft maintenance.



The fall protection imperative

There are two main reasons to ensure your company understands the need for – and the benefits of – fall protection: compliance and duty-of-care.

Compliance: Laws concerning workplace fall protection are becoming more stringent and more widespread, across industries and geographies. Legislation including OSHA in the United States and the Temporary Working at Height Directive in Europe is increasingly directive about fall protection measures such as:

- **Where fall protection is needed**
- **Which solutions are acceptable**
- **Who is responsible**

Many companies assume that the processes they currently have in place will suffice, without realising that they are in fact not fully compliant with legal directives. This hugely increases the risk of workplace incidents which can lead to negative publicity and trigger fines and safety audits by external bodies.

MSA Safety regularly provide consultancy around fall protection issues, helping organisations in the aerospace and defence sectors understand the specific legal requirements in place within their country, what that means in practice for their industry, and for their own workplace.

**Full details of fall protection legislation worldwide can be found on page 11 of this document.*

Duty-of-care: Regardless of the specific legislative requirement or recommendations that pertain to protecting workers at height in any given country, employers globally must share the same ethical duty-of-care to their workforce. Fall protection is only one part of a robust health and safety agenda, but the benefits for embracing it are often undervalued: a safe worker with peace of mind is a productive and happy worker.

Fall protection is never about 'one size fits all' – we have a deep understanding of usage scenarios and know why specific environments have a great bearing on what fall protection is required. We help organisations embrace the right system for them.



The view from above: Manufacturing

Given the size and the nature of the completed product, manufacturing in the aerospace sector necessitates working at height for a considerable part of the construction process.

For aerospace manufacturers, installing Latchways systems is an ideal way to demonstrate an understanding of risk management and prove a commitment to health and safety in a practical way. Over and above that, training the workforce about hazards and providing them with best practice guidelines for safety helps maintain the smooth running of operations and improves employee satisfaction. Greater efficiencies and reduced workplace incidents all add up to greater productivity and — for commercial manufacturers — greater profits.

“The Latchways system is extraordinarily versatile and greatly extends the range of tasks we can undertake without having constantly to physically reposition parts or people. The guardrail system has been developed to be able to stay in place and move with the airplane, right until it rolls off onto the flight-line. I really can’t remember how we got by before we had Latchways WinGrip!”

**Bill Colburn, Production Engineer,
Boeing**



The view from above: MRO

In the maintenance, repair and overhaul (MRO) sector, the sheer volume of maintenance tasks can often lead to delays— for commercial operators, delays in gate time can mean lost revenue — and the risk of compromising worker safety is a real, daily concern.

MSA offer easily portable fall protection systems which can be used outdoors and in wet weather. If all available hangar space is occupied, work can still continue, helping to avoid downtime, minimising the costs that come with idle assets and ensuring that time pressures do not amplify worker risks during maintenance.

“At North State Aviation we know the critical importance of getting the right solution in place - one that is liked by the people using it every day. When MSA team came to demonstrate the WinGrip solution I brought the whole team out to see it. I wanted everyone to consider it and to evaluate it. Basically, we all said yes. And WinGrip has proven to be the right decision. It just works.”

**Russell Kota, Vice President of
Maintenance, North State Aviation**



The view from above: Aerospace buildings and infrastructure

MSA's Latchways fall protection systems are used in a wide range of environments throughout the aerospace industry - different solutions comprehensively cover the range of challenges encountered in everyday operations.

Latchways systems are to be found all around users of aerospace environments. A portable vacuum-anchor system which ensures safety when on aircraft wings is used at Heathrow airport for inspection and light maintenance, regardless of where the aircraft may be. Barajas airport uses a rooftop cable system for maintenance, and at Helsinki airport an overhead

system facilitates access around the passenger terminal.

A horizontal cable system at Schiphol airport is used for access the airport sign. Latchways solutions are trusted by airports globally to help keep planes flying and operations running smoothly.



Our installations include:

Baku International
 Barajas (Madrid)
 Barcelona
 Bilbao
 Dubai International
 Frankfurt
 Gdansk
 Heathrow (London)
 Hong Kong International
 New Doha International
 Santiago de Compostela
 Schipol (Amsterdam)
 Stansted (London)
 Valencia

The view from above: Defence

MSA's rigorous innovation and reliable support meet the needs of the defence industry.

Military and defence customers require extend service commitments. Over four decades and a long-term record of successful partnership we have proven our credentials in the defence arena: we have the experience and understanding to meet military procurement procedures.

Our solutions include portable systems for use in non-permanent locations - these have the mobility, speed of installation and suitability for outside use demanded by the military.

MSA's defence customers include:

Armée de l'air
 Danish Air Force
 Belgian Air Force

Portuguese Air Force
 NATO
 Luftwaffe
 RAF
 Royal Australian Air Force
 Royal Netherlands Air Force
 Royal New Zealand Air Force
 Spanish Air Force
 USAF



"We chose Wingrip after carefully assessing and comparing it in terms of value for money, through-life costs; fitness for purpose and overall quality. Wingrip came out top because it gave us the best value and best engineered solution. Compared with its rivals, it was the strongest all-round package and best answer to our needs. Wingrip is a truly tri-service facility. We've got this excellent kit, it meets all safety legislation, it's popular and it's readily available for all to use."

Mike Wilkinson, Working at Height Cell, DE&S

MSA solutions for the aerospace and defence industries

WinGrip

The WinGrip system uses lightweight carbon fibre vacuum anchors which lock into place on the aircraft exterior. The worker connects to the system wearing a full body harness with a safety lanyard and positioning rope.

A great testament to the global standing of WinGrip is that it is the only fall protection system to be specified by Airbus and Boeing. These are some reasons why WinGrip has become product of choice for the sector:

Ease-of-use: WinGrip is loved by aerospace workers the world over as a system which is notably easy to transport, attach and use - providing simple, hands-free operation in all conditions. North State Aviation put it best: "It just works."

Versatility: Unlike other fall protection systems, WinGrip has no metal-on-metal parts and can be used safely during maintenance with fuel tanks open, with no risk of a spark. WinGrip is also the only fall protection system whose warranties cover working outside in wet conditions.

Complete peace of mind: In the very rare instance that any fault is detected in the system, WinGrip provides a unique "twenty minutes of safety" window in which the system "locks" safely in place to provide plenty of time for workforce to react and ensure the safety of themselves and fellow workers.

The WinGrip system is designed in a modular way to give end users choice and flexibility.



- **WinGrip Single User System:**

A single fall protection anchor point for one worker on wings, fuselage or stabilisers. The system offers comfortable hands-free movement for one operative.

- **WinGrip Multi-user Lifeline System:**

Allows up to four users to work together at any one time offering hands-free movement along the whole cable length.

- **WinGrip All-in-one:**

An individual pad and fully portable unit. Easy to use and quick to install, allows safe access to 'walking' areas of wings or structural sections of fuselage.

- **WinGrip Barrier system:**

Enables easy set up of a safe working area with upright stanchions and horizontal rails. The layout can enclose any area from one square metre to the entire deck.

The WinGrip system is widely used by military organisations globally including those in USA, Australia, UK and Europe—holding US national stock codes and NATO stock numbers.

"WinGrip is a fantastic product. I've been dealing with aircraft maintenance for 45 years; when you find something that does what WinGrip does ... it's a beautiful thing."

Russell Kota, Vice President of Maintenance, North State Aviation



Latchways® Single and Multi-span Overhead Systems

Provides permanent cable-based fall arrest within hangars where aircraft positioning is consistent or access is continuously required in the same area.

Combines revolutionary Constant Force load absorption technology using an innovative mobile anchorage, to provide a robust solution that offers outstanding levels of safety for single spans of up to 60m.

Usage: Hangars, for working on aircraft wings and fuselages - plus any fixed locations where overhead access is required.

Benefits:

- Simple system - easy to install.
- Reliable - durable and strong (1 x 19 stainless steel).
- Flexible – easily accommodates changes in direction.



V-TEC™ Self-Retracting Lifeline (SRL)

Complementing the overhead systems, MSA provide the most advanced range of SRLs on the market.

On-site servicing by MSA or its installers means a saving on the lifetime total cost of ownership.

Usage: Wherever fall protection is required without any compromise to mobility.

Benefits:

- Easy to maintain – no moving parts.
- Safe – a patented locking mechanism that cannot degrade due to extreme cold.
- Strong – the toughened nylon case protects the internal chassis and prevents impact damage.
- Retraction dampening technology - controls cable retraction speed limiting damage to the product.



Latchways® Vertical Systems

Latchways systems can be installed internally and externally, providing continuous protection.

Workers can use both hands as they work while remaining firmly attached to the system. Unlike hoop systems, the system has no obstructions that could cause serious injury while arresting a fall.

Usage: Adaptable for working on fixed ladders of any specification.

Benefits:

- Simple construction – adaptable to the contours of the structure it serves.
- Flexible – leaves both hands free for climbing and tasks.
- Reliable – arrest the fall by locking onto the system cable.



Latchways VersiRail®

This guardrail system provides aesthetically-pleasing collective protection solution, restricting access to fall hazards without the need to drill or penetrate the roof on which it sits.

VersiRail is quick and easy to install and can be used on virtually any flat roof surface up to a 4° pitch. A wide range of components enables the layout to be configured to suit the collective protection need.

Usage: For perimeter and access protection, for limiting walkways to defined areas, and offering fall protection. Commonly used on rooftops and in hangar gantries.

Benefits:

- Practical - lightweight and easy to install.
- Unobtrusive - complements the architectural location in which it is located- aesthetically pleasing.
- Hassle-free - no annual inspections needed.



MSA Latchways Constant Force® Post (CFP)

The Latchways CFP has a unique energy absorbing coil that, in the event of a fall, deploys in a controlled manner to absorb the force generated and leave the roof panel intact.

CFPs are designed to suit all common roof types and all major roofing manufacturers' systems including standing seam, composite, built-up-on-site, secret-fix, and membrane roofing.

Usage: Works with both fall arrest and fall restraint systems. Suitable for all work on roofs including maintenance, inspection and cleaning.

Benefits:

- Quick and easy to install
- Adaptable – works with nearly all roof types
- Maintains the structural integrity of the building



WalkSafe® — Rooftop Walkway System

WalkSafe rooftop walkways are a lightweight, practical solution which can be easily installed to provide a level non-slip surface on roofs.

The system also extends roof life by ensuring even weight distribution when roof works are undertaken.

Usage: Roof works including maintenance, plant inspection, air quality monitoring and roof-light cleaning.

Benefits:

- Practical - lightweight and easy to install; fully slip-resistant.
- Adaptable - for customisation to any roof surface.
- Aesthetically pleasing – sleek design and range of colour options.



Latchways Personal Rescue Device® (PRD®)

Where workers cannot be kept in restraint, a rescue solution must be present should a fall occur. Used in conjunction with suitable anchorage, PRD is a lightweight, unobtrusive 'back pack' providing an integrated harness system for self-rescue.

In the event of a fall a parachute-type 'rip cord' releases the descending system and lowers the faller gently to the ground in a controlled descent. The harness can be easily released allowing quick evacuation from the fall zone.

Usage: Individual working at height scenarios of up to 20m. Used in hangars, atriums, storage bays.

Benefits:

- Efficient – the rescue process takes seconds.
- Lightweight – no inconvenience to worker's movements.
- Easy-to-use – unobtrusive.



V-Gard 520 - unvented

Comfortable and peakless safety helmet, perfect for the protection of workers involved in working at height, confined spaces or electrical works applications.



Left/Right™ Wireless World

With advanced Bluetooth connectivity, taking a call or listening to streaming music has never been safer.

The high comfort and hearing protection level makes the Left/Right Wireless World the safest connection to the world...!



PremAire® Combination

Designed for versatility, affordability and comfort, its streamlined profile make this the ideal option for working in confined or tight spaces.



V-Gard 930 – vented or unvented

Balanced, modern and low-profile helmet with integrated over spectacles which fit over all corrective glasses.

For use where top impact hazards to the head, UV and particles hazards to the eyes exist.



Left/Right™ Passive Hearing Protection

Available in L, M, and H attenuation, this range features a precise fit that provides maximum loud noise protection using minimal cup size.

Helmet-mounted earmuffs can be adjusted to the angle of the ear, and also independently raised or lowered.



ALTAIR® 5X

Up to 6 gas detector with integrated pump.

Driven by advanced MSA XCell® Sensor Technology, this detector delivers faster response time, better stability, accuracy, longer service life, and cost savings over the life of the instrument.

Fall protection legislation worldwide

United Kingdom

Full details on UK Legislation can be found at HSE's website www.hse.gov.uk.

Working at Height Regulations (April 2005)
Construction (Design and Management)
Regulations 2007 (CDM)

Health and Safety in Roof Work
(Booklet HSG 33)

This document provides guidance on how to work safely on roofs and how to design and plan for safe working. It covers new buildings, repair, maintenance, cleaning and demolition. books.hse.gov.uk

USA

Occupational Safety and Health
Administration www.OSHA.gov

29 CFR 1910—Occupational Health and
Safety Standards for General Industry

29 CFR 1926—Safety and Health
Regulations for Construction,
Subpart M—Fall Protection

American National Standards Institute
www.ansi.org

ANSI Z359.1 details the components of a
personal fall arrest system, performance
requirements, test methods.

Australia

Every state in Australia except Western
Australia (WA) has now taken up the
national harmonised 'Work Health and
Safety Regulations 2011' (WHS) which cover
the risk of falls across all workplaces and
industries. WA currently follows:

Occupational Safety and Health Act 1984

Occupational Safety and Health Regulations
1996

Code of Practice: Prevention of Falls at
Workplaces

For more information visit:
www.safetyline.wa.gov.au

Canada

Canadian fall protection standards can be
viewed at www.csa-international.org

CSA Z259.2.1-1998, "Fall Arrestors, Vertical
Lifelines and Rails"

CSA Z259.16-04, "Design of Active Fall
Protection Systems"

CSA Z259.16 provides guidance to designers
of fall protection systems, the selection and
use of components.

France

Decree 65-48 of 8th January 1965, modified
by decree 95-608 of 16th May 1995

'Le Code du travail': Article L230-3 'General
principles of prevention'

Holland

Arbowet artikel 5 (verplichting tot Risico
Inventarisatie & Evaluatie)

Arbobeleidsregels 3.16 (werkzaamheden
boven de 2,5 meter)

Arbeidsomstandighedenbesluit artikel 2.29
(ontwerpers-bronbeleid-stand der techniek)

Arbobesluit voor de Bouw artikel 2.6 en 2.31
(verantwoording opdrachtgevers)

Spain

Royal Decree passed in Spain (2177/2004) in
particular:

4.1.3—Rope safety systems will be limited
to situations in which the risk assessment
shows that the work to be carried out can be
done in a safe manner, plus that the use of a
more secure system is not justifiable.

4.1.4—Where necessary, fall arrest systems
will be installed.

4.2.3—Work carried out at heights of
more than 3.5m from the ground, and
which require actions which would risk
the worker's stability will only be carried
out using personal fall arrest systems, or
alternative fall arrest systems.

Prevention of Labour Risk Law: 31/1995
and amendments to: 54/2003

It is the employers obligation to guarantee
health and safety in the work place.

Royal Decree 773/1997 Minimum health
and safety requirements pertaining to
the workers' use of personal protective
equipment.

Royal Decree 1215/1997 Minimum health
and safety requirements for the use of
equipment by workers.

NTP 448 Work on light roofing materials.

Mexico

NOM-009-STPS-2011 - Safety Conditions for
working at Heights.

NMX-S-058/1-SCFI-2005, Security, Personal
Protection Systems to stop falling from
heights-Part 1

NMX-S-058/5-SCFI-2005, Security,
Personal Protection Systems to stop falling
height-Part 5

New Zealand

Health and Safety in Employment
Regulations 1995

Approved Codes of Practice:

Construction and Building Maintenance:
Falls from heights—avoiding

Construction and Building Maintenance:
Heights—Safe Work at

Construction and Building Maintenance:
Falls—Guidelines for the Prevention of

For more information visit:
www.osh.dol.govt.nz

South Africa

Construction Regulations 2003

Occupational Health and Safety Act
1993—Section 8: Fall Protection

MSA—The Safety Company

All around the world, people work safely at heights thanks to MSA fall protection systems. With nearly 100 years of experience at the cutting edge of fall protection, MSA sets the standard for innovation, performance and quality. MSA is trusted to ensure worker safety on a wide range of buildings and structures, as well as throughout industries such as aerospace, oil and gas and energy and utilities.

Our Mission

MSA's mission is to see to it that men and women may work in safety and that they, their families and their communities may live in health throughout the world.

MSA: Because every life has a purpose.

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