Innovative Fall Protection Solutions Consultation to Turnkey Implementation

Flexible Lifeline Systems.

AIRCRAFT
Flexible Lifeline Systems® is the industry standard for fall protection. What that means for you is access to the best products and leading experts for fall hazards faced by commercial, corporate and military aircraft personnel. From a simple lightning strike check to a full D-check, whether the aircraft is in the hanger or on the flight line, FLS Aircraft Fall Protection Systems are user-friendly and non-intrusive while providing continuous, complete and uncompromising safety.

FLS offers every variety of aircraft fall arrest system, from economical cable-based permanent systems to highly portable Wingrip vacuum systems. We take into account your unique requirements and assist you in making the optimum choice for your application. As a turnkey provider, we design and install all options of fall protection, without bias. When you partner with FLS, the result is a system your workers will use without hesitation, because it keeps them safe without interfering with their jobs. A safe, confident worker is a more efficient worker. That’s why our clients say: FLS WORKS!
“Your team was excellent, knowledgeable and very professional. They completed 4 plus weeks of scheduled work in just over 2 weeks. Their workmanship is excellent; the communication was very good; their services were well provided; we were very satisfied. We will recommend FLS to others and will use FLS in the future.”

Dennis Ryan - General Dynamics
From our first meeting to your system certification, one project manager will have total responsibility and accountability for your project, guiding it every step of the way.

Consultation and Site Assessments
FLS fall protection specialists are uniquely qualified to identify fall hazards at your site and are always available for consultation.

Engineering Site Visit
Upon award of the project, Flexible Lifeline Systems will perform an engineering site visit to obtain site-specific measurements in order to form the basis of the design of the system and for preparation of plans and drawings.

System Design
Our professional engineers will work hand-in-hand with your staff to design systems in accordance with stringent specifications and in compliance with all local and federal regulations.

Fabrication
Our in-house fabrication facility and quality assurance programs ensure strict adherence to procedures, specifications and full material traceability. A Flexible Lifeline System is a quality product.
Installation
FLS offers a full range of installation options – no one-size-fits-all approach for our clients. Again, our engineers consider every aspect of your facility’s size and configuration. The rigorously trained FLS installation team implementing your design will leave you with a system custom-made for your individual needs.

Certification
Your FLS system is certified and comes complete with a *Use, Care and Maintenance Manual*. This comprehensive document contains the design basis, calculations, drawings and technical specifications for your system.

Training
FLS instructors are available to train your staff at your site or at our fully equipped facility in Houston, Texas. From a four-hour Basic Fall Protection Course to our 40-hour Qualified Person Course, FLS will tailor a training program for you.

Service & Cost
FLS provides a full menu of inspection and service options ranging from emergency call-out service to five-year maintenance contracts. Piecemeal competitors can’t compare with FLS turnkey costs and services. With a quality system and more productive workers, your bottom line will quickly show that *FLS Works!*®

“Flexible Lifeline Systems has always done a good job for Southwest Airlines.”
Rick Eliason - Southwest Airlines
“It’s your service that makes the real difference. That service includes your knowledge and that you always come through for us. Not much for us to think about with the expertise that FLS brings to the table.”

Bruce Robertson - Continental Airlines
FLS Single Span and Multi Span Systems provide the most customizable pass-through fall protection in the world. This is particularly important for our aviation clients who service dramatically different types and sizes of aircraft in a vast variety of structures.

**Single Span Systems**

Single Span Systems are economical, cable-based, stainless steel fall arrest systems that provide fall protection for up to three users for 200 feet.

**Multi Span Systems**

The Multi Span Flexible Lifeline System accommodates horizontal, inclined, curved and vertical requirements, allowing a user to travel unlimited lengths without having to disconnect and re-connect to the system.

**All Bases Covered**

Thanks to FLS’ flexibility, our engineers are able to develop and install both Single and Multi Span Systems that accommodate all your protocols. With these systems, multiple workers have comfortable and safe working areas to service the fuselage, wing, tail or engine on aircraft ranging in size from 777s and C-130s to Cessnas and Challengers.

- Unique and patented Overhead Shuttle unit glides freely over intermediate cable guides to enable continuous protection over the entire length of the system
- Built-in User-Friendly Tension Indicator
- Simple and economical installation
- Serial numbering of all components
- Unlimited length systems
- In-line Energy Absorber to Reduce End Loads
- All-weather use for optimum productivity

*Only the best will do. The smooth operating Overhead Shuttle used on FLS Single and Multi Span installations reflects our commitment to using only the highest caliber of equipment in your safety system.*
When hangar space isn’t available, an overhead cable-based system probably isn’t your fall protection solution. That’s where Wingrip® comes in. FLS Wingrip® systems operate inside or outdoors and provide access to the entire spectrum of aircraft shapes and sizes. Your workers will be able to work with confidence and efficiency in any environment.

**Full Aircraft Coverage**

Wingrip® provides an unprecedented combination of fall protection systems. Wingrip systems work as a single fall protection anchor point on the wings, fuselage and stabilizers, or can be connected in series with a horizontal lifeline to cover the entire wingspan of the aircraft. Systems can also be configured to work as a quick set-up fall restraint barrier system. Wingrip® systems can also be provided as independent all-in-one systems which afford a single user fall protection with no external power source or connections.

**Low Operating Cost**

Efficiency and innovation in design allow Wingrip® to operate at a fraction of the cost of other systems. Calibration and maintenance of the Wingrip® vacuum module and pads is a simple procedure conducted on site with no specialized tools, and the Wingrip® system doesn’t have the need for stocking expensive backup components. Additionally, Wingrip®’s multiple safeguards provides a system that exceeds legislative requirements.

- The Wingrip® system is powered by compressed air or nitrogen.
- The vacuum pad is compressed against the aircraft by atmospheric pressure and held in place by the negative pressure beneath the pad.
- Wingrip® can be used singly on the wings or fuselage, or connected in series to cover a full wingspan.
- Wingrip® is non-electrical, so electrical cables, mobile generators or a battery charging system are not required.
- The Wingrip® system is safe in all environments.
- In the event of a failure of the air/nitrogen supply, an alarm will sound and the pads will maintain a safe working condition for a minimum of 20 minutes.
“FLS has a solid record with the United States Coast Guard. Their services were completed on schedule in spite of being given little notice on the project. The installer was very courteous and FLS was extremely accommodating, particularly given the difficult timetable.”

Kent Goodwin
U.S. Coast Guard (Aviation)
MORE ABOUT WINGRIP

**Twin Pad Systems**
Twin Pad systems utilize two vacuum pads to triangulate and fix a single worker’s position in order to avoid a fall hazard. Dual pads can also be used for two-user fall protection where each user is anchored by a single pad.

**Lifeline Connection Systems**
Wingrip® horizontal lifeline systems utilize multiple vacuum pads with a single or pair of cables spanning between to provide safe, hands-free access for up to four workers along the entire length of a wing or fuselage.

**Barrier Systems**
Wingrip® Barrier Systems provide an ideal solution for larger aircraft which require multiple maintenance activities to be performed simultaneously. Vacuum pads secures the system to the aircraft. The center posts of the pads are fitted with uprights and horizontal rails that telescope into position and lock into place making installation quick and easy.

**All in One Anchor**
The FLS Wingrip® All in One Anchor is a completely portable, independent fall protection system powered by either an attached nitrogen bottle or a compressed air or nitrogen source. The system provides the user hands-free fall protection without reliance on batteries, electrical sources or other support equipment.
The FLS FlexRail System includes a durable rigid fall protection system featuring an enclosed track with optional bypass capability. No other rigid rail fall protection system provides bypass capability combined with the enclosed track benefits of FlexRail.

**Performance**
The FlexRail System provides an unprecedented 1:100 movement-to-weight ratio. Even in high overhead situations, such as wide-body hangars, the retractable lifeline remains overhead at all times completely eliminating any potential for an in-line swing-fall.

**Optional Bypass Capability**
With each user on their own enclosed track, multiple users gain full bypass capability. The result is increased safety and productivity.

**Durability**
All structural components are hot-dipped galvanized or coated for added durability and corrosion control. The Teflon® wheels of the sealed bearing trolleys do not damage the coating, resulting in years of maintenance-free use.
Flexibility and Expansion
The system can be designed in unlimited lengths. This modular style makes it easy to add sections when you expand your MRO capacities. We’ll even design your system with your expansion plans in mind to further reduce costs when the time comes.

Reliability & Maintenance
The FlexRail enclosed track is by far the most reliable rigid rail system in use today. The enclosed track prevents dust and debris buildup, providing a virtually maintenance-free system. This is critically important in aircraft maintenance hangars where Foreign Object Damage (FOD) is a concern.

Affordability
FlexRail is an affordable alternative to the old-style exposed flange trolley beam systems. In addition to the competitive initial cost, the system has little ongoing maintenance and provides increased productivity.

“General Dynamics likes doing business with Flexible Lifeline Systems. They’re a fair, competent, ‘tell it like it is’ company.”
Dennis Ryan - General Dynamics
"I want to thank you for your company's fast and professional handling of my recent install. The supervisor made it as easy as possible on us, even with all the hassle we have with our hanger. I also want to add that your installer proved to be very valuable. His product knowledge and professionalism inspired confidence. Thanks again for your help and time."

Rick Gurgos - Landmark Aviation
**MAINTENANCE PLATFORMS**

**FLS Aircraft Maintenance Platforms** provide optimal safety conditions for maintaining rotor or fixed wing aircraft across all military and commercial applications.

Flexible Lifeline Systems has developed an unparalleled variety of custom maintenance platform applications in over 400 locations worldwide establishing itself as the industry leader in the design, engineering and fabrication of aircraft maintenance platforms. Designs range from small portable step-up decks to full phase modular maintenance platforms.

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**Phase Style Maintenance Platforms**
Phase style platforms are engineered to cover all areas of maintenance on helicopters without stand replacement.

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**Flight Line, Independent, or Daily Stands**
Ideally suited for on-the-spot maintenance of aircrafts, these easily movable stands are available in several aircraft styles.

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**Deployable Aircraft Maintenance Stands**
These multi-purpose, hydraulic lift stands are designed for easy setup, are deployment ready in 1 hour, and take 1 pallet position.

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**FLS Modular Maintenance Stands**
The adjustable nature of modular stands allow decks to be continually added to expand access to the aircraft as needed.
**FLS Mobile Access** aviation products include the Horizontal Rail Fall Arrest System, Free Standing Mobile Access Platform, and Free Standing Mobile Access Stair System. These freestanding units are collapsible for storage or transportation, and height adjustable to optimize utility.

Flexible Lifeline Systems offers multiple system solutions to provide reliable fall-protection where it’s needed, when it’s needed. These systems provide optimal safety and allow for easy access to elevated work areas with fall protection for the duration of the work being performed.

Available in a range of heights and wheel styles, these free standing units can be customized to meet your exact requirements. All FLS mobile access systems are compliant with OSHA requirements and standards to ensure worker safety and protection.

**Mobile Access System Features**

- **Rugged Frame** Constructed from powder coated aluminum and zinc-plated steel for corrosion resistance and maximum durability
- **Lightweight** Easily moved by hand
- **Adjustable Height** Optimizes utility
- **OSHA Compliant** meets all applicable requirements and standards

**Horizontal Rail System**

Free-Standing Horizontal Rail Systems roll up to elevated work surfaces and provide mobile anchor points for fall protection along the length of an elevated area. With six wheel combinations to choose from, systems can be outfitted for any application or terrain. Rail systems may be fixed height or adjustable, and can incorporate an access stair system to provide ground-up fall protection for your elevated work activities.
Mobile Access Stair System
The Free-Standing Mobile Access Stair System provides access for working surfaces up to 18'-3". The stair-step design provides sure footing and facilitates safe access to and from work areas while carrying tools. Each unit features two davit anchor points providing fall protection for two users. Adjustable outriggers enlarge the base foot print to stabilize and level the system when in use.

Mobile Access Stair with Horizontal Rail
Combining the sure footing of a stair system with the mobile anchor point of a rail, The Free-Standing Mobile Access Stair with Horizontal Rail System affords safe access to elevated work surfaces and fall protection for an extended work area. These systems come in heights of up to 19 feet to the work platform and may be fixed height, or are height adjustable via hydraulic, manual or gasoline pump options.

“FLS met a very tight delivery schedule... We are really pleased with the product, and have already recommended FLS to our associates.”
Jerry McCawley - Lockheed Martin
Because **Flexible Lifeline Systems®** sets the global standard for fall arrest solutions.

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<th>UNRIVALED EXPERIENCE</th>
<th>INDUSTRY BEST EXPERTISE</th>
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<td><strong>Focus</strong></td>
<td><strong>Professional Engineers</strong></td>
<td><strong>Turnkey Service</strong></td>
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<tr>
<td>Our sole focus is innovative fall protection systems. We design and engineer fall protection. Period.</td>
<td>FLS’ Registered Professional Engineers are highly experienced in the loading characteristics of fall protection systems.</td>
<td>FLS has built its reputation through the self-performance of all phases of fall protection installation including engineering, fabrication, installation, certification and training.</td>
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<td>FLS has designed and installed more fall protection systems in more applications and industries than any other fall protection system contractor.</td>
<td>FLS provides multiple proven solutions for each application.</td>
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**ATTENTION TO DETAIL**
That’s why businesses concerned with safety and productivity know

Knowledgeable Systems Specialists
FLS’ Systems Specialists are the most highly trained and knowledgeable sales force in the fall protection industry. Think of your Systems Specialist as your own personal fall protection consultant.

Quality Assurance
Our uncompromising QA Team guarantees FLS Works® exactly as planned on every installation. We utilize ISO 9001:2000, API Q1, 7th Edition, and ISO/TS 29001:2003 systems which are designed to the highest standards of ongoing quality assurance. Our QA policy is simple; always meet or exceed our customer’s requirements and the highest recognized industry standards. No exceptions.

Satisfied Customers
Our clientele includes a wide range of industrial companies, military organizations, architects, engineers and contractors who come to us, not only for product knowledge, but for design and technical assistance. We pride ourselves on excellence - supplying proven solutions, technical services, and extensive industry experience. FLS Works®