



NEWSLETTER

MARCH 6, 2026

Design factors in keeping your crew healthy, safe

Muscle strains, back problems, shoulder injuries and hip problems are common hazards in aviation maintenance. So are arm, knee, wrist and head injuries. But all can be reduced or avoided with better designed equipment -- equipment that makes you feel you haven't "crawled through a knot-hole backwards" to get the job done.

Ergonomic design is critical for safety, productivity, and long-term workforce health. In aviation maintenance, these structures directly influence how workers access equipment, perform tasks, and manage physical strain. Poor design can lead to fatigue, musculoskeletal disorders, lost-time injuries, and decreased efficiency. Thoughtful engineering, on the other hand, enhances safety, comfort, and overall job performance.



At least 3 elements of ergonomic design are illustrated in this close up view of an SAS access stand. 1. Adjustable height puts technicians at the right level. 2. Non-slip surfaces protect your movements 3. Padded sliders eliminate gaps and the need to reach across open space.

- **Working height** is one of the primary ergonomic challenges. Platforms must position workers at an optimal height relative to the task. If a platform is too low, workers are forced to reach overhead, straining shoulders, neck, and upper back. If too high, they may bend forward or work at awkward wrist angles. Ideally, work surfaces should allow tasks to be performed between mid-thigh and chest level.
- **Access and egress** present important ergonomic considerations. Stairs should be designed with consistent rise and run dimensions, proper handrails, and slip-resistant treads. Steep or uneven
(continued page 2)

Come see us at MRO Orlando

April 20-23, #2558

Join us and thousands of other aviation professionals at the upcoming MRO event in Orlando. We'll be there to listen to your problems and challenges, and share ways we're helping reduce the headaches of line maintenance and ground operations. Come by our booth and tell us you've been reading our Newsletter to get a special gift..



Mechanic school surges!

At Cincinnati State Technical and Community College in Ohio, enrollment is surging as airlines and cargo carriers scramble to hire trained mechanics. The school now has 185 students in its aviation maintenance program and plans to expand so it can enroll 350, school administrators said.

AAR expands facility

AAR has substantially completed the expansion of its Airframe MRO facility in Oklahoma City. Driven by an increased demand for AAR's MRO services, the 80,000+ square foot facility expansion includes three maintenance bays capable of accommodating all 737 variants.

Custom Solutions. Exceptional Care.

www.Simpson-Services.com

Ergonomic design offers ways to protect, sustain your crews

- steps increase the risk of trips and falls, particularly when workers are carrying tools or parts. Ladder access, while space-efficient, is generally less ergonomic and more hazardous than stairways, especially for frequent use. Properly angled stairs with adequate landing space significantly reduce fatigue and injury risk.
- **Surface traction** is another essential issue. Workstands are often used in environments where fluids such as oil, water, or hydraulic fluid are present. Non-slip surfaces, grated decking, and anti-skid coatings improve footing and reduce fall hazards. However, designers must balance traction with comfort; overly aggressive grating can cause foot discomfort during long periods of standing.
- **Reach distance and task layout** also play a major role in ergonomic effectiveness. Tools, controls, and parts storage should be positioned within easy reach to prevent repetitive overextension. In aircraft maintenance settings, for example, platforms must allow technicians to access fuselage or engine components without twisting or leaning excessively over guardrails. Extended leaning increases lower back stress and compromises balance. Guardrail placement should protect workers without interfering with task access.
- **Mobility and stability** present another ergonomic tradeoff. Many workstands must be easily movable to support changing workflows. However, mobility introduces potential instability if locking mechanisms are inadequate. Casters should include reliable locking systems that prevent any movement during use. Excess vibration or sway can cause fatigue and reduce precision during detailed tasks. Stability is especially critical when workers handle heavy tools or perform torque-sensitive operations.
- **Lighting integration** is frequently overlooked in ergonomic design. Inadequate lighting forces workers into awkward positions to see clearly, contributing to neck and eye strain. Integrated LED lighting, adjustable light positioning, and minimized shadowing significantly improve posture and task accuracy. Similarly, noise and vibration control should be considered when platforms interface with powered equipment.

Ergonomic design of workstands and platforms involves careful consideration of height, access, stability, reach, surface safety, lighting, and adaptability. When these factors are addressed holistically, organizations benefit from improved safety outcomes, higher productivity, and a healthier workforce.

Innovation at the forefront of line maintenance evolution

Innovation within line maintenance is transforming how airlines manage aircraft reliability in the hangar, at the gate, and on the ramp.

Predictive maintenance is one of the significant advancements. Real-time aircraft health monitoring systems transmit fault data immediately upon landing, allowing technicians to diagnose issues before the aircraft reaches the gate. Instead of troubleshooting from scratch, crews arrive prepared with the correct tools, parts, and documentation. This reduces aircraft-on-ground time and improves on-time performance.

Digital tools are also reshaping ramp operations. Electronic logbooks and mobile maintenance applications let technicians access manuals, wiring diagrams, and fault isolation procedures directly from tablets. This eliminates paper documentation, reduces errors, and speeds sign-offs.

Ground support equipment is evolving as well, with safer, more ergonomic access stands and mobile platforms improving technician safety and productivity during quick inspections and component changes. "Everything we do starts with how to improve the environment for the technician. We're no longer building stands we're creating solutions" said Coy Stepro, SAS general manager. "I hear of so many situations where an off-the-shelf product doesn't work because things have changed. Finding the limitations, removing them and offering a broader solution is our business."

Customer experiences that result in trusted, lasting relationships.