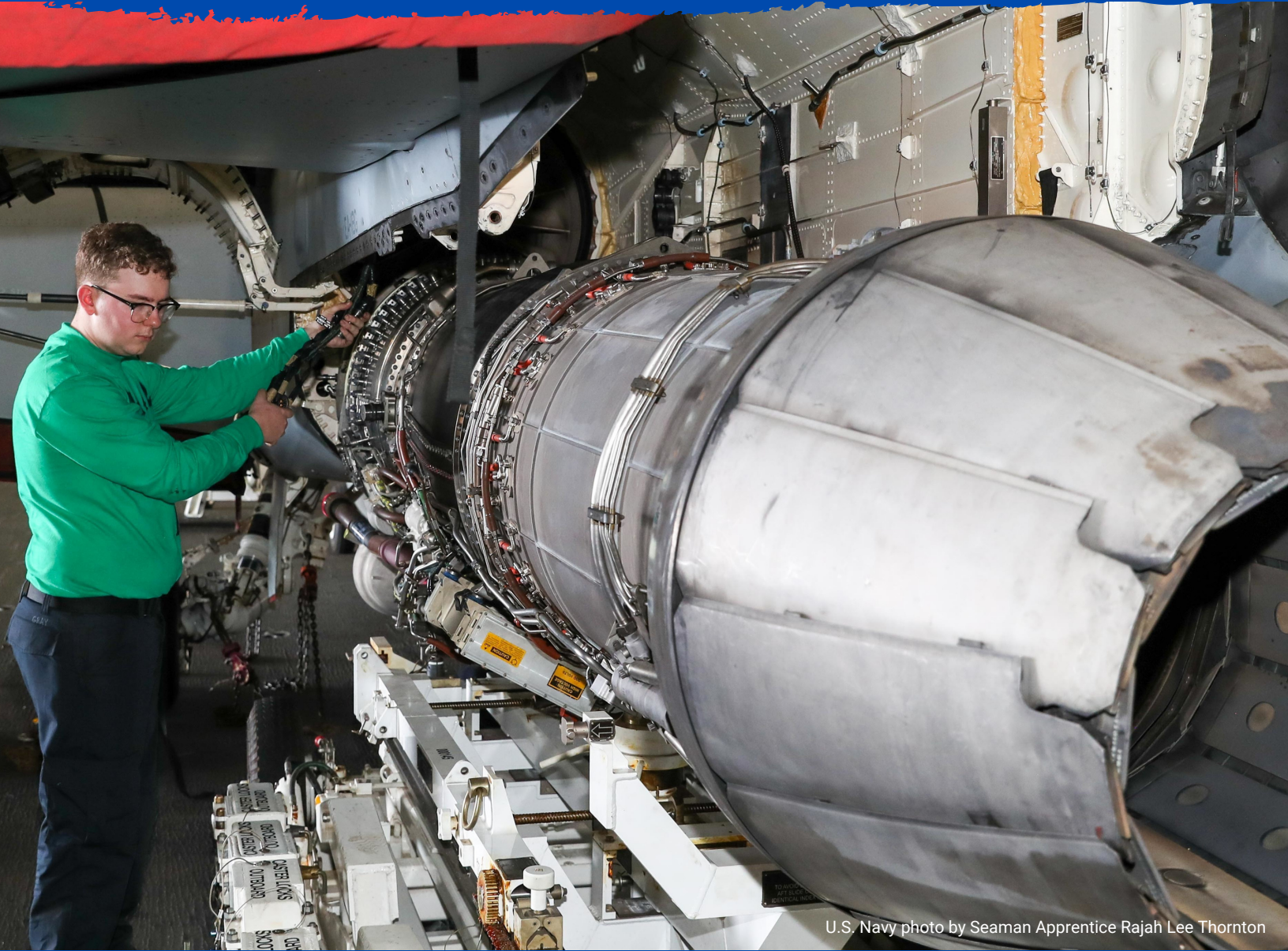


HIGH-RISK EVOLUTIONS

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U.S. Navy photo by Seaman Apprentice Rajah Lee Thornton



HIGH-RISK EVOLUTIONS

High-risk evolutions are part of everyday life in the Navy and Marine Corps workforce. Not everything we do is high risk, but we need to identify those high-risk evolutions and implement procedures to identify, mitigate and provide timely training to the risks associated with each high-risk evolution. High-risk maintenance evolutions include auxiliary power unit operation, low- and high-power aircraft engine turns, aircraft moves, functional check flights, aircraft jacking and lowering, hydraulic power application, propeller, rotor blade, tail paddle and gearbox removal and installation, overhead hoisting operations, crane operations, seat crane utilization, and engine removal and installation. Due to the inherent high-risk nature of these types of actions, higher levels of supervision are required during the planning and execution to prevent or reduce the possibility of mishap or injury.

Let's review a high-risk evolution that requires supervision, briefing and debriefing of the maintenance evolution to prevent ground mishaps from occurring by using the plan, brief, execute and debrief (PBED) process.

High-risk Identification and Planning

Aircraft moves have been identified as a high-risk evolution by Navy and Marine aviation commands, and aviation ground mishap trends support the heightened concern. Executing this move safely requires a sound plan, a clear brief, a safe execution and a debrief so we can address any concerns, lessons learned and adjustments that need to be made. The briefer initially needs to assess the areas the aircraft will be moved from and to, the path the aircraft will be moved along, and the condition of the aircraft that needs to be moved so the individual will have a solid plan going into the initial brief. All personnel involved in the evolution must be present for the brief, they must be engaged, and they must state any issues or limitations they have so everyone is on the same page. A good brief will clearly explain the evolution flow and must identify steps from start to finish. All personnel must understand their responsibilities, including first-time personnel or trainees.

Of note, there is a new requirement for a minimum of seven personnel to move an aircraft as a result of the large number of aircraft move mishaps. A recently released Interim Rapid Action Change to the NAVAIR 17-1-537 Organizational, Intermediate and Depot Maintenance Aircraft Securing and Handling Procedures with Aircraft Restraining Devices and Related Components adding an additional tail walker so there is a tail safety walker or observer on each side of the tail. This action will lead to changes in all the applicable NAVAIR manuals governing movement of aircraft.



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The Brief

During the brief, identify required safety equipment is in place, and identify personnel responsibilities such as move director, tow tractor driver, wing walkers, brake rider and tail walkers. Ensure the move director, brake rider and the tractor driver are all qualified and properly licensed.

There are topics that should be covered by the move director/move briefer before the move execution. Is the aircraft safe to move? Are there any limitations on the specific aircraft, such as operable brakes, critical doors and panels installed, wing fold/blade fold or spread concerns? Is the aircraft going to a turn or vibrations run spot and needs to be pointed in a certain direction? Does everyone have a working whistle/air horn as required? Are there any pre-operational inspections required and have they been completed? Is the evolution supervisor an E-6 or above? Is the aircraft going in or out of the hangar? Does anything need to be removed or installed on the aircraft prior to the move? Is there anything that must be moved out of the way or anything that will be in close proximity of the aircraft during the move? What is different today that could impact the evolution? Differences should be emphasized during the brief to ensure all personnel involved are aware and clearly understand the differences. Each aircraft move should be briefed due to different aircraft, different spots to move from and to, different paths required to move, and quite possibly different reasons why the aircraft are being moved.

The Execution

During the execution, the evolution supervisor must ensure the following: all ground locks are properly installed, aircraft is ready to move, everyone is in their proper position, has their whistle in their mouth or air horn at the ready to blow (depending on aircraft size and/or location) at all times during the move, that safeties are watching what they are supposed to be watching, and that all move team members can communicate clearly -- whether with wands and/or verbally. The speed of the aircraft being towed must not move faster than the slowest walker. The aircraft must be clear from any structures, toolboxes and support or test equipment. Once the aircraft move is complete, ensure brakes are applied and chocks and chains are properly applied to the aircraft as applicable. Once the brakes, chocks and chains are properly applied, ensure the tow bar is unhooked from the tow tractor, then unhook the tow bar from aircraft. Finally, ensure canopies, doors and panels are clear and secured as applicable, aircraft is grounded and all plugs are installed.

The Debrief

After the execution of the move, a debrief with the entire move crew will discuss any concerns, near misses or violations that need to be addressed. The debrief is also a time to collect any lessons learned and identify Bravo Zulus.

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Quality assurance should receive and process this information as applicable by ensuring any Aviation Safety Awareness Program reports or hazard reports are submitted, any lessons learned are officially captured and trained to as applicable, and the information is also shared with type-wing and carrier air wings as well.

High-risk evolutions and maintenance procedures are inherent in naval aviation. The intent is not to avoid high-risk evolutions, but to identify, mitigate and provide timely training to the risks through proper supervision and the PBED process. This will ensure units apply proper risk management and also maintain an effective Safety Management System.