



Two-Thirds of DoD, Aviation, and Rail Organizations Experienced Preventable Fleet Downtime Due to a Lack of Effective Predictive Maintenance

Eighty-Nine Percent Say They Must Improve Their Ability to Predict and Prevent Equipment Failure

ALEXANDRIA, Va. – July 18, 2023 – Within the last year, 66 percent of Department of Defense (DoD), commercial air, and commercial rail maintenance, operations, and IT teams experienced preventable downtime due to a lack of predictive maintenance, according to a new report from [MeriTALK](#), a public-private partnership focused on improving the outcomes of government IT, and underwritten by [Shift5](#), the observability platform for onboard operational technology (OT).

The report, “[Redefining Operational Readiness: Enabling the Full Potential of Predictive Maintenance](#),” surveyed decision-makers and revealed that while the need for predictive maintenance in defense, commercial aviation, and commercial rail is urgent, legacy systems and tooling and a lack of access to real-time onboard data hold back desired adoption. Predictive maintenance allows the owners, operators, and maintainers responsible for transportation and defense fleets to monitor the condition of their fleets and identify issues before they impact safety, availability, or readiness.

To explore the barriers to operational readiness, MeriTALK surveyed 300 operations, maintenance, and IT leaders from DoD, commercial air, and commercial rail organizations. According to the report, 89 percent of leaders say their organization must improve its ability to predict and prevent equipment failure, yet just 46 percent have fully implemented at least one predictive maintenance solution.

Legacy OT infrastructure and/or systems and lack of appropriate data access and observability are among the top impediments to predictive maintenance adoption, according to leaders across all three industries. More than three quarters (77 percent) agreed that their organization’s current tooling fails to provide the onboard data access and observability needed for effective predictive maintenance. Further, two out of three said that when an issue arises, their organization struggles to determine if the root cause is a cyberattack or an equipment maintenance issue, indicating that the implementation of predictive maintenance could drive cybersecurity improvements as well. In addition, DoD leaders are nearly twice as likely as commercial rail leaders to say predictive maintenance will improve cybersecurity.

“Organizations need real-time knowledge of what’s happening onboard aircraft,

locomotives, defense fleets, and weapons systems, at both the asset level and fleet scale,” said Egon Rinderer, chief technology officer, Shift5. “If you can’t access the data, you can’t achieve the observability that’s required for contextual insights and actionable analytics at the edge. This level of observability improves an organization’s ability to predict and prevent equipment failure and decrease downtime. For the DoD, effective predictive maintenance is critical for improving and maintaining mission readiness. In the commercial space, it’s essential for maximizing operational efficiencies, improving safety, and reducing maintenance costs.”

Operational readiness hinges on improving universal access, visualization, and exploration of onboard data. According to the report, defense, air, and rail leaders see a path forward for mission success. Defense, air, and rail leaders said they would like to see improved data access and availability to accelerate the implementation and expansion of predictive maintenance.

The report reveals expected outcomes of predictive maintenance implementation from DoD, commercial air, and commercial rail leaders, which include improved operational efficiency, optimized system availability and reliability, and improved customer and passenger safety.

The DoD Experience

- 73 percent said they’ve piloted at least one predictive maintenance application, but less than half feel well prepared to develop a comprehensive implementation plan, per a December 2022 Government Accountability Office recommendation¹
- 73 percent feel the lack of predictive maintenance across the DoD directly correlates to a low platform readiness/availability or mission capable (MC) rate, and 62 percent said that downtime could have been prevented with the use of predictive maintenance
- DoD leaders expect a 35 percent increase in their department’s MC rate from the implementation of predictive maintenance

The Commercial Air Experience

- Commercial air leaders expect predictive maintenance to lower maintenance costs by 22 percent
- 99 percent say predictive maintenance would improve their ability to comply with Federal Aviation Administration (FAA) requirements
- 83 percent say their current tooling fails to provide the data access and observability needed for effective predictive maintenance

¹ [GAO-23-1055546](#)

The Commercial Rail Experience

- Commercial rail leaders expect predictive maintenance to lower maintenance costs by 22 percent
- 97 percent say predictive maintenance would improve their ability to comply with Federal Railroad Administration requirements, including the 92-day service inspection
- 76 percent say their current tooling fails to provide the data access and observability needed for effective predictive maintenance

The report is based on an online survey of 300 operations, maintenance, and IT leaders from DoD, commercial air, and commercial rail organizations completed in May 2023. The report has a margin of error of $\pm 5.66\%$ at a 95% confidence level. To review the full findings, [view the report](#).

About MeriTalk

The voice of tomorrow's government today, MeriTalk is a public-private partnership focused on improving the outcomes of government IT. Our award-winning editorial team and world-class events and research staff produce unmatched news, analysis, and insight. The goal: more efficient, responsive, and citizen-centric government. MeriTalk connects with an audience of 160,000 Federal community contacts. For more information, visit www.MeriTalk.com or follow us on Twitter, @MeriTalk. MeriTalk is a [300Brand](#) organization.

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