Integrated Maintenance Solutions

Fleet Support Group has a process-oriented, analytical approach to integrating maintenance elements. Our procedures provide the maximum system performance at the lowest total operating cost, and we accomplish this basic engineering process in support of evolving, proactive maintenance programs.

Our Supportability Engineering Capabilities

Supportability engineering integrates all elements of logistics that support maintenance. FSG has active tasking in the majority of the supportability engineering elements, as well as strategic alliances for those elements that are specialty functions.

Maintenance Engineering consists of reliability analysis, maintainability analysis, Reliability-Centered Maintenance (RCM), Maintenance Task Analysis (MTA), and Level of Repair Analysis (LORA).

Maintenance Planning involves our understanding the maintenance concept for a product and how it influences the design process. It is the foundation for all maintenance planning efforts. We also realize that operational and environmental conditions and constraints impact system maintainability and performance effectiveness.

Our comprehensive maintenance planning skills are drawn from practical, hands-on experience. We influence the design process to incorporate where practical, built-in test equipment as well as diagnostic, troubleshooting, and repair features.

Supportability Engineering

We understand the critical need for early and proper logistics support analysis and its implementation and maintenance over all the DoD programs that Fleet Support Group supports. Our ultimate role is to ensure that our war-fighting forces and the platforms they use each day can flawlessly perform all their mission operational, maintenance, supportability, and sustainment requirements on the day they are fielded and throughout their anticipated useful life cycles.

FSG provides a complete line of maintenance planning products for both DoD and commercial assets, including:
- Integrated maintenance and performance systems
- Maintenance plans, schedules, and procedures
- RCM techniques
- Maintenance standards and work packages
- Maintenance monitoring
- Maintenance analysis automation

Reliability-Centered Maintenance (RCM)

RCM is a proven methodology used to analyze systems and maintenance processes with the primary objective of preserving system functions. Using RCM, Fleet Support Group identifies equipment failure modes that can defeat system functions, prioritizes the importance of failure modes, and selects only applicable and cost-effective maintenance tasks for accomplishment.

We have used this systematic method for engineering initial maintenance strategies on new systems and re-engineering existing maintenance strategies for HM&E and electronic systems. RCM strives to apply new technologies to make maintenance less invasive and more cost effective. FSG’s process ensures there is a method to monitor the effects of the changes made on the system in the form of Measures of Effectiveness (MOE) and Return on Investment (ROI).

Fleet Support Group applies the following RCM principles:
- Data driven for best results
- Methodologies that preserve system function
- Maintenance tasks must be applicable and effective
- Tasks should use technology to be less intrusive – avoid “open and inspect”
- Task periodicity based on maintenance data failure periodicities
- Most failures that show signs of decreased resistance to failure are measurable and suited to condition-based maintenance assessment
- Consideration of operational, safety, and economic factors

Reliability, Maintainability, and Availability (RMA)

Our goal is to provide a product that has higher reliability and reduced maintenance requirements. To achieve this, we:
- Control the RMA integration process
- Interject RMA system quantitative and qualitative requirements
- Conduct RMA trade-off analyses to support design alternative evaluation
- Use system and equipment parameters such as Mean Time Between Failure (MTBF) and Mean Time to Repair (MTTR) to develop RMA models
RMA Modeling performed by Fleet Support Group uses several widely accepted commercial and government computer programs, such as NAVSEA's TIGER and Relax. These models allow us to project system performance, influence the design process, and identify RMA critical items as early as possible. This reduces any potential impact on a product's critical design, testing, or production path. The RMA methodology we employ provides full traceability so that customers, and ultimately the end user, can have confidence in the analysis output and recommendations.

System Safety and Environmental, Health and Safety (EHS) cover all elements of safety, from the handling of hazardous materials, to safe operating procedures, to training specifications as they apply to ensuring safety.

Safety Analysis provided by FSG ensures safety in both industrial and office environments. We combine our own design experience and knowledge of industry standards with that of the customer to help assess risk, analyze safety considerations, and develop effective safety plans.

Fleet Support Group is experienced in conducting safety programs that involve a wide range of technologies, as well as establishing the administrative and technical means by which accident prevention requirements and policies are planned, managed, and implemented. We have the capabilities to conduct hazard analyses and eliminate or mitigate identified hazards. Safety is an integral part of every systems engineering process. Through a hazard analysis, FSG:

- Identifies and evaluates all potential hazards
- Classifies hazards as acceptable or unacceptable risks
- Identifies hazardous components, systems, and interfaces
- Evaluates potential solutions
- Develops and submits recommendations

Manning Analysis stems from Fleet Support Group's understanding that manning is the number one cost driver for product, production operations, and support for many industries. Our manpower assessment techniques permit effective integration with new design efforts, as well as non-disruptive evaluation of established processes. Our personnel analysis involves the selection of the number, skill levels, and location of personnel to support the maintenance function.

This allows for the insertion of state-of-the-art technology and automation into both new and established products and production processes. During our assessments, FSG:

- Investigates new technologies
- Conducts personnel interviews
- Observes system and process operations
- Analyzes maintenance procedures
- Utilizes the latest, approved industry/government manpower indices and standards
- Reviews policies and procedures that drive manning requirements

Facilities are selected to optimize the applicable support and effective maintenance tasks at the lowest cost.

Supply Support balances readiness requirements with the optimal mix of manpower involvement, whether it be direct vendor delivery, prime vendor support, full-service contractor, government agency or power-by-the-hour.

Support and Test Equipment (S&TE) includes equipment selection, location, management and maintenance of the S&TE itself.

Technical Data includes the creation and provision of accurate, current maintenance documentation in a variety of media to support the maintenance function.

Maintenance Training and Training Systems are those training evolutions and equipment required to provide skilled maintenance personnel, including the management of maintenance as detailed in Fleet Support Group's Maintenance University (MU).

Human Factors Engineering covers the design of equipment to accommodate the majority of users and ensures that equipment is accessible for maintenance.

Habitability addresses the quality of life issues associated with the maintenance functions.

Computer Resources Support is defined as utilizing the functionality of a maintenance management information system to support the maintenance function and to provide data for enhancement programs such as Total Enterprise Integrated Maintenance Strategy (TEIMS).

Total Ownership Cost (TOC) savings and avoidances are an integral part of every program's supportability assessment, especially with ever tightening DoD budgets.