

Baselines help keep naval aviation on the flight line

NAVAL AIR SYSTEMS COMMAND, PATUXENT RIVER, Md. – NALCOMIS OOMA may sound like the name of a character in a science fantasy novel, but it really is a powerful aviation maintenance tool that helps keep naval aviation flying affordably and reliably.

NALCOMIS, which is short for Naval Aviation Logistics Command Management Information Systems, is an automated information system that provides aviation maintenance and material management with timely, accurate and complete information that is used in the daily decision-making process and furnishes a means to satisfy the Naval Aviation Maintenance Program (NAMP) requirements.

Combined with the Optimized Organizational Maintenance Activity (OOMA), which provides data input through local data collection and validation for efficient and economical maintenance management, NALCOMIS describes an allowable configuration, called a baseline, so the fleet can create the actual airframe, engine, component or other item configurations, manage them electronically and report the data up line to a maintenance reporting system called DECKPLATE, or Decision Knowledge Programming for Logistics Analysis and Technical Evaluation.

Commander, Naval Air Systems Command (NAVAIR) is the baseline manager for the effort and is responsible for creating, loading and maintaining the aircraft or weapons systems baseline data that belongs to the respective program manager, and Naval Air Warfare Center Aircraft Division (NAWCAD) is responsible for the validation and functional testing of all Program Management Air (PMA) NALCOMIS OOMA baselines throughout the build and sustainment phases.

“Baseline managers previously reported to the programs so in an effort to streamline the process and produce cost savings we created a NALCOMIS Baseline Center of Excellence. The BCE was implemented in 2014 as budgets started getting tight,” said Brian Olson, national lead and process owner for NALCOMIS baseline development. “We have been able to consolidate functions, save costs by reducing manpower, establish policy and provide more consistent data for the fleet.

“We’re a gatekeeper to keep undocumented changes from making it to the fleet,” he said. “We make sure the aircraft configurations are maintained in the most current state so the platforms are ‘Safe for Flight’.”

The NALCOMIS OOMA database consists of three major segments. These include the Equipment Configuration Baseline, which is a hierarchical top-down breakdown of the actual configuration of the equipment; Usage Baseline, which includes metrics called “data sources” that are used to track life expenditure of components, weapons systems and aircraft; and Maintenance Baseline, which contains all scheduled and unscheduled maintenance tasks.

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There are currently about 60 aircraft platforms and mission mounted systems, with nearly 3,000 end-items that are baselined in NALCOMIS. Baseline data comes from a variety of sources, to include the original equipment manufacturer, the programs, Type Equipment Codes (TECs), Work Unit Codes (WUCs), part numbers, task definitions, technical bulletins, maintenance manuals and more.

This provides the maintainer a guide to what they should see as they begin to work on a piece of equipment, to include descriptions, part numbers, part locations and more. The data is validated by Baseline Center Quality Assurance before being released to the fleet.

“Our managers keep the baseline current for each type/model/series of aircraft,” said Tim Harte, NALCOMIS Baseline Center quality assurance (QA) team lead. “We work to update new technical data and not slow down the process of getting that data to the Fleet.”

Baseline managers and QAs work with a variety of stakeholders, to include NAVAIR competencies, PMA staff, In-Service Support teams (ISSCs), Space and Naval Warfare Systems Command (SPAWAR), Commander, Naval Air Forces (CNAF) and others to ensure the baselines are maintained with approved and validated platform data and conform to current policy.

One method for validating the data is by creating and exercising virtual simulations, Harte said.

“We validate changes by setting up a virtual squadron,” he said. “We run the squadron through myriad scenarios. We fly it virtually to break it so we can fix it.”

NALCOMIS also stores authority documents to validate changes and helps track whether changes are current.

Maintenance procedures, such as Commander, Naval Air Forces Instruction (COMNAVAIRFORINST) 4790.2 Series, Maintenance Instruction Manuals and Maintenance Instructions are separate documents and not covered in NALCOMIS OOMA, but must still be used by the maintainer.

The fleet also has input into the process. Baseline data modifications/updates can be requested and discrepancies can be reported, increasing the accuracy of NALCOMIS. That is done by way of the Joint Discrepancy Reporting Systems (JDRS) that provides a single entry point for Baseline Trouble Reports (BTRs) and Baseline Change Reports (BCRs). BTRs are fleet-driven and are used to report Baseline data discrepancies for evaluation and correction, while BCRs are generated and are submitted by baseline managers and report changes made to the database through sustainment.

Changes are then posted to the NAVAIR Air Technical Data and Engineering Service Center (NATEC) website.

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“Maintenance managers get updates every day via NATEC,” Harte said. “That helps keep them informed of any changes/updates with aircraft they may manage and provides standardization of the data being entered into OOMA and reporting up line to DECKPLATE.”

The NALCOMIS team is working to include Unmanned Aircraft Systems into the NALCOMIS OOMA.

“Regarding UAS, we’re learning as we’re going,” Olson said. “Baselines are identified by different groups such as group 4 & 5, which will cover the larger aircraft, and group 2 & 3, which are some of the smaller systems made up of the aircraft, launchers, recovery equipment, and more.”

The Baseline Center is helping to keep maintainers up-to-date on changes and trends and improving confidence in the data.

“When I was a maintainer in the Navy years ago, documentation was not as efficient as it is today,” Olson said. “Now that we have NALCOMIS, up-line reporting is real time and much more accurate.”