

JReport Solution Study: Naval Safety Center



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- Tommy Tucker, Head, Information Systems Division

Organization Overview

The Naval Safety Center works with over 4200 Navy and Marine commands worldwide to promote safety and safety processes. It is the Department of the Navy's organization for conducting safety investigations and mishap analysis, and is responsible for disseminating this information to the fleet. To accomplish its mission, the Naval Safety Center relies on the core values of naval leadership, teamwork, continuous improvement, customer focus, and person integrity. The Center's initiatives are shaped by three key components:

- Feedback from the Fleet and the Naval Safety Center team;
- Analysis of mishap trends, safety surveys, unit assessments, and hazard reports;
- Evaluation of emerging safety technology and processes in government and private industry.

The Challenge

On May 19, 2003, Secretary of Defense Donald Rumsfeld sent out a memorandum challenging the United States military to reduce the number of mishaps and accident rates by 50% in the next two years. Rumsfeld noted that these mishaps and

accidents cause unnecessary drops in production, excessive budget strain, and most importantly, the preventable injury or death of hundreds of service men and women annually. In response to Secretary Rumsfeld's challenge, and driven by the Navy's initiative to move toward a Web-based environment,

- **Customer**
Naval Safety Center. The NCS is the Department of the Navy's organization for conducting safety investigations and mishap analysis, and is responsible for disseminating this information to the fleet.
- **Customer URL**
www.safetycenter.navy.mil
- **Integration**
JReport is seamlessly integrated with WESS through the Naval Safety Center's "Keel" Java framework.
- **Application Environment**
JReport Enterprise Server is embedded within the Naval Safety Center's SUNONE V6.1 application server in a clustered environment that involves two 4 CPU Sunfire V440 servers. The server accesses mishap data from the Naval Safety Center's Informix database.
- **Security**
Authenticating against the Naval Safety Center LDAP Server and logging users into the JReport server based on their groups in the LDAP server enables single sign-on.

the Safety Center has been aggressively implementing new technologies to enhance operations and availability of information.

Among their web-initiatives is the migration from the Safety Information Management System (SIMS) to the Web-Enabled Safety System (WESS). SIMS was a proprietary, self-designed and implemented system for tracking accidents and mishaps that provided only the most basic levels of reporting functionality. Reports had to be manually generated as text files, and could not be easily exported or distributed outside of the SIMS system. This prohibited easy communication between the Naval Safety Center, Fleet safety officers, internal and external safety analysts, and the public. Technologically, the system was obsolescing; as of 2004, nearly all of the original programmers and support staff for SIMS had either moved on in their careers or retired. As a result, the aging system was increasingly taxing the Naval Safety Center's limited time, IT resources, and budget. Moving to WESS alleviated these concerns.

WESS is a Java-architected system that is completely web-enabled and provides worldwide, web-based access to historical data on shore safety, aviation safety, and afloat safety to fleet safety officers, naval analysts, and the American public. This data includes information on involved personnel (both on and off duty), involved civilians, and involved Naval equipment. The Naval Safety Center needed to add reporting functionality to the WESS platform so that Naval Officers, enlisted sailors, civilian contractors, analysts and the general public could easily access, view and analyze the data that the program compiles.

The JReport Solution

Because the WESS platform uses the web to enable global data access, the Naval Safety Center needed a reporting component that was flexible enough to seamlessly embed in WESS's Java architecture and

provided dynamic report creation, modification, viewing and exporting capabilities. JReport was the only 100% J2EE embedded reporting solution that offered the Naval Safety Center the data presentation and dissemination features that were necessary for a successful, worldwide launch of WESS.

JReport facilitates rapid data analysis by providing ready access to mishap data through customizable ad-hoc reports that can be created, modified and viewed through any web browser. Authenticating against the Naval Safety Center LDAP Server and logging users into the JReport server based on assigned groups and privileges in the LDAP server enables single sign-on, and grants or prohibits individual user access to data. Accessibility can be defined down to the individual field, column or row level. Depending on their permissions and access to data, users can perform multi-dimensional analysis by dragging and dropping fields into or out of a report, or moving data fields within a report to explore relationships between mishap causes and subsequent effects. Users can also dynamically drill down or up into data to view results at different detail without having to generate a new report.

Results and Benefits

JReport's fully customizable reports enable WESS' three unique user groups – naval safety officers, naval analysts, and the general public – to view and analyze mishap data in a way that is meaningful to them. Fleet safety officers use WESS to track mishaps and their causes on their ship or in their facility, and by doing so, can proactively work to eliminate the causes of those accidents, thus saving lives and reducing budgetary strain. Naval analysts use JReport's sophisticated analysis functionality to easily identify

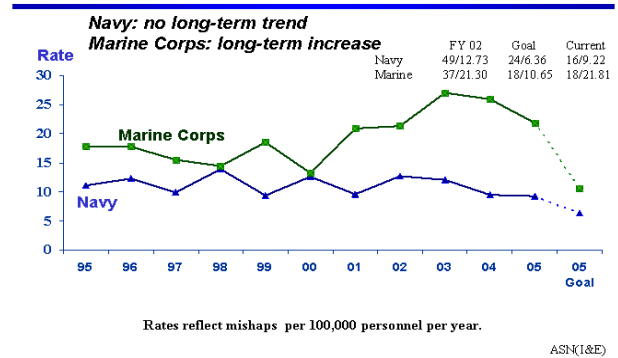
relationships between seemingly unrelated mishaps and their root causes department-side, which helps them direct changes in equipment design, training, and operational maintenance processes to reduce mishap occurrence.

Because JReport-generated reports deploy into a wide variety of standard formats, it is easy for both safety officers and analysts to publish reports in formats that are readily accessible for view by individuals outside WESS. For example, WESS generates an Excel version of incident rate reports for wide distribution throughout a number of government departments, and un-classified summary reports are posted on the Naval Safety Center's website in HTML. These reports are accessible by the general public.

After just a few months of using the JReport-powered WESS application, the Naval Safety Center noticed that mishap rates were trending downward at an increased rate. The program's success is attributed in part to JReport's ability to provide analysts and safety officers with the information they need to make timely, well-informed safety decisions. The graph below shows the recent decline in accident rates for both the Navy and Marine Corps, as well as forecasts for further mishap reduction.

"The Naval Safety Center is committed to working closely with Sailors, Marines, and civilians to help them reduce risk and accept no mishap as the cost of doing business," says Tommy Tucker, Head, Information Systems Division. "JReport provides us with an easy-to-use, web-based tool for managing and sharing pertinent data to achieve our goals."

*Navy and Marine Corps
Total Class A Operational Mishap Rates
As of 18 Mar 05*



More information on the Naval Safety Center and their mishap reduction efforts is available online at www.safetycenter.navy.mil.