

Nadcap: Friend or foe to the supplier?

Nadcap is a cooperative industry effort to improve quality, while reducing costs, for quality assurance throughout the aerospace and defense industries.

—Nadcap's marketing materials

The Nadcap program is administered by the not-for-profit Performance Review Institute (PRI). PRI's stated goal is to ensure that aircraft and aero-engines are of the highest quality to ultimately protect the public. Before Nadcap, the responsibility for assuring subcontractor quality was shouldered by individual aerospace companies. Nadcap believes that it will assist the industry in working together to end the duplication of effort, the inconsistent application of standards and the unnecessary costs associated with redundant audits. Nadcap goes on to state that it will actually reduce redundant auditing in the aerospace industry because it:

- Establishes stringent industry consensus standards that satisfy the requirements of all participants
- Reduces routine special process audits
- Conducts more in-depth, technically superior special process audits
- Improves supplier quality throughout industry through stringent requirements
- Reduces costs through improved standardization
- Utilizes technically superior auditors to assure process familiarity
- Provides more frequent audits for primes, fewer audits for suppliers

PRI is achieving a global presence. PRI now has offices in China, Japan, and the United Kingdom; its headquarters is in the United States. If you are a supplier, or want to be a supplier, to the growing list of Nadcap-subscribing primes (prime contractors) that includes Air Force, Boeing, Airbus, Rolls-Royce, Honeywell, Bombardier, BAE Systems, Rockwell Collins, Cessna Aircraft, Eaton Aerospace, GE Transportation, Industria de Turbo Propulsores, MTU Aero Engines, Northrup Grumman, United Technologies and Lockheed Martin, they will require you to achieve Nadcap accreditation through an audit. (A complete primes list is available at www.pri-network.org.)

The Nonconventional Machining and Surface Enhancement (NMSE) Task Group conducts audits to demonstrate compliance to the SAE AS 7116 (Non-conventional Machining) and SAE AS 7117 (Surface Enhancement). Nadcap audits are expensive, lengthy and the necessary preparation is taxing for any size supplier. Audit results have shown that flowdown of customer specification and Nadcap requirements into workstation instruction are the most common non-conformance to the Aerospace Standards. This has serious implications for the industry as a whole. The NMSE Task Group requires detailed workstation instructions (routing, technique sheet, etc.). Most suppliers are not used to this level of detail and initially struggle to meet

Task Group/Nadcap flowdown expectations. While it is generally found that suppliers are meeting process and specification requirements, failing to have detailed workstation instruction leads to variations in application and greater chance for process and specification non-compliances.

PRI attended ICSP-9 to share the latest information about Nadcap with the aerospace industry, meet with technical experts and learn about current developments within this dynamic field.

—Arshad Hafeez

Director of Global Business Operations, Industry Managed Programs, Research & Development for PRI

Nadcap staffed a booth at the recent International Conference on Shot Peening in Paris. Joanna Leigh, the Nadcap European Operations Specialist, was on hand to meet with conference attendees and share information. She distributed a brochure that outlined the programs Nadcap has developed to meet the needs of suppliers:

- **Nadcap meetings.** Nadcap meetings take place every quarter (January, April, July and October). Primes and suppliers are encouraged to attend as the meetings are intended to improve understanding and experience of the Nadcap process and provide valuable learning and networking opportunities. Meeting details, including agendas and minutes are posted at www.pri-network.org
- **Nadcap Customer Support Initiative (NCSI).** The NCSI is a free web-based training program developed by PRI in conjunction with the Nadcap Management Council. The goal of this training is to improve supplier readiness for Nadcap audits. The presentation offers pre- and post-audit advice, an overview of the Nadcap process and a review of the additional tools available to assist you. Each session is hosted by a Nadcap User member and they are informative and interactive.
- **eAuditNet.** eAuditNet is an online system for everything relating to Nadcap audits. You can learn more about how the Nadcap process works and participate in these ways: From requesting a quote to scheduling the audit; from carrying out thorough audit preparation to responding effectively to non-conformances after the audit in order to gain accreditation promptly. Subscribers can monitor the real-time progress of their suppliers to ensure compliance with Nadcap standards. Auditors also use eAuditNet extensively to view audit history and file the reports on a completed Nadcap audit. In addition, eAuditNet also contains the online QML, which is the searchable manufacturer's list of certified Nadcap suppliers.
- **Supplier Support Committee.** As major participants in the Nadcap system, suppliers voice their opinions and make suggestions for improvement to the Nadcap process through the Supplier Support Committee (SSC). The SSC mission is to represent the supplier community and work with the Nadcap Management Council (NMC) to enhance the effectiveness

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and economic value of the Nadcap system for the mutual benefit of suppliers and primes. The SSC is made up of active Nadcap accredited suppliers who are willing to help new suppliers through the process, as well as assisting experienced suppliers to establish, maintain and improve their accredited processes. The SSC meetings take place at the quarterly Nadcap meetings and all suppliers are invited to attend.

▪ **Before the audit checklist**

Nadcap provides these steps and timeline as a guideline only; all may not apply to your facility.

- Contact PRI and access eAuditNet
- Ensure that you hold AS/EN/JISO9100 or AS9003 or AC7004
- Schedule audit and obtain checklists
- Educate and train staff
- Attend Nadcap Customer Support Initiative training
- Check documentation compliance
- Attend a Nadcap meeting
- Review training
- Carry out a self-audit including job audits
- Complete RCCA* and monitor effectiveness
- Obtain external assistance if appropriate
- Check documentation compliance
- Educate and train staff on any revisions
- Revise RCCA* as appropriate
- Ensure staff training and records are maintained
- Attend a RCCA* seminar
- Conduct another self-audit
- Complete RCCA* and monitor effectiveness
- Provide staff training
- Contact the auditor and provide documentation
- Ensure that the audit fee has been paid

*RCCA stands for Root Cause Corrective Action. This should be carried out on an ongoing basis to maximize the effectiveness of your self-audit and root cause corrective actions.

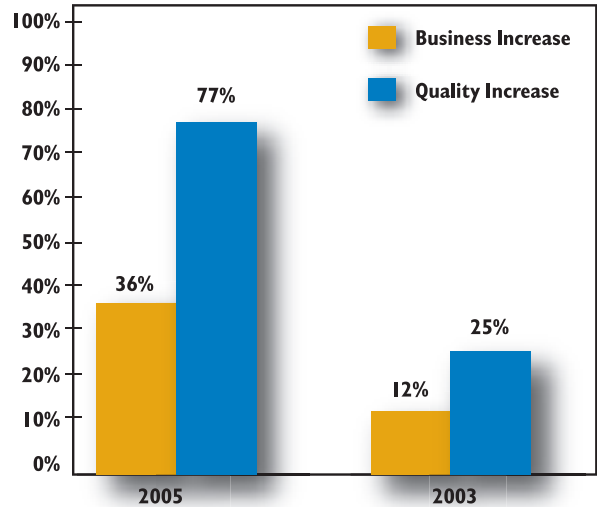
The analysis from the 2005 supplier survey will help set the agenda for improving the Nadcap process for the next two years.

**—Ed Engelhard
Supplier Support Committee Chairman**

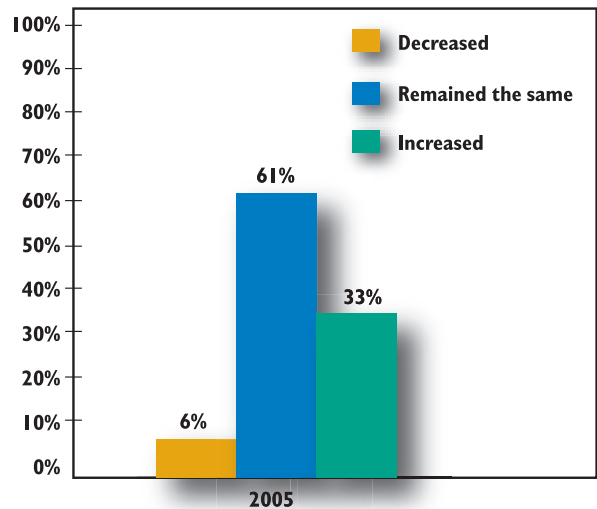
The Nadcap Supplier Support Committee (SSC) sponsored two supplier surveys, in 2003 and 2005, to address the following issues: Redundant Audits, Flow Down, PRI, Participation/Awareness, Software, Pre-Audit, Training and General Comments. 398 suppliers took part in the 2005 survey. SSC brought together a team of suppliers, primes and PRI staff to analyze the 2005 data and then determine the health of each Nadcap program surveyed and recommend appropriate action. (Request the complete survey report by emailing The Shot Peener at shotpeener@shotpeener.com)

The following graphs highlight crucial information from the 2005 survey and how it compares to the 2003 survey. (Please keep in mind that these surveys were completed by suppliers in Heat Treating, Materials Testing Laboratories, Non-Destructive Testing, Sealants, Welding, and Nonconventional Machining and Surface Enhancement, the classification that includes shot peening.)

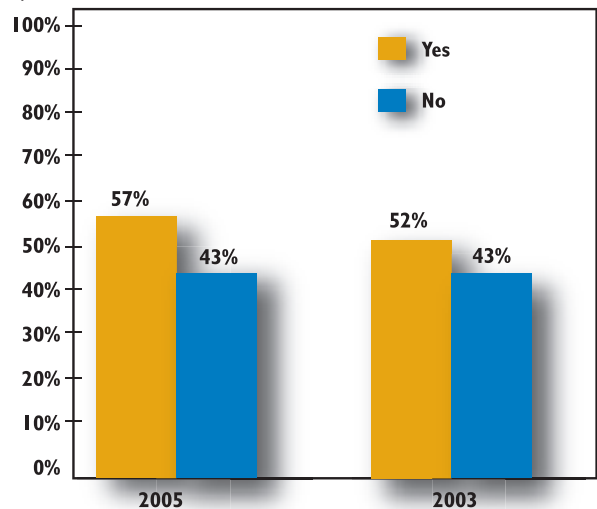
Survey question: If your company has been accredited for one year or more and your company measures business and/or quality trends, have you seen improvements in this area(s) related to your Nadcap accreditation(s)?



Survey question (new in 2005): In relation to overall prime surveillances, has the number of audit days:



Survey question: Do you find flowdown of specifications, their revisions, and other requirements from primes and their sub-tiers a problem?



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As you can see from the graphs, accredited suppliers are enjoying a significant increase in business and quality, but the number of audit days and the flowdown of specifications, their revisions, and other requirements from primes and their sub-tiers remain areas of concern.

Wouldn't my time be better spent in the shop working on continuous improvement activities?

—Walter Beach
Quality Assurance Manager
Peening Technologies

Since the survey results weren't specific to the shot peening industry, we wanted the first-hand experiences of a shot peening supplier. In 2002, Peening Technologies of Connecticut, a Hydro-Honing Laboratories Inc. company, became the first Nadcap shot peening accredited supplier. In addition to this Nadcap accreditation, Peening Technologies has received these additional significant milestones: The company's AS-9100-compliant quality assurance system has been approved by major aerospace manufacturers; the Connecticut facility became FAA Repair Station KJ1R272K in 1971 and earned JAA approval in 1993; in 2004, Peening Technologies of Georgia, Inc. received Nadcap accreditation and became FAA Repair Station G89R878X in 2005. Peening Technologies has 23 prime approvals. Peening Technologies offers shot peening, abrasive blasting and surface enhancement services to the aerospace, automotive, power generation and oil and gas exploration industries.

Walter Beach, Quality Assurance Manager of Peening Technologies, says that Nadcap is a great program if it accomplishes two things:

- raises the bar in quality so that all shops meet a minimum standard, and
- reduces the number of redundant audits.

Mr. Beach has not seen the results he has hoped for in either area. Regarding the quality issue, he believes that the FAA could benefit from utilizing Nadcap. His biggest disappointment is consistent with the results of the 2005 supplier survey—the number of redundant audits has not been reduced in his business. "In 2001, we had 45 audits. In 2005, we had 50 audits. And some of the primes are asking the same questions over and over again," says Mr. Beach. "Wouldn't my time be better spent in the shop working on continuous improvement activities?" According to Mr. Beach, one prime has done a great job of embracing Nadcap and uses it properly—General Electric.

Mr. Beach hopes that primes will eventually work with only two specs: AMS 2430 and AMS 2432. He says that not only are there too many specs to maintain, but many of the primes' specs are old. The way he copes with the numerous specs is to maintain the highest spec in his plant.

Mr. Beach takes advantage of one of the best vehicles available to him to voice his concerns—he attends Nadcap meetings. Nadcap expects suppliers like Peening Technologies to be involved. For example: Suppliers are eligible to become voting members in each Task Group (TG) and voting members in the Nadcap Management Council (NMC) where they participate with the subscribing prime contractor members and PRI management in accreditation discussions and overall program management. Suppliers are openly invited to participate in

appropriate open TG and NMC sessions and ad hoc committees, expressing their opinions and offering their expertise. Supplier executives have been invited to bring their concerns directly to the program for open and frank discussions about the issues surrounding accreditation and the industry in general.

Peening Technologies continues to grow and while its success can't be directly attributed to Nadcap accreditation, the accreditation is one component of the company's continual striving for excellence that makes it a vendor of choice for the world's largest aerospace companies.

Not everyone can make the cut. There will be that much more work for those who do.

—Stuart Sherman
Metallurgical Processing, Inc.
2004 Supplier Roundtable Member

So friend or foe? Any organization that strives to improve procedures and increase efficiency is a friend of quality-driven suppliers. Nadcap could eliminate the poor shot peening practices that have plagued the aerospace industry for years. Our recommendations are that you prepare and train for the audit to make it as smooth and painless as possible. Utilize Nadcap's numerous resources before and after the audit. If you feel Nadcap hasn't delivered on its promises, take advantage of the many opportunities to make your voice heard in the aerospace community. And then reap the benefits of being recognized as one of the top suppliers in the industry. ●

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