MY NADCAP AUDIT EXPERIENCE

In the 2017 Nadcap newsletter survey, feedback indicated that the Nadcap community would like to read “real audit case studies”. PRI published the first of these in the July 2018 Nadcap newsletter. This time Roy Adkins, Corporate Director of Quality at Braddock Metallurgical and Supplier Support Committee (SSC) Task Group Representative for Heat Treating, describes his perspective and experience of Nadcap audits.

Can you briefly describe your company to set the scene?

Braddock Metallurgical was founded in 1953 by

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William R. Braddock in the state of New Jersey, U.S.A. His two sons, Bill Jr. and Steve, expanded the business southward with the mission to help customers succeed. Superior customer service has been the premise for the company’s reputation and the backbone of the company’s growth for over 50 years. Today, grandsons Clay and Griffith Braddock, along with the company’s senior management, work diligently on steering Braddock Metallurgical development of its seven American sites, located in Bridgewater, NJ, Charlotte, NC, Atlanta, GA, Jacksonville, FL, Daytona Beach, FL, Boynton Beach, FL, Riverview, FL, and Bayamon, PR.

Four of the seven Braddock Metallurgical locations are Nadcap accredited in Heat Treating, with our Boynton Beach plant in Florida, U.S.A. also holding NonDestructive Testing Nadcap accreditation. The Riverview site was our first Nadcap accredited location, with both certificates granted in April 2005. Three Braddock Nadcap Heat Treating accredited plants have attained Merit status.

How did you first hear about Nadcap and why did your company decide to pursue Nadcap accreditation in the first place?

Braddock Metallurgical was partnered with many aerospace Suppliers. As Nadcap accreditation became more widespread, we were approached by our customers in 2004 to participate in the program and attain a Nadcap Heat Treat accreditation.

Braddock has always had a strong commitment to quality and to customer service. Participation in the Nadcap program has enhanced our robust quality system and continues our commitment to the partnerships with our customers.

How easy is it to find the information you need to help you prepare for a Nadcap audit?

Navigating www.eAuditNet.com can sometimes be challenging but, once you get the hang of it, you will see that all the information you need is at your fingertips. I would highly recommend any Auditee who wishes to get more familiar with eAuditNet, and how to use it, to attend the “eAuditNet Tutorial for Suppliers” session given at each Nadcap meeting. This session, along with other helpful ones such as “Keys to a Successful Audit”, are sponsored by the Supplier Support Committee, and are given the Monday of each Nadcap meeting. You can also find these presentations on eAuditNet, under Resources / Documents / Public Documents / Supplier / SSC Meeting Presentations as shown.

How long before the actual audit do you start preparing and what do you do to prepare for a Nadcap Audit?

There is no specific time block which can be set aside for audit preparation. It should be an ongoing process as our Nadcap facilities must maintain a constant state of preparedness.

At Braddock, this is led by the Plant Manager and Plant Quality Manager, and Nadcap checklists are an integral part of our internal audit system. Checklists for Nadcap and AS9100 are scheduled for review on a monthly basis through our internal audit schedule system. Audits are performed by plant personnel who are directly involved with the processes related to the checklist. The continual internal audit schedule rotation and involvement of plant personnel is critical to help ensure compliance at all times. It is basically an ongoing self-audit system which can be used as part of the required documentation to be submitted 30 days prior to the
actual Nadcap audit.

Contract review and job audits also play a large role in staying prepared. All Heat Treat processes are scrutinized against industry specifications and customer requirements, and then double checked for adequate flow-down prior to being released to production.

**How do you find the audit scheduling process?**

While I believe that the scheduling staff does a great job, I think there is always room for improvement. As with anything, the scheduling process is not excluded from improvement. I am sure it is not as simple as it may seem, and I don’t really have proper suggestions as to what could be done to improve it. However, I can tell you that I have had a couple of issues in the past, where I needed to contact the staff, and they were very helpful.

Even though we actively participate in Nadcap, we are always trying to schedule customer audits around the Nadcap audits, and this can sometimes be very difficult for all parties involved in the process. As an aerospace and commercial heat treating company, not all of our business is for the aerospace industry. Commercial customers expect and deserve the same level of customer service as our aerospace customers do.

**Do you have much interaction with PRI staff before the Nadcap audit and how is it?**

There is not much interaction with the PRI staff in general, unless there is an issue with either a scheduled date or an Auditor change request. My experience with PRI staff has always been positive. However, with allotted time frames given and the high demand for Auditors, I am sure scheduling audits to meet everyone’s expectations and to keep everyone happy can become difficult at times for the staff.

**What are your expectations of the following and how do they compare with what actually happens...**

I think my expectations are about the same as everyone else’s. I expect a fair and thorough audit. And most of the time that does seem to be the case. I have had some issues with a couple of Auditors over the years, but I think that PRI does listen, and I know that they do deal with issues as they arise. Overall, I would say that I am satisfied with the process.

**...the Auditor and his/her way of conducting the audit?**

I think it’s fair to say that the majority of the Auditors I have encountered are fair and open minded and have good communication skills. Some Auditors are better at managing their time than others. Each Auditor is different, but time management is one of the keys to a successful audit. I believe that a course on time management as part of the Auditor Conference would be beneficial in order to avoid lengthy days and late-night sessions, which are not conducive to a good audit experience.

**...opening session?**

The opening session is fairly standard and consistent among the Auditors. The Auditor works with the Quality Manager, General Manager, Production Manager and myself – Corporate Director of Quality – to establish a general timeline, review historical jobs, and in-process jobs which need to be witnessed. We also discuss any potential issues concerning availability of jobs and necessary personnel.

**...closing session?**

The closing session, again, is fairly standard. It mainly consists of the Auditor having a meeting with the same team as during the opening session to ensure that we understand any/all findings as well as the eAuditNet non-conformances response submission process. I think a standard PowerPoint may be helpful for consistency of the material covered.

**What did you find was the most challenging during the audit?**

As mentioned earlier, I would say time

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management is the most challenging aspect. It is often difficult to ensure that there are enough in-process jobs available to complete the checklist requirements and to cover the ratio of historical jobs/in-process jobs within the time allowed.

What could be done to improve the experience of going through a Nadcap Audit as well as having an Auditor on site?

This is a tough question and I must be honest here, I really don’t have a proper answer for this one. I do think that training must stress the importance of multitasking several checklists simultaneously by the Auditor, which again can be linked back to time management. In addition, there should be a certain amount of flexibility when looking for objective evidence in order to satisfy Task Group requirements as we feel sometimes Auditors are quite rigid.

What is the first thing you do once the Nadcap Auditor leaves?

At Braddock Metallurgical, the first post-audit thing we do is to assemble the audit team, led by our Quality Manager, to discuss what we need to do in order to take care of any immediate actions related to the findings to ensure compliance moving forward. Once we review our action list, we set up sub-teams to perform root cause corrective action (RCCA) and assign responsibilities for actions to be taken. Assigning responsibilities is crucial to keep track of what is happening and ensure corrective actions are found and implemented within the right timeframe to get the Nadcap accreditation.

How does the outcome of the audit and your company performance compare to your expectations?

Although we usually do pretty well, the goal is always to receive zero findings for each audit that is conducted. In reality, however, there is always room for improvement. We have four Nadcap accredited sites, and we apply lessons learned by each location across the board.

How do you go about responding to non-conformances (NCRs), if you have any?

We form a problem-solving team of people that have direct responsibility for the affected area(s)/procedure(s) and are involved from a user standpoint. I do help facilitate the meeting, but the Quality Manager is ultimately responsible for closing all NCR’s.

What tools do you find most useful in the RCCA process?

We tend to stick with the “5 – Why Approach to Root Cause” method due to its simplicity and effectiveness. We use the final “Why” as our root cause and submit the objective evidence related to our action plan for closure of the related NCR.

I would also say, as a member of the Supplier Support Committee, I do work with many staff members on meeting related issues, but I have never had any issues with any of the PRI staff members. In fact, I have always had a good working relation with both the Staff Engineers and the PRI support staff.

I am aware of the importance and impact that this article may have on the Nadcap community, especially on SMEs new or not having much experience with the Nadcap program. This is why, I would like to share some advice to other Nadcap Auditees as a conclusion:

• Audit Preparation is key and must continue before and after the audit.

• Do not hesitate to contact a Staff Engineer if you have a question about a finding – they can be very helpful.

• Understand the process. The Supplier Support Committee and PRI support staff are there to help you... Let them, or even ask them!
AEROSPACE STRUCUTRE ASSEMBLY (ASA) AUDIT INSIGHTS

The newest Nadcap Task Group, Aero Structure Assembly (ASA) has recently released its first Audit Criteria and is now ready to start conducting audits. Since the initial proposal to form the Task Group in the summer of 2015, members of the ASA Task Group have been hard at work preparing the Audit Criteria and completing other tasks that a new Task Group must perform to become operational.

Following up on the “Nadcap New Commodities” article in the July 2017 Nadcap newsletter, in which there was a section on ASA, this article intends to provide a better understanding of why and how PRI is supporting the creation and development of the new ASA Task Group. Also included is information on the ASA Pilot audit, conducted only a few months ago, along with Subscribers and Suppliers supporting the Task Group and what they are planning to do moving forward.

History and Development

Aircraft assembly has changed over the years from Subscribers assembling all the individual parts themselves to sub-contracting large complex assembly modules and then Subscribers assembling these modules into an aircraft. There are now more companies performing more of the detailed assembly operations. And there was no single process and/or auditing approach across the aerospace industry for managing these companies. Additionally, an escape of non-conforming assemblies/products could cause significant unseen product defects, rectification costs, and delivery delays.

Because of this, several Nadcap Subscribers started to show an interest in establishing accreditation of the assembly processes. Consequently, the Nadcap Management Council (NMC) formed a working group to further investigate the possibility of accreditation and start the process of moving to a full Task Group. This working group held monthly conference calls starting in August 2015. They met face-to-face for the first time at the October 2015 Nadcap meeting in Pittsburgh, PA, USA, with 19 attendees present representing both Subscribers and Suppliers. At the meeting, they decided to continue with monthly conference calls, which increased to weekly as the pace of the development quickened. They have also continued to meet at every Nadcap meeting since then.

One of the first things the group did was develop a business plan which addressed Subscriber interest, the number of projected audits, and what the scope of the Task Group would be. The scope was determined as including, but not limited to, hole preparation, fastener installation, bushing and bearing installation, shimming, and electrical bonding, and excluding system installation, pumps, actuators, cockpit systems, wiring harnesses, jigs / fixtures and maintenance, repair and overhaul (MRO).

As the focus shifted from business case development to checklist development, the membership of the group also shifted from NMC representatives to subject matter experts from Subscribers and Suppliers. This allowed the right people to be involved in developing the Audit Criteria and requirements.

With the scope defined and technical experts identified, the group could develop the checklist structure, the first step in developing the Audit Criteria documents. After much discussion, checklist development started with a core checklist and four slash sheets covering fastening, electrical bonding, and bushing and bearing installation.

Shortly after this, the group agreed to take control of the Sealant Task Group’s sealant application checklist, AC7129 and made it an additional slash sheet for ASA, bringing the number of slash sheets to four.

Checklists

The core checklist was given the designation AC7135. It includes the general Audit Criteria such as calibration, training, and documentation. It also includes common processes such as hole preparation, hot and cold dimpling, foreign object

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damage (FOD) prevention, and rework and repair.

Fastening is covered by the AC7135/1 and includes the following scope:

**Pre-Fastener Installation Assembly**
- Fit and Alignment
- Shimming
- Conversion Coating

**Cold Working**
- Cold Expansion of Holes using the Split Sleeve System
- Cold Expansion of Holes using Split Mandrels
- Cold Expanded Retainers (i.e. Nut Plates)

**Fastener Installation**
- Solid Shank Rivets
- Blind Rivets

**Bolt Installation**
- Blind Bolt
- Swaged Lockbolt Pull and Stump (Pin and Collar)
- Bolt and Nut
- Standard or Taper Shank Bolts (Standard or Shear Collars)
- Torque Tightening

**Internal Threaded Fasteners**
- Cage Nuts / Clip Nuts
- Rivet Nuts
- Threaded Inserts
- Helical Threaded Inserts
- Bonded Nut Plates
- Potted in Inserts (Composites)
- Bonded Sleeves (Composites)
- Bonded Inserts (Composites)
- Sealing of Nut Plates

AC7135/2 covers electrical bonding with the following scope:
- Electrical Bonding of Electrical Connector Receptacles
  - Preinstalled Ground Stud Installation in Metal
  - Direct Ground Stud Installation
  - Terminal Installation on Preinstalled Ground Studs
  - Electrical Faying Surface Bonds
  - Driven Rivet Electrical Bonds
  - Ground Block Installation
  - Static Discharger Assembly Installation
  - Electrical Bonding - Clamp Installation on Tubes / Conduit
  - Fitting and Coupling Installations, Union and Tee
    Hydraulic Fitting
  - Bulkhead Fitting Installation
  - Electrical Bonding of Fasteners to Conductive Finishes on Composites
  - Electrical Bonding of Composite Panels
  - Preinstalled Ground Stud Installation in Carbon Fiber Reinforced Plastic (CFRP) Structure
  - Dual Hole Terminal Direct Ground Stud Installation
  - Electrical Bonding of Carbon Fiber Reinforced Plastic (CFRP) Structure
  - Electrical Bonding Through Fasteners – Clearance Fit Hole
  - Electrical Bonding Through Fasteners – Interference Fit
  - Electrical Bonding Using Sleeved Bolts

Bushing and bearing installation are in the AC7135/3. It covers:

**Bushing Installation**
- Press Fit
- Cold Expanded
- Cold and/or Heat (Shrink Fit)

**Bearing Installation**
- Press Fit
- Cold and/or Heat (Shrink Fit)

**Bearing Roller Staking (V Grove Retention)**
**Bearing Retention (Anvil) Staking**
**Sealing of Bushing and Bearing**

The sealant application checklist from the Sealant Task Group (AC7129) was revised to become the AC7135/4. It
includes:

- Hole and/or Slot Sealing
- Wire Bundle Sealing
- Joggle or Mill Step Sealing (Pre-Packed and Injection)
- Liquid Displacement or Drain Path Sealing
- Pre-Filled and Frozen Pre-Molded Seal Caps
- Fastener Overcoating (Encapsulating) Sealing with Pre-Molded Seal Caps
- Fillet or Bead Sealing
- Fay or Interfay Surface Sealing, Liquid Shim
- Brush or Spray Coat Sealing
- Aerodynamic Smoothing and Fairing
- Form-in Place Sealing
- Wet Installation of Fasteners
- Fastener Overcoat or Encapsulation
- Edge Sealing of Composites

Pilot Audit

Once the checklists were completed, a pilot audit was performed at Lee Aerospace, Inc. in Wichita, KS, USA in September 2018. It was observed by several Subscribers as well as a PRI Staff Engineer. It included the core checklist and all four slash sheets and successfully demonstrated the validity of all the checklists.

Task Group

The Task Group is now made up of seven Subscribers representing Airbus, Airbus Defense and Space, BAE Systems, Leonardo, Lockheed Martin, Northrop Grumman, and Spirit AeroSystems. There are also three Supplier Voting Members from Arconic, Helicomb International, and Lee Aerospace, Inc. Chris Lowe of Spirit AeroSystems facilitates the group as the Chair with assistance from Keith Purnell, the PRI Staff Engineer.

Future Work

Even though the checklists have been released, there is still a lot of work for the ASA Task Group. They plan to add the processes of semi-automatic and automatic fastening to the Audit Criteria. They also plan to take the lessons learned from the audits that have been conducted and improve the checklists.

The ASA Task Group recently held their initial Auditor Conference in conjunction with the October 2018 Nadcap meeting in Pittsburgh, PA, USA. There are a few current Auditors in training, but more will be needed as the program grows. If you or someone you know has aero structure assembly experience and is interested in becoming a Nadcap Auditor, please contact Jennifer Eckels, Talent Acquisition Specialist, at jeckels@p-r-i.org.

In addition, the Task Group is working on developing an Audit Handbook. It is a very in-depth handbook which includes a great deal of information. There are photos and drawings of many different processes covered, as well as most of the different fastener types. This will help especially in those areas where fasteners are typically called out by trade name rather than a generic equivalent.

While there are currently no mandates for ASA as it is brand new, there are several Subscribers considering them. A few have committed to mandates and are working on the timing and implementation. The Task Group is working to ensure they have the necessary resources to support these mandates when they become effective.

The Task Group continues to meet at all Nadcap meetings and also still holds monthly conference calls. Interested Subscribers and Suppliers are welcome to attend.

For additional information about the Aero Structure Assembly Task Group, please contact Keith Purnell.

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OPERATING PROCEDURE (OP) 1116 - AUDITOR STAFFING

Nadcap would not be the well-established and global program it is today without the Auditor base. As the “face” of the program to the Auditees, Auditors are a key component of the success of the Nadcap program.

Nadcap Operating Procedure (OP) 1116 – Auditor Staffing can be found in eAuditNet under Resources / Documents / Procedures and Forms / Nadcap Operating Procedures as shown below. It defines the requirements for the Auditor Selection Process, Auditor Performance Review, communication to the Auditors by means of Auditor Advisories, and Auditor training including the annual Auditor Conference. This article intends to highlight some of the most relevant parts of this procedure to the Nadcap community.

To ensure that the Auditors are technically qualified to perform effective audits, OP 1116 defines a process to screen candidates. The first step in this process is that candidates must apply for Auditor positions for individual commodities using the PRI’s electronic application system: www.contractwithpri.com.

Once the application has been processed, the PRI commodity Staff Engineer will review the application to see if the candidate is appropriately qualified to audit for the Task Group. Each Task Group has defined their own Auditor qualifications criteria covering education, experience, professional certifications, and more. These criteria can be found in specific commodity OP 1116 Appendix in eAuditNet under Resources / Documents / Procedures and Forms / Nadcap Operating Procedures / OP 1116 Appendices.

If the candidate meets the Task Group’s defined criteria, the next step in most commodities is a technical exam, or series of exams. The exams help further address any potential weaknesses in a candidate’s knowledge and assist the Task Group to determine how – and whether – to address any weaknesses through additional training or restriction of auditing scope.

Once PRI Staff have completed the first screening and selections steps, the selected candidates are interviewed by the Task Group Voting Members. A minimum of three Task Group Subscriber Voting Members must participate in the interview and a 2/3 majority of the Task Group Voting Members present during the interview is required to approve the candidate as a Trainee.

If approved by the Task Group, the Trainee begins their journey to becoming an Auditor. The Trainee is required to complete training on various aspects of the program, including eAuditNet, travel, auditing skills, export control, non-conformance writing, operating procedures, specific commodity training, and a minimum of two training audits accompanied...
by a designated Trainer. The applicable Staff Engineer then makes the final decision to upgrade the Trainee to Auditor based upon the Trainee completing all required training and their overall performance during selection and training process.

Once onboarded, PRI monitors Auditor performance closely as part of the Auditor Performance Review and to support OP 1117 – Auditor Consistency. After each audit, the Auditor is subject to two evaluations:

- The Audit Report Reviewer completes an evaluation based on the completion of the checklist and non-conformances written – the audit evaluation is defined in Annex C of OP 1116.

- The Auditee provides feedback on the Auditor’s performance during the first cycle response submittal in eAuditNet – the Auditee feedback is defined in Annex D of OP 1116. Confidentiality is crucial for PRI and within the Nadcap program, and this is also true for the Auditors. This is why individual Auditee feedback, including scores, is not shared with the Auditor at all, unless agreed to by the Auditee.

The above two evaluation methods result in what is called an “Auditor level”, which is reviewed by PRI Staff for each Auditor on a quarterly basis at a minimum. The Auditor’s level, either Auditor or Lead Auditor, is reviewed to ensure the level is appropriate by considering performance statistics, observation feedback, Auditor consistency metrics, experience, and more. Through this process, PRI makes every effort to maintain the highest level of auditing expertise.

Monitoring performance ensures that the highest level of standards are met, and Auditor training maintains that level in the long term. While all Auditors must complete required periodic/recurring training, most of this activity happens during Auditor Conferences.

Originally held once a year at the Pittsburgh Nadcap meeting until 2017, Auditor Conferences are now held on a two-year cycle as below:

1. Year One: European and Asian Auditors attend an Auditor Conference in Europe (the 2018 European Auditor Conference was held in London, UK in June), and Auditors from the Americas attend an Auditor Conference in conjunction with the Nadcap meeting in Pittsburgh, PA, USA, which took place this past October.

2. Year Two: all Auditors attend the Auditor Conference in association with the Nadcap meeting in Pittsburgh, PA, USA, in October.

The Auditor Conference is a closed meeting for specific commodity Auditors, PRI Staff, and Task Group Subscribers. Others may only participate in order to provide specific training and at the invitation of the Task Group Chair or Vice Chair.

For more information on OP 1116 – Auditor Staffing, please contact your Staff Engineer or Ethan Akins.

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MULTIPLE CONTACTS IN EAUDITNET

www.eAuditNet.com is a web-based, intuitive workflow software system created by the Performance Review Institute. It facilitates and coordinates Nadcap audit processing. The eAuditNet team is constantly working on improving the software for the benefit of all, and any Nadcap participant can – and is, in fact, encouraged to – submit suggestions to improve the software.

All suggestions are reviewed and then prioritized depending on several criteria such as impact, reach, and time required to complete, among others. Recently, the team received a significant number of suggestions around the possibility of having multiple contacts within eAuditNet, both for billing and the audit. This enhancement will help Auditees interact with PRI more effectively.

Billing Contacts

Until late 2017, all billing information, including invoices and all related communication, was sent to the single audit contact in eAuditNet. The new “Billing Contacts” feature now enables Auditees to enter a distinct billing address and billing contact. This has been designed to ensure all billing information is sent to the correct part of your company, to make invoice processing easier.

To enter different billing contacts in eAuditNet, go to Supplier Applications / Supplier Audits as shown.

Once on the Supplier Audits landing page, select the link to an audit, which will then take you to the Audit Details page for that specific audit.

The billing contacts can be edited under the “Financial” section on the Audit Details page of the selected audit. As shown below, the current billing contact email will be displayed in the “Audit Billing Email” area. To update the billing contact email, select the icon noted in red below, enter the updated billing contact email and then select the “Save” button. There can be a different billing contact email for each audit.

The “Billing Contacts” enhancement also enables Auditees to have a different billing address from the contact address. To update the billing address, click on the link highlighted in green in the image below “Update Billing Address”. This takes you to another page – Edit Company Billing Address – where you can then update the address as needed and select the “Update Billing Address” button to save the change.

Multiple Audit Contacts

For years, eAuditNet allowed Auditees to have only one contact per audit, and this meant that all audit information was sent to one person only. This process worked fine until that unique audit contact no longer

...
worked for the company, or if that person was out of the office for an extended period. In those circumstances, it was possible for emails relating to Nadcap audit scheduling, billing and post-audit activities, not to be received.

Consequently in October 2018, eAuditNet introduced the “Multiple Audit Contacts” feature. This allows Auditees to have several people receive information about Nadcap audits.

Entering multiple audit contacts can be done at different stages of the audit. Auditees can do it when scheduling an audit – done under Supplier Applications / Audit Scheduling – right at the beginning of the process under the “Select Basic Info” section as shown in red below. To enter multiple contacts, click in the blank space inside the selection box.

Auditees can also edit or add contacts to their audit(s) once it is already scheduled. This is particularly useful for reaccreditation audits, which are typically scheduled automatically. To do so, Auditees need to find the audit for which they wish to edit/add contact(s) under “Supplier Audits” as shown in the first image of this article. Then, click on “Edit Audit Contact”, under the “Actions” tab in the upper-right corner of the audit details page.

Clicking on “Edit Audit Contact” will take you to the “Audit Contact” page, where you can edit/add audit contacts if you select “Edit”, aside the “Audit Contact”.

While the above is a short explanation on how to make the most of recent eAuditNet enhancements, it is important to note that:

- eAuditNet will not allow Auditees to have fewer than one audit contact to make sure that relevant and important audit communications are received by at least one person within the company.
- The Company Administrator, PRI Scheduling or any eAuditNet Administrator can add/edit/remove any contact from their company.

If you have any questions or suggestions regarding eAuditNet, please contact eAuditNetSupport@p-r-i.org.
The purpose of the Nadcap Supplier Survey is to improve the Nadcap program as a whole, and it could not be achieved without a team of Supplier volunteers.

This team, led by Steve Payne of Praxair Surface Technologies, has been working diligently on analyzing the responses received. The team not only analyzed the results, it also aimed to identify common themes and trends, and determine whether there are conclusions to be drawn from comparisons with previous survey data.

The 2017 Nadcap Supplier Survey shows that the Nadcap program is truly a global industry-managed approach to conformity assessment that brings together experts from all around the world:

- Companies from 48 different countries responded to the 2017 Nadcap Supplier Survey, a steady number compared to the 2015 edition which received responses from 50 different countries.
- For the first time in the Nadcap Supplier Survey history, the majority of respondents came from outside the USA. 57% of the responses received came from outside the USA.
- A growing momentum in Asia has been identified, especially from China and Japan, representing respectively 9% and 5% of the total responses received.

The global nature of the Nadcap program relies heavily on appropriate and effective communication, which is a main focus for improvement for the Supplier Support Committee (SSC). 79% of the respondents stated that the SSC effectiveness “meets” or “exceeds” their expectations, but 15% were not aware of the SSC existence at all.

To address this issue, the SSC Communications Sub-Team is currently working on an “Auditee Handbook” to introduce the SSC to the Auditees. This document will also serve as a guide for Nadcap Auditees on what is important to know when undertaking a Nadcap audit, explaining what Nadcap is and how it works, who the Nadcap participants are, basics of eAuditNet, how to prepare for a Nadcap audit, how to effectively handle the post-audit actions, and more.

At the time of writing this article, Steve Payne and his team are still reviewing the results. The above two trends stood out from the preliminary analysis, and results were presented in detail at the October 2018 Nadcap meeting in Pittsburgh, PA, USA.

To a lesser extent, the Survey results also show a need for education with regards to the Audit Checklists. Suppliers would like to better understand how to identify what changed in a current version of a checklist against a previous one as well as what the changes really mean. In response, the SSC is currently:

- working on a tutorial to help the Supplier community identify those changes more easily; and
- looking at alternative methods of delivering training to assist Suppliers in understanding what the checklist changes mean and what impact they have.

A special thank you to the volunteers who helped implement and analyze the survey results, as well as to those who helped with the translation:

- Lei Bao, NCS Testing
- Sergio Dominguez Nunez, Canagrosa Lab & Services
- Dale Harmon, Cincinnati Thermal Spray Inc.
- Jonathan Hebben, Avcorp Composite Fabrication
- Eric Jacklin, F.M., Callahan & Son
- Lisa Jensen-Donahoe, Arconic Inc.
- Jeremy Needs, Ultra Electronics Limited
- Steve Payne, Praxair Surface Technologies
- Dennis Reidy, C.I.L. Inc.
- Jesse Romero, Aluminium Precision Products, Inc.
- Arno Toelkes, Euro-Composites SA
- Jeff Tomczack, Techmetals Inc.
- Gary White, Orbit Industries Inc.
The Performance Review Institute (PRI) announces the appointment of Michael J. Hayward as its new Executive Vice President and Chief Operating Officer.

In his role, Mr. Hayward will lead and manage all aspects of PRI’s strategy, its continued growth, and its operations and programs on a worldwide basis.

“Mike is a highly successful and distinguished global Quality Executive with over 30 years of leadership, managerial and technical aviation, space and defense experience throughout the entire product life cycle,” David L. Schutt, PhD, President of PRI and CEO of the SAE Group, said. “We are pleased to have Mike’s passion for quality and safety as a part of PRI.”

Throughout his professional career, Mr. Hayward has been responsible for quality, safety and mission assurance for advanced air and space applications. He has extensive experience in the aerospace industry, including manned and autonomous aircraft, satellites, and space launch vehicles. He has worked for major aerospace companies and collaborated with the world’s leading aerospace OEMs. In addition, he has partnered with numerous government officials on advancing quality and safety regulations.

“At a time when mobility is being transformed and the need for safe and reliable transportation is ever increasing, PRI can be trusted to provide effective solutions”, Hayward said. “For 28 years, PRI has served and protected the aerospace industry by controlling state-of-the-art processes used on highly complex aviation, space and defense products. PRI is ready to leverage its success and meet the challenge of expanding into other industries where safety is paramount, and technologies are advancing exponentially.”

“In a business where safety is a must, the aerospace industry’s emphasis on quality and use of PRI industry managed programs has been an important enabler of safe and reliable air travel,” Etienne Galan, Vice President for Quality, Safran, and Chairman of the PRI Board said. “Mike’s deep experience in quality will further strengthen the aerospace industry’s capabilities and broaden PRI’s abilities to enable related industries.”

Mr. Hayward is a highly qualified and respected executive, holding multiple technical certifications and advising on internationally recognized certification exams. He also has been a long-time leader in international forums where, among other accomplishments, has led global teams to successfully harmonize NATO quality management system standards with ISO 9001 and AS/EN9100. He holds a BS degree in Business Administration from Regis University where he graduated Summa Cum Laude; and an MBA from the University of Colorado.
In response to the Nadcap newsletter feedback survey conducted in early 2017, PRI continues to publish information about the latest important changes made to the Nadcap Audit Criteria and Procedures, as shown below.

PRI encourages every member of the Nadcap community to review the entire document posted on eAuditNet or to contact the designated PRI staff responsible for the change/revision if you would like more information or have any questions. You can find all the contacts on eAuditNet, under the section “contact us”.

**CHECKLIST REVISIONS**

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Task Group Lead</th>
<th>Audit Criteria Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AQS</strong></td>
<td>Susan Frailey</td>
<td>AC7004 Rev G - Addition of NA to several questions</td>
</tr>
<tr>
<td><strong>ASA</strong></td>
<td>Keith Purnell</td>
<td>New AC7135 Aero Structure Assembly Baseline includes hole preparation, dimpling hot and cold, calibration, FOD, rework and repair, inspection records</td>
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<tr>
<td></td>
<td></td>
<td>New AC7135/1 Aero Structure Assembly - Fastening includes fit and alignment, shimming, conversion coating, Cold working, fastener installation, internally threaded fasteners</td>
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<td></td>
<td>New AC7112/2 Electrical Bonding of Aero Structure Assemblies and Component</td>
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<tr>
<td></td>
<td></td>
<td>New AC7112/3 Aero Structure Assembly – Bushing and Bearing Installation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New AC7135/4 Aero Structure Assembly – Sealing of Aerospace Assemblies and Components</td>
</tr>
<tr>
<td><strong>CMSP</strong></td>
<td>Andy Statham</td>
<td>AC7126 has been updated to clarify some minor issues and typos; there are no technical changes</td>
</tr>
<tr>
<td><strong>COMP</strong></td>
<td>John Tibma</td>
<td>AC7118 Rev F (and associated handbook) was released with one major change: addition of a section on silicone processing including actions to prevent silicone cross contamination from uncured silicone</td>
</tr>
<tr>
<td><strong>FLU</strong></td>
<td>Keith Purnell</td>
<td>Revised AC7112 Baseline to remove restriction of limiting audit to SAE Procurement documents</td>
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<td></td>
<td>AC7112/1 - Adding Tape Wound PTFE Hose manufacturing Audit Criteria</td>
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<tr>
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<td>New AC7112/6S with Airbus requirements for Ti Tube manufacturing</td>
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<td>Developing a new AC7112/7 Pipe / Tube Assembly Audit Criteria that will address bending, cleaning, fitting</td>
</tr>
<tr>
<td><strong>M&amp;I</strong></td>
<td>Dave Marcyjanik</td>
<td>Remote Service Provider questions incorporated into the AC7130/2/3/4 Audit Criteria for use when the process is procedurally complete</td>
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<td>AC7130/4 should see first audits spring of 2019</td>
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<tr>
<td><strong>NDT</strong></td>
<td>Phil Ford</td>
<td>AC7114, AC7114/1, AC7114/2, AC7114/3, AC7114/4 and supplements updated</td>
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<td>AC7114/6 and AC7114/8 removed from the system and made into a single Audit Criteria AC7114/10</td>
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<td>AC7114/11 is new and addresses the audit of National Aerospace NDT Boards</td>
</tr>
<tr>
<td><strong>NMSE</strong></td>
<td>Mark Hunkele</td>
<td>Audit Criteria revisions: AC7116/1, AC7116/2, AC7116/3, AC7117, AC7117/1, AC7117/2, AC7117/3, AC7117/5</td>
</tr>
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<td>New process and Audit Criteria for Abrasive Water Jet Machining – AC7116/7</td>
</tr>
<tr>
<td><strong>WLD</strong></td>
<td>Ian Simpson</td>
<td>AC7110/5 Rev I (Fusion Welding) now has supplement to assess orbital welding</td>
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<td>AC7110/14 Rev A (Additive Manufacturing) incorporated several items based on feedback from the first series of conducted audits</td>
</tr>
</tbody>
</table>
## PROCEDURE REVISIONS

<table>
<thead>
<tr>
<th>New Title</th>
<th>Document Owner</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP 1101 Document Control</td>
<td>Bob Lizewski</td>
<td>Issued a significant rewrite in January 2018</td>
</tr>
<tr>
<td>OP 1104 Audit Scheduling</td>
<td>Linda Novak</td>
<td>S-frm-20 Auditee Agreement revised in March 2018 – revision of the cancellation postponement policy</td>
</tr>
</tbody>
</table>
| OP 1106 Audit Report Processing   | Elizabeth Strano | Underwent a complete rewrite as part of the Document Transition initiative. The revised procedure was published July 17, 2018 and became effective October 17, 2018. The main changes were:  
  - Definitions of NCR statuses  
  - Statement of response requirements  
  - Requirement for Reviewer to provide rationale when rejecting a request to Void an NCR  
  - Clarified VCA request and approval process  
  - Added mechanism to resolve disapproval vote on second ballot  
  - Clarified accreditation, withheld, and cert issue processes |
| OP 1110 Audit Failure             | Mike Graham      | Underwent a complete rewrite as part of the Document Transition initiative. The revised procedure was published August 28, 2018 and becomes effective November 26, 2018. It was retitled to “Audit Failure and Risk Mitigation”. The main changes to the procedure were:  
  - Outcomes when an AC7004 audit fails  
  - Process for establishing Mode B criteria moved to Annex A. |
| OP 1111 Merit Program             | Christine Nesbitt| Added a requirement to document the justifiable reason that prevented Merit |
| OP 1114 Task Group Operations     | Nigel Cook       | Required Task Groups to define a process to evaluate compliance with aerospace/defence requirements in their OP 1114 Appendix when there is no aerospace/defense work  
  - Provided allowance for Task Groups to define:  
  - Standard corrective action process in their OP 1114 Appendix when a delegated Audit Report Reviewer does not meet requirements for maintaining delegation  
  - Example of “other justifiable reasons” for denying merit in their OP 1114 Appendix  
  - Criteria for requesting a Verification of Corrective Action Audit in their OP 1114 Appendix |
| OP 1114 CMSP                      | Andy Statham     | Revised to align with revision to OP 1114                                 |
| OP 1114 NDT                       | Phil Ford        | Revised to align with revision to OP 1114                                 |
| OP 1114 NM                        | Mark Hunkele     | Revised to align with revision to OP 1114                                 |
| OP 1114 SE                        | Mark Hunkele     | Revised to align with revision to OP 1114                                 |
| OP 1114 WLD                       | Ian Simpson      | Revised to align with revision to OP 1114                                 |
| OP 1116 Auditor Staffing          | Ethan Akins      | Complete rewrite, replaced "Supplier Feedback" with "Auditee feedback" and reorganized the entire procedure to improve the flow |
| OP 1116 CMSP                      | Andy Statham     | Revised to align with revision to OP 1116                                 |
| OP 1116 NDT                       | Phil Ford        | Revised to align with revision to OP 1116                                 |
| OP 1116 WLD                       | Ian Simpson      | Revised to align with revision to OP 1116                                 |
This newsletter, and past issues, are available to download on the PRI website at http://p-r-i.org/nadcap/

Please contact PRI at privacy@p-r-i.org if you no longer wish to receive the Nadcap newsletter.