N on- D estructive T esting Newsletter

June 2012

Issue Highlights

From the Chair…..

During the recent Supplier Symposium in San Diego dealing with Root Cause Corrective Action, a number of ancillary points were introduced that led to some interesting discussions. One that I would like to highlight is the evolution of the tools that are available today to participants in the Nadcap program. These tools, some of which are described below, were initially developed to help Suppliers prepare for the Nadcap audit but truly, they can also help the user become a more effective, efficient and quality sensitive company.

A Supplier Symposium highlights issues that are relevant to the entire NDT Supplier base. Previous topics have focused on Root Cause Corrective Action, the changes in NAS410, and the upcoming Symposium will deal with trying to clarify the role and expectations of the Level 3. The discussions are structured to help people understand the topic, but also to encourage Supplier participation and keep everyone involved. Those who are new to the program get a better understanding of the various topics and those who have been with us for a while have an opportunity to share their experiences.

The NDT Newsletter provides a source of information for everyone involved in the Task Group, but especially those who do not have an opportunity to attend meetings. Many of the pertinent topics that are discussed at the meetings are turned into articles which share the thoughts and discussions that happen at the meetings. This newsletter is sent to everyone in the program and we ask for input (such as topic suggestions or providing articles) from the Suppliers as well as the Subscribers and the Staff Engineers.

eAuditNet shows the top categories of NCR's by method, so Suppliers have the opportunity to look at their own processes, their own systems, to see if these issues could apply to them. It raises everyone's awareness of the major issues being found throughout the Aviation Industry. It also contains presentations from the face-to-face meetings for the benefit of those who could not be there to participate.

The checklists are made available to all participants well in advance of the actual audit date. This provides Suppliers with an opportunity to review their internal processes and quality system, to help identify and eliminate any weak spots. The checklists themselves contain compliance guidance. As the checklists are developed and the requirements evolve, the Task Group tries to include guidance that explains the intent of the question and help people to understand various requirements. If problem areas are uncovered, the other tools are available to help eliminate them. This not only prepares the supplier for the audit, reducing the time and resources needed to address any nonconformance, but it helps to improve the quality of the process and the product.

Now we, in conjunction with the Supplier Support Committee, are reenergizing the Mentoring Program. This will allow new Suppliers, or Suppliers struggling to understand the Nadcap requirements to learn from Suppliers who have been there, who have grown with the program and understand how it functions and the benefits to be gained.

However, no matter how many tools we develop, and no matter how effective they are in helping to identify and eliminate deficiencies, no one can force their use. We are all involved in the business aspect of our employer, to some degree. If these tools can make our business stronger, more effective and more efficient, why not

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take every advantage? When we pay for services in our personal lives we look for every advantage, every benefit for the money we spend. Why would we do any less for our business? The tools are available; use them. If you think there are additional opportunities to build our arsenal, feel free to contact one of the Staff Engineers, or a Subscriber or Supplier Task Group member. Helping to improve the Supplier base only helps to improve each and every Subscriber. We are in this together, so let's make it work.

Thanks, and I hope to see you all in Berlin.

Phil Keown – NDT Task Group Chair

Nadcap Meeting Schedule

2012	Location
June 25-29	Berlin, Germany
October 22-26	Pittsburgh, Pennsylvania, USA
2013	**Location**
February 18-22	Dallas, Texas, USA
June 3-7	Paris, France

NDT Newsletter – Want to be on the Circulation?

The NDT newsletter is published periodically throughout the year. The newsletters are read by the subscribing Nadcap users, Suppliers, Auditors and anybody that happens to click on the latest NDT newsletter on the PRI website (www.pri-network.org). The aim of the newsletter is to communicate information relating to NDT within the Nadcap program to improve our process and to promote the sharing of best practices at all levels.

Have you stumbled across the NDT Newsletter by chance? Want to receive it on a regular basis? Keep up-to-date of the latest Nadcap NDT information by getting added to the distribution list! To receive notification when a new edition has been published, please e-mail Rhonda Joseph at rjoseph@sae.org with your name, company and email address.

Compliance Jobs – Expectations Part II

Following queries received over the months and discussions during the NDT Task Group meetings regarding compliance jobs, the Task Group requested PRI staff to write an article to address some of the scenarios that occur during compliance.

Gary White, who is a dedicated Supplier Voting Member for the NDT Task Group, wrote a great article in the February 2009 edition of the Newsletter (http://www.pri-network.org/Non-Destructive-Testing.id.869.htm) regarding compliance jobs and the expectations. I will use his article as a base to elaborate and address some of the clarifications received. Most importantly – if you need clarification, have an upcoming audit, or are concerned about compliance jobs / expectations, etc., contact one of the NDT Staff Engineers.

As a rule for each of the NDT method-specific checklists:

- Witness three actual jobs processed by covering the Subscribers using three inspectors, one inspector for each job.
- Review a maximum of three 'paper' audit packs for Subscribers not covered in the job audits above.
  - o Note: Paper audit packs are only required if Subscriber hardware is not processed during the job audits

Some specific notes to consider (When referring to the scenarios below, the term 'one compliance job' can refer to a batch of parts and not just one part of the same part number):

- The auditor is required to choose the compliance jobs to be witnessed and the paper audit packages.
- If a company only has one inspector and three jobs to be witnessed, that one inspector will be required to process and inspect those parts.
- Three compliance jobs from three different Subscribers may be processed at the same time, provided the same technique is being used.
- If a company only has one compliance job and more than one inspector, then it may be acceptable to divide the batch to cover the two or more inspectors.
- Trainees and Level 1 personnel will be asked to participate in the job audits in a manner as defined by the company procedure for NDT personnel certification (written practice).
- Level 2 & 3 personnel who do not regularly process and inspect hardware will be included in the compliance jobs.
- The number of compliance jobs being processed by individuals on the line at the same time will be dependent on the size and functionality of the line. It is possible, however do not attempt to process batches of parts in a slightly different manner to expedite the audit. If an error occurs, then an NCR could be issued.
- Additional note: All personnel certified to perform functions of the process per the written practice, which includes control checks will be expected to perform those functions, even if they are not the individuals that regularly perform such tasks.

Jim Bennett – NDT Staff Engineer

Internal Inspection

One of the most difficult forms of inspection utilizing Liquid Penetrant or Magnetic Particle techniques is the ability to evaluate internal surfaces of a product. We are so familiar grabbing the UV light source, allowing for eye adaptation and beginning the inspection process that we sometimes get over zealous in thinking we can provide for adequate illumination to internal surfaces. Unfortunately, using standard inspection devices on products that have these internal surfaces may not always do the job. With internal surfaces on cylindrical shaped products or areas with passages whereby the standard UV light source cannot be used due to its size, other means of light illumination must be employed. There are items available that can be utilized to assist in this exercise.

Immediately UV borescopes come to mind. These can be quite helpful for small openings and curved surfaces, but can make inspection quite tedious. Due to the minimized focal viewing area, the length of time for inspection can be quite lengthy as well. Techniques for manipulating this device to attain the proper UV intensity at the work surface, maintaining focus and indexing must be strictly followed for assurance of complete inspection.

UV borescopes are available in fixed diameter and length (rigid) for easy to access (straight) inside diameter sections. Complex parts/structures can be inspected with flexible fiber optic cable with a range of 4 way tip articulation to hone in on the inspection surface. Various viewing heads such as right angle, bottoming, forward oblique and circumferential are available depending on the internal viewing requirement.

Video borescopes contain a camera that enables images to be viewed and recorded for archiving on a digital video recorder, computer hard drive or memory card. Unfortunately, these types of borescopes are quite costly since these systems can become quite complex compared to straight viewing devices.

Other methods of examination light sources could include UV light guides, pen lights, and even very high intensity external UV lamps such as the “Labino UV Light” where inspection can be performed with the aid of mirrors to reach into the part and examine through a mirror reflection. That said, there may be instances where accessibility is totally unattainable despite equipment at hand. These limitations to the NDT method employed must be understood through communication from the Level 3 to the engineering organization (customer) who mandated the requirement to have complete understanding that these surfaces may necessitate another form of NDT to allow for 100% inspection. If 100% inspection is not feasible it may call for revision of the engineering drawing requirements showing those areas to be categorized “un-inspectable”.

Again, when a requirement to perform FPI or MPI per a given specification does not define specific locations for inspection to be performed, this typically means that all areas of the part are required to be inspected. If this cannot be accomplished, get people involved. The best way to resolve these issues is to communicate with your colleagues and come to an agreement on how to move forward.

Rich Costantino- Goodrich Aerostructures

Calibration Frequency for NDT

AC7114 Rev. F, Paragraph 8.3.2:

“Does the calibration procedure address criteria to reduce the calibration frequency?”

This seems like an innocuous requirement and easily addressed. However, based upon review of many audits it appears to be more complicated than first thought. Although the intent is to write clearly, interpretation issues sometimes arise. For example, is it possible to use the words “frequency” and “interval” interchangeably? By referencing Webster’s Online Dictionary we find the applicable definition to be:

Frequency: The number of occurrences within a given time period.

Interval: A definite length of time marked off by two instants.

Not being a scholar, I find that they have similar meanings, just stated differently. Both address time defined by points. Seems fairly clear.

Now let’s look at the words “reduce” and “shorten” and what affect they may have.

Reduce: Cut down on; make a reduction in.

Shorten: Make shorter than originally intended; reduce or retrench in length or duration.

Here they both refer to bringing something closer together.

What about the opposite? This is where we want to separate the two occurrences by more time. In this case we would use the words “extend” or “lengthen”.

Extend: Lengthen in time; cause to be or last longer.

Increase: A process of becoming larger or longer or more numerous or more important.

Again, not being a scholar I would take the meaning at face value and move on. But language is a strange thing. A direct translation does not always come out the same or even meet the intent. Even in our office, we may speak English, but not understand what was meant.

So what is my point in all of this? I believe there is a misunderstanding in what the NDT Task Group expects when it comes to defining calibration frequency (interval). For the most part it is understood that if you do not extend (lengthen) the calibration frequency (interval) of NDT gages / inspection equipment, then merely stating so in a procedure is sufficient. But that only addresses half of the requirement. The second part and the one missed most often, is the reduction (shortening) of the calibration frequency (interval).

Because this is deemed so important, the checklist was revised to make two separate questions. We need to re-read the question in the revised checklist AC7114 Rev. F, Paragraph 8.3.2,

“Does the calibration procedure address criteria to reduce the calibration frequency?

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Compliance Assessment Guidance: As a minimum it is expected that a review of the impact on results captured whilst the equipment was "out of tolerance" will be documented and an assessment of suitability for further use shall be made. Any additional requirements imposed e.g. limitations of use, increased tolerances or changes in frequency would also need to be shown."

Not only does the calibration system need to address whether extension (increase length) to calibration frequency (interval) are made, but the necessity to reduce (shorten) the interval when warranted. Again, shorten (reduce) in this context is to go from 6 months to 3 months calibration interval.

What happens when NDT gage / inspection equipment is found to be out of tolerance when it is calibrated? Surprisingly, not very many know what happens or what should happen. As a minimum, an investigation into what effects the out of tolerance condition had on product or services must be considered. This investigation could possibly address how far out of tolerance the NDT gage / inspection equipment was at the time it was checked. Is it deemed significant, where it may have an impact on the process or product? Consideration must be given to how much out of tolerance is allowed before action must be taken. How many times can NDT gage / inspection equipment be found out of tolerance before a reduction (shortening) in frequency (interval) is invoked?

If the frequency (interval) is reduced (shortened), what, if any, criteria are there for returning the gage to the original calibration frequency (interval)? The act of returning the gage to the original frequency is not considered an "extension". The investigation, no matter in what form, must be documented. Potentially, customer notification would be required. That decision should be documented too.

Does the procedure address the required action and documentation required? The procedure may be specific to NDT gages or it may be a higher level document that applies to all gages in the facility. At a minimum it is expected that the calibration procedure address both extension (lengthening) and reduction (shortening) in frequency (interval). If extending (lengthening) the calibration period for NDT gages/ inspection equipment is not allowed, then merely stating so is sufficient. Many Suppliers do not extend the calibration periods. However every Supplier must address the reduction (shortening) of the calibration interval.

P. Michael Gutridge, Lead NDT Senior Staff Engineer

Human Factors

Reliability of NDT can be significantly influenced by the environment in which components are processed and inspected. Consideration of human factors is an area that is all too frequently overlooked. Human factors are typically dependent on a large number of influences, and the following may be areas in which you and your company may want to pay special attention when considering the NDT process within your company.

At a recent NDT Task Group meeting, the topic of human factors came up, and it took me back to my previous position as an FAA Repairman. Part of my responsibility was to help develop a Training Manual as a companion to our Repair Station and Quality Control Manual. Handbook Bulletin for Airworthiness Order 8300.10 then required human factors to be included in the training program. Numerous FAA documents had suggested elements on human factors but none that would apply to our small compressor blade repair facility.

Luck struck when our local Flight Standards District Office (FSDO) was having a two day Aviation Safety Program Workshop and one of the topics was human factors. The facilitator defined human factors as "The discipline of optimizing the relationship between people and their activities by the systematic application of the human sciences, integrated within the framework of system engineering." He also defined human error as "Where there is general agreement that a person should have done something other than what they did."

Most important to our facility were the twelve human factors that can cause human error:

- □ Lack of Communication
- □ Lack of Resources
- □ Complacency
- □ Pressure
- □ Lack of Knowledge
- □ Lack of Assertiveness
- □ Distraction
- □ Stress
- □ Lack of Teamwork
- □ Lack of Awareness
- □ Fatigue
- □ Norms

The following is a synopsis of each of the human factors described make up part of the presentation.

Lack of Communication – which is possibly the most important human factor issue that has played a role in aviation accidents. Either someone was assuming that someone else had done his/her job, or was not given proper instructions. Employees need to communicate before, during and at the end of each task and detained information must be passed along at shift change.

Complacency – is lack of sufficient stress. We all know that too much stress can cause confusion and fixation. However, too little stress can cause a person to be bored and complacent. When a person becomes complacent, not only does their stress level for the task decrease, but their performance decreases also. Error or complacency can be lessened by always following written instructions, procedures or specifications. Do not attempt to do work from memory, and never sign off on work that you are not totally sure that you have completed the task.

Lack of Knowledge – aircraft systems are so complex and integrated today that it is next to impossible to perform the necessary tasks without substantial technical training and reference sources. It has been suggested that if we make the effort to study one hour a day for a year on the subject of our profession, we will be among the top 15% of knowledgeable

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persons within our profession. Make a daily commitment to spend a small part of everyday reading on subjects that affect you in your daily job to avoid falling victim to the lack of knowledge human factor.

Distraction – psychologists have identified distraction as the number one cause of forgetting. We humans are always thinking ahead, both consciously and subconsciously. If we are distracted to the point of interruption during a task or procedure, when we return to the job, we often think we are further along than we actually are. Errors from distraction can be lessened by always finishing a task or marking the incomplete work, double inspect by another or self, and when you return to the job always go three steps back and use a detailed check sheet.

Lack of Teamwork – teamwork does not just happen by mistake; a lot of constructive communication needs to take place by all departments involved in order to produce teamwork. When there is trust and good communication among employees teamwork develops. A good team member wants everyone to succeed; we can start out by praising the people we work with.

Fatigue – is the body's normal reaction to physical or mental stresses of prolonged duration. Acute and operational fatigue is caused by hard work and long hours. Chronic fatigue however may be something that requires medical attention. Symptoms of fatigue can be attention reduced, memory diminished, mood becomes withdrawn, low situational awareness, long hours of labor or high intensity stress. The three most important ways of dealing with fatigue are regular sleep, a well-balanced diet and a regular exercise program.

Lack of Resources – a list of important resources would be money, people, time, tools and data/knowledge to name a few. Making sure that we have correct tools for the job is just as important as having the proper parts. Technical data is another critical resource which can lead to problems. If we cannot find the data we need to ask a supervisor or technical representative. When we have the proper resources for the task at hand there is a greater chance that we will do a better and more efficient job.

Pressure – can affect our judgment during critical moments at work. Pressure to complete the job is part of the stress that motivates us to do the job. Positive stress is the extra stimulation that helps us to perform at our best. Negative stress occurs when pressures layer one on top of the other and become uncomfortable. A few ways to reduce pressure is to put everything into perspective, be sure the pressure is not self-induced, communicate your concerns to someone in a position to make a difference or ask for extra help.

Lack of Assertiveness – assertiveness can be defined as standing up for rights and expressing feelings in an honest, open, appropriate and direct way which will not violate another person's rights. Assertiveness takes the view that all individuals can pursue their own goals, protect their own rights and achieve results without violating the rights of others. Assertiveness can be said to be the middle ground between aggressiveness and passiveness. One way to practice assertiveness is to refuse to compromise your standards and do what is right, even when no one supports you.

Stress – it's a blessing and a curse, a blessing in that it motivates us to perform and a curse in that it can adversely affect your health, both mental and physical. Stress can be created from many different sources, some can be family changes, work, or personal or financial issues. Knowing the early warning signs can give us a chance to use stress reduction or coping techniques. Some early signs are disruptions in eating patterns and sleep habits, errors in judgment occurring more frequently, poor concentration and memory loss become noticeable, personality changes and stomach distress. Techniques for reducing stress work differently in different people. Some examples are to go with change rather than against it. If job factors are creating stress, talk with your supervisor or someone in your organization in a position to make a difference, establish a balance between work, family and recreation, smile more, and laugh. Laughter is a proven stress-coping mechanism.

Lack of Awareness – or reduced situational awareness can be an indication that one or more of the other human factors are in action, such as fatigue or distraction or lack of communication. To maintain our awareness level throughout our careers and in our day to day job we can rely on our experience and training. Experience creates a mental file of how one interprets and responds to conditions and events. Use your experience to maintain a constant state of awareness.

Norms – norm in the context of the Dirty Dozen means, our group has a better way to do the job than the written instruction, procedure or specification. It could be considered "Tribal Memory", which are unwritten rules enforced by the group, peer pressure or habit. Always work as per the instructions or have the instructions changed. At least if things go badly we can say we were following the published procedure. "It's not my fault" is a nice position to hold.

Human factors should be considered in the design and operation of any NDT facility. The consideration of human factors will often lead to an efficient and effective NDT process.

Richard Gasset – Lisi Aerospace / Supplier Voting Member

Supplier Feedback

What is the last thing a Supplier does before sending their first response for the audit into eAuditNet for Staff Engineer review? They fill in the 'Auditor Evaluation'.

How many Suppliers take this seriously? We do not know.

The team involved with your audit, which includes the Auditors, Subscribers and Staff Engineers, work hard to achieve consistency. Feedback is important to understand the health of the program and possible improvements. Please complete the 'Auditor Evaluation' as honestly as you can. All evaluations are reviewed by Staff Engineers, and fed back to the Auditor Consistency team.

We do not expect a book to be written, but a few well-chosen words go a long way to help the program. Try not be vindictive if you received several NCR's; an honest appraisal is what is needed. If any conflict existed during the audit, then that also needs to be highlighted. Conversely, if the Auditor excelled in their performance, please let PRI know this too. Many times honest feedback is not given through this process. How do we know? Because Suppliers will contact us after the event as they did not want to document the issues, such as time keeping, insufficient communication, areas of conflict, etc.

Please take just 5 minutes to consider the form before you complete it and submit it.

1. Prior to Audit - Did the auditor contact you at least three weeks prior to the audit to discuss the audit plan?

If so, great! If not, check No, but if there are extenuating circumstances please also comment on this.

2. During the Audit (on-site) - Did the auditor conduct an opening meeting to discuss the audit agenda and confirm the audit scope?

3 - Was this meeting effective?

If your answer is no, then why wasn't it?

4 - Did the auditor conduct a daily debriefing to review non-conformances and to discuss the audit progress?

This is an area where complaints are typically recorded – NCR's being dropped on the Supplier at the last minute. That is not acceptable.

5 - Were these meetings effective?

If not, why wasn't it?

6 - Did the auditor clearly and effectively explain each non-conformance?

Staff Engineers review responses to NCR's that do not appear to have any relation to the NCR written. Please ensure you understand the written NCR's prior to the auditor leaving your premises.

7 - Did the auditor act in a professional and business-like manner?

PRI does not tolerate poor behaviour of any kind. If the auditor appears to be demonstrating poor behaviour, do not be afraid of talking to them to remind them of local expectations of business behaviour. Any concerns, contact the Staff Engineer.

8 - Did the auditor conduct a closing meeting to discuss any issues and to explain all non-conformances'?

Self-explanatory, but….

9 - Was this meeting effective?

If not, why wasn't it?

10 - Did the auditor provide a review of the eAuditNet process and timeframe for responding to non-conformances?

Many Suppliers think the review is not necessary. However, procedures and protocols periodically change within the program, so it is always worthwhile to ensure this takes place.

11 - Was this review effective?

If not why wasn't it?

12 - Was the communication between the auditor and the Supplier clear enough to prevent language barriers from impacting the audit results?

Be honest with this question – it may be that as a Supplier you could help with any issues here.

3. Time Management -

13 - Did the auditor use time effectively to complete the audit?

In your opinion, is there room for improvement?

14 - Was the auditor on-site a sufficient amount of time to conduct a thorough audit?

Was the audit completed too quickly? Do you feel the audit was unnecessarily protracted?

4. Consistency -

15 - Was the auditor consistent in their application of requirements as compared to previous audits?

This is an area of contention. Auditors, Subscriber and Staff Engineers work hard to achieve consistency. This is an opportunity to let the Staff Engineers know where PRI has areas for improvement.

5. Technical Competence - 16 - Did the auditor demonstrate appropriate technical knowledge for the process (es) reviewed?

Was the auditor up to, or better than, the technical standard you would expect of your employees?

Overall Comments

Any further comments?

Staff can assure there will be no retribution regarding comments received. Please take this opportunity to appraise the process seriously and honestly; it's another opportunity for you to help the program improve.

Andy Statham – NDT Staff Engineer

Myth-Busters

I am a relatively new Staff Engineer, but have been around in the industry for 30+ years and heard many stories about Nadcap & PRI. Among the most common ones are; the Task Group sits in an Ivory Tower, Staff Engineers are devils in disguise and Auditors are not human.

Myth 1: Task Group members do not sit in an Ivory Tower. They are hardworking, regular people just like you. Try talking to one; most of them don't bite…. The major difference between you and the Subscriber is they are directly responsible to the end users of their products who are the fare-paying flying population – you, in other words. The Task Group members are also accountable to the airworthiness authorities.

Myth 2: Staff Engineers do not sit around discussing vendettas all day – or at all. They are far too busy for this. Though they may appear to be grumpy old men, they actually enjoy the work and the interaction with the customer base. That's a relevant point - as well as the Subscribing members. You are customers too.

Myth 3: Auditors are human, and have feelings. Most are really nice people too! They have a tough job to do – they are overseen by you, the Supplier, by Staff Engineers and by the Task Group. Try to imagine that kind of pressure every day at work. Just because they may have not visited your facility before, they are not naïve, and the auditors have many, many years' experience in the industry.

Myth 4 is that collectively PRI/Nadcap/ Task Group/Staff Engineers will not listen – yes they do! Remember though, you might not want to hear what they tell you.

Myth 5: The myth that the Task Group won't listen to disagreements over NCR's is a common myth. The Task Group realizes there are differences of opinion over NCR's, and contrary to popular belief, they do listen. If you have a disagreement with an Auditor about a finding, there are mechanisms in place to resolve issues. If you think a finding is invalid, the first thing is discuss the finding with the auditor (who, again, is human) at the time of the audit. If the auditor does not change the finding, please do not argue with the auditor as this will just increase tension. Also, do not lose sight of the fact that the auditors are directed by the Task Group. They cannot change the checklist questions or overlook requirements that are imposed on you.

If the issue cannot be resolved at this time, call a Staff Engineer during the audit. It doesn't matter which one. Call the one you are familiar with or comfortable with.

If the issue is still unresolved, you may register your disagreement on the NCR report form at the closing meeting. Do not be apprehensive about this as no one will be 'out to get you' next time. Every report form is reviewed to capture comments recorded. These report forms give Staff an advanced warning about potential appeals. When the NCR's are uploaded into eAuditNet you will have 3 days to appeal the findings. Write to the Staff Engineer allocated for your audit stating which NCR's are under question and why they are being appealed. At this point staff will again try to resolve any concerns.

If not satisfied with the suggested resolution, the issue may be passed onto the Task Group for technical resolution. The Supplier may, at their discretion, request to discuss their concerns with the Task Group. At this point all relevant information may be presented to such support from your customer base, clarifications from industry standard specifications, etc. The Task Group will then give final technical dispensation on the issue.

The final and perhaps biggest myth is that it is not possible to close out an NCR on the first cycle round. It is not only possible, but it happens often and there is no secret how to do this. All information on how to do this is available free of charge. There is a Root Cause Corrective Action online tutorial on eAuditNet (www.eAuditNet.com), and recently the Staff Engineers with the assistance of the Suppliers presented a Symposium on RCCA. If you are still unsure how to proceed, call the Staff Engineer.

Suppliers have a great support group in the form of the Supplier Support Committee (SSC). The SSC has its own web page which includes contact details and FAQ's: http://www.pri-network.org/Nadcap/Supplier-Info.id.41.htm. It's a great resource and I would encourage you to actively engage with the SSC.

To conclude, communication is the key. Clear communication between all parties goes a long way to resolving issues and improving the process. Please feel free to contact any PRI staff person if you want to discuss your audit.

Andy Statham – NDT Staff Engineer

Number of NCRs, Failure and Merit

After the audit there are some Suppliers who, probably through hard work and diligence, have no NCRs and will not need to consider what effect the number of NCRs issued could have. However for many there will be a need to consider not only what to do to answer the NCRs issued but also what impact there will be with regard to the number and classification of NCRs. The two main considerations in the Nadcap system triggered by the number of NCRs are "Audit Failure" and "Merit Status". These are, in fact, linked since the threshold for Supplier Merit is now set as a percentage of failure levels.

Metrics show that the number of NCRs issued per audit day has reduced over the years but until recently the threshold levels for sanctions have been left at the relatively high levels associated with more NCRs being issued. Initially the failure level was set using a mathematical model such that the lowest 2% of Suppliers would automatically fall into a status of being considered for failure. However as Suppliers are becoming more familiar with the Nadcap system and hence the number of NCRs is reducing, metrics show that only 0.3% of Suppliers would fall into the catchment for failure. The Task Group therefore decided that it was time to revisit the criteria.

The previous and the revised values are shown in the table below for initial audits, reaccreditation and Supplier merit.

The challenge now for Suppliers is to beat the system by continuing to improve! The threshold will be revised but we

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No of Audit Days Old Proposed			1		2		3 or more	
			Old	Proposed	Old	Proposed	Old	Proposed
FAILURE LEVELS	Initial	Major	7	**5**	14	**10**	21	**15**
		Total	9	**8**	18	**16**	27	**24**
	Reacred	Major	4	**3**	8	**6**	12	**9**
		Total	6	**5**	12	**10**	18	**15**
Merit	18 Month	Major	2	**2**	4	**3**	6	**5**
		Total	4	**3**	8	**6**	11	**9**
	24 Month	Major	0	**0**	0	**0**	0	**0**
		Total	4	**3**	8	**6**	11	**9**

know that performance of Suppliers has been improving too with the number of NCR's going down. Metrics predict that following the change 1% of Suppliers will fail or be considered for failure and that around 10% less Suppliers will achieve the merit status they would otherwise have achieved. It would please everyone if the next metrics show Supplier performance better than this prediction!

However, a final word of caution, don't expect things to stay still. It is a Nadcap system requirement that these numbers are considered on a regular basis and as indicated previously this change only goes part way towards restoring the failure threshold level that once applied.

Andy Bakewell - EM Inspections Co Ltd

Nadcap Meeting Attendance - To Attend Or Not To Attend

Nadcap audits are a requirement which most companies that perform aerospace work in the special process arena have to deal with. Nadcap audits are work intensive, time consuming, costly and something to which most of us do not look forward. You probably invest at least three weeks in the pre-audit activities and close to a week for the actual audit. If you have findings there is even more time invested in answering the findings. Why would you invest any more money, time or energy attending Nadcap meetings that occur all over the world?

The meetings provide a forum where you are allowed to express opinions to a receptive audience. If the evidence provided is clear and concise, the task group may or may not implement your suggestion. Either way fair opportunity is given to express opinions and have a voice in the audit process. A really bad audit could have a devastating consequence to your company. One of your best allies is Nadcap meeting attendance and more importantly, participation at the meetings. You learn a lot about the whole process. Think of the savings of not having to deal with the devastating consequences of a really bad audit.

As an executive at the company for which I work, I am responsible for containing costs to the best of my ability. I take this responsibility seriously. Yet I attend most of the Nadcap meetings, both nationally and internationally. This adds to about $15,000.00 to $20,000.00 a year, including my time to the cost of doing business as it relates to Nadcap. How can I justify the extra time and money spent? Let me briefly explain my reasoning for justifying this cost.

Attendance at Nadcap meetings is extremely beneficial toward ultimate success in passing Nadcap audits. First and foremost, if you attend Nadcap meetings you have to participate. This means active participation. You need to listen to what is being said by the Subscribers, guests and Suppliers. There are times when subject matters are not interesting, but you still have to listen. Careful listening will allow for thoughtful insight whenever you choose to speak. If you hear something that is wrong for your company or industry in general, you must speak up. If it is wrong, and it is allowed to become auditable material, it pains us all. By stopping issues that are close to impossible to achieve, think how much time and money you have saved your company in answering the initial finding and any follow-up findings that might occur in the future. Even if you are incorrect, you get the valuable insight of those in attendance which may lead to understanding requirements more clearly, which in turn may allow you to perform at higher efficiency.

I have been in regular attendance at Nadcap meetings since 2007. From personal experience; I can guarantee that the company that I work for has saved far more than the $15,000.00 to $20,000.00 annual expenditure (as well as my lost work time) for attendance at Nadcap meetings. I have provided input in many issues at the Nadcap meetings saving money for the company I work for. There was one item in particular that was addressed at the 2007 Rome meeting regarding "off-site" facilities. The result would have been very costly to the company for which I work and to other companies, without added benefit. I was able to explain how things work and bring quick closure to the issue. This one action has saved enough money to justify my attendance for decades to come. If I had not been at this meeting, how much income could have been lost?

What about information? How valuable is that? Nadcap Management Council (NMC) meetings are open to all and provide insight from Nadcap and the Subscribers in regards to what is going on in the Nadcap community. Supplier Support Committee (SSC) meetings provide insight and information from other Suppliers across different commodities. During breaks, interactions with your peers occur in the hallways. You also get information straight from the source. During open meetings, questions can be directed to Subscribers and Staff Engineers to which you normally do not have access. Nadcap Staff Engineers have provided information on how to be successful in closing findings when they do occur. Suppliers have been asked to provide personal insight on how they

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have had success in closing findings. Guests have spoken on a number of topics such as NAS 410, annual eye exam requirements and black lights, to name a few. If new requirements are discussed and possibly implemented, you have an advantage over your competition. You can start to implement the requirements ahead of those who are not in attendance. How much value can you put on that?

Networking is another priceless commodity available at Nadcap meetings. You are networking with other members of your chosen field. Faces are placed with names of people probably dealt with over the phone. By being respectful and insightful when speaking at the meetings you may gain respect and become known to those in attendance. Trust between Subscribers, Staff Engineers and Suppliers are built. Experiences, both good and bad are shared.

The company that I work for has both tangible and intangible evidence of the value of having someone represent them at the Nadcap meetings. The company has endured hard times as well as good times and has yet to abandon attendance at the meetings. It is understood how important Nadcap is to our success. We choose to be an integral part of the Nadcap process to help ensure our continued success and help maintain the confidence that our customers have in us.

Hopefully by sharing our concerns and experiences with each other we can help create safer aircraft for the commercial and military customers that depend on the decisions that we make.

Dave Gray, Vice-President Mitchell Labs

Subscriber Voting Member Representatives of the NDT Task Group

Prime	Representative	Status	E-mail contact
309th Maintenance Wing – Hill AFB	Timothy Doane	Subscriber Voting Member	timothy.doane@hill.af.mil
Airbus Chester, UK	Tony Warren	Subscriber Voting Member	Tony.warren@airbus.com
Agustawestland	Luigi Merletti	Subscriber Voting Member	luigi.merletti@agustawestland.com
Avio	Massimo Colombo	Subscriber Voting Member	massimo.colombo@aviogroup.com
BAE Systems (Air Systems) Preston, UK	Chris Dootson	Subscriber Voting Member	chris.dootson@baesystems.com
Bell Helicopter Textron	Thomas Mike Guinn	Subscriber Voting Member	tguinn@bellhelicopter.textron.com
Bell Helicopter Textron Ft. Worth, Texas – USA	Jim Cullum	Alternate Subscriber Voting Member	jcullum@bellhelicopter.textron.com
Bell Helicopter Textron Ft. Worth, Texas – USA	Ed Hohman	Subscriber Voting Member	ehohman@bellhelicopter.textron.com
The Boeing Company Mesa, Arizona – USA	Bob Reynolds	Subscriber Voting Member	bob.s.reynolds@boeing.com
The Boeing Company Seattle, Washington – USA	Peter Torelli	Subscriber Voting Member	peter.p.torelli@boeing.com
The Boeing Company Philadelphia, Pennsylvania – USA	Louis Truckley	Alternate Subscriber Voting Member	Louis.r.truckley@boeing.com
The Boeing Company St. Louis, Missouri – USA	Douglas Ladd	Subscriber Voting Member	douglas.l.ladd@boeing.com
Bombardier – Quebec Dorval, CANADA	Sylvain Héon	Alternate Subscriber Voting Member	sylvain.heon@aero.bombardier.com
Bombardier Belfast, UK	Bobby Scott	Subscriber Voting Member	bobby.scott@aero.bombardier.com
Cessna Aircraft Company Wichita, Kansas – USA	Greg Hall	Subscriber Voting Member	ghall2@cessna.textron.com
Cessna Aircraft Company Wichita, Kansas – USA	Michael Daehling	Alternate Subscriber Voting Member	medaehling@cessna.textron.com
GE Aviation Lynn, Massachusetts – USA	Phil Keown	Chairman / Subscriber Voting Member	philip.keown@ae.ge.com
Eurocopter	Philippe Beck	Subscriber Voting Member	philippe.beck@eurocopter.com
General Dynamics Marion, Virginia – USA	Mitchell Birzer	Subscriber Voting Member	mbirzer@gdatp.com
Goodrich Aerostructures Riverside, California – USA	Chuck Alvarez	Alternate Subscriber Voting Member	chuck.alvarez@goodrich.com
Goodrich Aerostructures Chula Vista, California – USA	Richard Costantino	Subscriber Voting Member	richard.costantino@goodrich.com
Goodrich Landing Gear Cleveland, Ohio – USA	Robert Rainone	Alternate Subscriber Voting Member	bob.rainone@goodrich.com
Hamilton Sundstrand Windsor Locks, Connecticut – USA	Michael Mitchell	Subscriber Voting Member	mike.mitchell@hs.utc.com
Hamilton Sundstrand Windsor Locks, Connecticut – USA	Scott Iby	Alternate Subscriber Voting Member	scott.iby@hs.utc.com
Hamilton Sundstrand Rockford, Illinois – USA	Roger Eckart	Alternate Subscriber Voting Member	roger.eckart@hs.utc.com

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Prime	Representative	Status	E-mail contact
Hèroux Devtek, Inc. (Landing Gear Div) Longueuil, Quebec, Canada	Serge Labbè	Alternate Subscriber Voting Member	slabbe@herouxdevtek.com
Hèroux Devtek, Inc. Kitchener, Ontario, Canada	Walter Tonizzo	Subscriber Voting Member	wtonizzo@herouxdevtek.com
Honeywell Aerospace Phoenix / Tempe, Arizona – USA	D. Scott Sullivan	Subscriber Voting Member	dscott.sullivan@honeywell.com
Honeywell Aerospace Phoenix, Arizona – USA	Robert Hogan	Subscriber Voting Member	robert.hogan@honeywell.com
Honeywell Aerospace Phoenix, Arizona – USA	Pat Thompson	Subscriber Voting Member	pat.thompson2@honeywell.com
Honeywell Aerospace China	Fangmei Chu	Subscriber Voting Member	fangmei.chu@honeywell.com
Israel Aerospace Industries	Uri Sol	Subscriber Voting Member	usol@iai.com.il
MTU Munich, Germany	Juergen Burchards	Subscriber Voting Member	juergen.burchards@mtu.de
Northrop Grumman Corporation Littlerock, California - USA	Stephen Bauer	Subscriber Voting Member	stephen.bauer@ngc.com
Parker Aerospace Fort Worth, Texas – USA	Dale Norwood	Subscriber Voting Member	dnorwood@parker.com
Parker Aerospace Moncks Corner, South Carolina – USA	Gary O'Neill	Alternate Subscriber Voting Member	goneill@parker.com
Pratt & Whitney UTC East Hartford, Connecticut – USA	David Royce	Secretary / Subscriber Voting Member	david.royce@pw.utc.com
Pratt & Whitney UTC East Hartford, Connecticut – USA	Jim Fowler	Alternate Subscriber Voting Member	james.fowler@pw.utc.com
Raytheon Co Tucson, AZ – USA	Donald MacLean	Subscriber Voting Member	damaclean@raytheon.com
Rolls-Royce Corporation Indianapolis, Indiana – USA	Andrea Steen	Alternate Subscriber Voting Member	andrea.m.steen@rolls-royce.com
Rolls-Royce PLC Derby, UK	Chris Stevenson	Subscriber Voting Member	christopher.stevenson@rolls-royce.com
SAFRAN Group France	Alain Bouchet	Subscriber Voting Member	alain.bouchet@snecma.fr
SAFRAN Group France	Dominique Tomasso	Alternate Subscriber Voting Member	dominique.tomasso@aircelle.com
Sikorsky Aircraft Stratford, Connecticut – USA	Mike Clark	Subscriber Voting Member	mdclark@sikorsky.com
Spirit AeroSystems Tulsa, Oklahoma, USA	Frank Whittaker	Alternate Subscriber Voting Member	frank.c.whittaker@spiritaero.com
Spirit AeroSystems Wichita, Kansas – USA	David H. Vaughn	Subscriber Voting Member	david.h.vaughn@spiritaero.com
Textron Systems Wilmington, Massachusetts – USA	Carl Roche	Subscriber Voting Member	croche@systems.textron.com
Triumph Group. Inc., Inc. Dallas, Texas – USA	Mike Shiplett	Subscriber Voting Member	mshiplett@triumphgroup.com
Volvo Aero Corporation	Terho Sulkupuro	Subscriber Voting Member	terho.sulkupuro@volvo.com

Supplier Voting Member Representatives of the NDT Task Group

Suppliers	Representative	Status	E-mail contact
AAA Plating & Inspection Inc.	Robert Custer	Supplier Voting Member	bob@aaaplating.com
Aubert & Duval	Claude Chambon	Supplier Voting Member	claude.chambon@aubertduval.fr
Alcoa Howmet	William McKessy	Supplier Voting Member	bill.mckessy@alcoa.com
BYTEST	Mario Bianchi	Supplier Voting Member	bianchi@bytest.it
BYTEST	Massimo Capriolo	Alternate / Supplier Voting Member	capriolo@bytest.it
E. M. Inspection	Andy Bakewell	Supplier Voting Member	andy.bakewell@emcol.co.uk
Exova	Martyn Bills	Alternate / Supplier Voting Member	martyn.bills@exova.com
Exova	Jonathan Pugh	Supplier Voting Member	jonathan.pugh@exova.com
Hexcel Kent Kent, WA	Mike Ashton	Supplier Voting Member	mike.ashton@hexcel.com
Hi-Tech Metal Finishing	Guy Saenz	Supplier Voting Member	guy@hi-techmetalfinishing.com
Hitco Carbon Composites	D.E. "Skip" McDougall	Supplier Voting Member	mcdougall.skip@hitco.com
Imagineering	Rob Yocum	Supplier Voting Member	ryocom@iftworldwide.com

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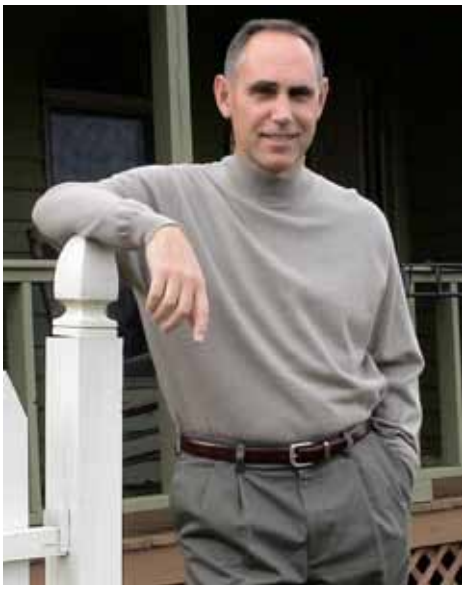
Suppliers	Representative	Status	E-mail contact
James Fisher IMS Ltd	Paul Evans	Supplier Voting Member	paul.evans@ndt-inspection.co.uk
LISI Aerospace	Richard Gasset	Supplier Voting Member	richard.gasset@lisi-aerospace.us
Mitchell Labs	David Gray	Supplier Voting Member	david.gray@mitchell-labs.com
New Hampshire Ball Bearings, Inc.	Richard King	Supplier Voting Member	rking@nhbb.com
Orbit Industries Inc.	Gary White	Supplier Voting Member	gwhite@orbitndt.com
PCC Structural	Chris Andersen	Supplier Voting Member	crandersen@pccstructurals.com
RTI	Dwayne Cooper	Supplier Voting Member	dcooper@rtiintl.com
TEAM Industrial Services TCM Division	Cindy Roth	Supplier Voting Member	croth@teamindustrialservices.com
West Penn Non-Destructive Testing Inc.	N. David Campbell	Supplier Voting Member	ndcampbell@westpenntesting.com
West Penn Non-Destructive Testing Inc.	Mark Pompe	Alternate Supplier Voting Member	mpompe@westpenntesting.com
X-R-I Testing	William B. Evridge	Supplier Voting Member	bille@xritesting.com

In Step with Mike Gutridge



As most of you know, since I took on the role of Senior Program Manager with responsibilities for NDT, ETG and AQS, I have had less time available to devote to my old role as the Lead Staff Engineer for NDT. To ensure that this extremely important function is given the attention that it deserves I have appointed P. Michael Gutridge to fill this role.

Certainly most if not all are familiar with Mike. He was hired by PRI as an NDT Auditor for Nadcap in October of 1992 and then as the Staff Engineer for NDT in June of 1993. He attended Ashland University on a baseball scholarship, graduating with a BS in Comprehensive Science / Biology.

Mike's experience goes way back with the first five years being obtained at an independent NDT laboratory performing in-house and field inspections for aerospace, mining, bridges, petroleum, nuclear and fossil fuel facilities. His aerospace experience includes that as a Procurement Quality Assurance Representative / Certified Special Process Administrator for Rockwell International (B-1B and Space Shuttle) and Procurement Quality Assurance Engineer with McDonnell Douglas Corp., (C-17, MD-11, MD-80) in Columbus, Ohio.

Mike has held Level 3 certifications in PT, MT and UT and RT Level 2. He was also a Certified AWS Weld Inspector and currently an AQS Certified Quality Auditor.

At this time Mike is a delegated Staff Engineer in three Nadcap commodities; (NDT, Welding and AQS), as well as an Internal Auditor for PRI.

Currently he lives and works out of his home in Granville, Ohio with his wife Mary. Please welcome Mike as he takes on his new responsibilities as the Lead Staff Engineer for NDT. No small task indeed, as Mike has the responsibility for a thousand NDT audits, 3 Staff Engineers, 2 CSR's and 44 auditors.

Mark Aubele, Senior Program Manager NDT, ETG & AQS

PRI Staff Contact Details

Name	Position	Location	e-mail Contact	Telephone
Amanda Bonar	Committee Service Representative	London, UK	amanda.bonar@pri-europe.org.uk	+44 (0) 207-034-1249
Rhonda Joseph	Committee Service Representative	Warrendale, PA, USA	rjoseph@sae.org	+1 (724) 772-8644
Melanie Petrucci	Committee Service Representative	Warrendale, PA, USA	mpetrucci@sae.org	+1 (724) 772-8642
Mark Aubele	Senior Program Manager - NDT, AQS and ETG	Warrendale, PA, USA	maubele@sae.org	+1 (724) 772-8654
Jim Bennett	Senior Staff Engineer	Warrendale, PA, USA	jbennet@sae.org	+1 (724) 772-8651
Phil Ford	Senior Staff Engineer	Wales, UK	phil.ford@pri-europe.org.uk	+44 (0) 144 322 5545
Mike Gutridge	Senior Staff Engineer(Lead)	Granville, Ohio, USA	mikeg@sae.org	+1 (740) 587-9841
Andy Statham	Staff Engineer	Derby, UK	andy.statham@pri-europe.org.uk	+44 (0)133-286-9276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