

# Quality Auditor Review

April-June 1999

Volume 3 Issue 2

## Delivering Bad News

### *Audit Thinking*

Auditors must deliver bad news from time to time. Failing an audit is not life threatening news, but it can have devastating effects on the organization and individual spirit. In most audit situations, individuals have invested a lot of personal energy into preparing for or maintaining the controls that were audited. Failing the audit could be viewed as a personal failure and has been known to affect an individual's chances for advancement.

#### Assess the situation

Before delivering the bad news an auditor must assess the situation by evaluating both the auditee environment and audit team conduct. The auditor must determine if people (auditee personnel) are prepared for the information (the bad news) and if they anticipate the negative outcome. Bad news



can be anything from losing your license, being dropped from the approved supplier list, to falling short of management's goal of zero non-conformities. The auditor should assess if anyone on the audit team transmitted a false signal about the audit results. If you

believe the auditee has been misled or if you sense they have very different expectations compared to the actual result, be prepared for defensive posturing and hostile reactions.

*By: J.P. Russell*

There are three auditee scenarios.

1. The auditee anticipates the opposite of what will be reported. *Very undesirable*
2. The auditee anticipates the outcome is borderline (it could go either way). *Undesirable*
3. The auditee anticipates what will be reported and has had time to prepare for it. *Very desirable*

Our most desirable scenario (#3) can be achieved

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**If you believe the auditee has been misled, be prepared for defensive posturing and hostile reactions**



### From the News Desk

⇒ The quality auditing standard ISO 10011 is being replaced with a generic audit standard number ISO 19011. The new standard will provide guidance for both quality and environmental compliance auditing.

⇒ Reminder: Mark your calendars for the Quality Audit Division Conference in Reno Nevada, March 2-3, 2000. The theme is Auditing at the Edge... moving from vertical to virtual.

#### Announcement

The Quality Auditor Review newsletter Volume 3, Issue 3 will be the last issue.

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# The Audit Guy

Dennis Arter

## Types of Audits

Quality audits come in many different shapes and sizes. They can be classified by purpose as well as scope.

### By Purpose

Quality audits began in the late 1950's, when military and nuclear activities started using financial examination concepts. Bombs, airplanes, and power stations were pretty risky endeavors and we wanted to make sure that work was being done "by the book." We were instructed to check on the implementation of the written manuals, procedures, and work instructions. Today, this is called a compliance audit. It continues in most business and government operations today. Third-party registration audits, regulatory inspections, and most supplier audits measure compliance. The application of a compliance audit results in stability and assurance that rules are being obeyed.



In last few decades, our auditing profession has started to examine driving forces behind the rules. These forces consist of controls, which, when packaged together, become systems. A system is a grouping of interrelated processes, designed to achieve a common goal. We are beginning to realize that the product (or service) is affected by the process, which is affected by the system. When we evaluate the effectiveness and suitability of these controls, we are performing a management audit. Unlike the compliance audit, underlying rules, procedures, and methods are challenged. Management audits are compliance audits plus cause and effect analysis. Rather than wait until after the report of nonconformities is issued, we do underlying cause analysis during the audit, when data are easier to obtain. The application of a management audit results in change.

### By Scope

Audits may examine products, processes, or systems. A product audit is quite similar to an inspection, where the completed item or task is ex-

amined to required characteristics. Sometimes, the finished item is even destroyed, as various characteristics are measured. Paperwork associated with the building of those items is also examined. These "out-of box" audits are performed mainly in the electronics industry and appliance manufacturing. Hospitals and hotels do quite a few product audits, except that the "product" is actually a service.

A process audit examines one or more processing steps. The audit might look at fastening, grinding, filling, mixing, or moving. It is an in-depth evaluation of the process and those universal affectors of methods, material, manpower, machine, measurement, and environment. All of the detailed requirements for that process are examined. Manufacturer's technical manuals, training programs, qualification requirements, and preventive maintenance are all fair game. Process audits are performed mostly in the nuclear power and aerospace industries; although, there is some interest within food processing to use the tool.

A system audit evaluates the application of system controls within the organization. They are at a higher level than process or product audits. They take longer and cover many different applications. A system audit examines on the macro level; whereas product and process audits examine on the micro level.

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Dennis Arter is the newsletter feature writer and author of the best selling book *Quality Audits for Improved Performance*.



Dennis has been an independent quality assurance consultant since 1984. His primary service is instruction in the field of management auditing for a wide variety of clients, including government, manufacturing, energy, research, aerospace, and food processing. He is an ASQ Fellow and active in the Quality Audit Division. His home page is

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...our auditing profession has started to examine driving forces behind the rules.

# Quality Audit Primer

## *Auditing tips and reminders*



### *Audit Preparation:*

### ***Random Sample Selections***

Auditors need to take samples to determine the degree of compliance and effectiveness of a process/system. In an earlier article (Volume 1 Issue 1, *Data Collection Plan*) we discussed the type of things (evidence) you should be sampling (article at [www.QAReview.com/QARindex.html](http://www.QAReview.com/QARindex.html)), but we did not talk about how to sample.

Few auditors actually issue formal sample plans, but auditors should know the strengths and weaknesses of their approach and know when more formal methods are needed.

As auditors, we take samples from defined populations. We could select men from the US male population to determine the average male height. A population (statistically) is any grouping of things that we can take our sample from. A population may be all routing cards for machine XXX, or nonconformance reports for the last year, or case histories since the last audit.

If the audit objective was to verify that items critical to quality are specified in purchase orders, our population would be all purchase orders of items critical to quality. If there were only 6 purchase orders, we may decide to examine the entire population (all six). However, if there were 1000 purchase orders, examination of each one would be impractical, so the auditor should select a portion of the purchase orders to examine. This portion is called the sample.

First, we must ensure that when we take the sample, it is a random sample. A sample is *random* if each individual in the population is equally likely to be selected. For example: Selecting three chips from a bowl of chips, selecting five chains from a barrel of chains, or using a random number generator table to match customer order numbers from the last quarter of sales.

#### **Random Number Sampling**

If we wanted to randomly select 12 individuals to be interviewed from the 100 person accounting department we could use Random Number Sampling techniques. Here are a couple of ways to accomplish this.

1. A physical method is to inscribe each persons name on a chip, mix all the chips in a large bowl, and the draw the sample.

2. An easier method would be to assign each employee a number from 1 to 100 and then go to a random number generator table (see Table A insert) to select our sample of 12 employees to be interviewed. Note: random number 00 would be the 100th employee.

The two methods are mathematically equivalent, with the second method being more practical. Use of the random number table ensures each item in the population has an equal chance of being selected.

You may need to employ various mathematical techniques (be creative) to link the random numbers to the samples being selected. For example, if the sample population is sequentially numbered (similar to lot or purchase order numbers), you can go to the random number table and select an item based on two numbers (Table B, insert) or one can use 4 digits from the table by combining two pairs of numbers picked in successive order. An auditor can also put the population in an imaginary grid and assign numbers that can be linked to the random number table. For example: If the auditor wants to randomly select corrective action reports from 5 different departments (or product lines), the 5 different departments would be represented by five columns (0-4) and rows (0-9) would represent the most recent 10 corrective action reports. Review of Table C (see insert) shows that the samples are random but they may not be representative of all departments. Another strategy to ensure corrective action reports are examined from all five departments would be to continue to select random numbers until there are two reports for each department. If the sample is representative, we can draw conclusions about the corrective action reports from all five departments.

#### **Interval (Random) Sampling**

A second popular random sampling technique is interval sampling. Interval random sampling is especially useful when there is no easy method to link sample selection with a random number generator (such as table A). Interval sampling is easy to use and understand. It is a good idea to determine the interval starting point by a random number. This can be done by using a ran-

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**First, we must ensure that when we take the sample, it is a random sample.**

**Types of Audits** *(Continued from page 2)***Six Kinds of Audit**

By using these categories, one comes up with the six kinds of audit shown in the following table.

	Compliance	Management
System Audit	Consistent implementation of a defined system, resulting in stability	Analysis of ability to achieve organizational goals, resulting in
Process Audit	Performance of the activity in accordance with defined methods	Ability of the processes to achieve desired characteristics
Product Audit	Production of goods or services to defined requirements	Suitability of the goods or services for intended use

**Random Sample Selection** *(Continued from page 3)*

dom number table or perhaps asking someone to select a number from 1-20 (a number within the pre-determined interval range, in this case it is 20). The interval is determined by the sample size needed. In the above example, if there were 1000 purchase orders in the population and you wanted to sample 5% of them, you would need 50 samples [ $1000 \times .05 = 50$ ]. Your interval for acquiring 50 samples would be 20 [ $1000/50 = 20$ ]. Of course there are assumptions that selecting samples from every 20th purchase order is representative of the population. To avoid patterns that could result in non-representative samples, the auditor can alternate or switch intervals. In this example the auditor could use a 20 unit interval 1/3 of the time, a 10 unit interval 1/3 of the time, and 30 unit interval 1/3 of the time. In mathematical terminology we could say: the auditor should ensure the interval selected is independent of the attribute(s) being examined. Even with the interval method, the auditor needs to ask some questions and keep a heads-up for situations that would make the sample non-representative. For example, after taking the 50 samples, you find out later that over 50% of the incoming dollar volume of materials come from 5 items that are purchased on blanket (or annual) purchase orders and none of the 5 blanket purchase orders are in your sample. People may question whether your sample is representative of the purchasing activity. In this case it would be a good idea to examine all 5 blanket orders and take samples from the remainder (called stratified sampling to be discussed in the next issue).

**Why Random**

Random sampling avoids the following bias:

- selecting samples based on convenience (short of time or don't want to create extra work)
- the auditor being known for a certain sample selection method (always taking the 3rd one, or the one in the upper left hand corner).
- selecting samples based on faulty knowledge (only examining 3/4 inch ratchets to find out they are out-sourced and not representative of production)
- selecting only certain samples with probable or unlikely defects. (auditor has own agenda)

The credibility of your report may be questioned if there was sampling bias. The auditor can be accused of having an ax to grind or being on a witch hunt. Also, random sampling is a necessary element for reporting statistical inferences about a population.

Knowing when you are or are not taking a random sample is very important. It may alert you to potential problems with your report or ensure that you specify the limitations of your results based on the sample and the sample population.

Random sampling is a must in determining statistical significance and when using acceptance sampling. Random sampling can be very important to give auditee's confidence that the auditors are impartial. Also, an auditor may employ random sampling and statistical techniques in situations where auditees always claim that findings are isolated incidents.



**Audit Thinking** *(Continued from page 1)*

through good audit practice during the audit. The number 2 scenario (keep them guessing) can backfire on a auditor. If the number 1 scenario exists, the auditor should take steps to minimize the shock factor and allow people time to prepare for the bad news.

**Prepare them for the bad news**

One technique to reduce the shock factor is to hold a pre-exit meeting with the area representative and/or the top management person for the area being audited. The pre-meeting will provide a means for the auditor to correct any misinformation and will add to the importance and seriousness of the issues. Tell them up-front in no uncertain terms that there is a major finding. Tell them that you will review the objective evidence that lead up to the finding at the exit meeting. The pre-meeting may also have the effect of protecting the area representative and others who may have told top management that everything was okay. The auditor is risking confrontation and criticism at the pre-meeting, but better now than at the exit meeting. Conducting a pre-meeting to correct misinformation will also reduce the likelihood of posturing and grandstanding at the exit meeting. The pre-meeting also provides a good opportunity for representatives to sign-off and acknowledge findings. And finally, there should be sufficient time between the pre-meeting and the exit meeting for the information to be digested.

Depending on the seriousness of the consequences, the auditor may need to inform the audit boss and client of the situation prior to the exit meeting.

**Report the bad news**

Next, conduct the exit meeting. This is a serious time with no joking around. Follow normal exit meeting protocols. At the appropriate place in the agenda, give them the bad news. Be clear, succinct, to the point. Then discuss auditee options, the appeal process, and possible outcomes. This will help put everything in perspective and in most cases, consequences are not as bad as the auditee expects.

**Stop talking and start listening.**

Next the auditor should ask if there are any questions or needs for clarification; be prepared to listen. Expect that some individuals may need to vent. As the auditor, you should never become defensive even if there are personal attacks. Expect 'you' statements such as:

◇ I don't see how **you** could come to that con-

clusion

- ◇ **You** haven't shown me rules where I have to do that
- ◇ I am warning **you** right now that I am going to appeal your report
- ◇ We don't want **you** back here ever again
- ◇ We don't agree with **you** and will take the necessary steps to get this erased.

To avoid a confrontation, some auditors employ what I call 'bully' techniques. Bully techniques include: raising your voice, talking faster, making global derogatory statements, and threatening the auditee. This conduct is self justified as a means to keep control of the meeting, however, proper conduct for the auditor is to stay calm and professional at all times.

**Reinforce your awareness of their concerns**

Always seek to legitimize the auditee's concerns and never trivialize them. The intensity of the auditee's response is a good indication of how important the audit results are to them. Never say: "Don't worry about this, it will work itself out," or "you are over reacting."

Now you are ready to end the meeting by repeating the next step and your expectations and agreements. Record agreements in the exit meeting minutes. Tell them what will happen next and when they should expect to receive the written report.

The auditor should be able to deliver both good and bad news. If you feel uncomfortable delivering bad news, then get help from the audit boss. You can prepare yourself for handling difficult situations by self study (go to the library) or taking classes on conflict resolution, assertiveness, interpersonal relationships, etc., offered by local community colleges.

**Tips:**

- ◆ Always assume there will be a last minute observation that will change the audit outcome.
- ◆ Keep fellow auditors up-to-date so everyone is on the same page.
- ◆ Don't predict an outcome until the audit's done.

## Field Reports:

*The Good.. The Bad.. The Ugly..*



### Keep It Clean

*By Undisclosed Auditor*

I was an auditor on an audit team working for a registrar. There were two of us on the audit team and I reported to the lead auditor. At the opening meeting the lead auditor boasted about his wealth of experience and that he had performed over 300 registration audits. By talking to him prior to the opening meeting and reviewing his biographical sketch, I knew he was very experienced.

After the opening meeting we went on a short tour to get acquainted with the location. During the tour



we passed through the break area. The lead shared his view how he can normally tell how the audit is going to go by looking at the lunch room and employee rest rooms. The auditee said, oh really, and then apologized for a bag that had been left in the lunch room unattended. The lunch room was in good condition.

I had heard about the cleanliness of restrooms, break rooms and lunch rooms being an indication of how well a company is managed. However, I did not expect an experienced auditor would suggest to the auditee that they are going to do well during the audit because of the condition of the lunch room.



### Quality CrossWord

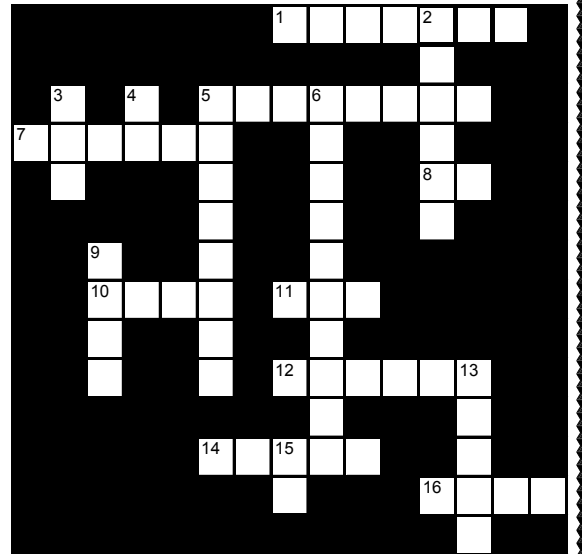
#### Across

1. Makes certain
5. Small parts of a whole
7. Opportunity
8. Piece \_\_\_\_ cake
10. Answers which?
11. Owns
12. Part of the K.I.S.S.
14. State of \_\_\_\_ .
16. Per

#### Down

2. Unbiased sampling
3. Precedes end
4. \_\_\_\_ apple a day
5. Chosen
6. Group of people
9. May be hot
13. Same/ sweetner
15. Not out

Solve the CrossWord and discover the quality quote taken from *The Quality Audit Handbook*.



Ans:

Simple random sampling assures that each item in the population has an equal chance of being selected.

