Chapter 33. Internal Audit

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0) Introduction

There are several closely-related clauses in this chapter, relating on the various types of internal audits. They make a very suitable cluster for discussion. Many of these clauses are new, and some not fully misunderstood and/or poorly catered for. Many NCs have been written on this clause alone. Some attention should be given.

1) 9.2.1. Internal Audit (Scope) (ISO9001)

(Clause Description-Paraphrase)

The organization shall conduct internal audits at planned intervals to provide information on whether the quality management system:

a) conforms to:

1) the organization's own requirements for its quality management system;

2) the requirements of this International Standard;

b) is effectively implemented and maintained.

(Highlights of the clause)

- (Ref to old Standards).There had been a similar clause, 8.2.2 of the same title, in the old version of ISO9001. The old clause was rather long. Para 2 onwards became another clause in the new standard as 9.2.2.
- The new clause is almost identical to first para of the old clause, except a slight change of words-from' to determine', to 'provide' info.
- Key ideas still same ,to ensure the Standards and own QMS and effectively implemented
- The new clause basically has the same requirements

(Compliance best practice)

9.2.1. Internal Audit (Scope)

1. *Scope of internal audit is to assess the effectiveness of the QMS, in meeting the requirements of:*
   - *ISO9001/IATF16949 standards*
   - *Organization's own QMS*

2. *This is the same as before and not seen as an issue so far*

2) 9.2.2 Internal Audit (Activities) (ISO9001)

(Clause Description-Paraphrase)

The organization shall:

a) plan, establish, implement and maintain an audit programme(s) including the frequency, methods, responsibilities, planning requirements and reporting, which shall take into consideration the importance of the processes concerned, changes affecting the organization, and the results of previous audits;

b) define the audit criteria and scope for each audit;

c) select auditors and conduct audits to ensure objectivity and the impartiality of the audit process;

d) ensure that the results of the audits are reported to relevant management;

e) take appropriate correction and corrective actions without undue delay;

f) retain documented information as evidence of the implementation of the audit programme and the audit results. <mandatory procedure status remain in 9.2.2.1

NOTE See ISO 19011 for guidance.

NOTE See ISO 10011-1, ISO 10011-2 and ISO 10011-3 for guidance.

(Highlights of the clause)

- (Ref to old Standards). This new clause was the back end the old 8.2.2, in the previous version of ISO9001.
- The new clause is a reworded version to be more readable, with some redundant sentences removed.
- The new requirements are: a) frequencies of audit shall also consider changes to the process, b) ensure that the results of the audits are reported to relevant management
- The total requirements are given in a) to f).

(Compliance best practice)

9.2.2 Internal Audit (Activities)

1. *A documented process is required. (see 9.1.1.1). The procedure in your former ISO/TS16949 can be used. But make sure the 3 types of audits are mentioned inside. I used to see only the QMS system audit being mentioned in the earlier days of transition*
2. *Results should show effectiveness, and generally expressed as findings*
3. *For negative findings, issue NCR in accordance to the method defined*
4. *The audit report shall be submitted to Management, without undue delay. Submission is when the audit is done and concluded. (not to wait for the NC to close out)*
5. *Follow-up actions shall be taken to close up the NC and OFI/Observations issued.*

3) 9.2.2.1 Internal Audit Program (IATF16949)

(Clause Description-Paraphrase)

The organization shall have a documented internal audit process. The process shall include:

a) the development and implementation of an internal audit programme that covers the entire quality management system including quality management system audits, manufacturing process audits, and product audits.

b) The audit programme shall be prioritized based upon risk, internal and external performance trends, and criticality of the process(es).
c) Where the organization is responsible for software development, the organization shall include software development capability assessments in their internal audit programme.
d) The frequency of audits shall be reviewed and, where appropriate, adjusted based on occurrence of process changes, internal and external nonconformities, and/or customer complaints.
e) The effectiveness of the audit programme shall be reviewed as a part of management review.

(Highlights of the clause)

- (Ref to old Standards). There had been a similar clause, 8.2.2.4 Internal Audit Plan, in the old version of ISO/TS16949.
- The old clause was a friendly, one-liner: " Internal audits shall cover all quality management related processes, activities and shifts, and shall be scheduled according to an annual plan".
- The new clause has some new requirements a) to e)
- The type of internal audits mentioned as QMS, manufacturing process, product
- Notable change is the frequency of audits shall be reviewed and, where appropriate, adjusted based on occurrence of process changes, internal and external nonconformities, and/or customer complaints.
- Another notable change is Where the organization is responsible for software development, the organization shall include software development capability assessments in their internal audit programme.
- Another notable change is the clause title change from " internal audit plans" to 'internal audit program'

(Compliance best practice)

9.2.2.1 Internal Audit Program

1. *All audit programs for the implementation types of audits need to be prepared and documented*
2. *The programs can be documented separately, or on the same document. See* ***Exhibit 33-1*** *for a combined program.*
3. *Shifts audit is now applicable to Manufacturing Process Audit and no long QMS system. See clause 9.2.2.3.*
4. *All your types of audit can be carried out in rotation over 3 years (see Clauses 9.2.2.2, 9.2.2.3, 9.2.2.4)*

4) 9.2.2.2 QMS System Audit (IATF16949)

(Clause Description-Paraphrase)

The organization shall audit all quality management system processes over each a three-year audit cycle. calendar period, according to an annual programme, using the process approach to verify compliance with this Automotive QMS Standard. Integrated with these audits, the organization shall sample customer-specific quality management system requirements for effective implementation.

(Highlights of the clause)

- (Ref to old Standards). There had been a similar clause, 8.2.2.1 of same the title, in the old version of ISO/TS16949.

- The old clause was a friendly one-liner: “The organization shall audit its quality management system to verify compliance with this Technical Specification and any additional quality management system requirements”
- There is an SI (SI-14) modifying the original clause content.
- A 3-year rotation is allowed. Process approach. Frequency may be adjusted all processes be sampled though out 3-year cycle, all applicable 9K, IATF clauses + CSR
- Notable changes are:
  i. that shift audit is no longer here, but MPA
  ii. CSR shall be sampled during the QMS audit

(Compliance best practice)

9.2.2.2 QMS System Audit

1. *You are allowed to audit all the QMS processes over a 3-year period. My recommendation is that you continue to audit all processes every year..*
2. *If rotation is still preferred, you have to prepare the 3-year program first. See* ***Exhibit 33-2.***
3. *Note that rotation does not mean total processes divided equally by 3. Some critical COP e.g. design, production and customer satisfaction still need to be audited every year. Other minor processes can be alternated over the next 2 years.* For initial or *recertifications, you must audit all processes.*
4. *From the program, you must still prepare an audit plan, with more details. See* ***Exhibit 33-3.***
5. *QMS system audit shall be based on automotive process approach. This is not well implemented in most cases seen. Most organizations are still using procedures for auditing and this is not adequate. This can be improved by using an additional list to cover the missing elements. See* ***Exhibit 33-4.***
6. *CSR of customers are to be sampled during QMS (system) audit. You can also elect to conduct CSR on separate occasions. See* ***Exhibit 6-2.***

5) 9.2.2.3. Manufacturing Process Audit (IATF16949)

(Clause Description-Paraphrase)

The organization shall audit all manufacturing processes over each three-year calendar period to determine their effectiveness and efficiency using customer-specific required approaches for process audits. Where not defined by the customer, the organization shall determine the approach' to be used. Within each individual audit plan, each manufacturing process shall be audited on all shifts where it occurs, including the appropriate sampling of the shift handover. The manufacturing process audit shall include an audit of the effective implementation of the process risk analysis (such as PFMEA), control plan, and associated documents.

(Highlights of the clause)

- (Ref to old Standards). There had been a similar clause, 8.2.2.2 of same title, in the old version of ISO/TS16949. The old clause was a friendly, 1-line: The organization shall audit each manufacturing process to determine its effectiveness.”
- The new clause is much expanded. Notable changes are: a) 3-year rotation allowed, b) customer specified approach to be used e.g. VDA6.3, c) All shifts to be audited, d) process risk analysis, by auditing the implementation of the various process document.

(Compliance best practice)

9.2.2.3. Manufacturing Process Audit

1. *Manufacturing Process Audit (MPA) audit also needs its own program for the year. The program can be a standalone, or combined with others. See **Exhibit 33-1.***
2. *For 3-year rotation for MPA is also allowed. If elect to do so, the 3-year rotation need to be shown. See **Exhibit 33-2.***
3. *For the immediate audit, prepare a separate audit plan to show more information, including shift auditing and changeover sampling. See **Exhibit 33-3.***
4. *If customer specifies a particular method be used, you need to comply. For example, if a German OEM specifies VDA6.3 for process audit, you must comply. Furthermore your MPA auditors must be qualified according to the VDA's requirement.*
5. *A specimen of MPA audit checklist is provided here. See **Exhibit 33-5***
6. *On the question of Process risk, it is considered OK if you conduct the audit using control plan, FMEA and WI during the audit.*

6) 9.2.2.4 Product Audit (IATF16949)

(Clause Description-Paraphrase)

The organization shall audit products using customer-specific required approaches at appropriate stages of production and delivery to verify conformity to specified requirements. Where not defined by the customer, the organization shall define the approach to be used.

(Highlights of the clause)

- (Ref to old Standards). There had been a similar clause, 8.2.2.3 of the same title, in the previous version of ISO/TS16949.
- The old clause was a friendly, -liner: The organization shall audit products at appropriate stages of production and delivery to verify conformity to all specified requirements, such as product dimensions, functionality, packaging and labelling, at a defined frequency.
- The new clause is much expanded. Notable changes are: a) 3-year rotation allowed, b) customer specified approach to be used e.g. VDA6.5, c) audit points are at appropriate stages of production and delivery to verify conformity to specified requirements

(Compliance best practice)

9*.2.2.4 Product Audit*

1. *Product Audit (PDA) also needs its own audit program for the year. It can be a standalone, or combined with others. See **Exhibit 33-1.***
2. *3-year rotation for PDA is also allowed. If elect to do so, use another table to show the rotation. See **Exhibit 33-2.***
3. *For the immediate audit, prepare a separate audit plan to show more information, including timing and auditors. See **Exhibit 33-3.***
4. *Choice of parts to be audited are generally based on: a) customer requirement, b) criticality, and c) performance*
5. *If customer specifies a particular method be used, e.g. VDA6.5, you have to comply. If there is no customer requirement, you can use your own format for the audit.*
6. *A specimen of PDA checklist is provided here. See **Exhibit 33-6***

7) 7.2.3. Internal Auditor Competency (IATF16949)

(Clause Description-Paraphrase)

The organization shall have a documented process to verify the internal auditors are competent, taking into account any customer-specific requirements on this area. Organization shall maintain a list of qualified internal auditors.

System auditors shall have the following competencies

a) Understanding the automotive process approach for auditing, including risk-based thinking
b) Understanding of applicable customer-specific requirements
c) Understanding of ISO9001 and IATF16949 requirements
d) Understanding of applicable core tool requirements
e) Understanding how to plan, conduct, report and close out audit findings

(SI-4 has modified the clause that the requirements a)-e) apply only for QMS System Auditor)

Manufacturing Process Auditor ~~further~~ (SI-4) shall have:

f) understanding of the relevant manufacturing process (es) to be audited, including
g) process risk analysis (such as FMEA) and control plan)

Product Auditor ~~further~~ (SI-4) shall have

h) understanding of product requirements
i) use of relevant measuring and test equipment to verify product conformity

Others:

j) If the organization's personnel provide the training to achieve competency, the trainer shall be competent with evidence. (Refer to internal trainers only -SI-4)
k) minimum number of audits a year as defined by organization (No longer applied SI-4)
i) maintain knowledge of relevant requirements base on changes internally or externally. Internal changes may be process technology, product technology; External changes may concern changes in requirements of ISO9001, IATF16949, core tools and CSR
m) if there is special customer requirement e.g.VDA6.3 audit, then the MPA auditor must be process auditor qualification which requires formal training, work experiences and auditing experiences

(Highlights of the clause)

- (Ref to old Standards). There had been a similar clause, 8.2.2.5 Internal Auditor Qualification, in the old version of ISO/TS16949.
- *In the last versions, it was only 1 liner that says,, "*The organization shall have internal auditors who are qualified to audit the requirements of this Technical Specification(see 6.2.2.2)"
- The new requirement is much expanded. Subsequently SI-I had modify the competency requirements to be more logical. Competencies for the 3 types of internal auditors are made clearer. See clause content above

(Compliance best practice)

7.2.3. Internal Auditor Competency

1. *Internal auditors need to be qualified. Clauses 7.2.3 specified the qualifications for the various types of auditors. SI-4 amended some of the rules.*
2. *Clause 7.2.4 also spelt out qualifications for second-party auditors*
3. *IATF auditors will check on the current list of internal auditors. Therefore it shall be made available. The qualifications adopted shall also be available for audit. You can also place*

both the qualifications and current auditor list separately or together. ***Exhibit 33-7*** *is a 2-in-1 list.*

4. *Internal auditors should be ranked. The model given here has 3 types ranking, support, full and trainer auditors. See* ***SN33-14.***
5. *Auditor list shall be updated every year.*

8) SIs & FAQs

SI Nbr	IATF Clause	Description
4	**7.2.3 Internal auditor competency**	The organization shall have a documented process(es) to verify that internal auditors are competent, taking into account any **requirements defined by the organization and/or** customer-specific requirements. For additional guidance on auditor competencies, refer to ISO 19011. The organization shall maintain a list of qualified internal auditors. Quality management system auditors~~, manufacturing process auditors, and product auditors~~ shall ~~all~~ be able to demonstrate the following minimum competencies: a) understanding of the automotive process approach for auditing, including risk-based thinking; b) understanding of applicable customer-specific requirements; c) understanding of applicable ISO 9001 and IATF 16949 requirements related to the scope of the audit; d) understanding of applicable core tool requirements related to the scope of the audit; e) understanding how to plan, conduct, report, and close out audit findings. ~~Additionally,~~ **At a minimum,** manufacturing process auditors shall demonstrate technical understanding of the relevant manufacturing process(es) to be audited, including process risk analysis (such as PFMEA) and control plan. **At a minimum,** product auditors shall demonstrate competence in understanding product requirements and use of relevant measuring and test equipment to verify product conformity. ~~Where training is provided~~ **If the organization's personnel provide the training** to achieve competency, documented information shall be retained to demonstrate the trainer's competency with the above requirements.
4 (cont.)	**7.2.3 Internal auditor competency**	***Rationale for change:*** *Distinguish competency requirements for quality management system auditors, manufacturing process auditors, and product auditors. Clarified the trainer competency expectations for internally provided training.*
14	**9.2.2.2 Quality management system audit**	The organization shall audit all quality management system processes over ~~each~~ **a** three-year **audit cycle** ~~calendar period~~, according to an annual programme, using the process approach to verify compliance with this Automotive QMS Standard. Integrated with these audits, the organization shall sample customer-specific quality management system requirements for effective implementation. **The complete audit cycle remains three years in length. The quality management system audit frequency for individual processes, audited within the three-year audit cycle, shall be based upon internal and external performance and risk. Organizations shall maintain justification for the assigned audit frequency of their processes. All processes are required to be sampled throughout the three-year audit cycle and audited to all applicable requirements in the IATF 16949 standard, including ISO 9001 base requirements, and any customer-specific requirements.** ***Rationale for change:*** *Clarified that the audit cycle remains three years in length. Deleted IATF 16949 FAQ 18 and put former FAQ 18 2nd paragraph requirements into SI 14. Clarified that all processes are to be audited during the three-year audit cycle.*

18 ***deleted***	**Quality management system audit** **9.2.2.2**	**See SI 14, issued November 2018, effective January 2019.**
19	**9.2.2.3** **Manufacturing process audit**	**QUESTION:** **For each manufacturing process audit do all shifts have to be covered?** **ANSWER:** Each audit does not have to cover all shifts in **one** audit (for example an audit of the pressing process could be done on shift 1 and 2, sampling shift changeover in year 1, and then in year 2 or 3 an audit undertaken on the third shift for pressing). However, **all** manufacturing processes must be audited on **all shifts** over a three-year cycle, the frequency depending on risk, performance, changes etc.
20	**9.2.2.4** **Product audit**	**QUESTION:** **Why is there no defined audit frequency for Product audit?** **ANSWER:** The audit frequency must be determined based on the risk and product complexity (See ISO 9001, Section 9.2.2). If an organization has high risk and high product complexity, it is recommended that product audit frequency be increased.
22	**9.2.2.4** **Product audit**	**QUESTION:** **How does a product audit differ from a layout inspection?** **ANSWER:** As defined in section 3 of IATF 16949, the term product is used to represent "…any intended output…" of the manufacturing process. Products typically have dimensional, performance (functional) and material requirements, therefore, product audits may contain verification of dimensional, performance (functional), or material requirements. As stated in the FAQ 21 above, a layout inspection is limited to dimensional requirements. Product audits can be carried out on finished or partially finished product, following customer specified approaches (e.g. VDA 6.5 Product Audit), if applicable. Product audits may include packaging and labelling requirements. A product audit, like other audit types, is an independent verification of compliance to requirements. As such, the product audit has a defined frequency and scope specified within the audit programme and is based on risk.

FAQ	IATF Clause	Questions and Answers
28	**9.2.2.3** **Manufacturing process audit**	**QUESTION** **What is intended frequency and coverage of Manufacturing Process Audits?** **ANSWER** Effective assessment of each manufacturing process is vital to ensure continued manufacturing of product meeting customer, statutory and regulatory requirements. However, aligned with the risk approach of ISO 9001 and IATF 16949, some manufacturing processes or aspects of manufacturing processes may need higher frequency of assessment than others. The organization determines the audit frequency, if not defined by the customer, by using the appropriate risk management approach, including consideration of new technologies and customer measured performance. Manufacturing processes demonstrated to be low risk by the organization may be audited less frequently than high risk processes; however, all manufacturing processes are audited within the 3-year audit cycle. Evidence for risk analysis includes continued compliance with all relevant requirements, (for example: statutory and regulatory, customer, process, and internal requirements). If any one of the relevant requirements is not met, the manufacturing processes is audited at a higher frequency than every 3 years. The 3-year frequency as per clause 9.2.2.3 is a minimum requirement intended for low risk and fully compliant manufacturing processes.

9) Supplementary Notes

Legend: HOC= Highlights of Clause, CBP= Compliance Best Practice, S&Q= SIs & FAQ, EXH= Exhibits

Clause	Section	Clarification Subjects
9.2.2, 9.2.2.1	CBP	**SN33.1 All 3 types of audits now allow for a 3- year rotation. Should we accept the offer?**
9.2.2, 9.2.2.1	CBP	**SN33.2 How to show 3 year's rotation for QMS, when the audit program is only for finished year?**
9.2.2, 9.2.2.1	CBP	**SN33.3 How to show MPA and PDA rotation for the years?**
9.2.2.2	CBP	**SN33.4 QMS audit how to adjust frequency due to NC from audits and complaints from customers? What do we check during the re-audit?**
9.2.2.2	CBP	**SN33.5 We do verification after closing. Isn't this same as your suggested?**
9.2.2.2	CBP	**SN33.6 For QMS audit, how do we sample for CSR implementation?**
9.2.2.2	CBP	**SN33.7 How to audit Management Processes as QMR the most qualified audit, is a part owner of the process?**
9.2.2.2	CBP	**SN33.8 How to audit Internal audit and Management Review ? Internal audit is generally in progress, and management review is only after internal audit.**
9.2.2.2	CBP	**SN33.9 What are some of the frequent problem with QMS Audit?**
9.2.2.3	CBP	**SN33.10 What are some of the frequent problem with MPA?**
		SN33.11 What are some of the frequent problem with PDA?
7.2.3	CBP	**SN33.12 Why criteria and the current list of internal auditors need to be done separately?**
7.2.3	CBP	**SN33.13 How to define qualification of an internal trainer for internal audit?**
7.2.3	Exhibit 33-7	**SN33.14 The specimen Exhibit 33-7 you gave on auditor qualification, you categorize auditors into a few types of auditors. What is the purpose?**

SN33.1 All 3 types of audits now allow for a 3- year rotation. Should we accept the offer?

It is your choice, as you are allowed to do so. My opinion is no, don't do it.
QMS: From field experience, even after many cycles of audits, many organizations still have a lot of NC and weaknesses. You can imagine what will happen if you reduce the audits to once in 3 years?
MPA. New customers and new processes will make your rotation plan unsuitable.
PDA. New products will invalidate your rotation plan.

SN33.2 How to show 3 year's rotation for QMS, when the audit program is only for one year ?

Have a supplementary list to show the rotation over 3 years. See **Exhibit 33-2.**

SN33.3 How to show MPA and PDA rotation for the 3 years?

In SN-33.1, I have suggested you don't do it. But you must, then do a supplementary list to show 3 year rotation for MPA and PDA. See **Exhibit 33-2.**

SN33.4 QMS audit how to adjust frequency due to NC from audits and complaints from customers? What do we check during the re-audit?

Whenever NC (from internal or external audits), or customer complaint complaints occur, additional audit is required. This is recommended to take place within 6 months. When re-auditing, focus on the NC and check for any potentials for repeat, and horizontal replication. Don't waste time checking on closing evidences, as they had been checked earlier.

SN33.5 We always do verification after closing. Isn't this same as your suggested?

Your verification is still part of the original audit. The original intent is you re-audit the whole process or the affected clauses again. That will be very time consuming with no extra benefits w. The suggested method saves you time, and focus on something really useful, a) no potential for repeat, b) apply horizontal application.

SN33.6 For QMS audit, how do we sample for CSR implementation?

There are 2 ways you can do this: a) you audit the full list, on a separate occasion, b) distribute the duties among the QMS auditors to do the audit, during system audit. See Chapter 4. For more details

SN33.7 How to audit Management Processes as QMR, the most qualified auditor, is a part owner of the process?

Ask another senior auditor of the organization can be the auditor. QMR to be present as co-auditee in this process. This way, the process can be a learning process for top management too. Alternatively, use the services of an external consultant, or another senior member from a sister company.

SN33.8 How to audit Internal audit and Management Review ? Internal audit is generally still in progress, and management review is only after internal audit.

This is a cyclic problem and there is no perfect answer for this. One common way is to audit a mixture of current year's prep work and last year's records, and interview the persons in charge. There should be enough facts and data to deduce the effectiveness.

SN33.9 What are some of the frequent problem with QMS Audit?

a) Some organizations are still on procedure auditing, not checking on the other elements of the turtle,
b) some are just auditing the turtle diagram itself, with not much digging on the methods,
c) untrained, or inexperienced auditor are used to audit, resulting in zero or very few findings.

SN33.10 What are some of the frequent problem with MPA?

a) MPA audit is cramped in within the internal audit period, very hasty work with shoddy conclusions, b) not separately audited but consider production process (QMS system) as MPA, c) some processes are left out of the audit, d) no audit notes or checklist used, e) no NCR issued for findings

SN33.11 What are some of the frequent problem with PDA?

a) PDA audit is cramped in within the internal audit period, very hasty work with shoddy conclusions, b) very minimum product audited, e.g. only 1 part out of 20. c) method is not correct-auditors are duplicating the QC inspector's work, instead of auditing, d) no NCR issued for findings

SN33.12 Why criteria is needed to define the qualifications of internal auditors? Isn't the current list of internal auditors self-explanatory?

The list that normally seen is just data. What is the criteria for judgement? Exactly same as 7.2.3? If so, it has to be stated. Additionally, the list normally show only the training attended. Does it mean a person attended training is automatically qualified to audit? The least you can do is to list out all the requirement according to 7.2.3, and also add on some practical training to be convincing. You can combine both information on the same sheet. See **Exhibit 33-6** for a specimen.

SN33.13 How to define the qualifications of an internal trainer, for internal audit?

Qualified internal trainers must have received training of the latest version of the subject, and have sufficient experience. A fresh graduate just passing an internal audit training is therefore not considered qualified. According to the specimen case, the most senior auditors with certain no of audits can be appointed. **Exhibit 33-6**

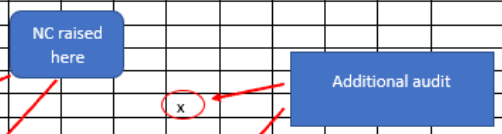
SN33.14 The specimen Exhibit 33-7 you gave on auditor qualification, you categorize auditors into a few grades. What is the purpose?

First, it gives chance to more people to participate in internal audit. New employees also can join as trainee auditor to learn, semi-trained ones can learn further from the leading seniors. The senior can become internal trainer, with the defined number of years. Most of all, quality of internal audit will improve, and load shared out.

10) Exhibits

Exhibit 33-1. 1 Year Internal Audit Program

No	A. QMS Audit- Processes	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Auditors
1	Management Planning/Review		X											
2	Internal Audit		X											
3	Handling of RFQ		X											
4	Manufacturing Process Design		X											
5	Order Processing/ Production Planning		X											
6	Purchasing		X											
7	Production- Casting		X											
8	Production- secondary processes			X										
9	Production- Machining													
10	Production-Assembly			X										
11	QAQC			X										
12	Infrastructure maintenance			X										
13	Machine preventive maintenance			X										
14	Tooling maintenance			X					x					
15	Storage & Delivery			X										
16	Customer feedback and complaint			X										
17	HR & Training			X										
18	Documentation			X										
19	Payment Collection			X					x					
20	Information Systems			X										



No	B. Other types of audit	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Auditors
1	**Manufacturing process audit (once /2 months)**		X (M1)		X (M2)		X (M3)		X (M4)		X (M5)		X (M6)	XXXX, YYY
2	**Product Audit (Once every 2 months)**			X (P1)		X (P2)		X (P3)		X (P4)		X (P5)		XXX, ZZZ

	C. Additional Audits		Plan	Actual	Judgement	Audit Notes
	Customer complaints					
1	NWB 1/18. Missing hole in Part No xxx. Date 16 Feb 2017		2/9	2/9	Effective	Closed out in Apr 2017. Re-audited on 2/9. The corrective actions still in place. No new incident on this part or other parts
2	PTNN. Model PPXX has plating peeling off, issue		3/9	2/9	Effective	Closed out in May 2017. Re-audited on 2/9. The corrective actions still in place. No new incident on this part or other parts
	NC from CB					(sustained, application on new cases
1	Risk and oppor not effective		27/8	27/8	Effective	Risk and opportunity had been updated. Seen one case, QAQC has increase 1 more item on measurement
2	CSR not audited		17/8	27/8	Effective	CSR to process matrix done. Sample some at production and find them in compliance. (checklist on production)
3	Reponse to customer feedback not effectve		27/8	27/8	Effective	Check feedback this time. AKIM's low rating on delivery has been worked on at high level, involving customer and the ED supplier
4	Proces control not effecitve- force meter not calibrated		27/8	27/8	Effective	Seen re-calibrated, WI in place, records well maintained
	Internal NC					
1	Purchasing ASL not updated		27/8	28/8	Effective	Seen even the latest appointed supplier Vendex has been included
	MPA					
1	M2. Step 13. N=3 not followed		27/8	28/8	Effective	Seen records of last 2 months and found n=3 observed
	PDA					
1	P3. Functional test-pull force not tested		27/9	28/9	Effective	Check OQC report to Nissan. Sampled 2 from each month. Pull force done.
2	P1. Salt pray on plating no results		27/10	28/10	Effective	Check OQC report to Denso, Send 3 months of records, every delivery. Salt spray test done.

Remarks given here explain on the Exhibit. Do not include them as part of your document

- It is best to put all the audit programs on 1 page. This is particularly good for overall planning (timing and duration)
- QMS System audit is normally done in 1 compressed period e.g. 1-2 months. The case shown above is for 2 months
- MPA (manufacturing process audit) and PDA (product audits), are usually carried out over the entire year. Frequency and sampling depends on customer and internal requirements
- Clause 9.2.2.1 requires NC and complaints to be given additional audits. You can decide when to do that so long it is before the next internal audit. However, when conducted within 3-6 months is most effective.
- For additional audits, It should focus on continued effectiveness and any evidence of horizontal replication. There are also organizations that prefers to repeat audit of the clause, or even the entire department, but I think it is not necessary.

Exhibit 33-2. 3-year Rotation Internal Audit Program

3-Year Rotation Internal audit Program

No	A. QMS Audit- Processes	2018	2019	2020
1	Management Planning/Review	X		X
2	Internal Audit	X		X
3	Handling of RFQ	X	X	X
4	Manufacturing Process Design	X	X	X
5	Order Processing/ Production Planning	X	X	
6	Purchasing	X	X	
7	Production- Casting	X	X	X
8	Production- secondary processes	X	X	X
9	Production- Machining	X	X	X
10	Production-Assembly	X	X	X
11	QAQC	X		X
12	Infrastructure maintenance	X		X
13	Machine preventive maintenance	X		X
14	Tooling maintenance	X		X
15	Storage & Delivery	X		X
16	Customer feedback and complaint	X	X	X
17	HR & Training	X	X	
18	Documentation	X	X	
19	Payment Collection	X		X
20	Information Systems	X		X

No	B. Manufacturing Process Audit	2018	2019	2020
1	Manufacturing process audit (No customer requirement	Moulding	Turning	SMT. Cust-A
		Secondary Processes	Assembly Process/Packing	SMT. Cust B
		Assembly Process/Packing	Turning	SMT. Cust C
No	**B .Product Audit**	**2018**	**2019**	**2020**
2	Product Audit (No customer requirement	MM Series	NN Series	PP Series

Remarks given here explain on the Exhibit. Do not include them as part of the document

- This is a specimen how to do rotation for all 3 types of internal audits. (I personally think this is not effective. It might be OK for IATF auditors because they are professionals, and specialized in this line of work).
- You will notice in QMS System Audit, the rotation does not mean you take all the 20 processes and split over 3 years. The important COP are still to be audited every year e.g. production and customer feedback. This is what IATF auditors also do, so that the critical processes do not get overlooked and risk slips in on the critical areas.
- For Manufacturing Process and Product Audits, the various types of audit targets are spread out too far apart and cannot be effective. You might as well decide year-to-year, according to priorities

Exhibit 33-3. Single Year Audit Plan

Internal audit Plan (2019)

No	A. QMS Audit- Processes	2019	Date	Time	Internal Auditors
1	Management Planning/Review				
2	Internal Audit				
3	Handling of RFQ	X	16 Jan	9:00-10:00	FLA: John
4	Manufacturing Process Design	X	16 Jan	10:00-12:00	FLA: John
5	Order Processing/ Production Planning	X	16 Jan	13:00-15:00	FLA: John
6	Purchasing	X	16 Jan	15:00-17:00	FLA: John
7	Production- Casting	X	18 Jan	9:00-10:00	TRA: Larry
8	Production- secondary processes	X	18 Jan	10:00-11:00	TRA: Larry
9	Production- Machining	X	18 Jan	11:00-12:00	TRA: Larry
10	Production-Assembly	X	18 Jan	13:00-14:00	TRA: Larry
11	QAQC				
12	Infrastructure maintenance				
13	Machine preventive maintenance				
14	Tooling maintenance				
15	Storage & Delivery				
16	Customer feedback and complaint	X	17 Jan	9:00-10:00	FLA: John
17	HR & Training	X	17 Jan	10:00-12:00	FLA: John
18	Documentation	X	17 Jan	13:00-15:00	FLA: John
19	Payment Collection				
20	Information Systems				

No	B. Manufacturing Process	2019	Date	Time	Auditor
1	Manufacturing process audit (No customer requirement	Turning, Assembly Process, Packing	15 Mar	Shift A	FLA. Lily
				Shift B Shift change witness here	FLA . Lily
				Shift C	FLA. Bexter

No	C. Product	2019	Date	Time	Auditor
2	Product Audit (No customer requirement	NN Series	20 Mar	2:00-5:00	FLA. Bexter

Remarks given here explain on the Exhibit. Do not include them as part of the document

- A program is for a longer term, say over a year or 3 years. An audit plan is for audit for the immediate use. More data should be available for information to all concerned
- Only lead auditors are shown here. You can also list down the other members of the team

Process Approach Additional Checklists

Process Audited: Date:

No	Process Elements	Check Items	Findings
1	KPI	• Are the KPI achieved? • If consecutively more than 3 months of non-achievement without taking corrective/ improvement actions, it is an NC • If there are signs of losing control, internal auditors should have to trace the source, by going through the following in detail • If KPI are achieved, the following can be checked by sampling at the auditor's discretion	
2	Output	• Check every item/sampling items by requesting to view evidence • Take a cursory look to see if things are in order	
3	Input	• Check every item/sampling items by requesting to view evidence • Take a cursory look to see if things are in order	
4	Tool/Equipment	• Sampling on the tool/equipment needed to perform the job • See the item, or request to see how it is used, to deduce it is functioning good enough to produce the desire result. For measurement equipment, check on calibration to see it is still within the calibration period	
5	Competency	• Know who are the people in the dept • Select the new or newer staff to see their competencies • If there is enough time, interview the persons based on some reference e.g. SOP/QP, WI, latest training etc • If there is not enough time, view the training records	
6	Method	• Check the Procedure in greater details	

Remarks given here explain on the Exhibit. Do not include them as part of the document

- Surprisingly, many IATF-certified companies, are still auditing based on procedures. The other elements of the process are often neglected,
- Some companies try to use turtle diagrams for the QMS system audit, but tend to be audited too shallowly for procedures (methods)
- Internal auditors can carry on auditing the procedures first, and finished off by auditing the above list. The 2 list add together, will make the process approach audit complete

Exhibit 33-4. Automotive Process Approach Checklist

Manufacturing Process Audit Record

Process Name: Cutting **Part No Running:** **Date Audited** **Time Audited**

A. Checklist

Process No	(Sub) Process	Machine, device etc	Characteristics		Class (SC)	Method					Reaction Plan
			Product	Process		Specs	Eval Technique	Sample		Control Method	
								Size	Freq		
Process 30	Cutting										
Step 30.1	Setup					F1					
30.2	Loading material		F2								
30.3	First Off checking							F3			
30.4	IPQC										

B. Audit Conclusion

Finding No	Finding Type	Ref No (NC only)	Findings Description	Containment Requirement	Closing date agreed
F1	Minor NC	IANC/MPA/19-01	Length set up was wrong. Seen as 250mm. Should be 200 mm	Yes	1 week
F2	OFI		The type of material should be recorded, or label retained	No	Dept's discretion
F3	Minor NC	IANC/MPA/19-02	N=1. In control plan it is stated n=3.	Yes	1 week

Lead Auditor: Auditee Rep:

Date Date:

Remarks given in this section explain on the Exhibit. Do not include them as part of your document

- For MPA, you need to follow customer requirement e.g. to use VDA6.3. Customer may also specify frequencies and which stages to audit
- For this specimen, there is no customer format specified and the organization uses the control plan as checklist. This recording form patterns after the control plan format, so the findings can be placed at the corresponding slots. Later the findings are expanded in conclusion heading.
- With this method, you can audit all the processes within the control plan at one go, or by subprocesses, or on different days, especially if the processes cannot be completed on the same day.
- You can also take a photocopy of the control plan as checklist and make notes on it, and summarize into a conclusion sheet, like the above.

Exhibit 33-5. Manufacturing Process Audit Checklist

Exhibit 33-6 Product Audit Checklist

Product Audit Checklist

Customer/Product TBN-099-10101-OC	Process OQC	Lot No
Auditor	Auditee	Date

No	Checking Areas	Specification	Results		Judgment OK/NG
			From record	Auditor Testing (Optional)	
A	**Dimensions**				
	Inspection Point A	1.10.2-10.3mm	15-10.2mm Sampling Jan, Mar 2108	No need	OK
	XXX				
B	**Appearance**				
	Scratch mark	Scratch-free	Seen full year. OK	Sampled by auditor. OK	OK
	XXX	XXX	XXX	XXX	
	XXX				
C	**Labelling & Packaging**				
		Follow WIXXX	OQC report full year seen. OK	Auditor checked on Lot No 5334. ROHS found not on label	NC
D	**Functioning.**				
	e.g. salt spray test	96 hours no rust	See OQC report for fully year. OK	Auditor seen the Lot No XXX, see part no rust. OK	OK

Others/ Remarks

Other Observation/Comments:
See demo by inspector XXX doing the 250mm measurement using calipers. Method OK. See here training record, she is competent for FQC. OK. Calipers calibration external. Seen Report No , Calibrated by Labcare, SAMM No 234 (IATF certified).
Storage area for this part is seen, no factors that can be affect product are checked and everything is functioning and OK.

Remarks given here explain on the Exhibit. Do not include them as part of your document

- Product audit has some similar requirements with MPA. You need to follow customer requirement, e.g. they may specify VDA6.5. Or which products to audit and at what frequencies.
- Product audit generally looks into dimension, appearance, functional and packaging. But you can look into more areas like in the case above, under 'Observation/Comments'. You can also report on inspector competency, testing method, equipment calibration status, storage conditions etc., that can affect product quality, or reliability of the QC results.
- There is a frequent question on how many stages should we be checking for this audit. The answer is based on criticality. The most important is the final point FQC or OQC area. You can include upstream inspection area where is important e.g. problem-prone, or where there is a hand-off involved.
- I have noted in many companies, the PDA auditor is not really doing product audit, but merely duplicating the FQC inspector to check the products. See Best Practice for more information.

Exhibit 33-7. Internal and Supplier Auditors List

QMS System AUDITOR LIST

No	Name	Mandatory Training			Extra Training					Audit Experience			Grades		
		A) ISO9001:2015 Std	B) TIATF16949 Std	C) Audit Course	D) PQP/PPAP	E) Control Plan	F) FMEA	G) MSA	H) SPC	0-2 Audits	3-10 Audits	>10 Audits	Support Auditor SPA	Full Auditor FLA	Trainer Auditor TRA
1	ABC	x	x	x	x	x	x	x	x	x		x			x
2	DEF	x	x	x						x			x		
3	GHI	x	x	x	x	x	x				x		x		
4	JKL	x	x	x				x	x		x			x	
5	MNO	x	x	x	x	x	x	x	x	x	x			x	

Qualification Criteria:

- All auditors must pass all mandatory training A, B & C) . Otherwise the candidate is a trainee, who can observe but cannot officially audit
- 'Extra' training (D to H) is not mandatory for everyone. Only those auditing technical processes will need them e.g. design, QA, production. Even so, only relevant tools need to be trained. Example, MSA training is only needed for auditing QAQC. This rule applies to all grades of auditors
- The classification is then based on the audit experience. Support auditor can only audit under supervision. Full and trainer auditor can audit independently. Trainer auditor is also qualified to train.

MANUFACATURING AUDITOR LIST

No	Name	Mandatory Training						Others		Audit Experience			Grades		
		A) PQP/PPAP	B) Control Plan	C) FMEA	D) MSA	E) SPC	F) Audit Course	G) Min 1 year exp in manufacturing		0-2 Audits	3-10 Audits	>10 Audits	Support Auditor SPA	Full Auditor FLA	Trainer Auditor TRA
1	ABC	x	x	x	x	x	x	x				x			x
2	DEF	x	x	x	x	x	x				x		NA	NA	NA
3	GHI	x	x	x	x	x	x	x		x			x		
4	JKL	x	x	x	x	x	x						NA	NA	NA

Qualification Criteria:

- All MPA auditors must pass all mandatory training (A, B, F). Otherwise the candidate is a trainee, who can observe but cannot officially audit. In this case, 1 Year experience (G) in manufacturing is also mandatory. Failing which the person is still a trainee, until qualified by trainer auditor
- In the case above, DEF and JKL' s names should not have appeared on the auditor list, as they are not qualified yet as auditor. They are still trainees.
- The classification is based on the audit experience. Support auditor can only audit under supervision. Full and trainer auditor can audit independently. Trainer auditor is also qualified to train.
- If there is a customer-specified method, the auditor qualifications specified shall be complied

Exhibit 33-7. Page 2

PRODUCT AUDITOR LIST

No	Name	Mandatory Training					Others				Audit Experience			Grades		
		A) Training on M& M Equipment	B) Control Plan	C) Audit Course	D) MSA	E) SPC	F) Min 1 year Exp as QA supervisor				0-2 Audits	3-10 Audits	>10 Audits	Support Auditor SPA	Full Auditor FLA	Trainer Auditor TRA
1	ABC	x	x	x	x	x	x						x			x
2	DEF	x	x	x	x	x					x			NA	NA	NA
3	GHI	x	x	x	x	x	x					x			x	
4	JKL	x	x	x	x	x	x				x			x		

Qualification Criteria:

- All Product auditors must pass all mandatory training (A, B, C). Otherwise the candidate is a trainee, who can observe but cannot officially audit. In this case, 1 Year experience in QA is also mandatory (F). Otherwise the person is still a trainee, until qualified by trainer auditor
- In the case above, DEF's names should not have appeared on auditor list, as he/she is not qualified yet
- The classification is based on the audit experience. Support auditor can only audit under supervision
  Full and trainer auditor can audit independently. Trainer auditor is also qualified to train.
- If there is a customer-specified method, the auditor qualifications specified shall be complied

SECOND PARTY AUDITOR LIST

No	Name	A) Automotive process audit methods (IATF internal audit training)	B) Applicable CSR of org and customers (CSR and org SQM)	C) Applicable product safety and statutory & regulatory requirement	D) Applicable ISO9001/ IATF16949 clauses (ISO/IATF standards training)	E) Applicable manufacturing processes, including FMEA and CP (experience with the type of Ind & as required)	F) Applicable core tools (Core Tool Training-**As required**)	Audit Experience			Grades		
								0-2 Audits	3-10 Audits	>10 Audits	Support Auditor. SPA	Full Auditor. FLA	Trainer Auditor. TRA
1	ABC	x	x		x	x	x			x			x
2	DEF	x	x		x	x	x		x			x	
3	GHI	x	x		x			x			x		

Qualification Criteria:

- All Product auditors must pass all mandatory training (A, B, C). Otherwise the candidate is a trainee, who can observe but cannot officially audit. Item D, E and F are as required. Hence the auditor without these 2 competencies can audit non-manufacturing e.g. warehouse, purchasing etc. This case applies to Auditor GHI
- The classification is based on the audit experience. Support auditor can only audit under supervision.
  Full and trainer auditor can audit independently. Trainer auditor is also qualified to train.

Remarks given in this section explain on the Exhibit. Do not include them as part of your document

- Normally only one list is used to cover all types of internal auditors, which is incorrect, as the qualifications for all the 4 types of auditors are different.
- It is also assumed that an internal auditor, after attended a training course, is considered qualified. This is also not acceptable. Some practical work is needed. In the above examples, the number of audits is used for this purpose, to ensure auditors have the required experience.
- The auditors are best classified into a few grades. In this case they are: a) support, b) full and c) trainer auditors. Trainer auditors can be used to do internal training and qualification of junior auditors, so that more auditors can be trained up, to relieve the load on a few auditors.

>> End of Chapter 33 <<