Article

MCP Technical Training

Our Approach to Competence

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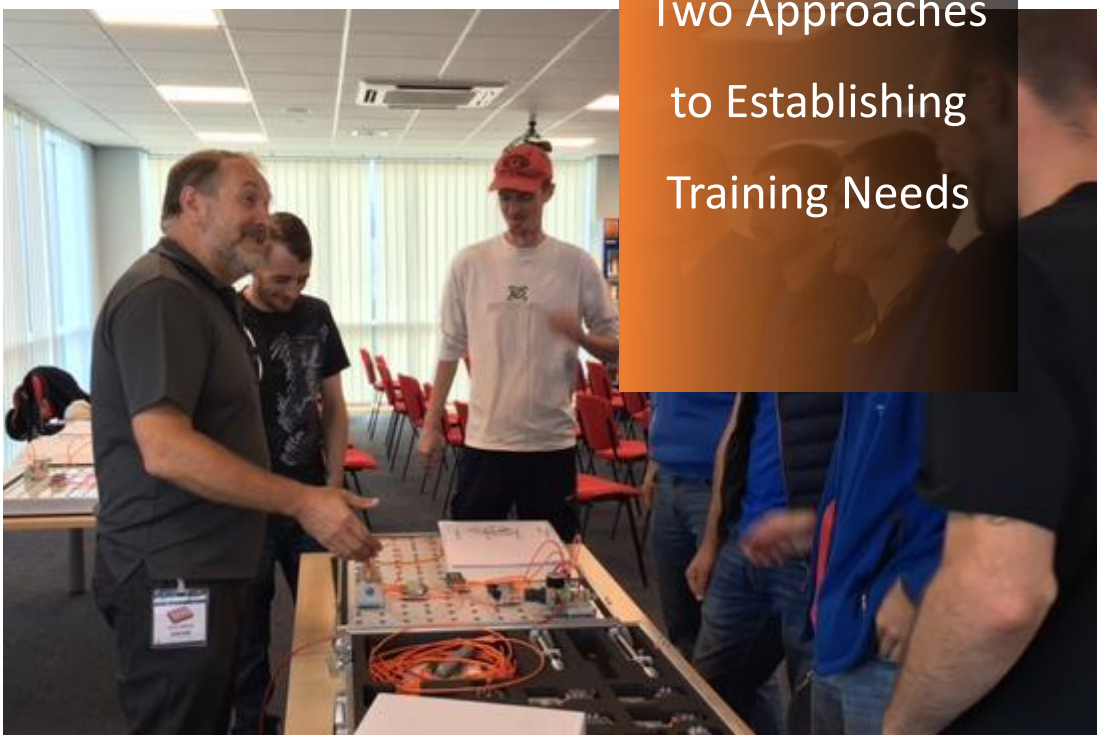
Two Approaches to Establishing Training Needs



introduction

The most valuable asset in your business is your people. If they are maintenance technicians and operator maintainers their value is even greater. The talent pool of maintenance technicians in the UK has been diminishing for several years. Add in the number of eastern European technicians going home after Brexit, companies struggling with the apprentice levy and accelerated retirements after Covid, and the situation has become critical.

Our job is to ensure your maintenance teams have the skillset required to be safe, competent, motivated and bring additional value to your organisation.

In this article we take a look at the two main approaches that can be taken to establish training needs, namely the classic Training Needs Analysis (TNA) and a Competence-based Approach.

Both methods are outlined in more detail in the following pages.

1 vs 2

Approach 1 versus Approach 2

The classic TNA is a much broader way of examining what maintenance technicians get involved in. The competence-based approach is narrower but an output from it is evidence of competence – at least you can be sure that they are safe, following successful completion of the competences. Some maintenance technicians take umbrage from having their skills assessed. A combination of approach 1 and approach 2 might be appropriate.

Through the introduction of a robust training and development plan, there is an opportunity to:

1. Improve morale and motivation and job satisfaction
2. Improve performance and service to stores
3. Develop staff and give them an individual training plan
4. Define the maintenance roles more clearly
5. Retain staff for longer
6. Have evidence of competence and records of training
7. Comply with legislation
8. Reduce costs (through less waiting time) to stores through flexibility
9. Embed a transparent grading structure
10. Reduce reliance on mobile/regional/contracted staff
11. Align training with business needs

Approach 1

Classic TNA (process shown pictorially in Figure 1)

Communication sessions

All stakeholders, including the Trade Union Representatives, attend a brief presentation outlining the process, explaining how this method is objective, fair and recognised as Best Practice. They can ask any questions. It is usual to involve both the customer and MCP in the process.

Training Needs Analysis for Approach 1
Classic TNA, Figure 1

Task analysis

Vocationally competent MCP maintenance engineers walk the job with the technicians, listing each task that the maintenance men undertake. Interested parties would then review the task list. This task list will subsequently be turned into a questionnaire (see figure 2 which gives an example of health and safety and legislative areas which might be addressed and an idea of the format that might be used).

There may be two questionnaires, one for the more advanced technicians and another for the less experienced technicians, dependent upon the complexity of the data. Or there may be different questionnaires for different disciplines.

	Skills Ability Self Audit	**Skill Types:**								**Self Analysis Coding System**									
	Engineering Assessment	**Understand**	Has an undertanding			1.Competent - able to complete this task without further training													
		Competent	Is trained & competent in task			2. Training received in the past but not regularly performed													
		Fault find	Is trained & able to fault find			3. Task performed occasionally but no formal training													
		Maintain	Is trained & able to maintain this equipment			4. Never trained in the task and never performed													
	Name:																		
										Skill Types									
Skill Code	**Skill**		**Trade**			**Understand**				**Competent**				**Fault find**				**Maintain**	
		All	Mech	Elect	Inst	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
	Safety Procedures and Regulations applied across Tesco																		
1	- Asbestos (PGM procedure?)	A																	
2	- Resuscitation and electric shock treatment	A																	
3	- Tesco DSE assesment	A																	
4	- Safe system of work	A																	
5	- Local Exhaust Ventilation (LEV)	A																	
6	- PE (Controls?)	A																	
7	- PE (mech?)	A																	
8	- PE19	A																	
9	-Performing simple Risk Assessments	A																	
10	- Legionella	A																	
11	- Confined Space Entry	A																	
12	- Accident Reporting (EHSILOG)?	A																	
13	- Fire Safety and Evacuation Procedures	A																	
14	- First Aid	A																	
15	-Change Control	A																	
16	**ATEX**	A																	
17	-Theory:Zone Definitions	A																	
18	-Theory Equipment Classes	A																	
19	-Theory: Gas Groups	A																	
20	**Legislative Requirments**	A																	
21	European Directives	A																	
22	-Equipment (Machinery Directives - EC marking)	A																	
23	-94/9/EC (ATEX) Equipment intended for use in Explosive Atmospheres	A																	
24	-Equipment (EMC directive)	A																	
25	Environmental	A																	
26	-Effluent Discharge	A																	
27	-Emmisions	A																	
28	**Health & Safety legislation**	A																	
29	-Provision & Use of Work Equipment Regulations (PUWER)	A																	
30	-Control of Substances Hazardous to Health Regulations (COSHH) (parts 1, 2&3)	A																	
31	-Lifting Operations and Lifting Equipment regulations (LOLER)	A																	
32	-Pressure Systems Regulation 2000		Mech																
33	-Electricity at Work Regulations 1989			Elect	Inst														
34	-Dangerous Substances & Explosive Atmospheres regulations (DSEAR)	A																	
35	USA Legislation and regulation	A																	
36	-US FDA (21CFR Code of Federal Regulations)	A																	
37	-UK Legislation & Regulation	A																	
38	-UK : Animals Scientific Proc Act COP for Animal Care	A																	
39	-UK Radioactivity	A																	
40	- HASAWA	A																	
41	- Manual Handling (Regs)?	A																	
42	- Pressure and Pressure Systems (regs?)		Mech																
43	- Working Safely with Ladders (working at heights regs?)	A																	
44	**Standards, Codes of Practice & Regulations**	A																	
45	-BS7671: IEE Wiring Regulations			E	I														
46	-GMP/GLP MCA Orange Guide	A																	
47	-US Pharmacopia (para 645 Conductivity in pure water)																		
48	-SHE	A																	
49	-HTM2010 Steriliser Maintenance																		

Skills Ability Audit, Figure 2

Questionnaire administration

Technicians have their questionnaires administered in groups of five to ten by an MCP consultant. The questionnaires are then validated by the technicians' first line manager.

Skills audit

Depending upon the job role, mix of tasks and skills of the store/region, it will be possible to identify an ideal skill set for certain groups. We can then audit the candidates against their ideal skill sets.

Development of individual training plans

These training plans will be a product of the skills audit and linked to the organisation's business needs.

Development of team training plans

If it is appropriate, it will also be possible to identify team training plans at this stage.

Sourcing and scheduling of training

This is an opportunity for your company to have input.

Delivery of training

Outlines of some of our training courses are included as appendices. We can deliver training either at your premises or at one of our regional training centres. Where it is possible for us to deliver the training, we will provide you with costed proposals.

Approach 2

Practical Competence-based (process shown pictorially in Figure 3)

We have extensive experience of competence assessment for both existing staff and new recruits. We have a number of assessment packages already written around maintenance activities. We can add to the list as appropriate.

Communication sessions:

All stakeholders attend a brief presentation outlining the process explaining how this method is objective, fair and recognised as Best Practice. They have the opportunity to ask any questions. It is usual to involve both the customer and MCP in the process.

Task analysis

Vocationally competent maintenance engineers walk the job with the technicians, listing each task that the maintenance technicians undertake.

Identification of core competences

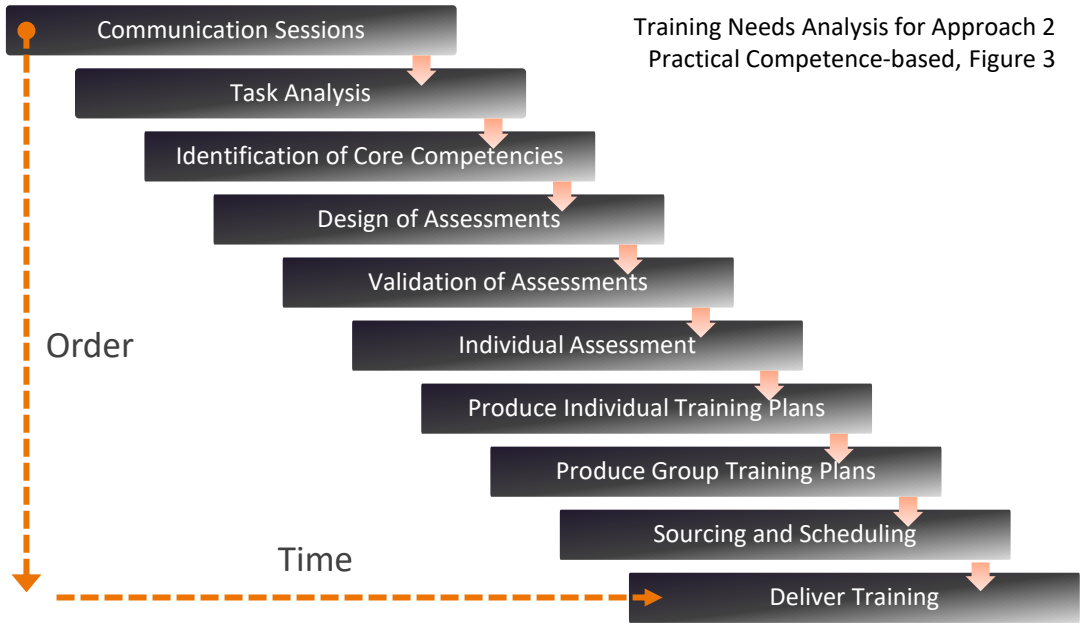
From the task list a number of core competences (say 20) will be reviewed and discussed between the customer and MCP. Some of the tasks will be appropriate for the higher-level technicians and some for the lower-level technicians, or they may be graded to suit either

Design of assessments

We will need to work very closely with your company to ensure that the assessments we write fit in with best practice and your company procedures. We will look to you for support whilst undertaking this exercise to ensure we have accurate and up to date information.

Your company validation of assessments

On completion of an assessment or suite of assessments we will review the work completed thus far and provide you with a progress report.



Training Needs Analysis for Approach 2
Practical Competence-based, Figure 3

Assessments

Questionnaire administration

Technicians have their questionnaires administered in groups of five to ten by an MCP consultant. The questionnaires are then validated by the technicians' first line manager.

Candidates undertaking individual assessments in groups

We will work with you to plan the assessments, in order to minimise any disruption to normal service. Subsequently we will carry out the assessments and give feedback on either an individual basis or group basis (if we have assessed team members). The feedback will include design of group and individual training plans. Of the 20 assessments that we design, we would envisage that each candidate might undertake 5 assessments.

Sourcing and scheduling of training

This is an opportunity for your company to have input if required.

Delivery of training

Outlines of some of our training courses are included as appendices. We can deliver either at your premises or at one of our regional training centres. Where it is possible for us to deliver the training, we will provide you with costed proposals.

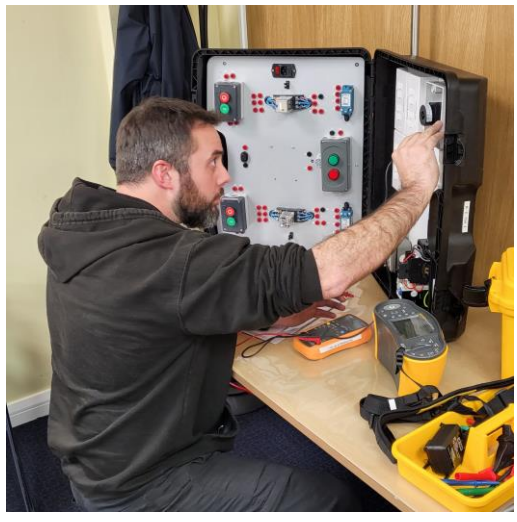
Job roles and profile

We need to know what we are looking for in the candidates/employees. This is especially in the organizational and management section of the assessments. Below is a sample for maintenance engineers. We would need to devise a list of tasks for the high frequency low risk jobs.

Scenario based interview

Competency based interview questions are designed to help make interviewing more precise and objective. Whilst the competency framework describes the knowledge, skills and attitudes required in a role, the questions help to discover how a candidate measures up to the competencies.

Each interviewee should be asked the same questions, notes must be made to support decisions, and scores will help to distinguish between similar candidates.



Electronic

This test uses a small-scale production line controlled by a PLC. Faults can be placed in this system to allow the candidate to find and cure these faults - demonstrating his ability to maintain a computer-controlled line.

Product Sorting

A test production line is reproduced on a drawing that shows balls being fed to a series of chutes that have “flipflop” diverting valves fitted. The chutes lead to hoppers where the balls end up. The candidate is asked, against the clock, to determine how many balls arrive in each hopper, by a logical approach to the problem. Two faults are then introduced, and the candidate is asked to find the damaged valves causing the problems.

Electro Pneumatic Rig

A rig panel contains two air cylinders that open and close in succession, using solenoids to open and close air valves. Faults are introduced for the candidate to find and rectify.

Belt/Chain Alignment

This is a simple test for an experienced machine mechanic. The rig consists of a motor turning a common shaft, one with a pulley wheel and the other a sprocket wheel. The power is transmitted via either a chain or a V-Belt, to a common shaft. The candidate is asked to dismantle one or other of the drives and refit either a new chain or a new V-Belt. They are observed during the test to see how they approach the problem of alignment, how they use tools and how sound is the new assembly.

Dead Motor

A non-functioning three phase motor is presented to the candidate on a custom-built rig. The rig is made so that by secret switches various faults can be assigned to the motor. The candidate has test devices available and tools with which they are asked to find the fault or faults and describe their actions and findings to the tester.

None of the practical tests are too difficult but are at a level, under exam conditions and time constraints that allows them to demonstrate their potential skills to experts. From the overall results we can give an overall assessment of the existing skills and potential of each candidate.

supporting you with maintenance competence

In conclusion, a TNA is primarily concerned with identifying gaps in employees' knowledge, skills, and abilities to determine the training interventions required to bridge those gaps. On the other hand, a Competence-based Approach concentrates on defining and measuring specific competencies required for effective job performance. This approach looks beyond mere skills and includes knowledge, behaviours, and attributes crucial for success in a particular role.

While a TNA is diagnostic and identifies areas for improvement, a Competence-based approach is more holistic, aiming to align individual capabilities with departmental goals for sustained success. Both approaches play crucial roles in enhancing workforce performance and development, but they differ in their scope and emphasis.

ABOUT US

The MCP Group of Companies was originally established in 1987 providing physical asset management and maintenance consulting and training services to clients on a worldwide basis.

We are focused on supporting our clients' future maintenance and business objectives. Our highly qualified and experienced consultants and trainers have the skills to help you each step of the way.

We have assisted a wide range of organisations to identify and solve their skills gaps, in a variety of industry sectors including Food and Drink, Transport, Power, Facility Management, Water, Pharmaceutical and Chemical.

Are you looking to implement a maintenance training program in your organisation, or have already started and uncovered some hidden stumbling blocks along the way? Then we can help.

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