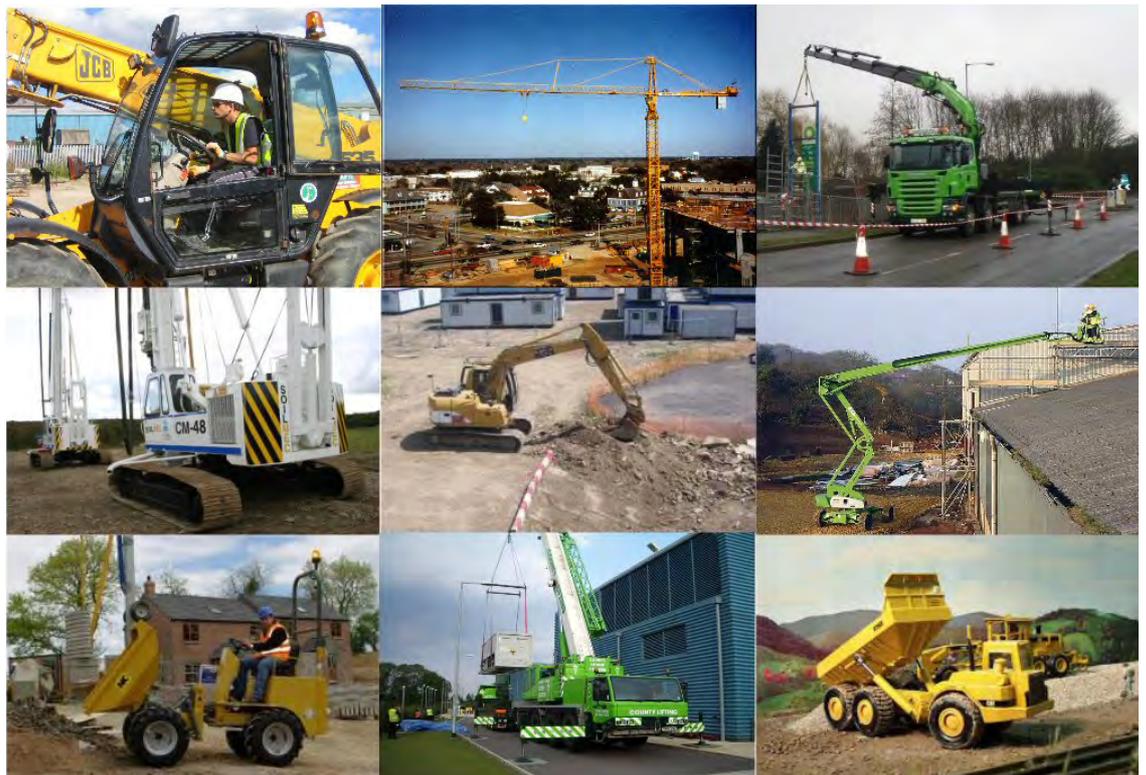


STRATEGIC FORUM  
FOR CONSTRUCTION

PLANT SAFETY  
GROUP

G U I D A N C E

# Competence to Operate Construction Plant



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# Competence to Operate Construction Plant

## Strategic Forum for Construction Plant Safety Group



**Working in Partnership**

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Competence is the ability to carry out the task in prescribed circumstances, safely and efficiently. Competence can be evidenced by demonstrable skill and knowledge, and documented training and experience. Competence is not however an "absolute" and for any given job role there is progression towards greater competence, during which competence is incrementally developed throughout the operators career. Competence requires continual updating, which is frequently achieved through lifelong learning.

**NOTE:** Further details can be found in **4.1**

## Foreword

The operators of construction plant play a vital part in the building process and it is essential that they are competent to undertake the tasks they are required to carry out. If it is used by people who are not competent, construction plant is capable of causing death and serious injury to operators and bystanders. This guidance provides practical tools to ensure that employers and those in control of work comply with their legal duties to ensure plant operators' competence.

Many organisations see training and possession of a card from a training or assessment scheme as proving competence in all circumstances. This is dangerous assumption. Formal schemes are merely an aid to managing competence and additional management activities are needed.

This guidance has been prepared and agreed by industry representatives to show the range of measures required to ensure competence. It outlines the steps which should be taken by employers and others in the construction supply chain. All parties have responsibilities and an interest in ensuring that plant operators are competent. In particular, the guidance explains methods for employers to manage, develop and record their employees' competences and meet their duties under health and safety legislation.

The advice in this document is straightforward, comprehensive and easy to adopt. It has been prepared by industry representatives to demonstrate realistic means of complying with legal duties. However, following the guidance is not compulsory and may go further than the minimum you need to do in order to comply with the law.

I thank those who have been involved in its preparation and commend the guidance to anyone who employs people who work with construction plant and those with an interest in such matters.

Please read the publication and turn the advice into action.



### **Heather Bryant**

HM Chief Inspector of Construction

Chair of the Health and Safety Executive's Construction Industry Advisory Committee (CONIAC).

## 1.0 Introduction and Scope

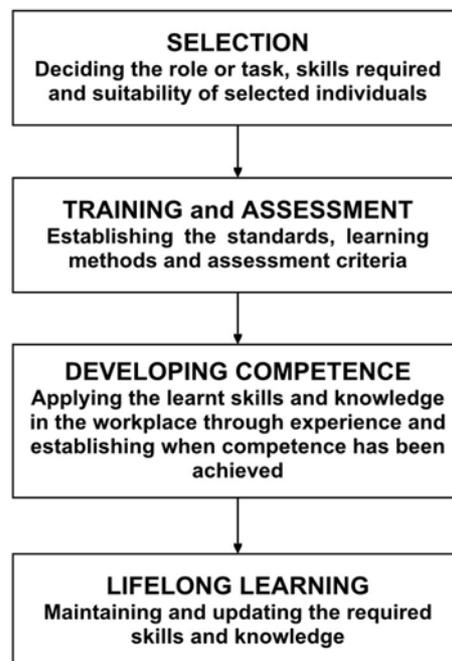
Construction plant, in particular mobile plant, has the potential to cause fatalities and serious injury. Consequently it is essential that people who operate construction plant are competent to do so. The duty to ensure that plant operators are competent rests with their employer and the process of ensuring competence requires cooperation between employers, training providers and operators, all of whom have a significant part to play in the process.

Many organisations see training and possession of a card as a proxy for competence; this is a dangerous assumption. It may indicate a general level of ability to operate plant but does not take into account the difficulty of the task, the complexity of the environment or the experience of the operator. These all have a bearing on the successful management of the task.

This document is intended to provide guidance on the management of the competence of plant operators, clarifying methods for employers to manage, develop and record their employees' competences and meet their duties under HSWA, PUWER and CDM.

Achieving the necessary competence to carry out a particular task is a four stage process which is outlined in **Figure 1**. Each of these stages is described in detail in Sections **4, 5, 6, 7** and **8** of this document.

It does not deal with issues of fitness which are addressed in the Strategic Forum for Construction Plant Safety Group *Good Practice Guide on Medical Fitness to Operate Construction Plant*.



**Figure 1 - Outline Process for Developing Skills and Competence**

## **2.0 Definition of Terms Applying to this Document**

### **2.1 *apprentice***

an individual registered and undertaking a bona-fide training programme such as those within the scope of the Apprenticeship Framework

### **2.2 *assessor***

a specialist in a vocational subject who evaluates and confirms the work-based skills and knowledge of an individual who, for the purposes of this section, is undertaking a work-based competence qualification

### **2.3 *Awarding Organisation***

organisation or body that awards industry recognised certification or qualification who, in the case of framework based qualifications, are regulated by a Government appointed regulatory office

### **2.4 *competence***

see Section 4.0

### **2.5 *construction plant***

construction machinery which is controlled by an operator at all times when in use

### **2.6 *familiarisation***

ensuring that a trained operator is familiar with the characteristics of a machine they are required to operate where those characteristics differ from machines on which they have been trained

### **2.7 *Health and Safety at Work etc Act (HSWA)***

primary legislation setting out the duties of employers and others to ensure the health and safety of their employees and others not in their employ

### **2.8 *industry recognised standards***

standards for plant operator training and assessment having general acceptance within the construction plant industry

### **2.9 *National Occupational Standard (NOS)***

specifies the minimum standard of performance an individual must achieve when carrying out occupational functions competently in the workplace, together with the knowledge and understanding needed to meet that standard consistently

**NOTE:** *National Occupational Standards are not the only approach (See 2.8)*

### **2.10 *National Vocational Qualifications (NVQs)***

occupational qualification within QCF that has competence outcomes which measures occupational competence through performance within industry.

### **2.11 *occupational competence***

the knowledge, understanding and competence required to perform a job related role and is associated with five key areas:-

- human factors – situational awareness, behaviours and attitudes;
- technical requirements - being the occupational skills and knowledge that the individual needs;

- managing the work process – such as identifying resource needs, planning their or other’s work, monitoring quality, solving typical problems etc.;
- working relationships – forming and maintaining relationships with team members, colleagues, customers etc.;
- managing the work environment – such as maintaining health and safety and environmental issues etc.

## **2.12 *personnel***

### **2.12.1 assessor**

specialist in a subject who evaluates the work of somebody else

### **2.12.2 competent person - general**

person who has such capacity combined with practical skills, theoretical knowledge and experience of an item of plant as is necessary to carry out the function to which the term relates in each particular context

### **2.12.3 instructor/trainer**

A person who is qualified and occupationally competent in both plant and equipment theory and operation and can effectively and efficiently convey such knowledge to trainee plant and equipment operators

### **2.12.4 mentor**

an individual who is suitably qualified and experienced in the particular occupation), who advises and guides a less experienced person

### **2.12.5 plant operator**

person who is operating an item of construction plant

### **2.12.6 site management**

person or organisation responsible for operations on a construction site or part of a construction site

**NOTE:** This includes Principal, package and sub contractors

**NOTE:** Managers may also take on the role of supervisor

### **2.12.7 supervisor**

person responsible to higher management for the day-to-day performance of individuals or a small group, guiding the group toward its goals, ensuring that all members of the team are safe, productive and resolving problems, within their competence, as they arise

#### oversee activities

Watches over an activity or task being carried out by somebody and ensure that it is performed correctly to the safe system of work

#### oversee people

In charge of a group of people engaged in an activity or task and keep order or ensure that they perform it correctly to the safe system of work

### **2.12.8 young person**

anyone under eighteen years of age

**2.13 *qualification***

a recognised collection of criteria that denotes that standards have been met for a given occupation, strand of work or ability based on learning. Formal qualifications are awarded through awarding organisations who register individuals and provide resultant certification

**2.14 *Qualifications and Credit Framework (QCF)***

framework for recognising vocational qualifications in England, Wales and Northern Ireland

**2.15 *Scottish Vocational Qualification (SVQ)***

competence based occupational qualification within the Scottish credit qualification framework that confirms occupational competence in the workplace and based on national occupational standards

**2.16 *training***

organised activity, aimed at imparting information and/or instructions, including an element of evaluation of progress, to improve the recipient's performance or to help him or her attain a required level of knowledge or skill

**2.17 *trainee***

person of any age undergoing training and requiring extra care and supervision in carrying out tasks

### 3.0 Legislative Requirements

The main items of legislation of relevance to operator competence are outlined below:-

#### 3.1 ***The Health & Safety at Work etc Act 1974 (HSWA)***

- HSWA places a duty on employers to ensure the health and safety of employees and others who may be affected by their work activities. This includes the provision of information, instruction, training and supervision, all of which should be incorporated in a safe system of work;
- Similar duties are placed on the self-employed and persons in control of premises. Employees, managers and directors also have responsibilities;
- The HSWA also places a duty on employers and others, where their work activity could affect the general public;
- Anyone who has control to any extent of construction plant has obligations to ensure it is used safely and by competent people.

#### 3.2 ***The Provision and Use of Work Equipment Regulations 1998 (PUWER)***

- Regulation 3 (3) of PUWER places duties on employers, the self employed and any person who has control of work and any person who has control to any extent of:-
  - work equipment;
  - a person at work who uses, supervises or manages the use of work equipment; or
  - the way in which work equipment is used at work (including maintenance) and to the extent of his control;
- PUWER applies to employers in respect of work equipment provided for, or used by, their employees, self-employed persons in respect of work equipment they use and other persons, for example visitors;
- Regulation 9 of PUWER requires that people who use or supervise the use of work equipment are adequately trained.

#### 3.3 ***The Management of Health & Safety at Work Regulations 1999 (MHSWR)***

- Under MHSWR, employers and self-employed people are required to assess risks to health and safety from their undertaking;
- The risk assessment should identify what measures are needed to comply with health and safety requirements and control risk;
- The duty holder should then put in place the organisation and arrangements to ensure that those measures are properly implemented;
- Regulation 13 of MHSWR requires an employer to "*ensure that his employees are provided with adequate health and safety training*" and that the training must "*be repeated periodically where appropriate*". The Guidance to Regulation 13 provides advice on levels of training and competence.

#### 3.4 ***The Construction (Design and Management) Regulations 2007 (CDM)***

- The Construction (Design and Management) Regulations place duties on duty holders including clients, designers and contractors for the planning, management and monitoring of health, safety and welfare in construction projects and of the co-ordination of the performance of these duties by duty holders;

- These include a duty on every person working under the control of another to report anything that he is aware is likely to endanger health or safety;
- The Regulations impose additional duties on clients, designers and contractors where the project is notifiable, defined as likely to involve more than 30 days or 500 person days of construction work;
- Regulation 4 of CDM places duties on contractors and Principal Contractors to ensure that workers are competent.
- Regulation 22(2) places duties on Principal Contractors to ensure that workers are provided with the necessary training to carry out their tasks safely.

**NOTE:** *These requirements are current at the date of publication.*

## 4.0 Definition and Principles of Plant Operator Competence

### 4.1 General

Those who operate construction plant must be competent to do so, operating the equipment both safely and efficiently.

Competence is the ability to carry out the task in prescribed circumstances, safely and efficiently. Competence can be evidenced by demonstrable skill and knowledge, and documented training and experience. Competence is not however an "absolute" and for any given job role there is progression towards greater competence, during which competence is incrementally developed throughout the operator's career. Competence requires continual updating, which is frequently achieved through lifelong learning.

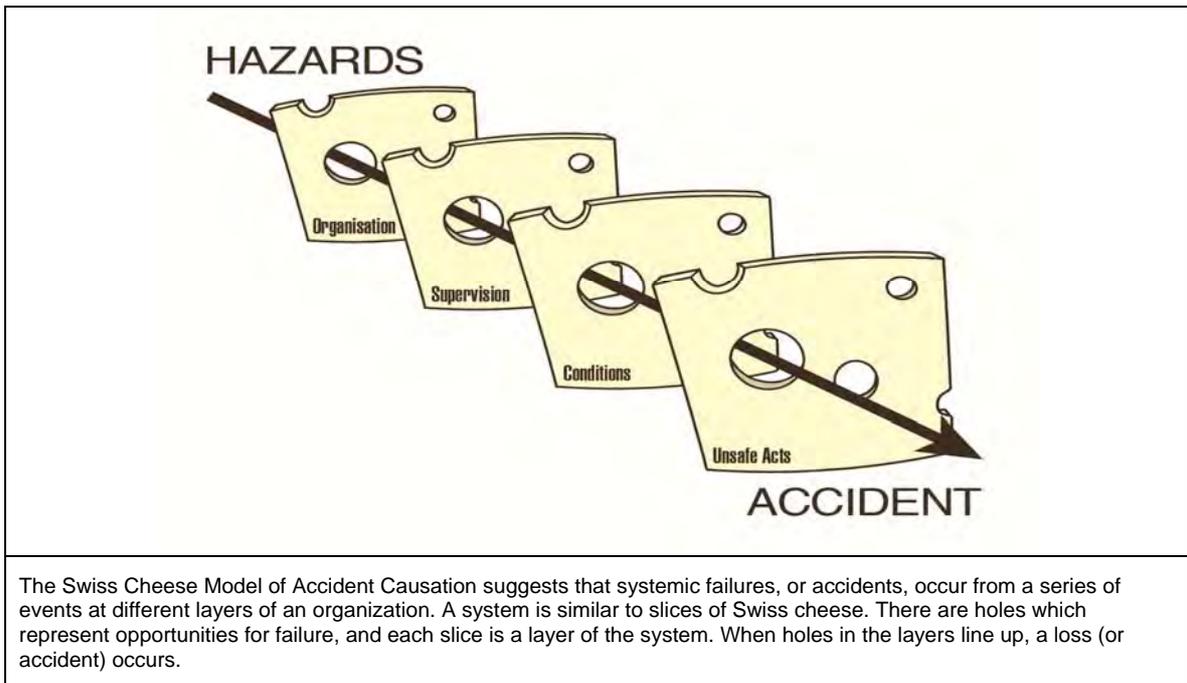
**An operator's level of competence to carry out a specific task in a given environment will dictate the level of supervision required.**

For a plant operator to be considered competent, they should be assessed to ensure that they have:-

1. Training to ensure acquisition of the necessary knowledge, skills and understanding of the equipment they are to operate and the tasks that they are required to perform. This may be evidenced by the holding of appropriate qualifications;
2. Appropriate experience;
3. Knowledge and understanding of the working practices used in the organisation for which they work;
4. Adequate knowledge and understanding of:-
  - a. the hazards associated with the equipment for which they are responsible;
  - b. the hazards associated with the environment in which they are working;
  - c. the hazards associated with the task they are undertaking;
5. The ability to communicate effectively with their peers, others who may be affected by their work, and with their supervisors;
6. The confidence to stop the operation if it would be unsafe to continue;
7. An understanding of their own limitations and constraints, whether of knowledge, experience, facilities, resources, etc., and a willingness to point these out;
8. Adequate situational awareness - the ability to both appreciate and understand the environment in which the machine is working and to predict the development of potentially dangerous conditions in order to take action to prevent harm occurring;
9. Awareness of the cumulative effect of a number of issues, none of which by themselves is likely to lead to a dangerous situation but when combined almost certainly will (See **Figure 2**).

**NOTE:** *Issues of fitness are addressed in the Strategic Forum for Construction Plant Safety Group Good Practice Guide on Medical Fitness to Operate Construction Plant.*

Competence is vital for safe plant operation, however there are many factors, relating to the individual, the job and the organisation, that can influence safe performance and it is important that anyone managing plant operator competence is aware of these. Individual factors which might adversely affect safe performance include fatigue, stress and illness. Examples of job factors would include using machines with unfamiliar controls, working in tight, congested environments and being provided with inadequate method statements and work instructions. Organisational factors affecting safe performance might include a poor safety culture, where corner-cutting goes unchallenged and productivity is prioritised over safety.



**Figure 2 - The Swiss Cheese Model of Accident Causation** (after James Reason)

#### 4.2 Level of Competence Required

Different levels of competence in the operation of plant are required for differing tasks and differing environments.

*An operator of an excavator digging a trial pit in an area containing services and adjacent to a public area, would require an increased level of competence compared with an operator who was digging a trial pit in the middle of a greenfield site.*

Employers and those who control work should ensure that operators have the required level of competence to safely carry out the tasks they are required to undertake. This is illustrated in **Figure 3**.

<b>Environmental Complexity</b>	<b>High</b>	<b>High Level</b>	<b>High Level</b>	<b>High Level</b>
	<b>Medium</b>	<b>Intermediate Level</b>	<b>Intermediate Level</b>	<b>High Level</b>
	<b>Low</b>	<b>Basic Level</b>	<b>Intermediate Level</b>	<b>High Level</b>
		<b>Low</b>	<b>Medium</b>	<b>High</b>
		<b>Task Complexity</b>		

**Figure 3. Level of Competence Required**

### 4.3 Responsibility for Competence Assessment

The assessment of an operator's competence is primarily the responsibility of the operator's employer. **Table 1** sets out the responsibility for four operator supply situations commonly found on construction sites. This process requires effective cooperation and communication between all parties.

Operators operating on a site for the first time should be subject to an increased level of supervision until the contractor (plant user) feels confident in the ability of the operator to carry out the task(s) safely and efficiently. This is particularly important where a plant owner or labour agency is being used by the contractor for the first time. Increased supervision is an important part of the competence assessment process.

<i>Item</i>	<i>Operator Supply Situation</i>	<i>Responsibility of the plant owner</i>	<i>Responsibility of the labour agency</i>	<i>Responsibility of the contractor (plant user)</i>
1.	A plant owner hiring a machine with an operator who is their employee, to a contractor (plant user)	Primary responsibility for competence assessment of the operator <i>NOTE: Where the plant owner is also the plant operator (that is self employed) they should work with an external assessor to ensure that the assessment of the plant owners' competence can be shown to be sufficiently independent.</i>	N/A	Assessment of the plant owner's ability to supply competent operators
2.	A plant owner engages a labour agency to supply him/her with an operator, and then supplies the operator and machine	Assessment of the labour agency's ability to supply competent operators Assessment of the operator when they initially operate the item of plant	Primary responsibility for competence assessment of the operator, taking account of the operator's qualifications and the job which he/she is to undertake.	Assessment of the plant owner's ability to supply competent operators
3.	The operator is an employee of the contractor (plant user)	N/A	N/A	Assessment of the competence of their operator
4.	A contractor (plant user) engages a labour agency to supply him/her with an operator	N/A	Primary responsibility for competence assessment of the operator, taking account of the operator's qualifications and the job which he/she is to undertake.	Assessment of the labour agency's ability to supply competent operators Assessment of the suitability of the operator based on information provided by the labour agency. An increased level of supervision until the plant user feels confident in the ability of the operator to carry out the task(s) safely and efficiently.

**Table 1 - Responsibility for the Assessment of Competence of Plant Operators**

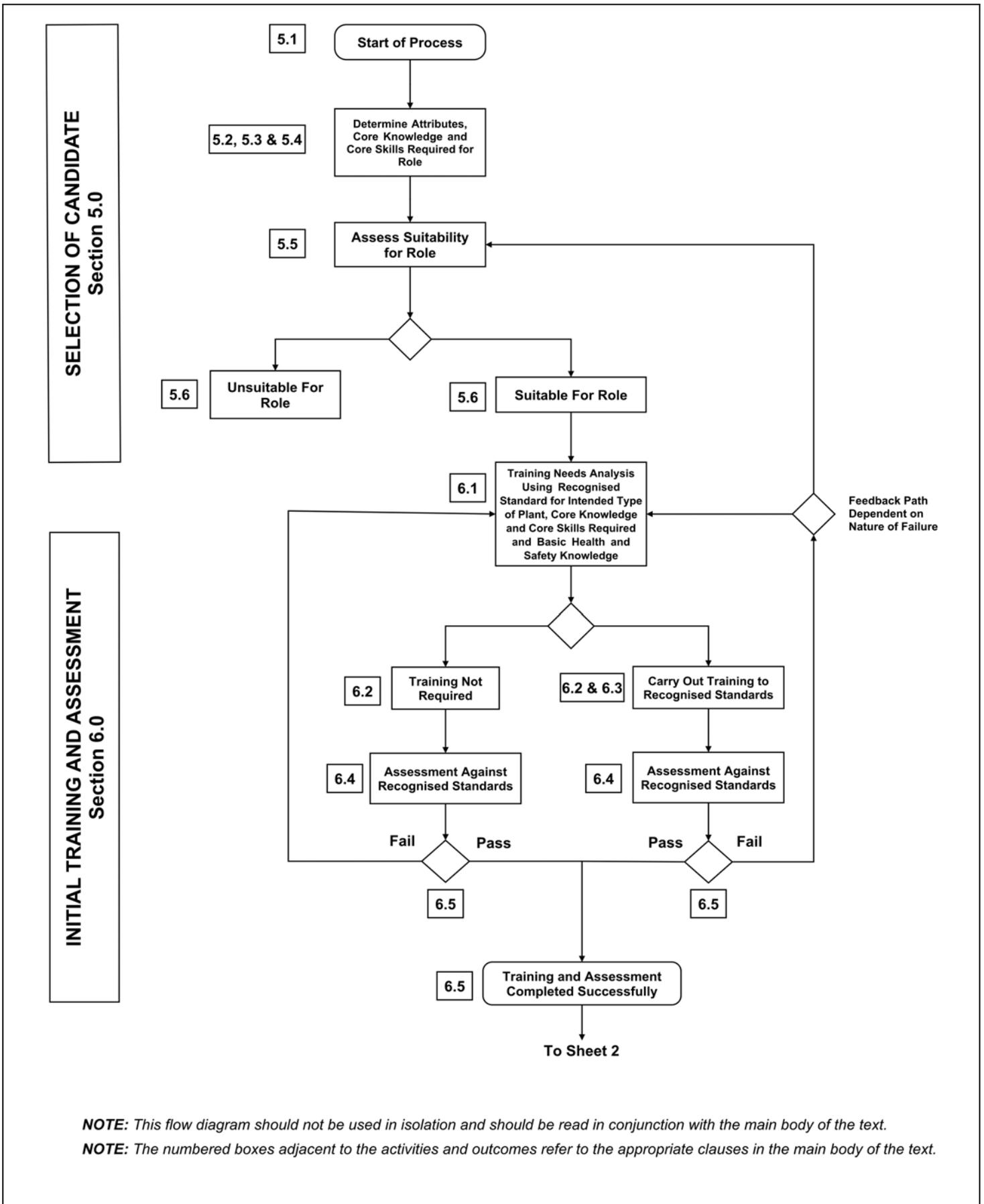
#### **4.3.1 Agency Operators**

When using labour agencies and agency operators or contractors, their competence should be established before they are allowed to operate plant. They should be considered in the risk assessments of the plant user, taking into account their level of experience and familiarity with the work. The same health and safety standards that apply to permanent employees also apply to agency workers and contractors. They are likely to need some specific job and familiarisation training, as well as additional supervision.

An employer's health and safety duties towards agency workers or contractors cannot be passed to another party by civil contracts. Employment agencies and employers of plant operators should make sure there is a clear understanding of who is responsible for the day-to-day management of the health and safety of agency workers or contractors, preferably recorded in writing.

#### **4.4 *Developing Competence***

The development of competence should follow a formal process as described in **Sections 5, 6, 7 & 8** and illustrated in **Figure 4**.



**Figure 4 (Sheet 1) - Developing Operator Competence**

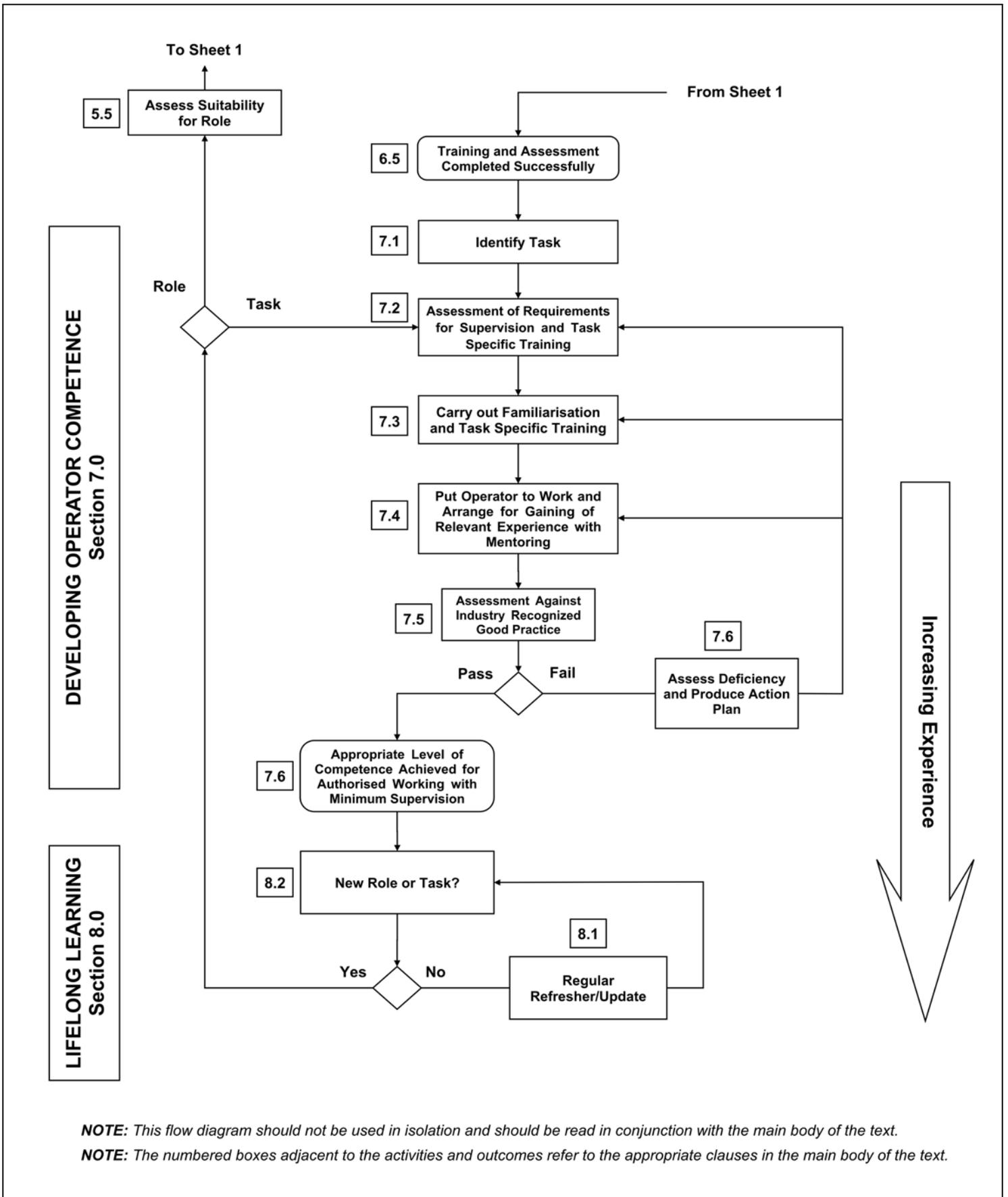


Figure 4 (Sheet 2) - Developing Operator Competence

## 5.0 Selection of Candidate Plant Operators

### 5.1 General

Candidates who wish to become plant operators should be assessed for suitability against the attributes and core knowledge and skills listed in 5.2, 5.3 and 5.4.

When operators are recruited it is essential that employers check that their qualifications and experience relate to the job they are to do.

**NOTE:** This section does not address employment issues and should be read in conjunction with employment legislation.

### 5.2 Attributes

The attributes of candidates who wish to become operators should include:-

- Physical fitness to the degree required to operate a particular type of plant;  
**NOTE:** Further advice on Medical Fitness is given in the Strategic Forum for Construction Plant Safety Group "Good Practice Guide on Medical Fitness to Operate Construction Plant".
- A responsible and mature attitude;
- Manual dexterity;
- Mechanical aptitude;
- Ability to understand verbal and written information, and communicate clearly with other personnel on site;
- An understanding of their own limitations in knowledge and experience;
- Effective communication skill;
- Numeracy and literacy skills to the required level;
- Ability to learn.

### 5.3 Core Knowledge

Once training and assessment has been successfully completed, operator's knowledge and understanding should include:-

- What the machine can and cannot be used for;
- The hazards associated with plant operation including (where applicable):
  - overturning;
  - electrocution – contacting overhead power lines;
  - colliding with pedestrians;
  - crushing and trapping;
  - falling loads;
  - falling from height;
  - loss of control;
  - unsecured attachments.
- The function of safety devices/ features, such as tilt and overload alarms, hold to run controls etc. and why they must not be defeated or bypassed;
- How controls can be accidentally or incorrectly operated and what precautions can be taken to reduce the risks;

- What can happen if the machine is poorly maintained;
- The need to physically leave the cab/seat/operator position and check any attachment and its securing mechanism before work commences or recommences following fitment;
- The need to organise their work in accordance with the instructions or written safe system of work (Method Statement), including coordination with others who may be affected, and follow the Method Statement unless it is unsafe to do so, in which case work must stop;
- The need to report all unsafe working practices and faults with their machine to their supervisor;
- Understanding that poor planning, operation, training, maintenance, supervision or working environment, (or a combination thereof), are major contributory factors to accidents/incidents;
- The increased risks when plant is being operated in the vicinity of other people and ensuring/maintaining an exclusion zone wherever possible;
- The organisational procedures and requirements that they need to follow;
- The need for familiarisation before operating new or unfamiliar types of plant and/or attachment;
- Their responsibilities under the Health and Safety at Work Act;
- Their limitations in organising their work or operating the machine in any given environment.

#### **5.4 Core Skills**

Once training and assessment has been successfully completed, operator's core skills should include the ability to:-

- Communicate effectively with other workers and line managers;
- Interpret relevant information and follow given instructions;
- Organise the work activity or part of the work activity with others;
- Select and/or request resources and additional equipment required;
- Carry out the checks and pre-use inspections that are required on a daily and/or weekly basis as required;
- Fit and remove a commonly used attachment in the prescribed manner;
- Carry out checks to ensure the attachment has been correctly engaged;
- Operate the plant according to manufacturer's requirements and safe working practices;
- Raise and address issues confidently and not be afraid of conflict or of stopping work when necessary to ensure safety.

**NOTE:** The core knowledge and skills identified in **5.3** and **5.4** do not form an exhaustive list and may be added to by reference to sources such as British Standard Codes of Practice.

#### **5.5 Assessment of Candidate's Suitability for the Role**

Candidates for plant operation should be assessed against the attributes, core knowledge and core skills listed in **5.2**, **5.3** and **5.4** for their suitability to undertake training and development. The outcome of this assessment should be recorded in writing.

## 5.6 **Assessment Outcome**

The assessment will indicate one of two outcomes:-

- The candidate is suitable for the role and can proceed to the training needs analysis;
- The candidate is not suitable for the role and:-
  - as an employee, will return to their current or another role;
  - as a new applicant, will not be offered the position.

**NOTE:** *If non-suitability is as a result of medical non-fitness further advice is given in the Strategic Forum for Construction Plant Safety Group "Good Practice Guide on Medical Fitness to Operate Construction Plant".*

## **6.0 Initial Training and Assessment**

### **6.1 Training Needs Analysis**

Once a candidate has been assessed as suitable for the role of plant operator a training needs analysis should be carried out using recognised standards for the type of plant the candidate will be required to operate. This should include the required core knowledge, core skills and basic health and safety knowledge. The training needs analysis should determine the extent of training which is needed by an individual, bearing in mind that this could be influenced by any previous training and experience. When operators are selected it is essential that employers check that their qualifications and experience relate to the job they are to do.

Where the type of plant to be used is outside the employee's previous experience, additional training must be provided. In any event, some further job specific training is likely to be necessary.

Guidance on carrying out assessment is given in the National Occupational Standards for Learning and Development - Standards 9, 11 and 12 (See **Annex B**)

### **6.2 Training Needs Analysis Outcome**

The training needs analysis will have one of two outcomes:-

- The candidate does not require any training and can pass on to the assessment stage;

*or*

- The candidate does require training before they can pass on to the assessment stage.

### **6.3 Training**

Training should be carried out to ensure that the learning outcomes identified in the training needs analysis have been met and that any gaps in the knowledge, skills and understanding of operators must be remedied. Training may be carried out in-house or by an external training provider and should be carried out to recognised standards.

All training undertaken should be recorded in writing in sufficient detail to ensure that its adequacy and appropriateness can be ascertained at a later date.

### **6.4 Assessment**

An assessment of the candidate against recognised standards should be carried out either:-

- Immediately after the training needs analysis has been carried out if no training is required;

*or*

- After satisfactory completion of training identified by the training needs analysis.

Employers should ensure that personnel are assessed against recognised standards to establish that they are competent to carry out the tasks they are required to undertake. This applies equally to personnel completing training and those experienced workers who have been recently recruited.

The assessment should have two components:-

- Testing of underpinning knowledge;
- Practical testing on the category of plant to assess practical skills and the application of knowledge.

The assessment should be carried out by occupationally competent and authorised assessors/instructors.

Guidance on carrying out assessment is given the National Occupational Standards for Learning and Development - Standards 9, 11 and 12 (See **Annex B**)

**NOTE:** *Details of some industry training card schemes are given in **Annex D***

## **6.5 Assessment Outcome**

The assessment will have one of two outcomes:-

- The candidate passes and is ready to move on to the next stage of developing competence (See **7.0**)
- The candidate does not pass the assessment and either goes back to **5.4** to be reassessed for their suitability for the role or goes back to **6.1** to have their training needs reassessed.

## 7.0 Developing Operator Competence

### 7.1 Identification of task

Once the operator has successfully completed their basic training and assessment their first task as an operator should be identified.

### 7.2 Assessment of Requirements for Supervision and Task Specific Training

Following identification of the operator's first task, an assessment of the requirements for supervision and task specific training should be carried out. Task specific training will include machine specific familiarisation.

### 7.3 Familiarisation

Construction plant comes in a variety of shapes and sizes with significant differences in operating controls and characteristics. It is therefore essential that operators and supervisors are given adequate familiarisation on an unfamiliar type or model of the plant and/or attachment on which they have not been trained, before they begin operations. **The employer of the operator is responsible for ensuring that familiarisation is undertaken.**

Familiarisation may be carried out by:-

- an experienced person employed by the machine owner or;
- a representative of the machine or attachment manufacturer or supplier or;
- any other competent and authorised person.

The person giving familiarisation should have specific knowledge of the machine and have been assessed by a suitably trained person to ensure that they are competent to do so.

All familiarisation should be recorded by both the provider and the employer of the operator.

Familiarisation for the operator of construction plant should include the following:-

- Layout and use of controls;
- Machine specific safe working procedures for connection and disconnection of attachments;
- Machine specific visual inspections of the machine or attachment;
- Machine specific "pre start checks" and basic maintenance requirements as recommended by the manufacturer.

**NOTE:** It may be possible for operators who have been trained on a specific category of equipment to familiarise themselves on a different make or model of machine within that category. Details of the requirements for self familiarisation are given in **Annex E**

**NOTE:** Familiarisation should not be confused with Conversion Training (See 8.3)

### 7.4 Putting the Operator to Work and Gaining of Relevant Experience with Monitoring

Employers should be aware that to minimise the risk of accidents, candidates on some construction plant training programmes may not operate the machine at its full potential. Consequently employers should ensure that newly trained operators are limited to activities and/or working areas encountered within the training programme until they become confident in operating to the parameters experienced within training. When being required to operate outside these parameters appropriate supervision must be applied to ensure the operator can safely carry out the task.

Employers and supervisors should be aware of skills attained during the training course and provide further specific training as required. Machine manufacturers and importers of attachments, as well as external training providers, who offer construction plant training, can be approached for advice on relevant training requirements.

For newly qualified operators, employers and supervisors should:

- Specify any particular work requirements to the nominated training providers prior to the commencement of training;
- Establish the type and the content of training and/or assessment programmes undertaken by the operator;
- Identify any differences between the operator's learnt skills and those required on the work site, by referring to the training body learning outcomes and/or training material;
- Initially limit the operator to activities and/or working areas encountered within the training programme;
- Provide time for the operator to study the machine's operating notes/handbook and other related data;
- Provide time and facilities for the operator to practice with the new machine type;
- Monitor work undertaken to gauge operator confidence and ability;
- Introduce new activities and/or working areas under supervision, for example - lifting loads to heights higher than previously encountered, or working within hazardous or busy areas;
- Carry out periodic assessments and ascertain when new or higher risk activities can be undertaken safely;
- Provide specific additional training for activities such as lifting operations using a hook and other types of attachment;
- Ensure that all training and experience is adequately recorded (See 9.0)

### **7.5 Reassessment Against Industry Recognised Good Practice**

Employers should ensure that following a period of working under direct supervision operators are assessed against industry recognised good practice to establish that they are competent to carry out the tasks they are required to undertake without direct supervision. This applies equally to operators completing training and experienced workers who have been recently recruited.

Assessment should contain both practical elements to demonstrate the skills and standards achieved and the answering of questions to demonstrate relevant underpinning knowledge. The assessment should be carried out by occupationally competent and authorised assessors/instructors.

**NOTE:** *National Occupational Standards may be used as a standard against which people are assessed. They can be downloaded from the UKCES National Occupational Standards page at <http://www.ukstandards.org.uk/>*

### **7.6 Reassessment Outcomes**

The reassessment will have one of two outcomes:-

- The candidate has achieved an appropriate level of competence to be authorised to work with minimum supervision;
- The candidate does not pass the assessment. In this case the candidate's deficiencies should be assessed and an action plan to remedy those deficiencies produced. The action required will depend on the deficiencies identified (See **Figure 4**).

## **8.0 Lifelong Learning**

### **8.1 Regular Refresher and Updating Training**

It is essential that training and subsequent assessment are an ongoing activity and not viewed as one off activities, valid for a life time. Plant operators will require additional training, familiarisation and assessment to ensure that they remain competent to carry out the tasks required of them. Employers should ensure that opportunities for ongoing development are planned for and provided.

For advice on key principles for "*Engaging Small Businesses in Effective Learning*" see the Small Firms Enterprise Development Initiative (SFEDI) at [www.sfedl.co.uk](http://www.sfedl.co.uk)

### **8.2 New Roles or Tasks**

When an operator is to be given a new role, such as operating a different category of machine or type of machine in the same category they must be assessed for their suitability for the role (See **5.3**), following the procedure outlined in **Figure 4**. This may well involve conversion training (See **8.3**)

If an operator is to be given a new task outside their current competence, such as excavation around underground services, the requirements for supervision and task specific training for the new task must be assessed for their suitability for the role (See **7.2**).

### **8.3 Conversion Training**

Conversion training enables trained and experienced operators to extend the range of plant they are competent to operate. It involves learning to operate a machine of a different category, such as a wheeled mobile crane operator converting to operate, for example, a crawler mobile crane.

It is likely to be appropriate for an operator to also go through conversion training where, for example, they are already a fully trained operator on a small telehandler without outriggers but want to operate a significantly larger telehandler fitted with outriggers.

Conversion training should be approached with the same attention to detail as basic training so that all gaps in and variants on existing skills and knowledge are covered during training. There may be significant variations in the arrangement or application of controls, even in the same machine types. Conversion training should follow a similar pattern to initial machine training, including basic, specific job and familiarisation training. Operators also need assessing on their ability to operate the new machine in the same way as they were assessed after their initial basic training.

## 9.0 Competence Records

### 9.1 Introduction

It is important that employers have comprehensive records of competence for all plant operators. These should include records of training, experience, assessment and evidence of keeping up to date. As plant operators tend to move from site to site and employer to employer it is essential that the operator has a personal copy of their competence records. This enables the operator to prove previous experience and training to a new site or new employer.

### 9.2 Record Format

Competence records can be kept in either paper or electronic format. Paper records are often easier to update as the input will often be in paper format such as training, assessment and familiarisation records. Electronic records are however more secure against loss and damage, and the data is more readily analysed. There are many personnel record software packages on the market but care should be taken when considering purchase to ensure that the system is flexible enough to accommodate changes in types of input and output.

Most employers will wish to keep plant operator competence records electronically, however the copy retained by plant operators may need to be in a physical format.

### 9.3 Record Components

As a minimum plant operator's competence records should contain the following:-

#### 9.3.1 Training

Records of all training carried out, both external and in-house

#### 9.3.2 Experience

Records of experience including different types of machine operated, tasks carried out and projects worked on. This may be based on the operator's log book which forms part of some schemes.

#### 9.3.3 Assessments

Records of all assessments, including assessment of training needs at both initial employment and subsequently.

#### 9.3.4 Familiarisation

Records of all familiarisation on different types and models of machines and attachments.

**NOTE:** Other records which may be found useful are listed in **Annex A**

## 10.0 Consultation of Employees

### 10.1 Consulting the workforce

All workers have the right to be consulted. Consultation is the process of managers and workers (or their representatives) jointly considering and discussing issues of mutual concern. It involves seeking acceptable solutions to problems through a genuine exchange of views and information.

Consultation is **not** negotiation and it is **not** just giving information or telling employees what the employer has already decided to do. Consultation does not remove the right of managers to manage – they must still make the final decision – and does not require managers and workers to agree. It does however, oblige managers to seek and listen to the views of workers before decisions are taken.

The benefit of consultation is that people's behaviour is more likely to be influenced if they understand and have contributed to management decisions.

### 10.2 Legal requirements for consultation

There are two principal sets of regulations that require workers to be consulted on health and safety matters. One set is for undertakings where trade unions are recognised for collective bargaining purposes (*The Safety Representatives and Safety Committees Regulations 1977*), and the other is for circumstances where this is not the case (*The Health and Safety (Consultation with Employees) Regulations 1996*). Other regulations that require consultation of employees, most of which are sector specific are not considered in detail here.

The Safety Representatives and Safety Committees Regulations 1977	The Health and Safety (Consultation with Employees) Regulations 1996
<p align="center"><b>“Safety Representatives”</b></p> <p>Appointed in writing by a recognised trade union recognised for collective bargaining purposes</p>	<p align="center"><b>“Representatives of Employee Safety”</b></p> <p>Elected by the workforce</p>
<p align="center"><b>Role</b></p> <ul style="list-style-type: none"> <li>• Representation of employees in consultation with the employer on specified matters</li> <li>• Investigation of workplace incidents, complaints and potential hazards</li> <li>• Presentation of the findings of such investigations to the employer</li> <li>• Inspection of the workplace;</li> <li>• Representation of employees in dealings with health and safety inspectors</li> <li>• Attendance at health and safety committee meetings</li> </ul>	<p align="center"><b>Role</b></p> <ul style="list-style-type: none"> <li>• Representation of employees in consultation with the employer on specified matters</li> <li>• To take up with employers concerns about possible risks and dangerous events in the workplace that may affect the employees they represent</li> <li>• Presentation of the findings of such investigations to the employer</li> <li>• To take up with employers <b>general matters affecting the health and safety</b> of the employees they represent</li> <li>• Representation of employees in dealings with health and safety inspectors</li> <li>• Attendance at health and safety committee meetings</li> </ul>

**Table 2 - Comparison of functions of Safety Representatives and Representatives of Employee Safety**

## **11.0 Apprentices and Young Persons Operating Construction Plant**

### **11.1 Introduction**

This section provides guidance on apprentices who are being trained to operate plant. Apprentices are individuals enrolled on a formalised training programme. Although an apprentice can be any age, individuals on apprenticeships are traditionally between the ages of 16 to 19 years, although they may be older. Employers must consider the additional issues that may arise due to a lack of maturity, compared with equally inexperienced but more mature trainees. Although this section focuses on apprentices it is applicable to all young persons operating plant.

Statistics indicate that young persons have a greater chance of an accident due to factors such as maturity, lack of risk perception, attitude, being placed into situations beyond their capabilities.

Apprentices and other young persons working to achieve competence will follow the process outlined in **Figure 4**, taking into account the following:-

### **11.2 Suitability for role / Assessing training needs**

When carrying out the assessment of suitability for the role of plant operator (**See 5.3**) and the assessment of training needs (**See 6.1**), the employer should also take account of:-

- the level of academic achievement attained;
- their background experiences and attitudes to work and safety;
- their physical ability to undertake the intended tasks;
- their perception of risk and the factors which affect risk;
- their knowledge of plant and equipment that has been gained to date.

Whilst it is a requirement that apprentices undertake formal training, they may also require other assistance outside the apprenticeship framework. Employers should ensure that all individuals are treated fairly, equally and in compliance with current legislation such as *The Equality Act 2010*.

### **11.3 Carry out training to recognised standards**

The apprentice should be enrolled onto a nationally recognised training programme which combines formal training and on-the-job experience. Some industry sectors, such as construction, provide a framework of apprenticeships relating to plant operations. Employers should consult with their particular sector skills council for advice and guidance on the appropriate apprenticeships scheme and approved delivery bodies.

A fundamental element of an apprentice's skills development is on-site experience. A competent supervisor or mentor must familiarise the apprentice with plant and equipment on site and the apprentice must be restricted to operating only that equipment until the specific training has been completed.

### **11.4 Assessment of Skills and Competence**

All assessments should be carried out to nationally recognised standards. The apprenticeship framework requires ongoing assessment of a candidate's progress and the development of the apprentice should be monitored by both the approved assessment centre and the sponsoring employer. The centre should assign an assessor/instructor to the candidate to evaluate their progress and development. These on-going assessments are complimented by an initial evaluation once basic training has been completed to confirm that the learning aims have been met. Work undertaken on site should be periodically assessed by both the employer and the assessment centre to

confirm that practical application of learnt skills has been achieved. This process culminates in the confirmation of competence against national standards through competence-based qualifications.

If a candidate does not demonstrate the standard required to complete the apprentice programme, the assessment centre and employer should review both the training provided and the suitability of the candidate. Both parties should work together to establish whether further training, assistance or support would result in a successful outcome or whether the candidate is deemed unsuitable for the role. If the latter is the outcome, a revision of initial assessment processes should be carried out.

### **11.5 Work Experience**

An apprentice needs on-the-job experience in order to develop their knowledge and skills and enable them to attain the required competence. It is important for employers to recognise that the apprentice is trained but not yet competent and a suitable risk assessment will be required to reflect the introduction of the apprentice into the work place.

Young persons, due their lack of maturity, may exhibit traits and behaviours that need to be recognised and managed by the employer. In particular, young persons may:-

- have a poor perception of risks;
- be unable to assess significant risks to themselves and others;
- be unable to correctly interpret instructions and directions;
- show a negative attitude to authority and object to being given instructions and directions;
- be competitive and display a “macho” attitude;
- be easily influenced by others;
- be prone to copying poor practice;
- place or find themselves in situations beyond their current capabilities;
- suffer emotional instability and mood swings;
- suffer the effects of an excessive social life.

On the other hand, young persons do have attributes which, if channelled correctly, can prove a positive asset to the work place. Young persons can be:-

- enthusiastic, willing and eager to perform;
- energetic;
- open-minded and adaptable.

### **11.6 Site Supervision**

The Site Supervisor is the person in charge of site activities of the employing organisation. The employer should ensure that the Supervisor is aware of the stage of training the apprentice has reached, before allowing them to operate plant on site. The Supervisor, in conjunction with the Site Controller (where applicable), should ensure that all persons on site are made aware of the presence of an inexperienced and young operator. The Supervisor should arrange suitable integration with other trades, for both the protection of the apprentice and other contractors. The degree of supervision and integration required will depend on the performance and maturity of the apprentice.

The employer, in consultation with the Site Supervisor and training organisation, should appoint a suitably experienced Mentor to the apprentice for a particular activity to ensure that the works are supervised and carried out in a safe and effective manner.

**Annex C** shows a typical form for the authorisation for the use of plant and equipment on site by apprentices and other young persons. The form is signed by the apprentice/young person to accept the conditions of authorisation and the Principal Contractor/Client to carry out the authorisation.

### **11.7 Mentors**

It is important to ensure that the young person has the right mentor. A good mentor will help the apprentice to improve their skills and develop the ability to operate plant safely. The typical mentor would be an experienced worker/operator and have the personal life skills to enable their experiences and practical skills to be passed onto the apprentice. The mentor will aid the development of the apprentice. At this stage, any bad habits or poor working practices must be avoided to ensure that development of the apprentice is in compliance with current health and safety legislation, best practice and the training provided.

Mentoring has benefits not just for the apprentice, but also for the mentor, as it requires a level of responsibility and trust, and should be recognised as such. The selected mentor needs to understand and have empathy with young person issues and attributes, and be able to assist where necessary in evidence collection for an apprentice's workplace-based qualification.

The individual being selected as a mentor should:-

- have the requisite attitude to safety;
- be experienced in plant operations or the relevant occupation;
- be available throughout the working day;
- display and promote best practice;
- have a good understanding of health, safety and welfare issues;
- be willing to undertake the role and be properly prepared/ trained;
- have an understanding of the requirements for workplace evidence needed for the qualification;
- be able to foster personal and professional development.

### **11.8 Client/ Principal Contractor**

A Client/Principal Contractor may have reservations about allowing apprentices to carry out plant operations on a "live site" because of their age and lack of skills. Apprentices have or will be near completing, basic skills training and Clients/Principal Contractors should encourage the use of apprentices. This will give apprentices the opportunity to work on a site, enabling them to become effective, productive and maintain the future skills needs of the sector. To ensure that the presence of apprentices on site does not increase the risk to either the apprentice or others, the organisation controlling the site, together with the employer, should assesses the significant risks associated with the activities that are being carried out and implement necessary control measures.

The Client/Principal Contractor should inform all persons on site or attending site for the first time that apprentices are being trained on site and that:

- no site personnel should enter work areas where apprentices are operating plant and equipment without the Principal Contractor's site manager's, and the supervisor's/ mentor's permission;
- they recognise the limits of the types of activities that can be carried out by an apprentice;
- they acknowledge that apprentices are not fully productive and that patience is required by managers, supervisors and other co-workers;

- other parties on site should not operate plant and equipment near an apprentice unless a suitable risk assessment has been provided to the principal contractor and employing organisation;
- any information required for the contractor to ensure his safety, or that of the apprentices, is passed onto the said contractor;
- no person on site should put an apprentice at risk by their actions or inactions.

### **11.9 Further Requirements and Guidance**

Regulation 19 of the *Management of Health and Safety at Work Regulations 1999* stipulates a number of additional requirements that must be taken into account when carrying out risk assessment for work involving young persons. Health and Safety Executive guidance documents such as *HSG165 – Young People at Work* and *HSG 199 – Managing health and safety on work experience*, provides further advice and information.

## Annex A - Example Records

The following is a list of the type of records that may contribute to the competence records referred to in **Section 9.0**. This is not an exhaustive list.

- In-house handover sheets for new models of plant;
- Familiarisation records;
- Major projects worked on;
- Letters of commendation;
- Attendance on manufacturer's training courses;
- Attendance on conversion training courses;
- Log book covering types of work carried out and types of machine;
- Qualification certificates;
- Records of refresher and update training;
- Apprenticeship agreement and outcomes;
- Other training for example health and safety, first aid, company policies;
- Training agreements;
- Toolbox talks;
- Training seminars;
- Driver Certificate of Professional Competence (CPC);
- Copy of driving licence (if applicable).

## **Annex B - Details of National Occupational Standards and Vocational Qualifications**

The construction industry, including the plant sector, has recognised vocational qualifications as part of its strategy for a fully qualified and competent workforce. Attainment of training and/or competence-based qualifications means that an individual has formal recognition which supports and confirms their occupational role or duty.

Formal qualifications are recognised within the Qualification and Credit Framework (QCF) for Wales, Northern Ireland and England, or within the Scottish Credit and Qualification Framework (SCQF). Qualifications within each framework are awarded by awarding organisations, whose role is to ensure that candidates, accredited centres, and the instructors or assessors who work for each assessment centre complies with the requisite standards.

Vocational qualifications are based on National Occupational Standards (NOS) which are determined by industry-based working groups for an occupation or role. NOS consist of competence and performance statements which are devised by subject experts and practitioners drawn from industry. NOS also identify the generic employee skills such as self-management, organisation of work, solving problems, working with others, communicating effectively etc. NOS can be used in other ways such as to support human resource management and organisational development processes.

Qualifications within the frameworks contain a credit value and a level. The credit value indicates the typical learning time needed to achieve the qualification. The credit value equates to 10 hours of learning, for example - a qualification rated at 20 credits indicates that the equivalent of 200 hours of learning may be required. Learners are not expected to meet those hours; they purely are guidance to indicate the size of the qualification. The level denotes the difficulty, complexity or the autonomy needed in achieving the qualification.

Qualifications containing the terms SVQ or NVQ are competence based and measure the practical application of skills and understanding in the workplace against national standards and industry expectations. To prove competence in industry, the candidate, under the guidance of an assessor, demonstrates or collects and presents evidence of competence from the workplace.

Evidence may consist of a combination of the following:-

- The candidate being observed by the assessor doing, or doing part of, the job or task;
- The candidate being filmed or photographed;
- Statements from witnesses (such as the employer, site manager, supervisor, client etc.), that the job has been done to the set standard;
- Work undertaken being confirmed by an employer-nominated work-based recorder;
- Operator Logbook;
- Customer timesheets;
- One or more test results (undertaking one or more tests).

An NVQ or SVQ can be achieved over a period of time. If the candidate is already experienced, the period will be shorter. The qualifications can be gained during normal working hours within the workplace without the candidate having to attend college or take formal exams.

An NVQ or SVQ assessor is a qualified individual who guides the candidate through the process of evidence generation and judges their performance in the workplace against

the standards. Assessors can be employees of construction or plant-based companies. Once the evidence has been collected and collated, the assessor judges the presented evidence against the standards. If the standards have been met, the assessor notifies the awarding organisation that the qualification can be awarded.

The construction industry is always seeking new SVQ and NVQ assessors to help it meet the aim of a fully qualified workforce. Individuals wishing to become assessors should contact an appropriate awarding body.

Further information about plant-related qualifications is available from the Office of Qualifications and Examinations Regulations (Ofqual) at <http://register.ofqual.gov.uk/>

## Annex C - Example of a Form of Authorisation of an Apprentice to Use Plant and Equipment on Site Whilst Undergoing Training and Gaining Experience

<b>Authorisation of an Apprentice to Use Plant and Equipment on Site Whilst Undergoing Training and Gaining Experience</b>		
<b>Site:</b>		
<b>Principal Contractor/ Client:</b>		
<b>Name of Apprentice:</b>	<b>Employer:</b>	
<b>Authorised Machine and Authorised Task(s):</b>		
As an authorised representative of the Principal Contractor/Client I authorise the above named apprentice to use plant and equipment on this site whilst undergoing training and gaining experience.		
<b>Name:</b>	<b>Signed:</b>	<b>Date:</b>
<p>I, the above named apprentice, agree that I will:-</p> <ul style="list-style-type: none"> <li>• comply with the guidance, mentoring and instructions given to me by authorised parties involved with my training;</li> <li>• stop work and contact either my Contracts manager or the Company Safety Advisor for advice, if I feels that I am being put at risk by any instructions given;</li> <li>• comply with the site/client's requirements and rules for safety on site;</li> <li>• work and perform my duties in a manner which will not bring my employer into disrepute;</li> <li>• not use any plant and equipment outside specified areas, until training and familiarisation has been provided and signed off;</li> <li>• use the equipment in a safe and effective manner, as trained, and not to put others at risk by my actions or inactions.</li> </ul> <p>I recognise that not complying with these requirements may result in the immediate removal of this authorisation and my having to leave site until an investigation is carried out, which may result in disciplinary action being taken.</p>		
<b>Name:</b>	<b>Signed:</b>	<b>Date:</b>

## Annex D – Examples of Training and/or Assessment Schemes for the Operation of Construction Plant

<b>Scheme Name</b>	<b>Administering Body</b>	<b>Plant Covered</b>	<b>Website</b>
ALLMI	Association of Lorry Loader Manufacturers and Importers	Lorry loaders	<a href="http://www.allmi.com">www.allmi.com</a>
CPCS	CITB	Majority of mainstream construction plant or related roles	<a href="http://www.citb.co.uk/cpcs">www.citb.co.uk/cpcs</a>
NORS (National Operator Registration Scheme)	RTITB	Lorry loaders, lift trucks, telehandlers and all warehouse mechanical handling equipment	<a href="http://www.rtitb.co.uk">www.rtitb.co.uk</a>
NPORS	National Plant Operators Registration Scheme	Majority of mainstream construction plant	<a href="http://www.npors.com/index.asp">http://www.npors.com/index.asp</a>
IPAF PAL	International Powered Access Federation	MEWPs and MCWPs	<a href="http://www.ipaf.org/en/training/pal-card/">http://www.ipaf.org/en/training/pal-card/</a>
<b>NOTE:</b> This list is non-exhaustive			

## Annex E - Self Familiarisation

As stated in 7.3, construction plant comes in a variety of shapes and sizes with significant differences in operating controls and characteristics. It is therefore essential that operators, trained on a particular category of plant, are given adequate familiarisation on an unfamiliar model in that category, before they begin operation.

**The employer of the operator is responsible for ensuring that familiarisation is undertaken.**

Familiarisation of an operator is normally carried out by another competent and authorised person. In certain circumstances however, it may be permissible for an operator to familiarise themselves from the machine manufacturer's information. This is known as "Self Familiarisation".

Self familiarisation should only be carried out where:-

- The operator carrying out self familiarisation has been assessed as competent to do so by a suitably trained person;
- The operator is given adequate time to carry out this process;
- The operator's training has covered the extraction of information from the machine manufacturer's manual;
- The machine is not significantly more complex than a machine in the same category on which the operator has previously been trained or familiarised;
- The machine is not significantly larger or of significantly greater capacity than a machine in the same category on which the operator has previously been trained or familiarised;
- The machine does not introduce additional hazards which the operator has not been trained to deal with;
- All relevant information, including the manufacturer's instruction manual is provided to the operator.

It is essential that self familiarisation is recorded by both the provider and the employer of the operator.

Examples of where self familiarisation may and may not be appropriate, are given in Table E1 below.

<i>Item</i>	<i>Category</i>	<i>Machine on Which Familiarisation is Required</i>	<i>Previous Training/ Familiarisation</i>	<i>Differences</i>	<i>Suitable for Self Familiarisation?</i>
1.	ALLMI C1 – Lorry loader (up to 20 tm with hook)	14 tm HIAB, pre-stabilizer monitoring with fully hydraulic stabilizers and standard controls.	12 tm HIAB, pre-stabilizer monitoring with fully hydraulic stabilizers and standard controls.	None – with the exception of a minor increase of size which remains within the formally trained category.	Yes
2.	ALLMI C5 & E– Lorry loader (up to 20 tm with brick grab & radio control)	14 tm HMF with fully hydraulic stabilizers, stability monitoring and with Scanreco radio remote control.	14 tm Atlas with manually extendible stabilizers, without stability monitoring and with Hetronic radio remote control.	The new machine is fitted with a stability monitoring device, different specification stabilizers and different remote control type.	No.
3.	CPCS A60 Mobile Crane	100 tonne capacity all terrain mobile crane, max lifting height 91m, maximum radius 58m, four axle chassis	60 tonne capacity all terrain mobile crane, max lifting height 63m, maximum radius 48m, three axle chassis	Minimal - lifting height, lifting radius and number of axles	Yes
4.	CPCS A60 Mobile Crane	500 tonne capacity all terrain mobile crane, max lifting height 142m, maximum radius 108m, eight axle chassis and multiple boom configurations including fixed and luffing lattice jibs, and Y stays	60 tonne capacity all terrain mobile crane, max lifting height 63m, maximum radius 48m, three axle chassis	Significant - lifting capacity, lifting height, lifting radius, carrier size, multiple boom configurations	No
5.	CPCS excavator 360°	24 tonne crawler excavator with back hoe	18 tonne crawler excavator with backhoe	Minimal - weight and physical size	Yes
6.	CPCS excavator 360°	98 tonne crawler excavator with front shovel	18 tonne crawler excavator with backhoe	Significant - weight, physical size, control system, touch screen display access, front shovel	No
<b>Table E1 - Examples of when Self Familiarisation is and is not Suitable</b>					

## Annex F - Further Information and Guidance

### Legislation

Health and Safety at Work etc. Act 1974 (HSWA);

The Provision and Use of Work Equipment Regulations 1998 (PUWER)

The Construction (Design and Management) Regulations 2007 (CDM);

The Equality Act 2010;

### Other Publications

HSE publication L22 - *Safe use of work equipment - Provision and use of Work Equipment Regulations 1998 - Approved Code of Practice and Guidance*, HSE Books;

HSE publication L144 - *Managing health and safety in construction - Construction (Design and Management) Regulations 2007 - Approved Code of Practice*, HSE Books;

HSE publication - *Managing competence for safety-related systems, Part 1: Key guidance*, HSE website;

HSE publication - *Managing competence for safety-related systems, Part 2: Supplementary material*, HSE website;

HSE publication - *Human Factors Briefing Note No. 2 - Competence*, HSE website.

Strategic Forum for Construction Plant Safety Group - *Good Practice Guide on Medical Fitness to Operate Construction Plant*;

*National Occupational Standards for Learning and Development* download from :-  
<http://webarchive.nationalarchives.gov.uk/20110414152025/http://www.lluk.org/standard-s-and-qualifications/standards/learning-and-development-national-occupational-standards/>

### Useful Websites

Association of Lorry Loader Manufacturers and Importers	<a href="http://www.allmi.com">www.allmi.com</a>
Construction Plant-hire Association	<a href="http://www.cpa.uk.net">www.cpa.uk.net</a>
CITB	<a href="http://www.citb.co.uk">www.citb.co.uk</a>
Health and Safety Executive	<a href="http://www.hse.gov.uk">www.hse.gov.uk</a>
International Powered Access Federation	<a href="http://www.ipaf.org">www.ipaf.org</a>
National Plant Operators Registration Scheme	<a href="http://www.npors.com">www.npors.com</a>
Strategic Forum for Construction	<a href="http://www.strategicforum.org.uk">www.strategicforum.org.uk</a>
UK Contractors Group	<a href="http://www.ukcg.org.uk">www.ukcg.org.uk</a>

**NOTE:** The information in this annex is correct at the time of publication.

## Annex G - Working Group Membership

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K Minton            Construction Plant-hire Association

### *Members:*

B Bolton	HSE
P Brown	CITB
G Crick	HSE
J Dobson	UKCG
R Douglas-Jones	IPAF
K Fear	CITB
G Fisher QGM	Select Plant
S Foster	IPAF
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H Jones	NPORS
D Lambert	UKCG
A Newell	CITB
M Norton BEM	Norton Training and Testing
M O'Connor	HSE
G O'Neill	John Reilly Civil Engineering Ltd
P Rowley	UKCG
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