Unit 15: Monitor the Handover and Installation of Land-based Equipment

Unit code: T/600/3443

QCF Level 3: BTEC National

Credit value: 5

Guided learning hours: 30

Aim and purpose

The aim of this unit is to provide the learner with the knowledge, understanding and skills required to prepare for and handover the installation of land-based equipment and how these can be applied in practice. It is designed for learners in centre-based settings looking to progress into the sector or onto further/higher education.

Unit introduction

This unit is essential for those learners considering a career in the land-based sector where the supply of new and used machines to customers is an integral part of their company's profile. The unit is appropriate for learners working towards engineering based careers in agriculture, countryside management, forestry, horticulture and ground care.

It is likely that learners will already have studied a range of equipment service and repair and have a good operational insight into the equipment being prepared for handover to a customer. It is essential that health and safety, current legislation and acceptable working practices covered in previous units are emphasised at all times. This information should be relayed to the customers receiving the equipment.

The range of equipment appropriate to this unit could include tractors, all terrain vehicles, off road utility vehicles, self-propelled ground care equipment and their attachments, as well as fixed equipment such as materials conveying and processing equipment.

On successful completion of the unit, learners will be able to carry out machine assembly according to manufacturers' requirements and specifications, pre-delivery inspections, arrange delivery time and venue, install equipment on site to meet customer requirements and check equipment performance. It is now a legal requirement, and a major element of handover, to explain working and operational principles to the customer or potential operator(s) to ensure the equipment is used safely and correctly. It is essential that learners are aware of possible consequences of omitting or giving incorrect information during the handover process.

Learning outcomes

On completion of this unit a learner should:

1 Be able to perform the handover and installation of land-based equipment

2 Understand how to perform the handover and installation of land-based equipment.

Unit content

1 Be able to perform the handover and installation of land-based equipment

Handover and installation: correct procedures to handover and install the equipment (handbooks, stop procedures, safety issues, control and operation techniques, maintenance, service schedules, warranty and terms and conditions); criteria (legal, machine economic, performance, efficiency, professionalism)

2 Understand how to perform the handover and installation of land-based equipment

Reasons and benefits of handover and installation of products: legal; machine economic; performance; efficiency; professionalism

Installation: using a systematic process and the relevant quality control systems including special machine characteristics; handbooks; stop procedures; safety issues; control and operation techniques; maintenance; service schedules; warranty; terms and conditions; recipients signature

Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	**To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:**	**To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:**
P1 identify a suitable time and location, agree and prepare for handover and installation with customer [CT, EP, TW]	**M1** explain the legal requirements for the handover of a self-propelled item of equipment and either an attachment to a self-propelled item of equipment or a fixed item of equipment	**D1** produce suitable documentation covering the handover process of used equipment where no manufacturer or supplier documentation is available.
P2 use the correct procedure to handover and install the equipment as specified [SM, EP]		
P3 use an appropriate format to record the results of the installation [CT]		
P4 identify the reasons and benefits of handover and installation of products [RL]	**M2** explain possible consequences due to the omission of relevant handover information, incorrect information and incorrect set up procedures.	
P5 describe how to carry out an installation using a systematic process and the relevant quality control systems including special machine characteristics (CT)		
P6 describe technical advice and assistance within limits of own authority and how to deal with queries and problems. (IE)		

PLTS: This summary references where applicable in the pass criteria, in the square brackets, the elements of the personal, learning and thinking skills. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

Key			
	IE – independent enquirers	RL – reflective learners	SM – self-managers
	CT – creative thinkers	TW – team workers	EP – effective participators

Essential guidance for tutors

Delivery

Delivery of this unit will involve practical assessments, written assessment, visits to suitable collections and will link to industrial experience placements.

It is expected that learners will have completed units covering the service and repair of the equipment chosen for this unit. It is essential that learners have a good understanding of equipment operation and performance so that references to machine use and operation can be made when demonstrating handover procedures.

Learning experiences should be spread over as wide a range of techniques as possible to stimulate, motivate and enthuse learners. In addition to formal lectures, it is recommended that learners engage in practical activities, visit equipment suppliers and working demonstrations and, where possible, engage in practical fieldwork activities to familiarise themselves with equipment output, capabilities and procedures.

Due to the complexity of many machines, potential stored energy and heavy, often sharp components, it is essential that tutors emphasise safe working practices, health and safety issues and assessment of hazards and risk. Risk assessments are to be undertaken before practical activities being carried out and correct PPE used. Where waste packaging and materials are to be disposed of, procedures, in accordance with current legislations and company practice. must be followed.

Where possible, tutors/assessors should integrate assessment criteria into course delivery strategies to enable practical assessments to be undertaken as 'simulations'. The tutor/assessor could represent the potential customer handover processes are being demonstrated to. Learners should be encouraged to work to a safe, professional, high standard at all times.

Learners should be given the opportunity to base their learning and assessment on a range of equipment relevant to their chosen area of learning, industry contact may enable the acquisition of relevant new equipment which will be more suited to the tasks and assessment process than centre-based equipment which is likely to be pre- assembled, pre-used and may not be accompanied by the necessary documentation.

Learning outcome 1 looks at the practical aspects of correct handover procedures and relevant documentation to be used or devised to satisfy handover records.

Learning outcome 2 requires learners to explain the handover procedures, the reasons for and importance of the process and emphasise the need for accurate and complete handover information. They need to be aware of where technical information can be sourced to satisfy customer requirements.

Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan gives **an indication of the volume of learning it would take the average learner** to achieve the learning outcomes. It is **indicative and is one way of achieving the credit value.**

Learning time should address all learning (including assessment) relevant to the learning outcomes, regardless of where, when and how the learning has taken place.

Topic and suggested assignments/activities and/assessment
Introduction to unit.
Pre-delivery preparations and inspections (practical work).
Assignment 1: Perform Handover Process (P1, P2, P3)
Pre-delivery and handover documentation.
Assignment 2: Legislation and Documentation (M1, D1)
Legislation pertaining to handover procedures.
Monitor assignment development.
Reasons for handover and correct installation procedures.
Assignment 3: Benefits of Correct Handover Procedures (P4, M2)
Use of manufacturers' data, specifications and requirements.
Practical/oral assessments (simulations) and feedback.
Assignment 4: Installation Procedures and Sources of Technical Advice and Information (P5, P6)
Monitor assignment developments.
Unit review.

Assessment

For P1, P2 and P3 learners must carry out appropriate handover and installation procedures. These criteria could be assessed directly by the tutor during practical activities. If this format is used then suitable evidence from guided activities would be observation records completed by learners and the tutor, and accompanied by appropriate worklogs or other relevant learner notes. If assessed during a placement, witness statements should be provided by a suitable representative and verified by the tutor.

For P4, P5 and P6 learners must provide information relating to handover and installation situations. Evidence for these criteria could take the form of a pictorial presentation with notes (possibly using appropriate software or an overhead projector), an annotated poster or a written assignment.

For M1 and M2 learners must explain issues relating to handover and installation of given equipment. For M1, learners are expected to provide evidence in the context of a minimum of three types of land-based equipment. For D1 learners must produce suitable documentation for a given handover scenario without the aid of manufacturers documentation. Evidence for these criteria could take the form of a pictorial presentation with notes (possibly using appropriate software or an overhead projector), an annotated poster or a written assignment.

Programme of suggested assignments

The following table shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1, P2, P3	Perform Handover Process	Arrange with recipient, suitable time and venue to carry out handover and installation of equipment.	Practical assessments. Verbal Q&A. Completed records and documentation.

Criteria covered	Assignment title	Scenario	Assessment method
M1, D1	Legislation and Documentation	Explain the legislation, codes of practice and acceptable working practices for selected equipment to be handed over to recipient.	Oral/written evidence of relevant health and safety, acceptable working practices and appropriate current legislations. Documentation covering handover and installation of pre-used equipment.
P4, M2	Benefits of Correct Handover Procedures	Explain the benefits of correct and thorough handover and installation procedures and understand the legal, warranty and health and safety implications of not complying to requirements.	Written evidence of understanding of the need to carry out accurate and thorough handover procedures. Written evidence to show understanding of possible consequences arising from omission of information and incorrect set-up procedures following handover of equipment.
P5, P6	Installation Procedures and Sources of Technical Advice and Information	Record/document handover and installation procedures of selected equipment. Explain how technical advice may be sourced to satisfy recipient's enquiries and requirements.	Written evidence of handover.

Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit forms part of the BTEC land-based sector suite. This unit links with many units in this specification and has particular links with:

Level 2	Level 3
Land-based Engineering Operations – Carry out Servicing and Maintenance on Land-based Equipment	LEO29 Monitor the handover and installation of land-based equipment

Essential resources

Learners will need access to a range of new or currently available self-propelled equipment, attachments and fixed equipment such as materials conveying or processing equipment. The equipment should be appropriate for learners from agricultural, horticultural, grounds care, forestry and countryside management disciplines. Manufacturers' operator manuals must accompany all equipment and, where possible, examples of pre-delivery service sheets and records should be made available. Access to communications equipment to arrange handover of equipment to a recipient will be needed, such as phone, text or email.

Employer engagement and vocational contexts

Centres should be encouraged to develop links with contractors, dealers and farmers so modern equipment can be made available for this unit. Visits, where possible, to shows and working demonstrations could enhance learners' appreciation of modern technology and the systems available. Work experience would benefit learners who have little prior experience in the use of land-based equipment selected for this unit.

Indicative reading for learners

Textbooks

Bell B – *Farm Machinery (Resource Management)* (Old Pond Publishing, 2005) ISBN 1903366682

Cairns B – *The Farmers and Groundsmans guide to Planning Vehicle and Machinery Maintenance* (The Crowood Press Ltd, 2009) ISBN 1847971104

Culpin C – *Farm Machinery, 12th edition* (Blackwell Scientific, 1992) ISBN 0632031597

Witney B – *Choosing and Using Farm Machinery, First Edition* (Longman Higher Education, 1998) ISBN 0582456006

Journals

Profi International

Other publications

Lubrication charts and data sheets

Manufacturers' publications and manuals

Websites

www.bagma.com	British Agricultural and Garden Machinery Association
www.hse.gov.uk	Health and Safety Executive

Delivery of personal, learning and thinking skills (PLTS)

The following table identifies the PLTS opportunities that have been included within the assessment criteria of this unit:

Skill	When learners are ...
Creative thinkers	arranging a time and venue for a handover procedure selecting appropriate format for records describing installation procedures
Reflective learners	identifying reasons for and benefits of correct installation and handover
Team workers	arranging a time and venue for a handover procedure
Self-managers	using the correct procedure to hand over and install the equipment as specified
Effective participators	arranging a time and venue for a handover procedure.

Although PLTS opportunities are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

Skill	When learners are ...
Independent enquirers	arranging work placement opportunities
Team workers	carrying out pre-delivery inspections and the initial assembly of equipment
Effective participators	carrying out pre-delivery inspections and the initial assembly of equipment.

Functional Skills – Level 2

Skill	When learners are ...
ICT – Use ICT systems	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	using communication methods to arrange handover and installation
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	completing records
Manage information storage to enable efficient retrieval	archiving records
Follow and understand the need for safety and security practices	carrying out practical tasks
Troubleshoot	
ICT – Develop, present and communicate information	
Enter, develop and format information independently to suit its meaning and purpose including: • text and tables • images • numbers • records	
Bring together information to suit content and purpose	
Present information in ways that are fit for purpose and audience	producing appropriate recording systems for pre-used equipment handover and installation
Evaluate the selection and use of ICT tools and facilities used to present information	
Select and use ICT to communicate and exchange information safely, responsibly and effectively including storage of messages and contact lists	
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	arranging a handover and installation time and venue using communications equipment.
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	