



Australian Government

Department of Education, Employment and Workplace Relations

ICTTCR3191A Install radio plant and equipment on telecommunications structures

Release: 1

ICTTCR3191A Install radio plant and equipment on telecommunications structures

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to install basic telecommunications radio plant and equipment on telecommunications structures. This unit applies to standard telecommunications structures. A licensed rigger is required for the installation of some rigging equipment. The National Standard for Licensing Persons Performing High Risk Work applies to persons performing dogging and rigging work. Completion of the following units is required for certification at either basic, intermediate or advanced levels. CPCCLDG3001A Licence to perform dogging CPCCLRG3001A Licence to perform rigging basic level CPCCLRG3002A Licence to perform rigging intermediate level CPCCLRG4001A Licence to perform rigging advanced level. If operation of an elevated work platform is required, a licence may be required. Users should confirm requirements with the relevant federal, state or territory authority.
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Application of the Unit

Application of the unit	Technical staff who install basic telecommunications radio plant and equipment on telecommunications structures apply the skills and knowledge in this unit. They may use rigging plant and equipment, fall arrest, fall guarding and fall constraint and team communications.
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Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		
	ICTTCR2188A	Use rigging practices and systems on telecommunications network structures
	ICTTCR2189A	Use operational safety in a telecommunications rigging environment
	ICTTCR2190A	Use safe rigging practices to climb and perform rescues on telecommunications network structures

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for installation of radio plant	1.1. Prepare for given work according to relevant legislation, codes, regulations and standards 1.2. Arrange access to the site and discuss customer requirements 1.3. Inform appropriate personnel of existing and potential site hazards 1.4. Select tools and safety equipment required for safe rigging practice 1.5. Develop installation plans in agreement with customer or site supervisor 1.6. Procure materials and verify delivery against inventory according to industry practice
2. Install plant and equipment	2.1. Set up rigging equipment for safe and effective use according to specifications 2.2. Install telecommunications radio equipment and feeders according to specifications and industry practice following occupational health and safety (OHS) and environmental requirements 2.3. Maintain installation progress documentation according to company and customer requirements
3. Assist with testing and fault-finding	3.1. Assist with testing of telecommunications radio equipment mounted on telecommunications structures 3.2. Identify and locate faults by interpreting test results and rectify according to industry practice 3.3. Document test results according to specifications and customer requirements
4. Clean up site and complete documentation	4.1. De-rig and lower rigging equipment according to specifications 4.2. Restore site to customer expectations following completion of installation according to industry practice 4.3. Complete documentation and notify customer for sign off

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

REQUIRED SKILLS AND KNOWLEDGE**Required skills**

- communication skills to liaise with other personnel, including the use of radio devices
- literacy skills to interpret technical documentation, plans and specifications
- numeracy skills to take measurements and interpret results and evaluate different types of technical data
- planning and organisational skills to plan, prioritise and monitor own work and OHS responsibilities
- problem solving and contingency management skills to adapt rigging activities and requirements to particular sites and conditions
- safety awareness skills to:
 - apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
 - select and use required personal protective equipment conforming to industry and OHS standards
 - work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- task management skills to work systematically with required attention to detail and adherence to all safety requirements
- technical skills to :
 - select and use personal protective equipment
 - be aware of meteorology and weather prediction
 - use appropriate installation equipment

Required knowledge

- antenna principles
- features and operating requirements of rigging equipment
- relevant regulations and typical issues and challenges that occur onsite
- rigging practices and systems in relation to telecommunications radio structures, and related licensing and regulatory issues
- specific knowledge of:
 - electromagnetic radiation (EMR) safety practices
 - optical fibre cabling and equipment safety practices
 - working at heights safety practices
- specific OHS requirements relating to the activity and site conditions:
 - basic survival skills
 - company OHS procedures
 - hypothermia
 - remote area first aid

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the ability to:

- install basic telecommunications radio plant and equipment on telecommunications structures
- assist with testing and fault-finding basic telecommunications radio plant and equipment mounted on telecommunications structures
- use effective communications skills related to:
 - dogging
 - work associates
 - supervisors
 - team members
 - enterprise documentation.

Context of, and specific resources for assessment

Assessment must ensure:

- site on which rigging operations may be conducted
- rigging and safety equipment
- relevant regulations, standards, specifications and manuals.

Methods of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- direct observation of the candidate setting up and carrying out installation work on a telecommunications structure
- oral or written questioning of the candidate to assess OHS requirements and work practices associated with installing radio plant and equipment on telecommunications structure.

Guidance information for assessment

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended,

EVIDENCE GUIDE

	for example: • ICTTCR3192A Protect against electromagnetic radiation and system hazards when working on telecommunications radio sites. Aboriginal people and other people from a non-English speaking background may have second language issues. Access must be provided to appropriate learning and assessment support when required. Assessment processes and techniques must be culturally appropriate, and appropriate to the oral communication skill level, and language and literacy capacity of the candidate and the work being performed. In all cases where practical assessment is used it will be combined with targeted questioning to assess required knowledge. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. Where applicable, physical resources should include equipment modified for people with special needs.
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Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Relevant legislation, codes, regulations and standards may include:

- appropriate licences that may be required:
 - crane
 - dogging
 - rigging
 - scaffolding

RANGE STATEMENT

- winch
- AS 1353.1:1997
- AS 1353.2:1997
- AS 1657:1992
- AS 2319:2001
- AS 2626:replaced by AS/NZS 1891.4:2000
- AS 2089:2008
- AS 3775.1:2004
- AS 3775.2:2004
- AS 3777:2008
- AS 4497.2:1997
- AS/NZS 1891.1:2007
- AS/NZS 1891.4:
- AS/NZS 4801:2001
- AS/NZS ISO 14001:2004
- Equipment Certifications e.g. NFPA 1983 (2006 edition), NFPA/UL G-rated (General Use)
- CE, American National Standards Institute (ANSI) equipment standards
- enterprise standards
- equipment standards, intrinsically safe lightning protection, site engineering standard
- OHS
- Radcoms Act
- Telecoms Act
- Australian Communications Industry Forum (ACIF) standards and codes
- Australian Communications and Media Authority (ACMA) technical standards
- Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) EMR standard
- Australian building codes and regulations
- Australian standards
- enterprise standards
- environmental protection
- fire regulations
- heritage legislation
- international standards
- local government
- WIs, CIs, Business Operating Procedures

RANGE STATEMENT	
	(BOPs), Radiocommunications Assignment and Licensing Instructions (RALIs), assignment guidelines.

RANGE STATEMENT	
Customer requirements may include:	• availability of asset owner site personnel • compatibility with rest of network • timelines • type of equipment • type of structure.
Tools may include:	• crane • forklift • hand tools • load tension gauge • mechanical • power tools.
Safety equipment may include:	• aerial safety belts and lines • anchor straps • anchors • crane cage • earmuffs • elevated platform • equipment guards • fall arrest devices and systems • fall constraint systems • fall guarding systems • flashing lights • gloves • guards • helmets • lanyards • pulleys • rescue harness • rigging plates • rope clamps • safety cages • safety glasses • safety harnesses: • basic • full body fall arrest • sit harness • scaffold deck • static lines • warning signs and tapes.

RANGE STATEMENT***Installation plans*** may include:

- EMR hazard management plan against an on site situation
- fall arrest systems:
 - double lanyards
 - pole straps
 - static lines
- installation structures
- plans and specifications detailing:
 - cabling
 - compatibility issues
 - location of antennae and hardware
 - material types and quantities
 - tools required
- preparing for work at a telecommunications site with optical fibre and laser equipment
- relevant legislation, codes, regulations and standards
- rigging systems, methods, and equipment
- safe working practices:
 - fall guarding
 - fall restraint systems
 - installation of fall arrest
 - lifting methods
 - load calculation
 - personal protective equipment
 - safety issues in roof work
 - safety plans
 - site hazard identification and control measures
- specifications for bolts:
 - high strength
 - high tensile
 - mild
 - stainless
 - torque requirements
- specifications for tensioning:
 - antenna mounts
 - load cells
 - temporary anchors

RANGE STATEMENT	
	• terminations: • bulldog grips • dead ends • preformed.

RANGE STATEMENT	
<i>Procure materials</i> may include:	• handling • purchasing • storage • withdrawal from stock or stores.
<i>Equipment</i> may include:	• antenna systems • cabinets • cable trays • coaxial feeders and connectors • connectors • ducting • earthing systems in communications • feeders • frames • microwave systems • optical fibre cable and equipment on network structures • steel work • terminating blocks • waveguide.
<i>Testing</i> may relate to:	• alignment of antennas and line of sight systems • antennae • cables • connectors • earthing • feeders.

Unit Sector(s)

Unit sector	Telecommunications
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Co-requisite units

Co-requisite units	

Competency field

Competency field	Telecommunications Rigging Installation
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