

Survey Engineer Grade II

S30 and S32

The following should be read and used in conjunction with the information pack 'Competence Assurance & Assessment: Introduction for Experienced Freelance Personnel'.

Evidence Required

- Competence appraisal:** ♦ at Survey Engineer Grade II level
- Work records:** ♦ one proof of attendance at an offshore safety induction
♦ copy of survey equipment fault report completed by the candidate
- Witness testimonies:** ♦ one example of the candidate following safety instructions
♦ one example of the candidate using the appropriate safety equipment, especially in the use of electronic tools
♦ one examples of the candidate setting up computer hardware and technical software packages and using fault-finding techniques to maintain system
- Essential knowledge:** ♦ written answers to Survey Engineer Grade II questions
- Curriculum Vitae** ♦ detailing offshore trips, work scope, clients, regions, etc.

IMCA Framework Requirements

The competence assurance and assessment framework developed by IMCA (the International Marine Contractors Association) sets out a number of elements for each safety-critical position. The following table shows how competence can be demonstrated against each element.

Code	Demonstration	Covered by
S/S30/000/01 Safety	Participation in offshore safety induction Ability to follow safety instructions and use appropriate safety equipment for deck and outside operations Ability to follow muster calls, shipboard drills and exercises Demonstrates an understanding of company health, safety, environmental and quality procedures	R, CA(a) CA(a), WT, Q6 CA(a), WT, Q5 CA(a), WT
S/S30/000/02 Emergency Procedures	Thorough understanding of company emergency procedure documents and where to find them Ability to recognise a potential or actual emergency situation and report it accordingly Ability to describe own role in emergency situations and that of colleagues	CA(a), Q4 CA(a), Q1,3 CA(a), WT, Q5
S/S30/000/03 Behavioural Factors	Establishment and maintenance of good working relationships with both junior and senior colleagues Ability to use clear, concise and correct verbal communication with colleagues and others Ability to recognise personal limitations and effectively seek advice	CA(b) R, CA(b) CA(b)
S/S32/000/06 Software	Ability to prepare the computer system for software installation Ability to connect computer hardware and peripheral devices Ability to perform basic fault-finding within the survey software	CA(e), WT, Q7,8 CA(e), WT, Q7,8 CA(f), WT, Q9,10,11

Code	Demonstration	Covered by
S/S32/000/07 Survey Systems	Demonstrate an understanding of electronics to Senior Survey Engineer Ability to use electronic tools safely Demonstrate an understanding of safe electronic working practices Ability to adopt a logical approach to fault-finding Ability to locate and effectively use technical reference material, e.g. manuals, schematic drawings etc.	CA(f), WT, Q12 CA(f), WT CA(f), Q15 R,CA(f), (g) CA(g), Q7
S/S32/000/08 Management and Administration	Ability to report repairs and faults to line manager or offshore supervisor	R, CA(g), Q18

Q Question (written answer required)

CA Competence Appraisal Form

R Record of work; document or product

WT Witness Testimony

Sample Achievement Record

Candidate name:

First assessor name:

	Assessment Decision	Approval of Internal Verifier/ Competence Focal Point
Safety		
Emergency Procedures		
Behavioural Factors		
Software		
Survey Systems		
Management and Administration		

Comments:

First assessor signature: Date:

Verifier signature: Date:

Sample Competence Appraisal

The appraiser must have observed the appraisee completing the task before completing the relevant section. Where necessary a number of different appraisers may be used to complete the form fully.

Appraisee name:

Task	Feedback to Appraisee	Appraiser <i>(Print name, sign and date)</i>
<p>a) Demonstrate general safety / emergency awareness, familiarisation with worksite and ability to identify hazards.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>b) Maintain effective teamwork and communication.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>c) Demonstrate basic IT skills including Office packages and data management and basic CAD skills for charting.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>d) Recognise standard seabed conditions and pipeline / subsea structure engineering features both real-time and from video.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>e) Installs computer systems and technical software packages and performs basic fault-finding of installation.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>f) Demonstrates basic electronic skills including safe use of tools and knowledge of safe working practices.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		

Task	Feedback to Appraisee	Appraiser <i>(Print name, sign and date)</i>
<p>g) Demonstrate a logical approach to fault-finding, use of technical reference material and fault reporting system</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>h) Understand and assist with calibration of surface and sub-surface positioning systems and survey sensors</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>i) Demonstrate basic understanding of survey sensor operational requirements and expected outputs.</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>		
<p>Projects</p> <p>Indicate which Projects you have participated in during the last 12 months. Specify project work-scope.</p>		
<p>Projects</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>	<p>N.B. Feedback should be based on projects detailed above</p>	
<p>Hardware/Software</p> <p>Indicate which Hardware/Software you have used during the last 12 months</p>		
<p>Hardware/Software</p> <p>Performance is exceptional <input type="checkbox"/></p> <p>Performance is competent and dependable <input type="checkbox"/></p> <p>Additional skills or experience required <input type="checkbox"/></p>	<p>N.B. Feedback should be based on Hardware/Software detailed above</p>	

Appraisee comments:

Appraisee signature:

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Date:

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Essential Knowledge – Sample Questionnaire

1 What is the definition of 'near miss' incident?

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2 List the most important hazards encountered when working offshore.

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3 For your worksite describe in detail how any safety incidents are reported.

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4 Where can you find the company emergency procedure documents for your worksite?

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5 Upon hearing a vessel/installation muster alarm, describe the actions that should be taken by the survey team?

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6 What are the aims of a toolbox talk?

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7 Draw a block diagram showing a typical computer network normally found onboard a survey vessel, including PCs for ROV, online and offline.

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8 Describe what precautions must be taken when installing hardware to computers

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9 If one or more sensors fail to be read by the navigation system, how would you go about assessing where the problem lay?

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10 What are the most common reasons for data not reaching the navigation system in readable format?

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11 How would you test for an output from a survey sensor such as a gyro?

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12 What are the main differences between 20mA current loop, RS422 and RS232? What is required to connect such outputs to the online software?

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13 What factors should be taken into consideration when siting antennae for data and video telemetry and DGPS satellite and differential during mobilisations?

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14 Explain why it is critical to safety to choose carefully where on the vessel to deploy over the side equipment, i.e. CTDS probe.

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15 Discuss what steps should be taken when working with potentially dangerous voltage levels.

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16 List any potentially hazardous operations which may occur during a mobilisation or demobilisation. Indicate where permit application and extra PPE that may be required.

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17 Why is it necessary to have tidy and clearly labelled cabling between sensors and the relevant operating systems?

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18 What should accompany all equipment sent to base for repair?

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