

Surveyor Grade II

S30 and S31

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 Surveyor Grade II level
- Work records:**
- ♦ one proof of attendance at an offshore safety induction
 - ♦ copy of survey logbook entries over a minimum 14 day period completed by the candidate
 - ♦ one proof of survey sensor calibration
- Witness testimonies:**
- ♦ one example of the candidate following safety instructions
 - ♦ one example of the candidate using the appropriate safety equipment
 - ♦ one examples of the candidate operating the online navigation and positioning system and monitoring quality
 - ♦ one example of the candidate operating the data acquisition system and monitoring quality
- Essential knowledge:** ♦ written answers to Surveyor 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) WT, CA(a), 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 and written communication with colleagues and others Ability to recognise personal limitations and effectively seek advice	CA(b) R, CA(b) CA(b)
S/S31/000/06 Software	Demonstrate an understanding of how the survey software packages operate and how they are structures Ability to run up the survey software packages for a variety of survey operations Ability to verify the current datum and related geodetic parameters are correctly selected Ability to select the appropriate navigation vessel for a specific operation	Q9 WT, CA(c) Q11, 14 CA(f), Q11
S/S31/000/07	Demonstrate an understanding of quality control objectives	WT

Code	Demonstration	Covered by
Data Acquisition	<p>Ability to monitor data quality within the survey system and to identify anomalous cases to senior personnel</p> <p>Ability to power up online system components and bring system online</p> <p>Ability to enable and disable logging as required during survey operations</p> <p>Ability to monitor all system inputs and diagnose any data outage problems</p> <p>Demonstrate an understanding of the calibration requirements for the online survey system</p>	<p>CA(g)</p> <p>CA(f)</p> <p>CA(g)</p> <p>CA(g)</p> <p>R</p>
S/S31/000/08 Data Management	Ability to perform online data logging to company standard procedures	WT, CA(j)
S/S31/000/11 Navigation and positioning	<p>Demonstrate an understanding of the basic operating principles of surface and sub-surface positioning systems</p> <p>Demonstrate an understanding of the calibration requirements and procedures for surface navigation equipment</p> <p>Ability to operate standard surface navigation equipment</p>	<p>CA(h)</p> <p>CA(i)</p> <p>WT, CA(h)</p>
S/S31/000/12 Co-ordinate Reference Systems	<p>Demonstrate an understanding of basic geodetic terminology</p> <p>Demonstrate an understanding of commonly used horizontal and vertical datum used for offshore surveys</p> <p>Demonstrate an understanding of grid and geodetic trigonometry and its application in offshore surveys</p> <p>Demonstrate an understanding of precision, accuracy and error as they apply to the derivation of a position from observations</p>	<p>WT</p> <p>WT</p> <p>Q15</p> <p>Q18</p>

Q Question (written answer required)

R Record of work; document or product

CA Competence Appraisal Form

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		
Data Acquisition		
Data Management		
Navigation and Positioning		
Co-ordinate Reference Systems		

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) Assist with setting up the online/navigation system for a standard survey, ensuring correct datum parameters, vehicles, sensors etc. are selected</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) Operate and maintain online data logging and navigation software for a variety of standard survey operations.</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) Monitor data quality within the survey system in accordance with standard / project specific procedures. Report any data loss/poor quality to supervisor.</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 basic principles of, and operate, surface and sub-surface positioning systems.</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) 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>j) Maintain online survey log and associated records in accordance standard / project specific procedures</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>	N.B. Feedback should be based on projects detailed above	
<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>	N.B. Feedback should be based on Hardware/Software detailed above	

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 Explain the importance of offsets to vessel and vehicle survey sensors and effect on logged data.

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8 Why is a logbook kept and how is it used throughout the life of the project?

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9 Explain the basics of the required interfaces between the survey navigation system and the associated peripherals on a standard survey spread.

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10 Explain the importance of sound velocity measurements and the impact of velocity profiles on depth measurement and ray bending.

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11 What checks might you undertake at the start of your shift?

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12 What sort of information would you record regarding the status of an LBL transponder prior to deployment?

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13 How would you QC graphics data imported into the on-line navigation system?

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14 What methods are available to verify geodetic parameters are being applied correctly in the navigation system?

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15 What is the difference between ellipsoidal and geoidal data? Which is closer in height to MSL?

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16 What action should you take if the DGPS or USBL becomes unstable?

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17 Explain precision, accuracy and error as they apply to the derivation of a position from observations

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