

Senior Surveyor

S10 and S11

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 Senior Surveyor level
- Work records:**
- ◆ copy of a report written by the candidate that has been submitted to onshore management or the client. Possible examples: daily report, stores request, end of trip report, fault report, interim field report or site memo.
 - ◆ copy of positioning system calibration summary report and survey sensor calibration check sheets approved by candidate. Possible examples: ROV/Vessel gyro calibration, doppler velocity log, CTDS probe, motion reference units etc.
- Witness testimonies:**
- ◆ one example of the candidate leading by example and demonstrating general safety awareness
 - ◆ one example of the candidate coaching junior personnel in a technical area
 - ◆ one example of the candidate's ability to quality control the online system
- Essential knowledge:**
- ◆ written answers to Senior Surveyor 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/S10/000/01 Safety Awareness	Demonstrate in-depth knowledge of company health, safety, environmental and quality procedures Ability to plan and perform risk assessments for all safety critical areas in a work environment Ability to perform "toolbox talk" meetings/briefings immediately prior to specific to specific survey operations Demonstrate a commitment to safety by setting an example on safety issues and demonstrating safety leadership to subordinates and work colleagues	CA (a) CA(c), Q2,4 WT, CA(a), Q3 WT, CA(b), Q2
S/S10/000/02 Emergency Procedures	Ability to take appropriate action in the event of an emergency situation Ability to produce coherent and concise reports on emergency situations	CA(a), WT WT
S/S10/000/03 Behavioural Factors	Ability to explain and instruct subordinates in the use of equipment and systems Ability to take charge and show leadership qualities Ability to communicate effectively with client and company management, other team members and supervisor	CA(b), WT CA(d) CA(d), Q9
S/S10/000/04 IT Skills	Ability to accurately report software faults and the context in which they are found to the appropriate support staff	R, CA(h), WT
S/S10/000/05 Seamanship	Ability to instruct personnel in the correct use of safety and survival equipment and aids Demonstrate a practical knowledge of vessel operations	CA(b), WT WT, Q9
S/S10/000/06 Prepare Project Procedures and Plans	Ability to prepare project specific procedures in accordance with client specification and project requirements Ability to understand and gather the necessary background information and data (work pack) to undertake the specified work, e.g. existing data, drawings and charts	CA(e) CA(e)

Code	Demonstration	Covered by
S/SI I/000/07 Data Acquisition	<p>Ability to plan survey data acquisition to ensure compliance with specifications or procedures</p> <p>Demonstrate a thorough knowledge of the operating principles of the acquisition system</p> <p>Demonstrate a knowledge of the critical elements that can effect system performance and data quality and how their effects can be minimised</p> <p>Ability to monitor system performance against specification and re-assess quality control criteria in light of field use</p> <p>Ability to verify that the online system has been correctly installed an configured for use</p> <p>Ability to verify that the online system is performing within specification</p> <p>Demonstrate a clear understanding of calibration principles sufficient to assess calibration validity</p> <p>Ability to assess calibration results and approve or otherwise the result based on knowledge, experience and company standards</p>	<p>CA(e)</p> <p>CA(i)</p> <p>CA(l), Q10</p> <p>WT, CA(g), (i), Q14</p> <p>CA(f), (g)</p> <p>WT, CA(g), (i), Q14</p> <p>R, CA(f), (h)</p> <p>R, CA(f), (h), Q13, 15</p>
S/SI I/000/09 Data Presentation	<p>Demonstrate a clear understanding of reporting requirements and company procedures for reporting</p> <p>Ability to write a detailed and concise survey field report</p> <p>Ability to check reports against requirements, specifications and related items e.g. charts, data listings etc.</p> <p>Ability to perform detailed quality control checks on processed survey data</p>	<p>R, CA(j), Q11</p> <p>R, CA(j)</p> <p>CA(j)</p> <p>WT, Q12</p>
S/SI I/000/11 Navigation and Positioning	<p>Ability to plan use of surface positioning systems ensuring coverage and accuracy requirements are achieved</p> <p>Ability to install LBL acoustic positioning systems ensuring coverage and accuracy are achieved</p>	<p>CA(g)</p> <p>CA(h)</p>
S/SI I/000/12 Co-ordinate Reference Systems	<p>Ability to select a geodetic datum for a particular work region, taking into account datum transformation parameters.</p>	<p>Q17</p>

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		
IT Skills		
Seamanship		
Prepare Project Procedures and Plans		
Data Acquisition		
Data Presentation		
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 safety and 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) Lead by example and coach other personnel in general safety awareness.</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) Lead risk assessment teams and chair toolbox talks for operational tasks.</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) Maintain effective teamwork and communication, including the supervision of a shift.</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) Prepare project procedures and gather necessary data, drawings, charts etc.</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) Supervise basic calibration of survey sensors and devices. Assess results are within company/eqpt. standards, approve and ensure offsets are entered correctly in 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>		

Task	Feedback to Appraisee	Appraiser <i>(Print name, sign and date)</i>
<p>g) Install and monitor surface navigation eqpt. Perform positioning comparisons to confirm quality of solution.</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) Plan use of LBL and USBL positioning systems to ensure coverage and accuracy are achieved. Supervise calibration of systems and approve results</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 full understanding of data acquisition system and factors affecting performance. Verify is correctly configured and performing within specification.</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) Compile precise field and final reports and check against data listings, client requirements etc.</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>k) Process acquired survey data in accordance with standard and 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</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 ticked above</p>	

Task	Feedback to Appraisee	Appraiser <i>(Print name, sign and date)</i>
Hardware/Software Indicate which Hardware and Software you have used during the last 12 months		
Hardware/Software Performance is exceptional <input type="checkbox"/> Performance is competent and dependable <input type="checkbox"/> Additional skills or experience required <input type="checkbox"/>	N.B. Feedback should be based on software / hardware ticked above	

Appraisee comments:

Appraisee signature:

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Date:

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Essential Knowledge – Sample Questionnaire

- 1 What criteria must be considered before deciding to conduct a formal risk assessment?
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- 2 If a shift team member approached you with a safety concern how would you respond and follow-up?
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- 3 What are the objectives/aims of a toolbox talk and how as the chairman of the talk can you ensure that the objectives / aims have been met?
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- 4 What are the definitions of hazard and risk? What steps are required to be taken to complete a risk assessment and how are risks evaluated?
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- 5 If a member of your shift team is feeling physically un-well what actions would you take?
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- 6 If a member of your shift team is acting out of character or is un-communicative what actions would you take?
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- 7 How can you best discover the limitations and abilities of a trainee on your shift?
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- 8 What are the definitions of the following weather terms, veering wind and backing wind?
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9 What actions can you take to ensure that a co-operative relationship is maintained between the client's representative, company management and the survey/inspection team?

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10 Outline where the performance of various sensors can be monitored and explain how the performance of certain sensors can be verified in the field without the requirement to undergo a full calibration routine.

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11 Where can one usually find details of what is required for a project and which final deliverables are to be supplied to the client?

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12 Outline areas where cross-checking of discrepancies is vital to ensure that all deliverables agree with each other and explain the relevant procedures and checks that are normally in place to ensure this is the case.

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13 What are the implications of using uncalibrated sensors offshore?

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14 For sub-surface positioning, quote the expected accuracy's for the following systems:

- EHF acoustics
- MF acoustics
- LUSBL
- USBL
- HiPAP

15 When calibrating the USBL system with a vessel spin, what shape would you expect to see traced on the navigation screen by the transponder if there was an error in the applied system offsets, assuming that the pitch, roll and azimuth corrections were good?

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16 Describe how standard deviation of a position fix can be used as an indication of quality.

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17 Explain the implications of origin when using UTM co-ordinate system (e.g. 3° East and 3°West)

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