

Senior Survey Engineer

S10 and S12

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 Survey Engineer level
- Work records:**
- ◆ copy of an equipment performance report written by the candidate that has been submitted to onshore management or the client.
 - ◆ copy of risk assessment documentation written by the candidate
 - ◆ copy of survey eqpt inventory and/ or inward /outward shipping manifest
- Witness testimonies:**
- ◆ one example of the candidate leading by example and demonstrating general safety awareness and coaching junior personnel in safety matters
 - ◆ one example of the candidate supervising junior personnel in a technical environment, including equipment operation and modification
 - ◆ two examples of the candidate's ability to mobilise and demobilise the survey systems, obtaining necessary permits required
 - ◆ one example of the candidate's ability to operate survey sensors, e.g. towed side scan sonar
- Essential knowledge:**
- ◆ written answers to Senior Survey Engineer 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) R, CA(c), Q2,4 CA(c), WT, 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
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	WT, CA(b) CA(d) CA(d), Q9
S/S10/000/04 IT Skills	Ability to accurately report and 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, Q8
S/S10/000/06 Prepare	Ability to prepare project specific procedures in accordance with client specification and project requirements	CA(e)

Code	Demonstration	Covered by
Project Procedures and Plans	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)
S/SI 2/000/07 Survey System Preparations	Demonstrate in-depth knowledge of survey IT and networking Ability to plan a survey IT network for installation Ability to plan mobilisation and demobilisation activities Ability to supervise subordinate survey technical personnel Ability to verify that all equipment calibration documentation is available and in date.	CA(h) CA(h) WT, CA(f) WT CA(i)
S/SI 1/000/08 Survey Systems Installations	Ability to liaise with marine crew with regard to deck operations and equipment installations during mobilisation and demobilisation Demonstrate knowledge of survey systems deck space requirements Ability to liaise with third party organisations and ensure all necessary documentation and permissions are obtained	WT, CA(g) CA(f) CA(g)
S/SI 1/000/09 Equipment Maintenance	Ability to supervise equipment modifications Ability to take responsibility for checking and inspecting survey systems for safety and installation compliance Demonstrate advanced fault-finding skills	WT CA(i) R, CA(k)

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		
Survey Systems Preparation		
Survey systems Installation		
Equipment Maintenance		

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 eqpt. 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) Plan and co-ordinate mobilisation and demobilisation activities, survey system deck space requirements and liaise with marine crew with regard to deck 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 (Print name, sign and date)
<p>g) During mobilisations and demobilisations liaise with third parties to ensure all necessary documents and permits are obtained.</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) Check installation of computer systems and technical software packages, diagnose faults and rectify.</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) Check installation of survey sensors for safety and installation compliance. Understand Calibration techniques and offset requirements.</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) Operate ancillary survey equipment, including safe launch and recovery of sensors and rigging skills.</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) Complete maintenance logs, fault reports, correctly label faulty equipment and prepare for transit</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 workscope</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>	

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 detailed 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 team?

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10 What factors must be considered in pre-mobilisation assessment visits?

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11 What are the safety requirements for the deck area to be used for survey operations?

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12 What reports are required after mobilisation and demobilisation activities, who should receive them and where do risk assessments fit into the process?

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13 List any mobilisation operations that may require the use of a permit or direct permission from bridge crew or vessel master. List any additional PPE that would be required in this instance.

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14 When installing navigational antennae and cabling, what are the main hazards to avoid to ensure there is no future damage to the cable, that the antennae are able to receive the strongest signal and that there is no danger to personnel?

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15 When installing radio transmitting eqpt. such as telemetry, VHF radios etc. explain why it is essential that the antenna system is connected before applying power.

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16 How should you approach a major problem in terms of reporting the fault, finding technical information, seeking additional help and reporting to supervisors and clients?

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17 List, in order of probability, the possible causes of equipment failure in a newly mobilised survey system.

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18 Immediately following the completion of a mobilisation what visual and physical checks would you carry out prior to applying power to the survey equipment?

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19 When launching towed sensors in a relatively rough sea describe the how you would time the launch in order to reduce the possibility of any damage to the system or cabling?

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