James Fisher
Marine Services

Risk Assessment Procedure

CONTENTS:

Purpose

Risk Assessments are an essential part of the planning stage of the **James Fisher Marine Services** Integrated Management System. This procedure defines the process of hazard identification leading to Risk Assessment eg. new tasks or equipment, method statement etc.

The main objective of a Risk Assessment is to determine the control measures required by the organisation in order to reduce the level of occupational injuries or ill health through health and safety management and compliance with relevant legislation.

Scope

This procedure applies to all of **James Fisher Marine Services** activities and is considered suitable for the vast majority of situations. However, for complex operational activities or very hazardous situations a more in depth assessment may be required using methodology such as quantitative risk assessment.

Main References

The Health and Safety at Work etc. Act 1974. (Particular attention payed to Sections 2 and 3).

The Management of Health and Safety at Work Regulations 1999

5 Steps to Risk Assessment (INDG163 rev2)

Definitions & Glossary of terms

Hazard: a hazard is anything that may cause harm

Hazards often fall within four categories connected to the activity. When identifying hazards, it is necessary to have an understanding of what constitutes a hazard, below is a list of hazards, this list is not considered exhaustive:

Physical hazards	Occupational health hazards	Hazardous substances	Miscellaneous hazards
Slips trips and Falls	Ionising radiation	Chemicals	Extreme weather
Working at Height	Lasers	Micro-organisms	Lone working
Machinery	Ultra violet light	Biological hazards	Confined spaces
Electricity	Cold objects	Asbestos	Access and egress
Welding/cutting, etc	Hot objects	Other substances	Animals
Mobile Plant, Flt, etc	Temperature		Work at height
Vehicles on site	Noise		Working over water
Pressurised systems	Vibration		
Excavations	Manual handling		
Restricted access			

Risk: the risk is the likelihood whether high or low, that the hazards identified may cause harm to individuals with an indication of the potential severity.

General approach

5 steps to Risk Assessment:

- Step 1: Identify the hazards.
- Step 2: Identify who or what may be harmed and how.
- Step 3: Assess the risk and decide if the existing control measures are adequate or whether additional controls are required.
- Step 4: Record and share the findings.
- Step 5: Monitor and review.

James Fisher Marine Services has adopted this approach

Risk assessments must be completed by those who have the competence to identify hazards and measures of either eliminating or reducing the risk whilst recommending relevant measurers to protect those carrying out the task and those who may be at risk from the task. Risk assessment may be carried out by a group of persons who each have a competence in the relevant area of work.

Risk assessments must always be made in cooperation with those carrying out or about to carry out the work and 'MUST' be communicated to all members of the workforce.

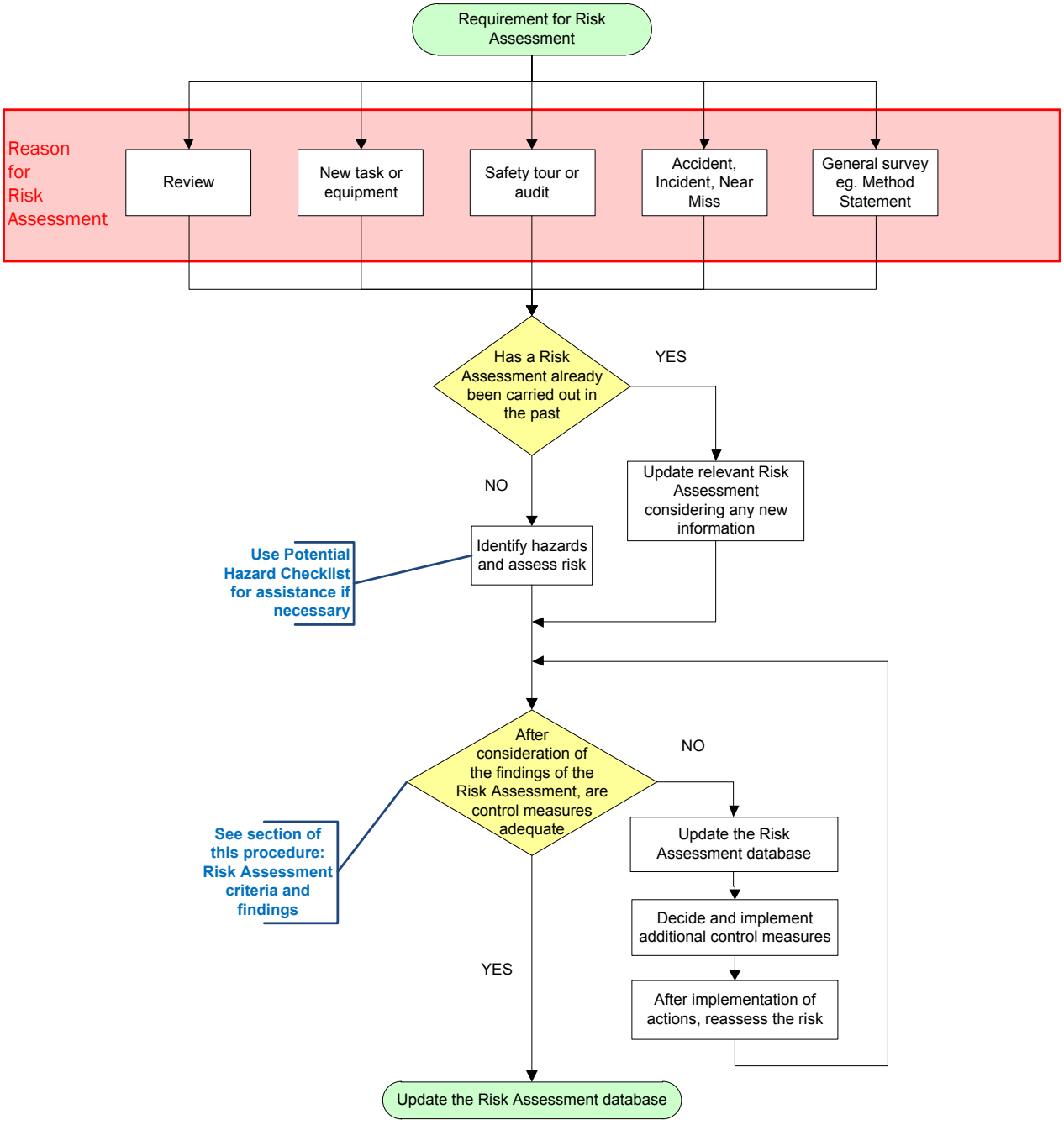
In the case of external contractors, Risk assessments must be submitted to James Fisher Marine Services at least 10 days prior to date of commencement of work. This allows James Fisher Marine Services time to review and, if necessary, return for explanation or updating to the originator prior to commencement of any work.

Risk assessments for any diving operations being carried out MUST be submitted to James Fisher Marine Services a minimum of three working weeks prior to date of commencement of work

All risk assessments/task risk assessments/method statements must be approved by James Fisher Marine Services prior to commencement of any work being carried out.

All persons carrying out the task or working in proximity of the associated and identified hazards are to read the risk assessment and sign off on the relevant form, indicating that they have read and understood the risk assessment and will adhere to information contained within it. If the risk assessment is not understood then that/those person(s) are to bring it to the attention of the Site Manager for further explanation or review. A Tool Box Talk with a sign off section is attached to the task risk assessment form

Risk Assessment procedure.



Risk Assessment Criteria & Findings

In order to establish a common understanding of risk levels, **James Fisher Marine Services** has established standard definitions for High, Medium and Low Risks. These definitions are based on a combination of Consequences/Severity and Likelihood/Probability.

Consequence or Severity:

When determining the potential result of an accident or incident, it is important to understand that **the severity is based on the most likely outcome and not the worst case scenario.**

		INJURY	FINANCIAL	MEDIA
	Minor	First Aid injuries or below	Under £10K	No media coverage
	Moderate	An incident that results in restricted working or external medical treatment	£10K - £100K	Local press coverage
	Serious	An incident that results in a Lost Time Accident	£100K - £1M	Regional press or local TV coverage
	Major	An incident that results in serious injury or permanent disabilities	£1M - £5M	National press or regional TV coverage
	Catastrophic	An incident that results in one or more fatalities	£5M upwards	National press and TV coverage

Likelihood or Probability:

1	Virtually impossible	Very unlikely, improbable, practically impossible
2	Remote	Unlikely, remote, unexpected or surprise event
3	Moderately likely	Possible, could happen but not often or regularly
4	Likely	Probable, possible on occasions, not a surprise
5	Virtually certain	Almost certain, expected, possibility of repeated events

Risk levels:

Once both the consequence and probability have been ascertained, the risk level can be calculated by multiplying the Consequence or Severity and the Likelihood or Probability by using the following matrix.

RA matrix		Likelihood or Probability				
Consequence or Severity	5					
	4					
	3					
	2					
	1					
		1	2	3	4	5

	Severity X Likelihood or Probability
HIGH RISK	15 TO 25
MEDIUM RISK	7 TO 14
LOW RISK	1 TO 6

Findings:

The risk level should be used to decide the need for further action.

RISK LEVEL	COMMENT
HIGH RISK	**CONTROL MEASURE TOO LOW** There is a requirement to reduce the risk to a reasonable level. If having identified all reasonable control measures, the residual risk is still high then the task may only be carried out with the authorisation of the Senior Manager.
MEDIUM RISK	**CONTROL MEASURE NOT SUFFICIENT** There is a requirement to reduce the risk further if reasonably practicable. If having identified all reasonable control measures the residual risk is still medium then the task should only be carried out with the authorisation of the immediate supervisor or SHEQS Manager.
LOW RISK	**CONTROL MEASURE SUFFICIENT** Please note that additional cost effective control measures that can further reduce risk might be appropriate.

POTENTIAL HAZARD CHECKLIST

1. Slips, Trips and Falls / Walkway

- ❑ Conditions of floor (wet, uneven, greasy)
- ❑ Obstacles at trip height or at head height
- ❑ Defective ladders, handrails or toe boards
- ❑ Housekeeping: before, during and after works

2. Working at height

- ❑ Work over dangerous environment (liquids/machinery)
- ❑ Work above holes/pits

3. Falling or moving objects

- ❑ Stacking / storage
- ❑ Drooped objects

4. Manual Handling

11. Health Hazards: Physical / Ergonomic

- ❑ Vibration injuries
- ❑ Radiation (UV, IR, ionizing radiations)
- ❑ Noise: in excess of 85 dB(A)
- ❑ Heat exhaustion/Heat stroke
- ❑ Sunburn
- ❑ Hypo/Hyperthermia
- ❑ Work on display screens / monitors
- ❑ Ventilation
- ❑ Extreme temperatures
- ❑ Contact injury with hot or cold surfaces
- ❑ Lighting
- ❑ Workstations and seating

12. Electrical

- ❑ Shocks
- ❑ High voltage rating
- ❑ Proximity of associated plant (eg. Pumps)
- ❑ Live equipment

- ❑ Excessive weight / Difficult to grasp the load
- ❑ Poor posture (twisting, stretching, bending, pushing, pulling, lifting, carrying)
- ❑ Solo handler
- ❑ Environment manual handling carried out in
- ❑ Stacking and storage

5. Hazardous substances

- ❑ Exposure to substances referred to in COSHH Regs
- ❑ Exposure to lead / asbestos
- ❑ Exposure to fumes / dust / gas
- ❑ Exposure to biological hazards (legionella, weils disiease)

6. Personal Protective Equipment (PPE)

- ❑ Hazards from use of RPE.
- ❑ Hazards from use of Harness
- ❑ Incorrect use of PPE
- ❑ Storage and maintenance of PPE

7. Mechanical systems

- ❑ Crushing / shearing / cutting / entanglement / etc.
- ❑ Contact with a friction or abrasion hazard
- ❑ Ejection of particles
- ❑ Stability of equipment
- ❑ High pressure Air, Gas or fluid etc.
- ❑ Stored pressure systems
- ❑ Diesel powered plant

8. Workplace Transport

- ❑ People / vehicle interface
- ❑ Overturning
- ❑ Dropped load
- ❑ Overhead power lines
- ❑ Lifting equipment failure
- ❑ Access and egress: poor visibility, emergency lighting and signage, blocked access and egress

9. Confined spaces

- ❑ Oxygen deficiency / Oxygen enrichment
- ❑ Gas / Fumes
- ❑ Fire / Explosive atmosphere
- ❑ Ingress of liquid or free flowing solid
- ❑ High temperatures

10. Excavations

- ❑ Identification of underground services
- ❑ Safety of trench walls etc.
- ❑ Earthing
- ❑ Static

13. Fire

- ❑ Flammable materials / gases / liquids
- ❑ Fire from product leakage
- ❑ Electrical
- ❑ Hot Work: welding / burning
- ❑ Provision of fire fighting equipment
- ❑ Work affecting the integrity of emergency systems (alarms)
- ❑ Spread of fire
- ❑ Vapours and fumes

14. Security

- ❑ Theft of equipment, materials or stock
- ❑ Assaults, abuse or robberies
- ❑ Access to sensitive information
- ❑ Access to dangerous plant or premises

15. Hand tools

- ❑ PAT (Portable Appliance Testing)
- ❑ Damage / fit for purpose

16. Individual

- ❑ Lone working
- ❑ Stress
- ❑ Pregnant / nursing woman
- ❑ Young people
- ❑ Lack of training / information / supervision
- ❑ Unsafe behaviour of individual
- ❑ Fatigue

17. Vessel

- ❑ Sea state
- ❑ Weather conditions
- ❑ Man Over Board
- ❑ Collision
- ❑ Conditions of deck (wet, greasy)
- ❑ Obstacles at trip height or at head height
- ❑ Defective ladders, handrails or staircases
- ❑ Housekeeping
- ❑ Sea sickness
- ❑ Cargo/load security
- ❑ Bridge equipment failure
- ❑ Ice on deck

Risk Analysis

Experience, knowledge and competence must always be used in determining the likelihood and consequence. It must be remembered that likelihood of an event happening can be reduced through relevant protective measures. However, unless the hazard is completely removed, the consequence level will not reduce.

For every hazard identified there must be a control measure in order to either eliminate or reduce the risk to an acceptable level. Hierarchy of risk control:

- Eliminate:
  - Hazard to be removed completely
- Reduce:
  - Reduce hazard at source
- Isolate:
  - Contain hazard by enclosure
  - Reduce employee(s) from exposure
- Control:
  - Safe system of work (SSOW), instruction, supervision, training
- PPE:
  - Personal protective equipment; head protection, eye protection, ear protection, face masks for dust protection, rubberized boots for electrical working as far as is reasonably practicable.

Recording of risk assessments

A central register of all risk assessments, each individually numbered will be kept on the James Fisher Marine Services system. Risk assessments on site for use will be given their unique individual identification number until re-numbered and entered into a central register.

Risk assessments will be reviewed every 24 months or when changes are recognised. In all events where there has been an accident or incident, the risk assessment for that task will be immediately reviewed and findings of any failings or modifications made to that risk assessment will be reported in writing to the SHEQS Manager and/or HSE Advisor.

Method statements

A method statement must be used in all tasks where relevant information on how to carry out the task; plant, ladders, PPE, isolations, permits to work, emergency telephone contact numbers, etc, are assessed as being supportive to the risk assessment in operation or in support of a work instruction.

The method statement will be in the possession of the Senior Person involved with the task its location and readily available for referral to for any required guidance.

The method statement will be signed off by all persons who will be working on that task.

The responsible manager must approve and sign the method statement before the work is undertaken. Assistance in compiling a method statement can be provided by the SHEQS Manager/HSE Advisor or Site Manager.

Permit to work

Any permit to work or procedures i.e. isolation procedures, work instruction may be used in connection with a method statement and will be referred to in the main document but will not be part of the method statement.

A permit to work (PTW) is a formal written procedure which authorises work to be carried out with proof of safe guards being established. A permit to work will always be used when the work involved is of such nature that it has a highly hazardous potential and is not covered by the Wind Turbine Safety Rules.

Each permit to work will be classed as a 'Recordable Document' and as such a clear line of issue and receipt will be established, with all cancelled PTW being filed and kept on record. Each PTW will be numbered sequentially and entered into a register.

The permit to work gives authorisation to certain people to carry out specific work within certain time constraints. It sets out the main precautions needed to complete the work safely and without any risks to health to those people who are involved and surrounding workers.

A permit to work cannot be transferred from one work period to another. The permit to work will be cancelled at end of a work period and a new one will be issued if required for further work.

Persons who authorise the permit to work or work under its requirements must be competent for the area of work and have an understanding of all hazards associated with that work.

A permit to work will:

- Define who may authorise particular work
- Identify who is responsible for establishing necessary precautions to be taken
- Provide a system of traceability for all issued permits to work

A permit to work will always be enforced and issued if work being carried out is:

- All live electrical work
- Electrical isolation where the line voltage may give rise to risk of injury >110v
- Hot work
- Confined spaces
- Nacelle roof work
- None standard work at height – i.e. blade repair on erected turbine
- Turbine de-commissioning

- Certain diving operations
- Testing and commissioning pressure systems
- Work beside or over deep or fast flowing water
- All other activities that have elements that can be regarded as high-risk activities:
  - Maintenance
  - Repairs
  - Inspection
  - Testing
  - Construction
  - Re-construction
  - Dismantling
  - Modification
  - Cleaning

The issue of a permit to work is an authorisation to carry out high-risk works, it does not remove any hazards or make the task safe. It requires that those who apply for and work under a permit implement the necessary procedures and safe working practices. All hazards must be identified by those carrying out the work. Those who are not covered by the written permit to work must be registered and where necessary have a supplementary formal written work instruction.

When issuing a permit to work, managers and supervisors shall ensure that persons who apply for and work under the constraints of a permit to work:

- Can identify the nature and extent of the job, taking working environment into consideration
- Are able to identify the hazards involved and have competence of how to eliminate or control such hazards
- Can identify necessary control measures to be taken
- Know the extent of the work and limitations
- Know the time that the permit to work is valid for
- Know how to cancel the permit to work

An issued permit to work will be displayed in a prominent place within the work area.

An issue of a permit to work will take the following procedure:

- The issuer of a permit to work shall ensure that the person(s) who carry out the work are competent to do so
- The issuer shall issue a serial number to the permit to work and enter it into the permit to work register
- The issuer enters the following data into the register:
  - Type of permit to work
  - Person issued to
  - Time period permit to work is valid for

- Additional requirements to support permit to work, i.e. risk assessment, work instruction, additional training, supervision
- Signature of person issuing the permit to work and signature of person receiving
- Signature of person signing back in cancelled permit to work
- The time when the permit to work was cancelled

- Cancelled permits to work must be filed

Lost permits to work must be reported immediately where after the permit to work will be cancelled. Another permit to work under a different serial number may then be issued.

James Fisher Marine Services

SC/248 – Provision of Upkeep management Services – Risk Register

Date Last Updated	22/06/2016
Date Last Reviewed	

Serial No	Risk Title	Risk Description	Risk Area	Risk Before Mitigation			Risk Impact	Mitigation Strategy	Risk After Mitigation			Review Comments
				Pf	Cf	Score			Pf	Cf	Score	
001	Loss or unavailability of Key Personnel in office	Ability to respond to WAFs and to respond to MOD requests in a timely manner	Business operation	0.75	0.75	0.56	Loss of staff expertise necessary for efficient administration of contract	A. Provision of training of back-up personnel B. Co-ordinate holiday and absence arrangements to ensure continual cover is provided	0.4	0.4	0.16	
002	Loss of Contract Overseers (long-term unavailability)	Ability to provide overseers in response to MoD request, due to retirement, resignation, long-term sickness etc of overseers	Business operation	0.6	0.6	0.36	Lack of contract expertise necessary for efficient commercial operations	A. Maintain and update pool of SQEPs B. Continual monitoring of available potential recruits C. Identification of available alternative overseers within existing pool of SQEPs to cover immediate shortfall of resource	0.45	0.5	0.24	
003	Loss of Contract Overseers (short-term unavailability)	Ability to maintain overseer presence on-site during an assignment, due to unforeseen circumstances or short-term availability	Business operation	0.7	0.6	0.38	Failure to meet MOD contract requirements Ineffective oversight of upkeep	A. Procedure for prompt notification of absence or unavailability B. Agreement with MOD for early notification of concern for whereabouts of overseer C. Identification of available alternative overseers within existing pool of SQEPs to cover immediate shortfall of resource	0.45	0.5	0.24	
CORP 015	Failure of IT Applications	Loss of access to and / or data from IT systems. Loss of communications systems	Performance Reputation	0.7	0.8	0.62	Inability/restricted capability to conduct normal business operations. Increased costs to provide alternative facilities.	A. Mitigated by GIS processes and procedures B. Each division maintains back-up contact details	0.4	0.4	0.16	
OFF 014	Office Closure or unavailability	Bad weather, major incidents or Acts of God force temporary closure of Fisher House, or non-availability of infrastructure	Business Operation	0.6	0.7	0.46	Inability to progress day-to-day operations Delays to invoicing Loss of support to remote project teams Possible failure to meet KPIs.	A. Contingency operational capability off-site, B. Implement intra-departmental extraordinary communications procedure C. Identify and provide for key staff to enable remote working/network access/telecoms.	0.8	0.2	0.06	
CORP 012	Loss of Business Premises	Inability to access one or more business units as a result of fire, explosion, terrorist alert etc	Performance Cost	0.6	0.6	0.36	Inability/restricted capability to conduct normal business operations. Increased costs to provide alternative facilities.	A. Appropriate insurance in place. B. Implementation of Disaster Recovery Plan.	0.5	0.5	0.25	
OFF 015	Significant illness or epidemic	Significant proportion of staff incapacitated due to epidemic/pandemic sickness (e.g. H1N1)	Business operation. Finance Health and safety	0.4	0.5	0.22	Compromised ability to support day-to-day operations Inability to meet customer immediate requirements Danger of important communications being unattended to.	A. Support and promote occupational hygiene advice issued by appropriate agencies. B. Develop emergency skeleton manning procedure with prioritised job functions. C. Ensure intra-department accessibility of mailboxes, telephones and voicemail	0.3	0.2	0.05	
CORP 009	Sub-Contractor Performance	Failure of major sub-contractor to deliver to time/budget, Failure/insolvency of a key supplier	Performance Cost	0.65	0.5	0.28	Loss of credibility with the Client. Reduction/loss of profit.	A. Ensure the implementation and operation of an Approved Supplier system by each Division. B. Undertake regular documented audit of the systems by the Company Quality Manager. C. Allow for on-site Company representation to monitor quality, cost or time as appropriate. D. Include penalty clauses for late delivery and cost overruns in sub-contracts. E. A review process to be set up to approve major sub-contract specifications. F. Board approval required prior to letting major sub-contracts. G. Use credit checks to provide initial indication of risk H. Investigate company and any concerns I. Pursue parent company guarantees where possible	0.6	0.4	0.19	
CORP 014	Withdrawal of Quality Standard Certification	Withdrawal of Quality Standard Certification due to failure to maintain quality management standards.	Business Growth Reputation	0.7	0.8	0.62	Inability to compete for new business, or loss of existing business due to not meeting Customer quality standard requirements.	A. Allocate appropriate resources to effectively monitor individual business unit quality standard performance. B. Hold regular Management Review Meetings.	0.15	0.7	0.16	

Serial No	Risk Title	Risk Description	Risk Area	Risk Before Mitigation			Risk Impact	Mitigation Strategy	Risk After Mitigation			Review Comments
				Pf	Cf	Score			Pf	Cf	Score	
CORP 016	Breach of Security	Significant breach of security protocols. Industrial espionage. Disclosure of confidential information.	Business Growth Reputation	0.6	0.5	0.27	Loss of List 'X' status and therefore inability to compete for Secret/Top Secret contracts. Compromising of existing contracts.	A. Draw upon the resources and services of the Group Security Controller. B. Educate and train staff in appropriate security procedures. C. Ensure exit confidentiality clause for all employees. D. Construct separate Security Risk Register to comprehensively address all security risks.	0.3	0.4	0.13	
CORP 027	Personnel Abroad	Duty of care to personnel travelling to foreign countries	Human Resources Denial of Assets Company reputation Financial loss	0.4	0.6	0.29	Seizure of Company employees or physical assets leading to financial demands for release. Press interest at local, or potentially national level. Inappropriate management of the event leading to damage to the Company reputation. The loss of key personnel over a prolonged period could impact on the business.	A. Ensure provision of K&R cover for personnel working in high-risk countries. B. CONDO-esque Duty-of-Care training for personnel prior to deployment overseas	0.4	0.35	0.13	
004	Overseer negligence	Loss or damage or injury caused by negligence or act of omission by an overseer	Business operation	0.2	0.8	0.26	Ineffective oversight of upkeep Delays or losses to MOD Accident and/or injury to MOD personnel Adverse publicity affecting MOD, repair facility and Company	C. Maintain SQEPs with known track-record in delivery of MOD oversight services D. Reference and competence checks for newly recruited overseers E. Capacity for substitution of overseers in event of concerns being raised	0.1	0.8	0.14	

RISK MANAGEMENT – CRITICALITY RANKING

Risk Area / Category	Criticality Factor Ranges (Blanchard & Fabrycky)
Catastrophic	0.81 - 1.0
Critical	0.61 - 0.8
Significant	0.41 - 0.6
Marginal	0.21 - 0.4
Negligible	0.01 - 0.2

RISK MANAGEMENT – PROBABILITY RANKING

Probability	Occurrence Per Annum	Probability Factor Ranges (Blanchard & Fabrycky)
Frequent	Likely to occur repeatedly.	**0.81 - 1.0**
Occasional	Likely to occur once.	**0.61 - 0.8**
Remote	Unlikely to occur.	**0.41 - 0.6**
Highly Improbable	Extremely unlikely to occur.	**0.21 - 0.4**
Incredible	Should never happen – but could.	**0.01 - 0.2**