Task Risk Assessment

Guide

STEP CHANGE IN SAFETY

preface

As well as being a legal requirement, Task Risk Assessment (TRA) is fundamental to reducing the likelihood of having accidents at work. There is a strong desire within the oil and gas industry to improve standards through adopting a common approach to TRA. This desire was demonstrated when the 300 participants at the Step Change Workforce Workshops held in November 1998 identified TRA as a key area to be addressed to promote safety improvement in our industry.

To address these issues, a working group was set up in 1999 to produce this Task Risk Assessment guide. The guide emphasises the key steps of hazard identification and risk assessment, and also the need to improve communication compared with what already exists. Importantly, it also provides more clearly than in the past opportunities to stop and re-assess the task – either prior to starting or when a change occurs while a task is being done. It illustrates a method, sets standards and expectations, and provides examples of good practice that are being used by some companies today.

The guidance contained in this document was produced after extensive analysis of current practice across industries in the UK. However if you choose to use this guidance, it is important to realise that TRA is not a one-off 'fix'. The guidance is intended for ongoing use as an aid to continually monitor the effectiveness of TRA at your location. Widespread adoption of this approach will result not just in a new standard for the industry, but in improved risk awareness by all those involved, promising the realistic expectation of fewer incidents.

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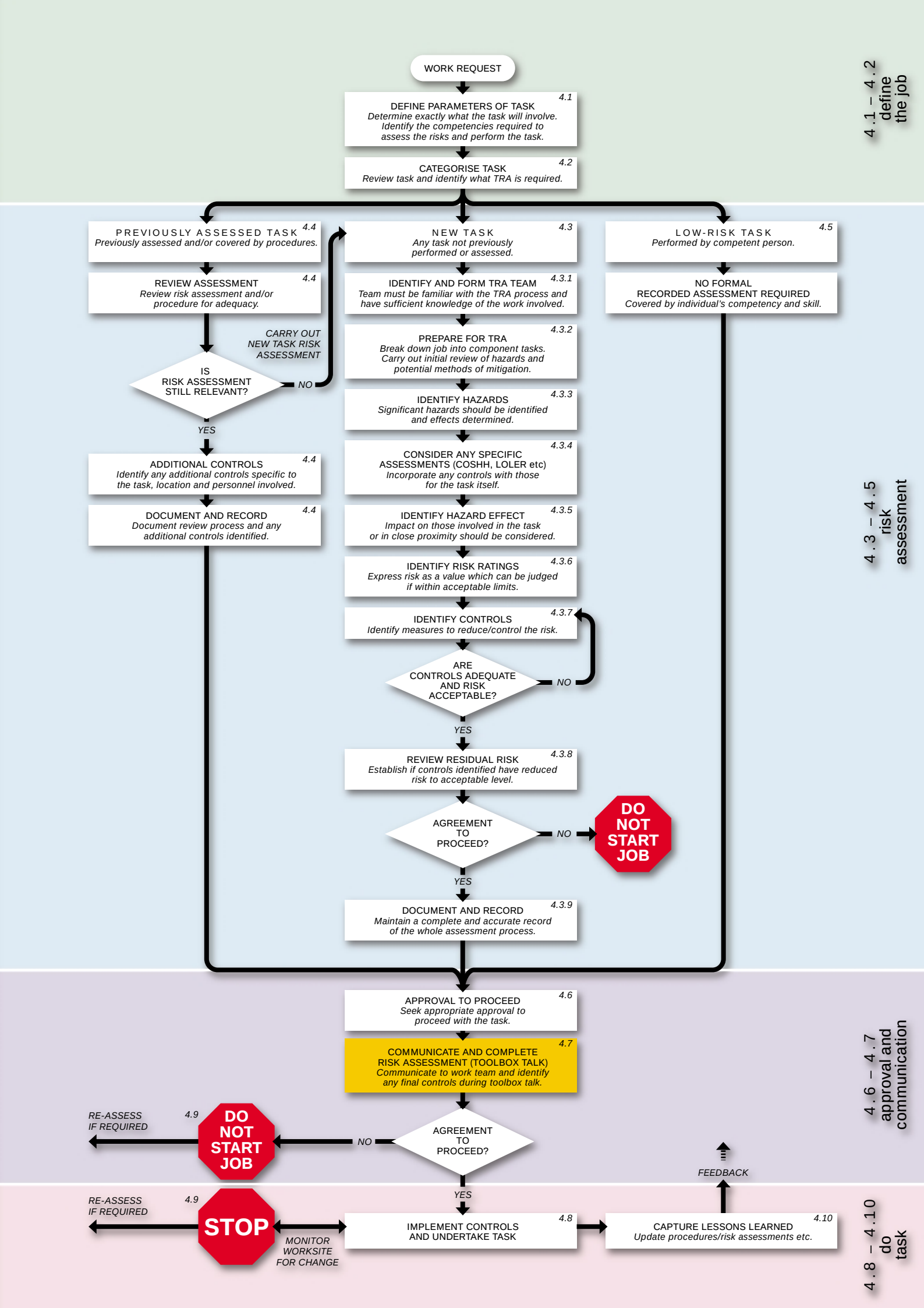
WORK REQUEST
4.1 – 4.2 define the job
DEFINE PARAMETERS OF TASK 4.1
Determine exactly what the task will involve. Identify the competencies required to assess the risks and perform the task.
CATEGORISE TASK 4.2
Review task and identify what TRA is required.
4.3 – 4.5 risk assessment
PREVIOUSLY ASSESSED TASK 4.4
Previously assessed and/or covered by procedures.
REVIEW ASSESSMENT 4.4
Review risk assessment and/or procedure for adequacy.
IS RISK ASSESSMENT STILL RELEVANT?
NO
CARRY OUT NEW TASK RISK ASSESSMENT
YES
ADDITIONAL CONTROLS 4.4
Identify any additional controls specific to the task, location and personnel involved.
DOCUMENT AND RECORD 4.4
Document review process and any additional controls identified.
NEW TASK 4.3
Any task not previously performed or assessed.
IDENTIFY AND FORM TRA TEAM 4.3.1
Team must be familiar with the TRA process and have sufficient knowledge of the work involved.
PREPARE FOR TRA 4.3.2
Break down job into component tasks. Carry out initial review of hazards and potential methods of mitigation.
IDENTIFY HAZARDS 4.3.3
Significant hazards should be identified and effects determined.
CONSIDER ANY SPECIFIC ASSESSMENTS (COSHH, LOLER etc) 4.3.4
Incorporate any controls with those for the task itself.
IDENTIFY HAZARD EFFECT 4.3.5
Impact on those involved in the task or in close proximity should be considered.
IDENTIFY RISK RATINGS 4.3.6
Express risk as a value which can be judged if within acceptable limits.
IDENTIFY CONTROLS 4.3.7
Identify measures to reduce/control the risk.
ARE CONTROLS ADEQUATE AND RISK ACCEPTABLE?
NO
YES
REVIEW RESIDUAL RISK 4.3.8
Establish if controls identified have reduced risk to acceptable level.
AGREEMENT TO PROCEED?
NO
DO NOT START JOB
YES
DOCUMENT AND RECORD 4.3.9
Maintain a complete and accurate record of the whole assessment process.
LOW-RISK TASK 4.5
Performed by competent person.
NO FORMAL RECORDED ASSESSMENT REQUIRED
Covered by individual's competency and skill.
4.6 – 4.7 approval and communication
APPROVAL TO PROCEED 4.6
Seek appropriate approval to proceed with the task.
COMMUNICATE AND COMPLETE RISK ASSESSMENT (TOOLBOX TALK) 4.7
Communicate to work team and identify any final controls during toolbox talk.
AGREEMENT TO PROCEED?
NO
DO NOT START JOB 4.9
RE-ASSESS IF REQUIRED
YES
4.8 – 4.10 do task
IMPLEMENT CONTROLS AND UNDERTAKE TASK 4.8
STOP 4.9
RE-ASSESS IF REQUIRED
MONITOR WORKSITE FOR CHANGE
CAPTURE LESSONS LEARNED 4.10
Update procedures/risk assessments etc.
FEEDBACK

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1
how to use this document

Focus on the **TRA**p...not the cheese!

This Task Risk Assessment (TRA) guide recognises that many locations have systems that work well already. It is designed to provide guidance in two basic ways:

1. To enable you to assess your current system against the principles put forward in this document and help you identify improvements to that system in line with current best practice.

2. To allow you to adopt a new system of TRA, based on current best practice, and to give ongoing guidance through implementation and continued application.

This document puts forward a process model of TRA, similar to many used in our industry already, which is both robust and practical. This process is illustrated on the inside cover. The guidance has been designed to be practical and easy to use.

Information is given on the various roles, responsibilities and competencies required to achieve a sound system of TRA. It also puts forward ideas on how to reinforce communication, meaningful involvement and training, and, perhaps most importantly, when to STOP THE JOB.

There is nothing new put forward here. There are many instances in our industry where robust systems are currently in use. This guide simply puts forward recommendations based on good practice from within and outside our industry.

To further help the user, key terms and definitions are defined in Appendix 7.

figure 1
TRA overview

2 introduction to task risk assessment

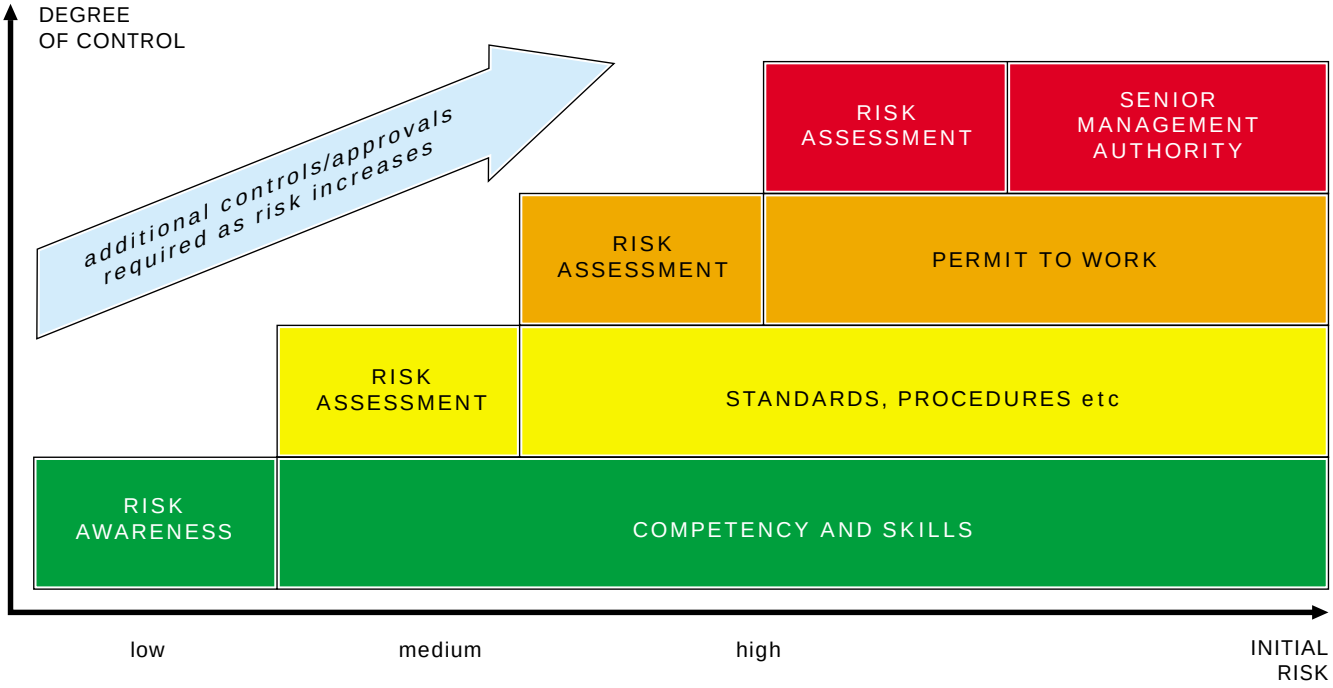
It is a requirement of legislation, and also good company practice and common sense, that all work tasks should be subject to an assessment of their risks. This is in order to identify the hazards present, assess the risks involved, and identify the controls and precautions necessary to undertake the work safely.

This part of the document shows how TRA fits into the work management process by describing the generic methodology that is followed when work is to be undertaken. The main steps are illustrated in Figure 1 and in more detail in the inside cover.

When a task is identified, the first action is to establish what it will involve. This initial appraisal should identify the need for any special safety studies or assessments and identify at the outset if it is clearly obvious that the task cannot be carried out safely. If the likely hazards cannot be reconciled at this stage, then the task should be rejected or redefined.

The next stage represents the heart of the TRA process. It involves identifying the hazards associated with the task, assessing the risks and identifying the controls/precautions required to mitigate those risks. Where a task comprises a number of separate activities, these should be broken down into individual tasks and assessed separately. The extent of the controls identified will depend upon the level of risk associated with the task. The higher the risk, the greater the degree of control. This is illustrated in Figure 2 opposite.

figure 2
risk control model



A new risk assessment will not be required for every task. Where a task has previously been risk assessed, or is covered by a procedure, it may not need a new risk assessment. Where this is the case, the previous assessment or procedure should be reviewed to ensure that the hazards and controls are still relevant and that any site or job specific controls are identified. For low-risk tasks performed by competent people, no formal recorded risk assessment is required as the individual's competency and skill covers this.

Prior to undertaking the task, the appropriate approval should be sought and a pre-task talk or toolbox talk should be held. At this point it is essential to communicate the hazards, controls and individual responsibilities to the rest of the work team and engage everyone involved in the final stage of the risk assessment process. The latter is an important opportunity for the whole work team to identify any additional hazards and controls, especially those specific to the site and the local conditions.

Once the task commences, it is important to monitor the worksite for any change in conditions that might alter the hazards and controls in place. If there is any concern, stop the work, re-assess the controls and, if necessary, re-plan and re-assess the task.

On completion of the task, it is important to capture any lessons learned and make improvements for next time.

3 responsibilities

The Management of Health and Safety at Work Regulations give details of duties under the Health and Safety at Work etc Act which relate to the control of work activity and risk assessment. These regulations apply to all workplaces in the UK, including offshore installations. Other legislation also makes reference to task-based risk assessment. Some examples include Control of Substances Hazardous to Health (COSHH), Manual Handling, Lifting Operations and Lifting Equipment (LOLER).

Everyone involved in the TRA process has specific responsibilities. These are defined in the following paragraphs.

3.1 Employers and Managers

The principal responsibilities of managers and employers under this legislation are to:

- Eliminate and reduce risks wherever practicable
- Combat risks at source
- Ensure suitable and sufficient assessment of all risks to the health and safety of their employees, or any third parties, caused by their work activities
- Ensure that assessments are recorded, reviewed and maintained as valid
- Ensure that an appropriate approval process is in operation, commensurate with the level of the risk assessed
- Give appropriate information, instruction and training to employees and ensure competence of involved personnel

3.2 Supervisors

The principal responsibilities of supervisors are to:

- Review each task and identify what level of risk assessment is required
- Ensure that all tasks undertaken within their area of responsibility are assessed to identify any hazard that may cause harm or damage
- Ensure that control measures are implemented to reduce the likelihood of a risk occurring to as low as reasonably practicable (ALARP)
- Reject or redefine the activity if residual risk is too high after being reduced to ALARP
- Ensure that any potential improvements highlighted during the assessment process are reviewed and actioned/implemented as appropriate
- Communicate details of the TRA to the work team, allocating individual responsibilities for job tasks and control measures
- Ensure that all members of the work team have the opportunity to identify further hazards and controls
- Ensure that before work commences all members of the work team are in agreement with the detail of the TRA and the proposed control measures
- Ensure that any lessons learned are captured to improve the task or the TRA

EVERYONE has both the authority and responsibility to STOP THE JOB if there is any doubt about the safety of the operation.

3.3 TRA Team Leaders

The principal responsibilities of TRA team leaders are to:

- Lead the team in performing the risk assessment
- Ensure that the team understands the assessment process and what it is trying to achieve
- Take responsibility for the quality of the TRA
- Ensure that the assessment team includes personnel with all the necessary knowledge and competence for the task involved
- Ensure that the team is guided systematically through the assessment process and kept on track
- Ensure that the TRA includes a worksite visit where possible
- Ensure that the detail of the assessment is agreed by the assessment team
- Ensure that the detail of the assessment is recorded and that records are updated as appropriate

3.4 Individual TRA Team Members

The principal responsibilities of individual team members are to:

- Actively participate in any TRA related to the work activity
- Help identify hazard(s) and control measures to reduce the likelihood of an incident/accident occurring
- Assist in the identification of any deficiencies in the work process and possible improvements

3.5 People Carrying Out the Work

Have a crucial part to play in the TRA process through:

- Understanding the hazards and control measures associated with the task
- Actively monitoring their worksites and surroundings for changes
- Stopping the work at any time they are concerned about safety
- Sharing knowledge and contributing towards the pre-task talk or toolbox talk
- Identifying any lessons learned from the job

4 process

The TRA process is shown in the flowchart on the inside cover of this guide. The following sections provide a supporting description of each stage in the process.

4.1 Define Parameters of Task

When a work request is received, the first part of the process is to define the parameters of the task. This is the responsibility of the supervisor, ie the person responsible for seeing that the work is carried out.

An examination should be made to determine exactly what the task will involve. It should consider:

- The need for any special safety studies or assessments (eg COSHH, manual handling, etc)
- Whether it is immediately obvious that the task cannot be carried out safely and should be immediately discarded. If the likely hazards cannot be reconciled at this stage then the task should be rejected or redefined
- What personal competency requirements are needed of those who will assess the risks and perform the task

4.2 Categorise Task

Once this initial examination is complete, the supervisor should determine into which of the following categories the task fits:

- New Task
  Any task not previously performed or assessed. New tasks should be subject to a TRA before commencement, unless categorised as a 'low-risk activity performed by a competent person' (see below). A new risk assessment is performed whereby all risks are identified and assessed in detail and controls identified to reduce the risk to ALARP. Other reasons for a new assessment may be that it is physically impossible to comply fully with all recognised standards or when previously used controls are not sufficient or practicable.
- Task Previously Risk Assessed and/or Covered by Existing Procedures Tasks that have been previously assessed and/or are covered by procedures may not require a new risk assessment. Previous assessments or procedures should be reviewed for accuracy and current applicability to see if they remain valid and to identify any additional job specific controls.
- Low-risk Task
  Where a task is low risk and is performed by a competent person, a worksite assessment will still be necessary, however, no formal recorded risk assessment will be required.

Once the category of the task has been determined, the applicable process detailed in the following paragraphs should be followed.

4.3 New Task

Any new tasks should be subjected to a new risk assessment with the formation of a suitable team to perform the assessment.

4.3.1 Identify and Form TRA Team

The manager/supervisor should nominate a TRA team leader and together agree composition of the TRA team. The size of the team will vary according to the complexity of the task. Relatively simple tasks can be assessed by one person. However, regardless of numbers, all teams should include personnel who:

- Are responsible for the task
- Are competent to conduct TRAs and have the ability to facilitate the process
- Have sufficient knowledge, expertise and competence in the task to be performed and an understanding of the hazard(s) it presents
- Are fully knowledgeable of the location, its surroundings and the hazard(s) they present
- Will be involved in carrying out the task
- Have specialised knowledge of the task(s) where it is relevant or appropriate

Team members must be familiar with the TRA process and have sufficient knowledge of the work activities and environment to make informed judgements of the risks involved and measures to mitigate them. This requires knowledge and experience of the area, plant, equipment or system to be worked on and an awareness of the hazards involved and their potential consequences. They should also have understanding of any relevant procedures and industry standards.

Where appropriate, individuals with specialist knowledge should be nominated as team members to provide technical advice (eg process, electrical or instrument engineers, lifting and manual handling specialists, etc).

4.3.2 Preparation

Prior to commencing the TRA, the team should carry out preparatory work to ensure that its members have sufficient background information on which to base their judgements. This should include reviewing the overall work programme and breaking it down into a sequence of tasks. Subsequently, the team shall visit the worksite where possible. This is important in order to see the physical layout of the area and current site conditions. Particular attention should be given to other plant and equipment in the area. Other activities taking place or planned to take place at the same time as the task to be performed should be identified as they could impact on the TRA.

When carrying out the preparatory work, the team should consider the following:

- What is the purpose of the task?
- What are the critical activities necessary to perform the task?
- Who is going to carry out the task and are they capable/ skilled enough?
- When is the task to be executed; could it be done at a different time (ie during a shutdown)?
- Where is the task to be performed; could it be carried out in a safer location (ie in a workshop)?
- Are there simultaneous operations that have a significant safety impact on the task (eg other tasks occurring as part of the same workscope, or other work in an adjacent area)?
- What are the characteristics of the plant and systems directly involved?

It may be useful to write down the steps that are to be taken, making notes for discussion during the TRA session, and so enable a constructive decision to finally emerge.

4.3.3 Identify Hazards

The team should list all significant hazards and then review them to determine what foreseeable effects they could cause if not eliminated or controlled. This should be done by way of a full group discussion under the direction of the TRA team leader to ensure that all members are given adequate opportunity to express their views.

The team leader must allocate sufficient time to allow all hazards to be identified and assessed, in order for considered decisions to be reached. A hazard and effects/consequences table is a useful prompt to ensure that no hazards are missed. An example of such a table is included in Appendix 1.

A record should be kept of all decisions reached.

4.3.4 Consider Specific Assessments

Whilst identifying the hazards, it may be necessary to consider specific assessments either previously done or which require to be initiated. This, for example, could include COSHH, Manual Handling, PUWER and LOLER assessments, or system isolation requirements. Where this is the case, any controls identified should be incorporated into the overall controls identified for the task.

4.3.5 Identify Hazard Effect and Who May be Affected

Once all the hazards associated with the task are established, the consequences or hazard effects (ie the harm which could possibly occur) and people who may be affected need to be identified and considered. As well as those directly involved in the task, consideration should also be given to others who may become affected ie personnel working in close proximity to the area

where the task is being undertaken, visitors to the worksite, etc.

4.3.6 Identify Risk Rating for Initial Risks

Risk rating is a means whereby the risks associated with a particular task can be expressed as a value and so judged whether to be within acceptable limits.

Risks created by each identified hazard should be evaluated according to:

- The worst credible severity if the hazard effects were to result
- The likelihood of the hazard effects resulting

These evaluations may be made either qualitatively (subjective risk rating of high, medium or low) or semi-quantitatively (rating risk by calculation of numbers) which helps to focus attention on the most serious risk(s).

Methods for making both types of evaluation are detailed in Appendix 2. While these are examples of good practice, it is recognised that many other equally suitable methods exist and are currently in everyday use.

Whether you use one of the examples in this document or another approach is not the overriding factor. The importance of whichever tool you use is that it should guide you to assess when the risks are too high for a task to be undertaken safely.

4.3.7 Identify Controls

Once the risk rating has been determined, the next stage is to identify the controls that are required to reduce/control the risk.

In identifying control measures, consideration should be given to:

- The task
- The people involved
- What tools, equipment and materials are to be used
- The working environment

The TRA team must work systematically through the list of hazards to specify all the methods needed to control each of the associated risks. These measures should be based on good safe working practice in order to reduce the residual risks to ALARP. A control guidelines hierarchy may be used to assist in this process. An example of such a hierarchy is shown in Appendix 3.

Once all the controls have been identified to reduce the risk, the following final questions should be asked:

- Have all the necessary control measures been fully/effectively identified?
- Are any additional competencies required to complete the task?
- Is the risk effectively controlled?

When the controls have been identified, the risk evaluation matrix should be revisited to establish the level of residual risk once these controls are in place.

4.3.8 Review Residual Risk

An assessment of the residual risks should be made for each of the hazards on the basis that all control measures have been put in place. If the residual risk is unacceptable, additional control measures should be identified (see 4.3.7).

If further control measures reduce the risk to an acceptable level, they should then be recorded with the new residual risk rating. If further control measures cannot reduce the risk to an acceptable level, the task must not proceed and the team must refer back to their manager/supervisor.

If the residual risk is acceptable and ALARP, the TRA team will recommend that the work should go ahead, with the identified control measures in place. However, it is essential that agreement is a unanimous decision of the whole team.

A consideration for the acceptability of risk is that the greater the perceived risk for any particular hazard, the greater the number and quality of independent controls. Consideration should also be given to the possibility of combined effects from the interaction of several different hazards.

4.3.9 Documenting and Recording

The findings of the TRA are normally documented on a standard proforma which covers the following:

- Identification of job steps
- Hazards associated with the task
- Initial task risk rating (severity x likelihood)
- Control measures to reduce the risk
- Residual risk rating
- Name of assessors
- Date of assessment

An example proforma is included in Appendix 4. While this is an example of good practice, it is recognised that many other equally suitable examples exist and are currently in everyday use.

4.4 Task Previously Risk Assessed and/or Covered by Existing Procedures

Where a task has previously been risk assessed or assessed generically, there may not be a need to carry out a full new risk assessment. In this instance the previous assessment should be reviewed to:

- Ensure that the hazards and controls identified are still relevant
- Ensure that the controls identified are appropriate to the specific job, location and personnel involved
- Identify any additional controls where appropriate

Certain common tasks have documented procedures and work routines that identify how to undertake the task safely and state the controls that are required to be in place. Where it can be demonstrated that these procedures were developed giving due regard to the hazards involved and/or have been developed based upon established good practice, a new risk assessment will not necessarily be required. However, as with tasks previously risk assessed, the procedures would need to be reviewed to ensure that the hazards and controls are still relevant and that any site or job specific controls are identified. The review should always be recorded.

Where there are any concerns with a previous assessment or procedure, a new TRA should be performed.

4.5 Low-risk Task

For some tasks, an individual's competency, skills and training are sufficient such that a formal recorded risk assessment is not required each time the task is performed. This would only apply to certain basic low-risk tasks such as walking up and down stairs, climbing a ladder, taking readings from unrestricted areas of plant, etc. In all cases, the individual must consider the associated hazards and remain vigilant to change.

Certain other specialist tasks could also fit into this category where, through their specific training, knowledge and skills acquired, those individuals have sufficient competency to enable them to carry out such tasks without performing a formal risk assessment each time. Examples of this could be the routine low-risk operations of qualified tradesmen.

4.6 Approval to Proceed

On completion of the risk assessment and prior to executing the task, the appropriate level of approval should be obtained.

Approval to proceed should not be seen as a formality. Approval should ensure that a suitable and sufficient risk assessment has been performed and that adequate controls have been identified to reduce the risks to an acceptable level and ALARP.

The level of approval must be commensurate with the level of risk, ie higher risks require more senior management approval. These approval levels must be based on the initial risks (see 4.3.6) and not the residual risks (see 4.3.8).

4.7 Communicate and Complete Risk Assessment

The success of a TRA will depend upon how effectively it has been communicated. The value of the risk assessment will be wasted if the people carrying out the task are not fully aware of, or do not thoroughly understand, the hazards and the precautions put in place. Open two-way dialogue should take place at a predominantly informal meeting prior to starting the activity. In this guide, we refer to these meetings as toolbox talks.

The toolbox talk should fulfil four functions:

1. Give everyone involved in the task a thorough understanding of:
   - The detail of the activities involved in carrying out the work; both their own activity and that of others
   - The potential hazards identified for each stage of the task
   - The control measures in place or to be put in place to mitigate the hazards
   - Individual actions and responsibilities at various stages of the task
2. Provide the opportunity for those involved in the task, either wholly or partly, to identify further hazards and control measures which may have been overlooked in the initial assessment. This is especially useful for identifying hazards at the worksite which may not have come to anyone's attention in the earlier stages.
3. Reach agreement of the whole work team on whether or not to proceed with the activity. If agreement cannot be reached, DO NOT START THE JOB.
4. Make clear to all involved that should conditions or personnel change or assumptions made when planning the activity prove false, they should re-assess the situation and, if in any doubt, STOP THE JOB.

For these reasons, a successful toolbox talk should be held at or near the worksite. It should include all people involved in the work or those who may be affected by it such as subcontractors, vendors and base crew. A copy of the TRA should be used during the toolbox talk to lead the team systematically through each step of the task ahead.

The structure of the toolbox talk should provide mechanisms for:

- Confirming the general understanding of the task and TRA detail
- Identifying further hazards and control measures
- Recording the communication and toolbox talk process
- Collecting feedback on the effectiveness of the risk assessment process to facilitate update of the TRA or procedures

The Toolbox Talk Risk Identification Card (TRIC) is a suitable tool to guide this process. An example of such a card is included in Appendix 5. The card is designed to lead the discussion through the necessary elements to be covered. It is not the only means of ensuring that the TRA has been effectively communicated and opportunity provided for further input. However, whatever system you use, it should cover the same elements.

When new work team members join the team, the same communication must be given to them.

It is critical that the processes in this section are followed in detail. No piece of paper or signature will make a job safe. Only by everyone having meaningful involvement and a thorough understanding of the task and TRA will the risks involved be minimised.

4.8 Implement Controls and Undertake Task

Once the team is satisfied that all the hazards have been identified and that suitable controls have been put in place to reduce the risk to an acceptable level, they can then undertake the task. Although controls may have been implemented, the work team should not become complacent. By monitoring on an ongoing basis, the team should always be aware of any changes in personnel (eg shift change), conditions at the worksite, or if the TRA is found to be incomplete or incorrect. If it becomes necessary, they should re-assess the task and, if in any doubt, STOP THE JOB.

4.9 Stopping the Job

Any individual has the authority and responsibility to STOP THE JOB.

If anyone concerned about the safety of a task stops the job, that person's decision must be supported, even if it turns out to be based on false reasoning. Being critical of a decision in such circumstances will increase the likelihood of the next job not being stopped when perhaps it should have been.

It is essential that all persons involved in an activity are made fully aware that they have both the authority and the responsibility to stop the job if there is any doubt about the safety of the operation.

Supervisors have a crucial role in this area. They must make clear to all individuals in the work team that they will be fully supported when taking action to stop the job. An individual who stops the job when there is a concern over the safety of the activity should be recognised as doing their job correctly. Any concerns a supervisor may have regarding productivity must not be expressed at this time. Safety must always take priority.

Many incidents happen when conditions at the worksite change, when conditions are not as foreseen, or when there is a deviation from the work programme. It must be made clear to all personnel, especially during toolbox talks, that when such conditions arise the expectation is that the individual or work team will stop the job and re-assess the situation. Only when the re-assessment indicates that the risks can be made ALARP should the task be restarted.

Don't wait for someone else to STOP THE JOB.

4.10 Capture Lessons Learned

On completion of work it is important that any lessons learned are captured and incorporated into the process. This may be in the form of changes/revisions to:

- Procedures used
- Risk assessment records
- The TRA process itself

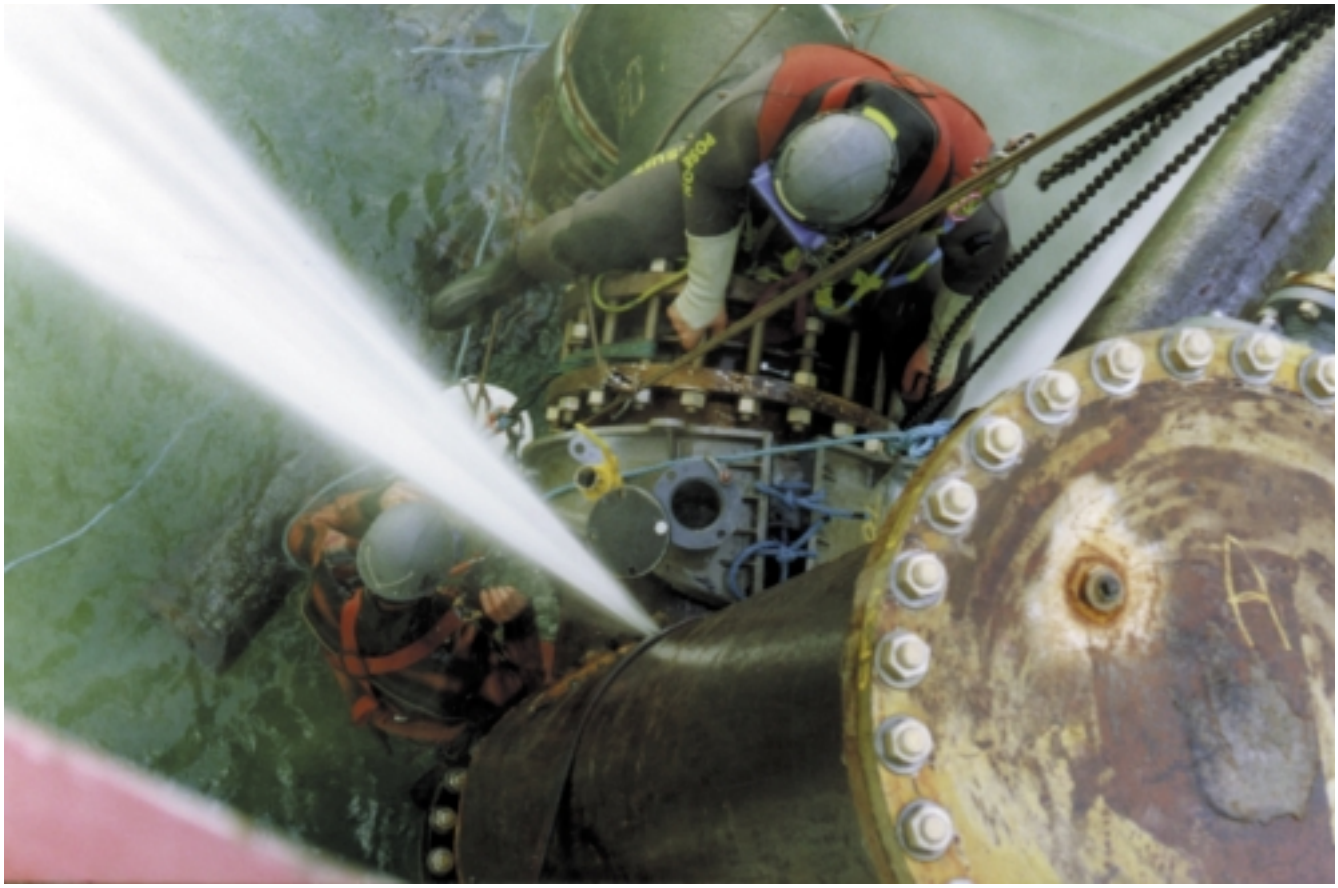
This is an important feedback loop in the TRA process.

Wherever possible, a post-TRA review should take place in order to establish any deficiencies or weaknesses within the risk assessment process. This will provide feedback into the management of a safe system of work.

Equally, where improvements to working practices can be identified, they should also be fed back into existing procedures.

In the event of an accident, incident or near miss taking place, it is critical that the TRA is reviewed.

The findings from incident investigations, near miss reporting and procedural review are good sources of lessons learned that can be applied to the TRA process.



5 training

Good, effective training of individuals involved in leading or participating in TRA is essential to achieve quality and consistency of results. Training provides the foundation for effective risk assessments and supports competence.

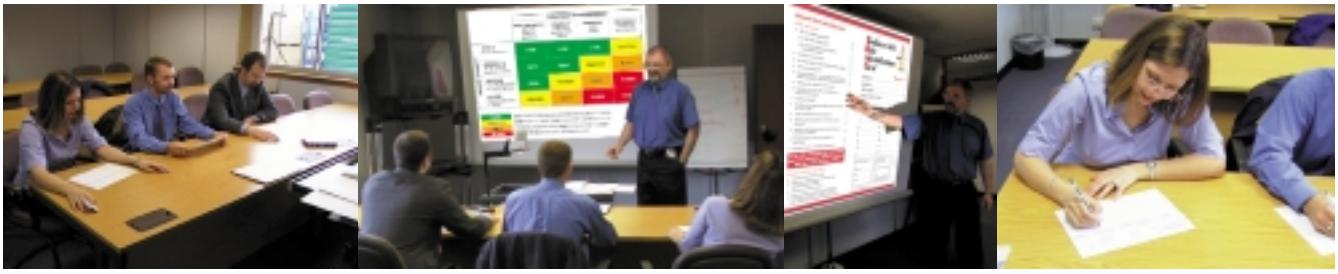
Some guidance on how this can be achieved is given opposite:

Who

- Everyone at each level in every operation who actively takes part in, and contribute towards, TRA
- New and transient personnel who may identify additional hazards or have experience of existing hazards and knowledge of an appropriate solution

What

- The principles of TRA
- When to conduct a TRA
- An understanding of the types of risk assessment
- Requirements for team membership and competency of individuals
- Responsibilities of team members



Where

- A classroom may be required for an explanation of the TRA process, assessment protocol and documentation completion, but this should be kept to a minimum
- In a variety of environments, practical in nature and focusing on hazard identification

Why

- Ensure that everyone is able to become involved in the risk assessment process – ownership
- Drive awareness and increase personal risk perception levels influencing behaviours
- Communicate the worksite hazards and risks through participation
- Ensure consistency of approach and understanding
- Allow cross-industry sharing – especially solutions

When

- Prior to involvement in TRA to provide an understanding of the process and enable participation
- Prior to becoming a TRA leader
- Refresher training as required by established performance standards
- Induction for personnel new to the operation

How

A combination of all training approaches should be employed, including:

- Classroom presentations
- Distance learning
- Videos
- Mentoring
- Coaching
- Checklists/keyword guides
- Practical team exercises
- Computer-based training

Commonality

The fundamental TRA process is covered through a vast range of procedures and varying organisational approaches across the industry. TRA is not a complex process but requires continual usage and practise to reinforce the risk awareness levels of the workforce and enhance safety performance.

Training should be viewed as the start of the process with the inclusion of all personnel in TRA as the goal.

The ability to share training across and between organisations is possible through a common approach, as outlined within this guide, and will drive the acceptance and implementation of best practice for TRA.

6 monitoring

No matter how thorough the TRA procedure has been, its ultimate success depends on the awareness of the people carrying out the activity. If they do not have a sound understanding of the TRA findings, what it means to them and what their responsibilities are, it will have a limited effect on preventing accidents.

As part of the Step Change in Safety initiative, a cross-industry group of Offshore Installation Managers in the Southern North Sea developed a monitoring sheet to help them (or anyone else) to measure the understanding of people involved in the activities. A copy of this monitoring sheet is included in Appendix 6 as an example of good practice.

7 summary

At present there are many examples of robust and fully operational TRA methods in place throughout industry. However, the importance of a TRA is not simply dependent on which of these systems is used. What is of prime importance is the rigorous process of:

- Hazard identification
- Risk assessment
- The reduction of risk to an acceptable level before any work is carried out

It is with this concept in mind that this guide does not try to prescribe that which is or which is not the best system. What it does offer is guidance to industry on how any robust system can be used to its greatest effect.

The main points of the TRA process can be summarised as follows:

- The TRA process is not an exercise to justify carrying out a task
- Appropriate risk assessment must be carried out for every task
- Everyone involved in the TRA process must know their roles and responsibilities
- The assessment team must include the right people with the right competencies
- Everyone involved in, or affected by, the task must have an input into identifying risks and controls
- If the risks of carrying out a task cannot be reduced to an acceptable level, the task should be rejected
- Everyone involved in the activity must be fully aware of the hazards and precautions put in place
- At any stage, if anyone has any concerns over the safety of carrying out the task, the task should be suspended and the risks revisited
- Lessons learned during completion of a task should be recorded and revisited the next time a similar task is to be performed

8 common pitfalls in risk assessment

Listed below are some common failures identified in the application of risk assessment following comprehensive research by the HSL (Health and Safety Laboratory) on behalf of the HSE (Health and Safety Executive) into Pitfalls in Risk Assessment,:

- Carrying out a risk assessment to attempt to justify a decision that has already been made
- Using a generic assessment when a site-specific assessment is needed
- Carrying out a detailed quantified risk assessment without first considering whether any relevant good practice was applicable or when relevant good practice exists
- Carrying out a risk assessment using inappropriate good practice
- Making decisions on the basis of individual risk estimates when societal risk is the appropriate measure
- Only considering the risk from one activity
- Dividing the time spent on the hazardous activity between several individuals – the salami slicing approach to risk assessment
- Not involving a team of people in the assessment or not including employees with practical knowledge of the process / activity being assessed
- Failure to identify all hazards associated with a particular activity
- Failure to fully understand all possible outcomes
- Inappropriate use of data
- Inappropriate use of risk criteria
- No consideration of ALARP or further measures that could be taken
- Inappropriate use of cost benefit analysis
- Use of "Reverse ALARP" arguments (i.e. using cost benefit analysis to attempt to argue that it is acceptable to reduce existing safety standards)
- Not doing anything with the results of the assessment
- Not linking hazards with risk control.

(Step Change would like to thank the HSE for their permission to share these findings with industry and further encourage those practitioners involved in the process of carrying out workplace assessments to make use of the additional guidance contained in the report, Good Practice and Pitfalls in Risk Assessment RAS / 03/02)

EXAMPLE	HAZARD
PEOPLE	• Insufficent Supervision • New/Inexperienced Personnel • Visitors/Unauthorised Personnel • Inadequate Communications • Insufficient Resources • Competence
EQUIPMENT	• Scaffolding/Ladders • Incorrect Use of Tools • Stability/Collapse of Equipment • Inadequate Maintenance • Equipment Failures • Damaged/Faulty Equipment
MATERIALS	• Hazardous Substances • Radioactive Substances • Flammable • Explosive Substances • Dimension/Weight • Waste
ENVIRONMENT	• Confined Space • Working at Heights • Noise • Temperature • Lighting • Ventilation • Vibration • Weather Extremes
PROCESS	• Incorrect Procedure Process • Emergency Arrangements • Inadequate Safety Management System • Inadequate Planning • Lack of Training • Lack of Information/Instruction/Supervision • No or Inadequate Risk Assessment

AN EVENT

EXAMPLE	HAZARD EFFECT/CONSEQUENCES
PERSONAL INJURY OR DEATH	• Physical - Lacerations - Abrasions - Crush/Nip Injuries - Burns - Muscular Skeletal • Occupational Illness - RSI - Asbestosis - Dermatitis - Hazardous Substance Exposures • Psychological - Stress
ENVIRONMENTAL IMPACT	• Pollution - Air - Water - Land • Societal Effects • Flora/Fauna • Excess Waste • Financial Liability
EQUIPMENT/ PROPERTY DAMAGE	• Fires/Explosions • Structural Failures • Dropped Object Damage • Financial - Loss of Production - Repair/Replacement Costs - Reputation

Appendix 1 Example: Hazard and Effects/Consequences Table

Qualitative

Using the information from the hazard identification together with the hazard effect, and considering the number of people to be involved, a risk rating is established. This is determined using a risk evaluation matrix where the risk rating equals the likelihood of an occurrence times the severity of the hazard. Two examples of a qualitative risk evaluation matrix are shown.

		Likelihood of Occurrence			
		Very Unlikely Little or no chance of occurrence	Unlikely Could occur, less than 50/50 chance	Possible 50/50 chance	Probable More likely to occur than not
Hazard Severity	Minor No or minor injury	CARE	CARE	CARE	CAUTION
	Moderate Off-site medical treatment or DAFW	CARE	CARE	CAUTION	ALERT
	Serious More than one DAFW – long-term absence	CARE	CAUTION	ALERT	ALARM
	Major Permanent disability or fatality	CAUTION	ALERT	ALARM	ALARM

CARE	Minor harm possible, serious harm very unlikely to occur
CAUTION	Minor harm probable, major harm very unlikely to occur
ALERT	Moderate harm probable, major harm unlikely to occur
ALARM	Serious or major harm will probably occur

Likelihood of Occurrence	Hazard Severity: Negligible Negligible injury, no absence from work	Slight Minor injury requiring first aid treatment	Moderate Injury leading to a lost time accident	High Involving a single death or serious injury	Very High Multiple deaths
Very Unlikely A freak combination of factors would be required for an incident to result	LOW	LOW	LOW	LOW	LOW
Unlikely A rare combination of factors would be required for an incident to result	LOW	LOW	LOW	MEDIUM	MEDIUM
Possible Could happen when additional factors are present but otherwise unlikely to occur	LOW	LOW	MEDIUM	**MEDIUM**	HIGH
Likely Not certain to happen but an additional factor may result in an accident	LOW	MEDIUM	MEDIUM	HIGH	HIGH
Very Likely Almost inevitable that an incident would result	MEDIUM	MEDIUM	HIGH	HIGH	HIGH

LOW RISK	May be acceptable; however, review task to see if risk can be reduced further.
MEDIUM RISK	Task should only proceed with appropriate management authorisation after consultation with specialist personnel and assessment team. Where possible, the task should be redefined to take account of the hazards involved or the risk should be reduced further prior to task commencement.
HIGH RISK	Task must not proceed. It should be redefined or further control measures put in place to reduce risk. The controls should be re-assessed for adequacy prior to task commencement.

By redefining the hazard severity, risk evaluation matrices can be used to assess health, production and environmental risk as well as the risk of accident and injury. An example of these definitions may be:

Negligible — Negligible injury or health implications, no absence from work. Negligible loss of function/production with no damage to equipment or the environment.

Slight — Minor injury requiring first-aid treatment or headache, nausea, dizziness, mild rashes. Damage to equipment requiring minor remedial repair, loss of production or impact to the environment.

Moderate — Event leading to a lost time incident or persistent dermatitis, acne or asthma. Localised damage to equipment requiring extensive repair, significant loss of function/production or moderate pollution incurring some restitution costs.

High — Involving a single death or severe injury, poisoning, sensitisation or dangerous infection. Damage to equipment resulting in production shutdown and significant production loss. Severe pollution with short-term localised implications incurring significant restitution costs.

Very High — Multiple deaths, lung diseases, permanent debility or fatality. Major pollution with long-term implication and very high restitution costs.

Semi-quantitative

Although this approach uses numerical values to assess risk, the results are still largely of a qualitative nature and are similar to the previous examples. Some people find this approach easier to use than the wholly qualitative approach. Two examples of a semi-quantitative matrix are shown.

These numerical values are quite often correlated to the low, medium and high categories as detailed previously.

Likelihood of Occurrence	Hazard Severity: 1 Negligible injury, no absence from work	2 Minor injury requiring first aid treatment	3 Injury leading to a lost time accident	4 Involving a single death or serious injury	5 Multiple deaths
1 A freak combination of factors would be required for an incident to result	1	2	3	4	5
2 A rare combination of factors would be required for an incident to result	2	4	6	8	10
3 Could happen when additional factors are present but otherwise unlikely to occur	3	6	9	12	15
4 Not certain to happen but an additional factor may result in an accident	4	8	12	16	20
5 Almost inevitable that an incident would result	5	10	15	20	25

1 – 6	May be acceptable; however, review task to see if risk can be reduced further.
7 – 14	Task should only proceed with appropriate management authorisation after consultation with specialist personnel and assessment team. Where possible, the task should be redefined to take account of the hazards involved or the risk should be reduced further prior to task commencement.
15 – 25	Task must not proceed. It should be redefined or further control measures put in place to reduce risk. The controls should be re-assessed for adequacy prior to task commencement.

		Likelihood				
		<Low (1) Not credible ie the team have never heard of event occurring in industry	Low (2) Conceivable but would require multiple failures of systems and controls	Medium (3) Less than average ie easy to postulate a scenario for accident but considered unlikely	>Medium (4) More than average ie the team do not have direct knowledge but suspect that event may have occurred and represents a credible scenario	High (5) Likely to occur and the team have knowledge of a similar event
Severity (consequences)	<Low (1) Injury is not credible	1	2	3	4	5
	Low (2) Only a minor injury is credible	2	4	6	8	10
	Medium (3) A single serious injury is credible	3	6	9	12	15
	>Medium (4) Fatality or multiple serious injury is credible	4	8	12	16	20
	High (5) Multiple fatality is credible	5	10	15	20	25

1 – 6	May be acceptable; however, review task to see if risk can be reduced further.
7 – 14	Task should only proceed with appropriate management authorisation after consultation with specialist personnel and assessment team. Where possible, the task should be redefined to take account of the hazards involved or the risk should be reduced further prior to task commencement.
15 – 25	Task must not proceed. It should be redefined or further control measures put in place to reduce risk. The controls should be re-assessed for adequacy prior to task commencement.

By redefining the hazard severity, risk evaluation matrices can be used to assess health, production and environmental risk as well as the risk of accident and injury. An example of these definitions may be:

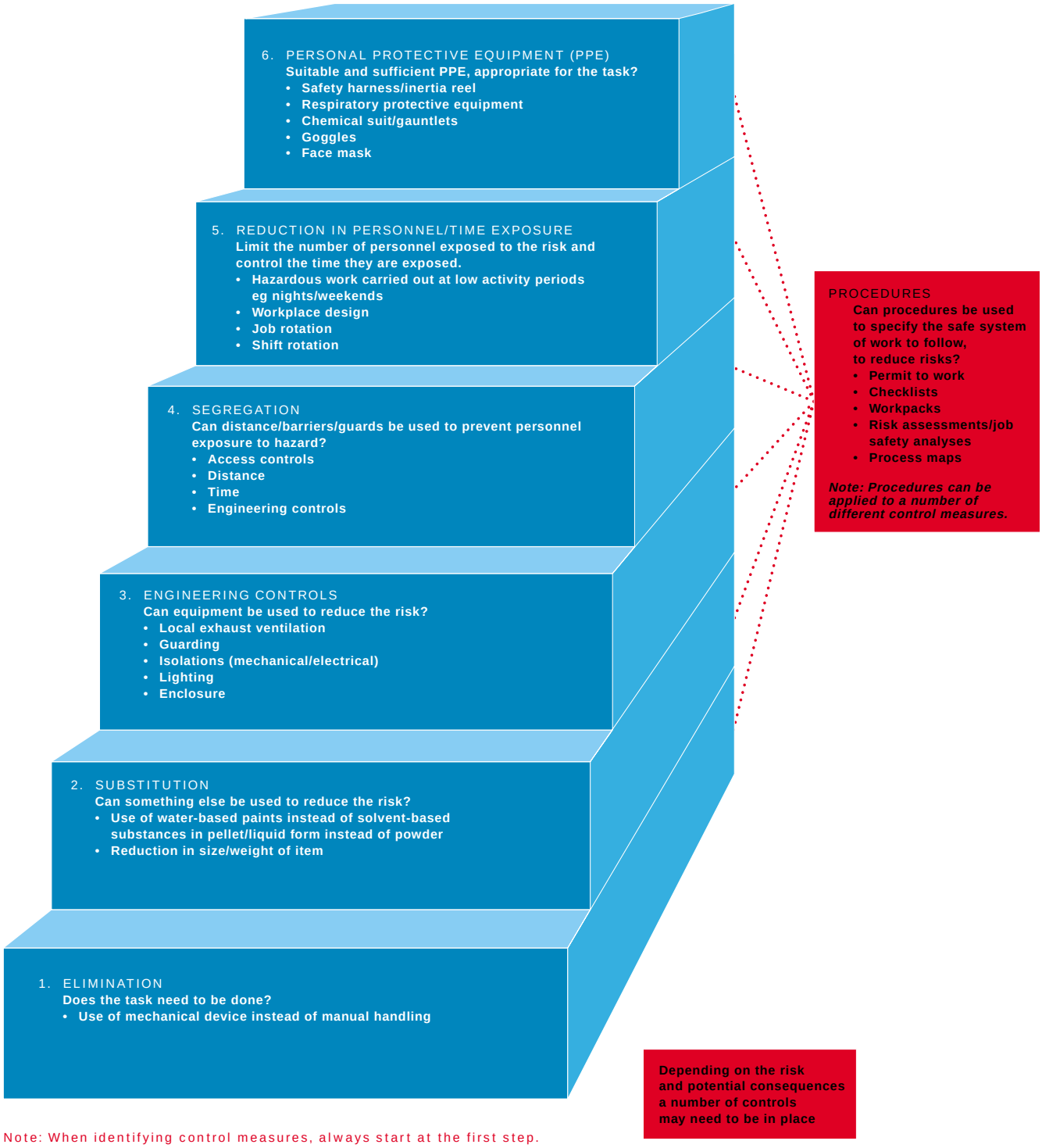
1 Negligible injury or health implications, no absence from work. Negligible loss of function/production with no damage to equipment or the environment.

2 Minor injury requiring first-aid treatment or headache, nausea, dizziness, mild rashes. Damage to equipment requiring minor remedial repair, loss of production or impact to the environment.

3 Event leading to a lost time incident or persistent dermatitis, acne or asthma. Localised damage to equipment requiring extensive repair, significant loss of function/production or moderate pollution incurring some restitution costs.

4 Involving a single death or severe injury, poisoning, sensitisation or dangerous infection. Damage to equipment resulting in production shutdown and significant production loss. Severe pollution with short-term localised implications incurring significant restitution costs.

5 Multiple deaths, lung diseases, permanent debility or fatality. Major pollution with long-term implication and very high restitution costs.



Note: When identifying control measures, always start at the first step.

TASK RISK ASSESSMENT

TRA Number:.....

Job Description:.....

Job Steps	HAZARD		INITIAL RISK			CONTROLS	RESIDUAL RISK		
	Hazard Description and Effect	**Population at Risk**	**Hazard Severity**	**Likelihood of Occurrence**	**Risk Rating**	**List all Controls Required**	**Hazard Severity**	**Likelihood of Occurrence**	**Risk Rating**
Separate the job into individual tasks and record in sequence.	Describe all hazards identified and their effects for each task (from Hazard ID checklist and based on observations and experience). Note: Additional hazards may be caused by interaction with other work.	Name all types of personnel at risk. Remember to include people outside the work party who may be affected.	From matrix, identify severity with no controls in place for each hazard.	From matrix, identify likelihood with no controls in place for each hazard.	Classify risk rating from matrix for each hazard.	Describe fully all controls applicable for each hazard eg if PPE is used as a control, it must be specifically described. If a control can only be verified by documentation then it must be available. All controls must be valid in that they reduce severity, likelihood or both.	From matrix, identify severity with controls in place for each hazard.	From matrix, identify likelihood with controls in place for each hazard.	Classify risk rating from matrix for each hazard.
Assessor's signature:						Date:			

Hazard/Risk Management

Can all personnel in the group answer YES to the following questions?

- *Have all the significant hazards involved with the work been identified?* ☐
- *Have control measures been identified for these hazards?* ☐
- *Have the people responsible for implementing these control measures been identified and are the controls in place?* ☐
- *Has the method of communication been agreed and tested?* ☐
- *Is everyone aware of what is being done at the worksite?* ☐
- *Are we aware of what everyone else is doing at the worksite?* ☐
- *Does everyone know that any changes to the work plan have to be communicated to everyone involved in the work?* ☐
- *Does everyone know that any new people joining the work party must be given a full and thorough handover?* ☐

If the answer to any of these questions is NO, then the safety of people is at risk

The talk leader should confirm the understanding of the group by asking open questions on the above points

Hazard/Risk Identification

Will the work involve:

- *The use of lifting equipment?* ☐
- *Working in noisy areas?* ☐
- *Line breaching or potential hydrocarbon release?* ☐
- *Environmental impact?* ☐
- *Manual handling – moving objects/loads? (If yes, obtain/complete a manual handling assessment)* ☐
- *Working near objects that may move?* ☐
- *Working in an area with poor lighting or a tight/confined space?* ☐
- *Working at height?* ☐
- *Working near areas that could cause personnel to slip, trip or fall?* ☐
- *Using portable electrical equipment?* ☐
- *Working with equipment or connections under pressure?* ☐
- *Working with dangerous goods and substances hazardous to health?* ☐
- *Personnel who are new to the platform or each other?* ☐
- *Equipment which is potentially dangerous?* ☐

If so, the work may be hazardous and care should be taken to ensure that the work is done safely

Remember, everyone is responsible for:

- *Using the correct tools for the job*
- *Being aware of the hazards around them and remaining vigilant to change*
- *Using the correct PPE for the job*
- *Making themselves aware of, and working within, the requirements of the PTW system, Procedures, DOG, Risk/COSHH/Manual Handling Assessments*

Toolbox Talk Risk Identification Card

Platform: .....

Location: .....

Talk Leader: .....

Person Supervising: .....

Job: .....

Date and Time: .....

Attendees

1	7 .....
2	8 .....
3	9 .....
4	10 .....
5	11 .....
6	12 .....

Reviewed by (initials):

Talk leader .....

HOD .....

Onshore .....

Action Required:

Update procedures ☐

Update risk assessment(s) ☐

Other ☐

(Raise remedial action form or change requests as necessary)

This product was developed by KCA Deutag

RISK CONTROL

This section should be used to summarise the key points of relevant risks identified by the team discussion

Procedure/DOG/Work Guideline Reference: _____

Permit/Job Card No: _____

Risk Assessment Reference No: _____

TASK: The steps involved in doing the job	*HAZARD:* What could go wrong and what would the effects be?	*CONTROLS:* How can the hazards be prevented?	*RESPONSIBILITIES:* Who is going to take action?	*CONTROLS IN PLACE?*	
				Yes	*No*

DE-BRIEF:
Additional comments and learning comments

This product was developed by KCA Deutag

PREREQUISITES OF A SUCCESSFUL RISK ASSESSMENT AWARENESS CAMPAIGN

- Commitment from senior management to follow through with the process
- Visible and considerable effort from OIMs, supervisors and safety reps to carry out the agreed number of interviews
- Allocating sufficient time and planning this time into the day's plan
- Use a 'No names, No pack drill' approach to carrying out the interviews. Where serious digressions from safe working practices exist, follow-up actions will be taken
- Interviewers must ask questions in a consistent manner and must not lead the interviewee - this will ensure a consistent measurement process
- Guidance range statements must be in use to pinpoint the quality of the response
- Results of interviews must be shared with the workforce and management on a regular basis, ie at safety meetings, continuous improvement meetings etc

DISPLAY THE RESULTS!

- Analyse the results to understand common root causes then act on the results to improve the work environment

RISK ASSESSMENT AWARENESS MEASUREMENT PROCESS

1. Agree a target for random risk assessment awareness interviews and keep a running tally/score of actual interviews carried out.
2. Select the job/task which you wish to measure and read through all supporting information, ie permit to work, risk assessment, method statement etc.
3. Take a new TRA monitoring sheet when visiting the worksite. Observe operation and select one individual from the work team to interview.
4. Explain the purpose of the process. Commence the interview by asking the questions as stated on the form and record the answers as accurately as possible.
5. Use the range statements to allocate a score to each answer. Tally the scores at the end of the interview.
6. Discuss the outcome of the interview with the team and, where applicable, revisit the risk assessment.
7. Where appropriate, take immediate action to stop a job if the level of understanding or control measures are inadequate.
8. At the end of each week/month, tally all scores and capture generic issues. Use this information to continuously improve risk assessment awareness performance.
9. At an agreed periodicity and through an agreed medium, share the scores and common issues with other company assets. Work towards continuous improvement.

Through the Step Change Forum, share results to look for industry-wide continuous improvement.

TRA MONITORING SHEET

Date:.....

Q.1 Explain your understanding of the job/task you have been asked to carry out?

.....
.....
.....
.....
.....

1. Has no understanding of the task to be carried out. 2. Partial understanding of the task. 3. Understands enough to work out what needs to be done. 4. Fully understands their own activity in the job/task but may not fully understand the complete job/task. 5. Fully understands the complete job/task in detail.	Score

Q.2 What do you see as the hazards to (a) yourself (b) others (c) the environment?

A.....
.....

B.....
.....

C .....
.....

1. Has no understanding of the hazards. 2. Partial understanding of the hazards. 3. Understands enough of the hazards to work out what needs to be done. 4. Full understanding of the hazards in their own job/task but may not fully understand the total hazards in the job/task. 5. Fully understands the complete hazards in detail.	Score

Q.3 Do the control measures fit the hazards/tasks to protect (a) self (b) others (c) environment?

A.....
.....

B.....
.....

C .....
.....

1. Has no understanding of the control measures to be carried out. 2. Partial understanding of the control measures. 3. Understands enough of the control measures to work out what needs to be done. 4. Full understanding of the control measures in their own job/task but may not fully understand the total control measures in the job/task. 5. Fully understands the complete control measures in detail.	Score
Observations	Total

Controls.....
.....

ALARP	As Low As Reasonably Practicable
COSHH	Control of Substances Hazardous to Health Regulations
DAFW	Days Away From Work
DOG	Drilling Operations Guidelines
HOD	Head of Department
LOLER	Lifting Operations and Lifting Equipment Regulations
PPE	Personal Protective Equipment
PTW	Permit to Work
PUWER	Provision and Use of Work Equipment Regulations
TBT	Toolbox Talk
TRA	Task Risk Assessment
TRIC	Toolbox Talk Risk Identification Card
Accident	An undesired event which results in actual loss (ie injury to personnel, impact on or release to the environment, property/equipment damage and/or production/productivity loss).
Competence	The ability to be able to perform an activity to the expected standard.
Competent Person	A person who, by reason of their training, knowledge and experience, is considered capable of adequately assessing the Health, Safety and Environmental risks associated with the task(s).
Controls	Precautionary measures which reduce or eliminate the risk.
Hazard	A condition in the workplace, equipment, or a method of carrying out an activity which has the potential to cause harm.
Hazard Effect	The potential outcome/consequences of the relevant hazard.
Likelihood	The expectation, possibility or chance of something happening, sometimes referred to as probability or frequency.
Near Miss	An undesired event which does not result in physical loss but has the potential to do so.
Residual Risk	The risk that remains after all the identified control measures have been put in place.
Risk	The result of the Hazard Severity x Likelihood.
Risk Rating	A means of expressing the risk of a task in terms of a value that represents both its likelihood and severity.
RSI	Repetitive Strain Injury
Task	An individual work assignment being a job or part of a job carried out by one or more persons.
Toolbox Talk	A meeting, involving a two-way dialogue, to ensure that everyone clearly understands what the job entails along with its hazards and the precautions to be put in place.

task risk assessment team

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PGS

Shell

Step Change ESR Network

Step Change OIM Network

TotalFinaElf

Transocean

Weatherford

Wood Group Engineering

An electronic copy of this document is available to download from the Step Change website (www.stepchangeinsafety.net) together with a useful presentation to help with roll-out within your organisation

STEP CHANGE IN SAFETY

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