

# Associated Non Technical Skills

Action Learning Program

## Train the Coach Learning Resource



Trade &  
Investment  
Mine Safety



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# Modules

## Module 1

## Communication

- Learning Outcome 1.1** Apply skills of speaking and listening
- Learning Outcome 1.2** Address existing or potential barriers to effective communication
- Learning Outcome 1.3** Prepare clear written materials
- Learning Outcome 1.4** Use assertive communication where appropriate

## Module 2

## Situation Awareness

- Learning Outcome 2.1** Understand the basics of situation awareness
- Learning Outcome 2.2** Gather relevant information to identify current situation
- Learning Outcome 2.3** Use gathered information to build situation awareness
- Learning Outcome 2.4** Maintain situation awareness

## Module 3

## Decision Making

- Learning Outcome 3.1** Choose suitable decision making processes for different circumstances
- Learning Outcome 3.2** Use effective decision making tools to ensure all relevant information is considered
- Learning Outcome 3.3** Address potential and existing biases and barriers to effective decision making
- Learning Outcome 3.4** Maintain situation awareness

## Module 4

## Leadership

- Learning Outcome 4.1** Understand basic leadership principles
- Learning Outcome 4.2** Determine and apply leadership principles to workplace situations
- Learning Outcome 4.3** Use motivation and influence to achieve outcomes
- Learning Outcome 4.4** Use assertiveness and influence to overcome barriers

## Module 5

## Team work

- Learning Outcome 5.1** Support the development of an effective team
- Learning Outcome 5.2** Demonstrate mutual performance monitoring and backup behavior
- Learning Outcome 5.3** Project shared mental models of situation awareness
- Learning Outcome 5.4** Overcome barriers for effective team work

# Associated Non-Technical Skills

Non-technical skills are the organisational and interpersonal competencies that ensure safe and efficient work.

To work safely and effectively, you need to be able to use both technical and non-technical skills.

Non-technical skills help to apply technical skills, like equipment operation, in a safe and healthy working environment. For example, to operate equipment safely you need to be able to communicate and work effectively with others, as well as know how to use the accelerator and brakes.

The NSW Mine Safety Advisory Council (MSAC) has identified the following 5 core Associated Non-Technical Skills (ANTS) for the NSW mining and extractives industry:

1. Communication
2. Situation Awareness
3. Decision Making
4. Leadership
5. Team work

These skills were once seen as part of someone's personality, not skills that could be learnt. A supervisor who was bad-tempered with their team or who didn't follow up effectively on identified risks was seen as "grumpy" or "lazy". We now know that communication and leadership are skills that can be learnt, even if the behaviours do not come naturally.

You can download a series of factsheets about these skills from the department's website at [www.resources.nsw.gov.au/safety/world-leading-ohs/ants](http://www.resources.nsw.gov.au/safety/world-leading-ohs/ants)

# Program Instructions

## Train the coach

Self-directed learning relies on the learner systematically undertaking the program's directed study activities. It is a flexible method of delivery, with learners able to study at a pace and in an environment that suits them. It requires a high level of commitment from the learner.

Learners will need access to the following:

- Text book
  - Flin, R, O'Connor, P & Crichton, M 2008, *Safety at the Sharp End: A Guide to Non-Technical Skills*, Ashgate, Aldershot UK.
- Internet access
  - Access to YouTube and a search engine (i.e. Google or Bing) is required to complete the program.

In addition it is expected the learner will:

- complete the learning needs questionnaire
- read through essential readings
- answer study questions that are designed to challenge your knowledge of the topic and consider how to use the skills in a practical setting
- watch video via the YouTube links provided
- answer study questions
- identify a practical opportunity, then plan, conduct and journal it.

Additional reading material has also been suggested for the learner. These readings are not essential but may be of further benefit.

## Purpose

This module addresses the key features of effective communication, which underpin all organisational and interpersonal skills. Effective communication is essential for effective WHS management.

## Learning outcomes

At the end of this module, participants will be able to:

- 1.1 Apply skills of speaking and listening
- 1.2 Address existing or potential barriers to effective communication
- 1.3 Prepare clear written materials
- 1.4 Use assertive communication where appropriate.

## Learning resources

### Essential reading:

- *Safety at the Sharp End: A Guide to Non-Technical Skills*, chapter 4, 'Communication' pp.69-76.
- *How to write clearly and concisely* <http://business-writing.proof-reading.com/?p=52>

### Essential viewing:

- Video: Air Crash Disasters – the Tenerife Air Disaster. Part 1  
[www.youtube.com/watch?v=ChEuaDVnObE](http://www.youtube.com/watch?v=ChEuaDVnObE)

### Further reading:

- Hopkins, A 1999, *Managing Major Hazards: The lessons of the Moura Mine disaster*, Allen and Unwin, Crows Nest, chapter 3, The Communication System.
- Hopkins, A 2000, *Lessons from Longford: The Esso Gas Plant explosion*, CCH Australia, Sydney, chapter 5, Communication: Problems and Solutions.
- Transport Canada's on-line materials in relation to communication for aviation:  
<http://www.crm-devel.org/resources/misc/transcan/transcan3.htm#process>
- Weick, K 1990, 'The Vulnerable System: An Analysis of the Tenerife Air Disaster', *Journal of Management*, vol. 16, issue 3, pp. 571 – 593

## Introduction

Communication is sharing information between individuals and is important for information gathering, issuing instructions or making decisions.

Communication needs to be clear, timely, relevant and use standard language. In addition feedback in two-way communication helps prevent misunderstanding. The sender and receiver need to be prepared to question or challenge.

Individuals also need to check to make sure the message has been heard accurately. Inadequate communication and lack of “role clarity” can cause team underperformance.

## Learning outcome 1.1

### Apply skills of speaking and listening

#### Exercise 1.1.1

Think about your day to day communication activities. What are the main methods of communication you use, what device/s do you use to communicate and why do you use this method for communication?

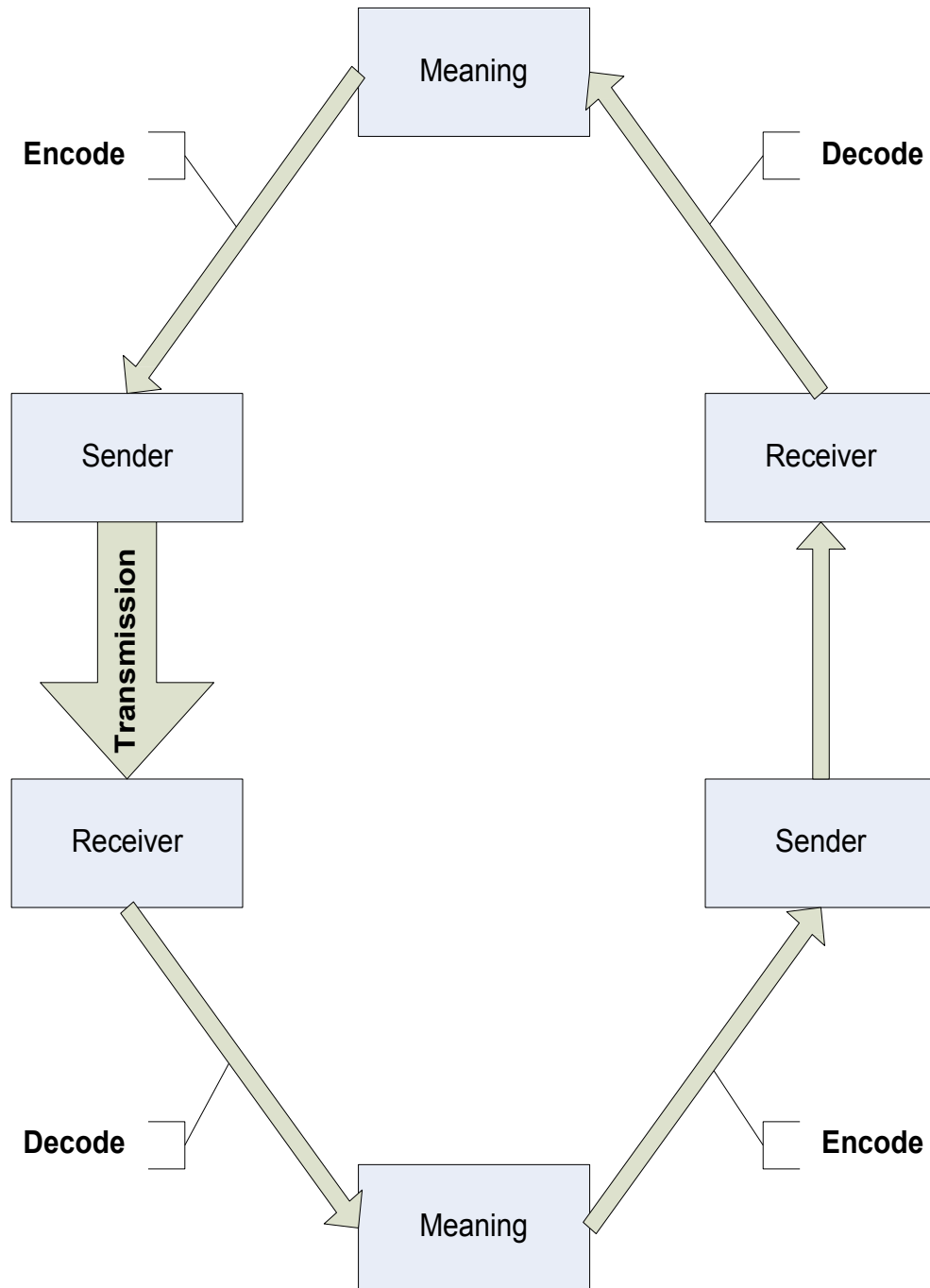
#### Workplace communication activity

Type	Devices	Why
e.g. Verbal	Radio	Logistics of myself and the other person.

### Exercise 1.1.2

This model demonstrates the communication process. Using the diagram below, circle the areas in the process where information can be distorted or miscommunication can occur.

#### Communication Model





## Learning outcome 1.2

### Address existing or potential barriers to effective communication

#### Exercise 1.2.1

Choose three methods of communication from Exercise 1.1.1 and identify opportunities where the message can be distorted or miscommunicated and why this may occur.

Method	Devices	Miscommunication or distorted communication opportunities	Why
e.g. Verbal	Radio	Transmitting message to receiver and receiver decoding message	There could be an interruption in transmission or the receiver may not interpret the information in the way that I intended

## Essential reading

*Safety at the Sharp End: A Guide to Non-Technical Skills*, chapter 4, 'Communication'  
pp. 69-76.

## Study questions

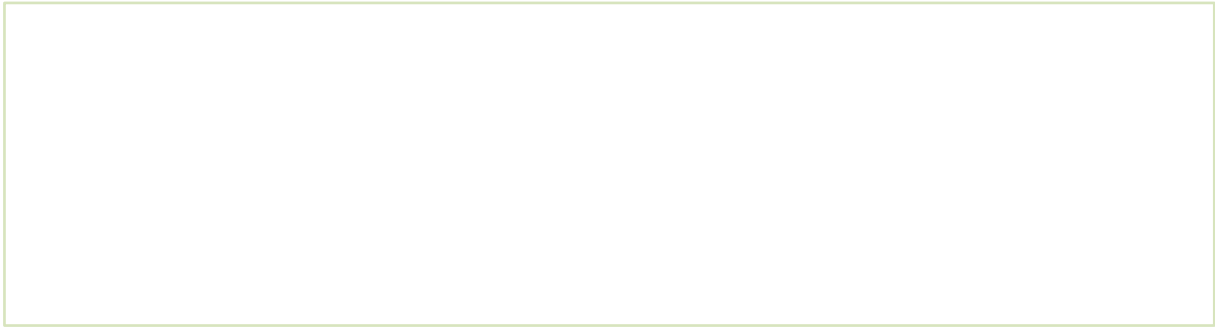
What are the advantages of one-way communication?

What are the disadvantages of one-way communication?

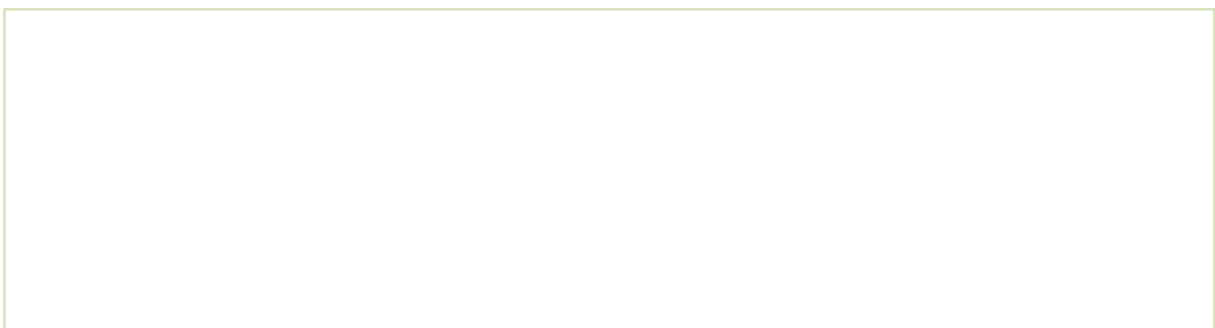
What are the advantages of two-way communication?

What are the disadvantages of two-way communication?

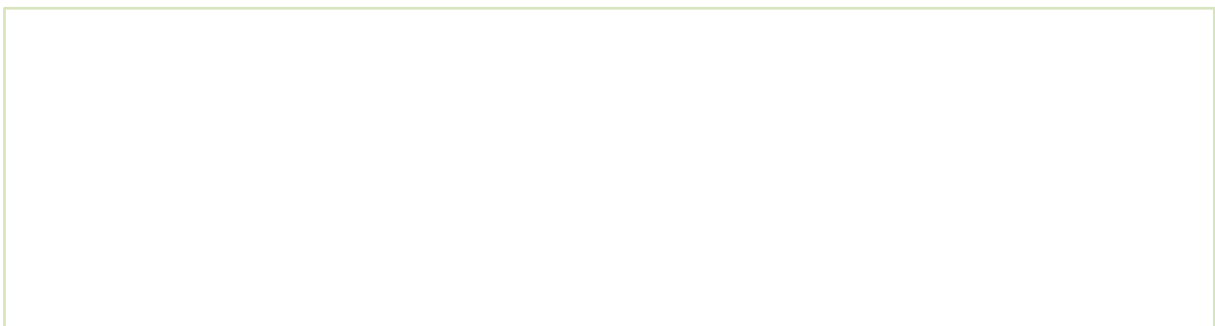
What are the two types of feedback?



What are the types of communication?



Identify and explain the different types of non-verbal communication.



## Types of questions

There are different types of questions, used for different purposes.

### Closed questions

These are questions which can only be answered with a yes or a no, for example 'Are people treated fairly on this site?' This type of question can be used effectively when followed by an open question, for example 'What leads you to this view?'

### Open questions

Open questions require a more detailed answer. They are usually of the how, why, when, where, what and who style, for example 'What do you do well in WHS on this site?'

### Direct questions

Direct questions are made of individuals in a group, for example 'Andrew, why is it important to... ?' They don't require other group members to think about the answer, and it is recommended that you don't use them too much. Their main use is to recognise someone's special knowledge or interest in a particular field.

### Depth of questioning

Questions vary in the extent to which they make demands on a work group. A "shallow" question just asks the group to recognise something (e.g. 'What is this?') or to review something which you have covered recently (e.g. 'What is a leading question?'). On the other hand, questions can require original or creative thinking, like in brainstorming (e.g. 'How could we prevent this hazard?') or require evaluation (e.g. 'What is the most effective prevention?').

## Learning outcome 1.3

### Prepare clear written materials

Written communication is central to WHS in the mining industry. Written documents such as work procedures and shift logbooks communicate information critical to maintaining healthy and safe operations. Unclear and badly written materials can be ignored and often result in misunderstandings.

To write clearly, keep the following in mind;

- Use less words, shorter and more succinct sentences are better.
- Use shorter words rather than longer more formalised words, for example “talk” instead of “communicate”, “on” instead of “upon”, “in” instead of “within” , “so” instead of “hence”.
- Use short sentences and paragraphs.
- Use dot points to minimise sentence length.
- Dot points can help you clarify in your own mind what is and isn’t important.
- Use active tense wherever possible (and appropriate) to make your writing clearer and less bureaucratic.
- Employees should have a clear understanding of the instructions conveyed by supervisors.
- Always begin by writing a statement of the purpose of the document.
- Edit your document carefully before sending it off.
- If possible leave sometime between writing the document and completing the final edit.
- Don’t send a document off in the heat of the moment. Edit with a cool head and an eye to what you want to achieve from your reader.

Use *How to write clearly and concisely* (see essential reading below), or some other suitable guide, as the basis for an exercise in preparing written materials. This could be:

- Review for clarity and completeness of one or more work procedures, shift logbooks or some other documents that are critical for WHS in participants’ workplaces. Prepare recommended changes where needed.

#### Essential reading

*How to write clearly and concisely*: <http://business-writing.proof-reading.com/?p=52>

## Plan your document

### Purpose

- Why am I writing this?
- Who will read this?
- What do I want them to do as a result of reading the document?
- What am I trying to say?
- What are they expecting in the document?

### Language

- What sorts of words do they use about this subject?
- What type of language should I use?
- What is their level of literacy?

### Content

- Who is it for?
- What do they know already?
- What background information will readers need?
- What other information do I need to include?
- How much information do I need?
- What can I leave out?
- What will I need to explain?

### Structure

- How do I want it to look?
- What format will I use?
- What layout will I use?

### Edit

- Test document
- Go back over document
- Have someone else read document

## Learning outcome 1.4

### Use assertive communication where appropriate

#### Essential viewing

Video: Air Crash Disasters – the Tenerife Air Disaster.  
<http://www.youtube.com/watch?v=ChEuaDVnObE>

#### Assertive communication

Communication is sometimes needed to alert people to situations or issues they are not aware of or are trying to avoid. For example, sometimes you must speak up when a situation is not safe, even when a more senior person has not noticed or does not agree. The Tenerife air disaster is often used as an example of why this is so important. If the co-pilot or flight engineer on KLM Flight 4805 had been more assertive with the much more senior captain, the disaster may have been averted.

From your own experience in speaking up what were the challenges in doing so?

What was the outcome?

<b>P</b>	<b>Probing</b> for a better understanding Inquiring into a potential problem e.g. Please explain why we have not given roof bolting crews methane detectors.
<b>A</b>	<b>Alerting</b> others to what you can see Stating your concern e.g. I am concerned that non-flameproof equipment is being used underground when we know that the methane levels are reaching explosive levels.
<b>C</b>	<b>Challenging</b> the suitability of present strategy Defining alternative actions e.g. We cannot continue to mine with methane levels in the explosive range and crews must be removed from the pit immediately.
<b>E</b>	<b>Emergency</b> warning of critical and immediate dangers Intervening to prevent disaster if necessary e.g. You must act now. If you don't order an evacuation of the mine, I will.

#### Shift handovers

Review the effectiveness of shift handovers on your site. Develop an evaluation criteria and prepare a report about the effectiveness of the communication in the shift handover.

#### Essential reading


*Safety at the Sharp End: A Guide to Non-Technical Skills*, Chapter 4, Communication, pp. 69-76.

## Case study

You can base your case study from your own experiences or use the Westray Mine case study.

## Study question

Briefly explain how communication contributed to this event.



**NOTE:** You have completed this module, please contact your facilitator and inform them that you have completed module 1.



## Purpose

This module covers situational awareness – knowing what is going on around you, what is happening now, and what might happen in the future so that you are able to respond effectively to risk. It is critical to preventing incidents.

## Learning outcomes

At the end of this module, participants will be able to:

- 2.1 Understand the basics of situational awareness
- 2.2 Gather relevant information to identify current situation
- 2.3 Use gathered information to build situation awareness
- 2.4 Maintain situation awareness

## Learning resources

### Essential reading

- *Safety at the Sharp End: A Guide to Non-Technical Skills*, chapter 2, Situation Awareness

### Essential viewing

- Video: Inattention blindness\_  
<http://www.theinvisiblegorilla.com/videos.html>

### Further readings

- Dekker, S, 2006, *The Field Guide to Human Error*, Aldershot, Ashgate UK, ch.14, 'So what went wrong?'
- Hopkins, A, 2007, *Lessons from Gretley: Mindful leadership and the law*, CCH Australia, Sydney, ch.4, 'The second failure: Dismissing the warnings'.
- Transport Canada's on-line materials in relation to situation awareness for aviation:  
<http://www.crm-devel.org/resources/misc/transcan/transcan7.htm>
- Weick, K, & Sutcliffe, K, 2007, *Managing the Unexpected: Resilient performance in an age of uncertainty*, John Wiley and Sons. San Francisco, ch.3, 'The three principles of anticipation'.
- Woods, D, Dekker, S, Cook, R, Johannesen, L & Sarter, N, 2010, *Behind Human Error*, Ashgate, Farnham, ch.7, 'Mindset'.

## Introduction

Situational awareness is the process of gathering information, deciding what it means and anticipating what might happen in the future. This requires concentration and attention.

People need a mental model of interactions between the work process, plant, equipment, environment and others to interpret what is happening now. This is also informed by past experience and knowledge.

An individual's ability to assess risk uses this skill as it requires the person to think ahead. Fatigue and stress will affect memory and memory recall. Organisational factors, including perceived organisational priorities (e.g. production targets) may lead to managers and workers applying a poor mental model.

## Learning outcome 2.1

### Understand the basics of situation awareness

Situational awareness is about how well you can answer:

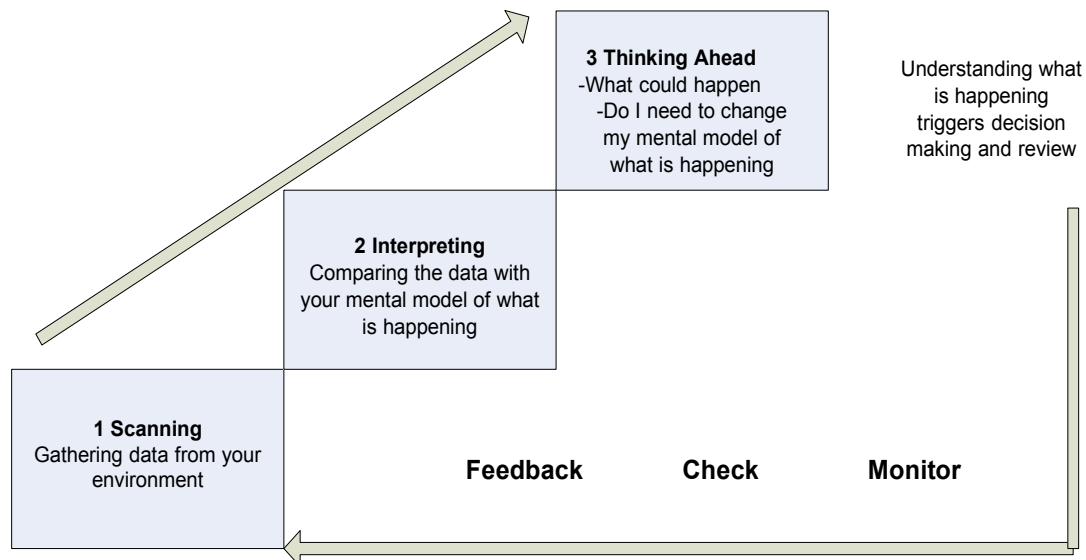
- What happened?
- What is happening?
- What could happen?

### Situation Awareness Model

What happened?

What is happening?

What could happen?



## Learning outcome 2.2

### Gather relevant information to identify current situation

#### Essential reading

*Safety at the Sharp End: A Guide to Non-Technical Skills*, Chapter 2, 'Situation Awareness', pp.17-31

#### Study questions

Give a brief description of working memory.

Give a brief description of long term memory.

What are the three levels of situational awareness?

## Essential viewing

Video: The invisible gorilla

[www.theinvisiblegorilla.com/videos.html](http://www.theinvisiblegorilla.com/videos.html)

## Study questions

How could you avoid inattentive blindness in your work?

What other sources of information could you use to make sure you see the “gorillas” in your workplace?

How can you use the diversity available in your crew to address this?

## Learning outcome 2.3

### Use gathered information to build situation awareness

#### The four elements of situation awareness



## Learning outcome 2.4

### Maintain situation awareness

#### Essential reading

*Safety at the Sharp End: A Guide to Non-Technical Skills*, ch.2, 'Situation Awareness', pp.31-37

#### Study questions

What factors affect situation awareness?

Describe how you can maintain situation awareness.

## **Situational awareness is likely to be poor when there is:**

- high workload
- time pressure
- confusion
- distractions and interruptions
- multi-tasking
- preoccupation with other tasks
- inadequate feedback from crew members
- inexperienced crews
- fatigue
- high stress situations
- abnormal activities or emergency procedures
- inadequate planning or briefing
- impulsiveness - rush or hurry
- fixation or preoccupation on particular part of the activity to the exclusion of other tasks
- ambiguous information or situations
- accepting second hand information – not checking directly
- complacency, not resolving discrepancies
- use of inadequate or improper procedures.

## **Signs that situational awareness is falling:**

- ambiguity – information from two or more sources doesn't agree
- fixation – you are focusing on one thing to the exclusion of everything else
- confusion – you have uncertainty or misunderstanding about a situation or some information
- you can't resolve discrepancies, such as contradictory data or disagreements about what to do
- breaking rules – limitations, minimums, regulatory requirements
- poor communication – vague or incomplete statements
- failure to follow SOPs – sequence ignored or skipped steps
- no time – in a hurry or behind schedule
- gut feeling – if it doesn't feel right, it probably isn't.

## **Ways to recover situational awareness:**

Go to the nearest safe, simple and stable situation and follow procedures

Assess the current situation with different data

Go back to the last thing you were sure of

Avoid fixation on a past problem

Take time to think:

- What is your immediate goal?
- What are you doing now to get there?
- What is the current problem?
- What are you worried about?
- What do you think the problem will look like in five minutes and why?
- What do you need to know to solve this problem that you don't already know?

## **What should you do to maintain situation awareness?**

Scan to seek information:

- know what is important, when, and where to find it
- Process, Plan, People (3 Ps)

Check your understanding:

- real world
- memory

Plan ahead:

- what if
- cross check

Manage your attention.



## STICC analysis<sup>1</sup>

Use this series of steps to structure crew briefings to support good situation awareness.

<b>S</b> ituation	Here's what I think we face.	
<b>T</b> ask	Here's what I think we should do.	
<b>I</b> ntent	Here's why I think that is what we should do.	
<b>C</b> oncern	Here's what we should keep our eye on because if that changes, we're in a whole new situation. The situation may change – watch out for that possibility.	
<b>C</b> alibrate	Now, talk to me. Tell me if: <ul style="list-style-type: none"><li>- You don't understand</li><li>- You cannot do it</li><li>- You see something I do not.</li></ul>	

**NOTE:** You have completed this module, please contact your facilitator and inform them that you have completed module 2.

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<sup>1</sup> Klein, G, 2003, *Intuition at Work*, Doubleday, New York.

Quoted in: Weick, K & Sutcliffe, K, 2007, *Managing the Unexpected: Resilient performance in an age of uncertainty*, John Wiley and Sons, San Francisco.

## Purpose

This module deals with decision making, reinforcing the value of a systematic approach to support good WHS management. It covers tools and hints that will support sound decision making.

## Learning Outcomes

At the end of this module, participants will be able to:

- 3.1 Choose suitable decision making processes for different circumstances**
- 3.2 Use effective decision making tools to ensure all relevant information is considered**
- 3.3 Address potential and existing biases and barriers to effective decision making**
- 3.4 Maintain situation awareness**

## Learning resources

### Essential readings

- *Safety at the Sharp End: A Guide to Non-Technical Skills*, ch. 3, 'Decision making'

### Essential viewing

- Video: Air Crash Investigation - Mistaken Identity video of the USS Vincennes story [http://www.youtube.com/watch?v=Onk\\_wl3ZVME](http://www.youtube.com/watch?v=Onk_wl3ZVME)

### Further readings

- Hayes, J, 2009. *Learning from High Reliability Organisations*, CCH Australia, Sydney, 'Operational Decision-making'.
- Reason, J, 2008, *The Human Contribution: Unsafe Acts, Accidents and Heroic Recoveries*, Ashgate, Farnham, pp. 162–16. Provides a case study of the rescue of passengers from the Titanic that highlights the role of decision-making.
- Operator's Guide to Human Factors in Aviation - Personal Qualities: Decision-Making, available at: [http://www.skybrary.aero/index.php/Decision-Making\\_%28OGHFA\\_BN%29](http://www.skybrary.aero/index.php/Decision-Making_%28OGHFA_BN%29)

## Introduction

Decision making is a judgment or choosing an option. Closely linked to situational awareness, it involves assessing the situation, thinking of options, selecting and carrying out the best option and evaluating the outcome.

Like situational awareness, decision making requires individuals to search their memory to recognise the cues to identify and apply the right set of rules. Technical expertise, experience and familiarity with the situation all influence decision making. As do fatigue, stress, noise and other distractions. Perceived organisational priorities will also influence the decision.

## Learning outcome 3.1

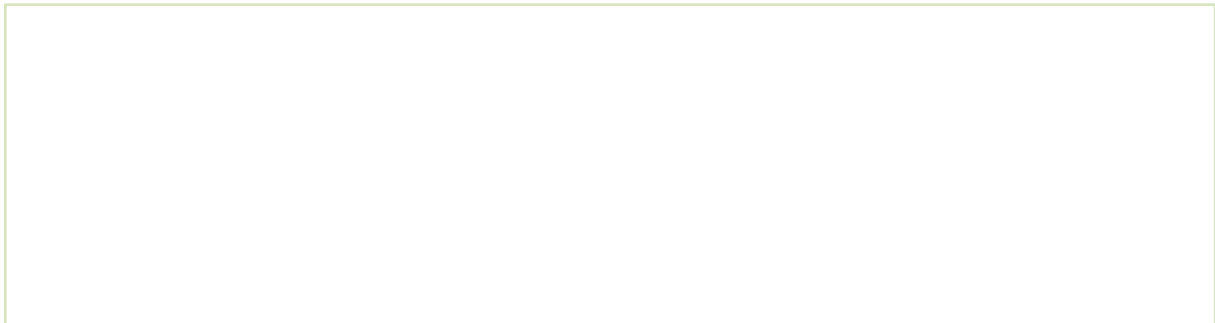
### Choose suitable decision making processes for different circumstances

#### Essential reading

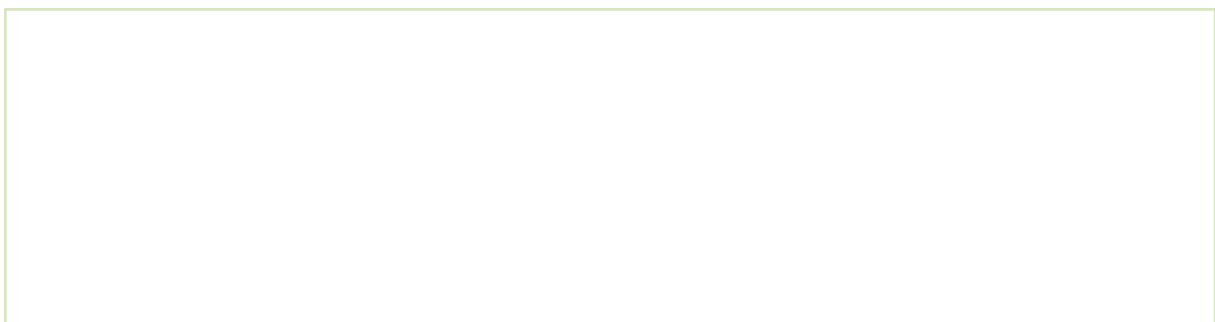
Chapter 3, "Decision making" in Flin, Rhona, O'Connor, Paul and Crichton, Margaret (2008), *Safety at the Sharp End: A Guide to Non-Technical Skills*, Aldershot: Ashgate pages 41-64

#### Study questions

Describe the link between the decisions we make and how these decisions may impact upon the health and safety of others



Draw the decision making model below.



## The decision making process

There are a number of different acronyms used to specify the steps in a systematic decision making process.

### The GRADE model of decision making

GRADE is one approach to systematic decision making.

<b>Gather</b>	Gather all facts and information about the event – what still works and what does not?
<b>Review</b>	Look at the relevance and importance of the information to the decision Determine what further information is needed, where this information can be located, how it can be verified. Compare with something familiar. Form a mental model. Match patterns.
<b>Analyse</b>	Assess and form an understanding of the situation. Have you seen something similar? Consider possible solutions.
<b>Decide</b>	Choose the safest practical solution. Identify the actions necessary to carry out the safest option. Have you done this before? What are the expected outcomes? Act by carrying out the safest option.
<b>Evaluate</b>	Evaluate the changes due to the action; reassess the situation, revise the plan if necessary. Review the situation.

### Exercise 3.1.1

Using the Westray case study, use the GRADE approach to determine what changes you would make and why, to improve the health and safety of Westray. Document your recommendations below.

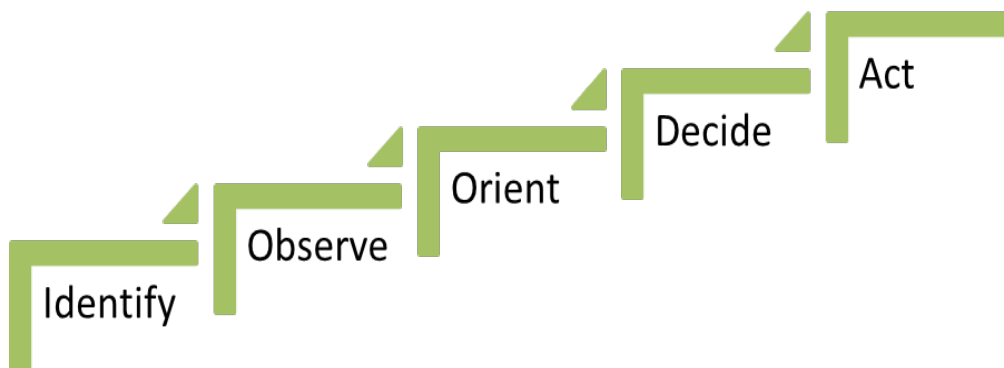
<b>Gather</b>	
<b>Review</b>	
<b>Analyse</b>	
<b>Decide</b>	
<b>Evaluate</b>	

## Learning outcome 3.2

### Use effective decision making tools to ensure all relevant information is considered

The following diagram demonstrates a five step process to apply when making decisions.

- Identify** - Determine the outcome you want to achieve
- Observe** - Collect information from relevant sources
- Orient** - Analyse the information and determine potential outcome
- Decide** - Choose the result that closely reflects on identified outcome
- Act** - Put into action your decision



## Learning outcome 3.3

### Address potential and existing biases and barriers to effective decision making

#### Essential viewing

- Video: Air Crash Investigation - Mistaken Identity video of the USS Vincennes story [http://www.youtube.com/watch?v=1LeYT9p\\_X3o](http://www.youtube.com/watch?v=1LeYT9p_X3o) [Air Crash Investigation - Mistaken Identity \(S03E06\) - YouTube](#)

#### Study questions

What contributed to effective and ineffective decision making?

What information was gathered and used in making the decisions?

Did the information support sound decision making? Why?

Who was involved in decision making?

Did they contribute to improving the effectiveness of the process? How?

What factors supported sound decision making?

What factors undermined sound decision making?



What barriers and biases are most common in your workplace?

What could you do to address these, particularly in your workplace projects?

What supports do you have in your workplace?

What could you do to introduce or strengthen these, particularly in your workplace projects?

## Barriers, biases and supports for decision making

Barriers to good decision making include:

- Organisational pressure.
- Time pressure.
- Lack of information.
- Poor physical environment (e.g. distractions, heat, dust).
- Stress.
- Biases that reduce effectiveness of decision making.
- Prior assumptions and beliefs.
- Not being prepared to challenge the experts – assuming that experts know everything that you know. If you are the expert, assuming that because you are the expert that you know everything there is to know about the problem (the fallacy of centrality).
- Searching for information that confirms your preconceptions, not for information that challenges it.
- Relying too heavily on one piece of information.
- Relying on information that is easily available.
- Presuming that the information you have represents all of the information you need to make a good decision.
- Having rose-coloured glasses – overestimating the chance of good things happening and underestimating the chance of bad things happening.
- Underestimating rare events and events that happened some time ago, overestimating. Frequent events and recent events.
- Blaming personalities for others' behaviour, instead of looking for situational causes.
- Group think – accepting the majority opinion and ignoring different points of view.
- Supports for good decision making.
- Being alert to the barriers and biases listed above.
- A clear boundary for the operating envelope so that people know when they are approaching unsafe operations.
- A process for establishing a “line in the sand” when unexpected events occur.
- Sharing professional knowledge so that others' past experiences can be drawn on to manage events.
- Consultation so that a variety of point of view can be included in decision making.

**NOTE:** You have completed this module, please contact your facilitator and inform them that you have completed module 3

## Purpose

This module deals with leadership, covering the skills and activities that allow individuals to help work groups achieve their objectives. It is directed to those with a formal leadership position (e.g. supervisors), although leadership can be exercised by people without a formal leadership role.

## Learning outcomes

At the end of this module, participants will be able to:

- 4.1 Understand basic leadership principles
- 4.2 Determine and apply leadership principles to workplace situations
- 4.3 Use motivation and influence to achieve outcomes
- 4.4 Use assertiveness and influence to overcome barriers.

## Learning resources

### Essential reading

- *Safety at the Sharp End: A Guide to Non-Technical Skills*, chapter 4, 'Leadership'

### Essential viewing

- Video: BBC Documentary, Challenger: Go for Launch. An overview is available at: [www.bbc.co.uk/programmes/p00zstkn](http://www.bbc.co.uk/programmes/p00zstkn) It can also be downloaded from: [www.documentary-log.com/challenger-go-for-launch/](http://www.documentary-log.com/challenger-go-for-launch/) or iTunes.

### Further readings

- Hopkins, A, 2010, *Failure to Learn: The BP Texas City Refinery disaster*, CCH Australia, Sydney, ch.11, 'Leadership'
- Hopkins, A, 2011, *Management Walk-Arounds: Lessons from the Gulf of Mexico Oil Well Blowout*, Working Paper 79, National Research Centre for OHS Regulation, ANU, Canberra.
- Pidd, C, Linley, L, and Larkin M, 2011, *Australian Cultural Imprints at Work: 2010 and Beyond*, IBSA, Melbourne, available for download from: <http://www.ibsa.org.au/news-and-projects/reports-and-publications.aspx>
- Simpson, G, Horberry, T & Joy, J, 2009, *Understanding Human Error in Mine Safety*, Ashgate, Farnham, ch.7, 'Predisposing Factors: Level 5 – Supervision/First-Line Management Roles and Responsibilities'.
- Sinclair, A, 2007, *Leadership for the Disillusioned*, Allen and Unwin, Crows Nest.

## Introduction

Effective leadership is crucial for maintaining safe performance. Supervisors, managers and team members demonstrating health and safety leadership will:

- Reinforce team safe work practices.
- Participate in workforce health and safety activities (e.g. inspections, incident investigations, job safety analysis, WHS committee meetings).

Leadership includes being supportive of health and safety initiatives and establishing WHS as an over-riding priority.

## Inspirational leadership quotes

*“Leaders are best when people barely know they exist. Not so good when people obey and acclaim them, worse when they despise them. But of a good leader who talks little, when his task is done, his aim fulfilled, they will all say we did it ourselves”.*

Lao Tzu, 6th century BC

*“There is nothing more difficult to take in hand, more perilous to conduct or more uncertain of its success, than to take a lead in the introduction of a new order of things”.*

Machiavelli, 1513, The Prince

*“Groups do not act because they have leaders, they secure leaders to help them to act”.*

Murphy, 1995, Leader and the Leadership Process, Irwin, Chicago, ‘A Study of the Leadership Process’, in Pierce and Newstrom (eds).

*“People are willing to die for great leaders – People die anyway for poor ones”.*

Patrick Hudson, 2010, Winning Hearts and Minds

*“Leaders and followers collude in the imagining of leadership as heroic feats that will fix problems and usher in a new era. These practices are seductive because they release individuals from the work of leading themselves, from taking responsibility for thinking through difficult problems and for critical decision-making”.*

Amanda Sinclair, 2007, Leadership for the Disillusioned, Allen and Unwin, Crows Nest

## Learning outcome 4.1

### Understand basic leadership principles

#### Essential reading

*Safety at the Sharp End: A Guide to Non-Technical Skills*, chapter 4, 'Leadership', 129-141.

#### Study questions

Describe the relationship between leadership and safety.

What are the four theories of leadership?

Describe a situation when you have applied each of the leadership theories.

## Learning outcome 4.2

### Determine and apply leadership principles to workplace situations

#### Essential viewing

- Video: Apollo 13: The Real Story

[http://www.msnbc.msn.com/id/36471007/ns/datetime\\_nbc-newsmakers/t/apollo-real-story/](http://www.msnbc.msn.com/id/36471007/ns/datetime_nbc-newsmakers/t/apollo-real-story/)

#### Study questions

Can you have more than one leader working toward a common goal?

Who were the leaders in the safe return of Apollo 13?

## Learning outcome 4.3

### Use motivation and influence to achieve outcomes

#### What motivates you?

Each of the items below compares two job characteristics. Please circle the characteristic which is of the greatest importance to you in your job. Consistency is not important. Do not correct items you have already answered.

#### Do you attach more importance to:

1	High pay	Advancement
2	Pleasant companions	Autonomy
3	Security	Responsibility
4	Status	Achievement
5	Advancement	Responsibility
6	High pay	Security
7	Autonomy	Status
8	Pleasant companions	Achievement
9	Status	Pleasant companions
10	Advancement	Autonomy
11	Achievement	High pay
12	Security	Autonomy
13	Status	Advancement
14	Responsibility	Pleasant companions
15	High pay	Status
16	Achievement	Responsibility
17	Security	Advancement
18	Pleasant companions	High pay
19	Autonomy	Responsibility
20	Achievement	Security
21	Responsibility	Status
22	High pay	Autonomy
23	Advancement	Pleasant companions
24	Security	Status
25	High pay	Responsibility
26	Achievement	Advancement
27	Pleasant companions	Security
28	Autonomy	Achievement

## Definitions

Work out which characteristic you circled the most, which the next most frequently and so on from 1 to 8. Write this ranking in the second column.

Characteristic	Definition	Total	Ranking
High pay	Receiving a salary that will enable you to improve your existing standard of living.		
Advancement	The opportunity to improve yourself, either by learning new skills or gaining promotion to more demanding jobs.		
Pleasant companions	Working with people (including subordinates and superiors) who are friendly and approachable.		
Autonomy	Being able to set your own objectives, to plan your working day and to have control over how you do your job.		
Security	The assurance of continued employment and a comfortable retirement.		
Responsibility	The opportunity to make decisions and to be accountable for the results and to have control over some (or all) of the organisation's resources (people, money, material).		
Status	Recognition by others in some non-monetary tangible form of the importance of your position in the organisation, e.g. having an office, access to benefits for senior		
Achievement	The opportunity to solve problems and generally being able to see the results of your efforts.		



## Learning outcome 4.4

### Use assertiveness and influence to overcome barriers

#### The 6 Tools of Influence <sup>2</sup>

##### Reciprocity

People try to repay, in kind, what another person has done for them.

##### Commitment and consistency

People want to appear consistent with something to which they have already made a commitment.

##### Social proof

People are more likely to do something if they see others do it too.

##### Liking

People are more likely to say yes to requests from people they like.

##### Authority

People are more likely to do what they are asked to do by an authority figure.

##### Scarcity

People are more likely to take up opportunities if they believe that the availability is limited.

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<sup>2</sup> Cialdini R. B., 1984, *Influence, the Psychology of Persuasion*, The Business Library, Melbourne.

## The ASORBR model

<b>Analyse the situation</b>	<p>What is going on in our environment?</p> <p>What are we expected or required to achieve?</p> <p>What resources do we have?</p>
<b>Set the direction</b>	<p>Where are we heading?</p> <p>Why are we going there?</p> <p>How will we get there?</p>
<b>Observe, measure</b>	<p>How do you want me to do it?</p> <p>How will we know where we stand?</p> <p>How will you help me to improve?</p>
<b>Remove obstacles</b>	<p>How will we anticipate and prevent what could go wrong?</p>
<b>Build the support</b>	<p>What are the team values? How will I be involved?</p> <p>What and how am I expected to contribute?</p>
<b>Recognise others' contributions</b>	<p>How will I know where I stand?</p> <p>How are performance standards, positive and negative, recognised?</p>

**NOTE:** You have completed this module, please contact your facilitator and inform them that you have completed module 4

## Purpose

This module deals with teamwork, covering the skills and activities that allow individuals to work together in groups to achieve their objectives. It involves all of the skills covered in the other modules in this package, combining them to enable cooperation and joint action.

## Learning outcomes

At the end of this module, participants will be able to:

- 5.1 Support the development of an effective team**
- 5.2 Demonstrate mutual performance monitoring and back-up behaviour**
- 5.3 Project shared mental models of situation awareness**
- 5.4 Overcome barriers for effective team work.**

## Learning resources

### Essential reading

- *Safety at the Sharp End: A Guide to Non-Technical Skills*, chapter 5, 'Team Working'.

### Essential viewing

- Video: Apollo 13: The Real Story  
[http://www.msnbc.msn.com/id/36471007/ns/datetime\\_nbc-newsmakers/t/apollo-real-story/](http://www.msnbc.msn.com/id/36471007/ns/datetime_nbc-newsmakers/t/apollo-real-story/)
- Video: The Chernobyl Disaster  
<http://www.youtube.com/watch?v=0eEpaSLi5WQ&feature=related>

### Further readings

- Reason, J, 2008, *The Human Contribution: Unsafe Acts, Accidents and Heroic Recoveries*, Ashgate, Farnham, pp.169–177. Provides a case study of the Apollo 13 rescue and pp.195–200 provides a case study of an emergency landing known as "The Gimli Glider", both of which highlight the role of teamwork.
- Weick, K, 1990, *The Vulnerable System: An Analysis of the Tenerife Air Disaster*, 'Journal of Management', vol.16, issue 3, pp.571–593

## Introduction

Teamwork relies on communication. It contributes to a shared situational awareness understanding of the mental model being used for assessment and decision making. Team members need to be clear about their specific assigned role and responsibility as well as being respectful and supportive of each other.

A good team will have:

- a shared goal and understanding of the situation
- a collective orientation
- clear communication
- competent people and good leadership.

Individuals in an effective team will monitor their own performance.

## Learning Outcome 5.1

### Support the development of an effective team

Teamwork failures can contribute to incidents when roles and responsibilities are not clearly defined, due to lack of co-ordination and communication.

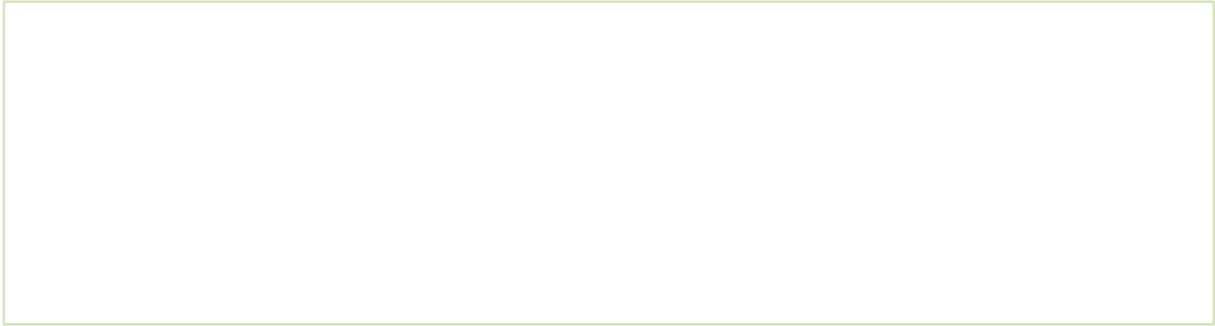
## Activity

Answer the following questions based on your experience:

How effective is my team?

What happens in the team that demonstrates effective or ineffective teamwork?

What does a team leader or team member do to contribute to this outcome?

A large, empty rectangular box with a thin black border, intended for the user to write their answer to the question above.

# How effective is my team – Questionnaire

Statement	Rubbish	Yeah, maybe	Some-times	Yes	Absolutely
<b>Mutual support and leadership</b>					
There is a high degree of trust and open communication between members of the team.					
In our team, we check that we understand each other					
People in this team support one another to get the job					
Our team leader actively promotes teamwork and cooperation in our team.					
We encourage each other to use initiative to improve group performance.					
In our team we have effective ways to provide feedback to each other about our individual and team					
We always put total group performance in front of personal interests.					
<b>Accountabilities and competencies</b>					
In our team we have effective ways to provide feedback to each other about our individual and team					
In our team, people take responsibility for their actions and they don't pass the buck.					
On the whole, people in our team follow through on the commitments they					
In our team, people take initiative instead of "just doing their jobs" or "waiting to be told".					
As a team, we have the right mix of competencies (knowledge, skills, behaviours and abilities) to					
Our team leader is competent in providing direction and leadership to the team.					
<b>Individual contribution</b>					
In our team we have effective ways to provide feedback to each other about our individual and team					
I feel that my views are respected and considered.					
I feel we have enough opportunity to debate issues.					
I feel comfortable that we effectively develop agreed policies and approaches for our work.					
<b>Statement</b>					
Mutual support and leadership					
There is a high degree of trust and open communication between members of the team.					

## Learning outcome 5.2

### Demonstrate mutual performance monitoring and backup behaviour

#### Essential reading

*Safety at the Sharp End: A Guide to Non-Technical Skills*, chapter 5, 'Team Working' pp.93-121.

#### Study questions

Describe the process model of team effectiveness

What are the elements of a team working?

Why is it important that a team share a mental model of how and what needs to be achieved?

Describe a time that you have participated in an effective team. Describe why the team was effective.

## Models of teamwork

### Essential reading

*Safety at the Sharp End: A Guide to Non-Technical Skills*, chapter 5, 'Team Working', pp.93-121.

### Stages of team development<sup>3</sup>

All teams develop through stages, whether it is a classroom group in a school, a social group or a task oriented team in an organisation. The stages are most commonly defined as forming, storming, norming, performing and mourning.

The journey through the five stages of team development is not necessarily sequential or smooth. It can include back-tracks, skipping stages and returning to stages that have been missed. Often, for example, groups re-visit the 'storming' stage, particularly if membership changes. All teams can generally be found at one of the five stages.

#### Stage 1: Forming

The first stage is where a team forms or establishes itself. Team members are concerned about:

- inclusion
- belonging
- acceptance
- not wanting to be rejected.

They spend a lot of time "sussing" each other, and the facilitator, out. Common behaviour of team members in this stage are:

- politeness
- cautiousness
- avoidance of conflict.

The team will typically focus on or demonstrate concerns on the task ahead. The team will generally ask lots of questions, such as:

- Why are we doing this?
- What are we supposed to be doing?
- Why are we doing it?
- How are we going to work together?

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<sup>3</sup> Bruce W Tuckman, 'Developmental sequence in small groups', *Psychological Bulletin*, 1965, vol 63, no.6, pp. 384-399.



Also at this stage, roles and functions of the facilitator and members are determined:

- how to do the work as a team
- how to make decisions

At the forming stage you generally get through the task at hand relatively slowly. This is offset by the gains of establishing a team. As you reach the end of the forming stage, you will find that team members:

- relinquish the comfort of non-threatening topics and risk the possibility of conflict.
- risk personal attacks.
- put aside continued discussion of the team's purpose and commit themselves to a purpose with which they may not completely agree.

## Stage 2: Storming

At the storming stage team members become involved in conflict because they often feel insecure and demonstrate concerns about:

- status
- power
- authority
- control

Team members often demonstrate the following behaviours:

- challenging or confrontational attitudes
- struggle for influence over the team
- break into factions or subgroupings
- question the focus of the team
- argumentative

At the storming stage, you get through your tasks very slowly. This is a normal stage of team development that will pass. It is also an important stage of team development. Before you move on it is important to resolve any conflicts.

Individuals who do not resolve conflict or status struggles will not move on to become an effective member of the team. Unfortunately this leads to a team not being happy with outcomes, not achieving compromise and optimal solutions as well as decisions not being made with deep commitment.

### Stage 3: Norming

At norming stage there is more cohesion between members of the team. Team members are more open minded and willing to share as there is consolidation of team identity which leads to a growing trust. Team identity develops as team members are more concerned with working together, being open minded and listening.

Example of behaviour changes in norming include:

- cohesion becomes evident
- thinking as a group - 'we'
- joking occurs
- team spirit develops - lunch, cakes
- members listen and support each other
- leadership and responsibility shared

At norming stage a good level of task achievement occurs as the team 'gets on with the job'.

### Stage 4: Performing

The performing stage is characterised by a supportive team climate, with the team solving problems in a creative way. The team is concerned with problem solving and getting the task done.

The following behaviour patterns may be evident:

- cohesion
- stability
- agree to disagree
- giving support
- no complacency

The team focuses on:

- constructive argument and criticism
- high task orientation - getting work done

Teams are most productive in the performing stage.

### Stage 5: Mourning

This stage can occur after any of the other four stages. Mourning occurs when the team's cohesion breaks down, and team members are concerned about disengaging from relationships. Typically, the mourning stage involves increased conflict and anger at the leader, breakdown of team skills and lethargy.

## Learning outcome 5.3

### Project shared mental models of situation awareness

#### Study questions

#### Apollo 13: The Real Story

How did team flight differ from team control?

How were team flight and team control similar?

What stages of team development before the explosion were team flight and team control?

What was the sequence of the stages of team development that the two teams went through when working together to solve the problems of Apollo 13 after the explosion?

## Learning outcome 5.4

### Overcome barriers for effective teamwork

#### Study questions

#### The Chernobyl disaster

Were the engineers in the control room working effectively as a team when testing the reactor? Give details of your answer.

How does “culture” impact on the team performance of the engineers in the control room?

How effective was the leadership in the team? Why?

What stage of team development were the engineers in the control room?

## Different approaches to resolving conflict<sup>4</sup>

Approach	Personal style	Attitude to the relationship	Hard/Soft (tough/easy) Ratio	Trust	Who wins
<b>Withdrawal</b>	Sulk Refuse to talk, walk away. Punish with silence. Passive-aggressive.	No relationship.	Hard on the people. Impotent on the problem.	Absent You don't trust yourself or the other person.	No one. They both lose out.
<b>Suppression</b>	Stay cheerful and refuse to talk about the problem (martyr).	Preserve the status quo at all costs	Soft on the people. Impotent on the problem.	Low trust of yourself and the other person.	On the surface, win/win, but someone's losing.
<b>Compromise</b>	Make concessions to keep the friendship.	Non-assertive. Participants are cooperating	Soft on the people and the problem.	Trust the other.	Neither is totally satisfied.
<b>Win/Lose</b>	Demand concessions, using any power available to achieve them.	Aggressive. Participants play the power game.	Hard on the people. Hard on the problem.	Distrust	One wins, one loses out.
<b>Win/Win</b>	Negotiate a mutually acceptable solution.	Assertive Participants are problem solvers.	Soft on the people. Hard on the problem.	Trust in your ability to find solutions. Negotiations based on respect, independent of trust.	Both get what they want.

<sup>4</sup> Adapted from material provided by The Conflict Resolution Network,

Email: [crn@crnhq.org](mailto:crn@crnhq.org),

Web: [www.crnhq.org](http://www.crnhq.org)

## Skills for resolving conflict

Resolving these conflicts relies on conflict resolution skills.

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### The 12 Skills of Conflict Resolution<sup>5</sup>

<b>Win/Win approach</b>	A new look at conflict and cooperation and the possibilities for mutual gain - finding a solution where everyone gets what they need.
<b>The creative response</b>	Seeing conflicts as opportunities. Though conflicts are usually seen as crises, they can also be an opportunity for change.
<b>Empathy</b>	Seeing the other person's point of view. Recognising the motivations behind apparently uncaring behaviour of other people.
<b>Appropriate assertiveness</b>	Knowing your needs and rights and how to state them clearly.
<b>Cooperative power</b>	The difference between power over someone else and power with someone else.
<b>Managing emotions</b>	Handling your own anger and frustration and dealing with these feelings in others.
<b>Willingness to resolve</b>	Understanding the role that resentment plays in preventing successful negotiation.
<b>Mapping the conflict</b>	Drawing up a map of the conflict which includes looking at the underlying needs, values, objectives and ideals of the participants.
<b>Development of options</b>	Creating a smorgasbord of choices from which people can choose action more appropriate for all parties.
<b>Negotiation skills</b>	Creating suitable environments for working together towards resolution; synthesising differing interests; working towards new balances, agreements and contracts.
<b>Broadening perspectives</b>	Recognising your view as one point of view and understanding the others' points of view as also valid and necessary as part of the whole.
<b>The third party mediator</b>	Understanding the special role of the mediator and the importance of neutrality.

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**Note:** There are further materials available from The Conflict Resolution Network ([www.crnhq.org](http://www.crnhq.org)). The session outline provided here uses materials adapted from this site

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<sup>5</sup> Adapted from material provided by The Conflict Resolution Network, Email: [crn@crnhq.org](mailto:crn@crnhq.org), Web: [www.crnhq.org](http://www.crnhq.org)

## Teamwork problems checklist

		Low evidence			High evidence		
1	Loss of production or team output	1	2	3	4	5	
2	The team only looks at the tasks to be done, not how it will work together	1	2	3	4	5	
3	The team neglects task outcomes	1	2	3	4	5	
4	Grievances or complaints within the team	1	2	3	4	5	
5	Unresolved conflicts or hostility between team members	1	2	3	4	5	
6	Defensiveness between team members	1	2	3	4	5	
7	Competition between team members	1	2	3	4	5	
8	Confusion about assignments or unclear relationships between people	1	2	3	4	5	
9	Lack of clear goals or low commitment to goals	1	2	3	4	5	
10	Lack of information needed to achieve team outcomes	1	2	3	4	5	
11	Lack of resources to achieve team outcomes	1	2	3	4	5	
12	Lack of focus on the team's goals - focus on red herrings or unimportant details	1	2	3	4	5	
13	Apathy or lack of interest or involvement of team members	1	2	3	4	5	
14	Lack of innovation, risk taking, imagination or taking initiative	1	2	3	4	5	
15	Ineffective team meetings	1	2	3	4	5	
16	Problems working with the boss	1	2	3	4	5	
17	Poor communication: people afraid to speak up, not listening to each other or not talking together	1	2	3	4	5	
18	Lack of trust between the team leader and team members or between team members	1	2	3	4	5	
19	Decisions made that people do not understand or agree with	1	2	3	4	5	
20	People feel that good work is not recognised or rewarded	1	2	3	4	5	
21	People are not encouraged to work together in a better team effort	1	2	3	4	5	

**NOTE:** You have completed this module, please contact your facilitator and inform them that you have completed module 5.