Dynamic Risk assessment overview

Introduction

The dynamic management of risk is about decision making. Prior to involvement at operational incidents, members are required to be fully trained and conversant with all the elements involved in the decision making process. The Officer in Charge (OIC) of an incident must be able to recognise and appreciate the risks which are present at the incident in order to carry out an effective dynamic risk assessment.

The definition of a dynamic risk assessment is:

"The continuous process of identifying hazards, assessing risk, taking action to eliminate or reduce risk, monitoring and reviewing, in the rapidly changing circumstances of an operational incident."

During the dynamic (rapidly changing) phase, the decision making process involves analysing and reviewing the risks and benefits presented by the incident, selecting an appropriate response (system of work) and making a judgement on whether the risks are proportional to the benefits.

Levels of Operational Risk Management

In order to provide an acceptable level of protection at operational incidents, ACT Fire Brigade Work Safety must operate successfully at three levels

Strategic, Systematic and Dynamic.

Strategic:
Strategic work safety management is carried out at a whole of government level, an example being the *Work Safety Act 2008* and ISO 3100:2009.

Systematic:
Systematic work safety management is carried out by departments including the ACT Fire Brigade and is represented by Work Safety policy distributed by the Brigade.

Dynamic:
Dynamic risk management is carried out by all personnel at an operational incident.

The main responsibility for dynamic risk assessment lies with the Incident Controller (IC) who must identify the hazards, assess the risks, then make professional judgements in order to use the available resources in such a way as to achieve an acceptable level of safety during work activities.

Dynamic Risk Assessment
The term 'Dynamic Risk Assessment' is commonly used to describe a process of risk assessment being carried out in a changing environment, where what is being assessed is developing as the process itself is being undertaken.

This is further complicated for the Incident Controller in that, often, rescues have to be performed, exposures protected and hose lines placed before a complete appreciation of all material facts has been obtained.

Nevertheless it is essential that an effective risk assessment is carried out at any scene of operations.

However, in the circumstances of emergency incidents, experience has shown that it is impractical to expect the IC, in addition to the incident size-up and deployment and supervision of crews, to complete some kind of check-list or form.

After action has been initiated on the basis of a 'Dynamic Risk Assessment', it is important that this is reviewed and confirmed as quickly as practicable, and further reviewed and confirmed at regular intervals.

Also, it is important that the outcome of a risk assessment is recorded, preferably in a way that is 'time stamped' for later retrieval and analysis, such as would be achieved by transmission over the trunked radio network.

For the purposes of this dynamic risk assessment process, the ACTFB will transmit informative situation reports (sitreps) on the talk group designated for the incident.

Although the dynamic management of risk is continuous throughout the incident, the focus of operational activity will change as the incident evolves. It is, therefore, useful to consider the process during three separate stages of an incident. These are;

- **The Initial Stage**

- **The Development Stage**

- **The Closing Stage.**

Initial Stage of Incident
There are 6 steps to the initial assessment of risk:

1. Evaluate the situation, tasks and persons at risk
2. Introduce and declare tactical mode
3. Select safe systems of work
4. Assess the chosen systems of work
5. Introduce additional control measures
6. Re-assess systems of work and additional control measures.

Step 1: Evaluate the Situation, Tasks and Persons at Risk
On the arrival of the initial attendance, the Incident Controller will need to gather information, evaluate the situation and then apply professional judgement to decide the most appropriate course of action.

Hazards must be identified and the risks to fire-fighters, the public and the environment considered. The benefits of proceeding with a task must be weighed carefully against the risks. It is important to think before you act rather than act before you think.

In order to identify hazards the Incident Commander will initially need to consider:

- Operational intelligence information available from pre fire planning, area familiarisation etc
- The nature of the tasks to be carried out
- The hazards involved in carrying out the tasks
- The risks involved to: fire-fighters; other emergency service personnel; the public; and the environment
- The resources that are available, e.g. experienced personnel, appliances and
- Equipment, specialist advice.

Step 2: Introduce and Declare Tactical Mode
The declaration of a tactical mode, which is the simple expression of whether it is appropriate to proceed to work in a hazard area or not, is a device to enable Incident Controllers of dynamic emergency incidents to comply with the principles of risk assessment and be seen to have done so.

However, in simple terms, after a rapid appraisal of the situation the Incident Controller will either be comfortable in announcing 'offensive mode', which is the most usual mode of operation, or if not must announce 'defensive mode' until sufficient additional information has been gathered, control measures taken, etc and eventually allow 'offensive' to be declared.

This approach is commonly known as 'Default to Defensive'.

The tactical mode procedure assists the Incident Controller to manage an incident effectively without compromising the health and safety of personnel by:
- ensuring that fire fighting operations being carried out by a single crew or within a sector do not have an adverse effect on the safety of fire-fighters in other crews or sectors; and
- generating a record of the outcome of the dynamic risk assessment process conducted by the Incident Controller.

Step 3: Select Safe Systems of Work

The Incident Controller will then need to review the options available in terms of standard procedures. Incident controllers will need to consider the possible systems of work and choose the most appropriate for the situation.

The starting point for consideration must be procedures that have been agreed in pre-planning and training and that personnel available at the incident have sufficient competence to carry out the tasks safely.

Step 4: Assess the Chosen Systems of Work

Once a course of action has been determined, be it offensive or defensive, the Incident Controller needs to make a judgement as to whether or not the risks involved are proportional to the potential benefits of the outcome.

If YES proceed with the tasks after ensuring that:
• Objectives, both individual and team are understood;
• Responsibilities have been clearly allocated; and
• Safety measures and procedures are communicated and understood.

If NO then go back to step 3.

Step 5: Introduce Additional Control Measures

The Incident Controller will need to eliminate, or reduce, any remaining risks to an acceptable level, if possible, by introducing additional control measures, such as:
  ▪ Use of additional PPE/C
  ▪ Use of BA or airlines
  ▪ Use of specialised equipment
  ▪ Use of Safety Officer(s).

Step 6: Re-assess Systems of Work and Additional Control

Even when safe systems of work are in place, there may well be residual risks. Where such risks remain and are realised, the Incident Controller should consider the degree of benefit to be gained from carrying out the tasks against the possible consequences.
• If the benefits outweigh the risks, proceed with the tasks
• If the risks outweigh the benefit, do NOT proceed with the tasks, but consider viable alternatives.

Development Stage of Incident

If an incident develops to the extent that the span of control is exceeded or if sectors are designated, the Incident Controller may delegate incident control roles. This may include the appointment of an operations officer or sector/ divisional command responsibilities.

As the incident develops, changing circumstances may make the original course of action inappropriate, for example:

- Fire fighting tactics may change from defensive to offensive
- New hazards and their associated risks may arise, e.g. the effects of fire on building stability
- Existing hazards may present different risks
- Personnel may become fatigued.

The Incident Controller, Operations Officer and Sector / Division Commanders need to manage safety by constantly monitoring the situation and reviewing the effectiveness of existing control measures. The appointment of a safety officer (s) may assist with this process.

The Closing Stage of the Incident
The three key activities involved in the closing stages of an incident are:
- Maintaining control
- Welfare, and
- Incident Debrief.

Maintaining Control
The process of task and hazard identification, assessment of risk, planning, organisation, control, monitoring and review of the preventative and protective measures must continue until the last appliance leaves the incident ground.

There are usually fewer reasons for accepting risks at this stage, because there are fewer benefits to be gained from the tasks being carried out. The Incident Controller and Sector Commanders should therefore have no hesitation in halting work in order to maintain safety.

As the urgency of the situation diminishes, the Incident Controller may wish to nominate an officer to gather information for the post incident review.

Whenever possible, this officer should debrief crews before they leave the incident, whilst events are still fresh in their minds.

Details of all 'near misses' i.e. occurrences that could have caused injury but did not in this instance, must be recorded because experience has shown that there are many near misses for every accident that causes harm. If, therefore, we fail to eradicate the causes of a near miss, we will probably fail to prevent injury or damage in the future.

Welfare
The welfare of personnel is an important consideration. It must be given particular attention by the Incident Management Team at arduous incidents or incidents that require a rapid turnover of personnel. The physical condition of crews must be continually monitored by supervisors.

Welfare includes provision of rest and feeding which should, where possible, be outside the immediate incident area and always away from any risk of direct or indirect contamination.

Incident Debrief
Following an incident any significant information gained, or lessons learned, must be fed back into the policy and procedures of the Brigade. Points to be covered may be in relation to existing operational intelligence information, personal protective equipment, the provision and use of equipment, other systems of work, instruction, training and levels of safety supervision etc.

It is important to highlight any unconventional system or procedure used which was successful or made the working environment safer.

It is equally important to highlight all equipment, systems or procedures which did NOT work satisfactorily, or which made the working environment unsafe.

Any significant information gained or lessons learned must be fed back to Brigade management in order to enable any necessary review, re-evaluation, refinement and modification of the risk assessment and its management to ensure the Brigades compliance with the *Work Safety Act 2008*.