CIVIL AVIATION AUTHORITY
OF NEW ZEALAND

# Advisory Circular AC139-14

**Revision 1**

**30 October 2015**

## Aerodrome Certification—Aerodrome Emergency Plan

### General

Civil Aviation Authority advisory circulars contain information about standards, practices, and procedures that the Director has found to be an **acceptable means of compliance** with the associated rule.

An acceptable means of compliance is not intended to be the only means of compliance with a rule, and consideration will be given to other methods of compliance that may be presented to the Director. When new standards, practices, or procedures are found to be acceptable they will be added to the appropriate advisory circular.

Advisory circular may also include **guidance material** to facilitate compliance with the rule requirements. Guidance material must not be regarded as an acceptable means of compliance.

### Purpose

This advisory circular provides guidance material on aerodrome emergency planning, to assist aerodrome operators, to meet the requirements of Civil Aviation Rule Part 139 *Aerodromes—Certification, Operation and Use.*

This material is intended for applicants for and holders of—

- an aerodrome operator certificate; and
- a qualifying aerodrome operator certificate.

It is also recommended to operators of non-certificated aerodromes.

### Related Rules

This advisory circular relates to Civil Aviation Rule Part 139 - specifically rule 139.57 regarding aerodrome emergency plans, rule 139.109 for maintaining those plans, and rule 139.23 for qualifying aerodrome operator determination.

### Change Notice

Revision 1 updates the content of this advisory circular to align with the latest amendment to Part 139; and makes editorial and formatting changes.

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# 1. Introduction

The holder of an aerodrome operator certificate issued under Civil Aviation Rule Part139 is required to put in place an aerodrome emergency plan (AEP) and procedures for the ongoing maintenance of the emergency plan including periodic testing.

The holder of a qualifying aerodrome operator certificate may be required, by a determination made by the Director following an aeronautical study, to have an AEP. A determination requiring an AEP will specify all matters to be included in it, and these will be based on the requirements for certificated aerodromes. These requirements will be no more onerous than those for holders of an aerodrome operator certificate.

The need for AEP is based on the *International Civil Aviation Organisation Annex 14, Volume1– Aerodrome Design and Operation.* Annex 14 gives a good overview of aerodrome emergency planning stating:

> "Aerodrome emergency planning is the process of preparing an aerodrome to cope with an emergency occurring at the aerodrome or in its vicinity. The objective of aerodrome emergency planning is to minimize the effects of an emergency, particularly in respect of saving lives and maintaining aircraft operations. The aerodrome emergency plan sets forth the procedures for coordinating the response of different aerodrome agencies (or services) and of those agencies in the surrounding community that could be of assistance in responding to the emergency".

This advisory circular represents a compilation of methods to assist, and issues for further consideration by, the aerodrome operator and the aerodrome emergency planning committee in establishing a suitable AEP. The objective is to address aerodrome emergency planning issues which are relevant to the New Zealand aviation environment and the varied levels of aerodromes.

The scope of emergency plans will depend on the type of operation conducted at the aerodrome. Some aspects of this document may not be applicable to all aerodrome operators. AEP should be developed to be commensurate with the level of operation of the aerodrome.

Reference should also be made to *ICAO Doc 9137 - Airport Services Manual, Part 7 – Airport Emergency Planning*, relevant New Zealand regional emergency planning systems, and current industry practice.

## 1.1 Objective

Aerodrome emergency planning is the process of preparing an aerodrome to cope with an emergency occurring at or near the aerodrome, or an aircraft accident at a location away from the aerodrome.

It is important to state in the AEP what geographical area the document covers, particularly what is considered on airport, off airport and remote, and what status the document has covering emergencies in these areas. The status of the document however should not preclude the aerodrome agencies from responding to any occurrences where they consider valuable assistance can be provided towards meeting the objectives of the AEP.

Emergencies can have a significant impact upon the functionality of the aerodrome, both during and after an event. The objective of aerodrome emergency planning is to minimise the extent of personal injury and property damage resulting from an emergency. There are two key aspects to be considered in this regard.

The first objective is minimising loss of life. The response to those directly affected by the emergency situation and the protection of those involved either directly (responding personnel) or indirectly (terminal occupants etc.), is the key priority of any emergency plan.

The second objective is to return the aerodrome to normal operations as soon as practical. Restoring property or systems to functionality status, or protecting them from the effects of an emergency situation, is essential to resuming normal operations after the emergency.

Returning to operational status does not necessarily mean, however, that the aerodrome emergency response is complete. There are many other aspects relating to aerodrome emergencies that may carry on. For example: care of the meeters and greeters, debriefing of responders etc. The gradual stand-down of agencies is common depending upon their role in responding to the declared emergency phase.

# 2. Aerodrome Emergency Plan

## 2.1 Introduction

***Rule 139.57 – Aerodrome operator certificate***
***Rule 139.25 – Qualifying aerodrome operator certificate***

Part 139 refers to requirements the applicant must meet before a certificate is issued. In this advisory circular, reference may be made to the certificate holder, not the applicant as stated in the rule, because the holder must continue to comply with the same requirements that were met before the certificate was issued.

All matters are applicable to holders of an aerodrome operator certificate, but only those specifically included in a determination made by the Director are applicable for holders of a qualifying aerodrome operator certificate. The rules references are those applicable for aerodrome operator certificate holders.

## 2.2 Aerodrome emergency plan requirement

Table 1 outlines the principal requirements for an AEP.

**Table 1** – Requirement for an AEP

| Aerodrome operator certificate | Qualifying aerodrome operator certificate |
|---|---|
| AEP required.<br>*Rule 139.57(a)* | AEP if required by Director's determination.<br>*Rule 139.25* |
| Exposition must contain AEP.<br>*Rule 139.77(a)(7)* | Exposition must include requirements or procedures necessary to manage risks relating to AEP.<br>*Rule 139.417(b)(2)* |
| Continue to meet the standards and comply with the requirements of Subpart B.<br>*Rule 101(4)* | Comply with all procedures, plans, systems, and programmes detailed in the exposition.<br>*Rule 139.451(2)* |

## 2.3 Contents of an aerodrome emergency plan

***Rule 139.57(b)***

There are a number of items that need to be included in the AEP. These include the following—

### 2.3.1 Types of emergencies

***Rule 139.57(b)(1)***

The AEP must provide for the coordination of agencies in responding to any emergency that can be anticipated as happening at the aerodrome or in the aerodrome vicinity. Emergencies can be generally categorised into two different groupings depending upon how the plan is structured. There are emergencies that involve aircraft and those that do not. Security related emergencies can be grouped individually if desired.

Aerodrome operators should also make provision for emergency response outside of the standard operating hours. This is particularly so when the AEP initiator is not on duty at the aerodrome, for example: outside the operational hours of air traffic control or rescue firefighting services. This could

include a sign on the terminal building detailing how people should contact emergency services and what information to give such as aerodrome name and location.

Appendix A of this advisory circular provides guidance on types of emergencies that should be considered.

### 2.3.2 Procedures for prompt response to emergencies

***Rule 139.57(b)(2)***

For each type of emergency detailed there must be procedures for contacting the responders and alerting them to the situation, including what information they will require. This could include a flow chart of the alerting system and response levels.

Appendix B of this advisory circular includes information on communication systems and procedures for inter-agency coordination.

### 2.3.3 Guidance to carry out the plan

***Rule 139.57(b)(3)***

Aerodrome emergencies vary in terms of type, actions required and personnel involved. It is important that the AEP provides clear guidance to each person involved in terms of their involvement and actions. This should be specific to each participating agency and include stand down procedures for an emergency.

### 2.3.4 Details, role and the responsibility of each agency

***Rule 139.57(b)(4)***

Each agency involved in the AEP should have detailed procedures and processes that they control in regard to AEP actions. The roles of agencies should be clearly defined providing certainty of emergency response.

The main agencies include the following as applicable to the aerodrome—

> **On aerodrome** – Air traffic control unit, rescue and firefighting services, aerodrome administration, medical services, aerodrome tenants, aircraft operators, security services, border control agencies, airport police.
>
> **Off aerodrome** – Fire service, police, medical ambulance services, hospital, military services, harbour patrol, coast guard, civil defence, regional authorities, search and rescue centres.

Basic human factor principles should be included in procedures and processes for emergency response. This should include how people interact with tasks, other people, machines, information sources and the environment and recognise that people have limitations to their capabilities.

The *ICAO Doc 9683 Human Factors Training Manual* is one of many publications on human factors in aviation.

Examples of human factor considerations include—

- Developing checklists for agencies and operators. This steers a person down a prescribed path or behaviour.
- Clear labelling and signage for the emergency operations centre (EOC) or control post components to reduce confusion. This reduces thinking and opportunities for incorrect decisions.

- Nominating a person who is responsible for the AEP. This creates ownership so the plan remains updated.
- The layout of the AEP is critical. It is important to make the plan effective and efficient, and easy to understand.

The AEP should have specific procedures and specialist agencies involved when the aerodrome is located near large bodies of water, swamps or where the approach or departure areas are over water. This could include use of the coast guard, divers, boats, hovercraft and the local harbourmaster. These specialist rescue services should be involved in testing of the emergency procedures on a regular basis.

### 2.3.5 Emergency operations centre and command post role

***Rule 139.57(b)(5)***

An international aerodrome[1] must have a fixed emergency operations centre (EOC) and a command post available for use during an emergency. The emergency operations centre should be a part of the aerodrome facilities and should be staffed by persons responsible for the overall coordination and general direction of the response to an emergency. The command post should be a facility capable of being moved rapidly to the site of an emergency, when required, and should undertake the local coordination of those agencies responding to the emergency. A person should be assigned to assume control of the emergency operations centre and, when appropriate, a person to assume control of the command post.

Appendix B of this advisory circular includes guidance on the requirements of an emergency operations centre and a command post.

### 2.3.6 Description and location of available equipment including medical equipment

***Rule 139.57(b)(6)***

The AEP should include—

- Emergency equipment available at the aerodrome, and include its type and location.
- Medical supplies and at an international aerodrome[1] portable medical equipment.
- Equipment to assist in the removal or moving of a disabled or crashed aircraft.

Guidance on medical equipment is given in Appendix C of this advisory circular.

### 2.3.7 Emergency contact information for participating agencies

***Rule 139.57(b)(7)***

Emergency contacts details for all services involved must be included in the AEP and these must be kept up to date.

[1] The term *international aerodrome* is used in this advisory circular for simplicity. Rule 139.5(aa)(1) provides the full definition of these aerodromes

### 2.3.8 Grid map of the aerodrome and its immediate vicinity

***Rule 139.57(b)(8)***

A grid map of the aerodrome and a grid map of the surrounding area are required to assist responding services in locating the incident scene. These grid maps should be of sufficient scale and detail to be easy to read and avoid ambiguity. These are necessary to assist in directing emergency services to the exact location of the emergency. The grid map references should be unique for each individual grid map to avoid confusion.

### 2.3.9 Procedures to maintain the emergency plan

***Rule 139.57(b)(9)***

The AEP must remain effective and procedures to ensure this must be included in the plan.

Personnel with duties and responsibilities under the plan must be familiar with their roles and be properly trained, the plan must be tested periodically, it must be reviewed after any test or actual emergency, and any identified deficiencies must be corrected. The plan must also be coordinated with all organisations and persons who have responsibilities in the plan. Section 3 details these requirements.

Guidance on simulated emergency exercises to test the plan is given in Appendix D of this advisory circular.

## 2.4 Aerodrome operator requirements

***Rule 139.57(c)***

The aerodrome operator is required to include participation by all relevant agencies and personnel in the development of the AEP. This includes law enforcement agencies, security providers, rescue and firefighting agencies, medical personnel and organisations, the principal tenants of the aerodrome, and all other persons who have responsibilities in the plan.

Interaction between agencies and services is important. If an emergency operations centre (EOC) is used, ensure that each agency is represented to facilitate communication and decision making.

While it is the responsibility of the aerodrome operator under Part 139 to develop and maintain an AEP, the actual establishment of coordinated response procedures and sub-activities is best achieved through committee. An aerodrome emergency planning committee may form part of a larger emergency response forum established by the local authority or emergency services. Regardless, the aerodrome emergency planning committee should be tasked with the formation of plans to provide a timely and coordinated response to, and recovery from, an emergency at the airport or aerodrome, or in its environs.

The aerodrome emergency planning committee would, in addition to the aerodrome operator, typically comprise representatives of police, fire and ambulance services, rescue fire service, airlines or aircraft operators, air traffic service provider, and other agencies with relevant knowledge or resources to assist. For example: the local emergency management office, local health authority, humanitarian relief agencies etc.

# 3. Aerodrome Emergency Plan Maintenance

***Rule 139.109***

The aerodrome operator must have procedures to maintaining the effectiveness of the emergency plan. They must include—

(a) Ensuring that personnel having duties and emergency responsibilities under the AEP are familiar with their assignments and are properly trained.

(b) Testing the AEP conducting either:

(i) a full-scale aerodrome emergency exercise at least once every two years, with special exercises between the full-scale exercises to ensure that any deficiencies found during the full-scale exercises have been corrected:

(ii) a series of modular tests to be done every 3 years, commencing in the first year and concluding in a full scale aerodrome emergency exercise no more than 3 years after the commencement.

(c) Reviewing the AEP after each exercise or after an actual emergency, to correct any deficiency found.

(d) Coordinating the AEP with all organisations and persons who have responsibilities in the plan, including, where appropriate, law enforcement agencies, security providers, rescue and firefighting agencies, medical personnel and organisations, and principal tenants of the aerodrome

Guidance on staging a simulated emergency exercise is provided in Appendix D of this advisory circular.

# 4. Administration of the Emergency Plan

## 4.1 Structure of documentation

The AEP should be structured to reflect the type of aerodrome operations and be specific to local community requirements. Because of the diverse range of aerodrome operations there is no standard AEP format. However the AEP should address the requirements of Part 139 at a level applicable to the type of aerodrome operation.

AEP typically are subdivided into sections and sub-sections, and follow one of two basic formats:

(a) the roles and responsibilities of each responding agency are arranged as self-contained sections within the overall plan, and within each agency's section there are sub-sections dealing with their response to each type of emergency:

(b) the overall plan is divided into sections dealing with each type of emergency, and within each section there are sub-sections detailing the response of each agency.

## 4.2 Management of AEP document

There are a number of issues that commonly arise with the management and distribution of AEP.

The most common issue with an AEP is the number of pages that must be produced and kept up to date. As well as the cost of producing these documents, the administrative effort and cost of amending the AEP as changes arise can become a burden.

One way to overcome this problem is to reduce the number of complete AEP in circulation. Agencies often only require the sections of the document that are relevant to them. In response to this, some airports have started to distribute the AEP document in sectionalised or customised packages relevant to the organisation. This reduces the total number of pages that are required to be distributed by the airport operator.

One option to address this issue is to produce the AEP electronically. Typically distribution can be by CD-ROM, email, or via a secure aerodrome operator web site. Participating agencies must then print the sections relevant to their requirements and compile their document, often using an aerodrome operator supplied AEP folder.

Another issue that arises is keeping the documents up to date. Telephone numbers, contact personnel, organisational position titles, are all items that can change with regularity. Ensure that at least annually all contact details are checked and confirmed.

## 4.3 Review of plan

A critical component of aerodrome emergency planning is the review of response plans. AEP review can occur as a result of:

- a regularly programmed task:
- an emergency exercise:
- a debriefing after an actual emergency:
- research of initiatives taken elsewhere.

Any identified changes to improve the effectiveness of the plan should be implemented.

## 4.4 Document control

Controls of the AEP should be in place to ensure—

- A current copy of relevant parts of the plan is available for all organisations and personnel with duties and responsibilities under the plan.
- All obsolete versions of the plan are promptly removed.
- The current version of the plan can be identified to prevent the use of superseded material.

# Appendix A – Types of Aerodrome Emergencies

## A.1 Introduction

The following is a list of the emergencies that should be considered for inclusion in the AEP. For clarity they have been grouped into three categories; aircraft emergencies, security emergencies and other emergencies.

## A.2 Aircraft emergencies

Information for pilots on aerodrome emergencies is detailed in the *AIPNZ, ENR1.15* and includes the following emergency phases and how to activate them to air traffic control unit.

### A.2.1 Local standby

A local standby phase is declared when an aircraft approaching the aerodrome is known, or is suspected, to have developed some defect but the trouble is not such as would normally prevent carrying out a safe landing. Declaration of the LOCAL STANDBY PHASE will bring all aerodrome-based emergency services to a state of readiness but in general, although off-aerodrome components are notified, they will remain at their posts.

Ensure appropriate and detailed stand down procedures are in place.

### A.2.2 Full emergency

A full emergency phase is declared when an aircraft approaching the aerodrome is, or is suspected to be, in such trouble that there is danger of an accident. Declaration of a FULL EMERGENCY PHASE will bring all facilities, both on the aerodrome and in the area or community, such as medical and ambulance services, police and fire services, to a rendezvous point on the aerodrome which may become the assembly area, or staging area for the incident. It will also alert the hospital to prepare for a possible reception of injured people and for road traffic control, to be instituted to clear the way for emergency vehicles.

Ensure appropriate and detailed stand down procedures are in place.

### A.2.3 Aircraft accident

An aircraft accident phase is declared when an aircraft accident, or crash, has occurred on or in the vicinity of the aerodrome. Declaration of the AIRCRAFT ACCIDENT PHASE or CRASH can occur at any location. The actual response to the accident from the aerodrome will differ depending upon the location.

ICAO specifies two general locations to be considered in respect to emergency planning. They are ‘on airport’ and ‘off airport’ accidents. Off airport accidents can, depending upon geographical features surrounding the aerodrome, be further categorised as ‘off airport – land’ or ‘off airport – water accidents’.

It is important to define in the AEP what geographical area each of these emergency phases cover, as well as what status the AEP has in governing the response. As an example, some aerodromes define ‘on airport’ as being within the perimeter fence of the aerodrome. Another has included the approach and departure areas which they have defined as a strip 300m in width, commencing from the end of the runway and extending away from the airport for 1000m.

Similarly, definitions of ‘off airport’ can differ. ICAO indicates the AEP should consider an area within an 8km radius of the airport. It may not be appropriate for the AEP to be the governing document in terms of the overall emergency response within this area. If this area is within an urban built up area, civil defence, police or fire service directives may take precedence.

This also applies for accidents that occur in remote locations. Although not covered by ICAO, it is now becoming a component of many AEPs. While the AEP will not be the governing document in terms of coordination of responding agencies to the accident site, and aerodrome resources may or may not attend such an incident, there may be aspects of the emergency plan that require activation at the aerodrome. The actual response may be reduced in scope and aircraft accidents at locations remote from the aerodrome should be considered as a separate emergency phase.

Another consideration given to aircraft accidents is the development of specific procedures for dealing with military aircraft. The RNZAF are able to assist aerodrome operators in developing response procedures for such occurrences.

## A.3 Points to consider

Examples of aspects which require due planning consideration include—

- Meeters and greeters, particularly for relatives and the media, who congregate at the aerodrome where the aircraft departed from or where it was due to arrive. Terminal management issues will need to be considered.
- Adequate private areas so relatives, etc. can be cared for over an unknown period of time.
- Flight information displays showing information concerning the flight.
- Controlling and managing the media.
- Potential telecommunication overload from enquiries.
- Assisting the aircraft operator with communications and logistics.
- Accommodating the passengers and crew from the aircraft, including separating the passengers from the crew involved in the incident.
- The issue of NOTAM to restrict or close the aerodrome, and restricting airspace by either Airways Corporation or the CAA.
- Transport for the crew and passengers from the scene to a location where they cannot see the incident site, and ensuring that all persons are accounted for.
- Private area for the passengers after the incident, and providing them with refreshments and access to communications, e.g. telephones, or Wi-Fi.
- Medical infrastructure including hospitals, ambulances and other hospital transfer methods e.g. helicopter, buses.

### A.3.1 Incident on ground

This emergency phase relates to aircraft occurrences that occur while the aircraft is on the ground. Examples of such circumstances include, aircraft fire while on the ground, often associated with overheated brakes; aircraft collision with vehicle or fixed obstacle.

### A.3.2 Immobilised aircraft

This emergency phase relates to aircraft that have become disabled on the movement area as a result of an excursion from the paved area, or from a fault such as a blown tire, etc. This phase activates the implementation of the aircraft recovery plan. The aircraft recovery plan can also be automatically implemented following an aircraft accident during the AEP recovery phase.

### A.3.3 Aerodromes near water

Where aerodromes are located close to large bodies of water, e.g. lakes or the sea, special provision should be made for rescue and fire fighting in the event of an incident or accident in the water. This may include the use of sea craft, hovercraft or helicopters, extra rescue equipment including flotation devices, and blankets for survivors to combat hypothermia.

More information is in *ICAO Doc 9137 – Airport Services Manual Part 7, Airport Emergency Planning, Appendix 6.*

## A.4 Security emergencies

Security emergency procedures should be consistent with the *National Aviation Security Programme*, *Aerodrome Security Programme* and *Air Operator Security Programme*. Airport security awareness training should be aligned with these security emergency phases.

### A.4.1 Sabotage

This emergency phase relates to instances of known or suspected sabotage against aircraft, or navigation facilities affecting the safety of aircraft. The response typically will be prioritised towards—

- Ensuring the safety of aircraft, crew members and passengers.
- Checking for further evidence or instances of sabotage.
- Going to a heightened level of awareness for further acts of sabotage.
- Investigation of the circumstances towards finding the source of the sabotage.

### A.4.2 Unlawful seizure (hijack)

This emergency phase relates to instances, where there is the physical taking over of an aircraft, by person or persons by actual force or implied threat thereof for the furtherance of their own aims. Response procedures are likely to include specialist services and the lead agency change depending upon whether the event escalates or not.

From an airport operator's perspective, the provision of a remote parking location is required, where aircraft subject to such threat can be parked to minimise any further risk to other aircraft, property or people. Such a site should be at least 100m from the nearest building or flight path and not interfere with normal aircraft movement. The area should have lighting available during the hours of darkness or portable lighting should be available within 30 minutes.

### A.4.3 Bomb threat (aircraft)

This emergency phase relates to instances where a bomb threat has been made against, an aircraft, airline or passenger, whether it be specific or non-specific, verbal or in written format. Prior to initiating this emergency phase, it is common practice to utilise a threat assessment technique called positive target identification (PTI) to ascertain whether such a threat is a hoax or whether the emergency plan needs to be activated. This should not preclude the lead agency, aviation security service or airline from requesting the activation of the emergency plan at any stage.

CAA has identified 3 particular and specific situations where threat management techniques are required. Those are when the—

(a) threat relates to an aircraft in the air or on the ground with doors closed; and

(b) threat relates to an aircraft on the ground with doors open; and

(c) threat relates to aviation related infrastructure.

The changing roles and responsibilities in each of the three specific situations require different approaches. Action on receipt of a threat is contained in the *National Aviation Security Programme,* and guidance in relation to the responsibilities following a SPECIFIC is contained in *Security Aviation Sensitive Information*. If your agency or organisation requires a copy of this information please apply to security@caa.govt.nz.

### A.4.4 Unattended article

An unattended article is a bag or other item, labelled or unlabelled, which—

- has not been authorised to be located in a particular area; and
- is considered to have the potential to cause harm or damage to people or property; and
- by either its appearance or location is regarded with suspicion.

Local operating procedures at the airport should identify the protocols to be followed when an investigation is undertaken. An aviation security service can use explosive trace detection (ETD), a dog unit and mobile x-ray units to assess whether the article is a risk or not. This emergency phase is normally warranted after investigation of the article, and where the owner cannot be identified or located to collect the article within a reasonable but brief timeframe (approximately 5 to10 minutes). Responses often include evacuation of a given area until such items have been determined to be safe.

### A.4.5 Suspicious article

A suspicious article is a piece of baggage or parcel in the baggage handling system, which has been identified through use of security detection equipment as potentially containing explosives, and where the owner of the item cannot be located for further questioning or investigation of the contents.

This emergency phase is activated where a bag or parcel remains uncleared following the final level of security screening at the aerodrome, and is used to initiate procedures to render safe the article.

A similar emergency condition can apply when cargo has been screened and further investigations fail to adequately identify the contents. This emergency phase only applies to airports, where explosive detection equipment is installed as part of the baggage handling system or cargo screening facilities.

### A.4.6 Bomb threat (building)

This emergency phase applies when a threat has been made, whether specific or non-specific, verbal or written, to the effect that a device has been placed in or near a building and it poses imminent danger to the occupants or indirectly to other persons.

Some aerodrome operators have adapted the PTI threat assessment technique used for aircraft, to determine if a threat against a building is as specific or non-specific. This can assist determining the action to take to minimise any unnecessary significant disruption to normal functionality.

The CAA has identified 3 particular and specific situations where threat management techniques are required. Those are when the—

(a) threat relates to an aircraft in the air or on the ground with doors closed; and

(b) threat relates to an aircraft on the ground with doors open; and

(c) threat relates to aviation related infrastructure.

The changing roles and responsibilities in each of the three specific situations require different approaches. Action on receipt of a threat is contained in the *National Aviation Security Programme,* and guidance in relation to the responsibilities following a SPECIFIC is contained in *Security*

*Aviation Sensitive Information*. If your agency or organisation requires a copy of this information please apply to security@caa.govt.nz.

### A.4.7 Civil unrest

This emergency phase applies to those instances where civil unrest occurs at the airport/aerodrome. Civil unrest is when a group of people form a critical mass for the purposes of disrupting the functionality of the aerodrome through their physical presence on site or by the destruction of property.

Examples can include unruly strike action against an airport tenant, vehicles blockading roads to the terminal building, or demonstrators entering the manoeuvring area to disrupted flight operations.

## A.5 Other emergencies

### A.5.1 Natural disasters

Aerodromes should consider working closely with their lifeline groups for assistance with risk assessments for hazards in their area. Those aerodromes which are regarded as national lifeline utilities also have a requirement to consider a group of risks which may be outside the scope of this section to meet the *National Civil Defence Order Plan.*

Natural disasters such as, earthquake, storms, volcanic eruption, or tsunami warning can be grouped under one general heading for civil defence emergencies, aerodrome specific response plans identified for each situation, or a combination of both.

Consideration should be given to the fact that occurrences such as earthquakes and significant storms (with high winds) occur with reasonable frequency in New Zealand. These emergency phases should be declared only where there is a resulting threat to human life or safety of aircraft.

Earthquakes can damage infrastructure including terminal buildings, fuel farms, visual and radio aids to navigation, and paved areas such as runways. These facilities should be checked after any known occurrence to assess whether any damage has occurred and for safe functionality.

Only airport agencies should be alerted to the emergency phase, so that personnel can conduct appropriate assessments of facilities and services, to ensure that aircraft and passenger safety will not be compromised.

Storms can bring high winds and rain which can jeopardise the safety of workers and passengers in open areas, as well as aircraft and other equipment on the ground. Normally such occurrences require an escalation of mitigating risk responses as the storm approaches. This emergency phase should be declared when wind speeds reach an agreed threshold and safe operations are jeopardised. Normally only on airport agencies require notification of this specific emergency phase unless injury to person(s) or significant damage to property occurs.

### A.5.2 Structural or ground fire

This emergency phase applies to structural and non-aircraft fires on the aerodrome.

### A.5.3 Hazardous substances

This emergency phase applies to spillages of hazardous substances at the airport/aerodrome. Packages containing dangerous goods are identified by the distinctive diamond-shaped dangerous goods label. More often than not occurrences require special precautions to be taken by personnel.

Fuel spillages are relatively common and consideration should be given as to whether they are included. If so, the level of spillage to activate the emergency plan should be determined. Alternatively fuel spills can be dealt with under a general phase of ‘aerodrome incident’, with an escalation of the response level if the size of the spillage warrants it.

### A.5.4 Medical emergency

Medical emergencies often occur at airports. Typically people suffer heart attacks, collapse, trip and fall, have respiratory difficulties, suffer from severe air sickness etc. These are normally responded to by on airport personnel pending arrival of local health authority paramedics or doctors if required.

The emergency plan is not normally activated for these sorts of occurrences. Consideration however needs to be given to medical emergencies, where there are multiple persons involved and which are unable to be attended to by on airport personnel. Medical emergencies have arisen in New Zealand with multiple persons sustaining serious injuries from severe air turbulence.

A medical emergency which can require special precautions is when passengers are showing symptoms of a communicable disease. Such symptoms might include a fever (with a temperature over 38º) and either persistent vomiting, persistent diarrhoea or skin rash. These passengers may require special quarantine measures to be taken at the airport. Quarantine measures until the cause for passengers feeling unwell is confirmed may be necessary for cases of suspected mass food poisoning.

Normally aircrew will advise ground-staff prior to their landing, if they suspect passengers are suffering from a communicable disease. Local health authorities should be notified for advice, and an emergency phase declared if passengers are required to be quarantined. It should be noted that in these instances, suitable toilet facilities should be available in quarantined areas.

Response procedures for these later forms of medical emergency can be independently contained under a separate ‘quarantine’ or ‘communicable diseases’ emergency phase. Such procedures are a requirement for all aerodromes serving international operations.

### A.5.5 Airport incident

This emergency phase generally covers occurrences at the airport that do not necessarily require ‘off airport’ assistance. Incidents such as motor vehicle accidents, fuel spills and some singular medical emergencies are examples of airport incidents, which can be notified to on airport agencies and responses escalated as needs arise.

## A.6 Supporting plans

### A.6.1 Terminal evacuation plan

A terminal evacuation plan is often implemented as a result of specific declared emergencies. For example: security incidents, structural fires, hazardous substance spillages, etc. A terminal evacuation plan can be part of the AEP or a separate self-contained document referenced by the AEP.

### A.6.2 Welfare plan

An emergency response or recovery phase may require the assistance of specialist welfare agencies. They may be needed to—

- Deal with meeters and greeters.
- Care for survivors with non-urgent injuries.
- Undertake stress debriefing and provide ongoing assistance to staff.
- Deal with relatives and survivors who want to return to the site after the event.

The aerodrome emergency planning committee should consider developing a welfare plan to support the AEP response. A welfare plan can be part of the AEP or a separate self-contained document referenced by the AEP. Major airlines are required to have welfare plans in place and to have staff

trained to assist with its implementation. Aerodrome operators and airline operators should be fully aware of each other's welfare plan.

Organisations such as Victim Support, the Salvation Army and the Red Cross have staff that are trained to assist with such welfare support.

### *Care of meeters and greeters*

During the emergency response phase, additional resources will be required to care for the meeters and greeters, and to assist the New Zealand Police with obtaining personal information about passengers involved in an aircraft accident (for identification and reconciliation purposes).

Consider involving religious leaders and interpreters as there may be a large number of non-English speaking persons involved.

Additional information is provided in Appendix E of this advisory circular.

### *Care of survivors*

Assistance will be needed with the care of survivors with non-urgent injuries. This can include obtaining personal information for identification and reconciliation, and obtaining contact information for family and friends.

### *Care of responders and staff*

Welfare support is also necessary during the recovery phase of the emergency response. Responders and staff can be equally traumatised by the events of an aerodrome incident, particularly an aircraft accident.

All agencies involved should consider obtaining professional assistance for critical incident stress debriefing and ongoing support. Victim Support or industrial psychologists are usually able to assist in this regard.

### *Care of relatives and survivors returning to the site*

The welfare plan should consider the likelihood of relatives or survivors wanting to visit the site of the accident. This can include providing personal support and facilitating the visits.

## A.6.3 Aircraft recovery plan

Aircraft can become immobilised on the manoeuvring area for many reasons including an accident, an excursion from the runway or taxiway, a mechanical failure through loss of hydraulic pressure or blown tires. An aircraft recovery plan is designed to ensure removal of the immobilised aircraft in a timely manner, without further damage to the aircraft and to enable the area concerned, to be returned to active service as soon as possible.

Ultimately it is the aircraft operator's responsibility to remove the aircraft. The efficiency of such a task can be improved if a separate plan is developed to coordinate all agencies involved in the aircraft's removal. The plan can form part of the AEP or a separate self-contained document referenced by the AEP.

Aircraft recovery plans should, like the AEP, outline the roles and responsibilities of the main agencies involved, which will be in charge of coordinating the removal, and the communications system for activation of the plan.

Likely agencies may include—

- aerodrome operator
- aircraft operator

- aircraft maintenance organisations
- airport rescue fire service or New Zealand fire service
- aviation fuel companies
- security providers
- specialist equipment or resource providers

Additionally, a list of resources available locally, or location of specialist removal equipment for the aircraft, should be contained in the plan together with up to date telephone numbers for contact personnel. The plan should be reviewed periodically to ensure equipment is still available and appropriate for the type of aircraft the aerodrome is serving.

Examples of resource requirements may include—

- specialist equipment designed for lifting or towing of an aircraft
- facilities for de-fuelling the aircraft
- cranes or winches for lifting and pulling
- diggers for creating temporary pathways for aircraft wheels and recovery equipment
- aggregate, metal or wood merchants for providing material to stabilise pathways or create working platforms
- trucks and trailers for transport of materials or aircraft
- barges and salvage experts for aircraft recovery in water
- lighting for removal during hours of darkness

Local sources of equipment and materials include—

- aircraft operators on-site
- maintenance providers on site
- hire companies
- crane operators
- heavy haulage operators
- salvage experts
- aggregate or timber merchants

The plan should give an indicative timeframe in which the equipment can be made available on site, to assist with management planning of the recovery process, once the plan is activated.

### A.6.4 Media and information management plan

Aerodrome emergencies, particularly aircraft accidents, draw a great deal of public attention particularly from the media. In addition meeters and greeters also require information concerning the emergency. These information requirements must be carefully managed in a controlled manner.

The media can be expected to approach anyone who might be able to provide an inside perspective on the emergency. It is important that the airports provide their relevant media teams with concise, factual information to enable them to communicate information that is timely and accurate to the public and to the external media reporting agencies.

It is therefore advisable that the AEP contains a supporting media plan, which should include, but not limited to, how to manage information requests, the protocol for releasing information and updating communication channels, the assigned media liaison person/team and media spokesperson, and the location of media briefings. The media plan can form part of the AEP or a separate self-contained document referenced by the AEP.

Accepted practice in New Zealand is for the lead agency (normally the New Zealand Police), with the support of other agencies directly affected (e.g. airline or aerodrome operator) to hold media briefings throughout the period of the emergency.

Ensure all enquiries are directed to the agreed media liaison person/point as listed in the AEP's supporting media plan. It is important to provide brief, factual information to satisfy the immediate requirements of the media.

Depending upon the scale of the emergency, consideration should be given to the establishment of a 0800 phone number for all enquiries. Many airlines will have the facility in place for aircraft incidents, but the New Zealand Police may also activate such a facility if required. Such a system can help free up the telecommunications network for ongoing use during the emergency, and manage the overall information requirements resulting from an incident.

# Appendix B – Communications and Coordination

## B.1 Communications

Communications are the most critical aspect of aerodrome emergency planning. The aerodrome operator is responsible for ensuring a prompt response to emergency incidents that are governed by the AEP. A key aspect to achieving this is the rapid alerting of all necessary responding agencies, and individuals to the emergency phase (activating the AEP).

The AEP should clearly define the activation sequence for calling out the agencies or individuals required to respond. Additionally there should be a sequence and process for cancelling the emergency phase and standing down agencies involved.

It is important to identify in the AEP who is the initiator of the emergency alerting system for each type of emergency. At larger aerodromes, this is often the air traffic control unit, rescue fire service, aerodrome operator or their agent. For security emergencies it may be the New Zealand Police or the aviation security service.

For smaller aerodromes which do not have a 24 hour a day staff presence, the New Zealand fire service or New Zealand Police, once notified, may initiate the AEP and emergency alerting sequence.

The emergency alerting system should be tested often to ensure it is working and that telephone numbers are correct, and to highlight any errors or weakness in the alerting aspects of the AEP. Testing at irregular intervals allows the system to be tested with different operators and at differing times of the day.

Aerodrome emergency alerting can be achieved in a variety of ways. The following are the most common.

## B.2 Communication systems

### B.2.1 Cascade system (call tree)

With a cascade system (or call tree) one call is made from the alerting system initiator to a group of people alerting them to the emergency. The receiver reads back the information from the caller to ensure they have heard and understood the message correctly. The receivers of that call in turn telephone the people listed on the level below them to pass the message on as part of their response to the emergency. The call continues to cascade down the pyramid until all agencies/ individuals listed are notified.

The agencies or individuals on the call tree should be arranged in order of their importance to the agreed response. Emergency services such as the airport rescue fire service, the New Zealand fire service, the New Zealand Police and the ambulance service are almost always at the top of the cascade system.

The agencies or individuals listed to respond is dependent on the type of emergency phase being declared. That is not all agencies are required for some emergency situations, and additional specialist groups may be required for certain emergencies.

Under Part 139, the names and telephone numbers for the offices and people named in the AEP must be up-to-date and correct.

The cascade system does have disadvantages. It can take a long time to transfer the necessary information to all the responding agencies and people, especially as the information requires to be read-back by the receiver to the caller to ensure that they have heard and understood the message correctly. There is a risk that during significant emergencies such as an aircraft accident at the aerodrome, the telephone network may become overloaded with the message unable to be

transferred. The aerodrome emergency planning committee should identify alternative methods of transferring information should the primary communication system fail or become unavailable, and include these in the AEP.

### B.2.2 Leased lines

Some aerodrome operators have mitigated the risk of telecommunications network overload by leasing what is known as an allied line, a hot line or a dedicated line. These lines usually connect the air traffic control unit or aerodrome operator with the three main emergency services and are dedicated for sole use by these agencies. That is, they are not used by the telecommunications provider to route public call traffic through. They continue to work even though the public switchboard may be overloaded or other situation where emergency calls might otherwise be placed in a queue.

The biggest disadvantage with leased lines is the ongoing lease cost to the operator.

### B.2.3 Automated emergency alerting system

An automated emergency alerting system (EAS) can use a variety of transmission medium e.g. dedicated lines, cell sites, data/radio transmission, to send a preformatted message to a number of agencies simultaneously.

The initiator of the message records or types the message into the EAS. Once sent the message is forwarded directly to the agencies connected to the system. Depending upon the system, the responding agencies receive the message typically on a computer screen, a paper printout, a mobile phone or pager message, or voice recording.

Recorded voice messages require some form of verbal acknowledgement that the message has been received. The more automated systems can display the message's receipt and acknowledgement on the senders screen.

The main advantages of an automated EAS are—

- an emergency message to be sent to several agencies simultaneously, reducing the overall response times and freeing up an operator to do other tasks; and
- it can be extended to additional agencies or recipients relatively easily, especially if it is using radio or data links, and not dedicated lines; and
- if it uses radio data transfer it will not be affected by telecommunications network problems or overloading; and
- text versions provide a record of the message and allow a more rapid response than is possible if an oral message has to be read back; and
- the message can be received at a variety of locations e.g. office or vehicle.

The main disadvantage of such a system could be—

- the set-up costs; and
- if it uses a mobile telephone service it could be compromised by network overloading during a major emergency.

### B.2.4 EAS message form

A standardised EAS message form should be provided to agencies to record message details if the message is not passed automatically in text format. This ensures all key information is provided and enables responding agencies to react appropriately.

While aspects of the message can differ depending upon the type of emergency, it is important that the message format is generally standardised. It must to conform to the requirements of the centralised emergency services communications centres (fire, police and ambulance) that will receive emergency calls from a number of different aerodrome locations.

Regardless of which organisation is the first point of contact, it is necessary to identify the aerodrome from which the call is being made before any further information is passed on.

The structure of the message for aircraft occurrences should include information in the following order—

- Prefix – for non-emergency use, i.e. exercise or communications check.
- Phase of emergency – aircraft crash, full emergency or local standby.
- Location or runway – the location of the accident or the runway to be used for landing.
- Type of aircraft.
- Estimated time of arrival.
- Nature of trouble.
- Persons on board.
- Fuel on board, if known.
- Dangerous goods on board, if known.

Prefix, phase of emergency, and read back are normally shown as a tick box option.

A sample EAS message form is shown in Figure 1.

If all information is not readily obtainable or known, the most crucial aspects of the message should be passed. The structure of the message as shown above is based upon the criticality of each component of the message, the more important components being first in sequence.

When initially unknown information becomes available, the missing components of the message should be relayed to the emergency services.

### *Location*

For incidents that occur off the aerodrome, or when the aerodrome is in or bounded by a rural area, provide responders with an emergency grid map reference. This will help them determine the best route to the location while avoiding geographical barriers that might impede a direct approach.

For aerodromes located in predominately urban locations, provide a general location in terms of a suburb or street name for responding emergency services.

### *Identifying the aircraft*

When identifying aircraft type give a weight category of the aircraft if known. The New Zealand fire service will dispatch an appropriate number of vehicles based upon the size of the aircraft. Although the fire service have categorised aircraft into heavy, light or military, this information is not critical as it can be determined in other ways.

Provide the airline name or call sign of the aircraft if it is known. It is not immediately crucial for the purposes of response, but provides valuable support information to responders.

**Figure 1** – Sample Emergency Message Form

**EMERGENCY MESSAGE FORM**

..... **AIRPORT EMERGENCY ORGANISATION**

PREFIX (For Non Emergency Use Only)

| | |
|---|---|
| ☐ | EXERCISE (SPOKEN THREE TIMES) |
| ☐ | COMMUNICATION CHECK (SPOKEN THREE TIMES) |

PHASE

| | |
|---|---|
| ☐ | CRASH CRASH CRASH |
| ☐ | FULL EMERGENCY FULL EMERGENCY FULL EMERGENCY |
| ☐ | LOCAL STANDBY LOCAL STANDBY LOCAL STANDBY |

(A) Location or RWY to be used: .....

(B) Type of aircraft: .....

(C) Estimated time of arrival (ETA): .....

(D) Nature of trouble: .....

(E) Persons on board (POB): .....

(F) Fuel on board if known: .....

(G) Dangerous goods on board if known: .....

READ BACK ☐

Time of Receipt: ..... hours.

Dispatched to:

| AGENCY | TIME |
|---|---|
| ..... | ..... |
| ..... | ..... |
| ..... | ..... |
| ..... | ..... |
| ..... | ..... |

### *Other aerodrome incidents*

In any other aerodrome incidents, such as fire, threats to security, hazardous substances spillages and medical emergencies, the most relevant information is the—

- Exact location of the incident
- Nature of trouble

It may be necessary to provide AEP information, or specific procedure lists, on site at the aerodrome for responding agencies. Not all agencies involved may have the AEP detail in their vehicle or are fully familiar with their onsite responsibility. This may include lead agencies such New Zealand

Police, New Zealand fire service or the ambulance service where the nearest available unit will respond.

Consider having a location at the aerodrome or outside of the terminal, possibly in a mailbox or cabinet, where specific sections of the AEP are available for the first responder. These may simply be laminated sheets for quick reference.

## B.3 Considerations for small aerodromes

Small or remote aerodromes (including airstrips) may not have staff available in an emergency to initiate an emergency response. They must rely on people who may not be familiar with the aerodrome and its operation.

In these circumstances it is recommended that a sign be displayed in a prominent position (preferably with a phone), detailing who to telephone together with the aerodrome name and its physical location.

## B.4 Information to third party aerodromes

Aerodrome operators should give consideration to providing information about an aircraft accident, if it is an air transport operation, to the aerodrome operator from where the aircraft originated or to where the aircraft was destined. Normally this will be communicated by the airline operator however, depending upon the size of their operation; it is advisable for the aerodrome operator to communicate this information in a timely manner as well.

This will permit the third party aerodrome operator to manage activity at their location relating to the incident e.g. meeters and greeters, relatives, media etc.

As an example, an aircraft accident occurred shortly after departure. The response to the incident received immense media coverage with images of the accident broadcast on television. These were seen by relatives waiting at the arrival aerodrome. Airline staff and the aerodrome operator at that aerodrome were unable to properly respond because they were unaware of the accident.

Such notification should form part of the aerodrome operator’s standard procedures when responding to an aircraft accident.

## B.5 Coordination

An AEP is to ensure the effective coordination of agencies and individuals responding to an aerodrome emergency. For each emergency phase specific agencies and individuals will provide a critical component of the overall response to that emergency.

*ICAO Doc 9137 - Airport Services Manual Part 7, Chapters 3 and 4, Airport Emergency Planning,* outlines the agencies that could be considered and their general role for each emergency phase. The agencies and individuals along with their general roles should be established and documented in the AEP.

The established practices of the New Zealand Police, New Zealand fire service and the ambulance service (the lead agencies) will usually guide the immediate emergency response. In certain circumstances other agencies will be the lead agency e.g. communicable diseases coordinated by the local district health provider.

The AEP should contain procedures similar to (or the same as) the procedures used by the emergency services in the community generally.

### B.5.1 Coordinated incident management system (CIMS)

To better coordinate their collective efforts, most emergency response agencies in New Zealand have adopted an emergency response model known as the coordinated incident management system

(CIMS). This model standardises the coordination of these agencies when they are involved in the same incident response.

The CIMS is the model for command, control and coordination of an emergency response. It provides the rules that define the system for managing incidents of any size and defines the relationship, responsibilities and management rules for organisations involved.

The CIMS is based on—

- Common terminology.
- A modular organisation.
- Integrated communications.
- Consolidated incident action plans (the AEP).
- A manageable span of control.
- Designated incident facilities including an incident command point (ICP), and an emergency operations centre (EOC).
- Comprehensive resource management.

Depending on the scale of emergency, the CIMS is built around four major components—

- Control – the management of an incident.
- Planning and intelligence – the collection and analysis of incident information and planning of response activities.
- Operations – the direction of an agency's resources in dealing with an incident.
- Logistics – the provision of facilities, services and materials required to deal with an incident.

Control of the incident is the responsibility of the incident controller. The incident controller should—

- Establish command and control.
- Establish the incident command point.
- Protect life and property.
- Control people and equipment.
- Maintain accountability for responder and public safety as well as task accomplishment.
- Establish and maintain effective liaison with outside organisations, including the EOC when it is activated.

It is important to distinguish between—

- incident control, which relates to situations and operates horizontally across agencies; and
- command lines, which operates vertically within an agency.

At an incident there is only one incident controller, but there will be as many lines of command as there are agencies involved.

As an incident grows, other facilities in addition to the ICP and EOC should be identified and established—

- Staging areas where resources are gathered before being despatched to an incident area or safe forward point.
- A safe forward point, which is a safe location near the incident from which forward operations can be supported.
- An assembly area where resources are organised and prepared for deployment and that is located away from an incident at an established facility.

### B.5.2 Emergency operations centre (EOC)

***Rule 139.57(b)(5)***

The rules require an international aerodrome[1] to have an EOC.

The EOC is a fixed location on the aerodrome and supports the incident controller. It is usually activated for larger scale emergencies although it is common for such a facility to be readied following notification of a significant emergency by the aerodrome operator.

It provides the location for the local controller of an emergency. The function of the local controller is usually fulfilled by the New Zealand Police as lead agency (although not in all instances), and may be conducted off site. The AEP should identify the agency that will fulfil the role of lead agency for each emergency response planned for.

When the response coordinator is off site, the EOC becomes a focal point for aerodrome information and resource management to the response coordinator.

The EOC should have established communications, administration and service facilities.

### B.5.3 Incident command post (ICP)

***Rule 139.57(b)(5)***

The rules require an international aerodrome[1] to have a command post for each type of emergency planned for.

ICAO documents refer to the ICP as the mobile command point. It may also be referred to as the incident command post.

To facilitate the CIMS approach, aerodrome operators (regardless of whether they are international[1] or domestic operations) should identify an ICP for each type of emergency planned for in the AEP.

The incident management team receives and disseminates information and make decisions on the response activities from the ICP. The ICP may be in the form of a vehicle, caravan, trailer, tent or building.

The ICP should be clearly identified and preferably sheltered from the weather. It should be positioned away from the general noise and confusion associated with the incident, and ideally

outside the present and potential hazard zone. Access to the ICP should be controlled and it should be located away from public traffic. The AEP should include where or how the ICP is to be identified.

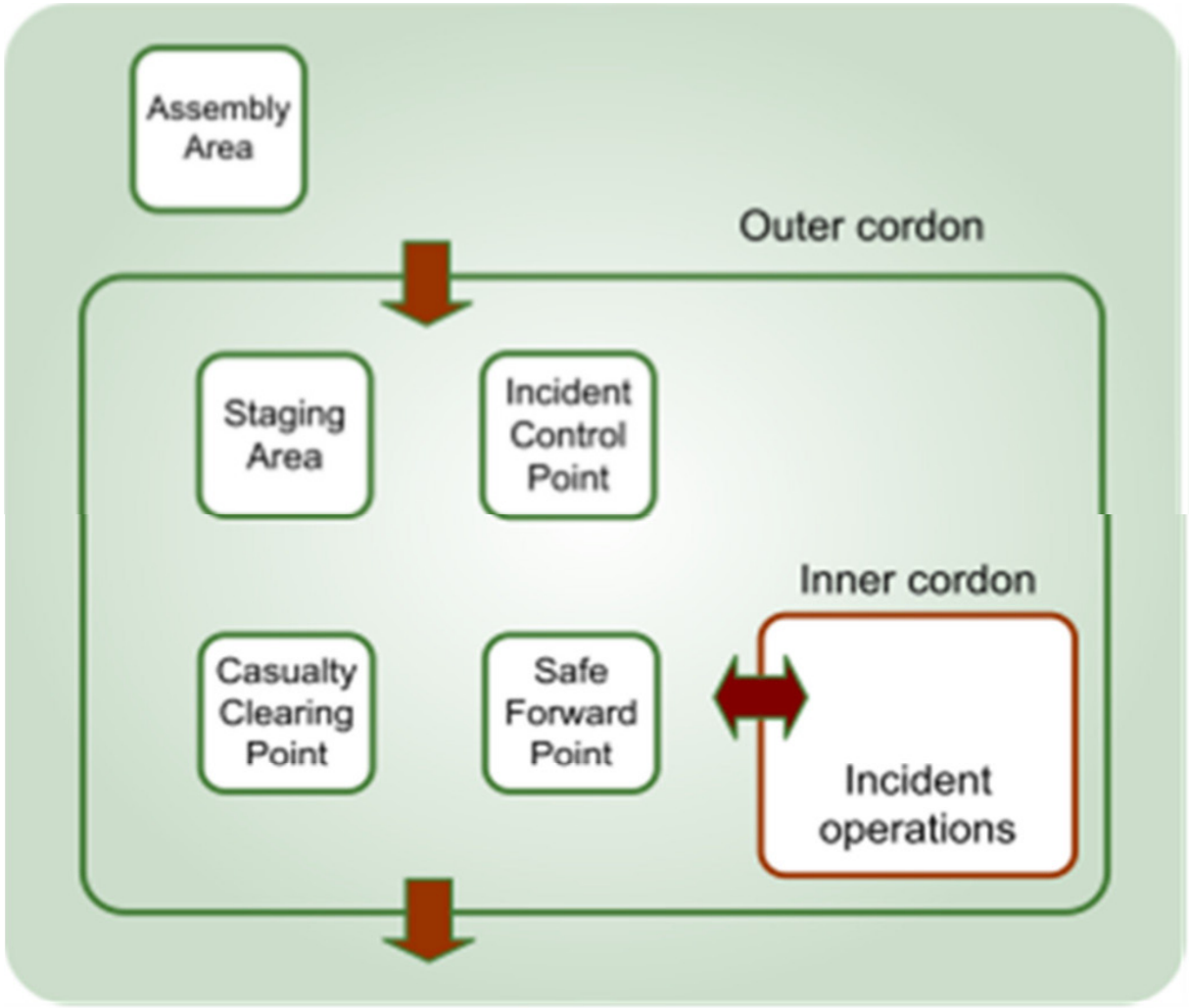


**Figure 2** – Generic CIMS Schematic

# Appendix C – Medical Considerations

## C.1 Medical equipment

***Rule 139.57(b)(6)***

The rule requires that the AEP have a description of available equipment including medical equipment and the location of such equipment.

The amount of stock or medical equipment held should be commensurate with the largest passenger aircraft type regularly using the aerodrome, taking into consideration other available resources which might be transported in a timely manner to the aerodrome in an emergency.

**Small aerodromes with no rescue fire service**. Basic medical supplies should be available in the terminal building.

**Domestic aerodromes with a rescue fire service.** There should be a dedicated first aid room. Rescue fire personnel should be trained in first aid and have suitable medical equipment available on the rescue fire vehicles and in the terminal building.

**International aerodromes.** The level of medical supplies should be commensurate with the volume and type of aircraft operating. As a minimum there should be medical supplies available on the rescue fire vehicles and in the terminal building. In addition a well-equipped portable medical unit, possibly on a trailer or small vehicle, should be available for use at any incident scene.

There may be problems deciding what equipment should be kept because many medical items have expiry dates. The aerodrome emergency planning committee should consider retaining the services of a medical advisor or coordinator, to help determine what is appropriate to be held at the aerodrome. The local ambulance service should be able to assist.

Some aerodromes have established, in conjunction with the local ambulance service, a rotatable stock system to ensure that items held at the aerodrome do not exceed their use by dates. Groupings of like items are contained in sealed containers and rotated with ambulance supplies accordingly. Stock taking is simplified when this system is implemented.

Containerised medical supplies can also be more readily transported by a variety of means should an incident occur ‘off airport’ or at a location that cannot be readily reached by road transportation.

Bear in mind items such as oxygen cylinders and masks, blankets and stretchers because these are not normally carried in large quantities by the emergency services.

## C.2 Triage and medical care

The *ICAO Doc 9137 – Airport Services Manual Part 7, Airport Emergency Planning, Chapters 9, 10 and 13* comprehensively discuss the management of the medical aspects of an aerodrome emergency involving mass casualties.

In an emergency casualties are transferred from the accident site to a triage area, then to a treatment area, then a transport area, then a hospital or another medical facility. This methodology is followed by the ambulance service and is consistent with CIMS.

Triage tags or similar are used to indicate a person’s injury and to prioritise their treatment following initial assessment. They are also used to identify and record a patient’s movement through the system. The tags are used by the ambulance services for mass casualty situations when the ambulance incident commander decides to do so. All ambulance services hold stocks of these tags.

After triage, transportation to hospital or other medical facility may be delayed depending upon numbers involved and the prioritisation of injury. People with non-life threatening injuries (walking wounded) can be contained in a separate area pending transportation to hospital. During this time

they should be subject to ongoing care, and have their personal information collected to help with the overall reconciliation process.

The AEP's supporting "welfare plan" brings together a separate team to assist with this process.

## C.3 Care of survivors

Ambulance services and local health authorities usually have dedicated plans for dealing with mass casualty situations that take into account the care of survivors at the accident site. However, the aerodrome emergency planning committee should give consideration as to what resources are available on site to assist with care of the survivors including the activation of a welfare plan.

For large numbers of casualties provision should be made for the designation of a temporary holding facility where the walking wounded, or those with non-threatening injuries will be held pending transfer to appropriate medical facilities. Such a holding area should be secured from the public and provide as much shelter and warmth as possible. Shelter and warmth are particularly important so consider the use of an area of the terminal building, a hangar or other building. If this is not possible, the use of vehicles in the field to provide some shelter or relief from the conditions may be considered pending the erection of a temporary facility or transportation off site.

Provision needs to be made where it is likely large numbers of people may be involved for the transportation of survivors at the site and also from the site. This may include securing public transport resources, especially buses.

In accidents, all surviving casualties should be transported to a hospital or other medical facility for further assessment, regardless of their condition.

Although normally an aircraft operator's responsibility, crew should if possible be separated from the rest of the passengers as known acts of violence against crew have occurred in overseas occurrences.

## C.4 Dealing with fatalities

The aerodrome emergency planning committee should consider the possibility that a temporary morgue may be required to be established on site by Police and the medical authorities.

The bodies of deceased should not be moved from site until the appropriate authorities, usually the New Zealand Police, have given approval. Depending on the circumstances, specialist teams trained in disaster victim identification may be required to investigate and record evidence onsite prior to the removal of a body or body part.

If local mortuary facilities may not be adequate to cope with a large number of deceased, the aerodrome emergency planning committee should designate a suitable site at or near the aerodrome in the AEP. This site should be determined in conjunction with local medical authorities. If a suitable site is not available then refrigerated containers from local transport firms, cool stores or similar may need to be used.

# Appendix D – Simulated Emergency Exercise

***Rule 139.109***

## D.1 Purpose

The holder of an aerodrome operator certificate must stage simulated emergency exercises regularly to test and maintain the preparedness and adequacy of the AEP. This can be done by conducting either—

(a) a full-scale emergency exercise at least once every two years, with special emergency exercises between the full-scale exercises to ensure deficiencies found during the full-scale exercise have been corrected:

(b) a series of modular tests to be done every 3 years, commencing in the first year and concluding in a full scale aerodrome emergency exercise no more than 3 years after the commencement.

The scope and size of special exercises can be adjusted as necessary providing they adequately verify deficiencies have been corrected.

Modular tests could be areas such as, but not limited to, the following—

- Notification + emergency communications + raising the alarm + rendezvous points (RVP) + stand-down.
- Airport fire service + New Zealand fire service + tactical training exercises + scene preservation + operational safety (accident site).
- Mobility exercise + casualty handling + triage + ambulance + hospitals.
- CIMS + command & control + control point + airport emergency operations centre.
- Transportation / equipment.
- Casualty reception + friends & relatives facilities + aircraft crew facilities + media.
- Business continuity v operational safety.
- Aircraft recovery + return to normal operations + investigations + debrief.

Aerodrome operators should consider additional exercises, including table top exercises, or emergency workshops or discussion groups at other times should circumstances warrant it. For example—

- Potential global epidemic, e.g. SARS in 2003, Ebola in 2014.
- Major change at the aerodrome, e.g. new terminal building.
- Specific exercises for agencies, e.g. ongoing familiarisation for the fire service or ambulance services.
- Smaller regular exercises particularly for agencies with volunteer staff, or have staff on rosters. This allows more people to be trained in the AEP.

## D.2 Emergency exercises

The purpose of an aerodrome emergency exercise is to test the adequacy of—

- response of all personnel involved; and
- emergency plans and procedures; and
- emergency equipment and communication.

### D.2.1 Preparing for an emergency exercise

Prepare for an emergency exercise by using the knowledge and expertise of the emergency services that regularly conduct such exercises.

Appoint an overall exercise commander to manage the running of the exercise and to determine when it is completed. For larger exercises it is often necessary to have a team implement the exercise with their own chain of command and communication requirements. The team usually comprises the exercise umpires and safety officers who are located in different areas to monitor the overall response.

### D.2.2 Scoping an emergency exercise

Before the exercise, the aerodrome emergency planning committee should identify the components of the AEP to be tested and set measurable objectives. This will also help determine the best form for the exercise. The committee should limit the scope of the components to be explored in the exercise, to ensure the learning environment remains positive and to gain the most benefit. An overly complex exercise is likely to result in participants becoming frustrated and confused.

Use partial exercises to target a specific agency or simulate a specific component of the response. These can be a table top exercise, a walk through exercise, or a physical simulation.

A table top exercise is conducted in a room using either a layout of the airport or a whiteboard to help participants talk through the response procedures to a given scenario. It is used to test the integration and capability of emergency response resources without the expense and disruption of services incurred by a full scale exercise. This method is often used to assist with familiarisation of staff, often as a precursor to a partial or full scale emergency exercise.

A walk through exercise is a level up from the table top exercise. This type of exercise is conducted in the field and is typified by its slower pace, and the ability to stop the sequence of events at any point during the exercise, to assess and analyse particular actions by individuals or participating agencies.

A full scale exercise is conducted in the field and simulates a complete response to a given emergency scenario. Given the scale of such an exercise, some airports have conducted full scale exercises in two distinct phases over two consecutive days, a response phase and a recovery phase. This has assisted with critical review of the AEP.

### D.2.3 Programming and timing an emergency exercise

Consideration should be given to programming a range of exercises with objectives covering various emergency phases. It is also useful to consider the timing of exercises, for example an emergency scenario normally responded to during daylight hours can become significantly more difficult if responded to during the hours of darkness. This also applies to staffing resource levels which are often reduced outside peak hours.

It may be necessary to consider the typical flight hours for aircraft operations, e.g. early morning, early evening or night, so that the exercise tests the resources available at those times. This allows the exercise to be more realistic because it is when an accident is more likely to occur. It will make it

easier to identify any logistical problems that may occur at these times e.g. low staffing for emergency services, road traffic problems, and shift changes.

### D.2.4 Managing participants for maximum benefit

A further consideration is to ensure optimum response by all agencies throughout the exercise. Emergency situations can extend to many hours or even days. People are unable to perform at their optimum for extended periods of time, so it is desirable that responders be given adequate rest breaks and, where necessary, rosters are established to fill key positions to ensure continuity of action. Agencies involved in the exercise should be able to demonstrate, that they have the ability to continue for extended periods of time should the need arise.

### D.2.5 Other considerations

When the aerodrome emergency planning committee is setting objectives and developing a realistic emergency scenario to test the plan, consider—

- the aerodrome's ability to continue functioning; and
- the health and safety of participants, both volunteers and staff; and
- community relations, particularly pre exercise communications; and
- insurance coverage; and
- the use of fictitious names for the scenario , passengers and airline; and
- establishing observer areas and observer critique sheets for feedback after the exercise; and
- contingencies for dealing with real emergencies that might arise during the exercise.

## D.3 Debriefing

***Rule 139.109(3)***

Following the exercise, a brief oral debriefing session should be held to obtain feedback from the volunteers, who playact the passengers or meeters and greeters, as well as the responding agencies. The volunteers often provide valuable insight into how they perceived either their rescue or how they were managed or counselled.

Nominated observers should complete their critique sheets with feedback, as to whether the objectives of the exercise were met, what worked well, and what could be improved upon.

Each agency should be encouraged to debrief its staff and prepare a report for the aerodrome emergency planning committee. Once the committee receives these reports it should hold a full debriefing session, to discuss and review the reports and recommend any changes to the AEP.

# Appendix E – Other Considerations

## E.1 Handling the meeters and greeters

### E.1.1 Meeters and greeters

Responding to an aircraft accident includes dealing with relatives, friends or business colleagues who are at the aerodrome to meet the arriving passengers or farewell those on departing flights. These people are known generally known as “meeters and greeters”. Although mentioned previously (in paragraph A.6.2) the handling of meeters and greeters is an important component of any emergency and must be carefully planned for.

The meeters and greeters may be traumatised by an accident and therefore need to be managed appropriately. Additionally, they may be able to provide valuable identification information about passengers involved in the accident. This information is usually obtained from direct questioning and the completion of a form.

### E.1.2 Security and privacy

The aerodrome operator and aircraft operator have a collective responsibility to designate a secure location within the terminal building (meeting room, conference facilities, guest lounge), or elsewhere where meeters and greeters can be taken for questioning and counselling. While the aerodrome operator can provide these facilities, the AEP should identify which agency will take responsibility for the segregation of the bone-fide meeters and greeters from the general public. This agency will then manage these people in conjunction with the New Zealand Police and other specialist personnel or agencies such as Victim Support, Salvation Army, Red Cross etc.

Consideration should be given to making medical support available to these persons, as well as refreshments and communication equipment if necessary.

The location should have direct access to separate rooms where private discussions can be held with counsellors. The location should be secured from the public and media interests, and preferably shielded from views of the accident scene.

### E.1.3 Access to information

The provision of timely and accurate information to these people is vital. Meeters and greeters should receive information prior to it being made public by the media and through other communication channels. Agreement should be reached locally on the management of news through TV screens, that fall under the responsibility of the airport and airport concessionaires, reasonable judgement should be applied on a case by case basis. However, be aware that many of the meeters and greeters will have access to media via personal devices such as mobile phones and computers.

### E.1.4 Smaller operators

The aerodrome emergency planning committee should also give consideration to smaller aircraft operators who have few, if any, permanent staff available to carry out AEP functions. The aerodrome operator, police, or other designated party may need to facilitate actions on the aircraft operator’s behalf, particularly when relatives and media start to arrive.

## E.2 Managing the terminal

Aerodrome operators need to consider managing terminal activities as part of emergency planning. This should include arrangements for an accident that occurs at or near the aerodrome or, if it could impact upon terminal activities, an accident at another aerodrome or remote location.

Information showed on flight information displays or provided over a public address system should be worded carefully. Consider the following—

- How to restrict access to airside and airline offices. These are all places where people may head to in the event of an emergency.
- Any crowd control measures that may need to be implemented and where additional resources will come from to cordon off or guard areas e.g. private security companies, airport security providers.
- What information will be available at an information center and how it will be communicated.
- Food outlets may need to be contacted to remain open, additional mobile catering providers could also be contacted.
- If the incident happens 'out of hours' when the aerodrome is closed, consider the impact this would have on management of the terminal and emergency planning.
- Alternative locations, such as large hotels, recreational halls or entertainment venues for managing the long term welfare needs of relatives, friends, support agencies, airport staff and media who wish to remain close by until the incident is concluded.

## E.3 Accident site - preserving evidence

***Civil Aviation Rule Part 12***

### E.3.1 Preservation of evidence

After an aircraft accident, an investigation into the cause of the accident will need to be undertaken before the removal of any aircraft wreckage, contents or other object involved in the accident. It is vital that all evidence is preserved on-site for the investigative authorities, and that the accident site is disturbed as little as possible during the emergency response phase.

*Civil Aviation Rule Part 12, Subpart C - Preservation of Aircraft, its Contents and Records*, outlines the requirements for preserving evidence at aircraft accident sites in New Zealand. It is important that aerodrome operators understand the requirements in this rule and have procedures to comply with these requirements.

Additional guidance is available in the CAA booklet *How to deal with an aircraft accident scene* available from the CAA, and at http://www.caa.govt.nz/safety_info/How_to.htm

### E.3.2 Investigation and removal of wreckage

Three authorities have the statutory power to investigate an aircraft accident in New Zealand—

- Transport Accident Investigation Commission
- Civil Aviation Authority
- New Zealand Police

Each authority involved in the investigation must authorise the removal of wreckage.

The aircraft operator is responsible for removing the aircraft in accordance with any aircraft recovery plan in the AEP, or in consultation with the aerodrome operator.

### E.3.3 Fatalities

The New Zealand Police acts on behalf of the coroner should there be any fatalities. Bodies or body parts may be subject to disaster victim identification process, and must not be moved without police authorisation.

### E.3.4 Light aircraft accidents

For light aircraft accidents with no fatalities or serious injuries, the aerodrome and aircraft operators are still obliged to get authorisation from the CAA for the removal of wreckage.

Removal of wreckage and return to normal operations can be expedited, if the aerodrome operator is prepared to initiate the investigation process before the CAA inspectors arrive (or in lieu of CAA inspectors needing to arrive). To do this the aerodrome operator must seek on each occasion the CAA's agreement and instructions, to undertake initial investigative actions on the CAA's behalf.

Depending on the severity of the accident and circumstances, such agreement may not be available unless there has been prior agreement with CAA that—

- staff are available who have undertaken basic accident investigation training; and
- procedures are in place for the collection of evidence, such as site photography, location marking of impact marks, site sketches, descriptive notes and other such actions as the CAA requires.

## E.4 Returning to normal operations – recovery phase

One objective of an AEP is to minimize the disruption to aircraft operations that might occur as a result of an aerodrome emergency. In New Zealand, most aircraft accidents that occur on the aerodrome are likely to close the aerodrome temporarily.

The AEP should include a recovery phase incorporating procedures to bring the aerodrome back to full operational status safely, efficiently and orderly.

Depending on the circumstances of the emergency, recovery may occur in a staged manner with restricted aircraft operations, before a complete recovery with unrestricted operations.

A return to restricted aircraft operations means re-commencing aircraft operations that use aerodrome maneuvering areas, not affected by the emergency or recovery operations. This activity is undertaken with extreme care so as not to endanger any emergency personnel or hinder recovery operations.

The aerodrome operator will need to consider the following before returning the aerodrome to normal operations—

- Assess damage to determine whether facilities are operational, safe, and functional. These facilities include navigation aid facilities, movement areas used by aircraft, aerodrome lighting and approach aids, fuel facilities and other facilities used for the processing of aircraft, baggage/cargo and passengers.
- Pay particular attention to foreign object debris (FOD) on the movement areas. Make sure grassed runway and taxiway surfaces are free of significant depressions or surface gouging, which may cause damage to other aircraft. Surface areas next to the runway or taxiway that might require rehabilitation, can be repaired at a later stage during a period of quiet operations, and subject to the level of threat posed to other aircraft.
- Close off and mark areas that are unsafe due to defect or obstructions. This includes areas with ongoing aircraft recovery operations or that are transport routes for vehicles involved in the recovery process.
- Consider whether recovery equipment or an immobilised aircraft infringe obstacle limitation surfaces (OLS), will affect radio navigation aids or obstruct visual aids necessary to approaching aircraft. If there have been infringements of the OLS, calculate and instigate reduced effective operating lengths (EOL), to ensure appropriate clearances are maintained.

- Reassess the rescue fire capability prior to commencement of operations and issue a NOTAM if required.

- Cancel any NOTAMs regarding the closure of the aerodrome, due to the emergency before continuing operations. Issue a new NOTAM about areas closed to aircraft traffic, any new or amended runway EOLs, or if aircraft traffic is otherwise restricted due to the emergency.

## E.5 Debriefing after an actual emergency

***Rule 139.109(3)***

All emergencies that result in activation of part or all of the AEP should be the subject of a debriefing session. It is often preferable to hold these with the actual personnel who responded, immediately after the emergency phase has been stood down. It also depends upon the complexity and severity of the emergency, and it might be more beneficial to hold a formal aerodrome emergency debriefing session, following individual agency debriefing sessions. Scheduling this debriefing for a later date will also provide the opportunity for all members of the aerodrome emergency planning committee to attend.

## E.6 Periodic review of AEP

***Rule 139.101***

The rules require aerodrome certificate holders to keep their AEP (as part of their exposition) up to date so, in addition to reviews carried out following exercises and actual emergencies, the AEP should be reviewed at least annually to ensure all contact details and the distribution list are current.

A further opportunity to review the AEP is through research of initiatives taken at other aerodromes which, if implemented locally, could improve the effectiveness of the response plans. Networking with other aerodrome operators and taking opportunities to attend other aerodromes' emergency exercises or debriefing sessions can be valuable.

Review of published articles on emergency management or aircraft accidents provide opportunities for the aerodrome operator to learn from other people's experiences, and to identify if similar weaknesses (or strengths) exist in their AEP.

# Appendix F – Related Information

## F.1 Documents

**ICAO**

*Annex 14 - Volume 1 - Aerodrome Design and Operations*

*Doc 9137 - Airport Services Manual, Part 7 - Airport Emergency Planning*

*Doc 9683 – Human Factors Training Manual*

**CAA**

*Civil Aviation Rule Part 12, Subpart C - Preservation of Aircraft, its Contents and Records*

*Civil Aviation Rule Part 139 - Aerodromes - Certification, Operation and Use*

*Booklet – How to deal with an aircraft accident scene*
*http://www.caa.govt.nz/safety_info/How_to.htm*

*AIPNZ. ENR1.15 – Emergency procedures*
*http://aip.net.nz/*