

Aircraft accident emergency planning and emergency management

Introduction

Many lessons are being learned through investigation of incidents around the world — the subject of this paper is the need for thorough planning of responses to aircraft emergencies to ensure that casualties and property damage are minimised. Investigation of major accidents and some serious incidents in various parts of the world has shown the value of being prepared for the type of event that everyone hopes will never occur.

With the inclusion of investigation of serious incidents in ICAO Annex 13 in 1994, many states have incorporated the requirement for such investigations into their national legislation. Others now investigate incidents and serious incidents without any legislative basis, whilst others choose to continue investigating accidents only, primarily because of limited resources, skills, expertise and finance.

The economic and social effects of emergencies and accidents, including loss of life, destruction of property and dislocation of communities, cannot be overstated. Emergency planning is the key to minimising the harmful effects of such events. Around the world, experience has shown that communities and organisations that have effectively applied a comprehensive emergency planning process are better able to cope with the impact of adverse events.

Emergency planning may also help protect organisations from litigation arising out of 'duty of care' provisions in common law. The general obligation of fulfilling duty of care, and the specific requirements under local state/territory legislation, indicate clearly the need for communities and organisations to develop, test, and review emergency plans. Only by carrying out a stringent planning process can the lessons of past investigations be learned.

A vital point in discussing emergency response planning is that aircraft accidents can occur anywhere, not just at departure and arrival airfields. Hence, planning for such mishaps should be on a national scale, although much of this planning will be focused on airport emergency responses. Because of the

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diversity of planning needs, this paper will concentrate largely on planning undertaken by airlines, and airports and the local surrounds.

This paper examines these emergency planning processes, drawing on the experiences of past accident and incident investigations. These experiences show that failure to heed the results of investigations can lead to 'history repeating itself' in later events, perhaps following a major accident in which lives are lost because of poor planning. Ultimately, the aim of comprehensive emergency response planning is to minimise pain and suffering of all associated with an emergency event.

The paper also addresses ICAO Annex 13 provisions relating to investigation of the effectiveness of an emergency response in an accident or incident, raising the question of whether existing requirements are sufficiently stringent.

Emergency response planning

Professor James Reason of Manchester University has carried out considerable research and has published a great amount of material on 'Organisational Accidents'. Reason's (1997) work on latent and active failures and in-depth defences and the dangers of neglecting or forgetting the effects of things that rarely happen, is just as valid in response planning and operations as it is to the production and transport organisations featuring in his studies.

For example, Reason has offered the thought that when an organisation operates for a lengthy period without experiencing an accident or serious incident, a mindset develops in the organisation that less effort need be devoted to safety considerations. In this situation, safety is eroded as productive

demands gain the upper hand. As a result, investment in safety measures declines, more capital is devoted to productive growth and the whole operation becomes less safe. The consequence is an increased risk of catastrophe. The corollary of this line of thinking is a similar effect in an organisation's response preparations. In short, 'We have a safe operation, we have not experienced an accident for years; why should we spend time and effort on preparing for the effects of an accident? We would be better off investing more money in additional equipment that is going to generate income.'

Airline safety managers and airport operators need to guard against such thoughts to ensure that their response preparations do not suffer. They need to promote the value and wisdom of preparing for the unexpected. Devoting scarce resources and spending money on preparations for responding to an accident may appear difficult to justify, but an old adage applies. 'If you think spending money on safety and preparing for an accident is wasteful, try having an accident when you haven't done any preparations.'

Reason's (1997) studies have included high-reliability organisations as targets—systems or companies having less than their 'fair share' of accidents. He found that people who operate and manage these organisations do so on the premise that 'every day will be a bad day', and prepare for the consequences of a 'bad day' accordingly. This attitude can be very difficult to sustain, particularly in time of economic pressure, and managers need to resist any temptation for complacency. It is the company that continues to operate in this way, considering and preparing for adverse events, that is less likely to experience a serious accident. Nevertheless, if it should meet with such a misfortune, it will invariably be prepared for that day.

Airport and airline planning committees and senior executives should consider very carefully all aspects of the scope and size of the emergency planning project. The temptation to 'cut corners', firstly to promote or accept an abbreviated planning process, or secondly, to try to

operate with less than optimum numbers during a response, needs to be resisted. The basic premise in both the planning process and the emergency response, should be to ensure that adequate resources are committed. In practice, this usually means initially committing too many resources rather than too few. The task can be scaled down if necessary. Another prudent consideration is to utilise the range of staff expertise at all levels. Only through harnessing this collective experience of staff members can a successful response plan be formulated.

The importance of a comprehensive consultative process in producing response plans has been stressed. This consultative process needs to extend into the community surrounding the airport and to local government agencies, as the effects of a major disturbance on an airport, or on a community in the vicinity of an aircraft accident will be significant. Clearly, airlines and airport response authorities cannot be expected to consult with every community under aircraft flight paths, but they do need to discuss the potential effects of an aircraft accident on communities short distances from an airport and with authorities that could be expected to respond to accidents remote from normal operating centres.

Of particular importance will be the reaction of the public living near the approach and departure ends of the runways. These people have understandable concerns that an aircraft accident may affect their personal safety and their property. A firm relationship based on mutual understanding and built up by involving the local community in exercises and de-briefings will allow residents to appreciate the safety concerns of the airline, airport and the airport community. Also, as members of the local community, they value being part of the wider planning and decision making process.

As in all undertakings of this kind, budget provision needs to be made for the staffing, resources and training of staff in the operation of the response plan, and this should be set in consultation with senior company management. With regard to an actual emergency requiring activation of local response plans and Airport and Airline Emergency Response Plans, there should be a designated budget within each authority that is immediately accessible, and on which immediate draw down can take place. Full reconciliation at the conclusion of the emergency should satisfy company accountants.

There are many 'services' that are

required to respond to an accident on or in the vicinity of an airport, such as fire, police, medical, welfare, and local government agencies, as well as national departments and agencies such as customs, agriculture and health. Each of these services will raise its own supporting response plan for the airport and will also exercise these plans regularly. The exercises may or may not involve the airport and other authorities, and are sometimes held in isolation. However, as a general rule, there are national and international requirements (eg ICAO, IATA) for 'full scale' exercises involving all elements of the internal international airport residents and responding agencies to be held on a fixed time scale.

In consideration of the differing response plans affecting an airport, one factor needs to be clearly kept in mind. That is, no matter which service or agency raises a response plan, the plan should not be produced in isolation. An integrated, systemic approach is essential. There needs to be full recognition given to the fact that the aim of an emergency response plan is to lessen the adverse effects of the emergency on the community and/or unfortunate organisation. This can only be achieved through the cooperation of all responding services and regular meetings of the various elements to rationalise their individual responsibilities, and to practise the command, control, coordination and communications necessary to arrive at a positive outcome to the emergency. Thus, an airline needs to be prepared to contribute to this local planning process if overall optimum emergency response plans are to be produced. The result will be a more efficient response to an emergency.

Composition of an airport response plan is flexible, but should include:

- an aim or objective, the scope of the plan, and authority for its issue
- joint management arrangements, e.g. organisational responsibilities, members of airport emergency planning committees
- emergency response facilities/centres and their likely locations
- operational response details, including airport access and emergency response requirements
- activation of plan
- welfare of staff involved in response and counselling arrangements
- recovery operations and management
- details of supporting plans, e.g. Care of Relatives Plan, Media Handling Plan, Terminal Evacuation Plan etc.
- arrangements for training exercises

and testing the response plan.

In joint response operations in some parts of the world, perennial areas of uncertainty are the arrangements specified relating to command, control, and coordination arrangements. The reason for uncertainty (and sometimes inter-agency conflict) is a general lack of understanding of what the terms mean, because although the elements for successful resolution of any accident are graphic in their simplicity, they can be complex in their execution. On occasions, this has led to the response operation being hindered.

An essential part of the emergency planning process is to ensure that there is no doubt or ambiguity as to all aspects of command, control, and coordination of all aspects of the operation. Indeed, regular exercising of these elements with all agencies that may be involved is equally important. Agencies include those internal to the airline or organisation, those outside the immediate sphere of that airline and, more particularly, those that will involve the local community.

Different countries may utilise differing interpretations of what is meant by command, control and coordination, but following are explanations that have a general acceptance.

Command

Command can only be exercised over staff in one's own organisation. It is the commitment and direction of resources by an officer of that organisation. To avoid any confusion, and in quiet times well before the event, management of many of the aspects relating to the aftermath of an accident needs to be considered by responsible members of the organisation. A clear path of action outlining these arrangements should be followed, so that management and subordinate staff will not be confused by any contention that a member of one organisation has 'command' over an employee of another organisation during the response. As an example, a Police officer may be the overall 'Incident Controller', and he/she may be empowered to direct senior representatives from other services to carry out certain tasks, but 'command' of personnel always remains with an officer of that organisation. Simply put, command is exercised vertically within a service, never across services.

Control

Control relates to the situation itself. It is the broad direction or control of a response operation as described immediately above. For adequate control flexibility, there needs to exist the ability

to vary existing plans that are already in being, and to formulate new criteria and action paths as the accident scenario unfolds. Control involves using all agencies to reduce the effect of the accident, and can require certain specific actions from other agencies. An overall Incident Controller (usually a police officer) will normally be specified in response plans. However, until an accident site has been declared 'safe', a Fire Service officer will usually retain site control. Control is closely related to coordination.

Coordination

Coordination also relates to bringing together all those resources, particularly those that are readily available or procurable and considered necessary to handle those ongoing phases of the accident. The coordination role is usually the responsibility of a controlling authority as designated in the emergency response plan, and will involve close liaison to identify how resources can best be provided. An important part of the planning process is to determine areas that will provide staff quickly and possibly be prepared to work with shorter numbers until the immediate effects of the event have passed. Equipment-oriented resources can cover a wider range of logistics. For example, there could be a requirement for providing or obtaining the plant and machinery necessary to continue rescue, salvage and clean up operations. Whatever the resource, coordination is required to make appropriate local, national and international decisions, and therefore bring about a successful conclusion to the operation. Controllers will certainly require passenger and cargo details very quickly. (Note that provision of detailed passenger and crew manifests and details of cargo carried should not present a problem because these details are available to airline liaison officers, but experience has shown that gaining this information can indeed take time).

Although this paper focuses on airport and airline emergency planning, the emergency planning process and the requirement to have a proven Emergency Response Plan in place are not the exclusive provinces of the aviation industry. There are many other segments of the workplace that benefit through a comprehensive planning process. Most large organisations now adopt this process (at least to some extent) to fulfil their legal obligations and to make the workplace a safer environment for their employees. According to media reports, a notable exception was the Japanese

nuclear plant that experienced a significant accident in September 1999. There appears to have been no emergency plan in existence for the plant and the company has faced massive legal/compensation damages and senior dismissals/resignations. There is little doubt that any industry that operates in a potentially hostile environment, would benefit by having in place a prepared emergency response plan. One of the functions of such a plan is to lessen the impact on legal and financial aspects of the organisation in times of stress.

Investigation of emergency responses

Any responsible authority charged with responding to a particular facet of an aircraft emergency will carry out a comprehensive investigation of the effectiveness of its part in a response operation. Similarly, authorities responsible for the overall coordination of a response will complete a detailed study of the whole operation. These investigations (albeit sometimes in the form of a relatively short discussion or debrief) are usually carried out after any activation of an emergency plan for an operational or training response. Thus, provided these authorities are prepared to learn, and implement appropriate change when necessary, emergency response plans should remain adequate.

While this process ensures ongoing internal scrutiny of emergency response plans, it sometimes lacks the necessary objectivity and independent focus such as that generated by an ICAO Annex 13 investigation. Clearly, the investigating authority of a state is best-placed to ensure that an impartial analysis of all aspects surrounding an aircraft safety occurrence is completed. This is the object of an aircraft accident or incident investigation—to gather and analyse information, to draw conclusions, and to make safety recommendations to assist in accident prevention. Ultimately, the investigation should minimise future casualties.

The provisions of Annex 13 are directed primarily at an investigation contributing to prevention of accidents and incidents. This is clearly stated in Chapter 3. The focus is not on the aftermath, the emergency response, although this can certainly affect the ultimate outcome of the event. Regrettably however, investigations of incidents do not always result in an accident being prevented, so some effort needs to be devoted to determining the effectiveness of a response.

Annex 13 does not preclude an investigation delving into a response, but the provisions are not specific. For example, the 'Survival Aspects' section of an investigation report requires 'brief description of search, evacuation and rescue, location of crew and passengers' etc. Annex 13 does not require any specific comment on the coordination of the response, although survival issues which may depend on relevant emergency response plans, would probably be investigated in depth. (In cases such as the El Al accident in Amsterdam, emergency response plans for the various city emergency services would have been outside the scope of the accident investigation, but would probably have been the subject of a separate, independent investigation.)

Further, in examining 'Organisational and Management Information', an investigator is required to examine various organisations 'influencing operation of the aircraft'. An emergency response does not fall readily into this category, as it is only required when there is already a problem with 'operation of the aircraft'.

Perhaps the area that provides the best opportunity to include an investigation of the response is the 'catch-all' section titled 'Additional Information', which provides an investigator with the discretion to investigate anything he/she chooses. However, in an incident investigation, or a less serious accident investigation, the effectiveness of the response may not spring to mind as warranting any study. In such cases, there is no external investigation of this facet of the incident or accident.

Considering that a well coordinated emergency response may be vital in saving lives, there may well be a case for a slight expansion of Annex 13, to provide more guidance to investigators in examining emergency responses both in accident and incident investigations.

Emergency response structure

Regardless of the frequency of use of an airport, or the likelihood of large aircraft accidents, all airport authorities should include emergency response structures as part of the agreed emergency response plan. Some parts of an airport's emergency planning structure may never be used, but trying to respond to an accident that is beyond the scope of a response authority's expectations if prior deliberations and planning have not taken place, is a recipe for disaster.

Thus, small or large airports should consider joint emergency response agencies to cater for the whole range of

possible responses. A small country airport without scheduled passenger jet services could find itself being used as a diversion airport for a large aircraft of a major carrier experiencing an emergency. This sort of event at least needs to have been addressed in emergency planning, and the emergency response plan should have identified the type of structure likely to be needed to react to such an event. An important point is that, in effect, an airport authority needs to carry out a risk management study as part of the emergency planning process.

If any central planning document exists, reference to it makes emergency planning a simpler task. In Australia, a document titled 'Airport Emergency Planning in Australia' which has been agreed by a central planning committee, sets out a plan framework, providing airport emergency planners with appropriate guidance.

Following paragraphs describe a typical airport emergency response structure to cope with most emergencies. The intention is not to provide an exhaustive list, but to provide guidance as to the type of agency that might be utilised.

The hub for the response is an Emergency Coordination Centre. As the name implies, it is the coordinating centre for all types of support. It also has the responsibility to liaise with other external agencies on progress of the response. Various other agencies (e.g. the affected airline) are inter-linked with an emergency coordination centre.

When an accident occurs, a Forward Command Post is necessary close to the site. The Incident Controller and agency commanders would be located there. Immediate rescue and fire fighting operations are directed from the Forward Command Post.

In a designated terminal, a Terminal Command Post manages the response to the 'terminal emergency'. This usually means the crowd control problems of visitors to the terminal, and the matching process of passengers and those who have come to greet or farewell them (loosely called 'meeters and greeters'). To assist in that process, separate centres for passenger reception, relatives (or meeters and greeters) reception, and recovery matching will be necessary. These centres are pivotal to an airport's ability to reunite survivors with loved ones quickly, to clear terminal congestion, and to assist the affected airline with its recovery.

Lastly, a specially formed Media Centre will be essential in order to coordinate and focus interaction with the media, and

provide accurate information to the assembled press. The media needs to be provided with accurate information at frequent intervals, but clearly specified and controlled (e.g. through scheduled press briefings), or the airport (and airline) risks having speculative material broadcast and published.

These agencies need to be linked with appropriate communication technology which should be tested at regular intervals, or there is a major risk of coordination problems when the fateful day of an accident arrives. Communication security should also be a consideration, and if necessary, provision will need to be made for (say) encrypted message traffic.

Stress and the need for counselling

A point not understood by many who have not experienced catastrophic situations, is that even the most stoic of persons can suffer serious adverse effects from grief and trauma. These people can 'put on a brave face' at the time and may not appear to have been affected to any great extent, but many years later, the effects can manifest themselves. At this time, these previously 'unaffected' persons can suffer major breakdowns. Fatal aircraft accidents are typically the sorts of event that can result in this delayed effect.

Attempting to predict the situation that could bring about this effect is not possible. There are too many variables and too many different personalities. Those affected can involve the complete range from hardened firefighters to airline junior 'check-in' staff. There does not have to be a physical contact with the scene of the operation, nor the viewing of the painful sights to be seen around an accident site to incur trauma. While those involved in such activities may well suffer mental distress and demonstrate a need for counselling, many others who may have been employed remotely from the accident will need assistance.

Those airline personnel who have to deal with emotional relatives and friends; those who have to handle the identification and disposal details of the deceased; those 'who did not join for this' and are now involved; will all suffer from stress to some degree. All will become victims and survivors themselves. They also will deserve care and attention and a responsible airline, airport, or responding authority or agency will need to ensure that they attend to such personal counselling. As an example, Air New Zealand's DC-10 accident on Mt Erebus in Antarctica in 1979 resulted in a major counselling

program for victims' relatives, and this grew to include airline staff who were affected by the tragedy.

Consideration should also be given to conducting a debrief of all staff. There is value for each operating department to hold an internal debrief to ensure that the organisation's plan(s) was followed and was relevant. Possible amendments and enhancements to the plan should also be discussed in this session.

Further, staff members should be provided with the facts of an accident as soon as they can be promulgated, taking into account the matter of potential legal proceedings. This could take the form of an airport or airline de-brief, and gives all personnel an appreciation of the facts and a feeling of 'belonging' to a caring organisation.

Airlines in particular benefit from this process, the point being that an informed staff member is, in effect, a character witness for the airline. Thus, every effort should be made to make staff aware of the circumstances and the ongoing progress of the accident investigation process. A small amount of time keeping staff members informed can be a valuable investment in the future of the airline. However airlines and responding agencies need to ensure that only authorised staff divulge information to the media or public.

Airline emergency response plans should always include a comprehensive section on counselling. In all large scale traumatic events, established emergency procedures need to be in place to provide suitable counselling to all who may have been affected. The list includes passengers and crew, relatives of deceased personnel and staff involved.

Airport operators and other responding rescue and welfare agencies should all have in place access to appropriate counselling services within their own response plans. As events unfold, affected personnel may wish to utilise the services of another agency's counselling service, particularly if they have operated alongside members of that agency during stressful periods. (In Australia many personnel elect, by invitation, to attend police debriefs and to utilise police counselling services.) This decision should always be left to individual choice. However, regardless of counselling services available externally, all agencies should be capable of catering for the needs of their own staff.

The need for counselling will vary from organisation to organisation and indeed from situation to situation. Many large

companies that have a separate welfare and counselling plan, look to providing suitably trained and rostered staff to be attached to a particular passenger in the ratio of two staff per surname. This attachment, provision of counselling and airline assistance may continue for a number of years.

To minimise the traumatic effects of a disaster on company personnel there should be no embellishment of the event to staff but simple and proven facts given. Counselling should be made available from the outset. The stress experienced by on-site response and investigation teams is self-evident, but equally important is that a watch should be kept on staff in other areas. For example, staff who have contact with the public will be subject to a range of pressures and stresses and managers will need to ensure that operating personnel are not suffering adverse effects.

There should be provisions made to bring in more staff to augment those engaged in the ongoing handling of the accident 'administration' as well as operational procedures and a need to provide relief and rest facilities near the workplace. Transport to and from work should also be considered. As always, provision of a surplus of staff rather than insufficient numbers is the preferred solution, downsizing later if required. Attempting to expand the operation is always difficult and will increase the stressful working environment for those on duty, increasing the likelihood of staff members requiring counselling and time away from the workplace.

Emergency response training

The raising and provision of an appropriate response plan is only the first step in an ongoing process to ensure that the agreed requirements to mitigate the effects of an accident are achieved. To ensure that the plan is meeting the response objectives as required both by the airline and by airport and response authorities, there is a need to regularly review the Plan and carry out training with staff involved. This training also ensures that airline plans remain in harmony with those of external agencies. Relevant laws and regulations (international and national considerations) will change occasionally, so these also need to be considered in reviewing and exercising plans. This process will ensure that airline plans conform to the highest standard.

Unfortunately, some managers like to consider themselves exempt from the need to undergo emergency response

training. However, senior staff need to exercise their roles as much as anyone in the organisation and responsible executives will willingly participate. Training also needs to be given to the management in activating and operating the plan on behalf of the company, with the training automatically flowing to all those who have an active role in the operation of airline response plans. Once training has been given there is a need to ensure that it is reinforced with regular and appropriate exercises.

The frequency and scope of the exercising of various components of the plan is essential. Management's aim should be frequent, low cost exercising of portions of the plan, such as activation and communications. Exercises can be 'table top' where selected management personnel run a simulation of an accident and can vary in size and complexity. They may involve actual deployment of resources, be simple or complex as the planning committee desires, or can be full-scale field activities, either held 'in house' or in conjunction with an outside agency or airport authorities.

International obligations specified in ICAO Annex 13 require a full-scale exercise involving the equivalent of the largest aircraft to service that airport, to be conducted every two years. If the airport is near hostile terrain, the exercise should involve sub exercises that will require response agencies to demonstrate proficiency in operating in that terrain.

With international operating standards prescribing full-scale field exercises at licensed airports at least biennially, participation in exercises of this nature may satisfy airline requirements. Conversely, airline management may deem that more is needed from an exercise than the all-embracing field exercises can provide. On many occasions, such exercises touch on airline reactions only superficially. Therefore, airlines need to consider programming additional specific purpose exercises, such as the previously described table top exercises, to ensure that all areas of the company are well-prepared.

Selection of an appropriate facilitator is vital to the success of a table top exercise. The facilitator is responsible for ensuring that the exercise flows smoothly and needs to be familiar with emergency response processes to explain areas that may not be clear to all participants. He/she also needs to be comfortable in leading discussions in front of an audience comprising representatives of a range of organisations.

Any response plan that has been developed by an airline operating over a network needs to be regularly exercised not only in conjunction with the local authorities (although this can be a good starting point), but also with local airports and agencies. Careful planning of these exercises is needed to ensure that they meet their primary goals and not become vehicles for local political points scoring.

Training exercises may be randomly timed, or they may be a set piece with staff aware of the time of commencement and ending of such an event. The table top exercise lends itself to the latter, more regulated timings. Selected observers should be detailed to attend exercises, primarily to critique the airline's efforts in relation to its formulated response plan, but also to pass similar thoughts on the performance of other participants. The aim is always to enhance an airline's and local response capabilities, and this can only be achieved through constructive comment.

Table top exercises offer the advantage of bringing all response agencies (including hospitals, local government etc) together at relatively low cost, in a closed environment to work through a scenario. Thus, all involved maintain an awareness of how their roles fit with other response agencies. Too often in the past, some response agencies have given the impression that they would prefer to operate independently. However, the results of incident investigations have confirmed that no one can hope to operate in a vacuum if a response is to be successful. Appropriate education and training of all concerned is vital.

Programming of training exercises should consider actual experiences in responding to actual emergencies. Any emergency that results in activation of an Airport or Airline Emergency Response Plan (from any sector of the airline, airport or allied agency) can be regarded as a training opportunity. When the emergency has ended, such an event should be the subject of a full debrief, with attendance by appropriate staff members.

Emergency planning in Australasia

By international standards, Australia is fortunate to have so far avoided the large-scale responses that have been necessary in some countries. However, Australia recognises that its good safety records are somewhat fortuitous and takes steps to guard against complacency.

As with the provision in many parts of the world, there is a general requirement for all Australian states and territories to

produce emergency response plans. These embrace policy and procedures for responding to all types of disaster, and include airport emergency plans as essential ingredients. Vital to this planning process is the role of local government, which is pivotal in ensuring that preparations are appropriate, although in general airport operators around the country have embraced the need enthusiastically.

In some countries, broad-based National Disaster Plans are produced to cover all known adverse phenomena that may have an impact on the country as a whole, with serious consequences to the economic and social structure of the state and the community. There will be contingency plans in being with a section devoted to acquisition of transport to cater for the emergency, whether it be weather related, geological or industrial in origin, or even war or acts of violence. Designated international flag carriers, as well as internal and domestic airlines will be identified as transport providers, and expected to make their aircraft and crews available to the national government on demand.

Australian States and Territories have developed their own disaster and emergency plans that support the national plans. In the same vein, local planning processes ensure that plans produced complement state/territory and national plans. It is important for airlines to be part of the national planning team and to take part in the decision making process, factoring into their own response plans the likelihood that their aircraft and manpower resources may be acquired by the particular State or Territory in time of national crisis. Once the national plan has been evolved, the airlines' own planning documents should reflect agreed courses of action and levels of participation in the national calamity.

Again, by law, every licensed airport owner in Australia is required to publish an airport emergency response plan, and to exercise those plans regularly. The rationale for compulsion is because the economic and social effects of any major aviation disaster will involve damage to property, at best a disruption to the local airport community and the surrounding environs, serious injury, and the possibility of loss of life. Each of these elements will require special and specific needs to bring about a restoration to some kind of normalcy to the affected organisations and areas. Coping with the problems generated in an emergency requires recognition of specific arrangements and procedures that will be required to manage the emergency,

and gives a reason for pre-accident focus and planning. These special arrangements and procedures should be derived from the planning process and reflected in a written document, an agreed emergency response plan.

Several years ago, the then Australian Civil Aviation Authority published guidance to airport operators on how emergency response plans should be developed. Although this guidance included a detailed listing of planning considerations, it was grasped with varying degrees of enthusiasm by operators. The National Airport Emergency Planning Committee (NAEPC) is a vehicle for airport operators and airlines to participate in a national planning process, and adds emphasis to the need for comprehensive planning processes around the country.

Almost from its inception, the NAEPC was chaired and managed by the Federal Airports Corporation (FAC). However, with the demise of the FAC, there was concern amongst airport and airline emergency planners that the work of the NAEPC may have been impeded. However, to the credit of all concerned, the committee has continued to function effectively and airlines and airports still enjoy the central planning process to assist in maintaining effective response plans around the country. The NAEPC (among other things) is responsible for the production of 'Airport Emergency Planning in Australia', the planning document mentioned in an earlier section.

For sceptics who would cite Australia's good safety record as justification for minimising time and money spent on emergency preparations, they should reflect on years gone by when Australian airlines did not enjoy such good fortune. For example, some 50 years ago, Australian National Airways experienced four major accidents (hull losses) in a period of about three months. The airline did not collapse, but was taken over by a competitor within a short time. Even considering that aviation is now far safer than during the 1950s, accidents at (say) Sioux City and Amsterdam show that events requiring a major response from local authorities can happen at any time, even in a safe industry.

A fundamental point in gaining acceptance and cooperation from all concerned is that in developing this type of plan, airlines need to put their normal competitive spirit aside and involve rival airlines in the response planning process. In Australia the major airlines have shown that they are willing to undertake this type

of mutual cooperation. In the very busy period shortly after an accident when an airline will rarely have sufficient staff available to carry out the increased range of duties, respective managements may agree that staff from a competing airline could be used to assist it through the difficult period. The types of service provided in this way would probably be limited to essential, short-term requirements, and is a means of maintaining the collective safety health of the airline industry.

These procedures are adopted in many countries with similar responsibilities being accepted. However, the organisational titles and legislative responsibilities vary from country to country so airlines in particular need to be aware of differences in states into which they operate or overfly.

As an example, under New Zealand law, responsibility for national disaster management is vested in its Civil Defence organisation. Airports are required to have a Response Plan, but unlike Australia, there is no central, designated planning committee. The New Zealand Civil Defence Organisation deals with all disasters including airports and major aircraft accidents and exercises are carried out regularly for all types of emergencies.

Universities in various part of the world have been specialising in advanced aviation studies for some years. These courses include a range of subjects related to most facets of aviation, but only in relatively recent times has the scope of the courses been expanded to include emergency responses.

In Australia and New Zealand several universities and technical institutions include such emergency planning modules in their expanding aviation undergraduate courses, so awareness of appropriate emergency preparations is growing amongst those who can be expected to hold future executive positions in the industry. Aviation safety professionals are engaged to deliver these programs ensuring that students are provided with the benefits of practical experience to complement theoretical information.

As in one or two other countries Australian university students are encouraged to join their local society (or chapter of ISASI) so that they can receive a very early foundation in all aspects of air safety. The Australian Society of Air Safety Investigators reinforces this encouragement by having an annual student award for the best paper by a student on a relevant subject.

Conclusion

Clearly, an accident is an unplanned or unscheduled event, or is the end result of a combination of events and circumstances which usually produces unintended suffering, injury, death or property damage. Those who are involved in the operation of an airport or airline always need to be on their guard to lessen the effect of such a calamity on their customers, the public, their organisation, and just as importantly, themselves and their staff.

The problems that need to be considered and resolved by an organisation commence at the time of the impact and may continue for many years. There is only one proven way to combat the effects of the event: a well formulated and accepted company Emergency Response Plan supported by strong leadership.

The heart of this plan or any set of procedures, is a quick and accurate response to a given set of circumstances, produced by pre-planning and demonstrated by exercise and practice. However, just as management of an airline's operations is by human beings, management of an accident and its aftermath is by people and is therefore subject to human frailties. The complexity and sophistication of the equipment used by an airline are unimportant unless the individual is prepared to deal with the unexpected, the system failure. That is the key to successful emergency response planning, planning for the unexpected, and definitely the unwanted.

The catchwords to successful mitigation of any accident aftermath are still command, control and coordination. Nevertheless, we should still bear in mind the thought that carefully planned training and the prudent (and sometimes reluctant) allocation of resources for that training are strong factors in the minds of management. However, if sufficient finance and resources are not committed to the planning, training, and exercising processes, the organisation will risk a less than optimum response, loss of company image and perhaps bankruptcy.

In some countries, incidents and serious incidents were being investigated long before ICAO formalised the requirement in 1994. However, even now, many investigations are not required to address the success (or otherwise) of the emergency response, and whether it was effective in reducing casualties. Indeed, Annex 13 requires only a 'brief description' of the rescue operation etc., so in an investigation of an 'incident', this may not be mentioned at all.

Incident investigations are invaluable

in assisting relevant authorities, companies etc. to reduce the likelihood of an accident, or to minimise casualties in the event of an accident occurring. For example, an awareness of how an airport authority may have reacted to an aircraft emergency would certainly assist in reviews of emergency plans. However, the investigation of an incident (or an accident) first needs to focus in some detail on the broader aspects of the response, with appropriate recommendations to enhance response measures.

Finally, to learn from incident investigations requires those in authority to be prepared to change, and this can be difficult to achieve. However, failure to heed the results of investigations will invariably lead to 'safety stagnation';

nothing will change, lessons will not be learned, incidents will lead to accidents and increased numbers of casualties.

References

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International Civil Aviation Organization ICAO 1994, *International standards and recommended practices: aircraft accident investigation, annex 13 to the Convention on International Civil Aviation (4th ed)*, Montreal, Quebec, ICAO.

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Conference Announcement

The Future of Emergency Management

Saturday 24th November, 2001

At the MFESB Training College, 619 Victoria Street, Abbotsford

Again this, our 23rd Seminar, will be a One-day presentation. We have selected the theme **The Future of Emergency Management** this being of major importance to each of the various Emergency Services, support Agencies, Municipalities and corporate sector. Speakers will present various aspects of the theme and, as always, we are targeting 'hands on' people and planners.

The Seminar will be opened by the Minister for Police and Emergency Services Hon. Andre Haermeyer MLA and Victoria's new Chief Commissioner of Police Ms Christine Nixon will deliver the keynote address.

Among the papers to be presented are

- Emergency Risk Management.
- What role will volunteers play in the future?
- Chemical, Biological and Radiological Training.
- Health risks faced by emergency personnel
- DNA profiling, as part of DVI.
- Overseas exchanges—the Timor experience
- Recovery from Emergency

Unfortunately, due to the change of venue, the seminar is limited to the first 200 attendees so book early and avoid disappointment. Further details will be circulated when finalised.

Mark your diary now - Saturday November 24th 2001.

For more information contact:

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