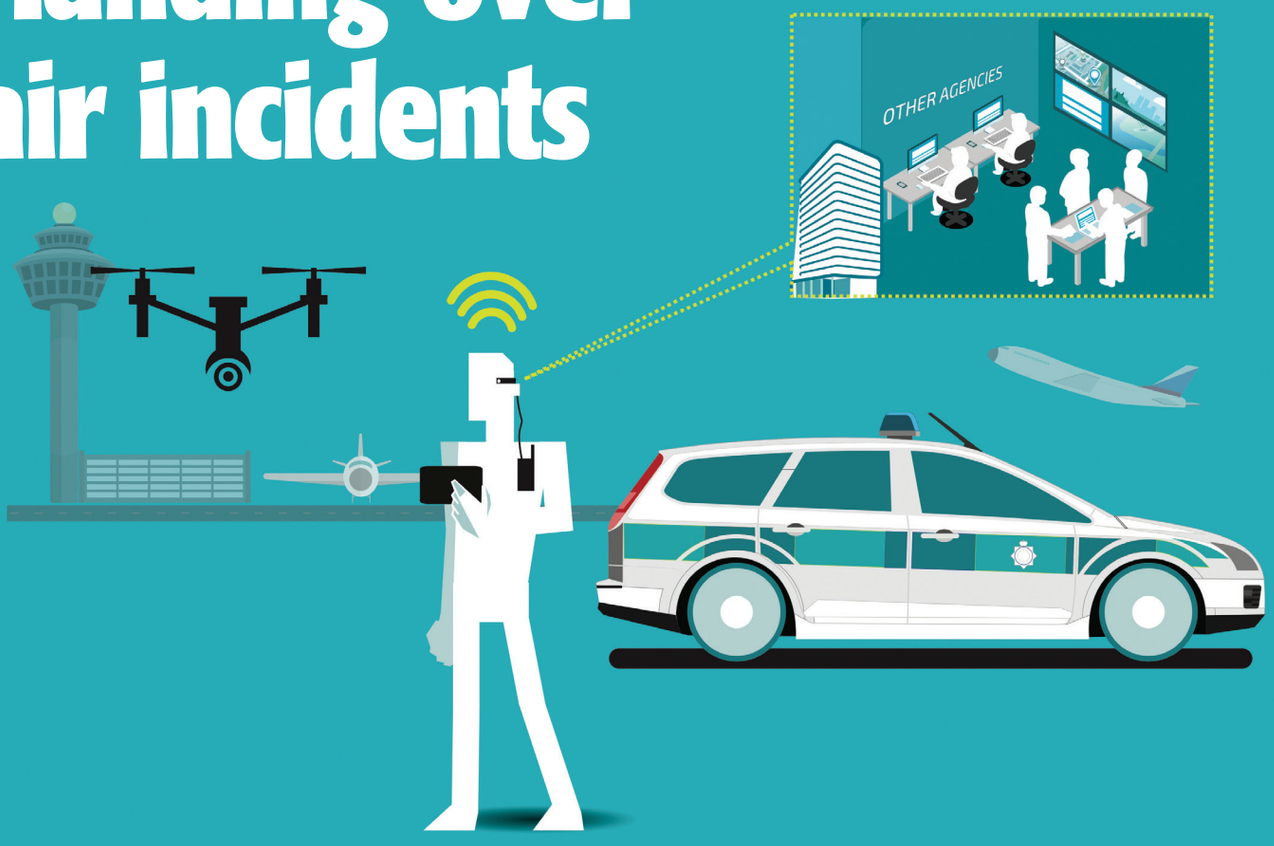
Handing over air incidents



Are handovers the weak link in major air-incident operations? Jon Hall from the Resilience Advisors Network argues that airfields are behind the times in terms of communications interoperability, making the seamless transfer of incident-management information all but impossible.

Two recent and very different major incidents at US airports have highlighted the difficulties of managing effective handovers for ARFF incidents from the initial incident commander to the secondary-phase response agencies.

In both cases, initial attendance at the incidents drew the full capacity from local ARFF crews and stretched airport resources to their limit. In accordance with every airfield's emergency plans, the next stage of operations following the search and rescue efforts drew on the multi-agency response appropriate to each incident, each led by the respective local authority – the legally responsible body – for the surrounding community and incident recovery.

Among the many stories of success, however, both incidents reached a critical point at which operations were adversely affected. During the secondary phase of each incident, both commanders experienced communication challenges during the handover from local command to the integrated command arrangements implemented by the local authority.

Face-to-face, commander-to-commander handovers were no problem, but the simple transfer of enabling capabilities such as radio channels, incident logging, document control, and data sharing proved challenging at best, and impossible at worst.

With the experience and professionalism of today's responders, we find it simple to describe the phases of an incident as though they will always naturally proceed in logical succession, just like the episodes of a binge-watched television series. When episode five finishes, episode six will immediately follow – when response finishes, recovery commences.

Too often in reality, however, either circumstances or individual service capabilities result in the equivalent of someone coming in and changing the TV channel mid-episode. Although we can quickly recover – or so we would have everyone believe – vital parts of the plot can be lost. In other words, continuity of command can fracture.

Of course, we work hard to overcome the problem and always manage to 'get by', but hindsight is the most critical judge and hindsight

Base Camp Connect is a solution that can help avoid communication failures when an incident happens.

teaches that this is a recurring issue that we have yet to seriously address.

As fire and rescue commanders, we are often faced with increasing communication challenges as incidents develop, but the last thing we need is an expectation that we will demonstrate our expertise as computer experts at the very time we are managing an unfolding disaster. There's a useful phrase that alludes to a solution we would all welcome: managing the emergency, not the communications.

Gone are the days when it was sufficient to brief those within our immediate command, supplemented with an occasional message over the radio. Communication lines now are increasingly complex and demanding. Technological advancements drive the expectation for all agencies to not only receive timely information, but also to be able to interact in real time with command decisions.

Whether it is environmental concerns, the reasonable demands of business continuity plans, air crash investigations or law enforcement, the need to ensure that all agencies are fully apprised of the developing situation on a minute-by-minute basis is real. And the number of agencies requiring information is growing exponentially, alongside our evolving understanding of the impact of a major incident and the beneficial impact that the early involvement of the appropriate authorities can have.

Immediate rescue considerations are, of course, paramount. However, 10 to 15 minutes into an incident, the problems faced by a commander will always be compounded by the need to consider the effects on the surrounding population and the environment, as well as the impact that a developing news story will have on the commercial operation of both the airfield and the airline involved. Most importantly, however, how can the commander transfer the incredible amount of knowledge and information gathered thus far to the myriad of interested parties now clamouring for that knowledge?

The incident commander will usually have been present from the initial call. By now, they will inevitably be carrying an enormous amount of information in his or her own head. Broad awareness of ongoing operations and actions taken so far will have been passed by voice, but coordination of the broader information outputs from the incident will be a challenge beyond even the keenest technologist.

Information and data streams such as aerial footage, truck dashcam video, the state of the ground, the presence of hazmats, media used, duration of continued operations, weather information, casualty recording and triaging, social media activity, actions taken by all agencies, command structures and decision logs – in fact, far too much for any single agency to process. What are the chances that even the smartest commander will be able to package all of that into a reliable, recorded, and useful handover? Experience has taught us that we need some help relating a single, unified command picture for incoming resources.

In a perfect world, the next phase of operations would be for oncoming agencies to mirror exactly the communications, data and command structures established in the initial stages. These can then be grown as the number of agencies increases and data requirements become more complex. This would ensure a seamless transfer of incident management information.

However, the reality is that this will never happen. Local authority and first responder agencies are increasingly

The Digital Dashboard Management Interface from Excelerate Group provides one interface for all data streams during a major incident.

geared up for sharing information with each other on a day-to-day basis. Sometimes they specify systems together, but even where this is not the case, they will have procured systems with this need in mind. Experience shows us that this is unlikely to be the case on any but the largest airfields, leaving the ARFF commander as the poor relation at best. At worst, they will be simply unable to participate in modern methods of multi-agency working.

Whilst total integration would be an aspiration, more basic interoperability and information sharing capabilities are a far more reasonable and affordable target, and one that should be on the agenda of every airfield ARFF operator.

Shared command post information, voice integration, logging protocols, and even shared hubs for automatic sharing of basic risk and response information, would be a great start. All of these are available. Unfortunately, these basic technical capabilities are still being overlooked by those specifying both new vehicles and refurbs of existing command capability.

Local authority responders in the UK increasingly use JESIP principles to integrate their decision-making processes and communication of outcomes. Increasingly, we are seeing them share command software solutions to enable improved transparency between agencies. There are, however, more affordable approaches available.

Integration systems are designed less to replace all current systems than to take many existing technologies and combine them through a single interphase or dashboard. Combining digital streams such as video with legacy analogue, such as legacy voice communications, to produce a single output available to all responders can massively reduce the burden on the over-stretched commander. It can also vastly increase the volume of information exchanged between agencies.

The opportunity exists for airfield safety operators to mirror some of the capabilities increasingly deployed by local authorities. They can do this by ensuring that their responders are using cut-down and affordable versions of what will invariably be deployed on arrival by the broader emergency management and recovery response.

Although there are more suppliers coming into this market space, we are witnessing a standardisation of approach whereby multiple diverse data streams are pulled together into a single dashboard. While there is a broad array of available solutions, the most widely deployed solution in the UK and Middle East is a digital dashboard management interface (DDMI) from Excelerate.

The Excelerate DDMI takes a range of information feeds and data storage capabilities and integrates them into a single screen. The operator can rely on the logging and transmission of all information to approved agencies without any direct action on the part of the incident commander – effectively allowing them to manage the emergency, not the communications.

A similar solution, which majors on voice, is designed to integrate analogue radio systems. It is used extensively across the Americas under the name Base Camp Connect. As the company itself puts it: 'it is important to allow commanders to manage the emergency, not the communications.'

Ignoring the technical or service-specific language used to describe such products, the interesting thing is the critical capability enhancement they can offer to ARFF operators. At a fraction of the overall cost of a command system, both systems are vehicle-independent and can be deployed in anything from a staff car to a full-scale command vehicle – a massive technical capability uplift without the cost of a bespoke vehicle.

Regardless of the product, the principles remain the same – that airfields will wish to mirror the command information capability of the agencies around them as these will invariably take over emergency management and recovery as soon as initial firefighting and rescue operations are completed. Airfields should be prepared for and equipped to facilitate this handover and better able to stay engaged following it.

While airport rescue firefighting technology is reaching new levels of complexity and effectiveness, integrated command and communication solutions are here today and are worthy of consideration by all airfields.

ABOUT THE AUTHOR:

Jon Hall, QFSM, is the former Chief Fire Officer for Gloucestershire and head of UK fire and rescue resiliance. He is an emergency and disaster specialist running the Resilience Advisors Network, a specialist organisation supplying expertise from the emergency, defence, and security services. The network tries to ensure that organisations and companies in the UK and across Europe have access to the very best technical and market advice when supporting emergency services.