THE INVESTIGATOR

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AIR ACCIDENT INVESTIGATION SECTOR – UAE GENERAL CIVIL AVIATION AUTHORITY

BUSINESS CONTINUITY PLANNING

Smooth functioning during and after major disruptions

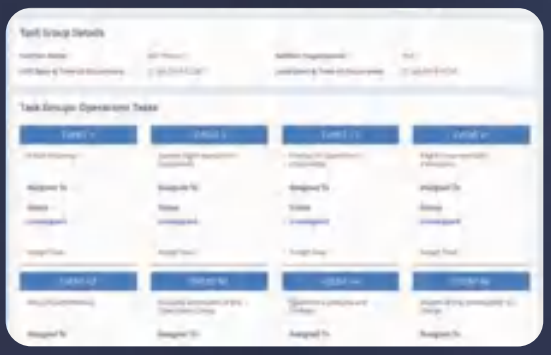
ALSO INSIDE

UAE-AIMS

Accident Investigation Management System

One platform for Notifications, Investigation Management and Safety Recommendations

Dashboard



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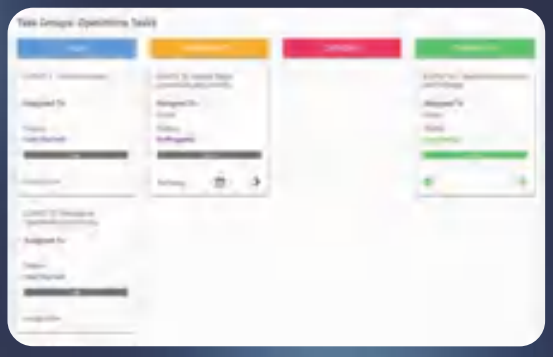

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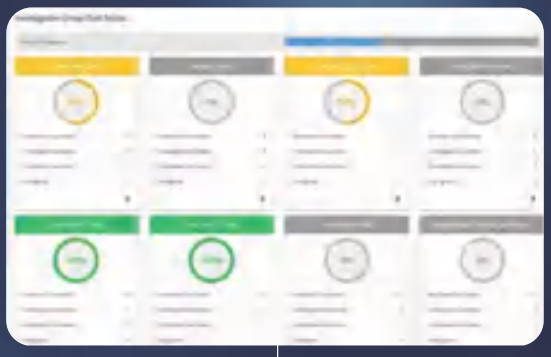

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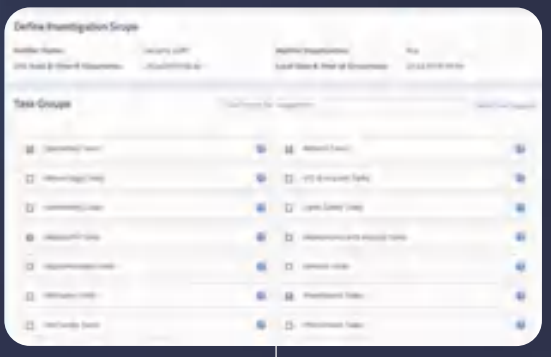

Investigation Reports Automation

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His Excellency Saif Mohammed Al Suwaidi,

Director General,
UAE General Civil Aviation Authority

UAE STATE SAFETY PROGRAM. Civil aviation has evolved into an extremely safe and efficient form of transport. Since the very beginning of aviation, there has been a constant effort on the part of the industry, regulators and safety investigation authorities to improve safety. We are now at a point when there is a relatively low number of civil aviation accidents. Nevertheless, the GCAA recognizes the need to continue to improve safety performance.

The introduction of safety management systems, which include the disciplines of human factors, risk management, in-depth data analysis, and safety promotion, among service providers, has led to a scientific and proactive approach to safety management.

The foundation of this proactive safety strategy is based on the implementation of a State Safety Program (SSP) that works closely with the service providers' Safety Management Systems (SMS). This combination systematically addresses safety risks. The ICAO Council first adopted Annex 19, which contains the standards and recommended practices related to the SSP, in 2013.

To meet the goal of the SSP which is the achievement of an acceptable level of safety across all areas of the UAE Civil Aviation industry, the GCAA works in partnership with the UAE aviation service providers. For instance, consultation with service providers before the introduction of new or amended regulations is regarded as very important by the GCAA.

The UAE has developed a methodology that is used by the country's aviation stakeholders to implement the SSP program. The methodology defines the major SSP components and elements.

The UAE SSP includes the collection of safety data from various reporting systems, audit reports, and safety investigation recommendations. This data is analyzed and used to monitor the safety performance of the stakeholders. The data is also compared to regional and global data to facilitate benchmarking of the SSP. The GCAA constantly monitors international best practice and adopts standards that will enhance the UAE regulatory framework. Recommendations from the safety data analyses identify areas of safety concern and inform the scope and content of GCAA regulations, policies, guidance materials, procedures, safety promotion, training, etc.

Even though there are few accidents, our efforts in safety improvement have not lessened and the SSP, working together with the service provider safety management systems, is at the forefront of the elimination of accidents.

THE SOPHISTICATION of modern aircraft, and the complexity of the environment in which they operate, requires continuous updating of Investigation Authority techniques in all areas but, in particular, in terms of investigation technology, methodology, and standards. However, for many States this may not be possible; an alternative has to be found.

Therefore, the United Arab Emirates has presented an initiative to the ICAO regional office aimed at establishing a cooperative platform based on the formation of a regional accident investigation working group. The working group would comprise representatives from state investigation authorities, air operators, air navigation service providers, and aircraft manufacturers. Regional and international professional organizations such as the International Air Transport Association (IATA), Regional Aircraft Accident and Incident Organization (RAIO), the International Federation of Air Line Pilots' Association (IFALPA), the International Federation of Air Traffic Controllers' Association (IFATCA), and the Civil Air Navigation Services Organization (CANSO) could also contribute to the group.

The working group will meet annually to discuss a wide agenda of topics such as establishing a regional investigation cooperation mechanism and giving consideration to the most recent investigation challenges such as the unmanned aircraft systems (UAS) and urban air mobility (UAM) vehicles. Other areas of discussion could cover innovative ideas for the effective use of investigation resources, including expertise, training, equipment, investigation experience and information, standards and guidance, etc.

One of the main tasks for the working group would be to establish a database for sharing of investigation reports and safety recommendations issued by the regional states and to identify operational and safety risks and their corresponding controls. Sharing lessons that are generated during the conduct of investigations is another useful aspect that could be added to the agenda of the working group meetings.

To provide impetus to this initiative, the United Arab Emirates will host the first meeting for the Middle East and North Africa Regional working group in Abu Dhabi in June 2020. The expectation is that this working group will become a resource to assist all the regional states in improving their investigation capabilities. ◆

Mohammad Faisal Al Dossari,

Acting Assistant Director General,
Air Accident Investigation Sector

WHAT SHOULD WE DO WHEN THINGS GO WRONG?

Robust and coordinated plans help absorb and minimise internal or external disruptions

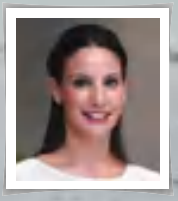
In May 2015, Rome's Fiumicino Airport was partially closed for over five hours after a fire had broken out at one of the terminals. Airport operations came to an immediate halt, resulting in flight diversions and cancellations.

In September 2017, a 15-minute Amadeus Altea software outage caused worldwide airport check-in system failures for over 125 airlines, leading to disruption at several major airports including Heathrow, Gatwick, Charles de Gaulle, Changi, O.R. Tambo, Reagan, Zurich and Melbourne.

In August 2018, Schiphol Airport in Amsterdam experienced a full communication shutdown in their radio telephony between pilots and Air Traffic Controllers, causing temporary suspension of incoming and outgoing flight traffic.

January 2020 saw record-breaking rainfall in most parts of the UAE, resulting in waterlogged roads, shopping malls and properties across the country. Airports in the region were not spared from the destruction of the torrential storms. Large strips of airfields were submerged under water. The impact of the flooding led to cancelled flights, lengthy delays and diverted aircraft, causing mass disruption. Airport communities banded together through the extreme weather conditions to restore their operations back to normal.

WRITTEN BY



NICOLE BALLAN
Emergency Planning & Support Manager dnata UAE Airport Operations

MAJOR EVENTS CAN BE MANIFOLD IN SCOPE AND NATURE AND BE DRIVEN BY INTERNAL SYSTEM FAILURE OR RESULTS OF AN EXTERNAL SHOCK.

Despite best efforts, disruption events will happen. When they do, the aviation community needs to have robust and coordinated plans in place to absorb and minimise the impact these external or internal shocks have on the aviation system.

A coordinated approach across all stakeholders requires an assessment of the situation to identify remaining resources and capabilities and, if necessary, adjust the scope of operations while dealing with the actual disruption and/or quickly find adequate substitutes to regain and maintain full operational control.

SO WHAT IS BUSINESS CONTINUITY PLANNING?

Business Continuity refers to an organisation's ability to continue their operations and maintain essential functions during and after a major event.

Planning is the process of identifying potential threats to a company, developing systems to prevent the impact these threats can impose, and creating processes and procedures that enable the operations to remain resilient and recover during and after an event.

Business Continuity Plans (BCPs) must be thorough, documented, implemented, tested and reviewed. Copies should be distributed to key personnel ahead of any incident that could cause a disruption. Responsibilities should be clear and staff must be trained and competent in anticipation of executing the plan. Hard copies should be stored off-site and soft copies should be backed up and available on multiple platforms.

Early details from the airport on aircraft parking bay, boarding gate and airline schedule changes will help ground handlers manage and deploy their resources efficiently, leading to a reduction in potential resource rotational issues during the recovery phase.

Although BCPs cannot cover every scenario, they should provide necessary guidance to manage most disruptive situations.

By conducting a risk assessment we can determine the level of response required to treat the threat inherent in key infrastructure, manpower, IT and communication systems. Business Continuity Plans can then be developed to mitigate this risk, reduce the overall exposure to airport operations and return operations to business as usual.

Alternative locations and equipment requirements should be pre-identified, and manual fall back procedures for systems and communication failures and alternative solutions for loss of workforce should be in place.

More importantly, an effective BCP needs to state areas of responsibilities and establish a chain of command in each organisation affected by the disruption. Airports are multi-stakeholder environments; it is therefore essential that the response of each organisation is coordinated and agreed.

The Aerodrome Operator, much like in emergency events, needs to take the lead and communicate the aerodromes' remaining capacity and operational capability. For this to be effective across all system partners, strong leadership is required with sound and informed decision making.

WHO MAKES A GOOD LEADER?

A good leader is essential to the success of a BCP. During a major event, good leadership is displayed by someone who is situationally aware of the broader operational impact on the aviation system; and who is able to assess the remaining capabilities of their organisation and make decisions on the remaining scope of operations.

For this, the person requires in-depth knowledge of their organisations, overall processes and interactions with the other system partners, and must be able to provide reliable and accurate information. People making important operational decisions need to trust that the information is correct. No information is better than wrong information!

Identifying critical resources for system relevant processes beforehand, and establishing reporting lines for the effective communications thereof during disruption events is key to restoring order back to operations.

HOW CAN WE EFFECTIVELY COMMUNICATE?

Information and decisions should come from a single source of truth and communicated effectively to the airport community. Having the right information is just as important as having continuously updated information.

Airlines proactively suspend online and self-service check-in and use social media and company websites to keep passengers up-to-date on flight information. This helps alleviate some of the pressure on already congested terminals and concourses.

Early details from the airport on aircraft parking bay, boarding gate and airline schedule changes will help ground handlers manage and deploy their resources efficiently, leading to a reduction in potential resource rotational issues during the recovery phase.

Working in such a dynamic situation, it is imperative that airlines, airports and their service providers have a solid systemic internal and external communication strategy.

HOW TO ENSURE PLANS REMAIN CURRENT?

Business Continuity Plans need to be reviewed and tested. Regular joint exercises with the airport community will help ensure stakeholder plans are aligned, and identify ways to improve a collaborative response.

Safety Management System principals, such as the management of change to critical resources and organisational structures, need to be applied in business continuity planning.

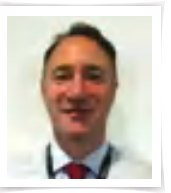
After each disruptive event, responders should provide feedback and recommendations on what went well and areas for improvement. Debrief sessions with relevant internal and external stakeholders will identify common action items that should then be tracked and resolved, and add to the plan's continuous improvement.

Business Resilience Planning is unending and is everyone's responsibility!

MANAGING THE AIRLINE RISK OF TYRE OVERSPEED EVENTS

Factors encountered, challenges faced and collaborative approach to ensure safety and operational efficiency.

WRITTEN BY



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AIRPLANE TYRES ARE designed and tested to endure a range of operating environments, and specifically for carrying heavy loads at high speeds. Although it is rare for tyre speed limitations to be exceeded, certain factors occurring simultaneously can contribute to such an event. This article aims to highlight some of the factors encountered during daily operations, the associated challenges faced, and the collaborative approach required to ensure safety and operational efficiency is maintained.

Although tyre overspeed occurrences can be identified through a number of means, the routine downloading of data from a Flight Data Monitoring (FDM) system is the most common method used for overspeed identification. The complexity of event identification becomes compounded on route networks where operating patterns take the aircraft away for long periods from those stations where FDM information is systematically downloaded.

AIRCRAFT MANUFACTURERS RECOMMEND the use of wheel tachometers for event identification, normally with an inherent tolerance of +/- 1 knot. If tachometer information is not available in the FDM data frame, the groundspeed parameter can at times be employed, however the speed tolerances for this parameter are significantly higher e.g. +/- 8-12 knots. This is exacerbated further by the fact that manufacturers normally recommend to only use the precise speed value determined by FDM to determine tyre overspeed events, avoiding use of tolerance values.

Another significant issue that may be encountered subsequent to a tyre overspeed event, is that of the required maintenance procedure. There is no industry consensus on the maintenance actions that should be undertaken following a tyre speed exceedance during takeoff. It is currently left to the discretion of operators to identify the most appropriate maintenance action to be performed following a tyre overspeed event.

Mitigations to avoid tyre overspeed events include use of a takeoff performance calculation methodology that minimises aircraft rotation speed, whilst also minimising payload restrictions. These procedures must also be logically easy to follow for their users i.e. pilots and dispatchers.

Working Iin parallel with other departments, the safety department can initiate studies to help provide clarity as to the root cause of any overspeed event. Powerful data visualization tools can also be employed to identify the relevant parameters and the bearing of each on an overspeed event. FDM best practice also encourages the use of routine data (from flights where no overspeed event was recorded) to assist with actual overspeed event analysis and comparison.

Manufacturer reference articles identify the following list of factors as being most commonly present in tyre overspeed events:

- Aircraft take-off weights at or very near to regulatory maximums e.g. ultra-long range flights.
- Rotation rates slower than recommended.
- Degraded aircraft performance e.g. at high density altitude airports.
- Tailwind conditions.

The likelihood of overspeed events occurring, generally depends on the severity of each influencing factor, either acting alone or in conjunction with one another. For example, airports that exhibit unique environmental characteristics, for instance, wind speed and direction that vary both throughout the length of the runway and also diurnally are more likely to be subject to overspeed events.

Table 1 outlines a good example of the importance of the interplay between factors. No tyre overspeed event would occur if any of the factors listed occurred in isolation. However, an unreported tailwind coinciding with a slow aircraft rotation at an airport with a high density altitude, could easily lead to a high likelihood of an event triggering, particularly at a high take-off weight.

Month	QNH	Temp (Celsius)	Headwind (knots)	Tailwind (knots)	Weight (Kg)
June-19	999	39	1		338
July-19	995	34	3		333
August-19	999	41		7	339
October-19	1006	32		3	326

Table 1

The threat and potential impact of a less than optimal rotation technique should be highlighted to the pilot community through methods such as safety bulletins. Particular focus should also be placed on crews identifying the relevant threats that could lead to potential tyre overspeed event during their departing briefing, along with relevant mitigation strategies.

Differing tyre testing methods exist between the Federal Aviation Agency (FAA), applicable to aircraft designed in North America, and that of the European Aviation Safety Agency (EASA), applicable to aircraft designed in Europe. During these tyre tests, a tyre is placed on a rig against an acceleration drum (Figure 1). A load is then applied while the acceleration drum simulates the forward motion of the aircraft. For Boeing aircraft, the testing criteria involves applying a constant rated load on the tyre until a set time; this technique is known as Universal Test Load (Figure 2). For Airbus aircraft, a high rated load is applied during the initial phase of the test run and this load decreases as time elapses to simulate the weight-off-wheels effect; this is known as the Variable Load Test (Figure 3). In both cases, the time and speed of the test is defined by the respective tyre manufacturers.

(Source: Bridgestone)

Figure 1

Tyre manufacturers can be approached to explore other mitigation strategies, such as higher speed rated tyres, based on the above philosophies. Airlines can also seek dispensation from aircraft and tyre manufacturers to allow a certain number of flight cycles to take place after a known overspeed event, prior to tyre replacement, or the use of an inspection-only method depending on the severity of the overspeed. These methods provide airlines with greater scope for operational flexibility and planning, subsequent to a recorded event.

In summary, with regard to the management of the risk of potential tyre overspeed events, airlines need to employ a multi-faceted approach. They need to enable effective collaboration between a number of internal departments to ensure awareness and management of the various factors that could potentially lead to tyre overspeed events. They also need to work with external parties such as tyre and aircraft manufacturers to identify all applicable product options and maintenance methods to provide the best solution in terms of safety and operational efficiency.

As always with aviation, prevention is preferred to the cure.

Airlines can also seek dispensation from aircraft and tyre manufacturers to allow a certain number of flight cycles to take place after a known overspeed event, prior to tyre replacement, or the use of an inspection-only method depending on the severity of the overspeed.

Graphic Representation of a Typical Universe Load-Speed-Time Test Cycle (For Tires Rated above 160 MPH)

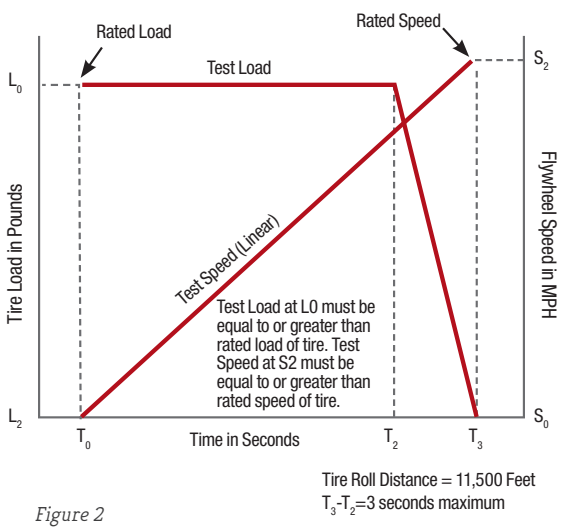


Figure 2

Graphic Representation of a Typical Universe Rational Load-Speed-Time Test Cycle

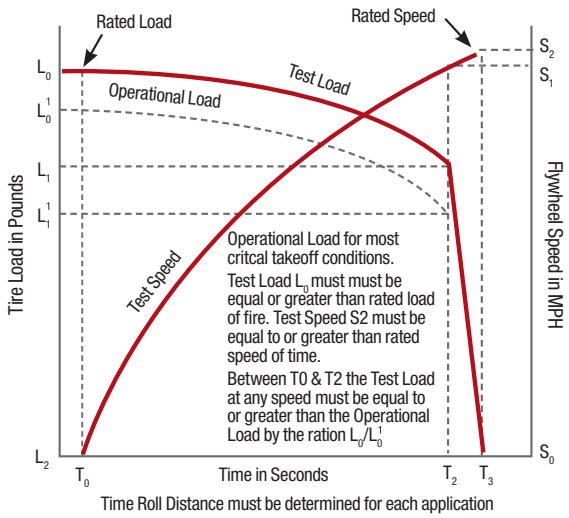


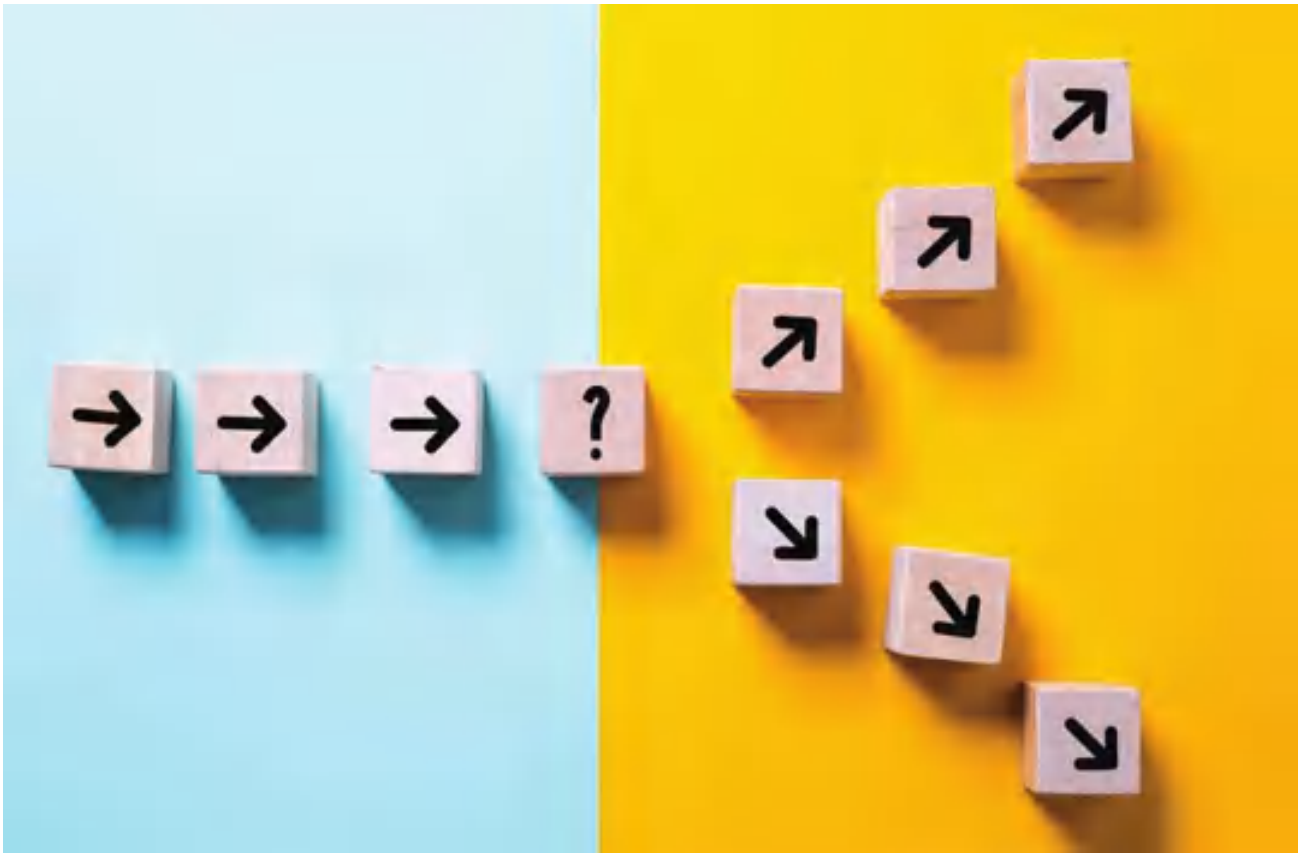
Figure 3

WHO CHOOSES YOUR SPOKESPERSON

Organisations choose lead communication strategists to meet reality

WRITTEN BY

LINDA TAVLIN
President
LJT Associates, Inc.



WOULD YOU BE surprised if I say the answer is the person who chooses the spokesperson is NOT the organization but rather the people who ask the question? If any employee can be asked a question by any audience, that is a lot of potential spokespeople within any organization.

The first question we have to ask is, "What is the definition of a spokesperson?" The most general definition says that it is, "Someone who is elected or engaged to speak on behalf of others." We can define "speak" as to say something in order to convey information. That means anyone reading this is vulnerable – like it or not!

If you can agree with the above definitions, then we can proceed to one of the biggest mistakes the industry makes in communication and that is to define communication only as dealing with the media and families. In my thirty plus years in industry, I will hear communication defined this way in 90% of the workshops/classes I conduct.

This gives a false sense of complacency because most organizations have policies in place that prevent employees from talking to the media, so employees believe they are protected, and they can defer the media to someone else. The interesting thing is that employees are given the responsibility of budgets, personnel decisions, and other responsibilities where they have peoples' lives in their hands, but they fear more for their jobs if they inadvertently, through no fault of their own, end up on the evening news. We all know that in today's world of social media any employee of any organization can end up on the evening news, YouTube or anywhere else on the internet due to cell phones.

The first question we have to ask is, "What is the definition of a spokesperson?" The most general definition says that it is, "Someone who is elected or engaged to speak on behalf of others." We can define "speak" as to say something in order to convey information. That means anyone reading this is vulnerable – like it or not!

PREPARE FOR REALITY!

Organizations talk about "holding statements." In today's world of instantaneous information, I ask what anyone thinks the media or anyone else is "holding" for? That is a PR cliché that does not fool anyone, certainly not the media. The words that come out of one's mouth ARE the statement. Isn't it better to give "the reason" than the excuse – excuses being, "I'm not authorized to speak," or "I'm waiting for executives to get here" or "you'll have to call our office of corporate communication?" If something happens in Tokyo and the media are asking your man on the ground in Tokyo a question, it's because they want an answer from your man on the ground in Tokyo. To tell them to "call headquarters," which might be in London, accomplishes several things. First, it fuels adversary. Second, it elevates the event. Third, they are most likely going to go with what they have at that

Prepare for Reality!

The people in these departments are going to answer for the issues all the way dowb the chain. This is the communication means. An organization's strategy should reflect this.

- INVESTIGATORS
- REGULATORS
- LAWYERS/INSURANCE
- FAMILIES/LOVED ONES
  Care Team Representatives
- MEDIA
  Corporate Communication Employees

SAFETY (Ops) AND QUALITY (TECH Ops)

The investigators are the leaders. They are in control of the event. When they walk into an organization, they choose with whom they speak. They are not coming into the offices of human resources, corporate communication or anything similar.

minute because they know that the "call headquarters" strategy is nothing more than an internal political turf issue. Let's face it. What is the point of positioning someone half way across the world in charge of an operation and not empowering him or her to represent the organization externally in a particular instance? What corporations say to me is, "We cannot run the risk of having one of our employees running off at the mouth to the media." What I say is, "In my 30+ year career I have never once heard a professional say that they can't wait to face hordes of media blasting questions at them in the aftermath of a corporate tragedy in the hopes of international exposure." So, who are these policies kidding? If things go wrong, it is because of the strategy that is in place within that organization BEFORE anything ever occurs, NOT because of the media.

As far as families go it is true that not everyone possesses the special skills needed to deal with this group. Anyone who knows me or has been in one of my classes knows I am one of those people. The families fall into the category of the emotional audience but also in this audience is anyone who identifies with the families. They want an organization to be sympathetic and accessible – accessible meaning you must come forward, face them and answer their questions to the extent you can. A person on the spot at the location of occurrence is the one who needs to be accessible. This goes from a small to a large-scale event.

YOUR COMMUNICATION STRATEGIST – THE REALITY

Thinking that communication just involves these two groups and can be managed – or controlled – by a select number of individuals or groups is a misunderstanding as to what the true meaning of communication is and who is involved.

The media are the first to go after an event. Long after they go, someone in an organization will have to answer for what happened. This goes for not just operators but regulators, manufacturers, controllers, airports and other parties of interest. Since these events are technical events, the people with the qualifications to answer for these issues are going to be, in reality, the ones communicating. The issues are operations, maintenance, engineering, ATC, weather/environment and security/terrorism with the sub-issues. (No one has ever asked me what kind of wine was served on Swissair prior to their crash.) It is not any organization's "communication policy" from on high that investigators, regulators, lawyers or the judiciary (depending on the country) care about when they call upon your technical experts to answer for what happened. Therefore, an organization's outcome is only going to be as good as these individuals' ability to communicate effectively with those who have called upon them to do so.

In the below table you can see the levels of communication and the reality of who communicates. I put emphasis on the world "REALITY." It can be explained like this. The investigators are the leaders. They are in control of the event. When they walk into an organization, they choose with whom they speak. They are not coming into the offices of human resources, corporate communication or anything similar. The regulators are coming in to look at compliance, paperwork, training, etc. They are coming into the same departments as the investigators. They choose with whom they speak. People will have to answer for what happened and when the courts call, you go. The families are the group who can never be restored to the life they knew before. The number one question they want answered is, "Why is my loved one dead." The family assistance people, who are the people facing them, do not have the answer to that question. The first people in an organization who will have it are those working hands-on with the investigation. As far as media go, corporate communication people are not a part of the investigation, so they have to go somewhere to get the information they need to do their job. As said earlier, the media goes home first. An organization can do a good job with the families and the media, but if they do not do a good job with the investigators, regulators and lawyers, the families and media are going to turn on them. Although the media is at the lowest level, if an organization does a bad job with them, it will have ripple-down effects all the way up the chain.

Levels of Involvement?	Who will be called?	Who has the answers?
Investigators	Safety/Quality Ops/TechOps	Safety/Quality Ops/TechOps
Regulators	Safety/Quality Ops/TechOps	Safety/Quality Ops/TechOps
Lawyers/Insurance	Safety/Quality Ops/TechOps	Safety/Quality Ops/TechOps
Families/ Loved Ones	Crisis Family Assistance	Safety/Quality Ops/TechOps
Media	Corporate Communication	Safety/Quality Ops/TechOps

None of these PR clichés used such as holding statements and the rest that are so obviously copied from company to company have anything to do with getting it right. If you have the reasons correct and understand the process, that is what you give. It is the ultimate safety net that organizations who get it correct use.

If the above table makes sense to you, then you can see who needs to be lead communication strategists for an organization, if an organization wants a communication strategy that meets reality.

In future blogs we'll discuss the ultimate safety net, potential parties to an event, their styles of communicating and how to take that into consideration in addition to how to avoid the clichés that are so obviously wrong and lead to the communication "Crash and Burn after the Crash and Burn." This book, Aviation Communication: Strategy and Messages to Ensure Success and Prevent Failures, which can be ordered at this link: *https://www.routledge.com/9781138624825*. Forward by Professor Graham Braithwaite, Endorsement by AirAsia Group Chairman Tony Fernandes. ◆

HARMFUL EFFECTS OF **SELF-MEDICATION**

Self-medication without a prescription can probably lead to incapacitation of a pilot's flying capabilities at the time of landing.

WRITTEN BY

MASKOOR CHHAYA RAINA
Manager Safety & ERP
Air Arabia

According to an investigation report of an incident a few years ago, a medical emergency was declared at the time of landing due to incapacitation of the pilot. The First Officer took control and the flight landed safely.

Further examination revealed that the previous night the pilot had approximately six hours of sleep and woke up early in the morning with pain in his neck. As the pain was subsiding he chose to continue with his flight schedule and reported on duty.

The aircraft took off and half way through the flight the pain in his neck got aggravated due to repeated stretching of his arm to operate the controls and overhead panels. He took a pain killer he carried in his flight bag to relieve his pain. Few minutes later he experienced symptoms like blurring of vision and blocked sensation in the ears.

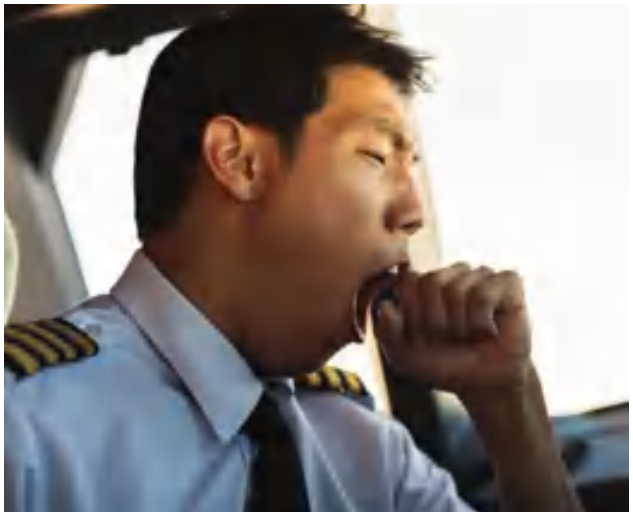
Note: *Non-steroidal anti-inflammatory drugs (NSAIDS) can cause side effect of blurring of vision and ringing sensation in the ears.*

Air Arabia through its Drug and Alcohol Management Policy ensures all the crew members are made aware of both the GCAA regulations and company requirements about prescription and over the counter medicines.

To relieve himself from these symptoms he took an anti-allergic medicine which he was carrying in his flight bag. He briefed his First Officer on his health condition and made note of the medication he had consumed on a piece of paper.

He also instructed the First Officer to carry out an auto-land and to advise ATC to provide a doctor on ground after landing, after which he lost consciousness. The First Officer took control and the flight landed safely. Immediately after landing the pilot recovered from his incapacitation.

After the incident, the Captain was taken off flying and subjected to medical examinations to ascertain the cause of incapacitation. He underwent all the medical tests including blood hemogram, blood biochemistry, urinalysis, TMT and X-ray cervical spine, which were normal. He was advised to rest for three days and was subsequently cleared to resume his flying duties subject to the condition that he will not take medication without consulting an Aviation doctor (No self-medication).



MEDICATION AND FLYING

Medication, whether prescribed or purchased over-the-counter from a pharmacist, can have side effects in some individuals.

Whilst some medications may increase drowsiness, others can promote alertness. Meaning that it may be difficult to either stay awake or fall asleep, depending on these side effects.

Natural remedies may also serve to bring about unwanted side effects as described above.

The GCAA regulations, and the Air Arabia policy, prohibits Flight crew and Cabin Crew from using medicines which can cause drowsiness. This can apply to many different types of medication, so it is essential to discuss the use of any medication with an AME before use.

Air Arabia, through its Drug and Alcohol Management Policy, ensures all the crew members are made aware of both the GCAA regulations and company requirements about prescription and over the counter medicines.

NOTE: *Codeine is banned in the UAE and its use could result in a custodial sentence as the medicine is classified as a narcotic drug and will show up on a urine drug test. It can be obtained over the counter outside the UAE.* ◆

SUBSTANCES THAT CAN AFFECT HUMAN ALERTNESS

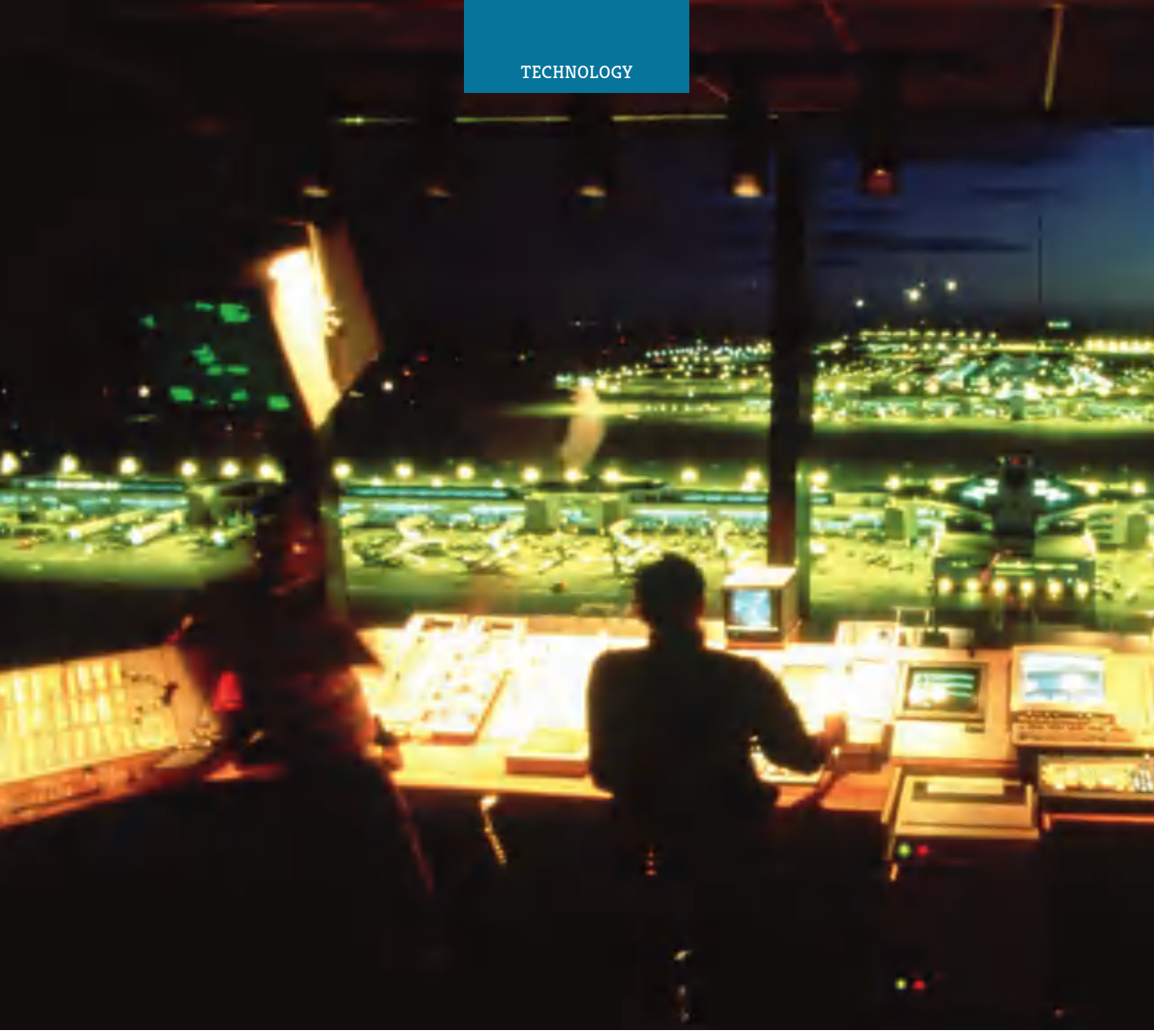
Prescription and over-the-counter medicines, caffeine, nicotine and alcohol may contribute to fatigue in a number of ways:

- Reducing alertness. Either directly or via 'hangover effects' (see below).
- Impacting on sleep
- Increasing arousal making it harder to fall asleep, (e.g. stimulants such as caffeine and nicotine).
- Affecting the quality or duration of sleep, (e.g. depressants such as alcohol). Please note that although alcohol is widely believed to aid sleep, the bad news is that alcohol has an adverse effect on the quality of sleep, therefore the overall effect of alcohol is to increase tiredness the next day rather than to help the situation.
- Via 'hangover effects'; i.e. influencing performance and leaving a person feeling tired and irritable the next day (e.g. sedatives).

Many drugs lower operational efficiency and impair judgment and reaction time. Commonly prescribed drugs in the following classes may have prolonged effects on performance.

- Sleeping pills or sedatives
- Antihistamines
- Tranquilizers
- Stimulants
- Analgesics
- Antibiotics, cortisone, steroids

The range of medicines that can potentially affect alertness is too broad and the crew are advised to consult an Aviation doctor (AME) for suitability of a prescribed or non-prescribed drug, a clarification must be sought from an AME.



THE HUMAN FACTOR
RELATIONSHIP IN ATC

The need to look at Human Factors at the very beginning of any automated project to clarify role sharing.

WRITTEN BY

JAMES FAIRLEY
Air Navigation Services Safety Specialist
GCAA

I STARTED MY career in Air Traffic Control on a cold morning in January 1988. At the time, Primary radar was in use with aircraft radar returns looking like electronic insects creeping about on an orange cathode ray tube. Controllers spoke constantly to each other across a pitch-black smoke filled room (yes you could smoke in radar rooms then) to ask what each other's aircraft were doing. There was no speed or height displayed on any screen. Any potential coordination was passed down the room by pen and paper. When something got a little too close for comfort then you stood up and shouted to your partner in crime alerting them to the situation. Move forward into the 90's and Secondary Radar gave the controller that warm and fuzzy feeling of always knowing which aircraft belonged to who and slowly but surely my automation relationship in ATC began to evolve.

Like any relationship, it takes time to understand how the other partner functions. We do not always understand each other's views or why we do things differently and it is no different with automation. This lack of understanding can lead to a mistrust of the automation in some but also an over reliance in others. Fast forward to the present day and we could honestly say that automation is at the core of everything we do in ATC, as well as in our day-to-day lives.

We use the phrase 'The Human in the Loop' or 'Human in the System' quite a lot in regards to Safety Management Systems and the human interaction with machine intelligence. ICAO gives guidance in various documentation from Human Factors Training in Doc 9683, Guidelines for Air Traffic Management Systems Doc 9758 and many more. The following is an extract from Doc 9758 about approaches to automation:

'A technology centered approach automates whatever functions it is possible to automate and leaves the human to do the rest. This places the operator in the role of custodian to the automation; the human becomes responsible for the 'care and feeding' of the computer. A human centered approach provides the operator with automated assistance that saves time and effort; the operator's task performance is *supported*, not *managed,* by computing machinery. '

At present, a dominant thinking trend is visible that everything can be easily automated by computers, robots and with use of AI software. However, the question of what and how to automate is, within a specific context, not always that simple. The more automation that is added to a system, and the more reliable and robust that automation is, the less likely that human operators overseeing the automation will be aware of critical information and be able to take over manual control if needed. It is no longer about the 'Human in the Loop/ System' but about the 'human getting lost in the system maze' as if it were never-ending and continually growing bigger and bigger as automation evolves.

Levels of automation by Endsley and Kaber (1999) shows the corresponding role played by the human and or the computer in functionality. This demonstrates the complexity of the relationship when focusing on a decision and action methodology in automation. It is certainly not as simple as looking up the table and assigning the role as per a corresponding box especially when it comes to the inter dependency of both the human and the computer. This confirms there is a need to look at human factors at the very beginning of any automation project to clarify how a role may be shared.

Level of Automation	Monitoring	Generating	Selecting	Implementing
Manual Control	Human	Human	Human	Human
Action Support	Human/Computer	Human	Human	Human/Computer
Batch Processing	Human/Computer	Human	Human	Computer
Shared Control	Human/Computer	Human/Computer	Human	Human/Computer
Decision Support	Human/Computer	Human/Computer	Human	Computer
Blended Decision making	Human/Computer	Human/Computer	Human/Computer	Computer
Rigid System	Human/Computer	Computer	Human	Computer
Automated decision making	Human/Computer	Human/Computer	Computer	Computer
Supervisory control	Human/Computer	Computer	Computer	Computer
Full Automation	Computer	Computer	Computer	Computer

Table 1 - Automation Taxonomy

ATC places the operator in the role of custodian to the automation; the human becomes responsible for the "care and feeding" of the computer.

Prior to introducing any new automation into any system there should be a clear set of Human Factors objectives set:

- transparency of underlying software operations;
  - a controller should be able to carry out tasks naturally or intuitively. Computer programming convenience should not take priority over usability.
- error-tolerance and recoverability;
  - design should be able to anticipate possible user error in data entry e.g. "are you sure you want to delete this flight plan?"
- consistency with controller's expectation;
  - automation should take into account ATC procedures and operations e.g. local airspace traffic management restrictions.
- compatibility with human capabilities and limitations;
  - failures within the automation should be easily identifiable to the controller. Controllers should not have to passively monitor the automation to detect failure.
- ease of reversion to lower levels of automation and of returning to higher levels of automation;
  - operating highly automated systems over a long period of time can cause skill fade of the basic controller tasks such as situational awareness.
- ease of handling abnormal situations and emergencies; and
  - controllers should have access to critical flight information regarding all aircraft in their sector.
- ease of use and learning
  - a system that is complex needs extensive initial training as well as extended recurrent training.

What can we learn from the human – automation relationship? Understanding what is involved from both parties is always key, which in turn will build trust. Trust is always the fundamental foundation of any relationship. We need to ensure that the human factor is forefront in any development of automation, more so as we move into the Artificial Intelligence era. Ensure that we stay informed, or in the loop, of emerging technology and then you will be less likely to be lost in the system maze. Question whether the automation is needed. Will this further automation degrade the controller's ability to carry out even the simplest tasks? Finally, what would you do if the automation failed? How confident would you feel if you walked into a modern day version of my 1988 operational environment?

THIRD PARTY RISK IN REGARD TO THE OPERATION OF UAS

Devastating consequences to the aviation industry by drones flown in an unsafe manner.

IN ERNST JÜNGER'S novel, The Glass Bees, where the fictional philanthropist Giacomo Zapparoni created tiny robots for many purposes, people fell under their spell and the Glass Bees:

> '**worked in dangerous locations, handling explosives, dangerous viruses, and even radioactive materials. Swarms of selectors could not only detect the faintest smell of smoke but could also extinguish a fire at an early stage; others repaired defective wiring, and still others fed upon filth and became indispensable in all jobs where cleanliness was essential**'.

Roger Berkowitz in his paper 'Drones and the Question of "The Human"' wrote of the Jünger novel "*Dispensable and efficient, Zapparoni's mini-drones could do the most dangerous and least desirable tasks.*", and this applies to the current threat from UAS that the aviation industry faces from a stand-off attack that would have minimal risk to the perpetrator but have potentially devastating effect to the aviation industry, and wider society. Notwithstanding this malicious threat it has become apparent that the prevalence of commercial UAS, and indeed at a hobbyist level, may also have a devastating effect, not necessarily on aviation but on the reputation of UAS and potentially those providing a service.

The consequence of a mid-air collision is not one that should warrant mere cursory consideration or an out of control UAS in isolation following a mid-air collision or a drone flown in an unsafe manner which can pose a substantial threat to all those in the vicinity. Third party risk is a known quantity to airports and should figure highly within local airport risk assessments. However, airport or airline style risk assessment should be expanded to cover the new and increasing UAS threat, understanding the potential consequences and implementing effective and appropriate mitigation measures. Currently this risk may not be a consideration for UAS commercial or indeed hobbyists.

WRITTEN BY

DAVID HARPER-JONES
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Organisational Safety

THIRD PARTY RISK CONSIDERATIONS

To differentiate between the types of users the following are considered:

a. Hobby: would be defined as 'an activity done regularly in one's leisure time for pleasure'. Separate from the 'Toy' user, this individual would be a person that takes the use of the UAS seriously with the intent to develop his skills, airmanship and competence. The Author would classify the UAS hobbyist as someone similar to a 'Model Aircraft' enthusiast, and usually part of a club or group.
b. Professional: would be a 'A person engaged in a specified activity, especially a sport, as a main paid occupation rather than as a pastime' or 'Engaged in a specified activity as one's main paid occupation rather than as an amateur'. The professional or commercial UAS user is considered to be a competent user and will have acquired a license following the required training from a National Qualified Entity (NQE).

Discussion within this article has referred to the limited knowledge available to the basic user with regard to UAS product capabilities. For example, the DJI family has four significantly capable products, all of which are available openly within the UAE. The product price points range from 6000 – 22000 AED (circa $1700 - $6000 USD). This is a fairly broad price range, with the majority of the costs being the video capabilities of the installed cameras.

The four types in ascending cost price are:

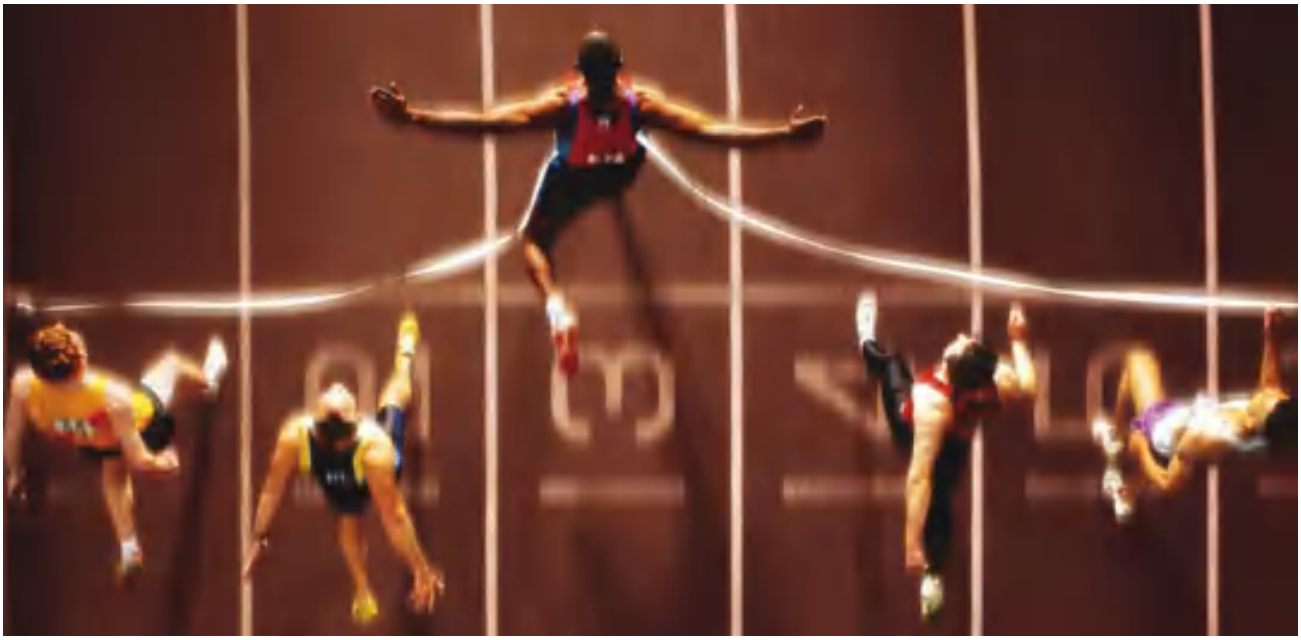
a. DJI Phantom 4
b. DJI Mavic Pro 2
c. DJI Inspire 2
d. Matrice 600 Pro

The fatality calculation outlined in this article demonstrates that a UAS operator, who may or may not understand the effect of his intentions, introduces a significant third party risk. For example, the mere act of flying a UAS, low over a crowd and at speed, could have a devastating impact if control were to be lost due to environmental, hardware, software or human error. These can include:

a. Mid-air collision
b. Battery failure
c. Structural failure
d. Motor failure
e. Loss of Global Navigation Surveillance System (GNSS) and enable to return to home
f. Risk taking – pushing UAS limits without understanding the consequences

This threat was clearly seen with the incident on 23 Dec 2015 involving an out of control commercial UAS and a skier in the World Ski Championships at Madonna di Campiglio, Italy that could have led to a potentially dangerous outcome not only to the competitor but also to the spectators.

These UAS are capable aircraft with inbuilt safety limits, but the unit must be updated to the latest firmware, and the controller software must be of the latest build for the safety systems to be effective. To date, there



is no evidence of physical or software functions that force the operator to apply firmware or software updates. It would be necessary to have an inbuilt system mandatory update of software/firmware, whether prior to launch, or at a pre-determined timescale, and subsequently not allowing the unit to operate with outstanding updates available could in part mitigate against any failure to update the system.

UAS capability could be the driving factor with regard to UAS classification as opposed to mass. However, from a risk to life perspective, the mass of the aircraft is the most significant influence and therefore the mass figure forms a significant part of the classification / categorisation of UAS.

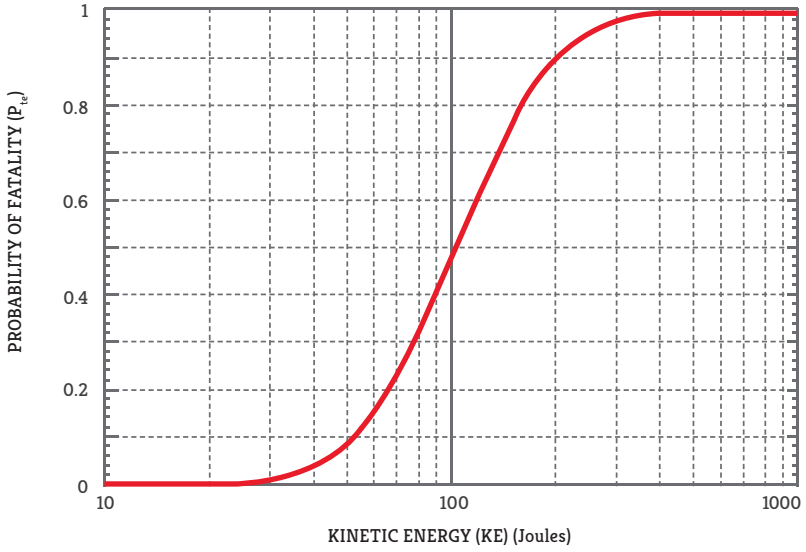


Fig 1 – E_k (joules) vs Probability of Fatality (Henderson, 2010)

UAS are capable aircraft with inbuilt safety limits, but the unit must be updated to the latest firmware, and the controller software must be of the latest build for the safety systems to be effective.

Mass, in conjunction with the velocity is an indicator of the amount of Kinetic Energy (E_k) measured in joules allied to the unit while in motion. When mass m and velocity v figures are extracted from the UAS performance data it allows the E_k to be calculated using the equation.

$$E_k = \frac{1}{2} \times mv^2$$

In conjunction with lethality criteria graph taken at Fig 1 the probability of fatality can be calculated based on a strike to the head.

The data at Tables 1 – 4 show the potential of a fatality, using the calculated energy and the fatality graph, for four popular types of UAS accessible and used in the UAE.

Table 1: Phantom 4 Lethality

Mavic 4 Pro – Mass 1.375kg	20 m/s	10 m/s	5 m/s
Speed km/h Kinetic Energy (j)	72* 275	36 68	18 17
Fatality % – Head Strike	97%	19%	1%
* Max speed			

Table 2: Mavic Pro 2 Lethality

Mavic 2 Pro - Mass 0.907kg	20 m/s	10 m/s	5 m/s
Speed km/h Kinetic Energy (j)	72* 181	36 45	18 17
Fatality % – Head Strike	83%	16%	1%
* Max speed			

Table 3: Inspire 2 Lethality

Inspire 2 – Mass 3.44 kg	20 m/s	10 m/s	5 m/s
Speed km/h Kinetic Energy (j)	94* 688	36 172	18 43
Fatality % – Head Strike	100%	81%	6%
* Max speed			

Table 4: Matrice 600

Matrice 600 - Mass 9.5 kg	18 m/s	10 m/s	5 m/s
Speed km/h Kinetic Energy (j)	65* 1539	36 475	18 118
Fatality % – Head Strike	100%	100%	60%
* Max speed			

Lethality probability is correlated to the area of impact and therefore will decrease from a strike to other body areas. For example an E_k of 80 joules would give a fatality probability of 32%.

The outcome of a strike by a UAS on a person has many factors such as age, body type, clothing and also the direction of the unit. However, for illustrative purposes (with aircraft under power), it can be seen at Table 2 the popular Mavic Pro 2 at close to full speed 20 m/s (72km/h) could potentially strike a fatal blow. Table 3 shows that a strike to the head from an Inspire 2 at 10m/s (36km/h) could almost certainly strike a fatal blow. The energy carried by a UAS also presents a significant 3rd party risk to life if in collision with another vehicle. Whilst it may not penetrate a windscreen or side window, the shock to the individual may cause a secondary reaction that results in greater harm to that individual or others.

A UAS falling due to a failure; factoring in height, surface area and wind resistance may also experience significant increases in velocity increasing the Kinetic Energy for impact.

ROGUE HOBBYIST

The threat posed by an individual wishing malicious damage would have limited mitigation via in-built system barriers. Realistically, the threats posed by UAS to aviation operated by a hobbyist or a professional would have to be considered low as they have a vested interest in the continued airworthiness of their UAS. For a hobbyist, this interest is related to skill development and a technological capability, while for the professional the UAS is a source of income and business development; both will, where possible, understand and endeavour to remain fully compliant with the UAS regulations. The still images taken from a video shown left of a night overflight of the Sheikh Zayed Road and the image above showing a UAS landing on the Burj Al Arab hotel helicopter landing pad.

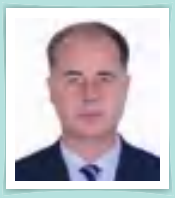
Both demonstrate that a hobbyist can pose a significant threat to aviation but more significantly to third parties when the operators potentially consider their skills far outweigh their risks.

UAS are here to stay, the tasks afforded to these units will grow and exponentially increasing the probability of failures. The expanded use of UAS in built up areas also increases the chances of collision. While this expansion is warranted and will be useful, careful consideration should be given to the routes, heights and timings to minimise the threats to those on the ground.

AERONAUTICAL SURVEYORS SERVICE PROVIDERS (ASSP)

CERTIFICATION AND OVERSIGHT WITHIN THE UAE

WRITTEN BY



ROBERT BARA
Air Navigation Inspector

AERONAUTICAL SURVEYING IS a highly specialized type of surveying, providing critical information about the airport features, obstacles, terrain, obstructions & navigational aids.

Aeronautical Surveyors Service Providers are collecting aeronautical data in terms of obstacles and /or terrain for aeronautical purposes and maintaining obstacle and/ or terrain databases – generating raw aeronautical data.

They are also conducting aeronautical studies to determine the impact of the obstructions - obstacles and/or terrain on the air operations and/or NAVAIDS.

DATA COLLECTED AND PROVIDED BY THE AERONAUTICAL SURVEYORS ARE USED FOR:

- Instrument Procedure Design (including circling procedure)
- VFR/IFR Aeronautical Chart production and on-board databases
- Ground Proximity, Terrain Avoidance and Minimum Safe Altitude Warning System
- Contingency Procedures during a missed approach or take-off
- Aircraft Operating Limitations analysis
- Determination of en-route "drift-down" procedure and en-route emergency landing location
- Advanced Surface Movement guidance and control system
- Flight Simulator and synthetic vision systems
- Height restriction or removal of obstacles that pose a hazard to air navigation.

This data is needed for safe aircraft operations and therefore it is safety critical.

That's why the geodetic institutes and surveyors are essential actors involved at the very beginning of the aeronautical data chain, as they create, modify or delete aeronautical information and aeronautical data for the purpose of aviation.

In order to enhance the quality of the aeronautical survey data and subsequently to improve the air navigation safety, GCAA developed a new regulation.

Certification and Oversight of the Aeronautical Survey Service: Providers - CAR ASSP, which, for the first time in the UAE and in the Region, provides the requirements for certification and oversight of this service within the UAE.

The new Civil Aviation Regulation CAR ASSP was issued in January 2019, and became effective on 1stof May 2019.

Prior to publication, few workshop with the industry were conducted by GCAA in order to inform and consult all stakeholders involved in the aeronautical survey activities.

During the certification audits, all surveying organizations that want to provide this service within the UAE have to prove that they meet at least an acceptable level of requirements with regards to personnel, equipment, training, facilities, documentation, data management, quality management and safety management, along with extensive knowledge of the National Regulations and ICAO documents related to aerodromes and its environs in respect of the operational areas, obstacle limitation surfaces, navigational facilities and PANS-OPS.

These requirements are applicable for the service providers from the UAE and also for foreign service providers.

The provisions are applicable for subcontracted organizations as well in order to assure that all parties involved in surveying activities will comply with the regulatory requirements.

The implementation of this new regulation is an open process. It started in May 2018 when the regulation became effective and, so far, three organization were certified based on the documentation submitted and the certification audits conducted by GCAA in 2018.

The main objective of the implementation of this Civil Aviation Regulation is to assure and maintain a high level of safety, by achieving an uninterrupted aeronautical data chain with no loss or corruption in data and information and with guaranteed data quality.

By certifying the aeronautical survey Service providers, GCAA is ensuring that the aeronautical surveyors provide data of a sufficient quality, being in compliance with the international requirements regarding aviation undertakings originating data compliance with the Quality Data requirements.

The results recorded so far demonstrate that this regulation already produced the expected effects.

There are not too many countries in the world certifying the ASSP, but the UAE is within these countries, proving once again the leadership in the aviation industry.

EMIRATES' EMERGENCY RESPONSE

FROM A FLIGHT SAFETY PERSPECTIVE

WRITTEN BY

CARL HOLT
Manager – Safety Management System, Emirates Airline, Dubai

Different teams across Emirates make sure that the company is ready to deal with the unthinkable with a well prepared and practised Emergency Response Plan. We look at how their Flight Safety team is structured to play an important role in the plan.

As part of the 'Coordination of Emergency Response Planning' element of its Safety Management System (SMS), Emirates has established and maintains an Emergency Response Plan (ERP) for accidents and incidents. This also includes emergency response plans of the other organisations it works with.

While Emirates' ERP covers a range of activities across multiple internal departments and external organisations, here we explore the work related to its Flight Safety section.

"Emirates participated in a full company exercise with Dubai Airports (DA) in 2019. Additionally, Flight Safety took part in a GCAA AAIS exercise in 2019 where the Flight Safety Go Team was activated and internal Flight Safety communications were exercised."

TEAM APPROACH

The Flight Safety ERP is built around a 'teams based' philosophy. Given the different variety of activities and rosters for employees, it's not guaranteed that any one individual will always be free. The plan makes sure that the team capabilities are always available and the required tasks can be efficiently completed and sustained.

The different roles that play a role in the Flight Safety response are outlined below:

Flight Safety Crisis Management Centre (CMC) Team

This is made up of a Flight Safety CMC representative and a support manager. The Flight Safety CMC representative engages with representatives from other departments. Chaired by a company Crisis Director, the CMC is a forum for senior management to engage and share updates to provide a common understanding of the situation.

Flight Safety Crisis Support Centre (CSC) Team

Led by a manager with additional nominated employees to support, the team tracks and manages the overall document collection activities to make sure they have been secured. The CSC team acts as a link between the Flight Safety CMC representative and the Flight Safety Go Team. The CSC manager additionally liaises with the Normal Operations Team (NOT) manager.

Flight Safety Go Team

12 people within Flight Safety form a 'pool' of pre-nominated and trained employees. The team has received specific training on Blood Borne Pathogens, Personal Protective Equipment and accident site safety. The team allocation for an event is made during the initial departmental management assessment. This includes consideration of the available employees, the aircraft type involved, the nature of the event and the event location.

The Flight Safety Go Team is made up of two specific sub-teams. One team helps and shares information with the GCAA Air Accident Investigation Sector (AAIS) to fulfil the operator responsibilities towards the ICAO Annex 13 State investigation. A separate sub-team provides capability from Flight Safety to the larger overall company department Go Teams. The company internal safety investigation is led as a separate activity.

Flight Safety Normal Operations Team (NOT)

The continuity and support to normal operations is an important aspect of the overall Emergency Response Plan. While the CMC and CSC are teams dedicated to the event, the Normal Operations Team continues with the regular safety activities. For example, the assessment and progression of Air Safety Reports (ASRs), any required safety investigations, safety training, proactive safety activities and planned regular safety meetings such as Safety Action Group (SAGs) and Safety Boards.

Awareness of Roles and pPlanning

The Flight Safety Emergency Response Plan sets out the expected capabilities of the employees and the role(s) they may be expected to carry out. To improve awareness, a weekly plan is published which shows the planned leaders of the Flight Safety CMC, CSC, Normal Operations Teams as well as the planned availability of employees. This information helps to allocate employees to the Go Team.

There is a weekly rotating rostered duty manager within Flight Safety who is the initial point of contact in regards to the Emergency Response Plan. The duty manager also works with the head of the department to confirm the Flight Safety team allocations and conduct the initial internal departmental communications. Flight Safety employees are also included within the wider company electronic call-out cascade system.

Activation and Scope

In the event of a full company activation of the departmental emergency response plans, Flight Safety integrates fully within the overall company activities. There are some events or incidents which don't require a full company activation but Flight Safety actions and internal / external liaison is required. The Flight Safety plan is such that it can be activated within stand-alone sections to make sure that the required actions and engagements are achieved.

Training, Exercises and Continuous Improvement

The Flight Safety emergency response training is matched to the roles a person could be expected to fulfil. In many cases, employees are capable of fulfilling roles across different teams. This provides greater flexibility during allocation as well as giving a wider understanding of the Emergency Response Plan and actions.

Flight Safety runs its own exercises and takes part in full cross-departmental company exercises and exercises with external agencies. For example, Emirates participated in a full company exercise with Dubai Airports (DA) in 2019. Additionally, Flight Safety took part in a GCAA AAIS exercise in 2019 where the Flight Safety Go Team was activated and internal Flight Safety communications were exercised.

Evaluating exercises allows Emirates to continuously improve its emergency response plans and provides greater experience for employees.

Careful preparation and practice of all aspects of the Flight Safety team's ERP makes sure that the team are ready to handle an emergency in an organised way.

Safety is everyone's responsibility.

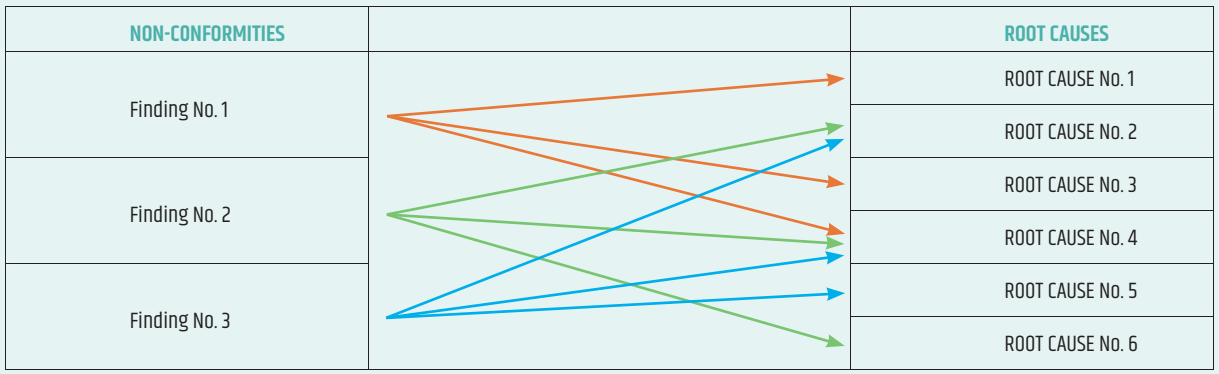

Our
Safety Management System
and You
Safety Policy
Safety Risk Management
SMS
Safety Assurance

WRITTEN BY

VESNA MARKOVIS
Air Navigation
Inspector - SAFS

THE IMPORTANCE OF INTERNAL AUDIT AND EFFECTIVE ROOT CAUSE ANALYSIS

Proactive and predictive hazard identification for the SMS.



TALKING ABOUT HAZARD identification is usually related to the Safety Management System (SMS) while the internal auditing system is in close connection with the Compliance and/or Quality Management system (QMS). This article is aimed at highlighting the connection between the SMS and QMS and the importance of an effective root cause analysis as proactive and predictive hazard identification for the SMS, upon the completion of an internal audit.

The Internal auditing system is part of the Quality Assurance Program. Besides, it is a regulatory requirement for all aviation industry: AOC operators, ANSs providers, Airports, Approved Training Organization, Maintenance Organizations, etc. The outcomes of an audit are the audit report with non-conformities, findings, observations, recommendations. The term `non-conformities` is used here generically to refer to the outcome of the audit.

The Root Cause Analysis (RCA) is the first step in the process of closing non-conformities and preventing the reoccurrence of non-conformities by developing efficient and effective corrective action plans, and it implies employing different kinds of methods. Regardless of what method is applied, the RCA can be used as a valuable tool and a proactive technique to identify hazards. Also, an effective root cause analysis can lead to hazard identification not only in the organization where the audit has been conducted but also to hazard identification for other service providers, contracted organizations or approved operators. For instance, if somebody has made a mistake, a proper RCA will invariably reveal problems with the training, coaching, and monitoring of the person who has made it. Besides, there will always be more than one root cause of a problem in an organization. In other words, the phrase 'Root Cause Analysis' is slightly misleading; it should probably read as `Root Causes Analysis1! The analysis usually reveals at least two key root cause types which include flaws with both preventative and detective roles.

In case that the RCA reveals that training was not adequate delivered by an approved training organization (ATO) that was not auditee organization, there is room for additional RCA. Why the training was not adequate? How many trainees received no adequate training? Should we share that data with other customers of ATO?

The phrase 'Root Cause Analysis' is slightly misleading; it should probably read as `Root Causes Analysis1! The analysis usually reveals at least two key root cause types which include flaws with both preventative and detective roles.

Sometimes it happens that several non-conformities during one internal audit have the same root cause. In this situation, without any doubt, we could say that this specific root cause is a hazard.

Sometimes the RCA does not refer to the auditee department, for example, to the HR or Legal Department. This may then identify organizational process gaps that expose weaknesses in a fully integrated management system. This is particularly important when identifying specific human factors as a root cause. Regardless of the organizational unit where the audit was conducted and the organizational unit where the hazard was identified, it should be considered as proactive hazard identification. In such cases, the question is who should consider that hazard? Whether it should only be the auditee organization or it could be a hazard for another organization. In case it is a hazard for another organization we should share that data in line, and not jeopardize the audit's confidentiality.

It is a challenge for the aviation industry including regulatory bodies. Sharing safety data is a common approach and it is encouraged by many regulatory standards and requirements. However, sharing the audit's details is not a recommended practice but sharing specific data about generic RCA and proactive hazards identification can be considered.

AJWAA

The Guide to UAE Aviation

Don't miss the new updates in **AJWAA 17**

ajwaa@gcc.gov.ae