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Second Edition 2011



Advanced aircraft automation: Friend or foe?

**Prevention of the Spread of Communicable Disease
Through Air Travel**

Advanced Cockpit Systems

SMS Update

Statistical Introspection

Message from the Director



Dear readers

We have reached the half-year mark and the SACAA management team is evaluating the progress made so far. At the beginning of 2011 we embarked on a journey to improve services at the SACAA. This journey was exciting at times, but there were also turbulences that we had to endure along the way.

I am proud to announce that a huge improvement in service delivery was noticed, which was confirmed by accolades from clients and industry leaders alike. Unfortunately, I have to report that we have also received complaints about the way our employees conduct themselves when they perform their duties off-site, particularly when they visit clients. We are addressing these concerns and hope to better our relationship with our stakeholders from now on.

Hopefully the news of our newly launched Tip-Offs Hotline has spread throughout the industry by now. We include a free cut-out of the brochure in this edition for easy reference. Please do the right thing and report unlawful acts.

On the financial side, the organisation is recovering from a financial crisis that led to a lengthy cost-cutting exercise which was a first for the Authority. The cost-cutting initiative sustained us over the past 18 – 24 months but we believe that we are well on our way to recovery. The implementation of the fuel levy from 1 June 2011 and the proposed increase in the passenger safety charge will ensure that we get back on our feet. In addition you will be happy to know that the Accident and Incident Investigation Division is not subsidized by the SACAA anymore and this will have a further positive impact on our finances.

Our newly appointed SACAA Board met for the first time on 23 June 2011. During this meeting, they were inducted and provided with a "hand-over" report by the outgoing Board which, among others, highlighted outstanding matters. I am happy to report the establishment of the following committees under the leadership of the suitable Chairpersons:

Safety Committee – Mr. Z. Nomvete, Finance and Audit Committee – Mr. S. Motau, Human Resources & Remuneration Committee – Dr. N. Sangweni, Legal and Legislation Committee/task team – Adv. Duhal.

The new Board made it very clear that they mean business, and I can assure you that I will make sure that, as the management and staff of this organisation, we will give them all the support they need.

We hope you enjoy this edition of the Safety Link and would once again like to invite the submission of articles or any proposals for articles related to aviation safety. Articles and proposals may be submitted to Mekoap@caa.co.za.

Safe flying until next time

Zakhele Thwala
Acting Director of Civil Aviation

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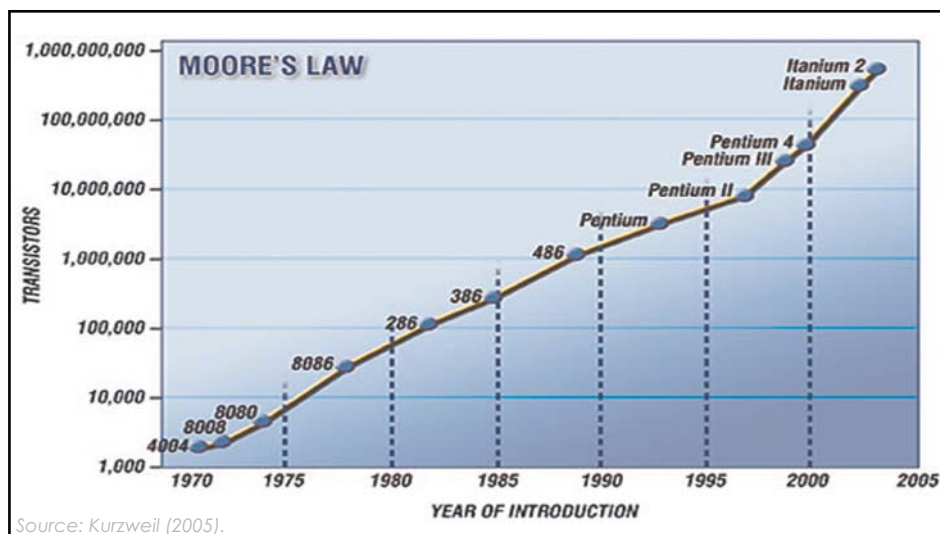
Advanced aircraft automation: Friend or foe?

By Preven Naidoo

In 1965, Intel co-founder Gordon Moore made an emphatic prediction that computing power would double every eighteen months for the next five decades or so.

The so-called 'Moore's Law' was founded and, forty years later, we continue to experience the fulfilment of that same prophetic statement (Kurzweil, 2005).

Futurists have taken this law one step further and theorise about a technological singularity based on the exponential nature of Moore's law, and the singularity conclusion is that technological advances will occur instantaneously: 'Gee-whizz stuff' intended to boggle the mortal mind.



Source: Kurzweil (2005).

NASA, Boeing and Airbus have in turn ensured that **aviation** technology follows a tight-fitting correlation closely aligning the gradient associated with Moore's law. The result of this can be seen on a daily basis (by a lucky few) in the modern flight deck, which is starting to resemble the Star Ship Enterprise, making any die-hard Trekkie proud.

This proposition would appear perfect: introduce more technology and automation into the cockpit, thus reducing pilot workload and thereby improving safety. However, all good plans in aviation history have an inherent flaw; the human factor. Accidents involving highly advanced aircraft from both major global manufacturers, for instance the TAG A320 and subsequently the Turkish 737-800, have once again highlighted a critical dyadic component in this dynamic, yet somewhat mechanistic system of the human-machine interface.

Researchers ask: 'Has the tremendous increase in technology and automation improved flight safety or, in fact, created another human factor hazard? Have airline pilots reached their cognitive limit in their ability to understand these advanced systems?' These and many other automation issues have left human factor experts with a treasure trove of new research areas that may keep them busy for decades to come.

Parasuraman, Riley, Funk, Lyall, Degani, Shafto and Kirlik are only some of the more prominent scholarly names in applied

aviation psychology tackling the confounding issues of aircraft automation. (A mere glance at the website www.flightdeckautomation.com, highlights the proverbial 'can of worms' opened by modern aircraft automation systems.)

The Turkish Airlines accident, involving one of the most modern commercial jet aircraft, should never have happened. Preliminary investigations revealed automation issues which were already identified in earlier studies. The ever-increasing gap between academia and actual line operations is an area of concern for researchers studying aviation automation and computerisation issues. For this reason, major institutions in South Africa such as the University of Pretoria are recognising the advantages of collaborating with operational stakeholders such as airlines and the regulatory bodies.

The detrimental effect of "mode confusion" was emphasised by the fatal result of the Schiphol B737-800 accident, where the holes of the "Swiss cheese" had lined up, and the ultimate goal keeper (the pilot) was defeated (Reason, 1990). Mode confusion stems from the fundamental premise of pilot-computer misunderstanding (Parasuraman & Riley, 1997). In fact, the computer may be blatantly communicating the fact that it is in a certain fatal state or mode. Unfortunately however, the human being does not interpret it the way it's actually

intended, and the result is mode confusion.

"...the auto-throttle, which uses the left radio altimeter data, transitioned to landing flare **mode** and retarded the throttles to the idle stop. The throttles remained at the idle stop for approximately 100 seconds..." From this Boeing then recommends, "...in addition, crews should be reminded to carefully monitor primary flight instruments (airspeed, attitude etc.) and the FMA for [changes in] auto-flight modes." (See: <http://www.flightglobal.com>, for more detailed information).

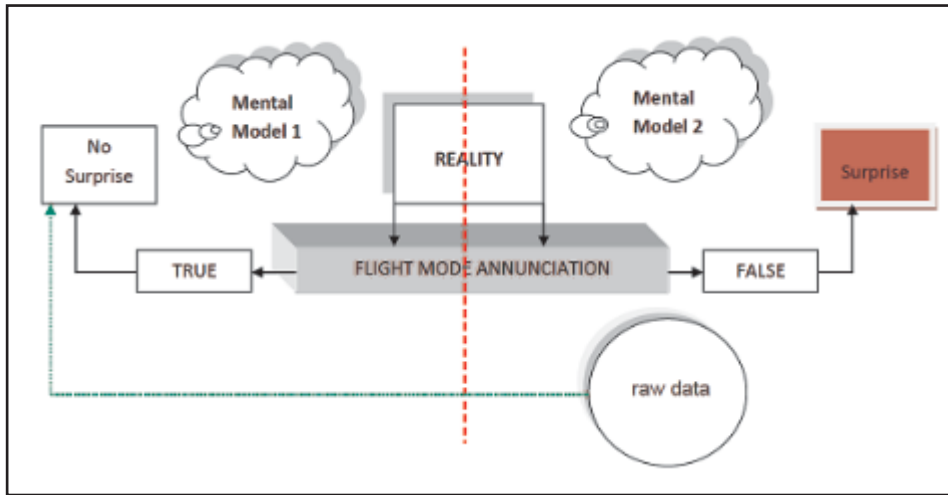
According to the FAA, these mode confusions are, to put it simply, a "surprise". In other words, what the aircraft does and what the pilot expects the aircraft to do, is not congruent - the result, a surprise. In this human-machine marriage, it is the pilot who is surprised, as the machine will do what it was programmed to do. The famous GIGO (garbage in - garbage out) scenario plays out. To understand the conceptual framework of the human mindset - computer mode paradigm, the diagram on the next page developed from studies in this topic at the University of Pretoria may be of interest:

From the mental models diagram, the mindset of the pilot can entertain one of two reality hypotheses. A false interpretation of reality (in other words, not understanding the specific flight mode) can result in a surprise for the pilot, as illustrated in the familiar "What is it doing now?!" lament of the advanced automated flight deck pilot.

All is not lost, however. There is an escape clause written into these stringent rules. By correctly interpreting raw data (i.e., bypassing the Flight Mode Annunciator, FMA), the operator can still save a bad situation by correcting the falsity derived from mental model 2, and adjusting his or her false hypothesis to align more closely to reality, resulting in mitigation of the surprise event.

This discussion is only the tip of the iceberg as far as the analytical study of automation, psychology and human factor complexities by aviation and behavioural scientists is concerned. A steep learning curve is envisaged for both flight safety experts and regulators involved with airlines' relentless acquisitions of modern jet aircraft. For the pilot, an in-depth understanding of

the nuances associated with one's modern flight deck can soften latent (uncontrollable) and adverse variables that may exist within the automation training parable. This knowledge may one day save lives which human beings are ultimately responsible for.



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Cooperative Arrangement for the Prevention of the Spread of Communicable Disease Through Air Travel (CAPSCA)

By Dr Lesego Bogatsu

Background

The International Civil Aviation Organisation (ICAO), International Air Transport Authority (IATA) and Airports Council International (ACI), estimate that more than 2 billion passengers with Ultra-Long Range Flights are able to circumnavigate the globe in less than 24 hours, and passenger/s can carry a communicable disease to the opposite end of the world in less than 24 hours.

In April 2003 the World Health Organisation (WHO) issued a global health alert for Severe Acute Respiratory Syndrome (SARS). The rapid spread of SARS caught many states by surprise and due to the lack of coordination and harmonisation of relevant stakeholders, this led to a knee-jerk response and panic reaction.

A primary casualty was the aviation sector, resulting in a major reduction in air travel, as demonstrated in the graph below.

The CAPSCA Project is an initiative of ICAO that came into being after the severe impact of SARS on the aviation sector and the emerging threat of pandemic influenza. In November of 2005, the World Health Organisation convened a meeting on aviation influenza and human pandemic influenza.

WHO called for a meeting on the "Global Influenza Preparedness Plan" and it was established that the Aviation sector had not dealt with this issue in detail.

The emerging threat of Avian Influenza raised fears of a human influenza pandemic and led to the CAPSCA project being conceived in 2005.

ICAO's Response

In response, ICAO strengthened its support for Article 14 to



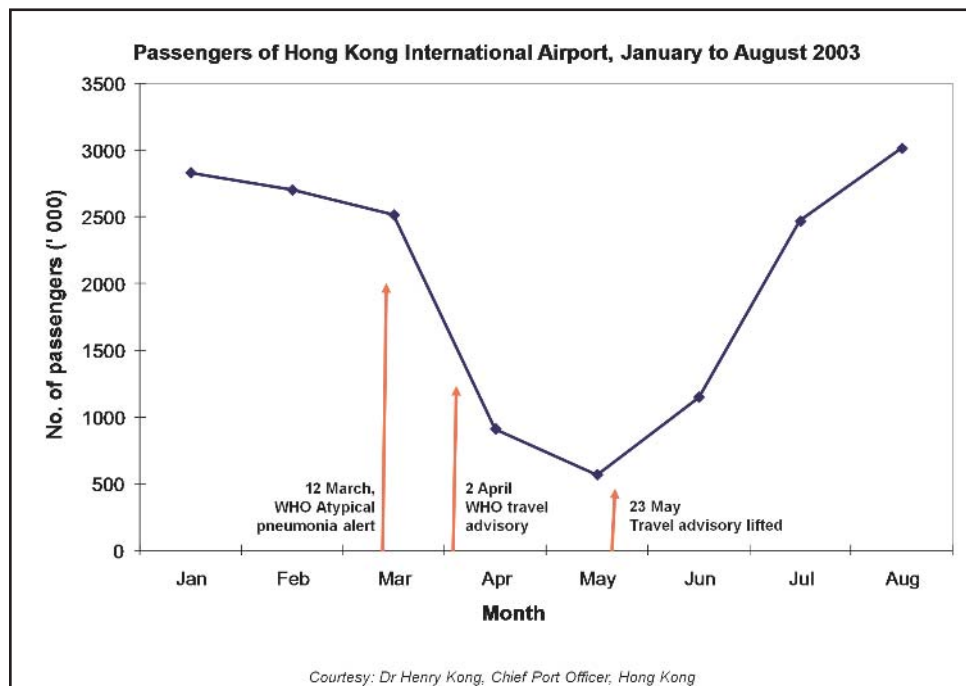
the Convention on International Civil Aviation - Prevention of Spread of Disease; amendments were also made to Annex 6, 9, 11 and 14, with the last amendment being promulgated in November of 2009.

Article 14 of the ICAO Convention regarding the Prevention of Spread of Disease

Each contracting State agrees to take effective measures to prevent the spread by means of air navigation of cholera, typhus (epidemic), smallpox, yellow fever, plague, and such other communicable diseases as the contracting States shall from time to time decide to designate, and to that end contracting States will keep in close consultation with the agencies concerned with international regulations relating to sanitary measures applicable to aircraft.

Amendment to Annex 9

ICAO Annex 9 states that a Contracting State shall establish a national aviation plan in preparation for an outbreak of a communicable disease posing a public health risk or public health emergency of international concern. This Annex is also concerned with the tracing of persons who may have been exposed to a communicable disease by using a prescribed Public Health Passenger Locator Card.



Continued on page 6...

The annex also refers to communication between the pilot in command and Air Traffic Controllers, once a suspected case of communicable disease is identified and the Aircraft Declaration Form, which defines possible symptoms to have been identified by the cabin crew.

Amendment to Annex 6

Annex 6 refers to the aeroplane being equipped with Universal Precaution Kits.

Annex 11 and 14

Annex 11 requires Air Traffic Service Authorities to develop and promulgate a contingency plan (Public Health) including a business continuity plan.

The Annex also defines the notification process in the case of a suspected communicable disease, or public health risk, on board the aircraft. The information to be communicated to the designated Airport Authority of the next intended landing destination includes the number of persons exhibiting symptoms of a communicable disease, aircraft identification, the name of the departure aerodrome, destination aerodrome, estimated time of arrival and the number of persons on board.

Annex 14 requires aerodromes to develop a pandemic emergency plan. Examples of public health emergencies are the increased risk of travelers or cargo spreading serious communicable diseases internationally through transportation and the severe outbreak of a communicable disease potentially affecting a large proportion of aerodrome staff.

Aim of CAPSCA

The purpose of CAPSCA is to mitigate the risk of a pandemic at a population level; reduce the risk of the spread of disease by air travel; to minimize the disruption to air service and to mitigate the financial impact from an outbreak or pandemic.

The first CAPSCA meetings and evaluations took place in Asia-Pacific in 2006. In 2008 at an AFI-RAN meeting held in Durban, the South African (Southern & Eastern Region) and Nigerian (Central & Western Region) Civil Aviation Authority were appointed as ICAO Regional Coordinators for the implementation of the CAPSCA Project.

The role of the regional coordinators is to ensure harmony between the pandemic preparedness plans for each of the states in their regions. On 9 February 2009, two Nigerian airports (Mohammed Motala and Abudja) were evaluated. South Africa is the first country on the continent where a simulation exercise related to the CAPSCA project took place in 2009, and two South African Airports (Cape Town and OR Tambo) were evaluated.

The evaluation (not an audit) that took place in both Nigeria and South Africa was conducted by the International Civil Aviation Organisation, World Health Organisation, IATA, and the Centre for Disease Control (COC) and a representative Leader and Coordinator for the Asia-Pacific Region.

Issued for consideration while implementing the CAPSCA Project

There is currently no single screening measure that provides

the requisite sensitivity and specificity; therefore, a combination of measures may be required depending upon the prevailing situation. ICAO recommends that States should be cognisant of the fact that the quarantine of large numbers of airline passengers is unlikely to be justified, is not practical and may be difficult to implement.

It may not be possible for States to completely prevent the spread of an evolving pandemic; however, with appropriate measures, it may be possible to delay and mitigate the effects of such an emerging pandemic.

There is no evidence to support the cleaning and/or disinfecting of baggage, including items arriving from areas where Avian influenza has been reported. This would include the checked-in bags of a suspected case of communicable disease on board a flight. (The use of remote stands at airports for aircraft arriving with case/s of suspected infectious disease on board a flight is not recommended).

The production of the relevant vaccine remains the best solution towards mitigating the high morbidity and mortality usually associated with a pandemic. States should, as part of their Pandemic Preparedness plan, develop business continuity models and put in place a clear risk communication coordination strategy. Based upon the available evidence, it was accepted that, upon the identification of a case of

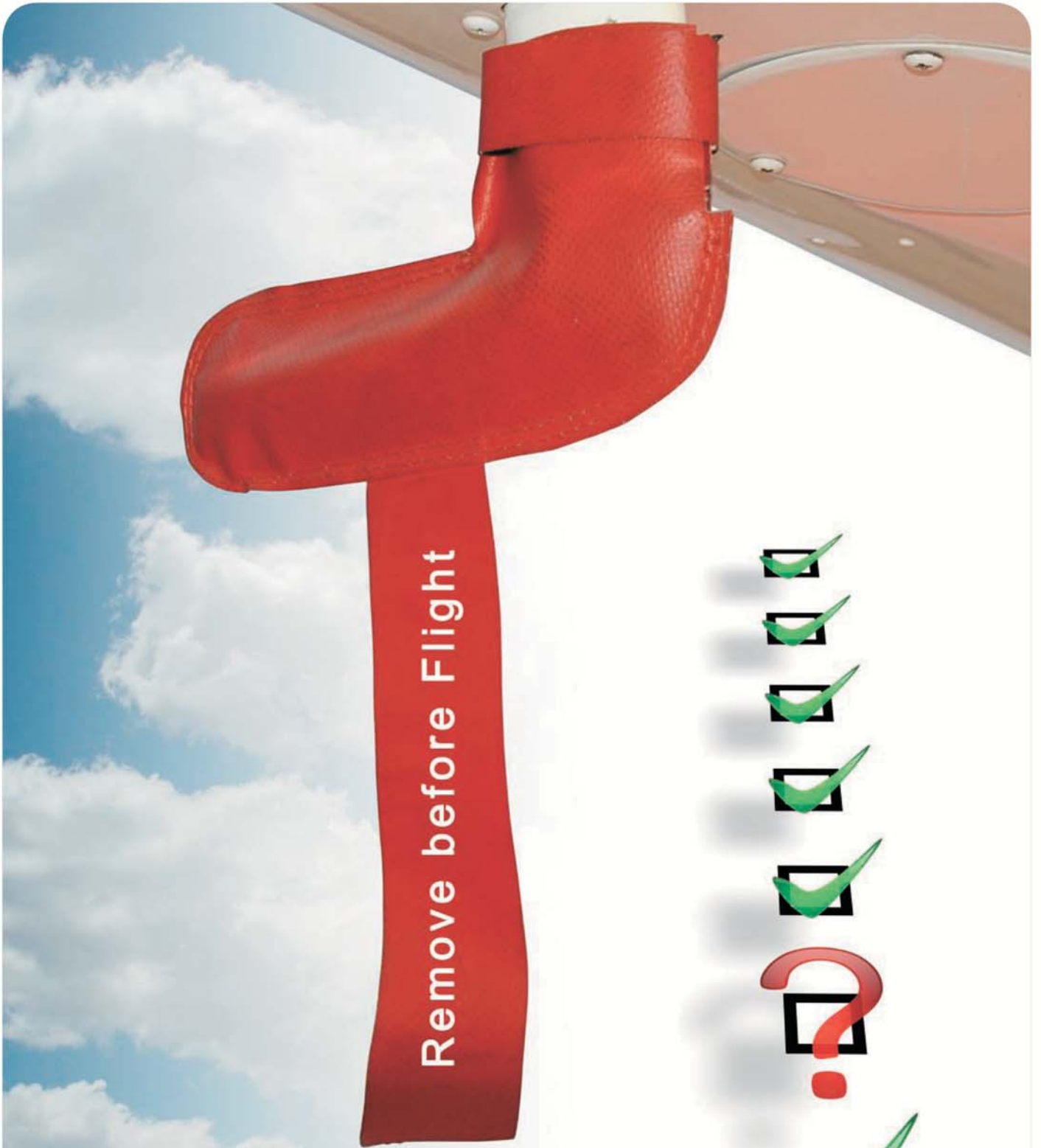
The purpose of CAPSCA is to mitigate the risk of a pandemic at a population level; reduce the risk of the spread of disease by air travel; to minimize the disruption to air service and to mitigate the financial impact from an outbreak or pandemic.

suspected communicable disease on board an aircraft in flight, the passengers seated in the same row and two rows in front and behind, in addition to any other close contact, should be designated as "contact" cases. Contact cases are identified for the purpose of contact tracing and appropriate public health measures on arrival and/or the presentation of health information.

Regulatory Approach CAPSCA Project

The SACAA has been in consultation with the industry to develop regulations and technical standards to comply with Annex 9,6,11 and 14 of ICAO. The regulations are in the process of being approved. In the mean time ACSA, SAA, ATNS, the Department of Health, Immigration, Bidair and Home Affairs presented their procedures to the ICAO evaluation team in 2009, to assess whether the country was moving in the right direction with regard to the implementation of ICAO Annexes. It must be said that the involvement of these stakeholders contributed to the major success of the SA evaluation.

The CAA has met with other representatives from the different operators to sensitize them about the CAPSCA project. To date ICAO has held workshops in Kenya and Mali. ICAO has officially requested the simulation video from South Africa to be made available to other states for training purposes. The CAA continues to draft the plan, which will eventually be signed by the Minister of Transport. Stakeholders who wish to obtain more information regarding CAPSCA can obtain information from the CAPSCA website, IATA and ACI.



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General Aviation Pilots' Attitudes Towards Advanced Cockpit Systems: A South African Perspective

By Preven Naidoo



The rapid advancement in computer systems and technology in general has had a profound effect on aviation. Moore's law predicts that the capabilities of digital electronic devices will double every 18 months. This prediction can easily be applied to general aviation cockpit systems.

The introduction of highly advanced avionics and computer-based technology in general aviation aircraft has increased exponentially over the past five years. For the past 10 years, advanced aviation technology in the form of glass cockpits has been incorporated into light aircraft at an ever-increasing rate. Older aircraft have been retro-fitted, whilst new aircraft have the electronic systems built in. Research on the impact of the new technology on pilots' perceptions has been carried out in the light of continuing concerns about the efficacy of the technology and pilots' performance. These changes to general aviation aircraft have resulted in new and very different emerging human factor issues. This concern has been met with a number of research projects attempting to explore the variables associated with the impact of technology on aviation and pilots in particular. The statistics currently raise no doubt about the improved levels of safety brought about by the implementation of advanced flight deck automation in modern commercial, part 121 aircraft. However, can the same be said about the general aviation sector? Very little research can be found with regard to the impact of automation or advanced systems in the GA sector.

A very recent study conducted by the NTSB (<http://www.ntsb.gov/aviation/Stats.htm>) revealed very surprising and startling results. Although very limited in scope, the study provides one with an understanding of the human factor issues that preside in new technology. The NTSB project analysed the accident rates of over 8000 piston-powered aircraft manufactured between the years 2002 and 2006. What the study found was that the fatal accident rate for those aircraft equipped with 'glass' type cockpits were higher than those of the conventional (round-dial) type. This is in stark contrast to what researchers were finding in part 121 operations. The lack of training for complex aircraft technology and general understanding of the operation of the system were cited as

primary concerns by the NTSB. These findings suggest that there might be a need to have more comprehensive training on manufacturer-specific equipment and that training needs should be assessed by aviation bodies and academia that "would teach pilots higher-order thinking skills". Research conducted by the University of Pretoria found that similar issues, and in particular, concerns over diminishing manual flying skills, overreliance on automation (automation bias) and deteriorating situational awareness are considered problematic in both part 121 flight operations and in general aviation in particular. Survey research found significant correlations between pilots' beliefs, attitudes and perceptions, with subsequent behaviour in the cockpit.

In order to explore the effects and the impact of advanced flight deck systems on general aviation pilots, a collaborative study was conducted in South Africa by the University of Pretoria, in Australia

by the University of Western Sydney and in the United States by the NASA Ames Research Centre (<http://www.nasa.gov/centers/ames/>). The University of Pretoria's research study was also endorsed by the South African Civil Aviation Authority (www.caa.co.za) as it aligned very well with the recent inception of their project, GASI (General Aviation Safety Initiative). This project was initiated after the sudden spike of serious accidents and incidents involving general aviation in 2008. The issues that emerged from GASI were categorised as 'flight training', 'aircraft' and 'human factors'. Some very well-known and respected names in SA aviation are currently involved with this initiative. An interesting finding was that poor pilot decision-making, risk management, poor judgement chains, lack of appropriate threat and error management, and crew resource management skills played significant causal roles in GA accident statistics. These human factor variables are also found to emerge when examining the human-machine interface of advanced flight deck systems. (<http://www.flightdeckautomation.com>). Threat and Error Management (TEM) training has become mandatory at large airlines. Sadly, however, education in this field is lacking within the GA community. Research has shown that knowledge of TEM principles can significantly reduce consequential errors within the human-advanced machine system.

The instrument used to illicit the experiences and perceptions of GA pilots with regard to the glass cockpit was developed by NASA and used in this particular study to make cross-national comparisons. This article reports on some of the summary and descriptive statistics of the data gained from the South African leg of the Advanced Cockpit Aircraft Survey (ACAS). The ACAS was hosted on a web-based system which was accessed by potential respondents via a link found in an accompanying invitation letter. The purpose of the study was to explore the concepts of advanced automation, aircraft computerisation and their impact on human operators, particularly in the general aviation environment. The information gathered in this research project is intended to add to the body of knowledge of human factors and automation in aviation, as well as the structuring of training programmes related to automation in GA aircraft,

thereby creating a far safer environment for pilots to operate in.

Response to the SA research was very good when compared to similar research in other countries. This demonstrates the enthusiasm for technology in South African general aviation, as well as a keen insight into safety issues around glass cockpit systems. A total of 330 people answered all or part of the survey. The actual response rate is unknown due to the nature of the methodology (i.e., the survey was linked to a web-based host). However, it was initially estimated that 800 or so pilots may be exposed to advanced cockpit technology in the South African general aviation sector, which means that approximately 40% of the population was sampled. 77% of the respondents indicated their nationality as South African. 3% of return questionnaires were answered by participants who indicated that they were female. The mean age was calculated as 43 (standard deviation=13.86 years). The total flight time which was answered by 279 respondents indicated a mean of 3266 hours (SD=4784.48) and the total number of hours in 'glass cockpits' was 1100 hours (SD=2006.93). The large standard deviation indicated to the researchers that the spread of the distribution was large, which means that respondents were very diverse in their level of experience.

One of the greatest disadvantages of using a web-designed survey method is that there is no definite control over who answers the questionnaire. Nevertheless, the questions were developed in such a way that a closer examination can assist in eliminating participants who do not meet the requirements of the survey. The criteria for inclusion were that each participating pilot had at least a CAA private pilot's licence with an aircraft category and class rating. Students were excluded from the sample, as were pilots who worked in only Part 121 airline operations at the time. However, the level of participation was very good when compared to other research of a similar nature, which in general elicits responses of only around 10%-30% of the sampling frame. For comparative statistics some scholars recommend that the sample size be in proportion to the square root of N. For this study the formula produced a response requirement of around 140. This number would then have been sufficient to conduct such an analysis.

Findings from the South African leg of the study.

The convention for reporting descriptive statistics from surveys is based on a coding system. In this case a response of 'Strongly Disagree' was scored as 1 and a response of 'Strongly Agree' was scored as 5. Where a survey item was left blank, no score was recorded. This methodology using Likert-type items is able to capture the overall perception of the sample with regard to the construct of interest (general aviation pilots' perception of advanced cockpit technology), and is popular in the field of psychological instrument development.

The next discussion reveals some very interesting aspects extracted from this particular study.

A little over 42% of the respondents held a private pilot's licence, while 21% and 23% of the total sample indicated that they were commercial and airline transport pilots respectively. The literature generally links a better understanding of the technical aspects of aircraft with that of flight instructors. Therefore it was a requirement for the survey to illicit such information and a count revealed that about 14% of the participants also held a flight instructor's

rating. This provided a good indication of the level of diversity which strengthened the validity of the results.

The goal of the survey was to exclude pilots who operated in scheduled airline service, thereby targeting the general aviation market, which resulted in a sample which contained more private pilots than ATP pilots. An in-depth analysis of the elements in the sample frame revealed that the proportion of private pilots in our study was approximately 20% larger than the South African population at large, and the proportion of ATP licensed pilots was similarly, 20% smaller.

2. General attitudes to advanced technology cockpits

The results of this section would be of interest to the average GA pilot as it gives a fair indication of behaviour within the industry.

Due to space constraints, the next section deals with only one important topic covered in the University of Pretoria's leg of the survey research, i.e., 'General attitudes about advanced cockpit systems'.

Six specific survey items (statements) were constructed to gauge the general attitudes of pilots toward advanced cockpit systems.

2.1. 'I look forward to new kinds of advanced cockpit systems.'

Almost 67% of respondents either 'strongly agreed' or 'agreed' with the above statement. Less than 1% had an opposing view. Responses from the South African general aviation pilots to this item correlate closely to that of a similar study conducted in the USA. However, these attitudes differ significantly from the earlier, seminal results of a survey conducted by Wiener (1985) which analysed airline pilots transitioning between earlier generation cockpit systems and more advanced automation. A statistical calculation showed that our GA pilots surveyed are more enthusiastic about advanced systems than the group of airline pilots in the Wiener (1985) study. Such a finding is interesting, for two reasons. Firstly, it proposes that SA general aviation pilots are not technologically averse (possibly due to the generation gap between airline pilots and private pilots in general, and the fact that our survey was run almost 25 years after the Wiener study). Secondly, manufacturers are acutely aware of how attracted the general aviation pilot is to advanced technology, and in particular, new and interesting systems which make piloting "easier". One could even go so far as to hypothesise that the average SA general aviation



pilot owns far more technologically-based “toys”, such as I-pads, laptops, mobile phones, and so forth, than the average consumer. Armed with this revelation, light aircraft avionics manufacturers are poised to continue introducing the market to ever-changing technological packages. In other words, computerisation in the general aviation cockpit is here to stay, like it or not.

2.2. *'They've gone too far with advanced cockpit systems.'*

Most participants in our survey disagreed with the above statement. South African general aviation pilots appeared to disagree with the statement more than airline pilots who answered the same question in similar previous studies. It was interesting to note Wiener's 20% disagreement as opposed to our almost 41%. These results provide a good indication that SA pilots are beginning to embrace and see the long-term advantages of advanced instrumentation. The findings provide evidence for the need to develop specific CAA-regulated training material which can provide more structure in the learning environment. A recommendation coming out of this statement is for the development of glass-specific emergency procedural training and guidance. Pilots flying in aircraft with modern equipment should bear in mind that any malfunction of advanced avionics has the potential for evolving into complex failures. The complexities result from an imbalance between the level of the human error and the significance of the outcome. For instance, programming errors (example, simple “finger” trouble) in the flight management systems of highly advanced commercial aircraft, such as the Airbus A340, can result in catastrophic damage. This occurred with an A340 departing Melbourne not too long ago, where the pilots inadvertently transposed the weight figure in the calculation of V-speeds, resulting in a near-fatal air crash. The old adage, garbage in, garbage out (GIGO), rings painfully true for the highly computerised flight system.

2.3. *'In an advanced cockpit, sometimes I feel more like a button pusher than a pilot.'*

A lot of research is currently underway which attempts to analyse the phenomena of deteriorating manual flying skills which are perceived to result from automation complacency and bias. The above survey statement gauged this attitude and surprisingly many of the participants indicated that they were unsure. A good spread existed between agreement

and disagreement. A disagreement with this probe is generally correlated with demographic variables such as higher flight time in glass cockpits, and flight time in aircraft with at least a panel-mounted GPS. The result of this item is consistent with that obtained in previous studies of a similar nature. Additionally, the SA general aviation pilots tend to lean towards slightly more disagreeing than agreeing, this difference however cannot confidently be said to be statistically significant. Therefore, there were no definite conclusions. Nevertheless, the pilots in our sample feel that there is some element of the advanced cockpit which still continues to stimulate their manual flying skills.

It should be remembered that the advanced light aircraft can be flown like any other conventional aircraft, and pilots should practice manual flying whenever feasibly possible so as to maintain levels of competency. Training for GA pilots in this regard should also highlight the need for appropriate use of automation during different phases of flight. For example, there should be less heads-down time when operating aircraft at low level and in close proximity to the airfield. Complex programming of the FMS (strategic) should be avoided and be replaced by short-term (tactical) autopilot interventions.

The next three items also probed GA pilots' overall attitudes toward advanced cockpit systems. As with previous studies, there was a moderate, yet significant correlation between responses and flight time. Here, greater flight experience was associated with agreement that cockpit automation appears to be getting more complicated. However, a good proportion of GA pilots tend to disagree that systems are becoming too complex, thereby compromising safety. This could indicate a fair degree of complacency being propagated by new advanced avionics in the South African environment. Automation bias and complacency is currently the Achilles heel of the advanced cockpit. Aviation literature is fuelled by anecdotes which point to deadly areas of weakness in spite of overall systemic strength within the human-machine interface.

Interesting results were revealed in the survey items which gauged these phenomena.

2.4 *'Advanced cockpit systems can get you into trouble just as easily as they can get you out of trouble.'; 'Advanced cockpit systems are becoming too complicated.'; 'The advanced cockpit does not make good use of my basic piloting skills.'*

An average number of participants agreed with the first statement (36%). Similarly an average number of respondents in the sample indicated that they disagreed with the second and third items respectively (30% to 36%). However, the large proportion of respondents who were unsure or disagreed within this statement cluster, points to overall uncertainty in our industry. As pilots in South Africa are slowly introduced to systems commonplace in other parts of the world and become more familiar with these systems, they are beginning to discover the nuances of advanced avionics. Only through experience can the systemic weaknesses reveal themselves to the operator. Additionally, an unfortunate paradox exists, both globally and locally. Difficulty in education and training arises because the proposition that more exposure to technology results in familiarity and general well-being is commonly accepted by scholars; and we are beginning to find that the group which can



benefit the most are often not in a position to attain the required experiences so as to grow with technological advancements. The private pilot is one specific group which is extremely vulnerable in such a situation, where not only competence, but money and time begin to play an even more important role in issues critical to safety.

Conclusion

The overall results of this specific topic in the University of Pretoria's probe, suggest that GA pilots in South Africa have a generally positive attitude towards advanced cockpit systems as opposed to a similar sample from Australia. An analysis further advocates that perceptions may be influenced by a pilot's flight experience and in particular by increased experience in glass-type cockpit aircraft. However, greater experience seems to be associated with greater concerns about the complexity of the advanced cockpit system. These concerns can be addressed to a degree through structured "glass-cockpit" type education, training and assessment programmes spearheaded by the local regulatory authorities.

Many GA pilots operate their aircraft in single pilot operations. Having an advanced cockpit system such as a panel-mounted GPS, or an autopilot, can radically enhance control and situational awareness. However, incorrect application, misuse and abuse of technology can also prove to be fatal. These feelings are indicative of response trends to items which reflect the attitude that advanced computerisation can get a pilot into trouble. Complexities and automation issues are generally noticed by the more experienced pilots who have had more time in both conventional and advanced cockpits.

Loss of manual flying skills is a core human factor problem, and has been cited in many research studies analysing aircraft automation issues. The result of an examination into this human factor phenomenon shows very neutral responses for our sample frame. This may indicate that pilots are unsure of the extent of their loss of skill. A pilot can only demonstrate skill during adverse situations, such as loss of systems. With advanced cockpit aircraft having a high level of reliability, the probability of this occurring is low and therefore very little experience in this area may be found. Only Part 121 operators are required by law to undergo yearly flight simulator training, which may give a pilot an idea of his rate of skill loss (or no loss). This is not possible in general aviation and in particular for light aircraft pilots. With this in mind, it is recommended that GA pilots gauge their manual flying skills in flight simulators and real life as often as feasibly possible, and also practice the operation of advanced aircraft systems (such as GPS, autopilot, etc.) on desktop computers (with the relevant software, where applicable). Only by understanding one's own limitations, can one be a more effective, efficient and most importantly, safer pilot.

The findings of the study conducted by the University of Pretoria further suggest that cognitively, there has been a change from a largely intuitive, correspondence-based task, to a primarily analytical, coherence-based task. In reviewing other, similar studies on a lack of awareness in automated systems, conclusions drawn now point to the difficulty in changing from being a passive participant to being an active participant when the need arises. Thus, the appropriate level of automation should be used for specific phases of flight. South African pilots in GA should now be educated in the philosophy involved in automation levels found within the human-machine interface.

**Did you know
that the SACAA
has implemented
a new penalty
system as from
1 June 2011?**



**IN TERMS OF PART 185.00.3
OF THE CIVIL AVIATION REGULATIONS,
INSPECTORS AND AUTHORISED
OFFICERS ARE EMPOWERED
TO IMPOSE ADMINISTRATIVE
MONETARY PENALTIES FOR OFFENCES
REFERRED TO IN PART 185.00.1.**

**Be informed
and comply!**

Visit the SACAA
website at
www.caa.co.za
to view the full Regulation.

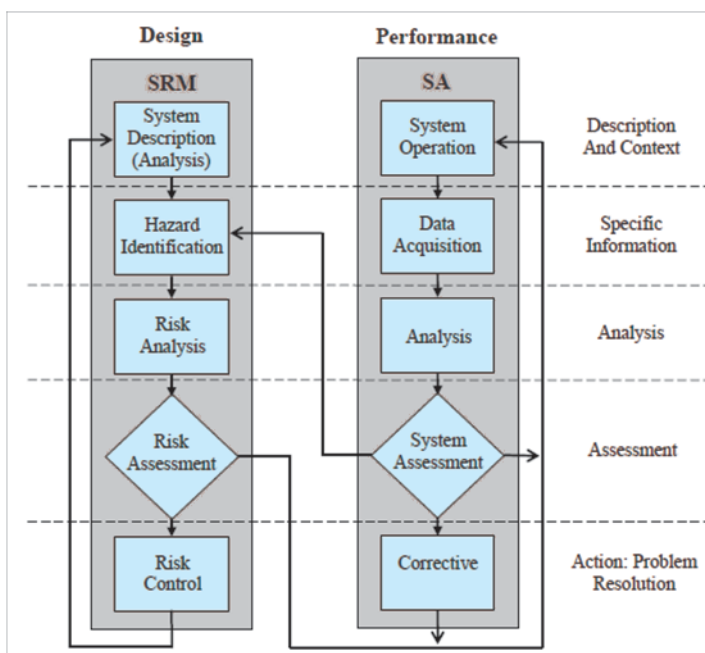


SMS – Safety Assurance

By Sibusiso Ketwa

Welcome to another SMS guide, brought to you by the SMS desk of the South African Civil Aviation Authority. In the previous issue we discussed the second component of the SMS which dealt with Safety Risk Management (SRM) which includes hazard identification and risk analysis and mitigation. In this issue we will look at the next component, which is Safety Assurance (SA).

Safety assurance is the SMS process management functions that systematically provide confidence that organisational products/services meet or exceed safety requirements. The objective of safety assurance is to implement dedicated surveillance and documenting procedures and processes in order to ensure that risks are being properly managed.



Safety assurance activities are at the core of the safety management system (SMS) that service providers would implement in order to meet ICAO SARPS and regulatory requirements. It is the means to demonstrate that organisational arrangements and processes for safety achievement are properly applied and continue to achieve their intended objectives.

According to the ICAO Doc 9859 – Safety Management Manual, safety assurance includes the following activities which are discussed in detail:

- ▶ Safety performance monitoring and measurement
- ▶ Management of change
- ▶ Continuous improvement of the SMS.

SAFETY PERFORMANCE MONITORING AND MEASUREMENT

SMS regulations require that service providers shall develop and maintain the means to verify that the safety performance of the organisation complies with the safety policy and objectives, and to validate the effectiveness of safety risk management. This is achieved by monitoring and measuring the outcomes of activities by operational personnel for the delivery of services by the organisation.

Regulatory requirements related to safety management and the implementation of SMS mandate aviation service providers to develop and maintain the means to verify the safety performance of the organisation. Safety performance monitoring enables continuous monitoring and regular assessment of the safety levels achieved by an organisation during service delivery. The safety performance shall be verified with reference to the safety policy, approved safety objectives and safety and performance targets using dedicated safety performance indicators. Trends should be analysed and consequently, corrective actions should be identified after detecting any deterioration of specified safety levels.

Information for safety performance monitoring comes from various sources, such as:

- ▶ Safety audits and informal inspections
- ▶ Safety surveys
- ▶ Safety occurrence reporting
- ▶ Safety studies
- ▶ Safety reviews.

The size and structure of the organisation and the operational environment have to be considered when setting up safety monitoring arrangements in the organisation. The following basic steps are suggested for establishing effective safety monitoring and measurement processes:

1. Identification of indicators to be monitored

The scope of monitoring should cover operational, technical and organisational safety management aspects. Safety indicators can be quantitative or qualitative, proactive or reactive.

2. Collation of the information for safety monitoring

There should be a systematic collation and evaluation of results from all safety monitoring activities to ensure that interrelationships can be detected.

3. Analysis of indicators

The evolution of the indicators should be analysed, and trends and related causes and influencing factors established.

4. Application of corrective action process

Corrective actions should be determined, taken and followed up wherever the monitoring shows that an element is approaching a point which may affect safety to an unacceptable extent; coordination with relevant units/organisations should take place wherever necessary; and the indicators and their evolution should be documented as well as actions taken and their results.

MANAGEMENT OF CHANGE

This activity involves developing and maintaining a formal process to identify and manage the changes within the organisation which may affect established processes, procedures, products and services. The management of change should ensure that the required safety performance is achieved by reducing or eliminating the safety risks resulting from the

changes in the organisation, the provision of services or in the operational environment.

Aviation organisations experience permanent change due to expansion; contraction; changes to existing systems, equipment, programmes, products and services; and the introduction of new equipment or procedures. Hazards may unconsciously be introduced into an operation whenever change occurs. Safety management practices require that hazards that are a by-product of change should be systematically and proactively identified and appropriate measures to manage the safety risks of the consequences of hazards should be identified, implemented and subsequently evaluated.

A change can introduce new hazards; impact the appropriateness of existing safety risk mitigation strategies and/or impact the effectiveness of existing safety risk mitigation means.

A formal process for change management should take into account the following three considerations:

1. Criticality of systems and activities.

Criticality relates to the potential consequences of equipment being improperly operated or an activity being incorrectly executed — essentially answering the question, “how important is this equipment/activity to safe system operations?” While this is a consideration that should be made during the system design process, it becomes relevant during a situation of change. Equipment and activities that have higher safety criticality should be reviewed following change to make sure that corrective actions can be taken to control potentially emerging safety risks.

2. Stability of systems and operational environments.

Changes may be the result of programmed change such as growth, changes in contracted services, or other changes directly under the control of the organisation. Changes in the operational environment are also important, such as economic or financial status, changes in political or regulatory environments, or changes in the physical environment. While these factors are not under the direct control of the organisation, it must take action to respond to them.

3. Past performance.

Past performance of critical systems is a proven indicator of future performance. Trend analysis in the safety assurance

process should be employed to track safety performance measures over time and to factor this information into the planning of future activities under situations of change. Moreover, where deficiencies have been found and corrected as a result of past audits, evaluations, investigations or reports, it is essential that such information is considered to assure the effectiveness of corrective actions.

A formal change management process should identify changes within the organisation which may affect established processes, procedures, products and services. All necessary arrangements to ensure safety performance should be identified and described prior to implementing changes. The result of this process is the reduction in the safety risks resulting from changes in the provision of services by the organisation to a level which is as low as reasonably practical (ALARP).

CONTINUOUS IMPROVEMENT OF THE SMS

The objective of this activity is to identify the causes of sub-standard performance of the SMS, determine the implications of sub-standard performance in operations, and eliminate such causes.

Assurance builds on the principle of the continuous improvement cycle. In much the same way that quality assurance facilitates continuous improvement in quality, safety assurance ensures control of safety performance, including regulatory compliance, through constant verification and improvement of the operational system and services. These objectives are achieved through the application of similar tools: internal evaluations and independent audits (both internal and external), strict document control and ongoing monitoring of safety controls and mitigation actions.

Internal audits have proven to be an important tool for managers, used to obtain information with which to make decisions and to keep operational activities on track. Thus internal audits provide an essential tool for safety assurance, to help managers in charge of activities supporting the delivery of services to control that, once safety risk controls have been implemented, they continue to perform and are effective in maintaining continuing operational

safety.

External audits of the SMS may be conducted by the regulator (SACAA), customer organisations, or other third parties selected by the organisation. These audits not only provide a strong interface with the oversight system but also a secondary assurance system.

Continuous improvement of the SMS thus aims at determining the immediate causes of below-standard performance and their implications in the operation of the SMS, and rectifying situations involving below-standard performance identified through safety assurance activities. Continuous improvement is achieved through internal evaluations, internal and external audits namely:

- ▶ Proactive evaluation of facilities, equipment, documentation and procedures, for example, through internal evaluations;
- ▶ Proactive evaluation of an individual's performance, to verify the fulfilment of that individual's safety responsibilities
- ▶ Reactive evaluations in order to verify the effectiveness of the system for control and mitigation of safety risks, for example, through internal and external audits.

In conclusion, continuous improvement can occur only when the organisation displays constant vigilance regarding the effectiveness of its technical operations and its corrective actions. Indeed, without ongoing monitoring of safety controls and mitigation actions, there is no way of telling whether the safety management process is achieving its objectives. Similarly, without monitoring, there is no way of measuring if an SMS is fulfilling its purpose with efficiency.

For more information, feel free to contact the SMS desk at rqc@caa.co.za

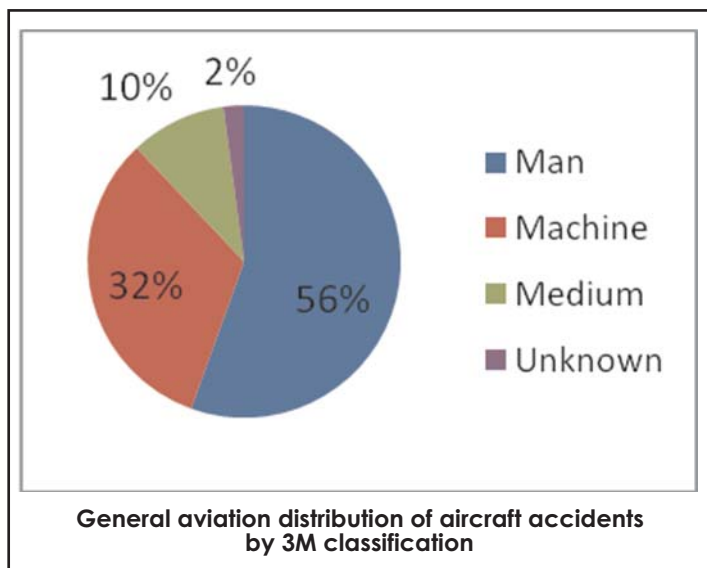


A Little Statistical Introspection

By General Des Barker

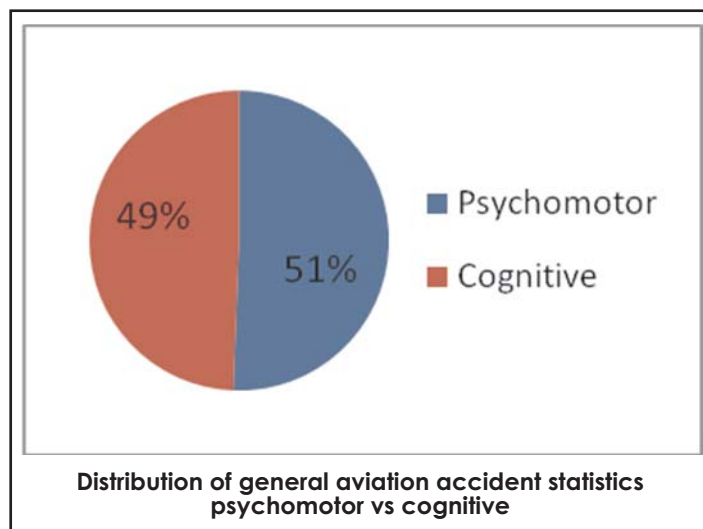
At the best of times, statistical analyses can pose problems and questions for which the answers are not self-evident and require additional interrogation; statistics dealing with human factors, are a case in point.

As an illustration, consider the breakdown of a population sample of 2310 accidents/incidents that occurred in South Africa over an 11-year period from 1999 to 2010. Classified in terms of MAN, MACHINE and MEDIUM; MAN was involved as the primary causal factor in 56% of the accidents. If one delves deeper, and further classifies MAN's contribution in terms of psychomotor (handling skills) vs cognitive (decision-making) errors, the surprising result approximates a draw, Psychomotor = 51% and Cognitive = 49%. This is true for both fixed and rotary wing aircraft. The question then is, whether the 51:49 ratio is a true reflection of man's challenges in achieving flight or, is it an indication of problems within the general aviation community? What do you think the ideal distribution should be?



One would have thought that since man was not designed to fly, the major proportion of accidents would fall within the realm of 'psychomotor'. Our ability to deal with flying an aircraft requires regular exposure to handling an aircraft to prevent skills decay; we need to maintain our 'feel' for flying an aircraft, the finer touches in pitch, roll and yaw under varying airspeeds and changing environmental conditions of winds, turbulence, gusts and shear. Our ability to consistently judge speed, height, and closure rates, etc. is extremely fickle and requires regular practice to 'keep our hands in'. With this in mind, surely the most difficult part of flying is then, the psychomotor realm. Decision-making should be the easy part, not so?

There is a strong belief that as an aviation community, we have vastly improved the theoretical knowledge and flying standards over the years to such an extent that the cognitive type of accident should be rather rare – we are supposedly a lot more professional today than our forefathers were! We know a vast amount more, we sit for major examinations and get issued with flying licences indicating that we have passed 'world standard' theoretical examinations. Our flying schools all advertise 'best practice, best standards', which implies that general aviation pilots graduating to 'wings standard', should be capable of high standards of cognitive behaviour and as such good judgement and decision-making should prevail. We should therefore not be reading accident reports of pilot error, fuel mismanagement, wheels up landings, unauthorised low flying and other such classifications showing scant regard for aviation regulations and procedural compliance.



But, alas, this is not the true state of affairs. The cognitive errors and those of psychomotor nature are approximately equal. The cognitive realm accidents are inordinately high. Could this phenomenon be traced back to poor basic training, poor discipline and attitude? Could it be traced back to a lack of professionalism?

South Africa's thought leaders in general aviation should seriously interrogate this statistical distribution, since unlocking the correct answer to this question, could just leverage an improvement to aviation safety in South Africa, with the nett result of saving lives and millions of rands annually.

Aviation Calendar 2011

Date: 2 July 2011
Event: SILVER QUEEN AIR RALLY
Organiser: Sydney Fryer
E-mail: sf@moboxgroup.com
Number: 012 345 4007 / Cell: 083 703 6565

Date: 15 - 16 July 2011
Event: Durban Air Show
Organiser: John Neilon
E-mail: john@eastcoastsa.net
Number: 082 485 5514

Date: 6 - 9 Aug 2011
Event: EAA CONVENTION, East London
Organiser: James Wardle
E-mail: jgmj@absamail.co.za
Number: 082 639 0395

Date: 6 - 9 August 2011
Event: Jabiru Jaunt (Battlefields Natal)
Organiser: Sias Truter
E-mail: sias@dibsa.co.za
Number: 044 873 0660
Cell: 083 456 4813

Date: 13 August 2011
Event: Tzaneen Airshow
Organiser: Eddie Vorster
Number: 083 294 2225

Date: 20 August 2011
Event: Secunda Airshow
Organiser: Hannes van Heerden
Number: 082 577 6581

Date: 26 - 27 August 2011
Event: Bethlehem Airshow
Organiser: Derek O'Connor
E-mail: derek@erwil.co.za

Date: 1 - 4 September 2011
Event: Barberton Airshow
Organiser: CC Pocock
E-mail: cc@bushair.co.za
Number: 082 490 5721

Date: 10 - 11 Sept 2011
Event: Vereeniging Air Show
Organiser: Sarie van den Berg
E-mail: sarie@vereenigingairshow.co.za
Number: 083 449 3378

Date: 24 September 2011
Event: Swaziland Airshow
Organiser: Lyndon Hermansson
E-mail: swazilandairshow2009@realnet.co.sz
Number: 00268 7 6044310

Date: 1 October 2011
Event: SAAF AFB Waterkloof Airshow
Organiser: Chris Stroebel
E-mail: stroebel@yahoo.com
Number: 083 415 7538

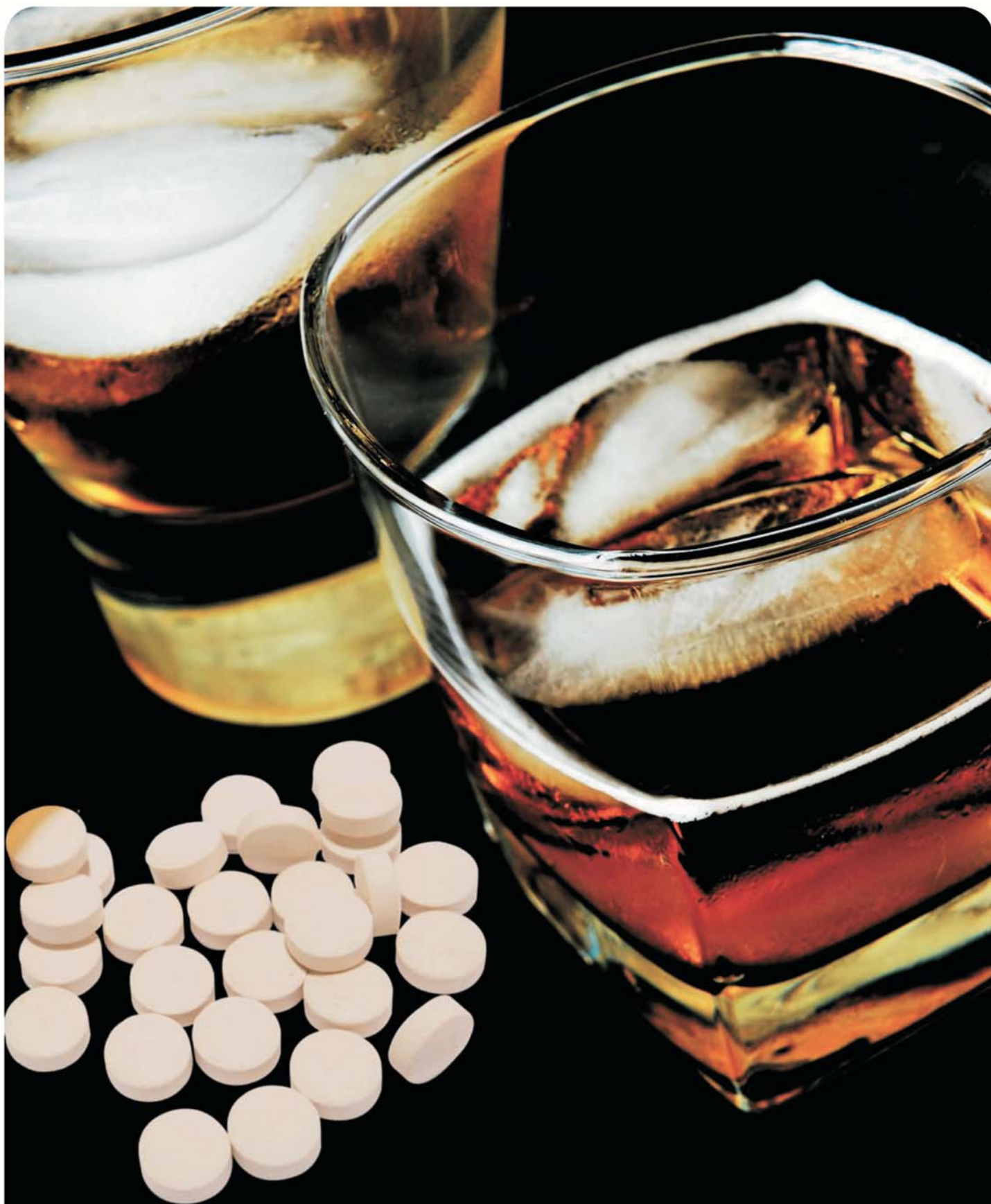
Date: 7 - 8 October 2011
Event: Kalahari Fly-In
Organiser: Helgaard Botha
E-mail: kpsmarketers@hotmail.com
Number: 088 4354815

Date: 15 October 2011
Event: Stellenbosch Airshow
Organiser: Lee Holmes-Shutte
E-mail: lee@creativespacemedia.co.za
Number: 083 351 8580

Date: 29 October 2011
Event: Lesotho Airshow
Organiser: Makhabane Molapo
E-mail: gabbi@homemail.co.za
Number: 079 982 6826

Date: 9 - 10 December 2011
Event: Ysterplaat
Organiser: Lt. Col G Nell
Number: 021 508 6101
Website: www.wingsandwheels.co.za





**The use of certain substances
will impair your flying abilities.**

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SOUTH AFRICAN



CIVIL AVIATION
AUTHORITY

Puzzle

Basic Aircraft towing In and Out of Hangars

- i) Use two (1)..... while moving aircraft in and out of hangars along with tug operator as towing supervisor.
- ii) (2).....completes an area (3)..... risk assessment before moving aircraft.
- iii) Perimeter floor (4)..... indicates (5)..... of aircraft Parking (6) near hangar walls.
- iv) Overhead doors systems should have a (7)..... inspection process.
- v) Hangar doors must have (8)..... methods to

- prevent door (9)..... due to (10)..... or strong (11).....
- vi) Aircraft wings should not (12)..... other aircraft.
- vii) Hangar doors should be (13)..... open before aircraft movement.
- viii) Aircraft should not be moved through (14).....
- ix) Floor or ramp markings indicate the best aircraft parking and towing lines for (15)..... and (16)..... from hangars.

X	D	U	F	E	Y	M	O	V	S	L	U	X	O	G	P	A
A	W	I	N	G	W	A	L	K	E	R	G	T	L	H	J	W
T	U	N	X	&	E	R	F	G	C	W	H	O	Z	K	Q	I
D	I	S	C	Y	P	K	W	B	U	F	B	W	I	N	D	L
Q	L	P	A	E	X	I	T	N	R	X	W	I	Q	B	M	X
C	B	E	D	H	L	N	K	Q	I	V	Y	N	W	F	C	H
F	T	C	G	K	W	G	C	D	N	J	K	G	D	X	V	F
Y	G	T	M	Y	B	S	I	M	G	E	T	T	S	A	E	Y
O	E	I	Q	I	P	L	D	S	W	T	P	E	X	Z	G	J
C	L	O	S	U	R	E	O	X	D	B	X	A	V	C	A	K
G	X	N	M	H	O	D	I	F	G	L	I	M	I	T	S	O
N	J	I	W	J	P	H	R	D	R	A	D	Q	Y	S	P	L
K	L	P	M	Q	E	Z	E	E	H	S	K	S	K	W	A	P
Q	O	V	E	R	L	A	P	T	J	T	P	X	H	Q	C	D
G	W	L	H	X	L	P	K	H	N	F	E	Z	L	B	E	C
Q	A	S	X	B	E	T	U	Y	O	L	M	I	D	P	N	Z
X	P	E	N	T	R	Y	W	E	A	B	Q	I	U	W	X	J
S	F	X	P	S	A	K	X	I	Y	G	G	M	F	I	R	Q
G	B	W	O	A	R	I	T	S	U	S	F	P	R	D	F	R
B	N	K	C	F	C	P	I	W	F	Z	V	Q	S	L	K	T
V	M	L	I	L	S	X	P	Q	M	H	E	D	J	G	L	P



Answers: 1 wing walkers, 2 towing team, 3 inspection, 4 markings, 5 limits, 6 space, 7 periodic, 8 securing, 9 closure, 10 jet blast, 11 wind, 12 overlap, 13 fully, 14 propeller arcs, 15 entry, 16 exit

Are you ready for this year's National Safety Seminar?

Notice is hereby given that the South African Civil Aviation Authority's (SACAA) 5th National Safety Seminar will be held on 19 October 2011 at Birchwood Executive Hotel in Boksburg. Registration will take place from 07:30.

Please note that attendance is by invitation only.

.....
The proposed theme for this year's seminar is:
"Working together towards reducing the accidents and incidents rate by half in 2014."
.....

The seminar is one of the various tools that the SACAA utilises to communicate with the industry and to address pressing issues. It also provides a good platform for the



industry to ask questions because the seminar allows for instant feedback.

In 2010, the seminar was held at Midrand Conference Centre and was well attended and received by industry role players. It had significant value for both delegates and the SACAA because not only the delegates were able to draw insight from the SACAA; the opposite was also true, as the SACAA received insight from delegates.

Members of the industry can look forward to a full programme, again aimed at addressing civil aviation safety issues in 2011.

If safety is your concern, read this...

In an endeavour to carry out our mandate of promoting aviation safety and security, CAA undertakes safety awareness presentations at flying clubs and related entities.

The objective of the presentations is to educate the members of the clubs about the common causes of accidents and appropriate prevention habits and activities.

Should your forum wish to invite us for a safety presentation, please do not hesitate to contact Pearl Mojapelo at mojapelop@caa.co.za or Elliot Mohlakore at mohlakoree@caa.co.za.

Frequently asked questions

Question: How can I be assured that my identity will be protected?

Reply: When you call the Tip-offs Anonymous contact centre you are not required to give your name or any personal details. Secondly, there is no caller identification so we do not know from where the call was made. Even though we record all the calls, SACAA will never have access to the recordings so no-one will be able to identify your voice. We also have 'Duty Evaluators' on site who 'sanitise' every call, which means that they strip out any information that could lead to the identity of the caller, so your company only gets a very factual report of the alleged wrong-doing with no additional information.

Question: How do we know that anything will be done about the information that we might forward?

Reply: Top management is committed to ensure that Tip-offs Anonymous is successful and part of the success is to ensure that all tip-off reports are followed up - they would not be going to so much effort if they were not committed to the service. Be assured that reports will be investigated, but you will not be informed as to how the investigation is progressing as these investigations are sensitive and need to be kept confidential. If a report leads to an investigation which leads to a prosecution, you may be informed at that stage.

Question: What happens if someone does not like someone else and uses the line to spread harmful stories (malicious call)?

Reply: Yes, this is a possibility and we are very aware that this can happen. Firstly, if there is malicious intent, one does not need this hotline to spread it - you can spread a rumour in the canteen or put a letter under someone's door. However, all our agents are trained to identify a malicious call and so are our duty evaluators. We filter these calls and flag them as malicious when we forward them. When these reports are read by SACAA management they are read in the light that they could be malicious. Also remember that a tip-off is merely an allegation of wrong doing and proper evidence and proof has to be obtained, before any action can be taken.

Help us soar to greater heights...

Report corruption, fraud, theft and dishonest behavior to Tip-offs Anonymous



SOUTH AFRICAN



CIVIL AVIATION
AUTHORITY

FreeCall:

0800 997 263
sacaa@tip-offs.com

Call the Tip-offs Anonymous® confidential, free hotline with any information you may have regarding fraud, corruption or other workplace crime.

FreeFax: 0800 00 77 88

FreePost: KZN 138, Umhlanga Rocks, 4320

Website: www.tip-offs.com

Deloitte.

Question: Is there a reward given to the person that makes a tip-off?

Reply: No and we at Tip-offs Anonymous discourage the reward scheme. We believe that the reporting of any wrongdoing is the responsibility and duty of an employee of an organisation. The 'reward' to the employee is knowing that he/she is working for an organisation that is serious about it's business and wants to protect the organisation, for the sake of all employees of the organisation. Your reward is job security and a secured work environment. Further, we believe that a reward scheme attracts the incorrect attitude to the Tip-offs service - more the 'witch hunt' approach, which is not the purpose of Tip-offs Anonymous.

Question: Why do the call centre agents ask me questions?

Reply: The call centre agent will ask you question in order to obtain the necessary information for investigation. Callers usually have valuable information of which they are not aware, our call centre agent will ask you these probing questions to guide you through the reporting process.

Question: What is the tracking/ reference number used for at the Contact Centre?

Reply: The tracking number is your reference number that relates to the incident that you have reported. Should you wish to add more information to a report at a later stage, you can call back and quote the reference number and just give the agent the additional information. This reference number is yours alone (do not give it to someone else to follow up on your report), this is to ensure that your identity is protected.

Question: Can staff follow up on investigations?

Reply: Generally an investigation is confidential and takes some time to complete so in most cases information relating to the investigation will not be available to the person who made the tip-off. Should an investigation lead to a prosecution, arrest or dismissal then the staff may be informed or you will notice that the person/s is no longer amongst you.



Fraud, crime

and **theft** are an **increasing problem** in South Africa.

Too often, it is undetected and goes unreported, resulting in financial losses to companies, eventually to the detriment of all their employees.

South African Civil Aviation Authority (SACAA) is no different. We are committed to conducting healthy business practices with honesty and integrity, which will not only ensure a stable employment environment for everyone but also ensure the continued future success of SACAA. For this reason, SACAA has subscribed to a service that will enable all stakeholders, but most specifically everyone who is employed by SACAA, to report anonymously on dishonest colleagues. The service, Tip-offs Anonymous, involves the professional services firm of Deloitte and is therefore totally independent of SACAA. No one will therefore ever know who reported the fraud or dishonest and inappropriate behaviour.

What can be reported?

Any wrong doing

Theft, Fraud, Crime Syndicate Activities, use of Ghost Employees

Not obeying company policies or procedures

- Over-riding controls
- Sharing of user ID's or access passwords or codes

Not obeying the law

- Alcohol/Drug abuse
- Use of Non-Roadworthy vehicles

Bribery and corruption

- A supplier offers a kickback to the employee to gain the tender
- Client offering a kickback for a licence or a certificate
- Collusion with internal and external parties

Abuse of company property and equipment

- Excessive personal calls on company's telephone
- Use of the internet, fax machine and company equipment to run your own business
- Abusing company tools, equipment, and chemicals

Theft of time

- Exaggerations or incorrect information on Timesheets, or Attendance Registers
- Extended lunches
- Prolonged personal calls
- Running your own business during work hours
- Misleading the employer on your whereabouts

Highly sensitive issues

Sexual Harassment, Nepotism, Racism

How does it work?

Anyone can contact Tip-offs Anonymous using the following means of communication:

Free call: Free from any Telkom line within South Africa.

Free fax: This is a confidential faxline.

Email: Information can be emailed through to Tip-offs Anonymous through your unique tip-offs email address.

Post: This is a free post where you are able to write to us and provide us with information pertaining to your tip-off.

Website: The website will lead to a page where you are able to make a tip-off.

Note: emails and telephone records can be traced within your company, please be advised to use an external location to contact us to ensure your anonymity. To be more safe when sending a Tip-off via email, create a temporal email address on yahoo, gmail, etc.

- Trained operators, using sophisticated contact centre equipment, will respond to calls in all 11 official languages, 24 hours per day, 365 days per year.
- Operators will interview callers, probing for specific facts so as to record as much information and understand things as clearly as possible.
- The information is then analysed and forwarded to designated senior officials of the company who will decide on corrective action to be taken.
- Although you may choose to tell Tip-offs Anonymous who you are, the Tip-off report will **never reveal your identity** or even your gender (unless you choose your identity to be made known to the company!).

For more information on Tip-offs Anonymous please contact the Deloitte Contact Centre.