



NATIONAL AVIATION SAFETY CONFERENCE

SAFETY – THE PILLAR OF SUSTAINABILITY

Georgetown, 26 – 27 October 2017

Final Report

OPENING OF THE CONFERENCE

1. INTRODUCTION

1.1 The National Aviation Safety Conference 2017 (NASC-2017) was hosted by the Guyana Civil Aviation Authority in collaboration with the aviation industry in Guyana at the Pegasus International Hotel during the period 26-27 October 2017, under the theme “Safety – The Pillar of Sustainability”. The Ministry of Public Infrastructure supported the collaborative approach towards hosting the conference.

The GCAA has been making strides in improving Guyana’s level of safety compliance and in the implementation of international standards to which Guyana must comply as a signatory State to the Convention on International Civil Aviation. In this regard, Guyana’s compliance with ICAO moved from 44% to 64% after an assessment was conducted subsequent to the International Civil Aviation Organisation (ICAO) Coordinated Validation Mission (ICVM) in November 2016. However, within the last three months, the domestic aviation industry has witnessed three aircraft accidents within the hinterland regions, two of which were fatal.

The NASC-2017 was organized to emphasize the critical importance of safety by all stakeholders, as the very sustainability of the industry is threatened if the sector is not safe, particularly considering the recent aircraft accidents.

Moreover, the NASC-2017 sought to bring together investors, aviation safety managers, pilots, engineers, aviation experts/consultants and strategic decision-makers of the aviation sector in Guyana to create an opportunity to build consensus, obtain commitments and formulate recommendations deemed necessary for the enhancement and preservation of safety. The conference also aimed to educate and empower participants on relevant and current issues such as human factors, quality assurance and other pertinent areas that are of pressing concern to the Guyana aviation sector.

2. OPENING CEREMONY

2.1 The conference was opened by the Master of Ceremony. The various participants and represented organisations were bid a warm welcome. Safety's role as the bedrock and pillar of the aviation industry was underscored.

2.2 Keynote speakers were Lt. Col (Ret'd) Egbert Field, Director General of the Guyana Civil Aviation Authority; Hon. Annette Ferguson, MP, Minister within the Ministry of Public Infrastructure; and Hon. Moses Nagamootoo, MP, Prime Minister, Cooperative Republic of Guyana.

3. ATTENDANCE

3.1 The two-day conference was attended by over 250 persons from Guyana's aviation industry. The attendees and represented organisations included Air Traffic Controllers, Air Traffic Control Assistants, Aeronautical Information Officers, students of the Air Services Flight Training School, students and instructors of the Art Williams & Harry Wendt Aeronautical Engineering School, Caribbean Aviation Maintenance Services, Guyana Defence Force, and both local and international operators. A full list of the agencies can be found in Appendix 2.

SUMMARY OF DISCUSSIONS

1. AIRCRAFT ACCIDENTS AND INVESTIGATIONS IN GUYANA

1.1 In the first session of the conference, it was observed that prior to the establishment of the Guyana Aircraft and Accidents and Investigation Unit (GAAIU), the Aviation Safety Regulations Directorate investigated aircraft accidents. It was noted that accident investigations should be independent, and conducted outside of the input or guidance of the GCAA.

1.2 The conference was made aware of the existing need for an enhanced organizational safety culture among air operators in Guyana. The operator is responsible for establishing a safety culture within his/her organisation, and must promote care and concern for hazards across the workforce. Air Operator Certificate (AOC) holders must maintain at least the minimum standards that were in place at the time that they received their AOC. It was acknowledged that human error is a major contributor to aircraft accidents, as such, it was noted that crew resource management should be give more emphasis.

1.3 During the ensuing discussions, the conference acknowledged that pilots occasionally operate in a hazardous environment with limited air traffic control services outside of the 75-mile radius boundaries and with insufficient availability of scientific aviation weather systems to assist pilots in their decision-making process when operating aircraft. The conference also noted the current lack of effective airstrip security management as well as the limitations of the present search and rescue system.

1.4 The representatives of the United States National Transportation Safety Board (NTSB) offered the assistance of their agency with regards to accident investigations.

2. SINGLE PILOT CREW RESOURCE MANAGEMENT

2.1 The concept of Crew Resource Management (CRM) was presented to the conference. It was noted that Crew Resource management should be incorporated into training for all pilots, and pilots should always remember the 5 P's. The conference also noted that in a single crew aircraft the pilot may use the passenger as a resource element, particularly in critical situations.

2.2 With regards to the efficiency of weather reports from interior locations, the conference was updated on the work of the GCAA: the GCAA is currently working to resolve the issue of unreliable weather reports and, in this respect, had concluded an MOU with the Meteorological Centre for the provision of weather information to the GCAA. The conference also noted that weather applications exist which may be used on mobile phones and can be used to share information among the different operators about the aerodromes.

2.3 The conference acknowledged that workload management is also taught in CRM which enhances safety by prioritizing. In this regard, it was noted that training is paramount to staying alive and so pilots should be trained to maintain aircraft situation awareness.

3. HUMAN FACTORS AND AVIATION SAFETY IN GUYANA

3.1 With regards to human factors in aviation safety, it was acknowledged that Guyana's interior is a difficult environment in which to operate, given its mountainous terrain and tropical weather. It was posited that 80% of aircraft accidents and incidents are due to human factors and so it is paramount to understand the human, machine, and environmental factors with regards to aviation safety.

3.2 In relation to human factors in aviation safety, the importance of seeking out the underlying causes of human factor errors and learning from same were underscored at the conference.

3.3 The conference reviewed the different types of factors which may eventually culminate in unsafe acts or active failures, including organizational influences, supervisory factors, and preconditions for an unsafe act. These are also referred to as latent failures.

3.4 Active failures were also discussed at the conference. Active failures may emerge as a result of aircraft failures, whether electrical or mechanical in origin, or as a result of external factors such as ATC errors, airport operator errors, flight crew errors, or maintenance errors.

3.5 Planning errors, too, were emphasized as being associated with unsafe acts. The conference was cautioned against committing the various types of planning errors which include, inter alia, crew assignment errors, fuel planning errors and emergency management errors.

3.6 Safety violations, as deliberate deviations from rules, procedures and instructions also formed part of the discussions.

3.7 Noting the absence of a National Airport Authority in Guyana, the conference discussed the current capacity limitations at Guyana's airports as well as its implications for the expected increase in air traffic resulting from the growth of the fledgling oil industry.

4. INTERNATIONAL ACCIDENT INVESTIGATION – DEVELOPING SUPPORT FROM ACCREDITED REPRESENTATIVE IN THE COURSE OF INVESTIGATIONS

4.1 The conference reviewed the Gates Learjet 24F aircraft accident and investigation by the NTSB that occurred on January 9, 2007 in Guadalajara, Mexico. The conference noted the similarities between the factors surrounding that accident and the existing conditions within Guyana's aviation environment.

4.2 The conference also considered the extant difficulties when attempting to mitigate risks associated with a particular type of operation. The conference also reviewed the SPANAIR MD-82 (EC-HFP) aircraft accident which occurred at the Madrid Barajas International Airport in 2008 and the ensuing investigation that was undertaken by the NTSB. The conference was then asked to consider the current aircraft accident investigation system and ways in which it can be improved.

4.3 The conference was presented with a review of the circumstances which led to the McDonnell Douglas MD-11F cargo flight aircraft accident at the Narita International Airport in Narita, Japan in 2009. The conference was also presented with a brief explanation of the NTSB's holistic approach to the MD-11 accident investigation: they had considered similar accidents involving that particular aircraft type in the conduct of the investigation.

4.4 Then, the conference reviewed the Dana Air Boeing MD-83 aircraft accident which occurred in Nigeria in 2012. The crash was particularly deadly; all passengers and crew members on board perished. The history of the flight and the circumstances surrounding the condition of the aircraft were examined. The conference also briefly reviewed the 2009 American Airlines Boeing 737 aircraft accident in Kingston, Jamaica. The aircraft overran the runway upon landing, however there were no fatalities.

4.5 With regards to capacity building and self-sufficiency in aircraft incident and accident investigations, the conference was made aware of the current efforts to formulate the Caribbean Accident and Investigation Unit. This unit is currently being developed by CARICOM and is slated to draw on the resources of the various CARICOM Member States upon its existence. The unit's formation is tentatively scheduled to be completed before year-end.

4.6 The conference noted that the aircraft accident investigation process is vital to ensuring the safety of the industry. In this regard, the conference also noted that supporting infrastructure and resources are necessary for effective investigations.

5. A WATERSHED MOMENT – DEVELOPING A SAFETY CULTURE

5.1 Under this item, the presenter noted that a safety culture must be fostered from the top-down within an organisation. A culture of speaking out against and reporting safety concerns should be encouraged; all levels of staff should be empowered to be involved in maintaining appropriate safety levels.

5.2 The conference was encouraged to confront the current safety climate in Guyana's aviation industry and to learn from past mistakes. In this same vein, the conference reflected on the recent spate of aircraft accidents and the resulting fatalities that occurred in Guyana.

5.3 Also, risk management was proffered as a key factor in building a safety culture within Guyana's aviation industry. The conference noted the steps in the risk management process: 1) identify, 2) assess, 3) review, 4) implement controls, 5) mitigate, and 6) monitor.

5.4 The conference recognized the importance of a just and non-punitive culture when attempting to foster a safety culture. The conference supported the protection of sources of safety information.

6. EFFECT OF SAFETY CULTURE ON CONTROLLED FLIGHT INTO TERRAIN (CFIT) RISK

6.1 This portion of the conference focused on the relationship between culture and CFIT accidents. CFIT was described as one of the least survivable types of accidents. These types of accidents were posited as the probable cause of many of the fatal accidents in Guyana.

6.2 The conference noted that LIAT and its subsidiaries have had two CFIT accidents in the past. The conference was treated to a brief description of the circumstances surrounding the accidents.

6.3 The presenter noted some of the common causes of CFIT accidents, and these include: deficiencies in the regulatory oversight of the operator, flight crew flying a non-standard instrument procedure, aircraft not equipped with a terrain awareness warning system, deficiencies in the operator's safety management system (SMS), and deficiencies in the operator's flight crew training system.

6.4 The conference, recognizing that it is the regulatory oversight body's function to set the minimum level of safety standards to protect the travelling public, acknowledged that it is the operator's obligation to keep their operations safe. The conference also recognized the main motivator of air operators to be economic success, and that safety is just a contributor that goal.

6.5 The conference was cautioned against complacency on the part of pilots who may be normalizing difficult situations in Guyana's interior locations. Pilots' motivators were also considered by the conference, including the financial needs of the pilots.

6.6 The conference noted that an excellent culture precludes losses from accidents and contributes to an enhanced reputation. The conference was also notified that culture is predictive of performance. The conference was encouraged to develop leaders that shape and embed such a culture within their organisations.

6.7 Operators were encouraged to opt-in to the IATA Standard Safety Assessment (ISSA) programme. This programme is a voluntary evaluation programme that is an extension of the IATA Operational Safety Audit (IOSA) Programme and is intended for operators of smaller aircraft. The conference reviewed the potential benefits of this programme which are inclusive of: entry into the ISSA Registry, improved marketing and commercial advantages for operators, and improved conditions for reduction of insurance premiums.

7. LOSS OF FLIGHT CONTROL

7.1 The conference was introduced to the work of the NTSB. The NTSB uses a Party System and its composition is limited to government agencies and companies whose employees, functions, activities or products were involved in the accident. Personnel comprising the party system must be suitably qualified technical personnel that actively assist in the investigation. It was also noted that no legal personnel are involved in the investigation.

7.2 With regards to investigations, the NTSB's preliminary reports of accidents/incidents are typically completed within 5 days, while the factual reports are usually completed within 6 months to one year. The determination of probable causes is published on the NTSB website.

7.3 Strategies to prevent loss of control of aircraft on the ground were presented to the conference. These various strategies include, inter alia, pilots' use of the FAA checklist to evaluate mental and physical fitness before each flight; frequently checking wind conditions and weather forecasts; and, incorporating go-around procedures for non-stable approaches into recurrent training.

7.4 The conference discussed the NTSB's existing mandate to include manufacturers on the Party System during investigations. In this regard, the FAA has automatic inclusion, and so the manufacturer is also included. The conference was also encouraged to invite operators with the requisite expertise to participate in investigations insofar as they lend objectivity to the investigation. The conference noted the NTSB's requirement for all investigators to be trained pilots, though with varying qualifications and skill sets.

RECOMMENDATIONS

8.0 RECOMMENDATIONS SUBMITTED:

8.1 Aircraft Accidents and Investigation

- a) There should be complete separation between the GAAIU and the GCAA;
- b) The GCAA and aircraft operators should collaborate to procure more navigational aids for airstrips;
- c) Reports on aircraft accidents and incidents should be made publicly available without the need for ministerial approval in the interest of safety as well as to facilitate transparency;
- d) The GCAA should act on findings emanating from accidents and incidents investigations;
- e) Airworthiness Directives should be issued by the GCAA;
- f) A code of ethics should be developed for air operators to initiate a positive change in the current safety culture and to facilitate a high level of integrity among pilots.

8.2 Human Factors and Aviation Safety in Guyana

- a) The GCAA should review and improve national aviation development and safety policies;
- b) The GCAA should recommend improvements to the national legislation, to the civil aviation regulations and to the implementing standards;
- c) Operators should review and improve company policies that affect safety;
- d) Operators should improve company manuals and standard operating procedures;
- e) Operators should improve national and company procedures;
- f) The GCAA should improve weather reporting, communication and navigation;
- g) The GCAA should ensure the training of personnel at remote aerodromes (initial, recurrent, and testing);

- h) Approved training organisations should improve pilot training (programme structure, scenario based, LOFT, etc);
- i) Improve pilot decision making (CRM, SRM, TEM and include as part of tests);
- j) Operators should discourage uncontrolled risk taking;
- k) Operators should improve aircraft equipment (terrain warning systems, ADSB, SATCOM);
- l) Operators should enforce mandatory use of minimum altitudes;
- m) Operators should act promptly to report and resolve known problems and deficiencies;
- n) Airports should engage in traffic forecasting based on historical traffic patterns as well as airport planning and management based on a Master Plan in order to prepare for future increases in air traffic;

8.3 International accident investigation – developing support from accredited representative in the course of investigations

- a) Apply non-conventional methods to aircraft accident and incident investigations, such as, having a non-expert aviation stakeholder as part of the investigation team to bring a fresh perspective to the investigations;
- b) Rethink processes so as to improve compliance with Annex 13;
- c) In the case of lengthy investigation reports, complete standalone recommendations as well as document operators' solutions/fixes to identified safety concerns prior to the publication of the full report;
- d) Operators, through the relevant Government agencies, should attempt to establish a better liaison between Guyana and the FAA in order to garner assistance and/or resources in the area of forensic pathology in the case of aircraft accident fatalities;

8.4 A Watershed Moment – Developing A Safety Culture

- a) Operators should foster a safety culture at all levels within the organisation; everyone should be made responsible for safety;

- b) The GCAA should further collaborate with the aviation industry to work together on shared safety goals;
- c) Operators should emphasize continuous training and development on aviation safety;
- d) The GCAA should engage in a regulatory review in an effort to strengthen safety within the industry;

8.5 Effect of Safety Culture on Controlled Flight into Terrain (CFIT) risk

- a) Operators should consider the adoption of the Human Factors Analysis and Classification System (HFACS) framework to systematically identify active and latent failures within the organisation that culminated in accident;
- b) Operators should improve pilot training (i.e. weather briefing, equipment, decision-making, wire and tower avoidance, and human factors) to prevent CFIT accidents;
- c) Operators should eliminate pressure to complete flights where continuing may compromise safety;
- d) There should be an improved safety culture within the aviation community;
- e) Operators/GCAA should develop and distribute mountain flying technique advisory material;
- f) Operators should undertake risk assessments prior to flight dispatch in order to enhance decision-making;
- g) Operators/GCAA should have a stabilized approach policy;
- h) Operators should identify and eliminate incentives for risk-taking;
- i) Operators should reinforce professionalism (i.e. doing the right thing even when nobody's watching) to counteract the cultural influences that lead to poor decision-making;
- j) The GCAA should establish a training programme to train pilots to:
 - 1) recognize the limitations of the GPS;

- 2) verify the accuracy of the GPS; and
 - 3) caution them on the use of the GPS in order to ensure that acceptable safety standards are maintained
- k) The GCAA/Operators should make proficiency checks more relevant to the realities of Guyana's domestic operations;

8.6 Loss of Flight Control

- a) Operators with the requisite expertise should be invited to participate in investigations insofar as they lend objectivity to the investigation;
- b) As far as is practicable, crash sites should remain undisturbed and all witnesses to the accident/incident should be interviewed;
- c) The GAAIU should address and rectify perceptions that witnesses in an accident/incident investigation should acquire legal representation to safeguard against possible prosecution, while bearing in mind that it is the witness' prerogative to have an attorney-at-law present;
- d) Pilots should use their aeronautical knowledge to analyze their surroundings using the 5Ps;
- e) The GCAA should have an experienced meteorologist onboard to share information with the industry on weather patterns;
- f) Operators should consider the use of mandatory contracts which pilots sign to state that they are legally fit to fly.

APPENDIX 1 – LIST OF PRESENTERS AND MODERATORS

List of Presenters

1. Ms. Paula McAdam – State Accident Investigator, Head of GAAIU
2. Captain Gregory Fox – Florida Institute of Technology, College of Aeronautics
3. Mr. John Lovell – Senior Aviation Accident Investigator, National Transportation Safety Board
4. Mr. Paul Forrest – PT6A Customer Engineering
5. Captain Linden Hillman – Southwest Airlines
6. Captain Jonathan Fitt – Safety Manager, LIAT Ltd
7. Ms. Beverly Drake – Program Manager, National Transportation Safety Board
8. Mr. Ray Adams – Director of Quality and Safety, Bristow US LLC.
9. Mr. Ryan Borne – Regional Sales Manager, Bristow US LLC.

List of Moderators

1. Mr. Saheed Sulaman – Director, Air Transport Management, GCAA
2. Mr. Abraham Dorris – Manager, Aviation Security, GCAA
3. Captain Christopher Kirkcaldy – Director (ag), Aviation Safety Regulations, GCAA
4. Mr. Courtney Frank – Manager, Civil Aviation Training School, GCAA
5. Ms. Chaitrani Heeralall – Director, Corporate Development, GCAA
6. Col. Cargill Kyte – State Safety Programme/SMS Coordinator, GCAA
7. Ms. Amanza Walton-Desir – General Counsel, GCAA

APPENDIX 2 - LIST OF ATTENDEES (ORGANISATIONS)

1. Air Services Ltd
2. Hinterland Aviation Inc.
3. Jags Aviation Inc.
4. Trans Guyana Airways Ltd
5. Wings Aviation Ltd
6. Roraima Airways
7. Domestic Airways
8. Guyana Defence Force
9. GUYSUCO
10. Bristow Helicopters
11. Canadian Flyers
12. DHL
13. Caribbean Airlines Ltd
14. Laparkan Airways
15. LIAT Ltd
16. COPA Airlines
17. Fly Jamaica Ltd
18. National Helicopter Services Ltd
19. Caribbean Aviation Maintenance Services
20. Art William & Harry Wendt Aeronautical Engineering School
21. National Air Transport Association (NATA)
22. Ogle Airport Inc.
23. New Timehri Handling Services
24. Accreditation Council
25. University of Guyana
26. Ministry of Communities
27. CARICOM Secretariat