2020
SECOND QUARTER REPORT

AVIATION INVESTIGATION BUREAU

KINGDOM OF SAUDI ARABIA

CONTENTS


DREAMLINER

DIRECTOR'S FOREWORD

Ismail Kashkash
Director of Engineering Laboratory

Aviation safety investigation is an evidence-based process. Thus, it might falsely lead us to believe that finding the evidence is the end of the story. In fact, it can be quite the opposite. Because a piece of a broken metal found in the wreckage of an accident site is only debris before being inspected and analyzed to determine the nature and the cause of the damage. The data obtained from the flight recorder (the Black Box) is only a scatter of numbers before being processed and analyzed to interpret anomalies related to the investigated case. Therefore, finding the evidence will not necessarily solve the case but knowing what to do with that evidence is what counts. AIB has this philosophy in its core belief and made its human capital its priority investment knowing that no matter how much tools and how advanced is the equipment it will be unparalleled by human capital development.

“I believe the 3 C’s (Communication, Cooperation and Collaboration) between AIB and other aviation parties, is the key to enhance the Aviation Safety.

Hisham Aldraiby , Prevention Specialist

FACTS & FIGURES

Global lockdown as resulted from COVID-19 Pandemic had affected aviation industry and the steady flow of scheduled flights in KSA skies. Statistics below show a below-average dropdown of reported events within this quarter.

EVENTS 65

Accident	0
Serious Incident	0
Incident	15
Non-Occurrence	50

INVESTIGATIONS REPORTS 3

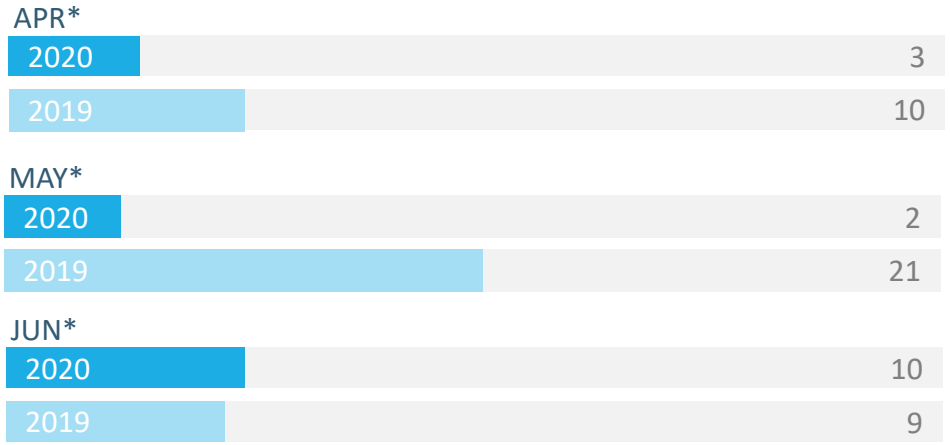
Limited scope report	2
Preliminary report	1

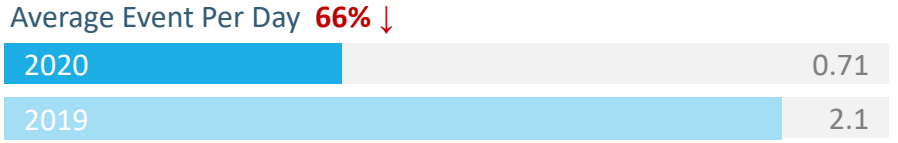
RECOMMENDATIONS 7

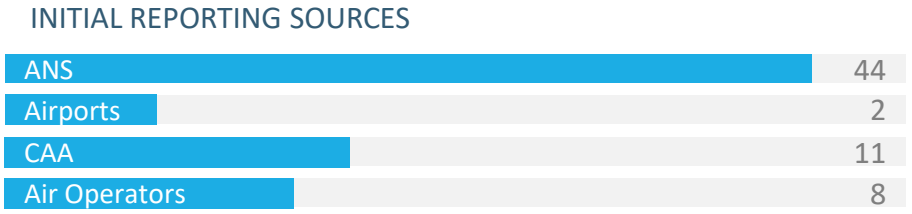
Safety Recommendations	7
Stand-Alone Recommendation	0
Safety Study Recommendations	0

OTHER REPORTS 4

Initial Assessment Report	3
Discontinued Report	1







* comparison between 2019 and 2020 does not include non-occurrences.

OCCURANCES 15

LOCATION

Jeddah - King Abdulaziz International Airport 3

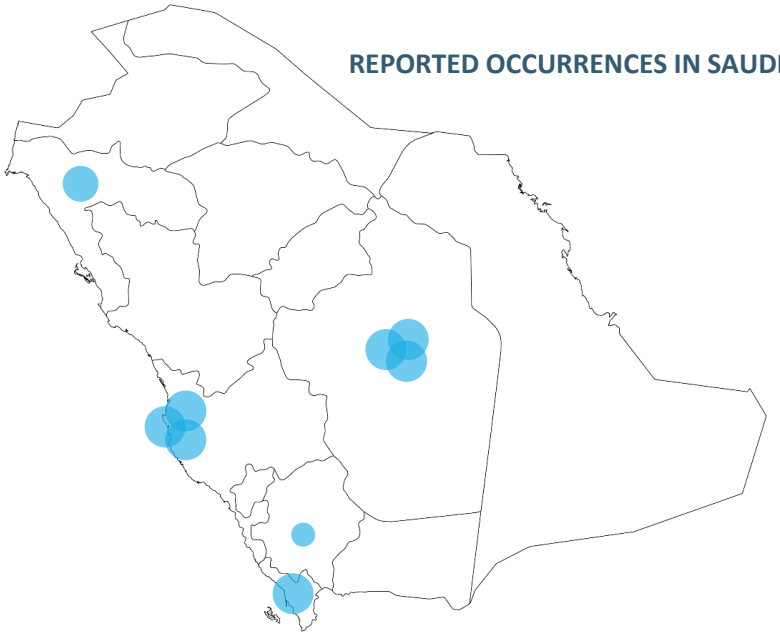
Riyadh - King Khalid International Airport 3

Abha Airport 1

Tabuk – Prince Sultan bin Abdulaziz Airport 2

Jizan – King Abdullah bin Abdulaziz Airport 2

Other (including International airports) 4



REPORTED OCCURRENCES IN SAUDI ARABIA

CATEGOREY

F-NI 1

BIRD 2

NAV 1

MAC 1

SCF-PP 1

CFIT 1

MAC | NAV 1

F-NI | SCF-NP 1

MAC | ATM 1

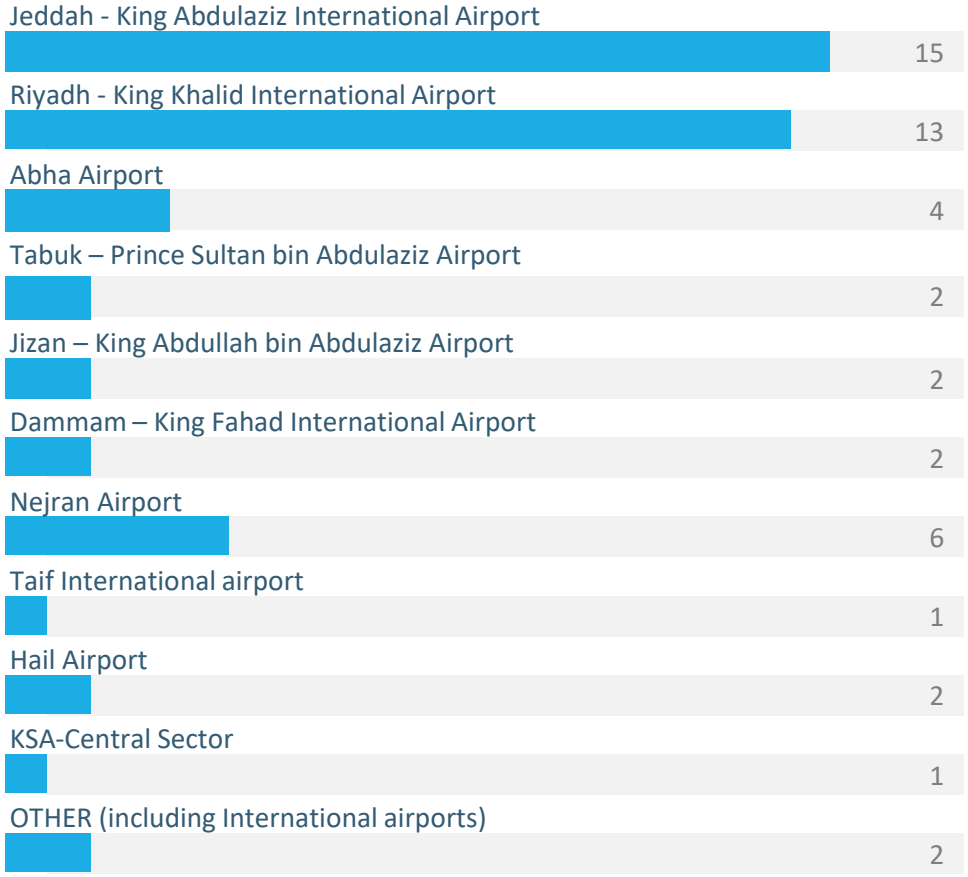
SCF-NP 5

RISK ASSESMENT

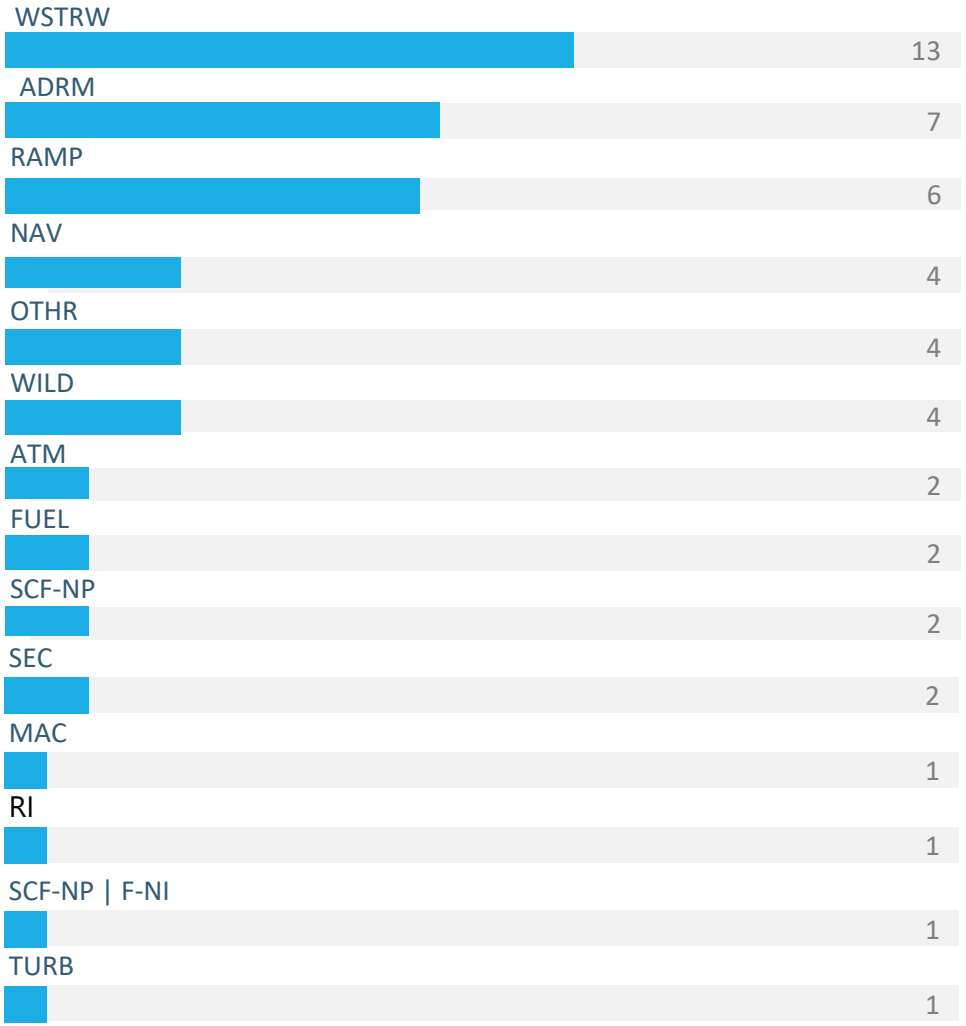
1	12	2
Extreme	Moderate	Low

NON-OCCURANCES 50

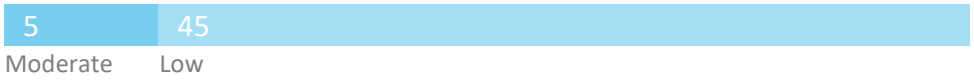
LOCATION



CATEGOREY



RISK ASSESMENT



SIGNIFICANT OCCURRENCES

BIRD 90%↓

2020	2
2019	19

SCF-NP 40%↓

2020	5
2019	7

MAC 67%↓

2020	1
2019	3

RAMP 100%↓

2020	0
2019	2

RI 100%↓

2020	0
2019	2

SIGNIFICANT EMERGING RISKS

WSTRW	13
NAV	5
ADRM	7

Flight Recorders Downloads and Analysis

Total Flight Recorders Downloads and Analysis	**0**
for AIB Investigation	**0**
for Technical Assistance	**0**
Aircrafts-Involved	**0**
Saudi Registered	**0**
Foreign Registered	**0**
Flight Recorder Report Issued	**3**

AIRCRAFT TYPE

A320	8	A330	2	B777	1	E35L	1	EMB	1	OTHER	2

"Reporting an aviation occurrence makes you among the first contributor to aviation safety.

Abdulrahman Masbah, Operation & Control Specialist

COVID-19 ADAPTATION AND PREPARATION

EXTERNALLY

In continuation of its effort for the best adaptation during the COVID-19 Pandemic, AIB personnel were engaged in Aviation Safety Risk Management course arranged by the International Civil Aviation Organization (ICAO) that tackles the safety risks facing the industry with the beginning of the reopening of the commercial travel in many countries. They also attended the ICAO webinar "Aircraft Accident Investigations during the COVID-19 Pandemic". The webinar addressed the responsibility of accident investigation authorities (AIA) prescribed in Annex 13 and explored how this function can be fulfilled during restrictions imposed by the COVID-19 Pandemic. It also discussed the recent experience of the French Civil Aviation Accident Investigation Authority (BEA) in investigating a major accident during such times.

Domestic Flights Resumed

31 May 2020

INTERNALLY

Several cities and regions around the world have been quarantined since the beginning of the coronavirus outbreak and therefore, a lot of employees nowadays have no choice but to work remotely. One of the most common challenges that the organizations face is that remote employees go through a lot of communications struggle.

That's why the AIB came up with a new short-term strategy to enhance the internal communication inside the bureau during the quarantine. The AIB objectives are to ensure that our employees are well-informed and updated regarding the current situation & to create a communication circle to keep them motivated and feel more connected.

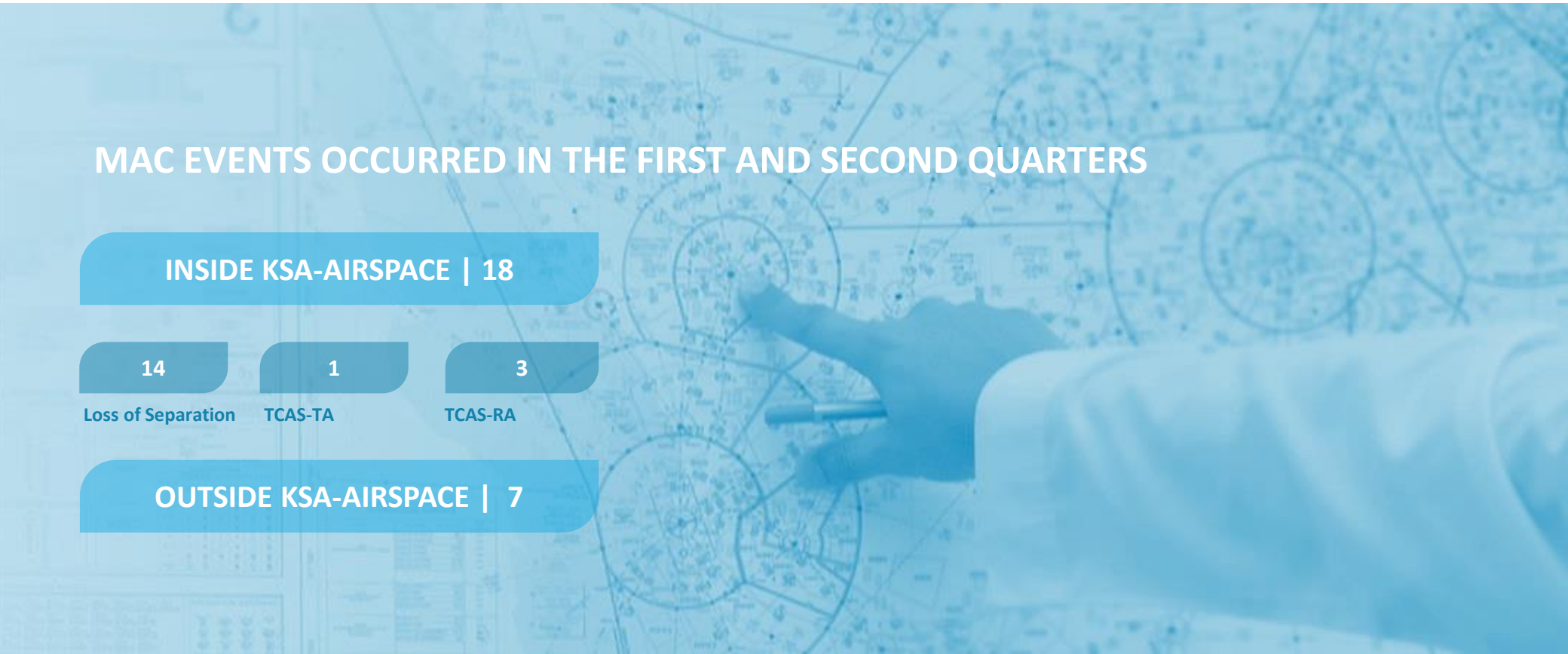
The AIB's plan started a new wave of effective communication practices that are creative and objective-oriented, using our digital channels. We increased the awareness messages internally and established new weekly platforms for employees to share expertise and achievements.

SIGNIFICANT ONGOING INVESTIGATIONS

1 AIB- 220620-313 | Incident

MAC - TCAS - RA

On 22 June 2020 at approximately 11:44 local time, the Aviation Investigation Bureau (AIB) of the Kingdom of Saudi Arabia received a notification from SANS that a TCAS-RA occurred between a civil (SVA 1527) and a military aircraft.



MAC EVENTS OCCURRED IN THE FIRST AND SECOND QUARTERS

INSIDE KSA-AIRSPACE | 18

14	1	3
Loss of Separation	TCAS-TA	TCAS-RA

OUTSIDE KSA-AIRSPACE | 7

SIGNIFICANT COMPLETED INVESTIGATIONS

1 AIB–080120–121 | Serious Incident

Runway Incursion

On 10 August 2019, Saudi Arabia Airlines operated flight SVA 305, an Airbus A330 aircraft with registration HZ-AQ20, on a scheduled service between King Abdul-Aziz International Airport (OEJN) in Jeddah and Cairo International Airport (HECA) in Cairo. An Airfield Operations vehicle conducting runway inspection was on the runway 34L (RWY-34L) when SVA 305 was cleared for takeoff on the same runway. SVA 305 continued its takeoff roll and rotated while the vehicle was not safely distanced from the aircraft and/or the effect of the jet blast. The flight crew were not aware of AF-02 close proximity as they rolled down the runway and rotated at VR. The Airfield Operations Officers (AOOs), in the inspection vehicle, were not monitoring the tower frequency and critically missed hearing ATC clearing SVA 305 for the take off. Unexpectedly and in total surprise they saw the aircraft accelerating down the runway and closing rapidly towards them. Evasively, they immediately vacated RWY-34L by exiting on taxiway-B5 (TWY-B5). The maneuver to separate was estimated to take7 seconds in time and at 120 meters (m) (90m from the wing tip) in terms of the distance. On one hand, individually, the Local Controller Aerodrome (LCA); the AOOs; and the flight crew actions were all examined against the regulatory requirements and against applying standard procedures; and, on the other hand, the Operations, involving runway management; runway inspection procedures and practices has been systematically evaluated. RUNWAY INSPECTIONS are considered as a core airport management safety activity demanding risk mitigation at the highest level. The investigation referred to findings and recommendations of a SANS report dated 08 January 2020. The AIB concluded:

1. SVA flight crew did not report the occurrence and may not have observed the encounter;
2. KAIA Airport Operations Control (AOC) performed well within prescribed guidelines;
3. the Airfield Operations Officers and the Local Control Aerodrome deviated from regulatory and ICAO Standards and Recommended Practices (SARPs). The AIB also observed and listed Air Traffic Management (ATM) elements considered as contributing to the occurrence. In addition to applying ICAO's Runway Incursion Risk Calculator assessment, the AIB evaluated this occurrence as a serious continued exposure threat to the safety of runway inspection operations regarded as a mandatory task that will always remain in practice. Accordingly, the AIB issued a recommendation dealing with individuals as well as with the system appropriately scaled to streamline and upkeep SARPs and encourage best safe practices.

2 AIB–080120-030 | Incident

Air Traffic Management Mishap

On 08 January 2020, flights HZ-A11 (an ATR 72) and HZ-FAC (an Airbus 320) flight number FAD 4661 were operating on the same route; from King Abdulaziz International Airport to King Khalid International Airport. HZ-A11 start-up was at 15:46:581 from the General Aviation (GA) apron (apron 16). Approximately 7 minutes later, FAD 4661 requested pushback and start from apron 3 stand 12. The aprons are at a considerable distance apart with HZ-A11 having to cover significantly more distance. Each flight taxied under the direction and clearances of its depicted area ground controller and on separate frequencies but headed towards the same active runway 34L (RWY-34L). With respect to the longer distance, HZ-A11 received a more complex taxi clearance involving specifically two hold short instructions, the first at taxiway Romeo (TWY-R) intersection and second at taxiway Uniform (TWY-U) intersection. As HZ-A11 moved closer to RWY-34L, Ground Controller West (GND-W) revised the clearance to hold short of RWY-34L via taxiway B1 (TWY-B1). Shortly after, HZ-A11 continued its taxi and accepted a takeoff option from TWY-B1 intersection, the TWY-B1 intersection was located closer up from RWY-34L threshold. An attempt to pass this information to the LCA controller was not successful.

FAD 4661 after pushback received a short and simple clearance for a right turn on TWY-U and direct to RWY-34L.
Both flights changed to the same LCA frequency, FAD 4661 receiving unconditional takeoff clearance, and HZ-A11 received non-standard conditional line-up and wait clearance. Clearances were dependent on LCA's sporadically scanning of the CCTV and not on real-time visual checks. With respect to a realistic distance factor, visual scanning of RWY-34L from the tower is considered to be challenging but as for this case where the investigation revealed that the LCA controller was without the medically certificate-required corrective lenses.

The LCA controller selective reliance upon CCTV images combined with the misunderstanding of critical radio transmissions led to:

1. failed comprehension of the seriousness of HZ-A11 and FAD 4661 warning calls; and,
2. severe miscalculation of which flight can possibly takeoff first.

Once the LCA controller gained awareness, he hastily issued cancelled and revised takeoff clearances. And, possibly driven by concerns for traffic approaching RWY-34L on FINAL (KNE 448) , LCA controller's recovery actions effectively introduced a new set of perplexing faulty decisions. The AIB has concluded the causal factor of the occurrence is the substandard and undisciplined behavior of the LCA controller. The AIB has also determined that the physical sequencing of both aircraft had self-stopped the occurrence from developing into a much more serious one; and there are findings of carry-over organizational/systemic contributing factors repeatedly observed in previous reports requiring GACA's focused attention.

> Every safe flight is an error away from incident

Abdullah Bakr, ATS Investigator

SAFETY RECOMMENDATIONS

1 AIB-2017-0616-SR-01 | SCF-NP

Saudi Arabian Airlines, to conduct reliability study on the performance of landing gear wheels and brakes consumable parts, in particular tie-bolts, to ensure the fleet healthy status.

2 AIB-2019-0121-SR-01 | RI

King Abdul-Aziz International Airport authority to implement a procedure by which a reminder call on the relevant ATCO frequency is transmitted by the vehicle on periodic basis throughout the entire time as long as the runway is occupied.

3 AIB-080120-30-SR-01 | ATM

The Saudi Air Navigation Service to reemphasize the correct usage of standard phraseology and conditional clearances amongst air traffic controllers

4 AIB-080120-30-SR-02 | ATM

The Saudi Air Navigation Service to reemphasize the requirement for controllers to maintain continued visual scanning at all times prior to runway entries, takeoff sequencing and takeoff runs.

5 AIB-080120-30-SR-03 | ATM

The Saudi Air Navigation Service to emphasize during the competency test and/or random inspections a protocol to validate compliance with any certificate limitations.

6 AIB-080120-30-SR-04 | ATM

The Saudi Air Navigation Service to reevaluate the process of keeping track of individual Key Performance Indicator (KPI) records for ensuring objectivity and fairness.

7 AIB-080120-30-SR-05 | ATM

The Saudi Air Navigation Service to conduct an in depth review for the “causes and remedy” to restore confidence and proper usage of the Stop Bar System.

Recommendation Subject

“

Investing in training and development ensure high retention rates; henceforth, we believe that Human Capital is our most valued asset

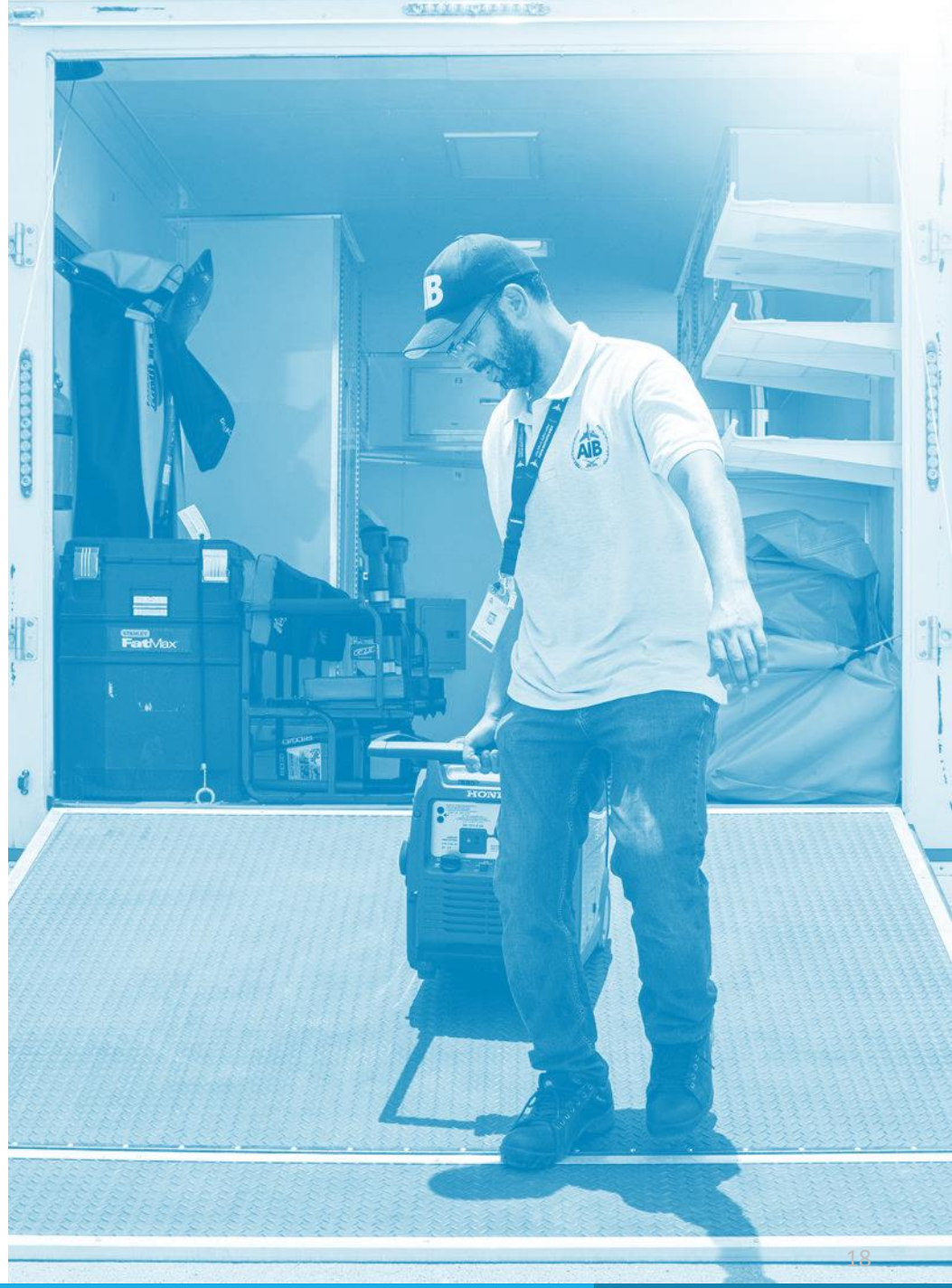
Amro Abdulbade, Human Resources Specialist

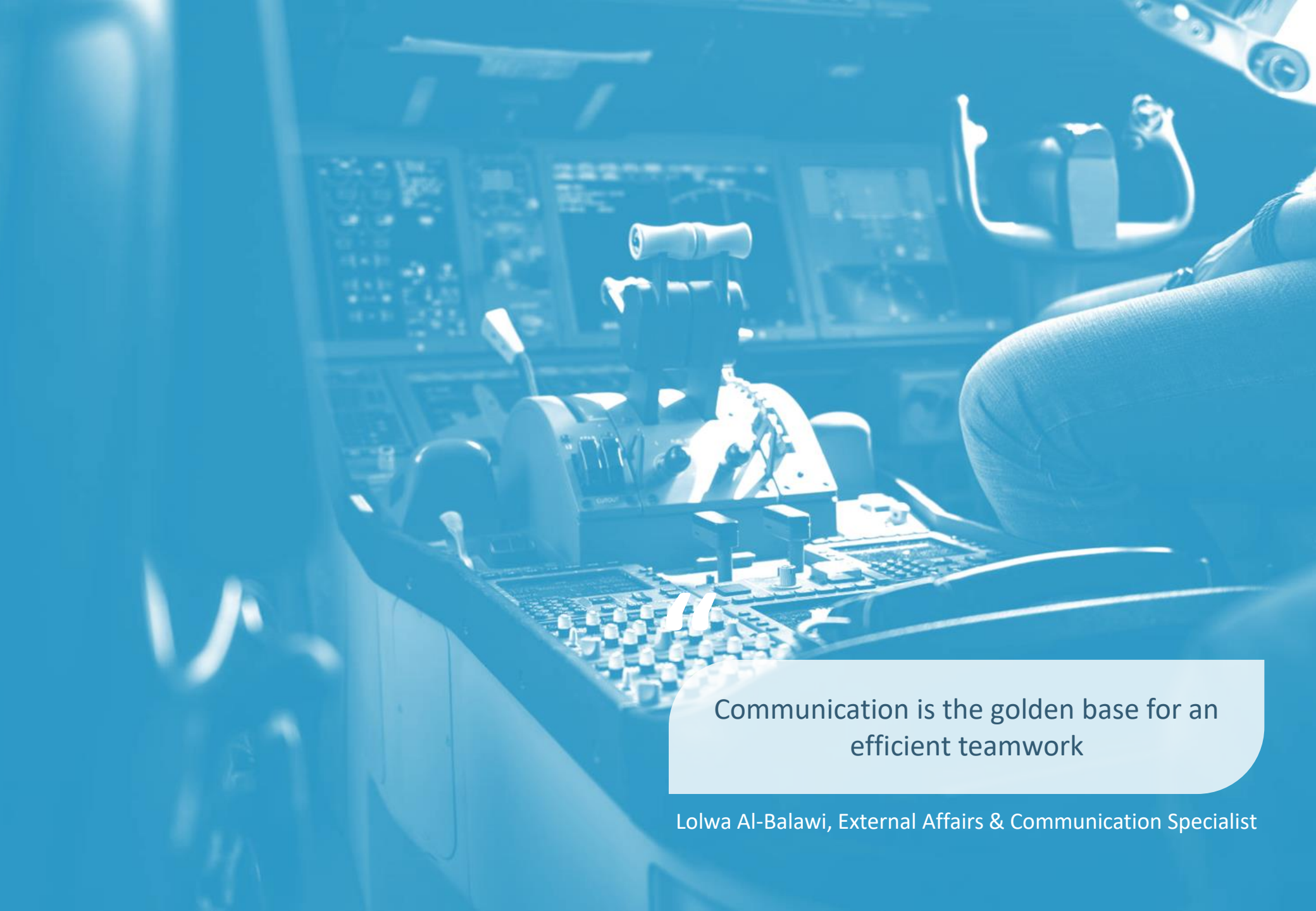
ENGAGEMENT

1 ICAO AIG Working Group

11/05/2020 | Jeddah, Saudi Arabia

AIB participated in the conclusion of the proposed amendments by the International Civil Aviation Organization Accident Investigation Working Group 18 (WG18) to be submitted to the Accident Investigation Panel (AIGP) for approval. The group main tasks were to review the provisions in Annex 13 in relation to the Global Aeronautical Distress and Safety System (GADSS) and Doc 10054 regarding the recovery of automatic deployable flight recorders and the protection of transmitted flight recorder data. The submitted final working paper included proposals for a new standard and modified definition in Annex 13. It also proposed revisions to the guidance material in Doc 9756 for the read-out of flight recorders.





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Communication is the golden base for an efficient teamwork

Lolwa Al-Balawi, External Affairs & Communication Specialist

DEVELOPMENT

1 DEPLOYMENT ENHANCEMENT

21/04/2020 | Jeddah, Saudi Arabia

Creating a new deployment support where all required resources are delivered by the OCC.

- Implementing a new deployment process that will define the level of support required to the investigation teams.
- Re-organizing the equipment room including full equipment inventory and tracking system along with Rebuilding of the investigation kits.
- Sharing the transportation control with administration department to enhance deployment teams support.

2 INTERNAL COMMUNICATION

APR-JUN/2020 | Jeddah, Saudi Arabia

During the second quarter of 2020, AIB focused its development on the internal processes and procedures. A special attention was given to enhance the work environment and to establish platforms such as podium and expert talks. that encourage the communication and the exchange of the tacit knowledge that is abundant in many specialties among the AIB team members.

Figure (1) : Expert Talk Poster


AIRCRAFT
FOR
STOP

ABBREVIATIONS/DEFINITIONS

ADRM	Aerodrome
ANS	Air Navigation Services
ATM/CNS	Air Traffic Management Or Communication, Navigation, Surveillance
CAA	Civil Aviation Authority
CABIN	Cabin Safety Events
CFIT	Controlled Flight Into Terrain
F-NI	Fire/Smoke (Non-impact)
FUEL	Fuel Related
MAC	AIRPROX/TCAS Alert/Loss Of Separation/Near Midair Collisions/Midair Collisions
NAV	Navigation Errors
NON-OCCURRENCE	All Aircrafts Events Other Than Incidents, Serious Incidents And Accidents
OCCURRENCE	All Aircrafts Events involving Incidents, Serious incidents and Accidents.
OTHR	Other
RAMP	Ground Handling
RI	Runway Incursion
SEC	Security Related
SCF-NP	System/Componenet Failure Or Malfunction (Non-powerplant)
SCF-PP	System Component Failure Or Malfunction (Powerplant)
TCAS	Traffic Alert and Collision Avoidance System
TURB	Turbulence encounter
WILD	Wildlife
WSTRW	Windshear Or Thunderstorm

2020
SECOND QUARTER REPORT

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