Garuda Indonesia

Eastern Indonesia Runway Safety: Airline Perspective

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Member of:

FLIGHT SAFETY FOUNDATION

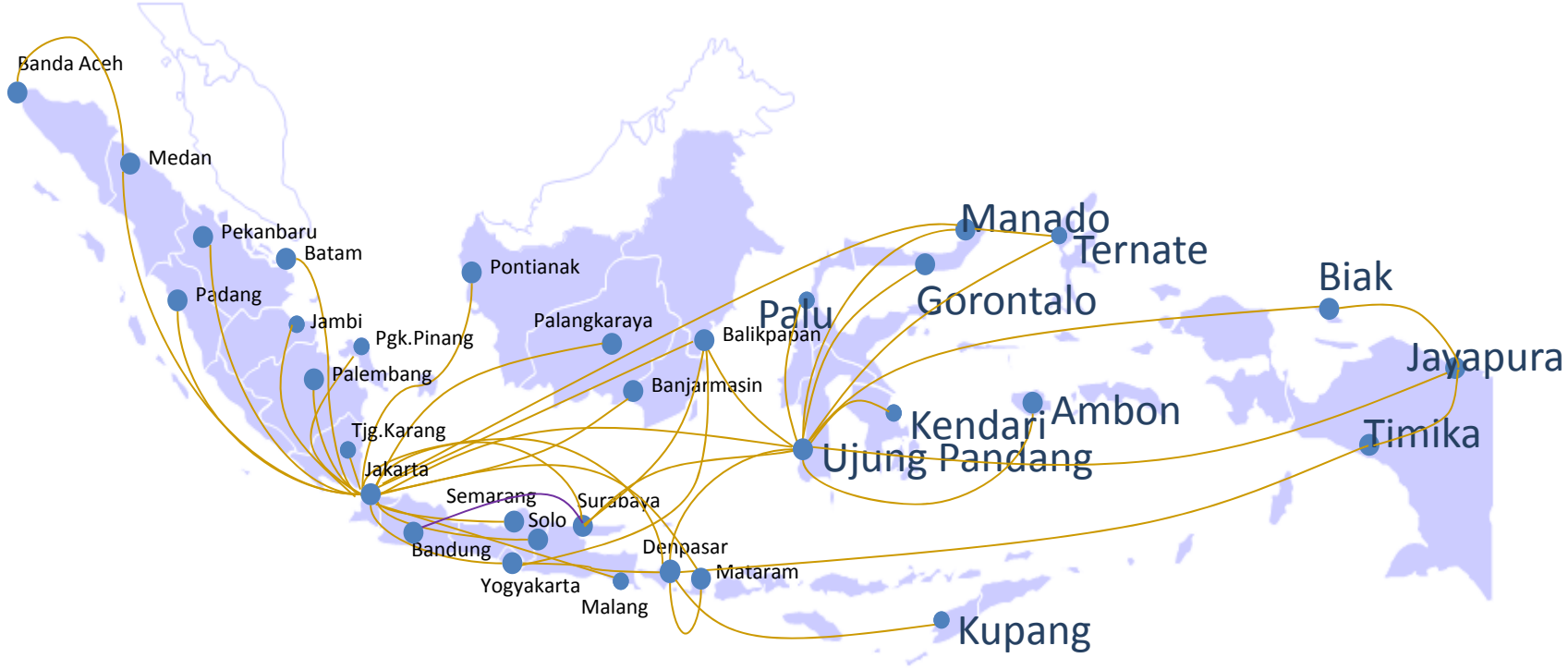
AAPA

IATA

Indonesia National Air Carriers Association

Kartika Discovery Hotel, Bali | 23 May 2012

Garuda Indonesia Domestic Routes:
Eastern Indonesia Destination



Operated by:

Boeing B737-800 NG

Data per 9 April 2012

Our Fleet – 91 Aircraft

March 2012

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BOEING 747-400

Number in fleet: 3 A/C
Max. Speed: 990 kph
Range: 14,180 Km
Seat Capacity: 42 + 386 = 428

AIRBUS A330-300

Number in fleet: 6 A/C
Max. Speed: 913 kph
Range: 7,242 Km
Seat Capacity: 42 + 215 = 257

AIRBUS A330-200

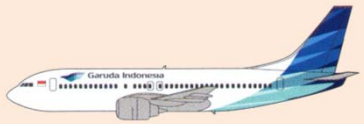
Number in fleet: 8 A/C
Max. Speed: 913 kph
Range: 12,500 Km
Seat Capacity: 36 + 186 = 222

AIRBUSS 320-200

Number in fleet: 4 A/C
Max. Speed: 840 kph
Range: 3,440 Km
Seat Capacity: 180

BOEING 737-800

Number in fleet: 53 A/C
Max. Speed: 853 kph
Range: 5,425 Km
Seat Capacity: 12 + 144 = 156



BOEING 737-400

Number in fleet:: 2 A/C
Max. Speed: 840 kph
Range: 3,515 Km
Seat Capacity: 14 + 120 = 134

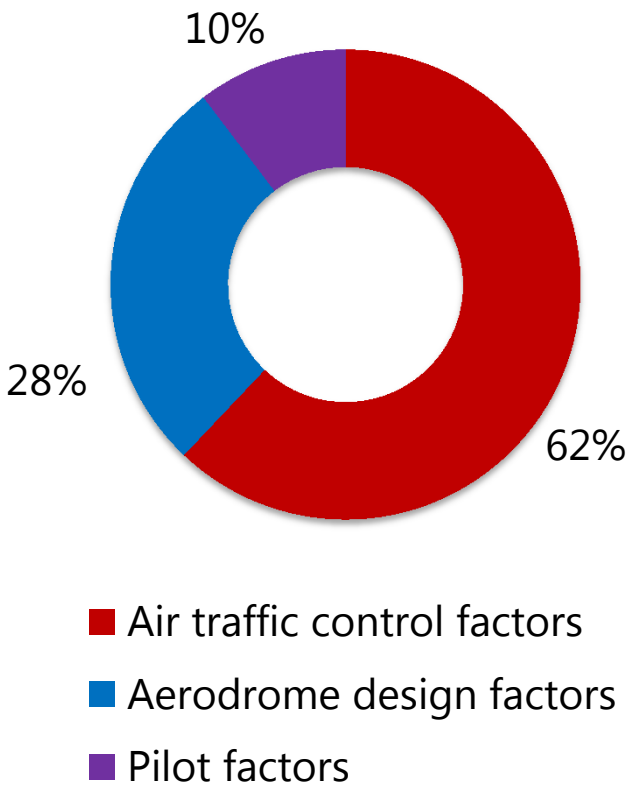
BOEING 737-300

Number in fleet: 10 A/C
Max. Speed: 840 kph
Range: 3,515 Km
Seat Capacity: 16 + 94 = 110

BOEING 737-500

Number in fleet: 5 A/C
Max. Speed: 840 kph
Range: 3,515 Km
Seat Capacity: 12 + 84 = 96

Reported Hazard of Runway Safety: Garuda Indonesia **Indonesian Coverage**

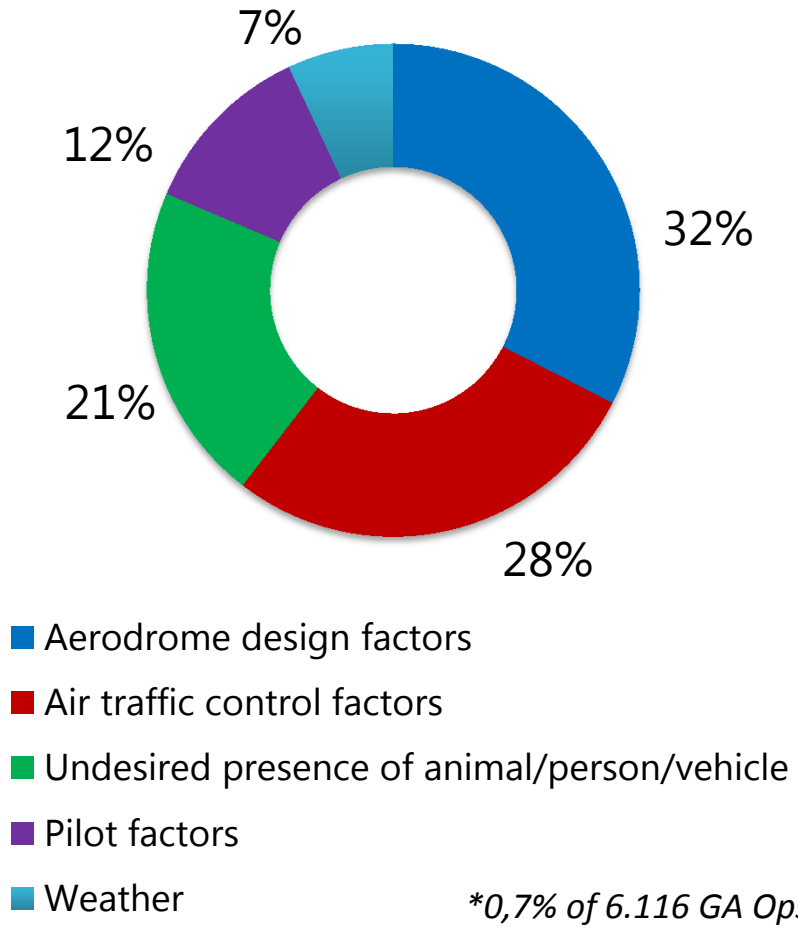


As traffic volume increase enormously, the likelihood of a runway incident/accident increases more rapidly when supporting parties not prepared simultaneously.

Air traffic control factors dominated the reported hazard that will induce runway safety event. Generally in Indonesia domestic coverage area.

**2,3% of 6.116 GA Ops Hazard Report 2009 – 30 Mar2012*

Reported Hazard of Runway Safety: **Eastern Indonesia Coverage**

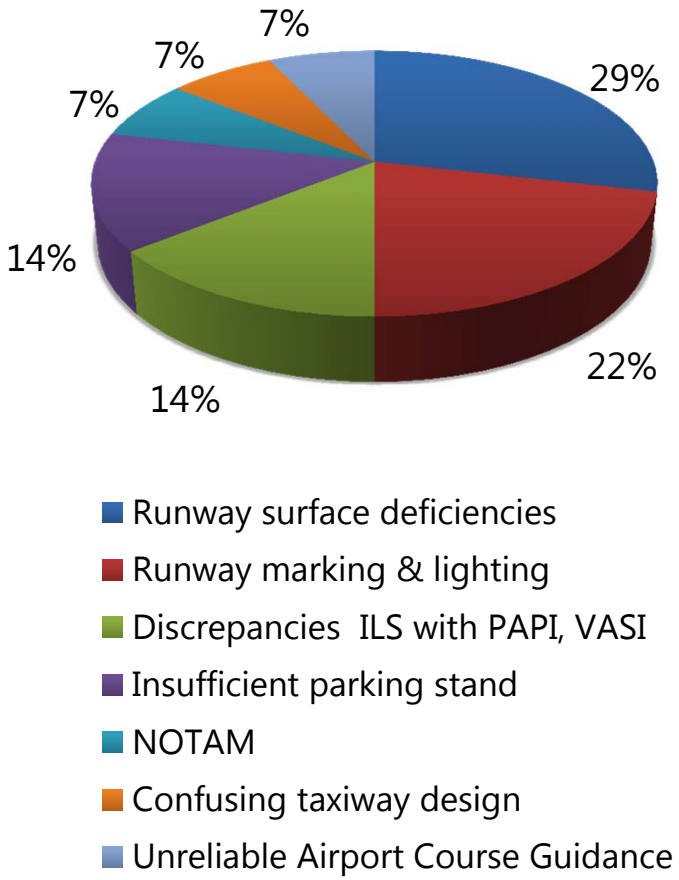


Eastern Indonesia operations have high risk level of operation since it has mountainous contours area surrounding the aerodrome.

Aerodrome design factors dominated the reported hazard that will induce runway incident/accident. Generally in **Eastern Indonesia** domestic coverage area.

**0,7% of 6.116 GA Ops Hazard Report 2009 – 30 Mar2012*

Aerodrome Design Factors: Eastern Indonesia

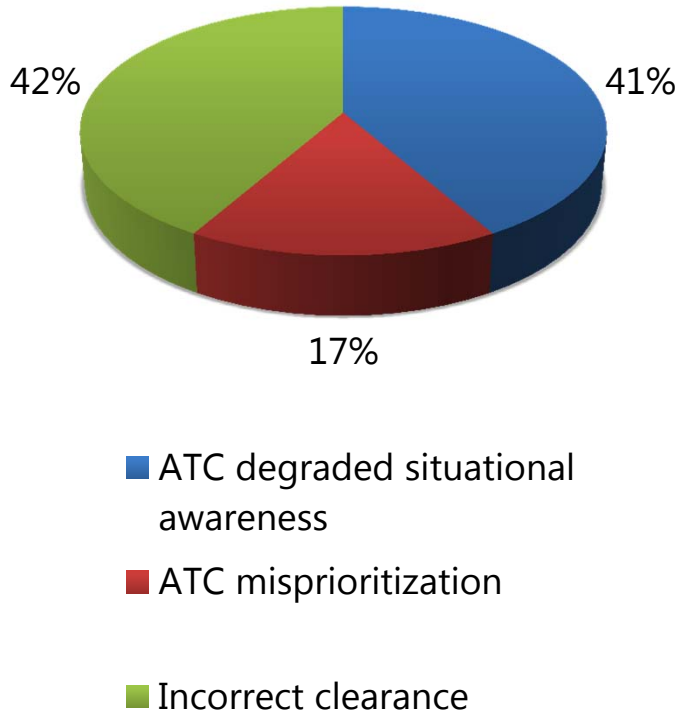


- Most Airports are not equipped with ILS.
- Inoperative/Unreliable Nav. aids (ILS, VOR, LOC) due to late calibration.
- Discrepancies ILS with PAPI, VASI, etc.
- Congested airport (Limited parking stand space, increasing operations of bigger aircraft, heavy traffic).
- Electrical Failure Problem (Failure of elements of approach light system, threshold lights, Run way end identifier lights, Runway Edge Lights) for required visual reference.
- Poor runway surface and scattered FOD due to construction works, no parallel taxiway, no approach lights, no RESA.
- Most airports do not provide ATIS, NOTAM are mostly not available or update.

**0,7% of 6.116 GA Ops Hazard Report 2009 – 30 Mar2012*

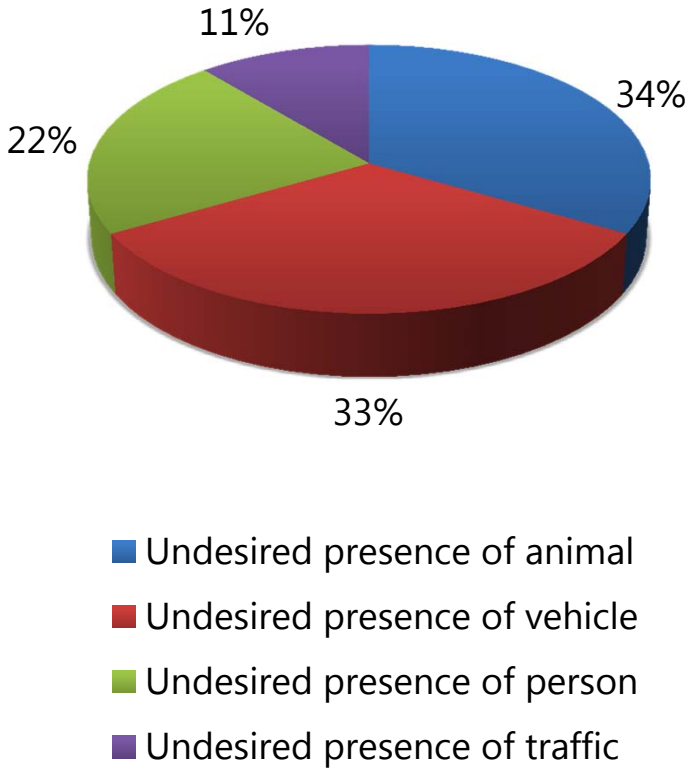
Gorontalo, Touchdown Zone Rwy29

Air Traffic Control Factors: Eastern Indonesia



- ATC misprioritization.
- ATC degraded situational awareness: failure to see and track airport activity, failure to provide sufficient separation.
- Incorrect clearance: non-standard phraseology, pilot readback error did not corrected by ATC.
- Insufficient ATC Infrastructures (radar) and human resources.

Undesired Presence at Active Runway: Eastern Indonesia



- Insecure Airport to include Active Runway or Taxi way (Trespassing Animal, Local Residents, Vehicle, etc.)

Pilot Factors

- Unstabilized Approach: Approach Speed High, High Rate of Descent.
- Non adherence to other procedures: Failure to properly identify/capture the outstanding sign, Fail to follow ATC instructions.
- High pressure on flight crew in congested airport and limited airport facilities (increase workload, afraid to loose a slot).

Other Factors

- Non adherence of ramp safety procedures (presence of ramp personnel and/or GSE Movement during aircraft movement).
- Weather, low visibility condition.
- Night operations.

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Aircraft Damage Hit by Airstair Blown by Jet Blast: **Air Traffic Control Factors**

Case 1

ATC degraded situational awareness: failure to see and track airport activity

GA-430 at AMI June 13th, 2011: "After landing GA430 instructed by ATC to proceed stand 8 via taxiway B. Aircraft parked at 04.58 UTC beside Lion MD 657. Pilot GA430 did the checklist, stairs coming in to pax door and pilot command doors may be opened, but the pax were held in the cabin by ground personnel, caused Lion MD 657 start to taxi. Pilot commanded cabin crew to be aware of jet blast. Just after command to cabin, the jet blast hit airstair and caused 4m x 1.5m part of the airstairs loose and hit left side on nose section and flip over the aicraft and fall on right side of the aircraft. The aircraft was deep scratch around 7cm deep 1mm. Lion pilot aggressively opening up power on taxi."

JT-657 GA-430

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Aircraft “Head On” at Taxi WC2 CGK:
Air Traffic Control Factors

Case 2

ATC degraded situational awareness: failure to see and monitor traffics on the airport.

CGK, December 13th, 2011: “Occurrence of 'Head On' between GA-333/PK-GMG and GA-890/PK-GPL on taxi way area WC2. The distance between two aircrafts was only 25 meter. There was working in progress (WIP) on taxiway WC1. Ground control have incorrect arrangement of traffics on ground.“


Jalan Raya Bandara
Jakarta Airport
Jakarta
Soekarno-Hatta
International Airport
GA-890
GA-333
Belendung

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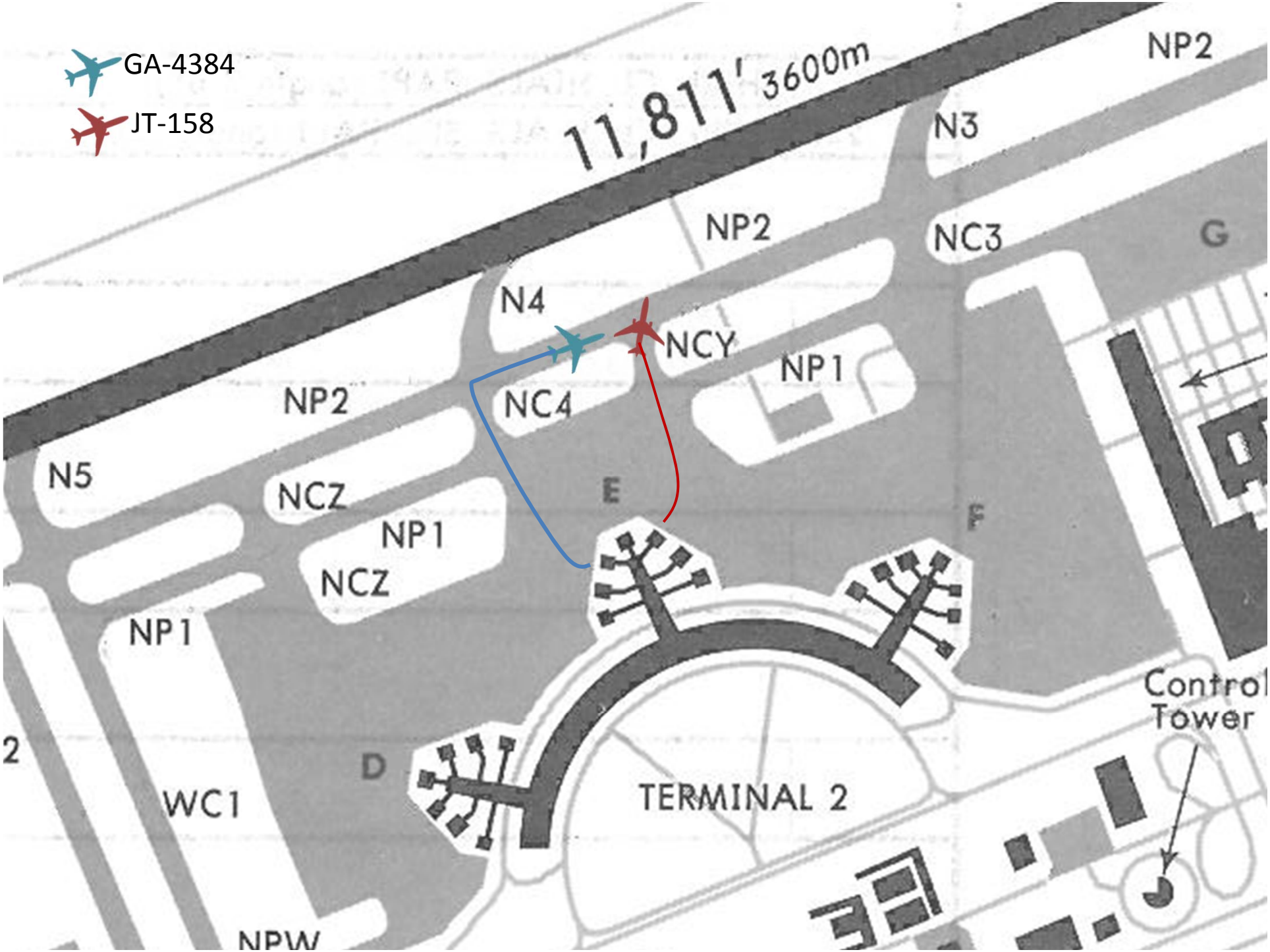
Aircraft Almost Collided During Taxi: **Air Traffic Control Factors**

Case 3

ATC Mis-Prioritization

GA-4384 at CGK March 13th, 2012: "GA from E31 was cleared to taxi to NC4 -> NP2 for R/W 25R. Then Lion JT-158 (PK-LJJ) was cleared taxi no.2 after GA-4384 via NCY. GA-4384 already on NP2 approaching NCY then Lion increased speed to enter NP2. GA-4384 position was only few meters from NCY and had to make immediate stop. Lion left wing was only approx 3 meters from GA-4384 nose. Flt crew reported the event to ATC and lady ATC officer only says "maaf mas". Lion kept on going even they were in the same crew and heard the conversation."


GA-4384
JT-158
11,811' 3600m
NP2
N3
NP2
NC3
G
N4
NCY
NP1
NP2
NC4
N5
NCZ
E
F
NP1
NCZ
NP1
Control
Tower
2
D
WC1
TERMINAL 2
NPW

Aircraft Rolled to the Side of Runway:
Weather Factors

Case 4

Weather: Gusty Wind and Wet Runway, Night Operations

Hasanudin Airport, UPG, 5 Nov 2010: GA-641 from AMQ to UPG during descent received weather update, visibility only 400 M, PiC asked to reduce speed and holding 15 NM south of BADOK with clearer of cloud. After received the latest weather report that visibility became better, PiC decided to make an ILS approach Rw03. During established the ILS monitored that crosswind speed was reducing gradually from 15 kts. At 500 feet, approach light was insight. Over threshold, PiC just focus to the touchdown point with the crosswind of 7 kts. Due to night flying, PiC tried to maintain over the runway since yhere was no centerline lights, after touchdown PiC applied reverse thrust. Suddenly the aircraft was rapidly moving side up to the right. PiC reduced the reverse thrust when aircraft steady and no more side up exist, PiC controlled the aircraft by applying left rudder pedal to bring aircraft to the centerline. After the aircraft was steady on the center line, the PiC continued taxi in to apron. At gate, maintenance staff reported that clean grass found around the right main wheel and no mud found at all.

Upon the FOQA reading, it was revealed that aircraft suffered a gusty wind upon touch down and landing rolled of 25 knots from the left. This gusty wind was not reported by ATC nor anticipated by the pilot.

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GA Prevention of Runway Incident/Accident

1. "No Fault" Go Around Policy At Any Time When The Safety of The Flight is Jeopardized *(Basic Operation Manual 4.4.4-06)*.
2. Route & Airport Categorization and Qualification eg. for difficult or high terrain areas *(Basic Operation Manual 3.1.5; 3.1.7)*
3. Conduct pilot proficiency check (simulator and line check) to ensure use of standard ICAO phraseologies in all communications associated with runway operations.
4. Sterile flight deck procedure: Restriction of activities to essential operational matters during critical phase of the flight (Below 10,000 feet).
5. Conduct TEM, CRM, and Joint CRM training to increase situational awareness of pilots, increase workload management, etc.
6. Conduct periodic mandatory training of ALAR & CFIT every year.
7. ALAR CFIT Checklist to assess potential risk in all routes and airports.
8. Reduce available runway length in aircraft performance measurement to accommodate RESA.
9. Performance Based Navigation Plan Conducted for Airports such as MDC and AMQ Airport

What we need?

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- The Indonesia economic CAGR ±6% for the last years and the aviation traffic growth mostly double or ≥10% every year! Unfortunately, the aviation infrastructure doesn't follow at the same rythme.
- We need aggresively;
  - Airport infrastructures expansion, especially on congested airports,
  - Improvement on ATM technology and resources,
  - Major airport facilities improvement in East part of Indonesia, especially West Papua,
  - Implementation of Safety Management System in every aviation "player".

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