

Aviation Accidents and Incidents in Indonesia

J.Koto,^{a,b,*}

^{a)}Pipeline and Subsea System Engineering, Ocean and Aerospace Research Institute, Indonesia

*Corresponding author: jaswar.koto@gmail.com

Paper History

Received: 20-September-2018

Received in revised: 20-November-2018

Accepted: 30-November-2018

ABSTRACT

Safety and security are very important in the aviation industry to minimize accident and complicated health problems. This paper discusses aircraft accidents in Indonesia. It was found that all airlines operating in Indonesia had a heavy or heavy accident or both. Lion Air is the most frequent airline operator with 1.16 rate of accident per year, followed by Batik Air with an annual accident rate of 0.4.

KEY WORDS: Aviation Accidents and Incidents, Indonesia.

NOMENCLATURE

KNKT Komite Nasional Keselamatan Transportasi
GA Garuda Airline

1.0 INTRODUCTION

An accident of aviation is defined by the Convention on International Civil Aviation Annex 13 as an occurrence associated with the operation of an aircraft, which takes place from the time any person boards the aircraft with the intention of flight until all such persons have disembarked and in which

- a person is fatally or seriously injured,
- the aircraft sustains significant damage or structural failure, or
- the aircraft goes missing or becomes completely

inaccessible.[1]

Annex 13 defines an incident as an occurrence, other than an accident, associated with the operation of an aircraft that affects or could affect the safety of operation.

In Indonesia based on report of Komite Nasional Keselamatan Transportasi or the National Transportation Safety Committee, (KNKT), January, 1, 2018 stated that in 2017 there were 7 cases of flight accidents. In 2017, all these cases were no dead casualties (zero passenger fatality), there were 22 injured victims almost all because of bad weather (clear air turbulence). The number of accidents and deaths according to the KNKT declined sharply compared to 5 years back. In 2017, the KNKT issued 16 safety recommendations aimed at 7 aircraft operators, 3 airport operators and 6 for regulators. Table 1 shows number of aircrafts accidents in Indonesia from 2012 - 2016.

Table.1: Number of aircrafts accidents in Indonesia 2012-2016.

Years	Accidents	Remarks
2012	13	58 deaths
2013	9	2 fatalities
2014	8	169 deaths
2015	11	65 fatalities
2016	19	30 deaths

2.0 AIRLINES ACCIDENTS

The following is a list of aircraft accidents in Indonesia, both Indonesian commercial aircraft that have accidents in other countries as well as commercial aircraft of other countries that have had accidents in Indonesia.

2.1 Pan American Airline.

1. April 22, 1974, Flight crash of N446PA Pan American World Boeing 707 crashing into a mountain in Bali, five minutes before landing at Ngurah Rai airport. The April 22, 1974 tragedy claimed the lives of 107 people.

Table.2: List accidents of airlines in Indonesia.

No	Airlines	Est.year	Cases	Rate/year	Deaths	Remarks
4	Citilink Airline	2012	1	0.17	0	Subsidiary of Garuda Indonesia to serve low-cost flights
2	Kal Star Aviation	2000	1	0.06	0	A private airline serves in Kalimantan, Java and Nusa Tenggara
6	Pelita Air Service	1963	1	0.02	16	Pelita Air Service operates on behalf of the state oil company Pertamina
7	Airfast	1971	1	0.02	19	Airfast Indonesia is cargo services to the oil, mining and construction.
8	Sukhoi	1939	1	0.01	46	The JSC Sukhoi Company is a Russian aircraft manufacturer.
9	Silk Air	1989	1	0.03	104	Silk Air is a full service regional Singapore's airline
10	Pan American Airline	1927	1	0.01	107	Pan American World Airways was ceased operations: December 4, 1991
11	Air Asia Indonesia	2001	1	0.06	162	Air Asia Indonesia is low-cost alias LCC airline
1	Batik Air	2013	2	0.40	-	Subsidiary of Lion Air.
3	Susi Air	2004	4	0.29	>4	Susi Air operates Jakarta, Medan, Balikpapan and Sentani
5	Sriwijaya Air	2003	4	0.27	1	Controls around 12% of Indonesia's domestic aviation market.
12	Batavia Air	2002	2	0.13	0	Batavia Air is one of several Indonesian aviation operators
13	Dirgantara Air Service	1971	2	0.04	28	Dirgantara Air Service was ceased operations in 2009.
14	Adam Air		2	0.00	102	Adam Air was was ceased operations on March 18, 2008.
15	Mandala Airline	2012	2	0.33	114	Mandala Airlines resumed operations in 2012 due to bankruptcy
16	Wings Air	2003	3	0.20	0	another subsidiary of Lion Air
17	Trigana Air Service	1991	3	0.11	10	Trigana Air is an airline based in Jakarta, Indonesia.
18	Bouraq Airline	1970	4	0.08	26	Were shut down in 2005 after prolonged financial problems
19	Merpati Nusantara	1962	13	0.23	155	The oldest domestic airline in Indonesia
20	Garuda Indonesia	1949	13	0.19	581	Garuda is the Indonesia's largest national airline
21	Lion Air	1999	22	1.16	215	Indonesia's largest private airline based in Jakarta

2.2 Garuda Airline

- December 4, 1974, The Martin Air plane hired by the Indonesian Garuda for the Hajj flight crashed when it landed at Colombo's Sri Lanka airport and caused 191 deaths.
- March 6, 1979, Garuda Indonesia Flight 553 is a Garuda Indonesia Fokker F-28 aircraft that was on a non-passenger flight from Denpasar to Surabaya and crashed into the slopes of Mount Bromo at an altitude of 6,200 feet. The four crew members were killed.
- July 11, 1979, A Fokker F-28 Garuda Indonesia plane was involved in the disaster on July 11, 1979. The plane named the Mamberamo on a flight from Talang Betutu Airport (Lampung) to Medan was piloted by A.E. Commissioner. Lontoh hit the wall of Mount Pertektekan, the son of Mount Sibayak in an approach to land at Polonia Airport, Medan. 4 crew and 57 passengers were killed.
- January 13, 1980, Garuda's DC-9 was heavily damaged due to landing hard in Banjarmasin
- September 20, 1981, The Garuda Indonesian DC-9 aircraft landed in an emergency due to engine failure, while landing both left rear tires broke causing the tire rim to hit the runway so it was difficult to move. There were no fatalities.
- March 20, 1982, Garuda Indonesia Fokker F-28 PK-GVK aircraft landed in heavy rainy weather, experienced overrun and were visible in paddy fields outside Bandara Branti, Bandar Lampung, Indonesia. 4 crew and 23 passengers were killed.
- June 11, 1984, Another DC-9, broken two on the Kemayoran runway while landing after flying. No victims.
- December 30, 1984, Garuda DC-9 broke three in swamps due to overshoot when landing at Ngurah Rai international airport, Bali did not swallow casualties
- April 4, 1987, The Garuda Indonesia PK-9 PK-GNQ aircraft crashed and caught fire on the runway of the Polonia Airport killing 26 crew and passengers and 19 people seriously injured. At an altitude of 1,700 feet before landing, the aircraft suffered a disruption in bad weather, rain, lightning and a speed of 4 knots.
- June 13, 1996, Garuda Indonesia 865, the aircraft caught fire at Fukuoka Airport, Japan when taking off to Jakarta,

- Indonesia. 16 injuries and 3 dead.
11. September 26, 1997, Garuda Indonesia Flight GA 152 is an Airbus A300-B4 aircraft which crashed at Buah Nabar Village, Sibolangit District, Deli Serdang Regency, North Sumatra, Indonesia (about 32 kilometers from the airport and 45 kilometers from Medan) when it was about to land at Medan Polonia Airport on September 26, 1997. This accident killed all of its passengers, totaling 222 people and 12 crew members, and is now the biggest aircraft accident in Indonesian history. The aircraft was on its way from Jakarta to Medan and was preparing to land. The Polonia Airport watchtower lost contact with the aircraft at around 13:30 WIB. During the incident, the city of Medan was covered in thick smoke from forest fires. The thickness of the smoke caused the pilot's view range to be very limited and only relied on the guidance of the Polonia control tower, but the misunderstanding of communication between the control tower and the pilot caused the aircraft to take the wrong direction and hit the mountain cliffs. Of all the victims killed, there were 44 bodies of victims that could not be identified which were later buried at the Membramo Monument, Medan. Among the fatalities, in addition to Indonesian citizens, there were also recorded US, Dutch and Japanese citizens.
 12. January 16, 2002, Garuda Indonesia Flight 421 is a Boeing 737 aircraft that flies the Mataram-Yogyakarta-Jakarta route. On January 16, 2002, the aircraft made an emergency landing in Bengawan Solo. This accident resulted in a flight attendant being killed and injuring 12 other passengers. The accident occurred at 3:05 p.m. WIB. The main reason for this plane crash is due to storm conditions and engine failure. As a result the pilot was forced to make an emergency landing on the river.
 13. March 7, 2007, Garuda Indonesia Flight GA-200 is a flight from the Garuda Indonesia airline majoring in Jakarta-Yogyakarta, which exploded when mired while making a landing on March 7 2007 at 06:55 WIB at Adi Sutjipto Airport Yogyakarta after taking off from Soekarno-Hatta Airport Cengkareng, Jakarta at 06:00 WIB. This aircraft carried 133 passengers, 1 pilot, 1 copilot, and 5 cabin crew. The pilot of the aircraft was Captain Marwoto Komar. The death toll was 22 people (21 passengers and 1 flight crew). Some Indonesian figures also took part in the flight, including the General Chairperson of PP Muhammadiyah Dien Syamsuddin (minor injuries), criminologist Adrianus Meliala (wounded), and former UGM chancellor Prof. Dr. Kusnadi Hardjosumantri (died) (Read: Indonesia Air Transport Open Yogya-Pangkalanbun Route).
- ### 2.3 Merpati Airline
1. March 29, 1979, The Merpati Nusantara Airlines Twin Otter crashed on Mount Tinombala on the way from Palu to Tolitoli, Central Sulawesi, with 13 people killed.
 2. June 18, 1988, VC-828 Merpati Nusantara from Jakarta to Polonia, Medan has an emergency landing on the grass base due to damage to the landing hydraulic system. The 67 passengers and five crew members survived.
 3. May 9, 1991, The Fokker F27 PK-MFD aircraft belonging to Merpati Nusantara flew in bad weather conditions and crashed into Mount Kelabat, Manado. 5 crew and 8 passengers died.
 4. October 18, 1992, The CN 235 PK-MNN aircraft owned by Merpati Nusantara, crashed into Puntang Mountain, Garut. 4 crew and 27 passengers died
 5. July 1, 1993, The Fokker F-28 aircraft owned by Merpati Nusantara suffered a disaster in Sorong when it will land at Jefman Airport. The plane flew too low and misplaced, crashing into a small hill as high as a coconut tree, breaking the plane into three parts. 41 people were killed and two injured.
 6. June 18, 1994, Merpati Nusantara Airlines Fokker F-27 PK-MFI hit the slopes of Mount Kalora about four minutes before landing at Mutiara Airport, Palu, Central Sulawesi. 5 crew and 7 passengers were killed.
 7. November 30, 1994, The F-28 Merpati Nusantara slipped in Semarang injuring 77 passengers
 8. January 10, 1995, The DHC 6 PK-NUK aircraft owned by Merpati Nusantara was lost when it passed through the Molo Strait, NTB (suspected explosion at Compartment Cargo). 4 crew and 10 passengers missing
 9. Apr. 19, 1997, The PK-MTX BAe-ATP aircraft belonging to Merpati Nusantara crashed before landing at Bulu Tumbang, Belitung. 15 people died.
 10. March 23, 2007, Merpati Nusantara Airlines Boeing 737-300 broke its windshield on flights from Denpasar to Kupang. The plane with 96 passengers landed safely in Kupang, but flights returning to Jakarta had to be postponed.
 11. August 2, 2009, Merpati Nusantara Airlines is a type of Twin Otter aircraft, missing in Papua. All 15 people were killed
 12. May 7, 2011, Merpati Nusantara Airlines Flight 8968 crashed in the waters near Utarom Airport, Kaimana, West Papua.
 13. June 10: Merpati Nusantara Airlines Flight 6517 with a route from Soa Airport in Bajawa to El Tari Airport in Kupang experiencing a hard landing when landing in Kupang. There were no fatalities in the disaster, but 20 people suffered minor injuries.
- ### 2.4 Bouraq Airline
1. February 1, 1988, Bouraq Airlines airline's HS 748 PK-HIS aircraft experienced a tire blown out at the nose wheel while landing in Gorontalo. 5 crew and 28 passengers survived.
 2. August 28, 1992, Bouraq Airlines' Vickers Viscount VC-8 PK-IVX aircraft caught fire after landing at Syamsuddin Noor airport, Banjarmasin. 23 people were injured.
 3. January 9, 1993, The Bouraq Airlines HS 748 PK-IHE aircraft suffered a fire on the engine right after landing at Juanda airport, Surabaya. 23 people were injured and 16 people died.
 4. August 9, 1995, Bouraq Airlines's HS 748 PK-KHL aircraft crashed into Mount Kumawa, Kaimana, Irian Jaya. 7 crew and 3 passengers were killed.

2.5 Pelita Air Service

1. January 2, 1990, Pelita Air Services' CASA C212 PK-PCM aircraft encountered a problem with the engine while on the Java Sea, the pilot decided to ditch (landed at sea) but failed and sank. 3 crew and 13 passengers were killed.

2.6 Airfast

1. January 25, 1990, Airfast's HS 748 PK-OBW aircraft crashed into Mount Sangkareang, Lombok due to bad weather. 3 crew and 16 passengers died.

2.7 Mandala Airline

1. July 24, 1992, Mandala's Vickers Viscount VC-8 aircraft lost communication when landing caused the plane to crash into the highlands southwest of Patimura airport. Killed 7 crew and 63 passengers.
2. September 5, 2005, Mandala Airlines Flight RI 091 is a Boeing 737-200 aircraft owned by Mandala Airlines which crashed in the Padang Bulan area, Medan, Indonesia on September 5, 2005. This accident occurred when the plane was taking off from Medan's Polonia Airport. The aircraft flew the Medan-Jakarta department and transported 116 people (111 passengers and 5 crews). Earlier it was reported that the aircraft carried 117 people but a passenger missed the plane. 17 survivors and 44 people on the ground were victims. On October 12, 2006, the NTSC stated that according to the results of the investigation, Flight 91 had fallen due to non-descending flap and slat conditions and procedures.

2.8 Skyvan Pan Malaysia Air Transport

1. January 31, 1993, SC-7 aircraft Skyvan Pan Malaysia Air Transport 9M-PID registered lost 35 minutes after taking off from Polonia. Plane with 11 passengers and 3 crew crashed in the East Aceh forest area, until now the ruins have not been found.

2.9 Dirgantara Air Service

1. April 25, 1994, The BN-2A PK-ZAA aircraft owned by Dirgantara Air Services hit Gunung Saran, West Kalimantan. Except for Mrs. Nur Intan Fitriani who escaped death, 10 passengers and the pilot were killed.
2. December 7, 1996, The C212-200 PK-VSO aircraft belonging to Dirgantara Air Services crashed at Irian Jaya's Wamena airport after takeoff because the right engine caught fire. 2 crew and 15 passengers were killed, the plane crashed 2.5 km southwest of the airport and hit a house, two people were killed on the ground.

2.10 Trigana Air Service

1. November 4, 1994, The Twin Otter Trigana Air Service crashed into a mountain near Kebu, Irian Jaya, killing four of its passengers.
2. May 25, 2002, The DHC 6 aircraft owned by Trigana Air Service, which flew from Wamena to Enarotali, fell in the mountains of Papua. 2 crew and 4 passengers were killed.

3. April 19, 2007, Trigana Air Fokker 27 made an emergency landing at the end of Wamena airport, Papua, after one of its tires broke. There were no casualties.

2.11 Raya Air Charter

1. October 3, 1995, Sabang Merauke Raya Air Charter lost CASA 212 PK-ZAG which fell in Bakongan Kaimana, Tapak Tuan, Sumatera Utara. There were 5 injuries and 1 killed.

2.12 SilkAir

1. December 19, 1997, SilkAir Flight 185 is a routine commercial flight service for SilkAir airlines from Soekarno-Hatta International Airport, Jakarta, Indonesia to Changi Airport, Singapore. On December 19, 1997, at around 16:13 WIB, a Boeing 737-300 aircraft serving this route had an accident falling over the Musi River, Palembang, South Sumatra. 97 passengers and 7 cabin crew were killed.

2.13 Lion Air

1. January 14, 2002, Lion Air flight 386 PK-LID, Boeing 737-200 Jakarta-Pekanbaru-Batam route, failed to air and crashed after the fuselage left the runway at Sultan Syarif Kasim II Airport, Pekanbaru, more than five meters. Seven passengers were injured and fractured during this incident.
2. October 31, 2003, Lion Air flight 787, MD-82, route Ambon-Makassar-Denpasar, off the track on landing at Hasanuddin Airport, Makassar.
3. July 3, 2004, Lion Air flight 332, MD-82, Jakarta-Palembang route, landed imperfectly at Sultan Mahmud Badaruddin II Airport, Palembang.
4. November 30, 2004, Lion Air flight 538 PK-LMN, MD-82, Jakarta-Solo-Surabaya route, slipped on landing at Adisumarmo Airport, Solo. A total of 26 passengers were killed.
5. January 10, 2005, Lion Air flight 789, MD-82, failed to broadcast at Wolter Monginsidi Airport, Kendari, due to a flat tire.
6. February 3, 2005, Lion Air flight 791, MD-82 on the Ambon-Makassar route, slipped on landing at Hasanuddin Airport, Makassar.
7. February 12, 2005, Lion Air flight 1641, MD-82, Mataram-Surabaya route, slipped its front wheels out of the runway about half a meter north of the runway edge, when it will take off at Selaparang Airport, Mataram.
8. May 6, 2005, Lion Air flight 778, MD-82, Jakarta-Makassar route, broke tires when landing at Hasanuddin Airport, Makassar. As a result the pilot was forced to stop the plane on the runway before reaching the parking lot.
9. December 24, 2005, Lion Air flight 792, MD-82, Jakarta-Makassar-Gorontalo route, slipped on landing at Hasanuddin Airport, Makassar.
10. January 18, 2006, Lion Air flight 778, MD-82, Ambon-Makassar-Surabaya route, slipped on landing at Hasanuddin Airport, Makassar.

11. March 4, 2006, Lion Air flight 8987, MD-82 Denpasar-Surabaya route slipped on landing at Juanda Airport, Surabaya due to bad weather.
12. December 24, 2006, Lion Air flight 792, PK-LIJ Boeing 737-400 route Jakarta-Makassar-Gorontalo, slipped on landing at Hasanuddin Airport, Makassar.
13. May 9, 2009, Lion Air PK-LIL MD-90 slipped at Soekarno-Hatta Airport, Jakarta.
14. November 3, 2010, Lion Air flight 712, PK-LIQ Boeing 737-400 Jakarta-Pontianak-Jakarta route, slipped at Supadio Airport, Pontianak.
15. February 14, 2011, Lion Air flight 598, Boeing 737-900 ER Jakarta-Pekanbaru route, slipped on landing at Sultan Syarif Kasim II Airport, Pekanbaru. All passengers are safe.
16. February 15, 2011, Lion Air flight JT 0295, Boeing 737-900 ER route Medan-Pekanbaru-Jakarta, slipped in Pekanbaru. The entire plane wheel came out of the airport track. All passengers survived and were not injured.
17. October 23, 2011, Lion Air JT 673 slipped as far as 15 meters to touch the end of the runway at Sepinggan Airport, Balikpapan, East Kalimantan. The two aircraft wheels fell.
18. December 30, 2012, Lion Air slipped at Supadio Airport, Pontianak, at 22.00 WIB. Wheel on the right side of the plane collapsed during the incident.
19. April 13: Lion Air Flight 904 slips on landing at Ngurah Rai Airport, Bali. All 108 passengers and flight crew survived. A total of 45 people were injured.
20. On August 3, 2017, a wing collision incident between Wings Air and Lion Air aircraft took place at Kualanamu International Airport, Deliserdang, North Sumatra. As a result of the accident, the wings of the two aircraft were damaged. There were no fatalities in this incident. At that time, the Lion Air plane carried 144 passengers from Banda Aceh to Medan. While the Wings Air plane carries as many as 66 passengers.
21. 5. April 29, 2018, Lion Air plane with flight number JT 892 slips at Djalaluddin Tantu Airport, Gorontalo. Reportedly, the plane landed when rain was pouring into the surrounding airport area. This Boeing 737-800 aircraft takes off from Sultan Hasanuddin International Airport at 17:24 a.m., and lands at Djalaluddin Tantu Airport at 18:35 a.m. A total of 174 passengers and seven crew members were declared safe from this event.
22. Lion Air JT 610 - October 29 2018, Plane with a flight route Jakarta - Pangkal Pinang fell after 13 minutes on the air. BASARNAS ensures that the plane is lost due to a fall. This aircraft takes off at 06.10 WIB and is scheduled to land at 07.20 WIB. This aircraft carried 189 passengers, including the crew.

2.14 Batavia Air

1. May 5, 2006, Batavia Air Flight 843, majoring in Jakarta-Ujung Pandang-Merauke after a while airs the pilot asked to return to the airport, when landing the tire broke and the plane slipped on the runway of Soekarno Hatta Airport, 127 passengers survived, 4 people were injured.
2. January 7, 2007, Batavia Air Flight 524 with the aim of

Jakarta and carrying 135 passengers and 3 babies failed to take off from Depati Amir Airport, Pangkalpinang due to damage to the wheel when the aircraft moved on the runway. As a result, the plane walked shakily.

2.15 Adam Air

1. January 1, 2007, Adam Air Flight KI-574 is a scheduled domestic flight Adam Air majoring in Surabaya-Manado, which before transit in Surabaya came from Jakarta, which was lost in flight. A black box was found at a depth of 2000 meters on August 28, 2007. All 102 passengers and crew were missing and considered dead. On March 25, 2008, the cause of the accident as announced by the National Transportation Safety Commission (NTSC) was bad weather, damage to the Inertial Reference System (IRS) navigation aids, and failure of pilot performance in dealing with emergency situations.
2. February 21, 2007, Adam Air Flight KI 172 is a Boeing 737 Jakarta-Surabaya line slipping on landing at Juanda Airport, Surabaya. The plane was damaged but all the passengers survived

2.16 Sriwijaya Air

1. August 27, 2008, a Sriwijaya Air Boeing 737-200 (PK-CJG) operating as flight SJ062 overran the runway at Jambi, Sumatra. There were 26 injuries and one fatality. The deceased was a farmer who was with his family in a hut sheltering from rain when it was struck by the plane.[11][12]
2. On 20 December 2011, a Sriwijaya Air Boeing 737-300 (PK-CKM, c/n 28333) encountered windshear on final approach and after touchdown veered off the runway while landing at Yogyakarta, Indonesia. The aircraft managed to touch down, but could not stop in time. The aircraft came to a stop 25 meters past the runway end. The right main landing gear and nose gear collapsed, causing the right engine and wing were substantially damaged. There were no fatalities and two passengers received minor injuries during the evacuation. The aircraft was written off.
3. On 1 June 2012, a Sriwijaya Air Boeing 737-400 (PK-CJV, c/n 24689), operating domestic flight SJ188 from Jakarta, Indonesia to Pontianak (Borneo) veered off runway 15 during landing at Pontianak in heavy rain. The aircraft, after aquaplaning on the drenched runway, came to stop left of the tarmac on soft ground on its belly (the nose gear collapsed and the main landing gear sank into the soft soil) and received substantial damage. No injuries occurred, the airport was temporarily closed as its single runway was blocked by the accident. On 2 June the aircraft was removed from the runway by the use of heavy cranes and the airport reopened for normal traffic.[13]
4. On 13 October 2012, a Sriwijaya flight from Medan, North Sumatra to Minangkabau International Airport, Padang, West Sumatra accidentally landed at Tabing Air Force Base, some 7 miles (12 km) away. None of the 96 passengers and 4 crew were harmed. The pilot and co-pilot were suspended and subsequently questioned by the NTSC

2.17 Qantas

1. November 4, 2010, Qantas's Airbus A380 has a number engine burst when flying over Batam City from Singapore to Sydney.

2.18 Sukhoi

1. May 9, 2012, Russian-made Sukhoi Superjet 100 lost contact and fell on Mount Salak, Bogor, while conducting a flight test (joy flight). The aircraft carried 38 passengers and 8 crew. The plane takes off from Halim Perdanakusuma Airport. All passengers were killed in the accident.

2.19 Air Asia

1. Air Asia 8501 - 28 December 2014, Precisely on December 28, 2014 aircraft flight routes Surabaya - Singapore with flight number 8501 fell in the Java Sea. This aircraft flies at 05.35 WIB and is scheduled to arrive in Singapore at 07.30 WIB or 08.30 Singapore time. But this plane lost contact at 6:17 a.m. WIB. This aircraft transports 162 passengers and a crew of six nationalities. 155 passengers are Indonesian citizens, three South Koreans, one French, one Malaysian, one Singaporean, and one United Kingdom. This plane fragment was discovered on December 30, 2014, until finally the fuselage was discovered on January 14, 2015. This accident claimed 162 lives and this incident was one of the worst accidents in Indonesia.

2.20 Indonesian National Police (POLRI)

1. December 3, 2016, On December 3, 2016, the M-28 Skytruk aircraft belonging to the Indonesian National Police with the registration number P-4201 fell in the waters of Lingga, Riau Islands. Based on previous reports, the plane lost contact when flying on the Pangkalpinang-Batam route. Reportedly, the number of victims in the plane was 13 people.

2.21 Indonesian Air Force (AU)

1. 18 Desember 2016, The Hercules C-130HS aircraft registration number A-1334 fell in Wamena, Papua. A total of 12 victims were declared dead as a result of this accident. The bodies of the Hercules aircraft crew were taken to the Air Base (Lanud) Abdulrachman Saleh by Boeing 737 aircraft from Wamena to Biak, and from Biak directly to the Abdulrachman Saleh Airport, Malang.

2.22 Wings Air

1. February 26, 2017, Wings Air IW 1286 aircraft with a flight route Bandung to Tanjung Karang in Lampung has a broken tire. The incident occurred at 2:15 a.m. WIB. It was reported that the plane had a tire break during the landing process at Tanjung Karang. At that time, the plane carried as many as 72 passengers. There were no casualties in this incident.
2. On August 3, 2017, a wing collision incident between Wings Air and Lion Air aircraft took place at Kualanamu International Airport, Deliserdang, North Sumatra. As a result of the accident, the wings of the two aircraft were damaged. There were no fatalities in this incident. At that time, the Lion Air plane carried 144 passengers from Banda Aceh to Medan. While the Wings Air plane carries as many

as 66 passengers.

3. 8. October 21, 2018, The Wings Air aircraft is reported to have hit a ground handling equipment or towing tractor on the runway of Halim Perdanakusuma Airport, East Jakarta. The ATR 72-500 PK-WFT type aircraft flew from Tanjung Karam to Halim. As a result of this incident, the aircraft did not become flown. Allegedly, the Wings Air plane experienced hydraulic loss problems resulting in damage to the doom radar and aircraft door gear nose.

2.23 PT Martha Buana Abadi

1. August 12, 2018, Pilatus Porter aircraft owned by PT Martha Buana Abadi was found destroyed on Mount Menuk, Pegunungan Bintang Regency, Papua Province. When the plane was found, the condition of the front of the aircraft was badly damaged and the left wing was broken. As a result of this accident, 8 people were declared dead and 1 person was declared safe.

2.24 PT Jhonlin Air's Cessna Caravan

1. October 10, 2018, some time ago, PT Jhonlin Air's Cessna Caravan 208EX-PK-JBR aircraft slipped at Beoga Airport, Papua. The plane carried food, departing from Mozes Kliangin Timika Airport at 06.00 Eastern Indonesia Time. Reportedly the plane only contained pilots, and did not carry passengers. There were no fatalities due to this incident.

2.25 Susi Air

1. In October 2008, a Diamond DA-40 with registration PK-VVL from Susi Air made an emergency landing on a firing range in the hilly Army Infantry Training Center compound, some 40 kilometers from the West Java provincial capital Bandung due to a fuel pump failure. As a result, the aircraft's propeller gear was damaged after hitting the ground on the uneven grass field.
2. On 9 September 2011 a Cessna 208B Grand Caravan with registration PK-VVE was destroyed when it crashed in the Pasema District, Indonesia. Both pilots were killed.
3. On 23 November 2011 a Cessna 208B Grand Caravan with registration PK-VVG was destroyed after a go-around at Sugapa Airport in Nabire, Papua, killing the aircraft's co-pilot and leaving the pilot with severe injuries; the two crews were the only people on the aircraft, which was operating a cargo flight.
4. On April 25, 2012 a PC 6 with registration PK VVQ crashed in Kalimantan Timur, Melak district killing the pilot and passenger(s) which was engaged in an Aerial Survey of the area.

2.26 Batik Air

1. On 6 November 2015, Batik Air Flight 6380, a Boeing 737-9GP(ER) with registration PK-LBO, overran the runway on landing by 100 meters at Yogyakarta Airport which caused the nose gear to collapse. 16 injuries were reported.
2. On 4 April 2016, Batik Air Flight 7703, operated by a Boeing 737-8GP (WL) with registration PK-LBS, collided with an ATR-42-600 aircraft on takeoff from runway 24 at Jakarta-Halim Perdana Kusuma Airport (HLP), Indonesia.

The ATR-42-600, operated by TransNusa and registered PK-TNJ, was being towed. No casualties were reported.

2.27 Kalstar Aviation

1. On December 21, 2015, Embraer 195LR with registration PK-KDC overshoots the runway at Kupang Airport while performing duty as KD678 from Ende to Kupang. Everyone onboard survived the incident.

5.0 CONCLUSION

In conclusion, this paper discusses on aircraft accidents in Indonesia. It was found that all airlines operating in Indonesia had a heavy or heavy accident or both. Lion Air is the most frequent airline operator with 1.16 rate of accident per year, followed by Batik Air with an annual accident rate of 0.4.

ACKNOWLEDGEMENTS

The authors would like to convey a great appreciation to Ocean and Aerospace Engineering Research Institute, Indonesia for supporting this research.

REFERENCE

1. Rina Atmasari. 2014, *Ini Daftar Kecelakaan Pesawat Terbang Indonesia*, Tempo.
2. Adhitya Himawan, Dian Kusumo Hapsari, *Kecelakaan Pesawat Terbang Menurun Tajam Sepanjang Tahun 2017*, Suara.com, 19 Januari 2018.
3. Astini Mega Sari, *Lion Air Jatuh, Inilah 9 Kecelakaan dan Insiden Pesawat di Indonesia dalam Dua Tahun Terakhir*, Tribunwow.com, 29 Oktober 2018 12:13
4. Sinar Putri S.Utami, Wahyu Rahmawati, 2018, *Ini deretan kecelakaan pesawat Lion Air sejak 2002*, 29 Oktober 2018, Kontan.
5. Susi Air, https://en.wikipedia.org/wiki/Susi_Air
6. Kalstar Aviation, https://en.wikipedia.org/wiki/Kalstar_Aviation
7. Batik Air, https://en.wikipedia.org/wiki/Batik_Air
8. Sriwijaya Air, https://en.wikipedia.org/wiki/Sriwijaya_Air