Demand & Prospects of Pilot Education & Training in Indonesia

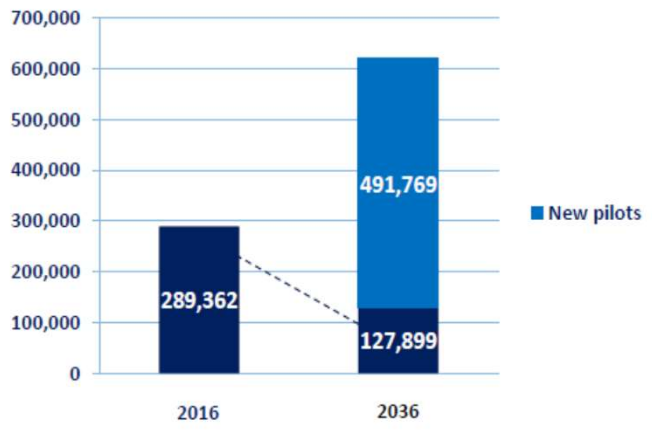
IR. KARIN ITEM, MM
CHAIRWOMAN OF INDONESIA ASSOCIATION OF AVIATION EDUCATION INSTITUTION (PIP21)

JOINT SEMINAR ON HIGHER EDUCATION FOR AVIATION PROFESSIONS (HE-AVIAP) TOWARDS INNOVATIVE UNIVERSITY DEGREE FOR AVIATION
JAKARTA, 25 – 26 APRIL 2019

ICAO Global and Regional 20-year Forecasts
(Doc 9956 –April 2018)

Pilot forecasts for 2036

Region	Pilots 2016*	Pilots 2036*
Africa	7,251	18,533
Asia-Pacific	84,211	306,268
Europe	66,542	114,299
Latin America	24,965	32,827
Middle East	18,816	45,776
North America	87,577	101,966
World	289,362	619,668



→ 67 new pilots / day

Asia Pacific needs approx. 30 new pilots/day

*ICAO - Number of pilots to fly aircraft above 100 seats, IATEC 2018

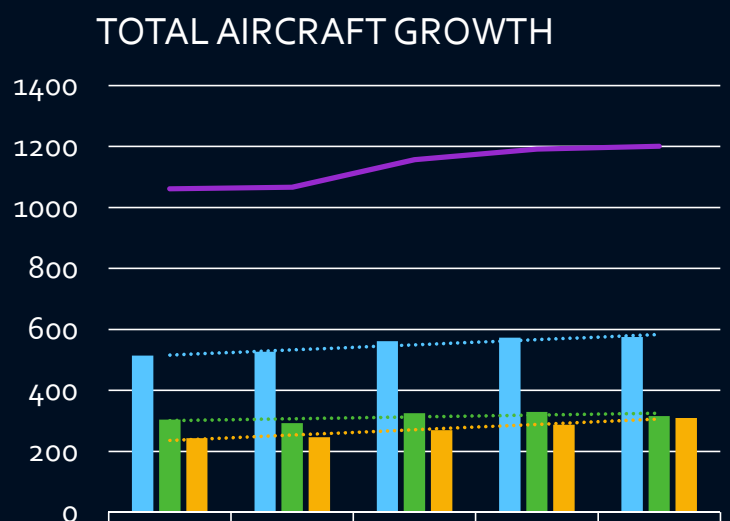
Indonesia Potency

The world's largest Island State, spread over **18,307** islands, occupied by **267 million** people (54% at Java Island)

Aviation is vital to connect people, exchange goods, and drive the economy
IATEC 2018

Indonesia Aircraft Growth

- Indonesia Pop. 261m have 575 aircraft (airlines).
- Compare to USA Pop. 326m, have 7,000 active aircraft. (Boeing 2016)
- To match per population ratio USA, Indonesia need to grow approx. 800%.
- Aircraft growth in 2017 from year 2013 only 13%; in 2017 difference total aircraft only **2**. Airlines more efficient: longer flight segment and hours, replace & add aircraft with bigger capacity.



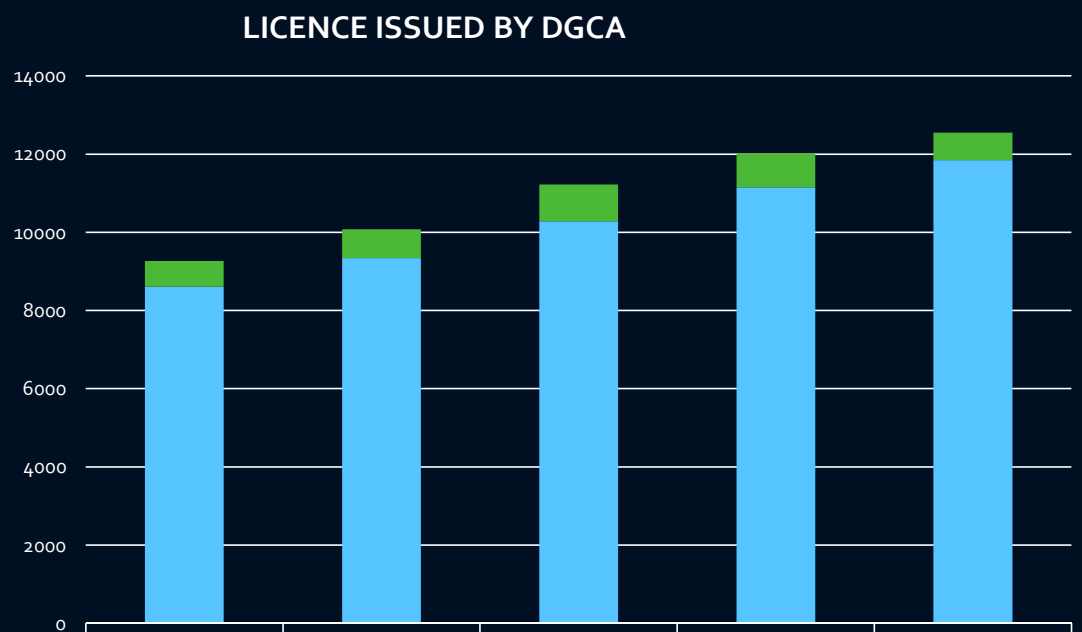
	2013	2014	2015	2016	2017
AOC-121	514	527	562	573	575
AOC-135	304	293	325	330	316
PSC-141, AOC-137, OC-91, FASI	243	247	270	288	310
TOTAL	1061	1067	1157	1191	1201

Ind. Economic growth 5% 2017

*Transportation Statistics 2017- DGCA

New Pilot Demand & Supply

- Total new licence issued in 2017 compared to 2013, growth approx 6%.
- But In 2017 new licence issued *decrease* approx. 24% compared to 2016.
- In 2013, registered **19** Certified Pilot School in Indonesia. During 2013-2017, 2 closed but 2 new certified.
- In 2017, production capacity, assuming aircraft ratio 1:5, of 19 pilot school in Indonesia is approx. 800 pilot per-year (10% Asia Pacific region pilot demand).
- Only **75%** (600) capacity utilized in 2017.
- In 2018, PIP21 predicts only **60% or lower** capacity utilized, from **16** active pilot school. In 2019, probably 2 more pilot school in active.



	2013	2014	2015	2016	2017
New Licence	660	733	941	868	699
Total Issued	8608	9341	10282	11150	11849

*Transportation Statistics 2017- DGCA

Challenge of Pilot School in Indonesia

- Surplus pilot from 2015 to 2017; predicted about 500 ab-initio pilots not absorbed by industry+ halo effect from media cover ; reduce quantity of student pilot intake.
- Airlines said most of commercial pilots graduated from pilot school did not meet the airline expectations. Airline has to put them at various entry-level training program before go to type rating course class.
- DGCA issued regulation more to facility improvement : minimum 5 aircraft per- pilot school and 1 one of them should be multi-engine aircraft, hangar facility for maintenance, area of school facility min 800m2. Later on school organization structure, and periodically audit & oversight.
- When one regional airport traffic growing, pilot school has to move out their Base Operation, or if could stay get limited window slot for flight excercise. VFR flying not as simple as flying in US or Australia.
- Up to now, not all airlines stated multi-engine licence requirement in recruitment process. Mandatory multi-engine aircraft at Pilot School, become the lowest productivity, and the highest burning cost, beside fuel and tax.

Indonesia Association of Aviation Education Institution (PIP2I)

INSTITUTION	CERTIF
Deraya Flying School	141
Aero Flyer Institute	141
Alfa Fying School	141
Bali Widya Dirgantara (BIFA)	141
Nusa Flying International	141, 142
National Aviation Management (NAM)	141, 142
Proflight Indonesia	141
Aviasi Solusi Prima (FlyBest)	141, 142
Genesa Dirgantara	141
Mitra Aviasi Perkasa (Perkasa)	141
Dirgantara Aviation Engineering (Tasik)	141
Aviaterra Dinamika	141, 142
Global Aviasi	141

Established on 13 September 2017 by 13 Pilot School & Training Center Indonesia

Global Challenge & Opportunity

- Pilot Shortage (duration of training is very important)
- New era of aviation technology, changing pilot profile (more technology-adaptive pilot).
- Effective & efficient Training :
  - Good pre-screening and selection of student pilot will minimize failure rate.
  - Understanding next-gen professional pilot (the curriculum should be a learner-focused)
  - Redesign training method & approach by using modern training media to meet the training objective.
  - Anticipate the teaching trend, like wearable technology, adaptive e-learning (data tapped into on individual basis to drive the curriculum of training-AI).
  - Instructors continuous improvement (shortage experience CFI)

A comprehensive program of training standards and concepts not only aimed at providing student pilots with the skills they will need to be effective professional pilots but goes on to ensure that these standards are not only maintained but enhanced over the pilot's whole career (IFALPA, IATEC 2018).

Indonesia Pilot School to Compete Globally

- Indonesia Situation are most likely same with Europe: has no benefited from a steady stream of military pilot or general aviation community.
- Most Indonesian school like European schools focus on produce commercial airline pilots. They have 2 training paths (both approx. 2 years program) :
  1. Traditional Ab-initio Training Model (Frozen ATPL)
  2. Multi-crew Pilot Licence (MPL).
- Indonesia schools should be more focus on training improvement to meet the airline's future requirement.
- Develop MPL program, but should have long-term contract with airlines.
- Open opportunity to meet international standard accepted by target region.
- Optimizing resources between PIP21 members.

Future Airline Pilot

- In addition to traditional skills of flying, navigating, and communicating, pilots in today's newer aircraft have to manage automation, information displays, and other new technologies.
- As airspace complexity and air traffic density increase, airline pilots must have increased situational awareness, understand risk assessment, and have a complete understanding of managing the automation of the aircraft.
- While much of a pilot's responsibility is procedural in nature, pilots must be trained to depart from linear thinking and "think outside the box" in order to deal with unexpected and undefined events.
- Future pilot should be more adaptive with the new technology era.
- Higher pilot education background becomes an advantage.

Bachelor's or Collegiate Degree Pilot

Pilot source study, published in 2010, authored by professors from several accredited collegiate aviation schools that researched the impact of **collegiate aviation training** on preparing students to be regional airline first officers. The researchers analyzed data on how 2,156 new-hire pilots performed in the training programs of six regional airlines from 2005 through 2009.

The study found that the **new-hire first officer** pilots with the **highest rate of success**—in terms of the amount of extra training needed to complete training tasks and fewer number of times tasks were not completed—in the airline training:

(1) were graduates of accredited college flight degree programs,

(2) had experience as flight instructors, and

(3) had accrued between 500 and 1,000 flight hours

(Source: US GAO-12-117/2011 Report)

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JKT / SIN

PPL GROUND/ FLIGHT

CPL GROUND/ FLIGHT

IR GROUND/FLIGHT

ME GROUND/ FLIGHT

→ **ATPL/JET INTRO** GROUND/SIM

TYPE-RATING GROUND

FSTD/ FBS

FFS SIMULATOR

→ **BASE-CHECK** /CONFIDENCE FLIGHT CHECKRIDE

→ **ROUTE TRAINING AIRLINE**

AIRLINE (PILOT) PATHWAY PROGRAM – AIRLINE CADETSHIP PROGRAM

Ground School integrate in:
-Univ. program lectures
-Online Learning Program-FAA
-Mentorship Class

Semester Break:
-Flying @ Batam

HIGHLIGHT

- ✓ Future pilot should be more adaptive with the new technology era. As airspace complexity and air traffic density increase, airline pilots must have increased situational awareness, understand risk assessment, and have a complete understanding of managing the automation of the aircraft. While much of a pilot's responsibility is procedural in nature, pilots must be trained to depart from linear thinking and "think outside the box" in order to deal with unexpected and undefined events.
- ✓ This requirement need higher skill of analytical thinking, knowledge and attitude background, which will be better covered in collegiate or university program,
- ✓ MPL Program will solve most of the pilot school and airline problem in Indonesia; furthermore, Indonesia pilot school could compete to fill global pilot demand, especially in Asia Pacific.
- ✓ Pilot Cadet/Student selection will still become a challenge the future. Government need to help reduce training cost, as other country do, by giving incentives.
- ✓ Indonesia with 18,307 islands, have a good opportunity for general aviation activity and aerial (build skill, airmanship, passion). When this activities grow, they will become the good source of future student pilot candidate.