Indonesian Civil Aviation Training Seminar
ICATS 2016

Sponsored by the Indonesian Ministry of Transportation
Conducted by the Human Resource Development Center

How Common Global Ab Initio Pilot Training Criteria Benefit All Stakeholders

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Yogyakarta, Indonesia

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The Benefits from Developing Global *Ab Initio* Pilot Training Standards

Who

What

When

Where

How

Why

Who –

- Is PABC, **What** is PABC doing & **Why**?
- Needs to hear this . . . and . . . **Why?**

Where - does this apply?

What - is the message?

When - do I need this?

How - does it benefit “me” / my company?

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WHO / WHAT is PABC

An international NGO aviation safety organization

Provide Independent, 3rd Party confirmation that

Ab Initio pilots are well prepared to enter airline/business Initial New Hire training

The Service we Provide for our global aviation industry:

PABC is developing the 3PK+ knowledge training criteria & testing service
[+ represents Competency ~ the ability to apply knowledge in normal flight operations]

PABC is NOT a Training Developer or Training Provider

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WHY – Develop these Criteria

2011 ICAO Study Findings

"Pilots need basic ATP-level knowledge to successfully complete airline New Hire training"

"… It is probable that the majority of current airline transport pilot knowledge exams fail to validate the necessary knowledge competencies to proceed with indoctrination to an international air operator."

ICAO Doc 9956 / published in 2011: 20-yr Global Forecast for Pilots, Engineers & Controllers
ATP: Airline Transport Pilot (License/Certificate) issued by Civil Aviation Authorities

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WHY
3PK+ Criteria & Testing Supports BOTH

Traditional Ab Initio Courses
& MPL Programs

Traditional Ab Initio Courses

PPL, CPL/IR/ME licenses		

3PK Knowledge Criteria +

Phase 1	2	3

MPL Qualification Courses

ATP+ Level

3PK TEST

Focus of 3PK Criteria & Testing:
Crew Operation of
Fixed-Wing Turbine Aircraft

1. Air Law
2. Aerodynamics
3. Aircraft General Systems
4. Human Performance
5. Navigation
6. Mass & Balance
7. Performance & Flight Planning
8. Safety: Ground & Flight
9. Security
10. Commercial & Business Operational Factors
11. Terminology
12. References & Resources

ATP-level Competency-based Testing

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WHY
3PK+ Criteria & Testing Supports BOTH

Traditional Ab Initio Courses & MPL Programs

Traditional Ab Initio Courses

PPL, CPL/IR/ME licenses

3PK Knowledge Criteria +

ATP+ Level

3PK TEST

Pilot POOL

Commercial Operations & Business Aviation

Employer-Funded Initial Indoctrination & Type Rating Courses

Any Airline IOE

Type Rating

A-320 / ATR-72

MPL Sponsor Airline IOE

Type Rating

B-737 / Q-400

Any Business IOE

Type Rating

G-650 / Phenom

ATP+ Competency-based Testing

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WHY – Develop these Criteria

Insurers Recommend *Test – Train*

To Prevent Failures Caused By Poor Ab Initio Training

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WHY – Develop these Criteria

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WHY – Develop these Criteria

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HOW – are 3PK+ Criteria & Tests Developed

PABC and the 3PK+ are designed to become

Industry Best Practice

Designed, Developed and Operated by

Industry Stakeholders*

In collaboration with

ICAO and State CAAs

* The 6 Stakeholder communities impacted by this endeavor

1. **Air Operators**
2. **Educators & Trainers**
3. **Insurers**
4. **Manufacturers**
5. **Pilots (Current & Future)**
6. **The Public**

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HOW – are 3PK+ Criteria & Tests Developed

Global Stakeholders: Roles & Contributions

1. Air Operators
2. Educators & Trainers
3. Insurers
4. Manufacturers
5. Pilots (Current)
6. The Public

ALL Stakeholders

PABC Board & Advisory Council

Industry & Public Updates

Flight Technical Expertise:

- Knowledge & Competency Criteria
- Test Development & Validation

ICAO & State CAAs

Confirm test compliance with regulatory standards

Contract Services

Support PABC in Test Design, Development, Delivery & Management Activities

The International Standards Organization (ISO)

Will audit & accredit PABC as an International *Professional Certification Body*

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WHY

3PK+ Training Criteria & Testing WILL keep up with

- **Industry & Regulatory Changes**
- **Advances in Training & Testing**

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WHY
To Help Meet Pilot Demand

Quality

The actual production rate of
***NEW* CPL/IR *Professional* Pilots**
is NOT known, but is estimated to be 15-20,000/year

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WHY
To Help Meet Pilot Demand

Quality 1st
Quantity

The actual production rate of
***NEW* CPL/IR *Professional* Pilots**
is NOT known, but is estimated to be 15-20,000/year

Global Annual Average Pilot Demand	Global Pilot Training Production ≠ Forecast Demand						How Will Industry Meet This Demand?						
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
35,000													
30,000							27,800						
25,000		Global Economic Recession			24,900	26,650	8	8	8	8	8	8 =	48,000
20,000	21,750	23,333	23,000	23,000			5	5	5	5	5	5 =	30,000
15,000													
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
Forecast	Boeing 20-Yr Global Forecast for NEW Pilots Needed by Year to Support Projected Fleet Growth												

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WHY

TO REDUCE THE PILOT SHORTAGE

- **Lack of preparedness**
  - **Degrades, delays or even halts a pilot's INH training**
  - **Delayed course completions disrupt staffing and route expansion plans**

TO REDUCE THE SAFETY THREAT

- **Lack of preparedness can go undetected during training, testing & checking**
  - **Poses a latent, long-term threat to operational safety and effectiveness**
  - **Contributes to operational errors, distractions and inefficiencies**
  - **Is functionally equivalent to operating without a "full" crew onboard.**

TO ENHANCE PILOT CAREER OPPORTUNITIES

- **3rd party confirmation of preparedness aids in invitations to interview**
- **Pilot MOBILITY will be increased when State CAAs as an AMC* for ATP exams**

*AMC: Alternative Means of Compliance accepted by each State

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The Benefits For Stakeholders & Regulators

Employers: Better prepared New Hire applicants result in:
Lower training costs, improved pilot / flight ops efficiency & effectiveness

Educators: Receive free access to current *Best Practice*. Innovation encouraged.
Course development & instructor qualification are simplified, and market access increased

Insurers: Reduced event claims through smarter ops and access to metric for rating policy risk

Manufacturers: Pilot staffing shortfall reduced; improved safety & operational reliability

Pilots: Have proof their preparedness, a faster grasp of new information & increased mobility

Public: Global air safety, expanded service & economic development goals are enhanced

Regulators: Receive free support for updating their standards and exams, and the ability to observe competency and advanced testing methods for their consideration

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The Benefits:

WHO - needs to hear this & WHEN?

WHO – Senior Executives in ALL 6 Stakeholder Communities

1. Air Operators
2. Educators & Trainers
3. Insurers
4. Manufacturers
5. Pilots (Current & Future)
6. The Public

NOTE
ICAO Staff and Many State CAAs
already understand the problem and encourage PABC's efforts

WHEN – Now!

We're already seeing evidence of the growing shortage

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3PK+ Alone will NOT Solve the Growing GLOBAL Pilot Shortage

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3PK+ Alone will NOT Solve the Growing GLOBAL Pilot Shortage

Self-funding

eliminates many suitable & highly motivated candidates from consideration

Aptitude

Attitude

Academic Preparation

Character

Desire

Health

Must be the factors used to select our Cadets for our Future Professional Pilot Workforce

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3PK+ Alone will NOT Solve the Growing GLOBAL Pilot Shortage

Self-funding

eliminates many suitable & highly motivated candidates from consideration

Unless we solve the funding issue:

- **The supply of *suitable* candidates will fail to meet the projected demand**

That Pilot Shortage WILL cause:

- **Aircraft orders to be delayed / cancelled**
- **Long-term supply contracts and beneficial pricing to be lost**
- **Manufacturers to lose skilled staff as lines close – costly to replace later**
- **Aircraft and associated equipment and service costs to rise**
- **Planned expansion of air service to be delayed**
- **Regional and global economic development plans to be disrupted**

PABC's *Foundation* Solves the Quantity Problem

The Aviation Professional Workforce Development Foundation

The APWDF / The Foundation

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Example: Can User Fee Loans Support 2013 GLOBAL Demand

?

ACI Reports Global Passenger Traffic Count for 2013 = 3 Billion

Boeing 20-Yr Forecast Average Annual Demand for NEW Pilots = 25,000

Estimated Cost of "Professional" Ab Initio Course / Pilot = $100,000 (USD)

What is the Annual Total Cost of Training for 25,000 pilots at $100,000 per pilot

	$100,000	Estimated Training Cost / NEW Pilot
	25,000	Forecast Demand for NEW Pilots / Yr
	$2,500,000,000	Total Loan Amount per Forecast Demand

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Can APWDF Assure Supply Chain Quality, Quantity & Sustainability

Yes

Foundation: Features & Functions

In addition to Maintaining ISO Accreditation

Note: CAAs approve or accept flight training providers' programs
APWDF Accredits (qualifies) programs for funding

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APWD Foundation Benefits

1. Assures Ab Initio pilots' preparedness for airline training
2. Provides larger & better screened and trained *Pilot Pool*
3. Makes production rate predictable & adjustable
4. Has negligible impact on passengers' ticket price
5. Provides loans designed for aviation careers
6. Assures staffing for planned air transport growth

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Pilot Demand vs. Production

A Multi-Faceted Shortage

Quality 1st
Quantity

The actual production rate of

***NEW* CPL/IR *Professional* Pilots**

is NOT known, but is estimated to be 15-20,000/year

HELP

Global Pilot Training
Production ≠ Forecast Demand

How Will Industry Meet This Demand?

Annual Pilot Demand	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
35,000													
30,000													
25,000	21,750	23,333	23,000	23,000	24,900	26,650	27,800						
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Global Economic Recession

Boeing 20-Yr Global Forecast for NEW Pilots
Needed by Year to Support Projected Fleet Growth

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Request # 1: That State CAAs Accurately Report Pro-Pilot Production

1. **Request ICAO & CAAs provide accurate State & Global pro-pilot production information**

   From each State CAA
   - **The number of INITIAL pilot licenses they issue each calendar year (Jan-Dec) for:**
     - **Instrument Ratings, CPL, MPL and ATPL pilots of Fixed Wing aircraft**
     - **Not to include: License conversions or renewals**
   - **The number of Approved Training Organizations (ATOs) in their State**
     - **The number and licensing levels of pilots they've graduated in the past year**

WHY?

This trillion dollar industry and its multi-trillion dollar impact on global economic growth must have accurate supply stream data in order to operate effectively.

- **State CAAs are the authorities responsible for these activities**
- **The expectation is both reasonable and a vitally important public safety service.**

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Request # 2: That ICAO Create Global Pro-Pilot Ab Initio Knowledge Training Standard

CPL/IR* Requirements

Have not kept pace with industry changes

*CPL/IR: Commercial Pilot License & Instrument Rating

AB INITIO & MPL

CPL/IR Pilots Hired

2011 ICAO Study Findings

"Pilots need basic ATP-level knowledge to successfully complete airline New Hire training"

Initial Indoctrination & Type Rating Training for New Hire Airline & Business Pilots

HELP

ICAO Doc 9956 / published in 2011: 20-yr Global Forecast for Pilots, Engineers & Controllers
ATP: Airline Transport Pilot (License/Certificate) issued by Civil Aviation Authorities

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Request # 2: That ICAO Create Global Pro-Pilot Ab Initio Knowledge Training Standard

2. Request that ICAO create a minimum global standard for the Knowledge Training of aspiring professional Ab Initio & MPL pilots

WHY?

A. To solve the problem ICAO identified in 2011

B. To enable State CAAs to consider the 3PK+ as an AMC* for their ATP-level exams

* AMC – Alternative Means of Compliance – for State CAA ATP-level knowledge exams

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The Benefits:

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The Benefits from Developing Global *Ab Initio* Pilot Training Standards

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What

When

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That's our Story

Thank you for listening

Please –
We always welcome Your Questions & Comments

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Solving the Global Pilot Shortage

The Problem: A Global Pilot Shortage

A 4-Part Solution:

- Training Criteria
- Certification
- Funding
- Operational Support System

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WHY – Develop these Criteria

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One More POSSIBLE Benefit

Dependent on Industry Support

Estimated Cost of 3PK+ Development

3-Year Timeline: $ 12 to 15 Million USD

2-Year Timeline: $ 15 to 20 Million USD

ACI 2014 Passenger Traffic Count			
REGIONS	Tickets Sold		Billion
China	416,500,000		0.417
Asia-Pacific	733,500,000		0.733
Combined	1,150,000,000		1.150

ACI 2014 Passenger Traffic Count			
REGIONS	Tickets Sold		Billion
China	416,500,000		0.417
Asia-Pacific	733,500,000		0.733
Combined	1,150,000,000		1.150

2-Year Development Timeline					
Est Total Cost = $15,000,000 (USD)					
	$7,500,000	*$7,500,000*		*/ Yr*	
Fee/Ticket >	0.018007203		$0.018	*/ Yr*	China
	0.010224949		$0.010	*/ Yr*	Asia-Pacific
	0.006521739		$0.007	*/ Yr*	Combined
	Divide: $7.5 Mil / 416 Mil				

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User Fee Benefits

Cost to Industry Stakeholders: ZERO

Cost to Passengers: Minimal in ALL Economies

For China & Asia-Pacific:

- **Prompt development of new criteria**
- **Enormous leadership & PR opportunity**