Captain Khaled Al Sheebani
Operations Training,
Etihad Airways
07 MAR 2018
Emphasis on hand flying – fundamentals refined first for continued reinforcement in Basic
• Duration of Core vs. Basic – the switch and why?
• Limited use of automation – automation table Basic phase

Efficiency of the Jet – use the jet as a TOOL – teach ELEMENTS of required SKILLS to develop the Pilot.
• Equipment changed, course must change. What can we do in the jet we could not accomplish previously?
  • Exposure to altitudes, different airports, energy management, descent planning, jet systems, crew coordination, so many elements...

Use what worked, think outside the box! – revised EMB BFC, long-briefings ‘just in time’, use of altitudes for unique jet experience.
• Rev 2 is FUNDAMENTALLY different than ANY prescriptive program. The philosophy to learn skills in a designed sequence. This is not intended to be a conventional program.

Build a SOLID IR Pilot before Intermediate Phase – re-focused phase lengths and objectives from original revision. Jet aircraft are great IR procedures trainers, speed, energy management, procedures, all a favorable for airline training.

Mitigate risk – out of “normal sequence” training to mitigate risk. Designed initial phase exposure to in-air maneuvering and handling. Progressive exposure to landing and takeoff.
<table>
<thead>
<tr>
<th></th>
<th>(lb)</th>
<th>(kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum ramp</td>
<td>10,626</td>
<td>4,820</td>
</tr>
<tr>
<td>Maximum takeoff</td>
<td>10,582</td>
<td>4,800</td>
</tr>
<tr>
<td>Maximum landing</td>
<td>9,877</td>
<td>4,480</td>
</tr>
<tr>
<td>Maximum zero fuel</td>
<td>8,554</td>
<td>3,880</td>
</tr>
<tr>
<td>Maximum zero fuel Optional</td>
<td>8,884</td>
<td>4,030</td>
</tr>
<tr>
<td>Basic operating (1) (2)</td>
<td>7,220</td>
<td>3,275</td>
</tr>
<tr>
<td>Available payload w/ max fuel</td>
<td>602</td>
<td>273</td>
</tr>
<tr>
<td>Maximum payload (2)</td>
<td>1,334</td>
<td>605</td>
</tr>
<tr>
<td>Maximum usable fuel (3)</td>
<td>2,804</td>
<td>1,272</td>
</tr>
</tbody>
</table>

NOTE: All data according to FAA baseline.
1. BDW considering 1 crew (200 lb, 91 kg).
2. Standard FAA configuration (weights may vary according to optional equipment installed or interior layout).
3. Adopted fuel density 6.70 lb/US gal (0.933 kg/l).
REQUIREMENTS FOR PHENOM

• Step 1; training areas to carry the flying:
  • The EMB needed a wider and bigger airspace due to operation envelop of the aircraft.
  • Training boxes over the UAE airspace.

• Step 2; GCAA approval on the program:
  • 1st MPL program in the region uses jet aircrafts in Core & Basic, E-300 for the UPRT.
  • GCAA requirement to approve the program:
    • Qualify E-300 instructors as FI.
    • EMB 100 instructors need to be TRI/TREs to train on the aircrafts.

• Step 3; EMB INSTRUCTOR QUALIFICATIONS:
  • Subject matter expert (SME) workshop on 21-Sep-2015 came with the following Instructor recommendations:
EMB INSTRUCTOR RECOMMENDATIONS

• Must have previous multi-engine turbine experience;
• Minimum 1500 HRS multi-crew aircraft or 500 hours time on type (EMB 500 - Phenom 100);
• Recent Instruction:
  • Must have provided Instruction within the past 3 years;
  • Minimum 1000 hrs as Instructor (A);
  • Minimum 500 hrs multi-engine (A);
• Good training history (no failure in checks) in the past 12 months;
• ICAO Level 4 ELP;
• Class 1 Medical;
• After GCAA approval, a TRE from FIN AIR academy support in the instructors qualifications.
The Dawn of PHENOM

• Started DEC 2016.

• All cadets training onboard EMB 100 only, supported the transition from the initial IR training to the A-320 type rating.

• Core and the basic have 45 flying hours.

• Flying in different airspaces, support the upper airspace knowledge.

• The major different, we omitted SOLO training in the program.

• SOLO is replaced with SPIC.

• This help in reducing the risk associated with the SOLO flying, and allow to evaluate the cadets more accurately.
COURSE STRUCTURE

Flight College

Core
- EMB Phenom FNPT II & EMB P100E
- General Handling (efficiency)
- Basic IR, evolving to Advance IR
- Multi Crew Ops
- CAS Management
- SOLID IR BRIDGE BUILT FOR INT/ADV

Basic
- EMB P100E

UPRT

Intermediate
- EY STRATEGY DEVELOPED
- A320 Systems & CBT
- APT A320 EY SOP’s
- A320 FFS Training
- A/C flows, systems
- ETOPS, All Wx Ops, etc.

ETIHAD-Abu Dhabi

EBT Advanced
- EY STRATEGY DEVELOPED
- A320 FFS Training
- Base Training
- Transition to LFUS

Base
- A320
# UPRT Training

<table>
<thead>
<tr>
<th>Extra 330 LT</th>
<th>ISA &amp; Sea Level Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Takeoff ground roll</td>
<td>200 meters</td>
</tr>
<tr>
<td>Rate of climb</td>
<td>2800 feet/min</td>
</tr>
<tr>
<td>Aerobatic flight endurance</td>
<td>01:00 (67 liters)</td>
</tr>
<tr>
<td>Spin recovery altitude</td>
<td>300 feet</td>
</tr>
<tr>
<td>Maximum operating temperature</td>
<td>44°C (engine limitation)</td>
</tr>
</tbody>
</table>
ETIHAD FLIGHT COLLEGE UPRT

Curriculum footprint

<table>
<thead>
<tr>
<th>ON AIRCRAFT</th>
<th>FULL FLIGHT SIMULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DAY 1</strong></td>
<td><strong>DAY 2</strong></td>
</tr>
<tr>
<td><strong>UPRT ACADEMIC GROUND TRAINING DAY</strong></td>
<td><strong>FLIGHT EXPOSURE TRAINING</strong></td>
</tr>
<tr>
<td>• Aerodynamics</td>
<td>• Pre-flight briefing</td>
</tr>
<tr>
<td>• Causes and case studies</td>
<td>• FLIGHT 1 (~.8 hr)</td>
</tr>
<tr>
<td>• Recognition and root cause</td>
<td>• Flight briefing</td>
</tr>
<tr>
<td>• Upset prevention techniques</td>
<td>• FLIGHT 2 (~.8 hr)</td>
</tr>
<tr>
<td>• Flight training elements and limitation of aircraft</td>
<td>• Post flight briefing and lessons learned</td>
</tr>
<tr>
<td>• Pre-flight including bail briefing and parachute safety</td>
<td></td>
</tr>
<tr>
<td><strong>FLIGHT EXPOSURE TRAINING</strong></td>
<td><strong>FLIGHT EXPOSURE TRAINING</strong></td>
</tr>
<tr>
<td><strong>FLIGHT 1 (~.8 hr)</strong></td>
<td><strong>FLIGHT 1 (~.8 hr)</strong></td>
</tr>
<tr>
<td><strong>FLIGHT 2 (~.8 hr)</strong></td>
<td><strong>FLIGHT 2 (~.8 hr)</strong></td>
</tr>
</tbody>
</table>

**FFS TRAINING A320**
Course developed by EY Strategy Team

- Flight control laws and protections (if applicable)
- Low and high altitude manual aircraft handling
- Energy management exercises
- Prevention and recovery techniques

**UPRT INSTRUCTOR TRAINING PROGRAM:**
- 2 Etihad Qualified pilots with considerable aerobatic experience (civil or military), 1 FI from Etihad Flight College, trained for UPRT.
- Tutima Aviation to conduct training in UAE for UPRT-I’s on-aircraft in UAE
- Instructor training outlined in EFC OM-D with recurrent training every 6 months

**AIRCRAFT:**
- (2) 2015 Extra 330LT aircraft in Al Ain (OMAL) with coordinated airspace approvals
- EFC Instructors will complete UPRT, Cadets and beyond...
ATPL VS. MPL

Course Comparison /WEEKS of Training

MPL Line training
AVRG 48 sectors, program is 42 sectors

ATPL Line training
AVRG 95 sectors, the program was 84 sectors
ATPL VS. MPL

• 274 started ATPL training at EY cadet pilot program, 223 complete training and became FO.

• Etihad and EFC had an ATPL program until 2013.

• 2013 MPL program started, 281 cadet trained or still under training.

• 86 became F/O. 25 did not complete the program for differ reasons.

• Rate of lost **18.6%** to **8.6%** from ATPL to MPL.

• Forecast first MPL group will reach command in 2024.
RESULTS

Outcome 4 years after starting MPL training

• Deficiencies like general knowledge, understanding company SOPs and multi cockpit crew operation are disappearing.

• As of today, we have 155 cadets in the airline either First Officer or still in training.

• 86 training disruptions recorded, only 2 training events were graded 1 (below than the acceptable standard).

• Most of the training reports were requesting additional training because the cadets were graded 2 in two consecutive training events, thus required Etihad Airways interference to support the cadets.
WAY TO THE FUTURE

- We introduced a new intermediate & advance program starting FEB 2018.
- It is based on the EBT training concept.
- Looking to train and develop the pilots competencies, rather only skills and tasks.
## CURRICULUM FOOTPRINT - ADVANCED PHASE

<table>
<thead>
<tr>
<th>GD 23</th>
<th>08:00 Hrs</th>
<th>GD 24</th>
<th>08:00 Hrs</th>
<th>GD 25</th>
<th>08:00 Hrs</th>
<th>GD 26</th>
<th>08:00 Hrs</th>
<th>GD 27</th>
<th>08:00 Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom &amp; Device</td>
<td>Classroom</td>
<td>Classroom</td>
<td>Classroom &amp; Device</td>
<td>Classroom</td>
<td>Classroom</td>
<td>Classroom</td>
<td>Classroom &amp; Device</td>
<td>Classroom</td>
<td>Classroom</td>
</tr>
<tr>
<td>INITIAL SEP TRAINING (inc. Door Training)</td>
<td>AVH TRAINING</td>
<td>LOFT BRIEFING</td>
<td>GROUND BASED LOFT 1</td>
<td>GROUND BASED LOFT 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEPI</td>
<td>AVHI</td>
<td>SFI</td>
<td></td>
<td>SFI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### FFS 23 04:00 Hrs

<table>
<thead>
<tr>
<th>FFS 23</th>
<th>04:00 Hrs</th>
<th>FFS 24</th>
<th>04:00 Hrs</th>
<th>FFS 25</th>
<th>04:00 Hrs</th>
<th>GD 28</th>
<th>08:00 Hrs</th>
<th>FFS 26</th>
<th>04:00 Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Briefing Room &amp; FFS</td>
<td>Briefing Room &amp; FFS</td>
<td>Briefing Room &amp; FFS</td>
<td>CBT &amp; Classroom</td>
<td>Briefing Room &amp; FFS</td>
<td>AIRBUS A320 FULL FLIGHT SIMULATOR TRAINING (LOFT)</td>
<td>AIRBUS A320 FULL FLIGHT SIMULATOR TRAINING (LOFT)</td>
<td>AIRBUS A320 VARIANT TRAINING ACAA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIRBUS A320 FULL FLIGHT SIMULATOR TRAINING (LOFT)</td>
<td>AIRBUS A320 FULL FLIGHT SIMULATOR TRAINING (LOFT)</td>
<td>AIRBUS A320 FULL FLIGHT SIMULATOR TRAINING (LOFT)</td>
<td>INITIAL OPERATIONS TRAINING RETO PROCEDURES AIRBUS A320 VARIANT TRAINING (LOFT)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SFI</td>
<td>SFI</td>
<td>SFI</td>
<td>CBT/SELF STUDY/GI</td>
<td>SFI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### FFS 27 04:00 Hrs

<table>
<thead>
<tr>
<th>FFS 27</th>
<th>04:00 Hrs</th>
<th>FFS 28</th>
<th>04:00 Hrs</th>
<th>FFS 29</th>
<th>04:00 Hrs</th>
<th>FFS 30</th>
<th>04:00 Hrs</th>
<th>GD 29</th>
<th>08:00 Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Briefing Room &amp; FFS</td>
<td>Briefing Room &amp; FFS</td>
<td>Briefing Room &amp; FFS</td>
<td>Briefing Room &amp; FFS</td>
<td>CBT</td>
<td>AIRBUS A320 FULL FLIGHT SIMULATOR TRAINING (LOFT)</td>
<td>AIRBUS A320 FULL FLIGHT SIMULATOR TRAINING (LOFT)</td>
<td></td>
<td>ETOPS</td>
<td></td>
</tr>
<tr>
<td>AIRBUS A320 AIRCRAFT SYSTEMS</td>
<td>AIRBUS A320 FULL FLIGHT SIMULATOR TRAINING (LOFT)</td>
<td>AIRBUS A320 FULL FLIGHT SIMULATOR TRAINING (LOFT)</td>
<td>AIRBUS A320 FULL FLIGHT SIMULATOR TRAINING (LOFT)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SFI</td>
<td>SFI</td>
<td>SFI</td>
<td>SFI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### GD 30 08:00 Hrs

<table>
<thead>
<tr>
<th>GD 30</th>
<th>08:00 Hrs</th>
<th>FFS 31</th>
<th>04:00 Hrs</th>
<th>FFS 32</th>
<th>04:00 Hrs</th>
<th>FFS 33</th>
<th>04:00 Hrs</th>
<th>APT 10</th>
<th>04:00 Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom</td>
<td>Briefing Room &amp; FFS</td>
<td>Briefing Room &amp; FFS</td>
<td>Briefing Room &amp; FFS</td>
<td>Briefing Room &amp; APT</td>
<td>AIRBUS A320 AIRCRAFT SYSTEMS</td>
<td></td>
<td>AIRBUS A320 AIRCRAFT SYSTEMS</td>
<td>AIRBUS A320 PROCEDURES TRAINING</td>
<td></td>
</tr>
<tr>
<td>INITIAL OPERATIONS TRAINING</td>
<td>AIRBUS A320 FULL FLIGHT SIMULATOR TRAINING ETOPS</td>
<td>AIRBUS A320 FULL FLIGHT SIMULATOR TRAINING LVOPS</td>
<td>AIRBUS A320 FULL FLIGHT SIMULATOR TRAINING LST / OPC (Pairing Note)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
THANK YOU

From Abu Dhabi to the world