**APPENDIX 3.**

***GM 1.* to Appendix 5. Integrated MPL Training Course**

*GENERAL*

***a )*** In broad terms, the MPL holder is expected to be able to complete the airline operators’ conversion course with a high probability of success and within the time frame normally allowed for this phase.

The standard is equivalent to what is currently expected from graduates of the ATP( A ) Integrated Course who have completed Type Rating training ;

***b )*** The general approach is to use the existing ATP( A ) Integrated Training Course as a reference and to implement progressively the MPL Integrated Training Course and specifically the transfer from actual flight to simulated flight ;

***c )*** This transfer should be organized in a way that is similar to the approach used for ETOPS. Successive evolutions of the training syllabus introduce progressively a higher level of simulated flight and a reduction of actual flight. Change from one version to the next should only take place after enough experience has been gained and once its results, including those of airline operator conversion courses, have been analyzed and taken into account.

***MPL TRAINING SCHEME***

***d )*** The following scheme should be applied :

***MPL Training Scheme***

Minimum **240** *hours* of training, including :

“ **Pilot Flying** ” *( PF )* *and* “ **Pilot Non Flying** ” *( PNF ).*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Phases of Training** | | **Training Items** | **Flight and Simulated Flight**  **Training Media**  ***Minimum Level Requirement*** | | **Ground Training Media** |
| **Integrated TEM Principles** | **Phase 4. *Advanced***  Type Rating training within an airline oriented environment |  CRM   Landing training   All Weather   LOFT   Abnormal Procedures   Normal Procedures | Aeroplane :  ME  Multi - Crew Certified | **12** Take -offs and landings  as PF |   CBT    E - learning    Part task trainer    Class room |
| FSTD  FS Level D *or* C  +  ATC simulation |
| PF / PNF |
|  | | | |
| **Phase 3 *Intermediate***  Application of multi - crew operations in a high performance ME turbine aeroplane |  CRM   LOFT   Abnormal Procedures   Normal Procedures   Multi - crew   Instrument Flight | FSTD :  representing an ME turbine powered aeroplane to be operated with a co-pilot and qualified to an equivalent standard to Level B + ATC simulation | PF / PNF |
|  | | | |
| **Phase 2. *Basic***  Introduction of multi - crew operations and instrument flight |  CRM   PF / PNF complement   IFR cross - country   Instrument Flight | Aeroplane :  SE *or* ME | PF / PNF |
| FSTD :  FNPT II + MCC |
|  | | | |
| **Phase 1.**  ***Core Flying Skills***  Specific basic  SP training |  CRM   VFR Cross-country   Solo Flight   Basic Instrument  Flight   Principles of Flight   Cockpit Procedures   Upset Recovery   Night Flight | Aeroplane :  SE *or* ME | PF |
| FSTD :  FNPT I / BITD |

***THEORETICAL KNOWLEDGE INSTRUCTION***

***e )*** The **750** hours of theoretical knowledge instruction can include classroom work, interactive video, slide or tape presentation, learning carrels, computer-based training, and other media as approved by the GDCA of RA, in suitable proportions.

***COMPETENCY UNITS, COMPETENCY ELEMENTS and PERFORMANCE CRITERIA***

***f )*** Apply human performance principles, including principles of Threat and Error Management:

1 ) cooperation ;

2 ) leadership and managerial skills ;

3 ) situation awareness ;

4 ) decision making.

These behavior categories are intended to help in the effective utilization of all available resources to achieve safe and efficient operations.

These behavior categories may be adapted and extended to incorporate issues like communication and use of automation if it is considered to be relevant to the development of the curriculum.

***g )*** *Perform Aircraft Ground and Pre - Flight Operations.*

List of competency elements and performance criteria :

|  |  |  |  |
| --- | --- | --- | --- |
| **N0** | **I T E M** | **Duties** | **Observa- tion & Asses -**  **-sment** |
| **1.** | Demonstrate attitudes and behaviors appropriate to the safe conduct of flight, including recognizing and managing potential threats and errors |  | S / U |
| **2.** | Perform dispatch duties :  *i ) verifies technical condition of the a/c, including adequate use of MEL ;*  *ii) checks technical bulletins and notices ;*  *iii) determines operational environment and pertinent weather ;*  *iv) determines impact of weather on aircraft performance ;*  *v) applies flight planning and load procedures ;*  *vi) determines fuel requirement ;*  *vii) files an ATS flight plan ( if required ).* | PF / PNF  PF / PNF  PF / PNF  PF / PNF  PF / PNF  PF / PNF  PF / PNF | S / U |
| **3.** | Provide flight crew and cabin crew briefings :  *i) briefed flight crew in all relevant matters ;*  *ii) briefed cabin crew in all relevant matters.* | PF  PF | S / U |
| **4.** | Perform pre - flight checks and cockpit preparation :  *i) ensures the airworthiness of the aircraft ;*  *ii) performs the cockpit preparation and briefings ;*  *iii) performs FMS initialization, data insertion and confirmation ;*  *iv) optimizes and checks take-off performance and take-off data calculation.* | PF  PF / PNF  PF / PNF  PF / PNF | S / U |
| **5.** | Perform engine start :  *i) asks for, receives acknowledges and checks ATC clearance ;*  *ii) performs engine start procedure ;*  *iii) uses standard communication procedures with ground crew and ATC.* | PNF  PF / PNF  PF / PNF | S / U |
| **6.** | Perform taxi out :  *i) receives, checks and adheres to taxi clearance ;*  *ii) taxis the aircraft, including use of exterior lighting ;*  *iii) complies to taxi clearance ;*  *iv) maintains look-out for conflicting traffic and obstacles ;*  *v) operates thrust, brakes and steering ;*  *vi) conducts relevant briefings ;*  *vii) uses standard communication procedures with crew and ATC ;*  *viii) completes standard operating procedures and checklists ;*  *ix) updates and confirms FMS data ;*  *x) manages changes in performance and departure route ;*  *xi) completes de or anti-ice procedures.* | PNF  PF  PF / PNF  PF / PNF  PF  PF  PNF  PF / PNF PF / PNF  PF / PNF  PF / PNF | S / U |
| **7.** | Manage abnormal and emergency situations :  *i) identifies the abnormal condition ;*  *ii) interprets the abnormal condition ;*  *iii) performs the procedure for the abnormal condition.* | PF / PNF  PF / PNF  PF / PNF | S / U |
| **8.** | Communicate with cabin crew, passengers and company :  *i) communicates relevant information with cabin crew ;*  *ii) communicates relevant information with company ;*  *iii) makes passenger announcements when appropriate.* | PF  PF / PNF  PF / PNF | S / U |

***h )***  *Perform Take - off*

List of competency elements and performance criteria :

|  |  |  |  |
| --- | --- | --- | --- |
| **N0** | **I T E M** | **Duties** | **Observa- tion & Asses -**  **-sment** |
| **1.** | Demonstrate attitudes and behaviors appropriate to the safe conduct of flight, including recognizing and managing potential threats and errors. |  | S / U |
| **2.** | Perform pre-take-off and pre-departure preparation :  *i) checks and acknowledges line up clearance ;*  *ii) checks correct runway selection ;*  *iii) confirms validity of performance data ;*  *iv) checks approach sector and runway are clear ;*  *v) confirms all checklists and take-off preparations completed ;*  *vi) lines - up the aircraft on centerline without losing distance ;*  *vii) checks weather on departure sector ;*  *viii) checks runway status and wind.* | PF / PNF  PF / PNF  PF / PNF  PF / PNF  PF / PNF  PF  PF / PNF  PF / PNF | S / U |
| **3.** | Perform Take - off roll :  *i) applies take-off thrust ;*  *ii) checks engine parameters ;*  *iii) checks air speed indicators ;*  *iv) stays on runway centerline.* | PF  PNF  PF / PNF  PF | S / U |
| **4.** | Perform transition to Instrument Flight Rules :  *i) applies V****1*** *procedures ;*  *ii) rotates at V* ***r***  *to initial pitch attitude ;*  *iii) establishes initial wings level attitude ;*  *iv) retracts landing gear ;*  *v) maintains climb out speed.* | PF / PNF  PF  PF  PNF  PF | S / U |
| **5.** | Perform initial climb to flap retraction altitude :  *i) sets climb power ;*  *ii) adjusts attitude for acceleration ;*  *iii) selects flaps according flap speed schedule ;*  *iv) observes speed restrictions ;*  *v) completes relevant checklist.* | PF  PF  PF / PNF  PF  PF / PNF | S / U |
| **6.** | Perform Rejected Take - off :  *i) recognizes the requirement to abort the take - off ;*  *ii) applies the rejected take - off procedure ;*  *iii) assesses the need to evacuate the aircraft.* | PF  PF  PF / PNF | S / U |
| **7.** | Perform navigation :  *i) complies to departure clearance ;*  *ii) complies with published departure procedures, for example speeds ;*  *iii) monitors navigation accuracy ;*  *iv) communicates and coordinates with ATC.* | PF  PF  PF / PNF  PNF | S / U |
| **8.** | Manage abnormal and emergency situations :  *i) identifies the abnormal condition ;*  *ii) interprets the abnormal condition ;*  *iii) performs the procedure for the abnormal condition.* | PF / PNF  PF / PNF  PF / PNF | S / U |

***i )*** *Perform Climb.*

List of competency elements and performance criteria :

|  |  |  |  |
| --- | --- | --- | --- |
| **N0** | **I T E M** | **Duties** | **Observa- tion & Asses -**  **-sment** |
| **1.** | Demonstrate attitudes and behaviors appropriate to the safe conduct of flight, including recognizing and managing potential threats and errors. |  | S / U |
| **2.** | Perform SID or En-route navigation :  *i) complies with departure clearance and procedures ;*  *ii) demonstrates terrain awareness ;*  *iii) monitors navigation accuracy ;*  *iv) adjusts flight to weather and traffic conditions ;*  *v) communicates and coordinates with ATC ;*  *vi) observes minimum altitudes ;*  *vii) selects appropriate level of automation ;*  *viii) complies with altimeter setting procedures.* | PF  PF / PNF  PF / PNF  PF  PNF  PF / PNF  PF  PF / PNF | S / U |
| **3.** | Complete climb procedures and checklists :  *i) performs the after take-off items ;*  *ii) confirms and checks according checklists.* | PF / PNF  PF / PNF | S / U |
| **4.** | Modify climb speeds, rate of climb and cruise altitude :  *i) recognizes the need to change speed, rate of climb or cruise altitude ;*  *ii) selects and maintains the appropriate climb speed or rate of climb ;*  *iii) selects optimum cruise flight level.* | PF  PF  PF / PNF | S / U |
| **5.** | Perform systems operations and procedures :  *i) monitors operation of all systems ;*  *ii) operates systems as required.* | PF / PNF  PF / PNF | S / U |
| **6.** | Manage abnormal and emergency situations :  *i) identifies the abnormal condition ;*  *(ii) interprets the abnormal condition ;*  *(iii) performs the procedure for the abnormal condition.* | PF  PF  PF / PNF | S / U |
| **7.** | Communicate with cabin crew, passengers and company :  *i) communicates relevant information with cabin crew ;*  *ii) communicates relevant information with company;*  *iii) makes passenger announcements when appropriate.* | PF  PF / PNF  PF | S / U |

***j )*** *Perform Cruise.*

List of competency elements and performance criteria :

|  |  |  |  |
| --- | --- | --- | --- |
| **N0** | **I T E M** | **Duties** | **Observa- tion & Asses -**  **-sment** |
| **1.** | Demonstrate attitudes and behaviors appropriate to the safe conduct of flight, including recognizing and managing potential threats and errors. |  | S / U |
| **2.** | Monitor navigation accuracy :  *i) demonstrates adequate area knowledge ;*  *ii) demonstrates adequate route knowledge ;*  *iii) navigates according to flight plan and clearance ;*  *iv) adjusts flight to weather and traffic conditions ;*  *v) communicates and coordinates with ATC ;*  *vi) observes minimum altitudes ;*  *vii) uses all means of automation.* | PF / PNF  PF / PNF  PF  PF  PNF  PF / PNF  PF | S / U |
| **3.** | Monitor flight progress :  *i) selects optimum speed ;*  *ii) selects optimum cruise flight level ;*  *iii) monitors and controls fuel status ;*  *iv) recognizes the need for a possible diversion ;*  *v) creates a diversion contingency plan if required.* | PF  PF  PF / PNF  PF / PNF  PF / PNF | S / U |
| **4.** | Perform descent and approach planning :  *i) checks weather of destination and alternate airport ;*  *ii) checks runway in use and approach procedure ;*  *iii) sets the FMS accordingly ;*  *iv) checks landing weight and landing distance required ;*  *v) checks MEA, MGA and MSA ;*  *vi) identifies top of descent point.* | PF / PNF  PF / PNF  PNF  PNF  PF / PNF  PF | S / U |
| **5.** | Perform systems operations and procedures :  i*) monitors operation of all systems ;*  *ii) operates systems as required.* | PF / PNF  PNF | S / U |
| **6.** | Manage abnormal and emergency situations :  *i) identifies the abnormal condition ;*  *ii) interprets the abnormal condition ;*  *iii) performs the procedure for the abnormal condition.* | PF / PNF PF / PNF  PF / PNF | S / U |
| **7.** | Communicate with cabin crew, passengers and company :  *i) communicates relevant information with cabin crew ;*  *ii) communicates relevant information with company ;*  *iii) makes passenger announcements when appropriate.* | PF  PF / PNF  PF | S / U |

***k )*** *Perform Descent*

List of competency elements and performance criteria :

|  |  |  |  |
| --- | --- | --- | --- |
| **N0** | **I T E M** | **Duties** | **Observa- tion & Asses -**  **-sment** |
| **1.** | Demonstrate attitudes and behaviors appropriate to the safe conduct of flight, including recognizing and managing potential threats and errors. |  | S / U |
| **2.** | Initiate and manage descent :  *i) starts descent according to ATC clearance or optimum descent point ;*  *ii) selects optimum speed and descent rate ;*  *iii) adjusts speed to existing environmental conditions;*  *iv) recognizes the need to adjust the descent path ;*  *v) adjusts the flight path as required ;*  *vi) utilizes all means of FMS descent information.* | PF  PF  PF  PF  PF  PF | S / U |
| **3.** | Monitor and perform en - route and descent navigation :  *i) complies with arrival clearance and procedures ;*  *ii) demonstrates terrain awareness ;*  *iii) monitors navigation accuracy ;*  *iv) adjusts flight to weather and traffic conditions ;*  *v) communicates and coordinates with ATC ;*  *vi) observes minimum altitudes ;*  *vii) selects appropriate level or mode of automation ;*  *viii) complies with altimeter setting procedures.* | PF  PF / PNF  PF / PNF  PF  PNF  PF / PNF  PF  PF / PNF | S / U |
| **4.** | Re - planning and update of approach briefing :  *i) re-checks destination weather and runway in use ;*  *ii) briefs or re-briefs about instrument approach and landing as required ;*  *iii) reprograms the FMS as required ;*  *iv) re - checks fuel status.* | PNF  PF  PNF  PF / PNF | S / U |
| **5.** | Perform holding :  *i) identifies holding requirement ;*  *ii) programs FMS for holding pattern ;*  *iii) enters and monitors holding pattern ;*  *iv) assesses fuel requirements and determines max holding time ;*  *v) reviews the need for a diversion ;*  *vi) initiates diversion.* | PF / PNF  PNF  PF  PF / PNF  PF / PNF  PF | S / U |
| **6.** | Perform systems operations and procedures :  *i) monitors operation of all systems ;*  *ii) operates systems as required.* | PF / PNF PF / PNF | S / U |
| **7.** | Manage abnormal and emergency situations :  *i) identifies the abnormal condition ;*  *ii) interprets the abnormal condition ;*  *iii) performs the procedure for the abnormal condition.* | PF / PNF  PF / PNF  PF / PNF | S / U |
| **8.** | Communicate with cabin crew, passengers and company :  *i) communicates relevant information with cabin crew ;*  *ii) communicates relevant information with company ;*  *iii) makes passenger announcements when appropriate.* | PF  PF / PNF  PF | S / U |

***l )*** *Perform Approach*

List of competency elements and performance criteria :

|  |  |  |  |
| --- | --- | --- | --- |
| **N0** | **I T E M** | **Duties** | **Observa- tion & Asses -**  **-sment** |
| **1.** | Demonstrate attitudes and behaviors appropriate to the safe conduct of flight, including recognizing and managing potential threats and errors. |  | S / U |
| **2.** | Perform approach in general :  *i) executes approach according to procedures and situation ; PF*  *ii) selects appropriate level or mode of automation ; PF*  *iii) selects optimum approach path ; PF*  *iv) operates controls smooth and coordinated ; PF*  *v) performs speed reduction and flap extension ; PF/PNF*  *vi) performs relevant checklists ; PF/PNF*  *vii) initiates final descent ; PF*  *viii) achieves stabilized approach criteria ; PF*  *ix) ensures adherence to minima ; PF/PNF*  *x) initiates go-around if required ; PF*  *xi) masters transition to visual segment. PF* | PF  PF  PF  PF  PF / PNF  PF / PNF  PF  PF  PF / PNF  PF  PF | S / U |
| **3.** | Perform precision approach:  *i) performs ILS approach ;*  *ii) performs MLS approach.* | PF  PF | S / U |
| **4.** | Perform non - precision approach :  *i) performs VOR approach ;*  *ii) performs NDB approach ;*  *iii) performs SRE approach ;*  *iv) performs GNSS approach ;*  *v) performs ILS Loc approach ;*  *vi) performs ILS back beam approach.* | PF  PF  PF  PF  PF  PF | S / U |
| **5.** | Perform approach with visual reference to ground :  *i) performs standard visual approach ;*  *ii) performs circling approach.* | PF  PF | S / U |
| **6.** | Monitor the flight progress :  *i) insures navigation accuracy ;*  *ii) communicates with ATC and crew members ;*  *iii) monitors fuel status.* | PF / PNF  PNF  PF / PNF | S / U |
| **7.** | Perform systems operations and procedures :  *i) monitors operation of all systems ;*  *ii) operates systems as required.* | PF  PF | S / U |
| **8.** | Manage abnormal and emergency situations :  *i) identifies the abnormal condition ;*  *ii) interprets the abnormal condition ;*  *iii) performs the procedure for the abnormal condition.* | PF / PNF  PF / PNF  PF / PNF | S / U |
| **9.** | Perform missed approach and go-around :  *i) initiates go-around procedure ;*  *ii) navigates according to missed approach procedure ;*  *iii) completes the relevant checklists ;*  *iv) initiates approach or diversion after the go - around ;*  *v) communicates with ATC and crew members.* | PF  PF  PF / PNF  PF  PNF | S / U |
| **10.** | Communicate with cabin crew, passengers and company :  *i) communicates relevant information with cabin crew ;*  *ii) communicates relevant information with company ;*  *iii) makes passenger announcements when appropriate ;*  *iv) initiates go-around procedure.* | PF  PF / PNF  PF  PF | S / U |

***m )*** *Perform Landing*

List of competency elements and performance criteria :

|  |  |  |  |
| --- | --- | --- | --- |
| **N0** | **I T E M** | **Duties** | **Observa- tion & Asses -**  **-sment** |
| **1.** | Demonstrate attitudes and behaviors appropriate to the safe conduct of flight, including recognizing and managing potential threats and errors. |  | S / U |
| **2.** | Land the aircraft :  *i) maintains a stabilized approach path during visual segment ;*  *ii) recognizes and acts on changing conditions for windshift or wind shear segment ;*  *iii) initiates flare ;*  *iv) controls thrust ;*  *v) achieves touchdown in touchdown zone on centerline ;*  *vi) lowers nose wheel ;*  *vii) maintains centerline ;*  *viii) performs after-touchdown procedures ;*  *ix) makes use of appropriate braking and reverse thrust ;*  *(x) vacates runway with taxi speed.* | PF    PF  PF  PF  PF  PF  PF  PF  PF  PF | S / U |
| **3.** | Perform systems operations and procedures :  *i) monitors operation of all systems ;*  *ii) operates systems as required.* | PF  PF | S / U |
| **4.** | Manage abnormal and emergency situations :  *i) identifies the abnormal condition ;*  *ii) interprets the abnormal condition ;*  *iii) performs the procedure for the abnormal condition.* | PF / PNF  PF / PNF  PF / PNF | S / U |

***n )*** *Perform after Landing and Post - flight Operations*

List of competency elements and performance criteria :

|  |  |  |  |
| --- | --- | --- | --- |
| **N0** | **I T E M** | **Duties** | **Observa- tion & Asses -**  **-sment** |
| **1.** | Demonstrate attitudes and behaviors appropriate to the safe conduct of flight, including recognizing and managing potential threats and errors. |  | S / U |
| **2.** | Perform taxiing and parking :  *i) receives, checks and adheres to taxi clearance ;*  *ii) taxies the aircraft including use of exterior lighting ;*  *iii) controls taxi speed ;*  *iv) maintains centerline ;*  *v) maintains look-out for conflicting traffic and obstacles ;*  *vi) identifies parking position ;*  *vii) complies with marshalling or stand guidance ;*  *viii) applies parking and engine shut down procedures ;*  *ix) completes with relevant checklists.* | PNF  PF  PF / PNF  PF  PF  PF / PNF  PF / PNF  PF  PF / PNF | S / U |
| **3.** | Perform aircraft post - flight operations :  *i) communicates to ground personnel and crew ;*  *ii) completes all required flight documentation ;*  *iii) ensures securing of the aircraft ;*  *iv) conducts the debriefings.* | PF  PF / PNF  PF  PF | S / U |
| **4.** | Perform systems operations and procedures :  *i) monitors operation of all systems ;*  *ii) operates systems as required.* | PF  PF | S / U |
| **5.** | Manage abnormal and emergency situations :  *i) identifies the abnormal condition ;*  *ii) interprets the abnormal condition ;*  *iii) performs the procedure for the abnormal condition.* | PF / PNF  PF / PNF  PF / PNF | S / U |
| **6.** | Communicate with cabin crew, passengers and company :  *i) communicates relevant information with cabin crew ;*  *ii) communicates relevant information with company ;*  *iii) makes passenger announcements when appropriate ;* | PF  PF / PNF  PF | S / U |

***PRINCIPLES of THREAT and ERROR MANAGEMENT***

***o )*** *One Model that explains the principles of Threat and Error Management*

*is the TEM Model.*

***1 ) The components of the TEM Model :***

There are three basic components in the TEM model, from the perspective of flight crews : threats, errors and undesired aircraft states.

The model proposes that threats and errors are part of everyday aviation operations that must be managed by flight crews, since both threats and errors carry the potential to generate undesired aircraft states. Flight crews must also manage undesired aircraft states, since they carry the potential for unsafe outcomes. Undesired state management is an essential component of the TEM model, as important as threat and error management. Undesired aircraft state management largely represents the last opportunity to avoid an unsafe outcome and thus maintain safety margins in flight operations ;

***2 ) Threats :***

( i ) threats are defined as events or errors that occur beyond the influence of the flight crew, increase operational complexity, and which must be managed to maintain the margins of safety. During typical flight operations, flight crews have to manage various contextual complexities. Such complexities would include, for example, dealing with adverse meteorological conditions, airports surrounded by high mountains, congested airspace, aircraft malfunctions, errors committed by other people outside of the cockpit, such as air traffic controllers, flight attendants or maintenance workers, and so forth. The TEM model considers these complexities as threats because they all have the potential to negatively affect flight operations by reducing margins of safety ;

( ii ) some threats can be anticipated, since they are expected or known to the flight crew. For example, flight crews can anticipate the consequences of a thunderstorm by briefing their response in advance, or prepare for a congested airport by making sure they keep a watchful eye on other aircraft as they execute the approach ;

( iii ) some threats can occur unexpectedly, such as an in-flight aircraft malfunction that happens suddenly and without warning. In this case, flight crews must apply skills and knowledge acquired through training and operational experience ;

( iv ) lastly, some threats may not be directly obvious to, or observable by, flight crews immersed in the operational context, and may need to be uncovered by safety analysis. These are considered latent threats. Examples of latent threats include equipment design issues, optical illusions, or shortened turn-around schedules ;

( v ) regardless of whether threats are expected, unexpected, or latent, one measure of the effectiveness of a flight crew’s ability to manage threats is whether threats are detected with the necessary anticipation to enable the flight crew to respond to them through deployment of appropriate countermeasures ;

( vi ) threat management is a building block to error management and undesired aircraft state management. Although the threat- error linkage is not necessarily straightforward, and although it may not be always possible to establish a linear relationship, or one-to-one mapping between threats, errors and undesired states, archival data demonstrates that mismanaged threats are normally linked to flight crew errors, which in turn are often linked to undesired aircraft states.

Threat management provides the most proactive option to maintain margins of safety in flight operations, by voiding safety-compromising situations at their roots. As threat managers, flight crews are the last line of defence to keep threats from impacting flight operations ;

( vii ) Table 1 presents examples of threats, grouped under two basic categories derived from the TEM Model.

Environmental threats occur due to the environment in which flight operations take place. Some environmental threats can be planned for and some will arise spontaneously, but they all have to be managed by flight crews in real time.

Organizational threats, on the other hand, can be controlled *( for example removed or, at least, minimized )*  at source by aviation organizations. Organizational threats are usually latent in nature.

Flight crews still remain the last line of defence, but there are earlier opportunities for these threats to be mitigated by aviation organizations themselves.

***Table 1.* Examples of Threats** *( list is not exhaustive )*

|  |  |  |  |
| --- | --- | --- | --- |
| **Environmental Threats** | | **Organizational Threats** | |
| **A.** | ***weather :*** thunderstorms, turbulence, icing, wind shear, cross or tailwind, very low or high temperatures ; | **A.** | ***operational pressure :*** delays, late arrivals or equipment changes. |
| **B.** | **ATC :** traffic congestion ;  ACAS RA / TA ; ATC command ;  ATC error ; ATC language difficulty ; ATC non - standard phraseology ;  ATC runway change ;  ATIS communication or units of measurement *( QFE / meters ).* | **B.** | ***aircraft :*** aircraft malfunction, automation event or anomaly, MEL / CDL ; |
| **C.** | ***airport :*** contaminated or short runway ; contaminated taxiway ; lack of ; confusing ; faded signage ; markings ; birds ; aids unserviceable ; complex surface navigation procedures or airport constructions. | **C.** | ***cabin :***  flight attendant error ;  cabin event distraction ;  interruption ;  cabin door security. |
| **D.** | ***terrain :*** high ground ; slope ; lack of references or “ black hole “. | **D.** | ***maintenance :***  maintenance event or error. |
| **E.** | ***other :***  similar call-signs. | **E.** | ***ground :*** ground-handling event ;  de-icing or ground crew error. |
| **F.** |  | **F.** | ***dispatch :***  dispatch paperwork event or error. |
| **H.** |  | **G.** | ***documentation :***  manual error or chart error. |
| **I.** |  | **H.** | ***other :*** crew scheduling event. |

***3 ) Errors :***

( i ) errors are defined actions or inactions by the flight crew that lead to deviations from organizational or flight crew intentions or expectations. Unmanaged or mismanaged errors frequently lead to undesired aircraft states. Errors in the operational context thus tend to reduce the margins of safety and increase the probability of adverse events ;

( ii ) errors can be spontaneous *( for example without direct linkage to specific, obvious threats ),*  linked to threats, or part of an error chain.

Examples of errors would include the inability to maintain stabilized approach parameters, executing a wrong automation mode, failing to give a required callout, or misinterpreting an ATC clearance ;

( iii ) regardless of the type of error, an error’s effect on safety depends on whether the flight crew detects and responds to the error before it leads to an undesired aircraft state and to a potential unsafe outcome. This is why one of the objectives of TEM is to understand error management *( for example detection and response ),* rather than to solely focus on error causality *( for example causation and commission ).* From the safety perspective, operational errors that are timely detected and promptly responded to *( for example properly managed ),* errors that do not lead to undesired aircraft states, do not reduce margins of safety in flight operations, and thus become operationally inconsequential. In addition to its safety value, proper error management represents an example of successful human performance, presenting both learning and training value ;

( iv ) capturing how errors are managed is then as important, if not more, as capturing the prevalence of different types of error. It is of interest to capture if and when errors are detected and by whom, the response(s) upon detecting errors, and the outcome of errors. Some errors are quickly detected and resolved, thus becoming operationally inconsequential, while others go undetected or are mismanaged. A mismanaged error is defined as an error that is linked to or induces an additional error or undesired aircraft state ;

( v ) Table 2 presents examples of errors, grouped under ***three***  *basic categories* derived from the TEM Model. In the TEM concept, errors have to be “ observable “ and therefore, the TEM Model uses the “ primary interaction “ as the point of reference for defining the error categories ;

( vi ) the TEM Model classifies errors based upon the primary interaction of the pilot or flight crew at the moment the error is committed.

Thus, in order to be classified *as aircraft handling error*, the pilot or flight crew must be interacting with the aircraft *( for example through its controls, automation or systems ).*  In order to be classified *as procedural error*, the pilot or flight crew must be interacting with a procedure *( for example checklists ; SOPs ; etc.. ).*

In order to be classified *as communication error*, the pilot or flight crew must be interacting with people *( ATC, ground crew, other crewmembers, etc.. )* ;

( vii ) aircraft handling errors, procedural errors and communication errors may be unintentional or involve intentional non-compliance. Similarly, proficiency considerations *( for example skill or knowledge deficiencies, training system deficiencies )*  may underlie all three categories of error. In order to keep the approach simple and avoid confusion, the TEM Model does not consider intentional non-compliance and proficiency as separate categories of error, but rather as sub-sets of the three major categories of error.

***Table 2.* Examples of Errors** *( list is not exhaustive )*

|  |  |  |
| --- | --- | --- |
| ***Aircraft Handling***  ***Errors*** | **A** | ***manual handling, flight controls :*** vertical, lateral or speed deviations, incorrect flaps or speed brakes, thrust reverser or power settings. |
| **B** | ***automation :*** incorrect altitude, speed, heading, auto throttle settings, incorrect mode executed or incorrect entries. |
| **C** | ***systems, radio, instruments :*** incorrect packs, incorrect anti-icing, incorrect altimeter, incorrect fuel switches settings, incorrect speed bug or incorrect radio frequency dialed. |
| **D** | ***ground navigation :*** attempting to turn down wrong taxiway or runway, taxi too fast, failure to hold short or missed taxiway or runway. |
|  | | |
| ***Procedural Errors*** | **A** | ***SOPs :*** failure to cross - verify automation inputs. |
| **B** | ***checklists :*** wrong challenge and response ; items missed, checklist performed late or at the wrong time. |
| **C** | ***callouts :*** omitted or incorrect callouts. |
| **D** | ***briefings :*** omitted briefings ; items missed. |
| **E** | ***documentation :*** wrong weight and balance, fuel information, ATIS, or clearance information recorded, misinterpreted items on paperwork ; incorrect logbook entries or incorrect application of MEL procedures. |
|  | | |
| ***Communication***  ***Errors*** | **A** | ***crew to external :*** missed calls, misinterpretations of instructions, incorrect read - back, wrong clearance, taxiway, gate or runway communicated. |
| **B** | ***pilot to pilot :*** within crew miscommunication or misinterpretation. |

***4 ) Undesired Aircraft States :***

( i ) undesired aircraft states are flight crew-induced aircraft position or speed deviations, misapplication of flight controls, or incorrect systems configuration, associated with a reduction in margins of safety. Undesired aircraft states that result from ineffective threat or error management may lead to compromising situations and reduce margins of safety in flight operations. Often considered at the cusp of becoming an incident or accident, undesired aircraft states must be managed by flight crews ;

( ii ) examples of undesired aircraft states would include lining up for the incorrect runway during approach to landing, exceeding ATC speed restrictions during an approach, or landing long on a short runway requiring maximum braking. Events such as equipment malfunctions or ATC controller errors can also reduce margins of safety in flight operations, but these would be considered threats ;

( iii ) undesired states can be managed effectively, restoring margins of safety, or flight crew response(s) can induce an additional error, incident, or accident ;

( iv ) Table 3 presents examples of undesired aircraft states, grouped under ***three*** *basic categories* derived from the TEM Model.

***Table 3.* Examples of Undesired Aircraft States** *( list is not exhaustive )*

|  |  |  |
| --- | --- | --- |
|  | | |
| ***Aircraft***  ***Handling*** | **A** | aircraft control *( attitude )* |
| **B** | vertical, lateral or speed deviations |
| **C** | unnecessary weather penetration |
| **D** | unauthorized airspace penetration |
| **E** | operation outside aircraft limitations |
| **F** | unstable approach |
| **G** | continued landing after unstable approach |
| **H** | long, floated, firm or off - centerline landing |
|  | | |
| ***Ground***  ***Navigation*** | **A** | proceeding towards wrong taxiway or runway |
| **B** | wrong taxiway, ramp, gate or hold spot |
|  | | |
| ***Incorrect***  ***Aircraft Configurations*** | **A** | incorrect systems configuration |
| **B** | incorrect flight controls configuration |
| **C** | incorrect automation configuration |
| **D** | incorrect engine configuration |
| **E** | incorrect weight and balance configuration |

( v ) an important learning and training point for flight crews is the timely switching from error management to undesired aircraft state management. An example would be as follows : a flight crew selects a wrong approach in the FMC. The flight crew subsequently identifies the error during a cross-check prior to the FAF. However, instead of using a basic mode *( for example heading )* or manually flying the desired track, both flight crew members become involved in attempting to reprogram the correct approach prior to reaching the FAF. As a result, the aircraft “ stitches “ through the localizer, descends late, and goes into an unstable approach. This would be an example of the flight crew getting “ locked in ” to error management, rather than switching to undesired aircraft state management.

The use of the TEM Model assists in educating flight crews that, when the aircraft is in an undesired state, the basic task of the flight crew is undesired aircraft state management instead of error management. It also illustrates how easy it is to get locked in to the error management phase ;

( vi ) also from a learning and training perspective, it is important to establish a clear differentiation between undesired aircraft states and outcomes. Undesired aircraft states are transitional states between a normal operational state ( for example a stabilized approach ) and an outcome. Outcomes, on the other hand, are end states, most notably, reportable occurrences *( for example incidents and accidents ).*

An example would be as follows : a stabilized of approach *( normal operational state )* turns into an un-stabilized approach *( undesired aircraft state )* that results in a runway excursion *( outcome ) ;*

( vii ) the training and remedial implications of this differentiation are of significance. While at the undesired aircraft state stage, the flight crew has the possibility, through appropriate TEM, of recovering the situation, returning to a normal operational state, thus restoring margins of safety. Once the undesired aircraft state becomes an outcome, recovery of the situation, return to a normal operational state, and restoration of margins of safety is not possible.

***5 ) Countermeasures :***

( i ) flight crews must, as part of the normal discharge of their operational duties, employ countermeasures to keep threats, errors and undesired aircraft states from reducing margins of safety in flight operations.

Examples of countermeasures would include checklists, briefings, call-outs and SOPs, as well as personal strategies and tactics. Flight crews dedicate significant amounts of time and energies to the application of countermeasures to ensure margins of safety during flight operations. Empirical observations during training and checking suggest that as much as 70 % of flight crew activities may be countermeasures-related activities ;

( ii ) all countermeasures are necessarily flight crew actions. However, some countermeasures to threats, errors and undesired aircraft states that flight crews employ build upon “ hard “ resources provided by the aviation system. These resources are already in place in the system before flight crews report for duty, and are therefore considered as systemic-based countermeasures. The following would be examples of “ hard “ resources that flight crews employ as systemic-based countermeasures :

( a ) ACAS ;

( b ) TAWS ;

( c ) SOPs ;

( d ) Checklists ;

( e ) briefings ;

( f ) training ;

( g ) etc.. .

( iii ) other countermeasures are more directly related to the human contribution to the safety of flight operations. These are personal strategies and tactics, individual and team countermeasures that typically include canvassed skills, knowledge and attitudes developed by human performance training, most notably, by CRM training.

There are *basically* ***three*** *categories* of individual and team countermeasures :

***a )*** *planning countermeasures :* essential for managing anticipated and unexpected threats ;

***b )*** *execution countermeasures :* essential for error detection and error response ;

***c )*** *review countermeasures* : essential for managing the changing conditions of a flight.

( iv ) enhanced TEM is the product of the combined use of systemic - based and individual and team countermeasures. Table 4 presents detailed examples of individual and team countermeasures. Further guidance on countermeasures can be found in the sample assessment guides for terminal training objectives ( PANS - TRG, Chapter 3, Attachment B ) as well as in the ICAO Manual, Line Operations Safety Audit ( LOSA ) ( Doc. 9803 ).

***Table 4.* Examples of Individual and Team Countermeasures**

|  |  |  |  |
| --- | --- | --- | --- |
| **PLANNING COUNTERMEASURES** | | | |
| ***SOP Briefing*** | The required briefing was interactive and operationally thorough | **a** | Concise, not rushed, and met SOP requirements |
| **b** | Bottom lines were established |
| ***Plans Stated*** | Operational plans and decisions were communicated and acknowledged | Shared understanding about plans :  *“ everybody on the same page “* | |
| ***Workload Assignment*** | Roles and responsibilities were defined for normal and non-normal situations | Workload assignments were  communicated and acknowledged | |
| ***Contingency Management*** | Crew members developed effective strategies to manage threats to safety | **a** | Threats and their consequences were anticipated |
| **b** | used all available resources to manage threats |
| **EXECUTION COUNTERMEASURES** | | | |
| ***Monitor***  ***and***  ***Cross-check*** | Crew members actively monitored and cross-checked systems and other crew members |  | Aircraft position, settings, and crew actions were verified |
| ***Workload Management*** | Operational tasks were prioritized and properly managed to handle primary flight duties | **a** | avoided task fixation |
| **b** | did not allow work overload |
| ***Automation Management*** | Automation was properly managed to balance situational and workload requirements | **a** | automation setup was briefed to other members |
| **b** | effective recovery techniques from automation anomalies |
| **REVIEW COUNTERMEASURES** | | | |
| ***Evaluation***  ***and Modification***  ***of Plans*** | Existing plans were reviewed and modified when necessary | Crew decisions and actions were openly analyzed to make sure the existing plan was the best plan | |
| ***Inquiry*** | Crew members asked questions to investigate and / or clarify current plans of action | Crew members not afraid to express a lack of knowledge : *“ nothing taken for granted “* attitude | |
| ***Assertiveness*** | Crew members stated critical information or solutions with appropriate persistence | Crew members spoke up without hesitation | |

***AMC 1.*  to Appendix 6. Modular Training Course for the IR**

a ) The theoretical knowledge instruction may be given at an ATO conducting theoretical knowledge instruction only, in which case the HT of that organization should supervise that part of the course ;

b ) The **150** hours of theoretical knowledge instruction can include classroom work, interactive video, slide or tape presentation, learning carrels, computer-based training, and other media as approved by the GDCA of RA, in suitable proportions.

Approved distance learning *( correspondence )* courses may also be offered as part of the course.

***AMC 2.* to Appendix 6. Modular Training Course for the IR**

*AEROPLANES*

***BASIC INSTRUMENT FLIGHT MODULE TRAINING COURSE***

a ) This ***10*** *hours module* is focused on the basics of flying by sole reference to instruments, including limited panel and unusual attitude recovery ;

b ) All exercises may be performed in an FNPT I or II or an FFS, for *a maximum of* ***5*** *hours.*

If instrument flight training is in VMC, a suitable means of simulating IMC for the student should be used ;

c ) A BITD may be used for the exercises 1, 2, 3, 4, 6, and 8 ;

d ) The use of the BITD is subject to the following :

1 ) the training should be complemented by exercises on an aeroplane ;

2 ) the record of the parameters of the flight must be available ;

3 ) an FI ( A ) or IRI ( A ) should conduct the instruction.

***EXERCISES***

e ) **Exercise 1** : **0 : 30** *hours*

1 ) basic instrument flying without external visual cues ;

2 ) horizontal flight : power changes for acceleration or deceleration ;

3 ) maintaining straight and level flight ;

4 ) turns in level flight with 15 ° and 25 ° bank, left and right ;

5 ) roll - out onto predetermined headings.

f ) **Exercise 2** : **0 : 45** *hours*

1 ) repetition of Exercise 1 ;

2 ) additionally climbing, descending, maintaining heading and speed, transition to horizontal flight ;

3 ) climbing and descending turns.

g ) **Exercise 3** : *Instrument Pattern :* **0 : 45** *hours*

1 ) start exercise, decelerate to approach speed, flaps into approach configuration ;

2 ) initiate standard turn *( left or right )* ;

3 ) roll out on opposite heading, maintain new heading for 1 minute ;

4 ) standard turn, gear down, descend 500 ft / min ;

5 ) roll out on initial heading, maintain descent ( 500 ft / min ) and new heading for

1 minute ;

6 ) transition to horizontal flight, 1000 ft below initial flight level ;

7 ) initiate Go - around ;

8 ) climb at best rate of climb speed.

h ) **Exercise 4** **:** **0 : 45** *hours*

Repetition of exercise 1 and steep turns with 45° bank ; recovery from unusual attitudes.

i ) **Exercise 5 : 0 : 45** *hours*

Repetition of Exercise 4.

j ) **Exercise 6 : 0 : 45** *hours*

1 ) radio navigation using VOR, NDB or, if available, VDF ;

2 ) interception of predetermined QDM, QDR.

k ) **Exercise 7 : 0 : 45** *hours*

Repetition of exercise 1 and recovery from unusual attitudes.

l ) **Exercise 8 : 0 : 45** *hours*

1 ) repetition of exercise 1;

2 ) turns, level change and recovery from unusual attitudes with simulated failure

of the artificial horizon or directional gyro.

m ) **Exercise 9 : 0 : 45** *hours*

Recognition of, and recovery from, incipient and full stalls.

n ) **Exercise 10 :** **3 : 30** *hours*

Repetition of Exercises 6, 8 and 9.

**CERTIFICATE of COMPLETION of BASIC INSTRUMENT FLIGHT MODULE**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CERTIFICATE of COMPLETION of BASIC INSTRUMENT FLIGHT MODULE** | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | |
| Pilot’s last name(s) : | | |  | | | | | | | | | First name(s) : | | |  | |
|  | | | | | | | | | | | | | | | | |
| Type of Licence : | | |  | | | Number : | | | | | |  | | | State : | |
|  | | | | | | | | | | | | | | | | |
| Flight training hours performed on SE aeroplane : | | | | |  | | | | *OR* | Flight training hours performed on ME aeroplane : | | | | | |  |
|  | | | | | | | | | | | | | | | | |
| Flight training hours performed in an FSTD  *( maximum 5 hours )* : | | | | | | | | | | |  | | | | | |
|  | | | | | | | | | | | | | | | | |
| Date : | | | |  | | | | Signature of applicant : | | | | | |  | | |
| *The satisfactory completion of basic instrument flight module according*  *to requirements is certified below :* | | | | | | | | | | | | | | | | |
| **TRAINING** | | | | | | | | | | | | | | | | |
| Basic Instrument Flight Module Training received during period : | | | | | | | | | | | | | | | | |
| from : |  | | | | | | | | | to : | |  | | | | |
| at : | ATO : | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | |
| Location : | |  | | | | | | | | Date : | | |  | | | |
|  | | | | | | | | | | | | | | | | |
| Signature of Head of Training : | | | | | | |  | | | | | | | | | |
|  | | | | | | | | | | | | | | | | |
| Type and Number of Licence and State of issue : | | | | | | | | | | | | |  | | | |
|  | | | | | | | | | | | | | | | | |
| Name(s) in capital letters of authorized instructor : | | | | | | | | | | | | |  | | | |
|  | | | | | | | | | | | | | | | | |

***AMC 3.* to Appendix 6. Modular Training Course for the IR**

*AIRSHIPS*

***BASIC INSTRUMENT FLIGHT MODULE TRAINING COURSE***

a ) This 10 hours module is focused on the basics of flying by sole reference to instruments, including limited panel and unusual attitude recovery ;

b ) All exercises may be performed in an FNPT I or II or an FFS, for a maximum of 5 hours. If instrument flight training is in VMC, a suitable means of simulating IMC for the student should be used ;

c ) A BITD may be used for the Exercises 1, 2, 3, 4, 6 and 8 ;

d ) The use of the BITD is subject to the following :

1 ) the training should be complemented by Exercises on an airship ;

2 ) the record of the parameters of the flight must be available ;

3 ) an FI ( As ) or IRI ( As ) should conduct the instruction.

***EXERCISES***

e ) **Exercise 1** : **0 : 30** *hours*

1 ) basic instrument flying without external visual cues ;

2 ) horizontal flight ;

3 ) maintaining straight and level flight ;

4 ) turns in level flight, left and right ;

5 ) rollout onto predetermined headings.

f ) **Exercise 2** : **0 : 45** *hours*

1 ) repetition of Exercise 1 ; additionally climbing and descending ;

2 ) maintaining heading and speed ;

3 ) transition to horizontal flight ;

4 ) climbing and descending turns.

g ) **Exercise 3** : ***Instrument pattern:***  **0 : 45** *hours*

1 ) start Exercise, decelerate to approach speed, approach configuration ;

2 ) initiate standard turn *( left or right )* ;

3 ) rollout on opposite heading, maintain new heading for 1 minute ;

4 ) standard turn, descend with given rate *( for example 500 ft / min )* ;

5 ) rollout on initial heading, maintain descent *( for example 500 ft / min )* and new heading for 1 minute ;

6 ) transition to horizontal flight *( for example 1000 ft below initial level )* ;

7 ) initiate Go - around ;

8 ) climb at best rate of climb speed.

h ) **Exercise 4** : **0 : 45** *hours*

1 ) repetition of Exercise 1 ;

2 ) recovery from unusual attitudes.

i ) **Exercise 5** : **0 : 45** *hours*

1 ) repetition of Exercise 4.

j ) **Exercise 6** : **0 : 45** *hours*

1 ) radio navigation using VOR, NDB or, if available, VDF ;

2 ) interception of predetermined QDM, QDR.

k ) **Exercise 7** : **0 : 45** *hours*

1 ) repetition of Exercise 1 ;

2 ) recovery from unusual attitudes.

(l) **Exercise 8** : **0 : 45** *hours*

1 ) repetition of Exercise 1 ;

2 ) turns, level change and recovery from unusual attitudes with simulated failure of the artificial horizon or directional gyro.

m ) **Exercise 9** : **4 : 15** *hours*

1 ) repetition of Exercises 6 and 8.

**CERTIFICATE of COMPLETION of BASIC INSTRUMENT FLIGHT MODULE**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CERTIFICATE of COMPLETION of BASIC INSTRUMENT FLIGHT MODULE** | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | |
| Pilot’s last name(s) : | | |  | | | | | | | | First name(s) : | | |  |
|  | | | | | | | | | | | | | | |
| Type of Licence : | | |  | | Number : | | | | | |  | | | State : |
|  | | | | | | | | | | | | | | |
| Flight training hours performed on airship : | | | | | | | |  | | | | | | |
|  | | | | | | | | | | | | | | |
| Flight training hours performed in an FSTD  *( maximum 5 hours )* : | | | | | | | | | |  | | | | |
|  | | | | | | | | | | | | | | |
| Date : | | | |  | | | Signature of applicant : | | | | | |  | |
| *The satisfactory completion of basic instrument flight module according*  *to requirements is certified below :* | | | | | | | | | | | | | | |
| **TRAINING** | | | | | | | | | | | | | | |
| Basic Instrument Flight Module Training received during period : | | | | | | | | | | | | | | |
| from : |  | | | | | | | | to : | |  | | | |
| at : | ATO : | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | |
| Location : | |  | | | | | | | Date : | | |  | | |
|  | | | | | | | | | | | | | | |
| Signature of Head of Training : | | | | | |  | | | | | | | | |
|  | | | | | | | | | | | | | | |
| Type and Number of Licence and State of issue : | | | | | | | | | | | |  | | |
|  | | | | | | | | | | | | | | |
| Name(s) in capital letters of authorized instructor : | | | | | | | | | | | |  | | |
|  | | | | | | | | | | | | | | |

***GM 1*. to Appendix 7. IR Skill Test**

To the skill test, an ME centerline thrust aeroplane is considered an SE aeroplane.

***AMC 1.* to Appendix 7. IR Skill Test**

*LAPL, BPL, SPL, PPL, CPL, IR SKILL TEST and*

*PROFICIENCY CHECK APPLICATION and REPORT FORM*

**APPLICATION and REPORT FORM**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **APPLICATION and REPORT FORM**  **LAPL, BPL, SPL, PPL, CPL, IR SKILL TEST and PROFICIENCY CHECK** | | | | | | | | | |
| Applicant’s  last name(s) | |  | | | | |  | **LAPL : A H B S** | |
| Applicant’s  first name(s) | |  | | | | | **BPL : SPL :** | |
| Signature  of applicant | |  | | | | | **PPL: A H As** | |
| Type  of licence \* | |  | | | | |  | |
| Licence  number \* | |  | | | | | **CPL : A H As** | |
| State | |  | | | | | **IR : A H As** | |
|  | | | | | | |  | |
| **1.** | ***Details of the Flight*** | | | | | | | | |
| Group, class, type of aircraft : | | | | | | Registration : | | | |
|  | | | | | | | | | |
| Aerodrome or site : Flight time : | | | | | | Take-off time : Landing time : | | | |
|  | | | | | |  | | | |
|  | | | | | |  | | | |
|  | | | | | |  | | | |
|  | | | | | |  | | | |
|  | | | | | |  | | | |
| Total flight time : | | | | | |  | | | |
|  | | | | | | | | | |
| **2.** | ***Result of the Test*** | | | | | | | | |
| Skill Test details : | | | | | | | | | |
| Pass | | | | Fail | | | | | Partial pass |
|  | | | | | | | | | |
| **3.** | ***Remarks*** | | | | | | | | |
|  | | | | | | | | | |
| Location and date : | | |  | | | | | | |
| Examiner’s Certificate  number \* : | | | | | | Type and number  of Licence : | | | |
| Name(s) in capital letters : | | | | |  | | | | |
| Signature of Examiner : | | | | |  | | | | |

**\*** *if applicable*

***AMC 1.* to Appendix 9. Training, Skill Test and Proficiency Check for MPL,**

**ATPL, Type and Class Ratings, and Proficiency Check for IRs**

*APPLICATION and REPORT FORM*

If applicable, this Form is also the Certificate of completion of the Type Rating Course for

ZFTT.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **APPLICATION and REPORT FORM**  **ATPL, MPL, TYPE RATING, TRAINING, SKILL TEST and PROFICIENCY CHECK**  **AEROPLANES ( A ) and HELICOPTERS ( H )** | | | | | | | | | |
| Applicant’s  last name(s) | |  | | | | ***Aircraft :***  SE-SP : A H  ME-SP : A H  SE-MP : A H  ME-MP : A H | | | |
| Applicant’s  first name(s) | |  | | | |
| Signature  of applicant | |  | | | | ***Operations :***  SP MP | | | |
| Type of Licence held | |  | | | | ***Checklist :***  Training Record Type Rating  Skill Test Class Rating  IR Proficiency Check  ATPL MPL | | | |
| Licence Number | |  | | | |
| State of Licence issue | |  | | | |
|  | | | | | | | | | |
| **1 .** | ***Theoretical Training for the issue of a Type or Class Rating***  ***performed during period*** | | | | | | | | |
| From : | | | | To : | | | | At : | |
| Mark  obtained : | | | %  ( Pass mark 75 % ) | | | | | Type and N 0  of Licence : | |
| Signature of HT : | | | | | Name(s) :  *in capital letters* | | | | |
| **2.** | ***FSTD*** | | | | | | | | |
| FSTD  *( aircraft type )* | | | | Three or more axes :  Yes No | | | | | Ready for service  and used : |
| FSTD  manufacturer : | | | | Motion or  System : | | | | | Visual Aid :  Yes No |
| FSTD Operator : | | | | | | | | | FSTD ID code : |
| Total training time  at the controls : | | | | | Instrument approaches at aerodromes  to a Decision Altitude or Height of : | | | | |
| Location,  date and time : | | | | | Type and N 0  of Licence : | | | | |
| Type Rating Instructor Class Rating Instructor . . . . . . . . . . Instructor | | | | | | | | | |
| Name(s)  *in capital letters* | | | | | | | Signature  of Instructor : | | |
|  | | | | | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **3.** | ***Flight Training :*** in the Aircraft in the FSTD ( for ZFTT ) | | | | | | | | | | | | | | | | | | | | |
| Type of Aircraft : | | | | | | | | | | Registration : | | | | | | | | Flight time at the controls : | | | |
| Take-offs : | | | | | Landings : | | | | | | | Training aerodromes or sites  *( take-offs, approaches and landings ) :* | | | | | | | | | | |
| Take-off time : | | | | |  | | | | | | | | Landing time : | | | | | | |  | |
| Location and : | | | | |  | | | | | | | | | | | | Date : | | |  | |
| Type and Number of Licence held : | | | | | | | | | | | | | | | | | | | | | |
| Type Rating Instructor | | | | | | | | | | | | | | Class Rating Instructor | | | | | | | |
| Name(s) *in capital letters :* | | | | | | |  | | | | | | | | | | | | | | |
| Signature of Instructor : | | | | | | | |  | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | |
| **4.** | | ***Skill Test Proficiency Check*** | | | | | | | | | | | | | | | | | | | |
| Skill Test and Proficiency Check details : | | | | | | | | | | | | | | | | | | | | | |
| Aerodrome or site : | | | | | |  | | | | | | | | | Total flight time : | | | | | |  |
| Take-off time : | | | | | |  | | | | | | | | | Landing time : | | | | | |  |
| Pass | | | Fail | | | | | Reason(s)  why, if failed : | | | | | | | | | | | | | |
| Location : | | | |  | | | | | | | | | | | | | | | Date : | |  |
| SIM or aircraft Registration : | | | | | | | | | | |  | | | | | | | |  | |  |
| Examiner’s Certificate N 0  *( if applicable )* : | | | | | | | | |  | | | | | | | Type and N 0  of Licence : | | | | |  |
| Name(s)  *in capital letters :* | | | | | | | | | | | | | | | | Signature  of Examiner : | | | | | |

***AMC 2.* to Appendix 9. Training, Skill Test and Proficiency Check for MPL,**

**ATPL, Type and Class Ratings, and Proficiency Check for IRs**

*TRAINING, SKILL TEST and PROFICIENCY CHECK :* ***SP Aeroplanes***

Section **3.B** of the Training and Skill Test and Proficiency Check content for ***SP Aeroplanes*** included in Appendix 9.B should include training on a circling approach, after an IFR approach.

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