Rate One Aviation IF Knowledge Base

These topics are intended as an aide memoir for instructors as to the scope of training they should deliver in in a number of situations

- An in house IR course
- An in house IR(R) course
- A check on external candidate's prior knowledge before a finish up course

The level of understanding will vary according to the course and the candidate's needs. Sometimes a thorough theoretical and practical understanding is needed. In other cases a simple mention and awareness of how to get more information will suffice. For key topics the training records should make clear how training was delivered and what standard was attained. In other cases a simple tick and instructor initials on this list or initials supported by a brief comment will be appropriate.

PNC Prior knowledge confirmed. Candidate answers one or two questions to establish that they have retained PPL standard understanding

B Briefed, a topic new to the candidate briefed to the level appropriate to their needs with detail in the training record as necessary

B&P Briefed as above supported by practical demonstrations on ground in sim or in the air as required.

D Discussed, the candidate is aware of the topic and knows how to find further information.

NA Not applicable to the course in question.

C Completed used for forms or other administrative actions

Some guidance is provided in italics but it is primarily an instructor responsibility to assess appropriate actions given the individual circumstances. The document must remain with the candidates file as it is gradually completed .

Administration

Customer details form. ROA manual
Complete . sign for having read manuals
Aircraft details form
Copy and file key docs
Safety brief
Training records
Start file if necessary

Local facilities
B& B, aviation, door codes
Simulator

Background knowledge PPL level General

AIP /AIC/IN
EASA FCL
Airspace classifications
Operation and errors of Altimeter, ASI , VSI. Turn coordinator
Engine operation throttle, mixture
Pre-flight checks
Altimeter setting
QNH, QFE, 1013 IFR practice RPS & QFE not used

Background Knowledge PPL level IFR related

Spatial disorientation
ATC services
Uk and normal countries
Special VFR
Basic concepts of ADF
Basic concepts DME
Basic Concepts VOR
Basic concepts ILS
Basic concepts RNAV
Transponder
Emergency codes, EXM call sign input

Cross pointer tracking
Single needle tracking

Basic IF

Power Attitude Trim
Preconceived idea of settings for each phase of flight
Bug it fly it
Use of bug to select suitable heading and fly it
Aviate Navigate Communicate
Priorities & IFR mindset
Rate 1 turns

Scan
Role of AH
Level flight
Climb
Descent
ROD calculation 3 and 3.5 degree

Advanced IF

Limited Panel
Compass turns
U/A increasing speed
U/A decreasing speed
Airborne checks from memory
Good ability vital

Pre-flight preparation

Performance calculations t/off, landing /W&B
Endurance
Weather
Sources, main risks

PLOG
Provide RAO model
Fuel Plan
Requirement with and without Shadin, L&R tanks only issues
Taxi checks
Important Brakes, then full rudder then taxi checks
Booking out /Beacon slots /Tech log/Shadin

Advance Aircraft /Engine operation

Retractable undercarriage
Emergency gear lowering
Variable Pitch Prop
Rev up throttle back failure indications
Engine analyser
General utility, Cylinder 4 selection on VPPL
Check lists
Pre-flight checks Check A
Oil type /quantity
Multigrade 9-10 QTs
Fuel refuel procedures
Parking and securing covers
Chocks, cover, pitot cover, control locks

Advanced Avionics &Instruments

Garmin 430
Basic function , on line manual, test set up, N up 0.3 scale
Garmin GTN
Basic function, on line manual, North up 0.3 scale
Aspen
HSI /RMI

Charts /Plates

CAA VFR Half million
Mainly for IR(R) limitations of aps

Low level IFR charts
Jepp
Approach plates
Refer to AIP concentrate on ROA amended Jepp plates

Route Planning

Airways
Levels quadrantals /semi circular
Position fixing
Icing levels
Fog
Winds /drift /winds true runways magnetic

IR(R) Privileges /revalidation

Privileges legal /advisory
Inside CAS
Outside CAS

Approach Aids

Ground Radar
VOR
NDB
ILS

Localiser
GPS
Markers
DME distance/ speed /time
Timing

Approach Procedures (General)

General design features
Entry angles
Pilot interpreted / radar
Holds
Procedure turns
Minima
Missed approach
Circle to land
RAO policy to avoid whenever possible, circle with defined tracks
Timing
Only for holds
Checks
From memory per ROA list
Arcs

RT / ATC

Types of service
Basic, procedural, traffic, deconfliction flight info
Correct RT content
IFR vs VFR concepts
Radio failure
Role of EAT, carry a hand held
Handovers

Separation standards
Lateral, vertical angular
Departure clearance
Start procedure

Approach Procedures Specific

Radar Vectored ILS
RNAV

Threats

Icing
Density altitude
Terrain
Fatigue
Decision making
Currency
Traffic
Weather

Emergencies

EFATO
Engine failure in IMC
Door opens in flight
No approach plates
Sick passenger

Low oil pressure
Rough running engine
Fire
Low fuel
Autopilot /trim runaway
Radio failure
Bird strike
Mystery Noises
Fumes in Cabin

Airfield specifics

Gloucester
Cardiff
Bristol
Special procedures
AOE
Airfields outside Europe

Cockpit Management

Kneeboard
Items to Carry / Flight case

Briefing notes Issued

Basic IF
Airborne Checks
TB20 checklist
Skill test route