Civil Aviation Department

CAD509 (MPL)

REQUIREMENTS FOR APPROVAL OF

FLYING TRAINING ORGANISATIONS OFFERING

AN INTEGRATED COURSE OF TRAINING FOR

HONG KONG MULTI-CREW PILOT'S LICENCE WITH INSTRUMENT RATING (MPL)

CONTENTS

APPENDICES

GLOSSARY OF TERMS

AIP	Aeronautical Information Publication
AIS	Aeronautical Information Service
AN(HK)O 1995	The Air Navigation (Hong Kong) Order 1995
ATC	Air Traffic Control
ATPL(A)	Airline Transport Pilot's Licence (Aeroplane)
CPL/IR(A)	Commercial Pilot's Licence / Instrument Rating (Aeroplane)
CV	Curriculum Vitae
FSTD	Flight Simulation Training Device
FTO	Flying Training Organisation
GFT	General Flying Test
HKAOC Holder	Hong Kong Air Operator's Certificate Holder
HKAR-1	Hong Kong Aviation Requirements – 1
ICAO	The International Civil Aviation Organisation
IFR	The Instrument Flight Rules
IR	Instrument Rating
IRT	Instrument Rating Test
MPL(A)	Multi-crew Pilot's Licence (Aeroplane)
P U/T	Student pilot or qualified pilot undergoing training
PF	Pilot Flying
PIC	Pilot-in-command
PM	Pilot Monitoring
PPL	Private Pilot' Licence
QA	Quality Assurance
RTF	Radiotelephony
SMS	Safety Management System
SMSM	SMS Manual
The CAD	The Hong Kong Civil Aviation Department
UPRT	Upset Prevention and Recovery Training

Aeroplane	A power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flights.
Dual instruction time	Flight time during which a person is receiving flight instruction from a properly authorised pilot on board the aircraft.
Flight procedures trainer	(See Flight Simulation Training Device.)
Flight simulator	(See Flight Simulation Training Device.)
Flight time	The total time from the moment that an aircraft first moves under its own or external power for the purpose of taking off until the moment it comes to rest at the end of the flight.
Flight time as student pilot-in-command	Flight time during which the flight instructor will only observe the student acting as pilot-in-command and shall not influence or control the flight of the aircraft.
Instrument time	Instrument flight time or instrument ground time
Instrument flight time	Time during which a pilot is controlling an aircraft in flight solely by reference to instruments.
Instrument ground time	Time during which a pilot is receiving instruction in simulated instrument flight in Flight Simulation Training Devices approved by the State Authority.
Night	The time between half an hour after sunset and half an hour before sunrise, sunset and sunrise being determined at surface level.
Pilot-in-command	The pilot responsible for the operation and safety of an aircraft during flight time.
Professional pilot	A pilot who holds a licence which permits the piloting of aircraft in operations for which remuneration is given.
Single-pilot aeroplanes	Aeroplanes certificated for operation by a minimum crew of one pilot.
Solo flight time	Flight time during which a student pilot is the sole occupant of an aircraft.

Flight Simulation Training Device (FSTD)	Any one of the following 3 types of apparatus in which flight conditions are simulated on the ground: a. A flight simulator, which provides an accurate representation of the flight deck of a particular aircraft type to the extent that the mechanical, electrical, electronic, etc. aircraft systems control functions, the normal environment of flight crew members, and the performance and flight characteristics of that type of aircraft are realistically simulated; b. A flight procedures trainer, which provides a realistic flight deck environment, and which simulates instrument responses, simple control functions of mechanical, electrical, electronic, etc. aircraft systems, and the performance and flight characteristics of aircraft of a particular class; c. A basic instrument flight trainer, which is equipped with appropriate instruments, and which simulates the flight deck environment of an aircraft in flight in instrument flight conditions.
Type (of aircraft)	All aircraft of the same basic design, including all modifications except those modifications which result in a change of handling, flight characteristics or flight crew complement.

1. INTRODUCTION

1.1 International Civil Aviation Organisation (ICAO) introduced a new aeroplane pilot licence, the Multi-crew Pilot's Licence (MPL), in Amendment 167 to Annex 1. The provisions became applicable on 23 November 2006. The MPL qualifies the licence holder to perform the co-pilot duties on aeroplanes operated with more than one pilot. This licence complements, but does not replace, the existing ways of qualifying as co-pilot on multi-crew aeroplanes. Accordingly, a fully implemented MPL course should embrace the following key elements:

(a) the better use of modern training device to a greater extent;

(b) competency-based training;

(c) threat and error management; and

(d) multi-crew concept and application.

1.2 Article 20(11) of the Air Navigation (Hong Kong) Order 1995, as amended, enables the Hong Kong Civil Aviation Department (CAD), subject to such conditions as it thinks fit, to approve any course of training or instruction and to approve a person to provide any course of training or instruction for the purpose of the grant of flight crew licences.

1.3 The purpose of this document is to detail the governing policies, requirements and procedures for the issue, renewal and variation of CAD Approval to Flying Training Organisations (FTOs) offering approved integrated courses of training leading to the issue of a Hong Kong Multi-crew Pilot's Licence for Aeroplanes (HK MPL(A)).

1.4 The requirements set out in this document will apply to FTOs wishing to offer an integrated course of training for HK MPL(A). The following pre-requisites are normally required before the CAD would give consideration of an FTO:

(a) A Hong Kong Air Operator's Certificate (HKAOC) holder has advised the CAD of its intention to contract the FTO for its pilot training programme; AND

(b) The FTO is approved by its own State Authority to conduct integrated courses for the issue of MPL(A) or CPL/IR(A) in accordance with ICAO Annex 1 or EASA Part-FCL.

2. THE FLYING TRAINING ORGANISATION (FTO)

2.1 For the purposes of this document, an FTO is considered normally to be an organisation located within or outside of Hong Kong, staffed, equipped and operated in a suitable environment offering the flying training, synthetic flight instruction and/or theoretical knowledge instruction for the whole or a part of an integrated course of training leading to the issue of a HK MPL(A). The number of FTO involved in a MPL(A) course should be kept to a minimum. In any case, the FTO that provides aircraft training in Phase 4 shall be the lead FTO.

2.2 Subject to the compliance with the conditions laid down in this document and other CAD requirements, an airline may be approved as a FTO, for example - to provide training for Phase 4.

3. USE OF LANGUAGE

3.1 As CAD would normally expect courses to be prepared in and given in the English language, all course material including the required documentation or records should be maintained in English.

4 OBTAINING AND MAINTAINING APPROVAL

4.1 An FTO seeking approval to conduct HK MPL(A) integrated training courses must apply to the Assistant Director-General of Civil Aviation (Flight Standards). The application must be accompanied by the Training Manual, a complete set of student study notes, a full description of the training programme (which may be included in the Training Manual), Operations Manual and, if considered necessary, Flying Orders. The following items must also be submitted:

(a) A detailed management structure with names, qualifications and responsibilities of managerial and instructional staff who will be engaged in activities related to the approval.

(b) A resume (CV) for the Head of Training, Chief Flying Instructor/Training Captain in-charge, Chief Ground Instructor/Head of Ground Training, Chief Synthetic Flight Instructor/Head of Simulator Training, other key training staff, and Quality Assurance(QA) & Safety Management System (SMS) personnel.

(c) A list of those flight instructors nominated to be supervising flight instructors.

(d) A list of the training aircraft to be used on course.

(e) A list of the aerodromes to be used, if more than one.

(f) A list of Flight Simulation Training Devices (FSTDs) to be used on courses.

(g) A description of the accommodation to be used to provide flight operations, theoretical knowledge instruction and management/administrative support activities.

(h) A description of the student accommodation.

(i) Proof of availability of aircraft, FSTDs, facilities and staff for the courses to be conducted if any of these are not permanently available to the FTO.

(j) A description of the SMS.

(k) Evidence of sufficient funding.

4.2 The FTO will not be required to duplicate submission of information relating to the items listed above if that information is already included in another document submitted, for example the Operations Manual.

4.3 After consideration of the application and the associated documentation, arrangements will be made for a CAD Inspection Team to inspect the FTO to ensure that it meets the requirements set out in this document. Subject to satisfactory inspection, the FTO and the HK MPL(A) integrated course on offer will be approved for a period of 36 months. After an approval is granted, periodic inspections will be necessary for continued monitoring of training standards.

4.4 The initial inspection will focus on:

(a) Staff
- adequacy of numbers and qualifications
- validity of licences and ratings and logbooks of flight instructors.

(b) Training aircraft
- registration
- documentation
- maintenance and maintenance records.

(c) Facilities
- adequacy for the course and the number of students (this includes the adequacy of the aerodromes to be used and the area(s) in which flight training is to be conducted).

(d) Documentation
- documents related to the course
- updating system
- training and operations manuals
- training records

(e) Flight instruction and synthetic flight instruction including pre flight briefing, actual flight and post flight debriefing.

(f) The SMS

(g) Evidence of sufficient funding

4.5 It will be a condition of the approval that the CAD may conduct periodic inspection visits at any time during the period of approval. One interim inspection will normally be conducted on an eighteen monthly basis, and a copy of the narrative report will be sent to the FTO. Continuation of an approval is not automatic but depends upon the outcome of inspections.

4.6 Authorised Inspectors of CAD will sample student training flights, phase/progress tests or periods of synthetic flight instruction at any stage during a course.

4.7 The arrangements for these sampling exercises will be made with the Head of Training or his designated representative. Pre flight and post flight briefing will be included in the sampling of student flying sorties.

4.8 Student training records must be made available to Authorised Inspectors.

4.9 Authorised Inspectors will inform the Head of Training of any weaknesses in a student's performance revealed during the sampling exercise not consistent with the student's training records or standardised teaching methods.

4.10 Authorised Inspectors will also conduct sampling checks on flight instructors and synthetic flight instructors from time to time, arrangements for which will be made with the appropriate personnel within the organisation.

4.11 It will be a condition of the approval that the appointment of the Head of Training, Chief Flying Instructor/Training Captain in-charge, Chief Ground Instructor/Head of Ground Training or Chief Synthetic Flight Instructor/Head of Simulator Training should be acceptable to the CAD. The CAD must be informed of the departure or intended departure of the above-mentioned senior personnel. It should be noted that one person may not normally hold two (or more) of the named posts simultaneously.

4.12 The CAD cannot guarantee to inform an FTO of its decision in relation to an application for renewal of an approval unless the application is received by the CAD no later than 60 days before the expiry date of the existing approval. This is to allow time for administrative procedures and renewal inspections to be completed. The FTO will be required to show that the necessary standards have been maintained. The emphasis will be on checking the quality of instruction given and of flight operations as conducted by the organisation. Having checked that the required facilities continue to be provided, the CAD Inspection Team will concentrate on the day to day conduct of training and the safety of flight operations and will pay particular attention to :

(a) student records which must be comprehensive and show that the approved course is being fully covered. The Inspection Team may need to speak to the instructors concerned in the presence of senior staff to dispel any doubts the members of the team might have;

(b) briefings, airborne and synthetic flight instructional exercises and classroom lectures which the Inspection Team may wish to observe;

(c) flight records which must by content and accuracy promote safety by ensuring timely availability of essential information to pilots and maintenance engineers;

(d) evidence of the correct use of meteorological, ATC and AIS information and facilities.

4.13 If more than one FTO intend to jointly conduct an integrated MPL(A) training, their applications for course approval must be submitted together. In such a case, if all conditions are met, only one approval, covering all involved FTOs, will be issued.

5. REVOCATION, SUSPENSION VARIATION OF THE APPROVAL

5.1 If the CAD thinks that the requirements set out in this document cease to be met in part or in whole, or if the standards on which approval was granted are not maintained, an approval may be revoked, suspended or varied by the CAD in accordance with Article 62 of the Air Navigation (Hong Kong) Order 1995 (as amended).

5.2 Should there be a failure to meet the requirements or standards, the FTO will be formally notified of the non-conformances and, if necessary, a restricted approval document issued to permit the remedial action identified to be taken within a timescale specified by the CAD. Should the FTO fail to meet the standards in the specified time, revocation, suspension or variation of the approval will be considered.

5.3 If an integrated MPL(A) course is jointly run by more than one FTO and any one of the them faces the situation described in paragraph 5.2 of this document, all FTOs under the same approval could be affected by such revocation, suspension or variation of the approval.

6. CHARGES

6.1 The charges for the grant and renewal of the approval of an FTO are to be made at cost recovery rates and the amount of which will be related to the CAD man-hours expended. In addition, the CAD will recover the expenditure incurred in conducting inspections of the FTOs.

7. SAFETY MANAGEMENT SYSTEM (SMS)

7.1 An FTO shall implement a SMS acceptable to the CAD, as a minimum:

(a) Identifies safety hazards;
(b) Ensures that remedial action necessary to maintain an acceptable level of safety is implemented;
(c) Provides for continuous monitoring and regular assessment of the safety level achieved; and
(d) Aims to make continuous improvement to the overall level of safety.

Notes: Guidance on SMS is contained in Appendix 9 of this document. Relevant information can also be found in the CAD 712 – "Safety Management System (SMS) for Air Operators and Maintenance Organisations – A Guide to Implementation" and the ICAO Safety Management Manual (Doc 9859).

7.2 A SMS shall clearly define lines of safety accountability throughout the FTO, including a direct accountability for safety on the part of senior management.

7.3 An FTO shall establish a flight a flight safety documents system, for the use and guidance of operational personnel, as part of its SMS.

Note: Guidance on the development and organisation of a flight safety documents system is provided in ICAO Annex 6, Attachment H.

8. FINANCIAL RESOURCES

8.1 An FTO should satisfy the CAD that sufficient funding is available to conduct training to the approved standards. Further information on this requirement is at Appendix 4.

9. PRACTICALITIES CONCERNING THE PROCESS OF OBTAINING APPROVAL

9.1 FTOs should expect that considerable resources and effort are required to prepare an initial application for approval to conduct integrated courses of training, particularly in relation to the development of up to date student study notes and other documentation. Equally the review of such material is both demanding of staff effort within the CAD and must take its place beside other work undertaken- it is not given special priority against other tasks. Therefore organisations should make realistic assumptions from the outset as to how long it will take to obtain approval and are strongly recommended to inform the CAD of their intentions at an early stage of planning.

9.2 Applications to renew an approval should be submitted well before the expiry of the existing approval. This is to allow adequate time for the CAD to complete the necessary pre-inspection work including a review of the organisation's funding and make arrangements for the inspection, conduct the inspection and complete the relevant post-inspection tasks. The CAD cannot guarantee to inform an organisation of its decision in relation to an application for renewal of an approval unless the application is received by the CAD no later than 60 days prior to the expiry of the existing approval.

9.3 If an approval has lapsed and an organisation wishes to re-establish the approval it should apply as if making an initial application for approval. The relevant charges will apply.

9.4 An organisation may not commence, conduct or continue training courses requiring CAD approval unless it has the relevant approval documentation in its possession.

10. MANAGEMENT AND STAFFING

10.1 The CAD requires that an adequate number of qualified, competent full-time staff are to be employed by the FTO. Particular emphasis will be placed on the qualifications and competence of all training staff in their specialisation and in training techniques. All training staff must be acceptable to the CAD. CVs of key training staff should be forwarded to the CAD.

10.2 All changes in key training staff should be notified and be acceptable to the CAD.

10.3 The CAD will also pay particular attention to staff/student ratios.

10.4 The agreement of the CAD must be obtained before part-time instructors are employed to instruct on courses approved by the CAD.

11. HEAD OF TRAINING

11.1 A Head of Training (HT) acceptable to the CAD must be appointed within an FTO who will be responsible to the CAD for discharging the overall responsibility for ensuring satisfactory integration of flight training, synthetic flight training and theoretical knowledge instruction, and for supervising the progress of individual students.

11.2 Apart from having extensive experience in pilot training as a flight instructor for professional pilots' licences and possess a sound managerial capability, the HT should normally have held an executive flying post (e.g. Chief Flying Instructor) within an organisation approved to conduct integrated courses of training for Professional Pilot Licence. In addition, the HT should normally hold or have held, in the three years prior to first appointment as a HT, a CPL/IR(A) or ATPL(A) issued by the CAD or an authority acceptable to the CAD.

11.3 The CAD would not normally expect the HT to function as a line instructor. He may perform, though not to the extent of becoming burdened with, administration, maintenance, finance, marketing or any management functions related to the HK MPL(A) integrated courses. Such supporting functions should be the responsibility of another senior management post (such as the General Manager).

11.4 In the case of an integrated MPL(A) course jointly run by more than one FTO, the HT of the lead FTO should also be the “Lead HT (LHT)” of the whole course. Apart from the duties as explained in paragraph 11.1 above, the LHT is also responsible to the CAD for making sure that the partner FTO(s) meets all relevant requirements and reaches satisfactory operational standards continually and that adequate measures are enforced within and amongst the involved FTOs for a seamless training.

11.5 In the case of an airline approved as the lead FTO: Its HT should, apart from meeting the requirements stated in this Section, hold an executive post in the flight training management team.

12. CHIEF FLYING INSTRUCTOR

12.1 A Chief Flying Instructor (CFI) acceptable to the CAD must be appointed who should be responsible for the supervision of flight and synthetic flight instructional staff, the standardisation of all flight and synthetic flight instructions and flight safety standards. The CFI should also be responsible for all student flight and synthetic flight instruction records.

12.2 The CFI must:

(a) hold a valid CPL/IR(A) or ATPL(A) issued by the CAD or an authority acceptable to the CAD; and

(b) when required by the FTO's State Authority or the CAD: hold a current Flying Instructor (FI) Rating acceptable to the FTO's State Authority and the CAD for giving flight instruction for professional pilot licence courses and for all types of aircraft used on the course within the FTO; and

(c) hold valid aircraft ratings for all aeroplanes used on the course within the FTO; and

(d) have completed at least 3000 hours pilot-in-command flight time, including a minimum of 2000 hours on flying instructional duties and 200 hours on instrument flying instructional duties; and

(e) have completed a MPL(A) instructor training course and maintain a MPL(A) instructor qualification acceptable to the FTO's State Authority and the CAD; and

(f) have completed at least 1500 hours of flight time in multi-crew operations; and

(g) have completed a CRM and TEM training course acceptable to the FTO's State Authority and the CAD.

12.3 In the case of an airline approved as the lead FTO: A Training Captain holding a management position and meeting the conditions stated in paragraph 12.2 should be assigned as the "Training Captain in charge" (TC-ic) of the flying training and be responsible for the CFI duties as described in paragraph 12.1.

13. FLIGHT INSTRUCTORS

13.1 Sufficient Flight Instructors (FIs) must be employed to ensure the proper continuity of flight training in different phases for all students attending the courses.

13.2 FIs must:

(a) hold a valid CPL/IR(A) or ATPL(A) issued by the CAD or an authority acceptable to the CAD, as appropriate; and

(b) hold valid aircraft ratings for the types of aeroplane used on the course in which instruction will be given; and

(c) when required by the CAD or the FTO's State Authority: hold an instructor rating acceptable to the FTO's State Authority and the CAD, which is both appropriate to the part of the course and valid for the types of aeroplane in which instruction will be given e.g. instrument rating instructor, flight instructor for professional pilot licences, as appropriate; and

(d) have completed at least 500 hours of flight time as pilots of aeroplanes; and

(e) have completed a MPL(A) instructor training course and maintain a MPL(A) instructor qualification acceptable to the FTO's State Authority and the CAD; and

(f) in the case of FIs providing training for Phases 1 and 2: have at least 200 hours experience of ab-initio flying instruction and have supervised at least 25 student solo flights; and

(g) in the case of FIs providing training for Phases 2 and 3 (if applicable): have completed at least 1500 hours of flight time in multi-crew operations, OR, for existing FIs on CPL/IR(A) integrated course only - have completed a multi-crew cooperation instructor training course acceptable to the FTO's State Authority and the CAD, in which observations of at least 5 sessions of instruction in Phase 3, Phase 4 and operator's LOFT training respectively must be included (their first 5 instructor sessions must be supervised by a Type Rating Instructor approved by the FTO's State Authority and acceptable by the CAD); and

(h) in the case of FIs providing training for Phase 4: have completed at least 1500 hours of flight time in multi-crew operations; and

(i) in the case of FIs providing training for phases other than Phase 1: have completed a CRM and TEM training course acceptable to the FTO's State Authority and the CAD.

13.3 The maximum flying hours, maximum flying duty hours and minimum rest time between instructional duties of FIs must be acceptable to the CAD.

13.4 In the case of an airline approved as the lead FTO: Training and tests on the aeroplane in Phase 4 must be conducted by the airline's Base Training Captains (BTCs) only. These BTCs must meet the requirements stated in paragraph 13.2 (condition 13.2(e) is not required in this case) and must have valid and appropriate Authorised Examiner (Aircraft) authorisations.

14. SUPERVISION OF FLIGHT INSTRUCTORS WITH RESTRICTED PRIVILEGES

14.1 This Section is applicable to Phase 1 of an integrated MPL(A) training only.

14.2 For a FI with experience less than those stated in para. 13.2f above, the privileges of his/her instructor rating are restricted to carry out under the supervision of a "supervising" flight instructor (SupFI) for day/night flight instruction at PPL(A) level of the HK MPL(A) integrated courses, excluding approval of first solo flights by day or night and first solo navigation flights by day or by night.

14.3 An FTO seeking to use FIs with restricted privileges should, before so doing, nominate FIs acceptable to the CAD to carry out the supervisory function.

14.4 The CAD will have to be satisfied with the duties and responsibilities of SupFIs specified in the documentation required in connection with the approval (e.g. the Operations Manual).

14.5 SupFIs must always be present and available at a facility where flight instructors with restricted privileges are discharging instructional duties.

14.6 The ratio of FIs with restricted privileges to SupFIs must not exceed 4:1.

15 STUDENT/FLIGHT INSTRUCTOR RATIO CALCULATION

15.1 The ratios given in paragraphs 15.2, 15.3 and 15.4 must not be exceeded without prior agreement of the CAD.

15.2 The basic ratio of students to line FIs, excluding the HT, must not exceed 6:1.

15.3 For ratio calculation, the CFI may be counted as one half of a line FI.

15.4 A student should be included in the ratio calculation from the time at which his/her flight training commences until the course is completed.

16 CHIEF SYNTHETIC FLIGHT INSTRUCTOR

16.1 A Chief Synthetic Flight Instructor (CSynFI) acceptable to the CAD must be appointed who will be responsible for all synthetic flight training, for monitoring synthetic flight instructor standards and maintaining student records. The CSynFI is responsible to the HT. In conjunction with the CFI, the CSynFI will in particular ensure that flight and synthetic flight training are fully integrated.

16.2 The CSynFI must:

(a) hold or have held an ATPL(A) or CPL/IR(A) issued by the CAD or an authority acceptable to the CAD and have instructional experience; OR

(b) have at least two years' experience as a SynFI for Instrument Rating Courses conducted by an FTO approved by the CAD or an authority acceptable to the CAD; and

(c) have completed a MPL(A) instructor training course and maintain a MPL(A) instructor qualification acceptable to the FTO's State Authority and the CAD; and

(d) have completed at least 1500 hours of flight time in multi-crew operations; and

(e) have completed a CRM and TEM training course acceptable to the FTO's State Authority and the CAD.

16.3 In the case of an airline approved as the lead FTO: A manager holding an executive position in the airline's simulator training centre with the qualifications and experience specified in paragraph 16.2 should be appointed as the "Head of Simulator Training" (HST) and be responsible for the CSynFI duties as described in paragraph 16.1.

17 INSTRUCTORS FOR SYNTHETIC FLIGHT TRAINING

17.1 Sufficient instructors must be employed to ensure the proper continuity of synthetic flight training for all students attending the courses being run by the FTO.

17.2 Synthetic flight instructors (SynFIs) must:

(a) hold or have held an ATPL(A) or CPL/IR(A) issued by the CAD or an authority acceptable to the CAD and have instructional experience; OR

(b) have at least 12 months' experience as a SynFI for Instrument Rating Courses conducted by an FTO approved by the CAD or an authority acceptable to the CAD; OR

(c) have relevant experience as a military FI; and

(d) have completed a MPL(A) instructor training course and maintain a MPL(A) instructor qualification acceptable to the FTO's State Authority and the CAD; and

(e) have completed at least 1500 hours of flight time in multi-crew operations; and

(f) have completed a CRM and TEM training course acceptable to the FTO's State Authority and the CAD; and

(g) in the case of SynFIs providing training for Phase 4: hold a Type Rating Instructor (TRI) qualification approved by the CAD or the FTO's State Authority, as appropriate.

17.3 Standardisation of instructors is the responsibility for the CSynFI/HST. The CAD will need to be satisfied that instructors have been instructed on and achieved an appropriate standard in the types of FSTDs to be used on courses, covering their operation and the instruction to be given to students in accordance with the synthetic flight training syllabus.

17.4 SynFIs should not normally instruct for more than 1000 machine hours in any period of 12 months.

18. CHIEF GROUND INSTRUCTOR / HEAD OF GROUND TRAINING

18.1 A Chief Ground Instructor (CGI) / Head of Ground Training (HGT) must be appointed who is acceptable to the CAD. He will be responsible to the HT for the overall management of the theoretical knowledge instruction; supervision and standardisation of theoretical knowledge instructors; maintenance of student theoretical knowledge instruction records and the programming of student ground examinations.

18.2 The CGI/HGT must have undergone a course of training in instructional techniques and have had extensive previous experience in giving theoretical knowledge and:

(a) hold or have held an ATPL(A) or a CPL/IR(A) or a Flight Navigator's Licence issued by the CAD or an authority acceptable to the CAD; OR

(b) hold an ATPL(A) or CPL/IR(A) issued by the CAD and have experience as a pilot or navigator in civil aviation or equivalent military air experience; OR

(c) have academic and professional qualifications acceptable to the CAD.

19. THEORETICAL KNOWLEDGE INSTRUCTORS

19.1 Sufficient ground instructors (GIs) must be employed to ensure the proper continuity of theoretical knowledge instruction for all students attending the courses being run by the FTO.

19.2 GIs must have extensive experience in aviation and previous experience in instructing for professional pilot training courses. In the case of an FTO provide training for Phases 1, 2 and 3, at least four full-time GIs, including the CGI, must be employed. The number of GIs should be such that class numbers in subjects involving a high degree of supervision or practical work by students or extensive use of demonstration equipment should not normally exceed 12 students. In other classes it should not exceed 24 students. GIs who are not involved in additional responsibilities should not normally exceed 23 teaching hours in any one week. These figures should be taken to include all classroom contact time whether on HK MPL(A) integrated courses or other courses in which a theoretical knowledge instructor takes part. In the context of taking part in 'other courses', the teaching hours committed to HK MPL(A) integrated courses should be proportionately reduced.

20. APPOINTMENT OF AUTHORISED EXAMINERS

20.1 CAD may appoint suitably qualified training staff employed by the FTO on full-time basis as Authorised Examiners (AE) to administer flights tests in the simulator or on the aircraft for the grant of a Hong Kong MPL(A) (and/or a Private Pilot’s Licence (Aeroplane) (PPL(A)) if applicable) and the issue or renewal of Aircraft Ratings on behalf of the CAD.

20.2 An applicant will have to meet the following pre-requisites before CAD would consider his/her appointment as an AE:

(a) hold a current ATPL(A) issued by the CAD or an authority acceptable to the CAD (a current CPL(A) is acceptable if the AE is required to administer flight tests for the issue of a PPL(A) only); and

(b) hold current Aircraft Rating(s) for the type(s) of aeroplane on which he/she will administer flight tests; and

(c) when required by the FTO's State Authority or the CAD: hold a FI Rating issued by the CAD or an authority acceptable to the CAD, as appropriate; and

(d) have at least two years of experience as a full-time FI or Type-Instrument Rating Examiner (TIRE) with unrestricted privileges; and

(e) possess knowledge of Hong Kong legislative requirements; and

(h) in the case of an AE who is required to conduct the combined MPL(A) Flying Test or the initial Instrument Rating Flying Test in the simulator (see paragraph 29.1): have completed a MPL(A) instructor training course and maintain a MPL(A) instructor qualification acceptable to the FTO's State Authority and the CAD; and

(i) have completed at least 1500 hours of flight time in multi-crew operations and a CRM and TEM training course acceptable to the FTO's State Authority and the CAD (this condition is not applicable to AE for PPL(A) Flying Tests only); and

(j) have satisfactorily completed an Authorised Examiner Course acceptable to the CAD, or holding a current examiner's authority issued by an authority acceptable to the CAD; and

(k) authorised Inspector of CAD must be satisfied with the performance of the applicant after observing him/her administering a MPL(A) flight test (or a PPL(A) flight test if applicable).

21. ADMINISTRATIVE STAFF

21.1 Administrative staff must be provided to maintain:

(a) records of students' academic achievements before and during the course;

(b) detailed records of flight training, theoretical knowledge instruction and synthetic flight training given to individual students;

(c) detailed and regular progress reports, based on individual reports from instructors, and regular progress flight tests and ground examinations.

22. TRAINING RECORDS

22.1 An FTO must maintain and retain the following records for a period of at least 5 years, using appropriate administrative staff:

(a) limited personal details of the student, e.g. expiry dates of medical certificates, ratings, etc;

(b) a summary of any credits in flying experience and theoretical knowledge instruction to which individual students may be entitled;

(c) cumulative flying training achieved;

(d) for each training flight, the date, the aircraft registration (or the simulator code), the flight time, the name of the FI/SynFI and written comments by the FI/SynFI on the students performance, progress and other factors such as attitude and manner during the flight and during the course as a whole. Students should be invited to sign each report acknowledging the debrief;

(e) summary reports and the result of progress/phase tests, flight tests and theoretical knowledge examinations including arrangements for remedial training after failed tests/examinations;

(f) training in aircraft emergency procedures, to be recorded separately and displayed prominently.

22.2 The format of student training records is to be specified in the Training Manual and must be acceptable to the CAD.

22.3 Similar records should be maintained for synthetic flight and theoretical knowledge instructions.

22.4 Computer based records should be backed up daily. The arrangements for safeguarding such records are to be entered in the Training Records section of the Training Manual.

22.5 In the case of an integrated MPL(A) course jointly run by more than one FTO, the LHT must also ensure that appropriate measures are in place for smooth and accurate transfer of student's training records to the lead FTO. Nevertheless the partner FTO(s) must retain a copy of training records as required by this Section.

23. LOGBOOKS

23.1 Student personal flying logbooks must be kept in accordance with Article 22 of the AN(HK)O. Students may consider using CAD 407 – Personal Flying Log Book. The details to be entered in logbooks should include at least the following information:

(a) For each flight:

- name of PIC
- date (day, month, year) of flight
- place and time of departure and arrival (times in UTC to be block times)
- type (aeroplane make, model and variant)
- registration of aeroplane
- flight details which may be referred as training exercise(s) according to the training programme agreed by the CAD
- single- or multi-engine
- total time of flight as PF and PM
- accumulated total time of flight, including total time as PF and PM

(b) For each FSTD session:

- type and code of FSTD
- details of instruction which may be referred as training exercise(s) according to the training programme agreed by the CAD
- date (d/m/y) and total time of each session (as PF and PM)
- accumulated total time, including total time as PF and PM

(c) Pilot function

- flight time during which the FI on board the aircraft will only observe the student acting as pilot-in-command and must not influence or control the flight of the aircraft should be logged as SPIC. SPIC may be credited as pilot-in-command time.
- flight time of successful sampling flights conducted by CAD Authorised Inspectors, progress tests and flight tests should be logged as PIC U/S (P1 U/S).
- P U/T denotes pilots receiving dual instruction.

(d) Instrument time

- includes instrument flight time and instrument ground time
- a pilot may log as instrument flight time only that time during which he operates the aircraft solely by reference to instruments, under actual or simulated instrument flight conditions.
- The instrument flight time logged to meet the licence requirements will be less than the chock-to-chock IF instruction time by an allowance to cover ground manoeuvring times and any period spent using external references available between start and take-off and the completion of the landing roll.

(e) Operational conditions

- Night
- IFR

23.2 All approved flight and synthetic flight training are to be clearly identified by reference to the training programme agreed by the CAD which should include details of the exercises.

23.3 All entries in students' logbooks are to be certified as being correct at the end of each course by the HT or his designated representative(s). In addition, the CSynFI/HST is to certify as correct the synthetic flight training in the students' logbooks.

23.4 Logbooks of the FI must include a monthly summary of all flying time which clearly distinguishes approved course instructional flying from other flying.

24. TRAINING PROGRAMME

24.1 A training programme covering all aspects of the course is required. This programme is to include a breakdown of flying and ground training in either a week-by-week or phase presentation, a list of standard exercises and a syllabus summary. The content and layout of the training programme is to be agreed with the CAD.

24.2 The training programme should form part of the Training Manual.

24.3 Upset Prevention and Recovery Training (UPRT)

24.3.1 As a requirement for the integrated MPL programme, UPRT should be a train-to-proficiency programme designed to achieve end-state objectives. It shall be incorporated into the FTO's Quality Assurance (QA) programme as well as an effective SMS programme. FTO conducting UPRT shall have effective policies, processes and procedures through a continuing hazard identification and safety risk management. FTO should conduct UPRT following the ICAO document 10011.

24.3.2 UPRT shall be an integrated approach comprising:

- Theoretical Knowledge academic training
- Aeroplane Training
- FSTD Training

24.3.3 All instructors assigned for UPRT should successfully complete a UPRT instructor qualification training course agreed by CAD, or the FTO's State Authority acceptable to the CAD, in addition to qualifications and experience specified in paragraphs 13 and 17 of this document.

25. COURSE OBJECTIVE

25.1 The aim of the MPL(A) integrated course is to train pilots to the level of proficiency necessary to enable them to operate as co-pilot of a multi-engined turbine-powered air transport aeroplane certificated for operation with a minimum crew of at least two pilots under VFR and IFR and to obtain a HK MPL(A).

26. GENERAL TRAINING CONCEPT & RESTRICTION

26.1 The MPL(A) course shall be competency-based and conducted in a multi-crew operational environment with Threat and Error Management (TEM) elements integrated in each phase of the training.

26.2 A person who has successfully completed an integrated MPL(A) course and has obtained a MPL(A) is expected to be able to complete the airliner operator's aircraft type conversion course with a high probability of success and within the time frame normally allowed for this phase. It is equivalent to what is currently expected from graduates of the integrated CPL/IR(A) course who have completed type rating training on multi-crew aeroplane.

26.3 The holder of an initially issued MPL(A) shall be restricted to the operations of the sponsored aircraft operator until he/she has passed the initial line check, unless the alternative arrangements with respect to the Line Flying Under Supervision (LFUS) or Initial Operational Experience (IOE) for the concerned MPL(A) holder are accepted by the CAD.

27. COURSE PLANNING

27.1 All MPL training programmes shall be developed with the use of an Instructional System Design (ISD) methodology. Detailed descriptions of the course development methodology and the competency-based approach to training and assessment can be found in the Attachment to Chapter 2 of ICAO Doc 9868 – Procedures for Air Navigation Services – Training (PANS-TRG). Training objectives, competency units, competency elements, performance criteria and assessment guide shall be derived by using the ISD methodology and be defined in detail. A sample of competency units, competency elements and performance criteria can be found in Chapter 3 Appendix B of ICAO Doc 9868 PANS-TRG. A sample of training objectives and assessment guide are shown in Attachment B to Chapter 3 of the same ICAO document.

27.2 Guidance on the design and development of a MPL(A) training programme can be found in Attachment A to Chapter 3 of ICAO Doc 9868 PANS-TRG.

27.3 The course shall comprise:

(a) theoretical knowledge instruction to the HK ATPL(A) knowledge level; and

(b) visual and instrument flying training; and

(c) training in multi-crew operations; and

(d) type rating training.

27.4 The training course shall include a continuous evaluation process of the syllabus and a continuous assessment of the students following the accepted syllabus. Evaluation shall ensure that:

(a) the competencies and related assessments are relevant to the task of a co-pilot of a multi-pilot aeroplane; and

(b) the students acquire the necessary competencies in a progressive and satisfactory manner.

27.5 The general approach of planning an integrated MPL(A) course is to use the existing CPL/IR(A) integrated training course and specifically the transfer from actual flight to simulated flight.

27.6 This transfer shall be organised 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 shall only take place after enough experience has been gained and once its results, including those of airline operator conversion courses, have been analysed and taken into account.

28. FLYING TRAINING (FLIGHT AND SYNTHETIC FLIGHT TRAINING)

28.1 The flying training must comprise a total of a minimum of 240 hours flight time as Pilot Flying (PF) and Pilot Monitoring (PM) of actual and simulated flight, which may include all necessary flying tests. The minimum hour requirements on aeroplanes and simulators for each phase of the training as well as the required levels of competency are stated in Appendix 1. Subject to the acceptance by the CAD, flying training in the simulators may be substituted by the use of aeroplanes.

28.2 In addition, the following requirements must be met:

(a) The flying hour requirements for the issue of a HK PPL(A), as stated in CAD 54; and

(b) Upset recovery training, night flying and flight by reference solely to instruments must be provided; and

(c) Upon the completion of the integrated MPL(A) course, the student shall have gained the experience necessary to achieve the advanced level of competency defined in Appendix 1.

28.3 Flight training on aeroplane must be integrated with synthetic flight training and theoretical knowledge instruction in a manner which will ensure that, as the various flying training exercises are conducted, students will be able to apply to them the knowledge gained from the synthetic flights. Arrangements should be made so that problems encountered in airborne instruction can be resolved during subsequent synthetic flight training.

28.4 Flying training should be so arranged that students do not normally receive instruction from more than 3 instructors throughout the period of each phase of the training course.

28.5 Flight authorisation should be confined to FIs employed by the FTO to give instructions on HK MPL(A) integrated courses, or BTCs in the case of an airline providing training for Phase 4.

28.6 Authorisation Sheets, either in document or computer based formats must be used to record pre flight and post flight details and should normally include at least:

(a) the date;

(b) the aircraft registration mark;

(c) the names of the FI/BTC and student;

(d) the details of the exercise, the route to be flown and the aerodrome(s) to be visited;

(e) the initials or signature of the authorising FI/BTC;

(f) the initials or signature of the PIC both before and after the flight;

(g) the intended duration of the flight;

(h) the elapsed time of flight (take off to touchdown);

(i) post flight recording of any deviation from the intended exercise, eg. cancellation or diversion due weather, etc.;

28.7 Technical Logs must be used to record fuel and oil states, and for post flight recording of any aircraft defects and subsequent recording of any rectification or deferring of these defects.

29. FLIGHT TESTING

29.1 Students will undergo the following flying tests in the simulator taken with CAD Authorised Examiners:

(a) a combined MPL(A) Flying Test, which consists of a Skill Test and an Aircraft Rating (AR) Test; and

(b) an Initial Instrument Rating (IR) Flying Test.

29.2 The syllabi for the combined MPL(A) Flying Test and the initial IR Flying Test are contained in CAD 54.

29.3 Student will also undergo the “12-take-offs-and-landings” exercise on the aeroplane with a CAD Authorised Examiner at the end of Phase 4. This item (i.e. the “base training”) must be completed within 28 days of the completion of the combined MPL(A) Flying Test as described in paragraph 29.1(a).

30. THEORETICAL KNOWLEDGE INSTRUCTION

30.1 The integration of theoretical knowledge instruction with flight and synthetic flight instruction must be agreed with the CAD.

30.2 Theoretical knowledge instruction must be given in the form of lectures and practical demonstrations, which must be supported by up-to-date student study notes. 'Directed Study' in lieu of formal training will not be accepted. Student study notes should be prepared specifically to meet the needs of an ab-initio student pilot.

30.3 Distance learning (study by correspondence) will not be approved as part of an integrated course of training.

30.4 Students are to be prepared for the ground examinations in accordance with Appendix 2.

31. INVIGILATION OF CAD GROUND EXAMINATIONS

31.1 The dates for ground examinations for the grant of HK MPL(A) should be planned on a course-by-course basis and such examinations must be invigilated by CAD staff.

31.2 To allow time for CAD staff deployment, the FTO must give CAD at least 4 weeks' prior notification of any intended changes to the pre-planned examination dates.

32. TRAINING AIRCRAFT

32.1 A fleet of training aircraft must be provided which will ensure the proper continuity of flying training for the number of students attending the course(s). The requirement for routine maintenance must be taken into account in determining fleet size. Depending on the phase(s) of training provided by the FTO, the fleet must comprise:

(a) single-engined aeroplanes, if the FTO provides training for Phases 1 or 2; and

(b) twin-engined aeroplanes, if the FTO provides training for Phases 1 or 2 (as appropriate); and

(c) turbine, multi-engined and multi-crew certified aeroplanes, if the FTO provides training for Phase 4 (also applicable to Phase 3 if the FTO provides flying training on the aircraft in that phase); and

(d) aeroplanes suitable for demonstrating stalling and spinning, if the FTO provides training for Phases 1 or 2; and

(e) aeroplanes equipped to permit flight under Instrument Flight Rules within Controlled Airspace.

32.2 Only aircraft types approved by the CAD for training purposes may be used on the course(s). The basic requirement for approval is that each aircraft must have a valid Certificate of Airworthiness in the Transport Category (Passenger) or an equivalent document in accordance with the State requirements and be maintained accordingly. The minimum requirements for course aeroplanes are specified in Appendix 5.

32.3 The aircraft type utilised in Phase 4 must either be a type on the Hong Kong Register or a type considered acceptable by the CAD. This aircraft type will be the one to be endorsed on the HK MPL(A).

32.4 An FTO must seek prior approval from the CAD before making changes to the type(s) of aeroplanes used on the course.

33. FLIGHT SIMULATION TRAINING DEVICES

33.1 FSTDs, other than full flight simulators, intended to be used for training and testing for the issue of a HK MPL(A) must be approved by the CAD in accordance with in Appendix 3.

33.2 Full flight simulators must be approved by the CAD in accordance with CAD 453.

34. AERODROME

34.1 The base aerodrome(s) at which training is conducted and any satellite aerodromes used must be licensed or approved for the purpose of training by its own State Authority and the environment of which must be suitable in every way for the course and types of aircraft to be used on the course.

34.2 The base aerodrome, and any alternative base aerodrome should have at least the following facilities:

(a) At least one runway or take-off area that allows training aeroplanes to make a normal take-off or landing at the maximum landing weight authorised, as appropriate,

(i) under calm wind (not more than 4 knots) conditions and temperatures equal to the mean high temperature for the hottest month of the year in the operating area,

(ii) clearing all obstacles in the take-off flight path by at least 50 feet,

(iii) with the powerplant operation and the landing gear and flap operation (if applicable) recommended by the manufacturer, and

(iv) with a smooth transition from lift-off to the best rate of climb speed without exceptional piloting skills or techniques;

(b) a wind direction indicator that is visible at ground level from the ends of each runway;

(c) permanent runway electrical lighting if used for night training; and

(d) an air traffic control service

35. FLIGHT OPERATIONS ACCOMMODATION

35.1 The following accommodation is required:

(a) An Operations Room with facilities to control flying operations;

(b) A Flight Planning Room including

(i) appropriate current maps and charts
(ii) current AIS information
(iii) current meteorological information
(iv) communications to ATC and the Operations Room
(v) maps showing standard cross-country routes
(vi) maps showing current Prohibited, Danger and Restricted areas;

(c) furnished briefing rooms/cubicles of sufficient size and number;

(d) room(s) to allow flying instructors to write reports on students, complete records, etc;

(e) furnished crew-rooms for instructors and students;

(f) lavatory and washing facilities.

35.2 Lecture rooms of adequate size relative to the maximum student capacity, each including a black (or white) board and model aircraft with working controls should also be available.

35.3 A machine room or rooms shall be provided where FSTDs are used.

35.4 All operational and training rooms are to be suitably equipped and furnished with proper provision for heating, light and ventilation and are not to be combined with any accommodation used continuously for the purpose of administering the FTO.

36. THEORETICAL KNOWLEDGE INSTRUCTION FACILITIES

36.1 Facilities for theoretical knowledge instruction should be available within the flying and synthetic flight training facilities.

36.2 Adequate environmental control must be provided in all classrooms which must also be protected from external noise and distractions.

36.3 Lavatory and washing facilities must be available. Where Flight Operations accommodation and theoretical knowledge instruction facilities are co-located, a single facility of adequate size may be acceptable.

36.4 Suitable demonstration equipment should be available to support the theoretical knowledge instruction. This should include sectioned components and instruments, appropriate wall diagrams, transparencies, slides, models, systems demonstration equipment, mock ups and can include computer generated graphics.

37. OPERATIONAL PUBLICATIONS

37.1 In addition to the documents required by the State Authority of the FTO, the following operational publications must be immediately available to students and staff and, where applicable, kept current by amendments.

(a) Air Navigation (Hong Kong) Order 1995

(b) HK Aeronautical Information Publication including Class I and II NOTAMs

(c) CAD 54 – Requirements Document for Pilot Licences and Associated Ratings

(d) HK Aeronautical Information Circulars

(e) Flight Manuals for the aircraft used on the course

(f) ICAO ATC Flight Plan

(g) Standard meteorology reports and forecasts (in document or computer based formats)

(h) Flight planning documents including flight guide supplements, radio navigation charts. TMA/CTR arrival/departure charts and aerodrome Instrument Approach Procedure charts. These may be in proprietary flight guides acceptable to the CAD, e.g. AERAD, Jeppesen.

37.2 A copy of the Flight Manual or an extract therefrom acceptable to the CAD and an approved Check List must be made available to each student. Extracts from the Flight Manual produced by the FTO must not be in conflict with the Flight Manual.

38. HEALTH AND MEDICAL CERTIFICATION ARRANGEMENTS

38.1 Emergency medical treatment must be available for staff and students during working hours.

39. STUDENTS

39.1 A student accepted for training must possess a Hong Kong Class 1 Medical Certificate throughout the whole course.

39.2 In deciding course entrance requirements, which must be acceptable to the CAD, organisations should note that for integrated courses, theoretical knowledge instruction should be integrated with flight training in such a way as to prepare the student for each of the flight training exercises in turn. The syllabus is designed to prepare the student for the ground examinations. Failure to absorb the theoretical knowledge training in step with the course programme will make it more difficult for the student to benefit from the flying training exercises and, eventually, to pass the flight tests and theoretical knowledge examinations to qualify for grant of the licence. It is in the student's interests therefore, that he has an educational background sufficient to enable him to keep pace with the theoretical knowledge training programme without undue difficulty. A good command of English and certain minimum standards for knowledge of Mathematics and Physics would be desirable.

39.3 It is expected that the CAD would approve courses in English. FTOs should therefore ensure that the students have an acceptable standard of spoken and written English before admitting them to a course. In any case the language proficiency demonstrated by the students must not below the Operational Level (Level 4) specified in ICAO Annex 1.

39.4 The FTO must be satisfied that a student attending the course has acquired an acceptable academic standard.

39.5 A student wishing to undertake an integrated MPL(A) course shall, under the supervision of the HT of the corresponding FTO, complete all the instructional stages in one continuous approved course of training as arranged by that FTO.

39.6 A student shall only be admitted to training as an ab-initio entrant under a sponsorship from an operator of Hong Kong-registered aircraft. A student failing or unable to complete the entire MPL(A) course may apply to the CAD for credit towards the theoretical knowledge examination and skill test for another licence and, if applicable, an instrument rating.

39.7 A student wishing to transfer to another FTO during a course of training shall apply to the CAD for a formal assessment of the further hours of training required at another FTO.

40. OPERATIONS AND TRAINING MANUALS AND ORDER BOOKS

40.1 An FTO applying for approval must prepare and maintain an Operations Manual and a Training Manual containing the necessary information and instructions to enable staff to perform their duties and to give guidance to students on how to comply with course requirements. The CAD must be satisfied that the information required by this paragraph and by Appendices 6 and 7 is available in written form to staff and students as appropriate.

40.2 Operations Manual

The Operations Manual must provide relevant information to particular groups of staff, eg. flight instructors, synthetic flight instructors, ground instructors, operations and maintenance staff, etc. Typical information to be included in the Operations Manual is at Appendix 7.

40.3 Training Manual

The Training Manuals must define the flight, simulated flight and ground training syllabi and cover the items listed at Appendix 6.

40.4 Flying Orders

(a) One of the purposes of the Operations Manual is to provide essential safety related operational information designed for everyday use by flight instructors and students. If so preferred by the FTO, such information may be grouped together in the form of specific instructions called Flying Orders. Guidance on content and layout are at Appendix 8.

(b) Flying Orders must be issued and signed by the Head of Training and must show the date on which they were first issued or amended.

(c) All flight instructors should sign as having read all orders at least once a year and also whenever a new order is published. All students should sign at the beginning of their flying training and whenever a new order is published thereafter until the end of the course. FTO should ensure that all instructional staff and students should familiarise themselves with the content of amended orders.

(d) The amendment policy and procedure must be stated and temporary orders or amendments catered for by use of Instructor or Student Order Books.

41 QUALITY SYSTEM

41.1 An FTO seeking approval should establish procedures acceptable to the CAD to ensure compliance with requirements set out in this document. These procedures should include a Quality System within the organisation to readily detect any deficiencies for self-remedial action. Guidance information for assisting FTOs to develop a Quality System is given in Appendix 10.

APPENDIX 1

FLIGHT INSTRUCTION FOR THE HK MPL(A) INTEGRATED COURSE

1. The progressive approach, as explained in Section 27, should be followed. The student shall complete no less than 240 hours as PF and PM of actual and simulated flight.

2. TEM principles should be integrated in all phases of training.

3. Each phase of the MPL training scheme shall be composed of instruction in underpinning knowledge and in practical training segments. Training in the underpinning knowledge requirements for the MPL(A) shall therefore be fully integrated with the training of the skill requirements in each phase of training. Students must demonstrate that they have reached the required level of competency of a particular phase before they can advance to the next phase of training.

4. Competency units

   The nine competency units that a student has to demonstrate are as follows:

   (a) apply human performance principles, including principles of TEM;

   (b) perform aeroplane ground operations;

   (c) perform take-off;

   (d) perform climb;

   (e) perform cruise;

   (f) perform descent;

   (g) perform approach;

   (h) perform landing; and

   (i) perform after landing and aeroplane post-flight operations.

5. Assessment level

The applicant for a MPL(A) shall have satisfactorily demonstrated performance in all the 9 competency units specified above, at the advanced level of competency.

6. The flying instruction should be divided into 4 phases:

a. Phase 1 – Core Flying Skills

I. Aim: Specific basic single pilot training.

II. Level of competency:

The level of competency at which the student shall have complied with the requirements for the HK PPL(A) specified in CAD 54, including night flight requirements, and , in addition, have completed, smoothly and with accuracy, all procedures and manoeuvres related to upset training and flight with reference solely to instruments. From the outset, all training is conducted in an integrated multi-crew, competency-based and TEM environment. Initial training and instructional input levels are high as core skills are being embedded in the ab-initio application. Assessment at this level confirms that control of the aeroplane is maintained at all times in a manner such that the successful outcome of a procedure or a manoeuvre is assured.

III. Training items:

i. Crew Resources Management (CRM) / TEM

ii. VFR cross-country

iii. Solo flight

iv. Basic instrument flight

v. Principles of flight

vi. Cockpit procedures

IV. Aeroplane: Single and/or multi-engined

V. FSTD: Type I

b. Phase 2 - Basic

I. Aim: Introduction of multi-crew operations and instrument flight.

II. Level of competency:

The level of competency at which assessment confirms that control of the aeroplane or situation is maintained at all times and in such a manner that if the successful outcome of a procedure or manoeuvre is in doubt, corrective action is taken. Performance in the generic cockpit environment does not yet consistently meet the Standards of knowledge, operational skills and level of achievement required in the core competencies. Continual training input is required to meet an acceptable initial operational standard. Specific performance improvement/personal development plans will be agreed and the details recorded. Students will be continuously assessed as to their suitability to progress to further training and assessment in successive phases.

III. Training items:

i. CRM / TEM

ii. PF/PM complement

iii. IFR cross-country

iv. Upset recovery

v. Night flight

vi. Instrument flight

IV. Aeroplane: Single and/or multi-engined

V. FSTD: Type II

c. Phase 3 - Intermediate

I. Aim: Application of multi-crew operations in a high-performance, multi-engined turbine aeroplane.

II. Level of competency:

The level of competency at which assessment confirms that control of the aeroplane or situation is maintained at all times and in such a manner that the successful outcome of a procedure or manoeuvre is assured. The training received at this phase shall be conducted under IFR, but need not be specific to any one type of aeroplane. On completion of Phase 3, the student shall demonstrate levels of knowledge and operational skills that are adequate in the environment and achieves the basic standard in the core capability. Training support may be required with a specific development plan to maintain or improve aircraft handling, behavioural performance in leadership or team management. Improvement and development to attain the Standard is the key performance objective. Any core competency assessed as less than satisfactory should include supporting evidence and a remedial plan.

III. Training items:

i. CRM / TEM

ii. Line-Oriented Flying Training (LOFT)

iii. Abnormal procedures

iv. Normal procedures

v. Multi-crew

vi. Instrument flight

IV. FSTD: Type III

d. Phase 4 - Advanced

I. Aim: Type rating training within an airline-oriented environment.

II. Level of competency:

The level of competency required to operate and interact as a co-pilot in a turbine-powered aeroplane certificated for operation with a minimum crew of at least two pilots, under visual and instrument conditions. Assessment confirms that control of the aeroplane or situation is maintained at all times in such a manner that the successful outcome of a procedure or manoeuvre is assured. The student shall consistently demonstrate the knowledge, skills and attitudes required for the safe operation of an applicable aeroplane type as specified in the performance criteria.

III. Training items:

i. CRM / TEM

ii. Landing training

iii. All weather scenarios

iv. LOFT

v. Abnormal procedures

vi. Normal procedures

IV. Aeroplane: Turbine, multi-engined and multi-crew certified, minimum 12 take-offs and landings as PF.

V. FSTD: Type IV

APPENDIX 2

THEORETICAL KNOWLEDGE SYLLABUS FOR THE HK MPL(A) INTEGRATED COURSE

1. The course of training must give the student a sound basic knowledge of the subjects shown in the ATPL(A) examination syllabi in CAD 54.

2. The theoretical knowledge instruction should include classroom work, interactive video, slide/tape presentation, learning carrels, computer based training, and other media as accepted by the CAD, but excluding student private study.

3. Adequate time should be allocated to practical work, classroom exercises, progress tests, revision, demonstrations, films etc. It is estimated that this may amount to some 40% of the total time. The actual balance between total hours, lectures, practical work, revision etc, must be made by the FTO.

APPENDIX 3

FLIGHT SIMULATION TRAINING DEVICE (FSTD)

1. FSTDs are categorized as follows:

a. Type I: E-training and part tasking devices that have the following characteristics:

- involve accessories beyond those normally associated with desktop computers, such as functional replicas of a throttle quadrant, a sidestick controllers, or an FMS keypad; and

- involve psychomotor activity with appropriate application of force and timing of responses.

b. Type II: A FSTD that represents a generic turbine-powered aeroplane. A FSTD with specifications equivalent to FAA FTD Level 5 or JAA FNPT II MCC is acceptable for CAD's consideration for granting an approval. See Section 2 of this Appendix for approval criteria.

c. Type III: A FSTD that represents a multi-engined turbine-powered aeroplane required to be operated with a co-pilot and qualified to an equivalent standard to Level B flight simulator, additionally including:

- a daylight/twilight/night vision system continuous cross-cockpit minimum collimated visual field of view providing each pilot with 180 degrees horizontal and 40 degrees vertical field of view; and

- ATC environment simulation.

Approval criteria for Level B flight simulator are detailed in CAD 453.

d. Type IV: A flight simulator which is fully equivalent to Level C or Level D with an enhanced daylight visual system, including ATC environment simulation. Approval criteria for Level C and D flight simulators are detailed in CAD 453.

2. Type II FSTD – Flight Navigation and Procedures Trainer (FNPT)

2.1 Minimum Technical Requirements

2.1.1 An enclosed flight deck, including the instructor's station, which shall replicate that of the aeroplane or class of aeroplane simulated and in which the switches and all the controls will operate as, and represent those in, that aeroplane or class of aeroplane.

2.1.2 The replicated aeroplane shall be of Performance Group A and the simulation shall reflect the performance of the aeroplane accurately.

2.1.3 The following systems shall be equipped and simulated with accurate response:

(a) turbine-powered engines;

(b) retractable landing gear;

(c) pressurization system;

(d) deicing systems;

(e) fire detection / suppression system;

(f) dual controls;

(g) autopilot with automatic approach mode;

(h) 2 VHF transceivers including oxygen masks intercom system;

(i) 2 VHF NAV receivers (VOR, ILS, DME);

(j) 1 ADF receiver;

(k) 1 Marker receiver;

(l) 1 transponder.

2.1.4 Systems shall be operative to the extent that it shall be possible to perform all normal, abnormal and emergency operations as may be appropriate to the aeroplane or class of aeroplanes being simulated and as required for the training. Once activated, proper systems operation must result from system management by the crew member and not require any further input from the instructor's controls.

2.1.5 Stall recognition device corresponding to that of the replicated aeroplane or class of aeroplane shall be installed and the response is accurately simulated.

2.1.6 Navigation and communication equipment corresponding to that of the replicated aeroplane or class of aeroplanes, with operation within the tolerances prescribed for the actual airborne equipment, shall be installed.

2.1.7 The following indicators shall be located in the same position on the instrument panels of both pilots:

(a) airspeed;

(b) flight attitude with flight director;

(c) altimeter;

(d) flight director with ILS (HSI);

(e) vertical speed;

(f) ADF;

(g) VOR;

(h) Marker indication (as appropriate);

(i) stop watch (as appropriate).

2.1.8 Instruments, equipment, panels, systems, primary and secondary flight controls sufficient for the training events to be accomplished shall be located in a spatially correct flight deck area. Circuit breakers shall function accurately when involved in procedures or malfunctions requiring or involving flight crew response.

2.1.9 Lighting environment for panels and instruments shall be sufficient for the operation being conducted.

2.1.10 Crew member seats shall be provided with sufficient adjustment to allow the occupant to achieve the design eye reference position appropriate to the aeroplane or class of aeroplane and for the visual system to be installed to align with that eye position.

2.1.11 In addition to the flight crew member's stations, suitable viewing arrangements for the instructor shall be provided. These shall provide an adequate view of the crew members panels and station.

2.1.12 A visual system (night/dusk or day) shall be capable of providing a field-of-view of a minimum of 45 degrees horizontally and 30 degrees vertically, unless restricted by the type of aeroplane, simultaneously for each pilot, including adjustable cloud base and visibility. The responses of the visual system and the flight deck instruments to control inputs shall be closely coupled to provide the integration of the necessary cues.

2.1.13 The following shall be available:

(a) variable effects of wind and turbulence;

(b) hard copy of map and approach plot;

(c) provision for position freeze and flight freeze;

(d) instructor controls necessary to perform the training task.

2.1.14 The instructor's station shall include the following controls:

(a) representative crosswinds;

(b) a facility to enable the dynamic plotting of the flight path on approaches, commencing at the final approach fix, including the vertical profile.

2.1.15 Significant cockpit/flight deck sounds, responding to pilot actions, corresponding to the aeroplane or class of aeroplane shall be simulated.

2.1.16 A generic ground handling model shall be provided to enable representative flare and touch down effects to be produced by the sound and visual systems.

2.1.17 Effect of aerodynamic changes for various combinations of drag and thrust normally encountered in flight, including the effect of change in aeroplane attitude, sideslip, altitude, temperature, gross mass, centre of gravity location and configuration, shall be accurately simulated. If the simulation is based on a multi-engined aeroplane, the effects of asymmetric thrust should also be represented.

2.1.18 Aerodynamic modeling shall also reflect the effects of airframe icing and the rolling moment due to yawing.

2.1.19 Control forces and control travels shall respond in the same manner under the same flight conditions as in the aeroplane or class of aeroplane being simulated.

2.1.20 Complete and updated navigational data shall be provided for at least 5 different airports, including the sponsored AOC holder's home base, with corresponding precision and non-precision approach procedures. All navigational aids should be usable, if within range, without restriction and without instructor intervention.

3. Information Required Prior to On-site Evaluation

3.1 The following information has to be submitted to the CAD prior to an on-site evaluation to enable the Authorised Inspector to assess and compare it to the type or class of aeroplane being represented:

(a) manufacturer's name and year of manufacture;

(b) type or class of aeroplane represented;

(c) diagrams of the flight deck layout, flight instruments and controls (suitably sized photographs may meet this requirement);

(d) a description of the ground station data provided in the simulation and an indication of the procedure necessary for making changes when data alters.

4. Evaluation

4.1 An on-site evaluation by the Authorised Inspector will consist of an assessment of the test report based on the Qualification Test Guide (QTG) and an evaluation of the handling and performance of the trainer as compared to the generic type or class of aeroplane it represents. Also checked will be compliance with all relevant requirements of this document, certification/approval from other authorities, examination of the training establishment and facilities, and an assessment of the instructional standards being maintained. Instructor(s) will be observed by the Authorised Inspector whilst conducting a training exercise or exercises.

4.2 On completion of a satisfactory evaluation, the Authorised Inspector will approve the use of the FSTD for the HK MPL(A) integrated course.

4.3 The CAD must be advised of any hardware, software or database modifications made or change of certification/approval status by other authorities since the previous evaluation.

APPENDIX 4

FINANCIAL EVALUATION OF THE FTO – EVIDENCE OF SUFFICIENT FUNDING

1. OBJECTIVE

1.1 The objective of this Appendix is to serve as guidance notes for the CAD to be satisfied that the FTO has sufficient funding available to conduct training to the approved standards. However, it is not intended to be a consumer protection provision. The grant and renewal of an approval cannot therefore be construed as a guarantee of the underlying financial soundness of the FTO. It is an indication, on the basis of financial information provided, that the approved FTO can provide sufficient facilities and qualified staff such that flying training can be, or can continue to be, provided in accordance with the requirements set out in this document.

2. APPLICATION FOR GRANT OR RENEWAL OF APPROVAL

2.1 Any application for initial grant or renewal of approval is to be supported by a plan, covering the period of approval requested, which includes at least the following information:

(a) Training facilities and number of students. Details of:

- the number and types of training aircraft that will be used;
- the number of flight and ground instructors that will be employed;
- the number of classrooms and other types of training facilities (synthetic training devices, etc.) intended for use;
- the supporting infrastructure (staff offices, operations room, briefing rooms, rest rooms, hangars. etc.);
- planned number of students (by month and course)

(b) Financial Details

- capital expenditure necessary to provide the planned facilities;
- costs associated with running each of the courses for which approval is sought;
- income forecasts for the period of approval;
- a forecast financial operating statement for the business for which approval is sought;
- details of any other financial trading arrangement on which the viability of the approved organisation may be dependent.

2.2 The plan submitted in support of an application for initial grant or renewal of approval is to be accompanied by a Financial Statement from the applicant's (FTO's) bankers or auditors which certifies that the applicant has, or has recourse to, sufficient financial resources to meet the applicant's proposals as described in the plan to conduct HK MPL(A) approved courses. Should the applicants wish to extend their activities in addition to those described in the plan, an appropriately revised Financial Statement will be required to be submitted to the CAD for consideration.

3. ONGOING FINANCIAL MONITORING

3.1 After approval has been granted, if the CAD has reason to believe that the necessary course standards are not being met or may not be met due to an apparent lack of financial resources, the CAD may require the organisation to demonstrate in a written submission that sufficient funds can and will be made available to continue to meet the terms of approval, or such modifications to it as may have been agreed with the CAD. Any such submission is to be accompanied by a further Financial Statement signed by the approved organisation's bankers or auditors.

3.2 The CAD may also require a Financial Statement if it appears to the CAD that operation of the approved course(s) is significantly at variance with the proposals contained in the application.

APPENDIX 5

GENERAL REQUIREMENTS FOR AEROPLANES TO BE USED ON HK MPL(A) INTEGRATED COURSES

1. DOCUMENTATION AND CERTIFICATION

1.1 All aeroplanes for use on an integrated course for HK MPL(A) must have a valid Certificate of Airworthiness (C of A) in the Transport Category (Passenger) or the equivalent in accordance with the State requirements.

1.2 All aeroplanes must be maintained in accordance with the appropriate maintenance schedule and the following documentation must be available for inspection by the CAD Inspection Team:

(a) Aircraft, Engine and Propeller Log Books, as appropriate;

(b) Certificates of Airworthiness and Registration;

(c) Weight and Balance Schedules;

(d) Certificates of Maintenance Release or equivalent;

(e) Radio Licences and Radio Installation Approvals or equivalent;

(f) Flight Manuals.

1.3 In addition to the items at paragraph 1.2 above, the record of hours and days remaining to the next maintenance check and the record of rectification or deferring or previously reported defects must be readily available for scrutiny by pilots before each flight.

2 AIRCRAFT REQUIREMENTS

2.1 All aeroplanes to be used on the course must first be approved by the State Authority for training purposes and must also be acceptable to the CAD. The minimum requirements of the CAD are as follows:

2.2 Each aeroplane must be fitted with duplicated primary flying controls for use by the instructor and the student. Swing-over flight controls are not acceptable.

2.3 All flight, engine and associated ancillary instruments, as required by the AN(HK)O 1995, HKAR-1 and Airworthiness Notices must be fitted. These instruments must be readily visible to both the instructor and the student when sitting normally in their customary seats with seat belts and diagonal shoulder straps or safety harness fastened.

2.4 Trim controls, wheel brakes, flap controls, undercarriage controls (if applicable), all engine controls, fuel controls and cabin fire extinguisher must be either duplicated or positioned so that they are accessible to both the instructor and student when sitting normally in their customary seats with seat belts and diagonal shoulder strap or safety harness fastened. Some single-engined aeroplanes with fuel controls fitted on the port side and not readily accessible to the instructor may be acceptable.

2.5 Each aeroplane must be equipped with a VHF Transceiver with 760 channels at 25 kHz spacing, controllable from the student's and the instructor's stations. However, aeroplanes used for the Instrument Rating Test must be fitted with two VHF Transceivers. Two-way electrical intercommunication must be fitted which permits the monitoring from one station of RTF communication made from the other, for use by the instructor and the student. All in-flight communications must be carried out using headsets. All radio apparatus must satisfy the requirements of ICAO Annex 10, Vol. 1, Part 1 and any current national requirements.

2.6 In addition to meeting the provisions of the HKAR-1, each single-engined aeroplane must be equipped in accordance with AN(HK)O 1995 Schedule 5 Scales A, B (i), C, F (i) (ii) (iii) and must have a turn and slip indicator (or turn co-ordinator and slip indicator), a gyroscopic bank and pitch indicator, a gyroscopic direction indicator and a sensitive pressure altimeter adjustable for changes in barometric pressure.

2.7 Aeroplanes used for stall/spin awareness and avoidance must be equipped in accordance with AN(HK)O 1995 Schedule 5 Scale B(iii) unless exempted.

2.8 In addition to meeting the provisions of the HKAR-1, each twin-engined aeroplane must be equipped in accordance with the AN(HK)O 1995 Schedule 5 Scales A, B, C, D, E and F (i) (ii) (iii) with E(iv) duplicated and in accordance with the AN(HK)O 1995 Schedule 6 Scales A, C, D, E, F and G. The signals from the 75 MHz receiver must be audible as well as visible and a separate ON/OFF switch should normally be readily available to the instructor. If no ON/OFF switch is available then a suitable means of obscuring the marker lights and removing the audio signal should be provided.

2.9 A stopwatch readily available for use by the student in flight must be provided. This may be part of the aeroplane equipment, failing which a stop watch holder must be provided.

2.10 A means of screening the student from external reference must be provided to simulate instrument flying (IF) conditions. Head-worn visors or similar devices are not normally acceptable. Screening should meet the following requirements:

(a) permit visual take-off;

(b) preclude the use by the student of any external reference when in simulated IF conditions within an arc of 60 degrees either side of the student's straight ahead view;

(c) allow both the student and the instructor unimpeded access to all controls and an unrestricted view of the instruments, especially the magnetic compass;

(d) be angled to ensure minimum interference to the all-round lookout from the normal seating position of the instructor;

(e) be simple to erect and remove in flight and be constructed of a frangible but durable material.

2.11 Devices for blanking-off the Artificial Horizon/Attitude Indicator and the heading reference indicators must be provided for limited panel IF training. These screens must be angled to provide the instructor with full panel reference.

3. AIRCRAFT INSPECTION

3.1 The aircraft will be inspected for condition and compliance with this Appendix for the purpose of approval. Aircraft may be subject to routine inspections during the course of, or for renewal of, approvals. Approval with be withdrawn if aeroplanes fail to meet the requirements of this Appendix.

APPENDIX 6

TYPICAL INFORMATION TO BE INCLUDED IN TRAINING MANUALS

Training Manuals for use at an FTO conducting approved integrated MPL(A) courses should be divided into sections, as necessary, containing the following information:

PART 1 - THE TRAINING PLAN

The aim of the course	A statement of what the student is expected to be able to do as a result of the training, the level of performance to be achieved, and the training constraints to be observed.
Pre-entry requirements	Minimum age Education requirements (including language) Medical requirements
Credits for previous flying experience	To be obtained from the CAD before training begins.
Customer requirements	A full statement of any additions to the minimum approval requirements
Training syllabi	The flying syllabus and the synthetic flight training syllabus, which shall include the relevant training objectives, competency units, competency elements and performance criteria. The theoretical knowledge training syllabus.
The time scale, in weeks, for each syllabus	Arrangements of the course and the integration of syllabi time.
Training programme	The general arrangements of daily and weekly programmes for flying, ground and synthetic flight training. Bad weather constraints Programme constraints in terms of maximum student training times, (flying, theoretical knowledge, synthetic) eg per day/week/month. Restrictions in respect of duty periods for students. Duration of dual, solo, PF and PM flights at various stages. Maximum flying hours in any day/night; maximum number of sorties (including both aeroplane and simulator sorties) in any day/night. Minimum rest period between duty periods.

Training records	Rules for security of records and documents Attendance records The form of training records to be kept. Persons responsible for checking records and students' log books. The nature and frequency of record checks. Standardisation of entries in training records. Rules concerning log book entries. If applicable, training records transfer procedures (from the partner FTO(s) to the lead FTO).
Safety training	Individual responsibilities Essential exercises Emergency drills (frequency) Dual checks (frequency at various stages) Requirements before first solo day/night/navigation etc
Tests and examinations	Flying (a) Progress checks (b) Qualifying tests Theoretical knowledge (a) Progress tests (b) Qualifying examinations Rules concerning refresher training before retest Test reports and records
Training effectiveness	Individual responsibilities. General assessment. Liaison between departments. If applicable, liaison between FTOs. Identification of unsatisfactory progress (individual students). Action to correct unsatisfactory progress. Procedure for changing instructors. Maximum number of instructor changes per student. Internal feedback system for detecting training deficiencies. Procedure for suspending a student from training. Discipline. Reporting and documentation.
Standards and level of Performance at various stages	Individual responsibilities Standardisation Standardisation requirements and procedures Assessment guide and application of performance criteria

PART 2 - BRIEFING AND AIR EXERCISES

Air exercise	A detailed statement of the content specification of all the air exercises to be taught, arranged in the sequence to be flown with main and sub-titles.
Air exercise reference list	An abbreviated list of the above exercise giving main and sub- titles only for quick reference, and preferably in flip-card form to facilitate daily use by flight instructors.
Course structure - phases of training	A statement of how the course and competency units will be divided into phases, indicating how the above air exercises will be divided between the phases and how they will be arranged to ensure that they are completed in the most suitable learning sequence and that essential (emergency) exercises are repeated at the correct frequency. Also, state the syllabus hours for each phase and for groups of exercises within each phase and when progress tests are to be conducted, etc.
Course structure - integration of syllabi	The manner in which theoretical knowledge, synthetic flight training and flying training will be integrated so that as the flying training exercises are carried out students will be able to apply the knowledge gained from the associated theoretical knowledge instruction and synthetic flight training.
Student progress requirement	The requirement for student progress including a brief but specific statement of what a student is expected to be able to do, and the standard of proficiency he must achieve before progressing from one phase of air exercise training to the next. Also, minimum experience requirements in terms of hours, satisfactory exercise completion, etc as necessary before the commencement of significant exercises, eg night flying.
Instructional methods	The FTO requirements, particularly in respect of pre-and post-flying briefing, adherence to syllabi and training specifications, authorisation of solo flights, etc.

Progress tests	The instructions given to examining staff in respect of the conduct and documentation of all progress tests.
Glossary of terms	Definition of significant terms as necessary.
Appendices	Progress test report forms Qualifying test report forms FTO certificates of experience, competence etc, as required.

PART 3 - SYNTHETIC FLIGHT TRAINING

Structure generally as for Part 2 and to include lesson plans.

PART 4 – THEORETICAL KNOWLEDGE INSTRUCTION

Structure generally as for Part 2 but with a training specification and objectives for each subject. Lesson plans should be available and should include mention of the specific training aids available for use.

APPENDIX 7 TYPICAL INFORMATION TO BE INCLUDED IN OPERATIONS MANUALS

Operations Manuals for use at an FTO conducting approved integrated MPL(A) courses should include the following information:

OPERATIONS MANUAL (GENERAL)

(a) A list and description of all volumes in the Operations Manual
(b) Administration (function and management)
(c) Responsibilities (all management and administrative staff)
(d) Student discipline and disciplinary action
(e) Approval/authorisation of flights
(f) Preparation of flying programme (restriction of numbers of aeroplanes in poor weather)
(g) Command of aeroplane - responsibilities of aircraft commander
(h) Carriage of passengers
(i) Aircraft documentation
(j) Retention of documents
(k) Flight crew qualification records (licences and ratings)
(l) Revalidation (medical certificates, licences and ratings)
(m) Flying duty period and flight time limitations (flying instructors)
(n) Flying duty period and flight time limitations (students)
(o) Rest periods (flying instructors)
(p) Rest periods (students)
(q) Pilot's log books
(r) Flight planning (general)
(s) Aeroplane maintenance and technical logs
(t) Aeroplane to be maintained to Public Transport standards
(u) Safety (general) - equipment, radio listening watch, hazards, accidents and incidents (including reports), safety pilots etc.

OPERATIONS MANUAL (TECHNICAL)

(a) Aeroplane descriptive notes
(b) Aeroplane handling (including checklists, limitations, aircraft maintenance and technical logs, etc)
(c) PF/PM duties at different stages of a flight
(d) Emergency procedures, including PF/PM responsibilities
(e) Radio and radio navigation aids
(f) Allowable deficiencies

OPERATIONS MANUAL (ROUTE)

(a) Performance (legislation, take-off route, landing etc)
(b) Flight planning (fuel, oil, minimum safe altitude, navigation equipment etc)
(c) Loading (loadsheets, weight, balance, limitations)
(d) Weather minima (flying instructors)
(e) Weather minima (students - at various stages of training)
(f) Training routes/areas

OPERATIONS MANUAL (STAFF TRAINING)

(a) Appointments of persons responsible for standards/competence of flying staff
(b) Initial training
(c) Refresher training
(d) Standardisation training
(e) Proficiency checks
(f) Upgrading training/tests
(g) FTO staff standards evaluation

APPENDIX 8

TYPICAL INFORMATION TO BE INCLUDED IN FLYING ORDERS

Notes:

1. Orders must not conflict with the AN(HK)O 1995. They should not simply require observance of the law, but may require reading of/familiarity with the law's provision.

2. The format below need not be followed precisely but all orders should be written as such and not merely for information.

3. Each flying order is to be individually signed and dated by the HT his designated representative.

4. An Index to Sections in the Flying Orders should be included.

SECTION I – AUTHORISATION AND DOCUMENTATION

1. Flight authorisation and authorisation sheets.

2. Completion of technical log and notification of defects.

3. Requirements for solo flying.

4. Possession of current licence.

5. Regulations for carriage of passengers.

6. Compilation of pilot's log books.

SECTION II – AIRCRAFT HANDLING ORDERS

1. Aircraft checks before flight – those not included in standard check lists.

2. Precautions when starting engines.

3. Running up procedures.

4. Turns after take-off.

5. Unusual manoeuvres (and spinning if included in the course).

6. Practice forced landing.

7. Low flying regulations.

8. Instrument flying – actual and simulated.

9. Go-around action.

10. Refueling procedure.

11. Practice asymmetric flights.

SECTION III – GENERAL FLYING ORDERS

1. Minimum altitude/flight levels for training (stalling and spinning if in the course).

2. Weather minima for local flying and cross country flights including maximum wind and cross-wind limitations – dual and solo.

3. Preparation for cross country exercises and navigation flights.

4. Safety Altitude.

5. Action when uncertain of position.

6. Action when lost.

7. Landing at unauthorised or unintended destination.

8. Care of aircraft away from base.

9. Forced landing – aeroplane damaged.

10. AUW and C of G limitations and weight and performance limitations.

11. Flying over the sea.

12. Consumption of alcohol and taking of other drugs before flight.

13. State of health.

14. Night flying – supervision.

15. Wake turbulence.

SECTION IV – RULES OF THE AIR AND ATC

1. Aerodrome opening hours.

2. Taxying procedures.

3. Signals square and signals/instructions from ATC.

4. Circuit procedures.

5. Local flying area.

6. Prohibited and danger areas.

7. Look-out near and within the circuit.

8. Action after landing.

9. Use of RTF.

10. Local anti-noise requirements.

11. Night flying – ATC and emergencies.

12. Letter of agreement.

13. Requirement to abide by conditions of aerodrome licence.

14. Infringements of controlled airspace.

SECTION V – CHECK LISTS

All pilots must be in possession of a copy of the handling notes and check-lists as used by the FTO and be required to abide by them. If necessary check-lists may be written into the Flying Orders under this Section. Handling notes and check lists must not contradict anything set out in the approved Flight Manual which forms part of the C of A. For legal purposes, check lists are part of the Operations Manual.

SECTION VI – EMERGENCY DRILLS

1. Engine failure after take-off.

2. Crash action.

3. Fire in the air.

4. Fire on the ground.

5. Forced landing without power.

6. Forced landing with power.

7. Ditching.

8. Radio failure.

Note : All these Orders are self-explanatory and even if they are contained in Handling Notes/Check Lists it may be useful to repeat them in this section.

SECTION VII – ACCIDENT, INCIDENT AND AIRPROX REPORTING

1. Reminder of the local legal requirement to report notifiable accidents.

2. Requirement to report occurrences and use of local system.

3. Requirement to report an AIRPROX.

SECTION VIII – LOCAL REGULATIONS

1. Smoking prohibitions.

2. Care of flying equipment.

3. Disciplinary action for breach of local orders and regulations.

4. Indemnity for personal injury.

5. General administration.

Note: Section VIII may be placed under separate cover to cater for purely FTO rules and regulations.

APPENDIX 9 SAFETY MANAGEMENT SYSTEM (SMS)

I. INTRODUCTION

This appendix specifies the framework for the implementation and maintenance of a safety management system (SMS) by a FTO. An SMS is a management system for the management of safety by an organisation. The framework includes four components and twelve elements representing the minimum requirements for SMS implementation. The implementation of the framework shall be commensurate with the size of the organisation and the complexity of the services provided. This appendix also includes a brief description of each element of the framework.

1. Safety policy and objectives

1.1 Management commitment and responsibility
1.2 Safety accountabilities
1.3 Appointment of key safety personnel
1.4 Coordination of emergency response planning
1.5 SMS documentation

2. Safety Risk Management

2.1 Hazard Identification
2.2 Safety Risk Assessment and Mitigation

3. Safety Assurance

3.1 Safety Performance Monitoring and Measurement
3.2 The Management of Change
3.3 Continuous Improvement of the SMS

4. Safety Promotion

4.1 Training and Education
4.2 Safety Communication

II. SMS COMPONENTS

1. Safety Policy and Objectives

1.1 Management Commitment and Responsibility

The FTO shall define the organisation's safety policy which shall be in accordance with international and national requirements, and which shall be signed by the accountable executive of the organization. The safety policy shall reflect organisational commitments regarding safety; shall include a clear statement about the provision of the necessary resources for the implementation of the safety policy; and shall be communicated, with visible endorsement, throughout the organisation. The safety policy shall include the safety reporting procedures; shall clearly indicate which types of operational behaviours are unacceptable; and shall include the conditions under which disciplinary action would not apply. The safety policy shall be periodically reviewed to ensure it remains relevant and appropriate to the organisation.

1.2 Safety Accountabilities

The FTO shall identify the accountable executive who, irrespective of other functions, shall have ultimate responsibility and accountability, on behalf of the FTO, for the implementation and maintenance of the SMS. The FTO shall also identify the accountabilities of all members of management, irrespective of other functions, as well as of employees, with respect to the safety performance of the SMS. Safety responsibilities, accountabilities and authorities shall be documented and communicated throughout the organisation, and shall include a definition of the levels of management with authority to make decisions regarding safety risk tolerability.

1.3 Appointment of Key Safety Personnel

The FTO shall identify a safety manager to be the responsible individual and focal point for the implementation and maintenance of an effective SMS.

1.4 Coordination of Emergency Response Planning

The FTO shall ensure that an emergency response plan that provides for the orderly and efficient transition from normal to emergency operations and the return to normal operations, is properly coordinated with the emergency response plans of those organisations it must interface with during the provision of its services.

1.5 SMS Documentation

The FTO shall develop an SMS implementation plan, endorsed by senior management of the organisation, that defines the organisation's approach to the management of safety in a manner that meets the organisation's safety objectives. The FTO shall develop and maintain SMS documentation describing the safety policy and objectives, the SMS requirements, the SMS processes and procedures, the accountabilities, responsibilities and authorities for processes and procedures, and the SMS outputs. Also as part of the SMS documentation, the FTO shall develop and maintain a safety management systems manual (SMSM), to communicate its approach to the management of safety throughout the organisation.

2. Safety Risk Management

2.1 Hazard Identification

The FTO shall develop and maintain a formal process that ensures that hazards in operations are identified. Hazard identification shall be based on a combination of reactive, proactive and predictive methods of safety data collection.

2.2 Safety Risk Assessment and Mitigation

The FTO shall develop and maintain a formal process that ensures analysis, assessment and control of the safety risks in training operations.

3. Safety Assurance

3.1 Safety Performance Monitoring and Measurement

The FTO shall develop and maintain the means to verify the safety performance of the organisation, and to validate the effectiveness of safety risks controls. The safety performance of the organisation shall be verified in reference to the safety performance indicators and safety performance targets of SMS.

3.2 The Management of Change

The FTO shall develop and maintain a formal process to identify changes within the organisation which may affect established processes and services; to describe the arrangements to ensure safety performance before implementing changes; and to eliminate or modify safety risk controls that are no longer needed or effective due to changes in the operational environment.

3.3 Continuous Improvement of the SMS

The FTO shall develop and maintain a formal process to identify the causes of substandard performance of the SMS, determine the implications of substandard performance of the SMS in operations, and eliminate or mitigate such causes.

4. Safety Promotion

4.1 Training and Education

The FTO shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform the SMS duties. The scope of the safety training shall be appropriate to each individual's involvement in the SMS.

4.2 Safety Communication

The FTO shall develop and maintain formal means for safety communication that ensures that all personnel are fully aware of the SMS, conveys safety critical information, and explains why particular safety actions are taken and why safety procedures are introduced or changed.

APPENDIX 10 QUALITY SYSTEM

1 INTRODUCTION

1.1 FTO approved by the CAD to conduct MPL courses are required to establish a Quality System to readily detect any deficiencies for self remedial action.

1.2 The information in the paragraphs to follow is based upon principles for Quality Systems laid down in, amongst others, the International Standards Organisation (ISO) 9000 series of standards. FTOs may find it helpful to use such internationally recognised standards to help them develop their own Quality Systems.

2 BACKGROUND

2.1 The development of a Quality System helps to formalise and clarify the complementary nature of the roles of the CAD on the one hand and the FTO on the other, in relation to safety. The CAD is and will continue to be responsible for drawing up, in concert with others, the requirements and for overall compliance surveillance with those requirements and with the law. The FTO is responsible for the safety of its operations and for compliance with the requirements and the law.

3 QUALITY SYSTEM CONCEPT

3.1 A Quality System may be characterised as a means of ensuring that activities conform to standards specified by the organisation (which must not be less than those specified in the requirements and the law).

3.2 It should embrace all aspects of the organisation to which the Quality System applies including the organisational structure, responsibilities, procedures and resources for implementing quality management. In developing a Quality System consideration should be given to at least the following:

(a) establishing a Quality Policy;

(b) establishing Quality Plans and a Quality Manual (which may form part of the Operations Manual);

(c) identifying and establishing: standards, procedures, responsibilities, processes, resources, skills and internal inspection methods and a Quality Assurance Programme;

(d) verifying the continuing acceptability of set standards;

(e) ensuring compliance of activities and procedures with standards set down in applicable documentation;

(f) establishing procedures for handling non conformity;

(g) establishing a methodology for updating procedures, quality control, quality audits/inspections and testing;

(h) identifying and preparing quality (system) records, and;

(i) appointing a Quality manager reporting directly to the General Manager.

3.3 The Quality System should be an integral part of the organisation. However, to ensure objective monitoring of the quality system the Quality Manager should be independent of the normal organisational structure. This applies also to any personnel assigned to assist the Quality Manager on a permanent or temporary basis.

3.4 This independence relates to:

- Direct line reporting;

- The authority given to the Quality Manager and personnel assigned to him;

- Access to all parts of the organisations.

3.5 The Quality Manager should monitor the procedures specified in the Training and Operations Manual/Flying Orders to ensure compliance with the law, requirements and the organisations own additional standards.

3.6 At the completion of quality audit/inspections, reports should be produced and should include details of non-compliance with requirements, standards and procedures.

3.7 The quality system should include a feedback system to the Head of Training to ensure that corrective actions are both identified and promptly addressed. The feedback system should also specify who is required to rectify discrepancies and non compliance in each particular case and the procedure to be followed if remedial action is not completed within an appropriate time scale.

4. TERMS

4.1 Quality Inspection

An inspection is the act of observing a particular event or action to ensure that correct procedures and requirements are followed during the accomplishment of that event.

4.2 Quality Audit

A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.

4.3 Quality Manager

The manager responsible for the monitoring function and for requesting remedial actions.

4.4 Quality System

The organisational structure, responsibilities, procedures and resources for implementing quality management.

4.5 Quality Policy

The overall quality intentions and direction of a company as regards quality, as formally expressed by the accountable manager.

4.6 Quality Manual

The document containing the relevant information pertaining to the operator's quality system and quality assurance programme.

4.7 Quality Assurance

All those planned and systematic actions necessary to provide adequate confidence that a product or service will satisfy given requirements for quality.

---------- The end ----------