COMMERCIAL INSTRUMENT MULTI-ENGINE

TRAINING COURSE OUTLINE

REV 2.2

1 June 2008

sabena
AIRLINE TRAINING CENTER, INC.

APPROVED 8/29/08
DATE
[redacted]
PRINCIPAL OPERATIONS INSPECTOR
FAA, ASHEBO

Cleveland

COLLISION AVOIDANCE

At all times while occupying a pilot's seat you will maintain surveillance of other aircraft - on ground or in flight. Clearing turns will be done before any maneuvers. Anti-collision lights and strobe lights will be used during the day (strobe lights off on the ground). These lights plus navigation lights will be used at night. Landing lights will be used in the traffic pattern at all times.

Basic air work maneuvers shall be completed prior to reaching a minimum altitude of 1,000 feet above ground. Stalls will be completed at or above 2,000 feet above ground in single-engine aircraft, and at or above 3,000 feet above ground in multi-engine aircraft. Minimum altitudes in FAR 91.119 will be complied with.

PRACTICE AREA

S.A.T.C. mainly utilizes the practice area North of Falcon Field, Scottsdale and Deer Valley airports, East of Lake Pleasant, and West of Bartlett Reservoir. Additionally, the area East and Southeast of Falcon Field bounded by the Superstition Mountains, Highway 60 to Florence Junction and Florence. Practice area frequency is 122.75 (North Practice Area) and 122.85 (South Practice Area).

OTHER RULES:

- Simulated forced landings will only be practiced when an instructor is on board.
- Spins will only be practiced when an instructor is on board. (Acrobatic maneuvers are prohibited.)
- Stalls will be done so that the lowest altitude in the maneuver is at least 2300' AGL, and not over a congested area, or on an airway.
- No student pilot may start a solo practice flight until the flight is approved by an instructor who is present at the airport. [FAR 141.79 (b)]. This will be done using the SATC FLIGHT RELEASE FORM.
- Always pre-flight the aircraft.
- Remove ice and frost from the windshield and plane surfaces.
- Use the Checklist each and every time you fly.
- Know the fuel system, capacity and consumption of your aircraft.
- Know and comply with FAA Air Traffic Rules.
- If you cannot meet your schedule, always call ahead -- even if the weather is bad.
- A pre-takeoff and prelanding checklist and the operator's handbook must be on board for flight instruction and solo flight. (FAR 141.75)
- Always contact Sabena Dispatch at frequency 123.30 when leaving and joining the ramp. This frequency can also be used to contact Sabena Dispatch for any problem (inflight).
- As a normal practice residential areas within the practice areas used will be avoided for all maneuvering and may not be overflown below 2,000' AGL.

INTEGRATED COMMERCIAL MULTI-ENGINE INSTRUMENT COURSE

INTRODUCTION

The integrated commercial multi-engine instrument course combines the:

- Private Pilot Course
- Instrument Course
- Commercial Course
- Multi-Engine Course

Into 1 single integrated training program.

Students enrolled in this program will start with a student pilot license and obtain the FAA Commercial Pilot License with Instrument and Multi-engine ratings at the end of the course.

The integrated syllabus contains an initial block of ground lessons, followed by a coordinated flight training program that will gradually build the student's knowledge and skills, from zero to a commercial multi-engine instrument rated pilot.

The integration of different course phases (from Private Pilot to Commercial Pilot with Instrument and Multi-engine ratings) has been thoroughly laid out so as to enhance the student's learning process throughout the course and to maximize the success rate of this course package. It is of utmost importance that all stakeholders involved—be it students, schedulers, instructor, etc—understand the importance of strictly following the sequence in which the course has been designed.

As the result of the training, the student will have acquired the theoretical background, the flying ability, and the basic airmanship necessary to undertake a JAR/FAR 25 transport category aircraft type rating and to start a flying career as first officer and to be able to become captain in an airline when sufficient experience has been acquired.

COURSE ELEMENTS

The course has been designed to satisfy all latest FAA pilot certification requirements and guide the users (students and instructors) through it in a logical manner.

GROUND TRAINING

As specified by FAR Part 141, the ground school module is an integral part of pilot certification courses. The ground school module will be given at the beginning of the course—before starting any flying training. The students will have to successfully complete all required written tests before being

PHASE B—OPTIONAL SOLO MODULE

OBJECTIVES

This phase is a additional optional solo flying module that is integrated into the normal course schedule starting week 17—after successful completion of Phase IV—that may be completed after having flown Mission 107 (ME Instrument Progress Check).

FLIGHT HOURS AND AIRCRAFT USED

This phase includes 28.0 hours PIC on the DA20.

MISSIONS

Phase B contains flight missions B1 to B11. In this phase, the Chief Instructor or Assistant Chief Instructor may decide to combine multiple missions into a single (long) mission for practical (planning) purposes, and to allow the student to build experience flying to distant areas and airports.

COMPLETION STANDARDS

Not applicable.

END OF PHASE CHECK

Not applicable.

TABLE OF CONTENT | COURSE DESCRIPTION | GROUND TRAINING | FLIGHT TRAINING

N°	Mission B6	Mission B7	Mission B8	Mission B9	Mission B10
TYPE OF FLIGHT	MANDATORY SOLO CROSS COUNTRY	MANDATORY SOLO CROSS COUNTRY	MANDATORY SOLO CROSS COUNTRY	MANDATORY SOLO CROSS COUNTRY	MANDATORY SOLO CROSS COUNTRY
AIRCRAFT	DA20	DA20	DA20	DA20	DA20
TRAINING	PIC VFR	PIC VFR	PIC VFR	PIC VFR	PIC VFR
AREA	DEST PER TCO & CFI	DEST PER TCO & CFI	DEST PER TCO & CFI	DEST PER TCO & CFI	DEST PER TCO & CFI
PTS AREAS OF OPERATION	I. PREFLIGHT PREPARATION II. PREFLIGHT PROCEDURES III. AIRPORT OPERATIONS IV. T/Os, LDGs & G/As VI. NAVIGATION X. POSTFLT PROCEDURES	I. PREFLIGHT PREPARATION II. PREFLIGHT PROCEDURES III. AIRPORT OPERATIONS IV. T/Os, LDGs & G/As VI. NAVIGATION X. POSTFLT PROCEDURES	I. PREFLIGHT PREPARATION II. PREFLIGHT PROCEDURES III. AIRPORT OPERATIONS IV. T/Os, LDGs & G/As VI. NAVIGATION X. POSTFLT PROCEDURES	I. PREFLIGHT PREPARATION II. PREFLIGHT PROCEDURES III. AIRPORT OPERATIONS IV. T/Os, LDGs & G/As VI. NAVIGATION X. POSTFLT PROCEDURES	I. PREFLIGHT PREPARATION II. PREFLIGHT PROCEDURES III. AIRPORT OPERATIONS IV. T/Os, LDGs & G/As VI. NAVIGATION X. POSTFLT PROCEDURES
TIME	2.5	2.5	2.5	2.5	2.5
TOTALS	222.5	225.0	227.5	230.0	232.5
MISSION	DA20 DA40 DA42	DA20 DA40 DA42	DA20 DA40 DA42	DA20 DA40 DA42	DA20 DA40 DA42
DC VFR DC IR PIC LOC VFR PIC XC VFR DC NIGHT PIC NIGHT	ALL LOGGED AS PIC XC VFR				
TOTALS	DA20 DA40 DA42	DA20 DA40 DA42	DA20 DA40 DA42	DA20 DA40 DA42	DA20 DA40 DA42
PER TYPE					
DC VFR DC IR PIC LOC VFR PIC XC VFR DC NIGHT PIC NIGHT	TOTALS NOT RELEVANT				
FTD FTD TOTAL					

PRIVATE ASEL
EXERCISE CARD V2.2

	PRE-SOLO											MANEUVERS & INSTRUMENT		SOLO PC	SOLO PATTERNS			NIGHT	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
AIRCRAFT TYPE	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20
MISSION TIME	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.5	2.0	2.0
DUAL	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.4	0.3	0.3	2.0	2.0
PIC															0.6	1.2	1.2		
XC 50NM																			2.0
XC 100NM																			
NIGHT																		2.0	2.0
INSTRUMENT												0.5	0.5						
I. PREFLIGHT PREPARATION	BRF	✓	✓	✓	✓	✓	✓	✓						✓				✓	✓
IA. Certificates and Documents	BRF	✓	✓	✓	P									✓					
1 Pilot Certificate - Medical - Logbook	BRF	✓	✓	✓	P									✓					
2 Aircraft Documents	BRF	✓	✓	✓	P									✓					
IB. Airworthiness Requirements	BRF					✓	✓	P						✓					
IC. Weather Information	BRF	✓	✓	✓	P									✓					
1 Standard Weather Briefing - SATC / FSS	BRF	✓	✓	✓	P									✓					
2 Interpretation of Weather Information	BRF	✓	✓	✓	P									✓					
ID. Cross-Country Flight Planning																			
IE. National Airspace System																			
IF. Performance and Limitations			BRF	✓	✓	✓	P							✓				✓	✓
IG. Operation of Systems																			
IJ. Aeromedical Factors																			
II. PREFLIGHT PROCEDURES	✓	✓	✓	✓	✓									✓				✓	✓
IIA. Preflight Inspection	✓	✓	✓	P										✓				✓	✓
IIB. Cockpit Management																			
IIC. Engine Starting	DEMO	✓	✓	P										✓					
IID. Taxiing	DEMO	✓	✓	✓	P									✓				✓	✓
IIF. Before Takeoff Check	DEMO	✓	✓	✓	P									✓					
III. AIRPORT OPERATIONS	DEMO	DEMO	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
IIIA. Radio Communications and ATC Light Signals	DEMO	DEMO	✓	✓	✓	✓	✓	✓	✓	✓	✓	P		✓	✓	✓	✓	✓	✓
IIIB. Traffic Patterns			DEMO	✓	✓	✓	✓	✓	✓	✓	P			✓	✓	✓	✓	✓	✓
IIIC. Airport, Runway, and Taxiway Signs, Markings, and Lighting	BRF	✓	✓	✓	P									✓				✓	✓
IV. TAKEOFFS, LANDINGS, AND GO-AROUNDS	DEMO	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IV.A. Normal and Crosswind Takeoff and Climb	DEMO	✓	✓	✓	✓	✓	✓	✓	✓	✓	P			✓	✓	✓	✓	✓	✓
IV.B. Normal and Crosswind Approach and Landing	DEMO	DEMO	DEMO	✓	✓	✓	✓	✓	✓	✓	P			✓	✓	✓	✓	✓	✓
IV.C. Soft-Field Takeoff and Climb												✓							
IV.D. Soft-Field Approach and Landing												✓							
IV.E. Short-Field Takeoff and Maximum Performance Climb													✓						
IV.F. Short-Field Approach and Landing													✓						
IV.K. Forward Slip to a Landing					DEMO	✓	✓	✓	✓	✓	P			✓	✓	✓	✓		
IV.L. Go-Around/Rejected Landing		DEMO	✓	✓					✓	✓	P			✓	✓	✓	✓		
BASIC FLIGHT	✓	✓	✓	✓	✓														
Effects of Flight Controls (Elevator-Aileron-Rudder-Trim-Power)	DEMO	✓	P											✓					
Straight-and-Level Flight (Different Airspeeds)	✓	✓	✓	✓	✓	P								✓					
Speed and Configuration Changes	✓	✓	✓	P										✓					
Normal Turns (30 degrees bank)	✓	✓	✓	✓	✓	P								✓					
Climbs / Descents	✓	✓	✓	✓	✓	P								✓					
Collision / Windshear / Wake Turbulence Avoidance	✓	✓	✓	✓	✓	P								✓					
V. PERFORMANCE MANEUVERS												✓	✓						
Steep Turns												✓	P						
VI. GROUND REFERENCE MANEUVER						✓		✓				✓	✓						
VI.A. Rectangular Course						DEMO		✓				P		✓					
VI.B. S-Turns						DEMO		✓					✓						
VI.C. Turns Around a Point						DEMO		✓											
VII. NAVIGATION																			✓
VII.A. Pilotage and Dead Reckoning																			✓
VII.B. Navigation Systems and Radar Services																			✓
VII.C. Diversion																			✓
VII.D. Lost Procedures																			✓
VIII. SLOW FLIGHT AND STALLS			✓						✓			✓	✓						
VIII.A. Maneuvering During Slow Flight			✓						✓			P		✓					
VIII.B. Power-Off Stalls			✓						✓				P	✓					
VIII.C. Power-On Stalls			✓						✓				P	✓					
VIII.D. Spin Awareness			✓						✓										
IX. BASIC INSTRUMENT MANEUVERS												✓	✓						
IX.A. Straight-and-Level Flight												✓	✓						
IX.B. Constant Airspeed Climbs												✓	✓						
IX.C. Constant Airspeed Descents												✓	✓						
IX.D. Turns to Headings												✓	✓						
IX.E. Recovery from Unusual Flight Attitudes													✓						
IX.F. Radio Communications, Navigation Systems/Facilities, and Radar Services																			✓
X. EMERGENCY OPERATIONS									✓	✓	✓			✓	✓	✓	✓	✓	✓
X.A. Emergency Approach and Landing (Simulated)									DEMO	✓	P			✓	✓	✓	✓	✓	✓
X.B. Systems and Equipment Malfunctions								DEMO	✓	✓	P			✓					
X.C. Emergency Equipment and Survival Gear																			
XI. NIGHT OPERATION																		✓	✓
Night Preparation																		✓	P
XII. POSTFLIGHT PROCEDURES	✓	✓	✓	✓										✓	✓	✓	✓	✓	✓
XII.A. After Landing, Parking, and Securing	✓	✓	✓	P										✓	✓	✓	✓	✓	✓
XII.C. Docking and Mooring	✓	✓	✓	P										✓	✓	✓	✓	✓	✓
XII.D. Ramping	✓	✓	✓	P										✓	✓	✓	✓	✓	✓

PRIVATE ASEL
EXERCISE CARD V2.2

	CROSS-COUNTRY			XC PC	SOLO X-COUNTRY					MANEUVERS & INSTRUMENT						EOC TEST	FAA PT	TOTALS
	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
AIRCRAFT TYPE	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20	DA20
MISSION TIME	2.0	2.0	2.0	2.0	1.5	1.5	2.0	2.5	3.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	59.5
DUAL	2.0	2.0	2.0	2.0						1.5			1.5		1.5	1.5	0.3	39.8
PIC					1.5	1.5	2.0	2.5	3.0		1.5	1.5		1.5			1.7	19.7
XC 50NM	2.0	2.0	2.0	2.0	1.5	1.5												13.0
XC 100NM							2.0	2.5	3.0									7.5
NIGHT																		4.0
INSTRUMENT										1.0					1.0			3.0
I. PREFLIGHT PREPARATION	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
IA. Certificates and Documents	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
1 Pilot Certificate - Medical - Logbook	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
2 Aircraft Documents	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
IB. Airworthiness Requirements	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
IC. Weather Information	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
1 Standard Weather Briefing - SATC / FSS	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
2 Interpretation of Weather Information	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
ID. Cross-Country Flight Planning	✓	✓	P	✓	✓	✓	✓	✓	✓							✓	✓	
IE. National Airspace System	✓	✓	P	✓	✓	✓	✓	✓	✓							✓	✓	
IF. Performance and Limitations	✓	✓	P	✓	✓	✓	✓	✓	✓							✓	✓	
IG. Operation of Systems	✓	✓	P	✓	✓	✓	✓	✓	✓							✓	✓	
IJ. Aeromedical Factors	✓	✓	P	✓	✓	✓	✓	✓	✓							✓	✓	
II. PREFLIGHT PROCEDURES	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
IIA. Preflight Inspection	✓	✓	P	✓	✓	✓	✓	✓	✓							✓	✓	
IIB. Cockpit Management	✓	✓	P	✓	✓	✓	✓	✓	✓							✓	✓	
IIC. Engine Starting	✓	✓	P	✓	✓	✓	✓	✓	✓							✓	✓	
IID. Taxiing	✓	✓	P	✓	✓	✓	✓	✓	✓							✓	✓	
IIF. Before Takeoff Check	✓	✓	P	✓	✓	✓	✓	✓	✓							✓	✓	
III. AIRPORT OPERATIONS	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
IIIA. Radio Communications and ATC Light Signals	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
IIIB. Traffic Patterns	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
IIIC. Airport, Runway, and Taxiway Signs, Markings, and Lighting	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
IV. TAKEOFFS, LANDINGS, AND GO-AROUNDS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
IVA. Normal and Crosswind Takeoff and Climb	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
IVB. Normal and Crosswind Approach and Landing	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
IVC. Soft-Field Takeoff and Climb		✓								P	✓	✓				✓	✓	
IVD. Soft-Field Approach and Landing		✓								P	✓	✓				✓	✓	
IVE. Short-Field Takeoff and Maximum Performance Climb	✓		✓										P			✓	✓	
IVF. Short-Field Approach and Landing	✓		✓										P			✓	✓	
IVX. Forward Slip to a Landing																✓	✓	
IVL. Go-Around/Rejected Landing																✓	✓	
BASIC FLIGHT																✓	✓	
Effects of Flight Controls (Elevator-Aileron-Rudder-Trim-Power)																✓	✓	
Straight-and-Level Flight (Different Airspeeds)																✓	✓	
Speed and Configuration Changes																✓	✓	
Normal Turns (30 degrees bank)																✓	✓	
Climbs / Descents																✓	✓	
Collision / Windshear / Wake Turbulence Avoidance																✓	✓	
V. PERFORMANCE MANEUVERS											✓	✓	✓	✓	✓	✓	✓	
Steep Turns											✓	✓	✓	✓	✓	✓	✓	
VI. GROUND REFERENCE MANEUVER										✓	✓	✓	✓	✓	✓	✓	✓	
VIA. Rectangular Course													✓	✓		✓	✓	
VIB. S-Turns											✓	✓	P	✓		✓	✓	
VIC. Turns Around a Point										P	✓			✓	✓	✓	✓	
VII. NAVIGATION	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
VIIA. Pilotage and Dead Reckoning	✓	✓	✓	P	✓	✓	✓	✓	✓							✓	✓	
VIIB. Navigation Systems and Radar Services		✓		P	✓	✓	✓	✓	✓							✓	✓	
VIIC. Diversion		✓	✓	P	✓	✓	✓	✓	✓							✓	✓	
VIID. Lost Procedures			✓	P	✓	✓	✓	✓	✓							✓	✓	
VIII. SLOW FLIGHT AND STALLS										✓	✓	✓	✓	✓	✓	✓	✓	
VIIIA. Maneuvering During Slow Flight											✓	✓	✓	✓		✓	✓	
VIIIB. Power-Off Stalls											✓	✓	✓	✓		✓	✓	
VIIIC. Power-On Stalls										✓	✓	✓	✓	✓		✓	✓	
VIIID. Spin Awareness										P						✓	✓	
IX. BASIC INSTRUMENT MANEUVERS										✓					✓	✓	✓	
IXA. Straight-and-Level Flight										P					✓	✓	✓	
IXB. Constant Airspeed Climbs										P					✓	✓	✓	
IXC. Constant Airspeed Descents										P					✓	✓	✓	
IXD. Turns to Headings										P					✓	✓	✓	
IXE. Recovery from Unusual Flight Attitudes										P					✓	✓	✓	
IXF. Radio Communications, Navigation Systems/Facilities, and Radar Services		✓	✓	P											✓	✓	✓	
X. EMERGENCY OPERATIONS	✓	✓	✓	✓												✓	✓	
XA. Emergency Approach and Landing (Simulated)	✓	✓	✓	✓												✓	✓	
XB. Systems and Equipment Malfunctions	✓	✓	✓	✓												✓	✓	
XC. Emergency Equipment and Survival Gear	✓	✓	✓	P												✓	✓	
XI. NIGHT OPERATION																✓	✓	
Night Preparation																✓	✓	
XI. POSTFLIGHT PROCEDURES				✓												✓	✓	
XIA. After Landing, Parking, and Securing				✓												✓	✓	
XIC. Docking and Mooring				✓												✓	✓	
XID. Ramping				✓												✓	✓	

FLIGHT TRAINING

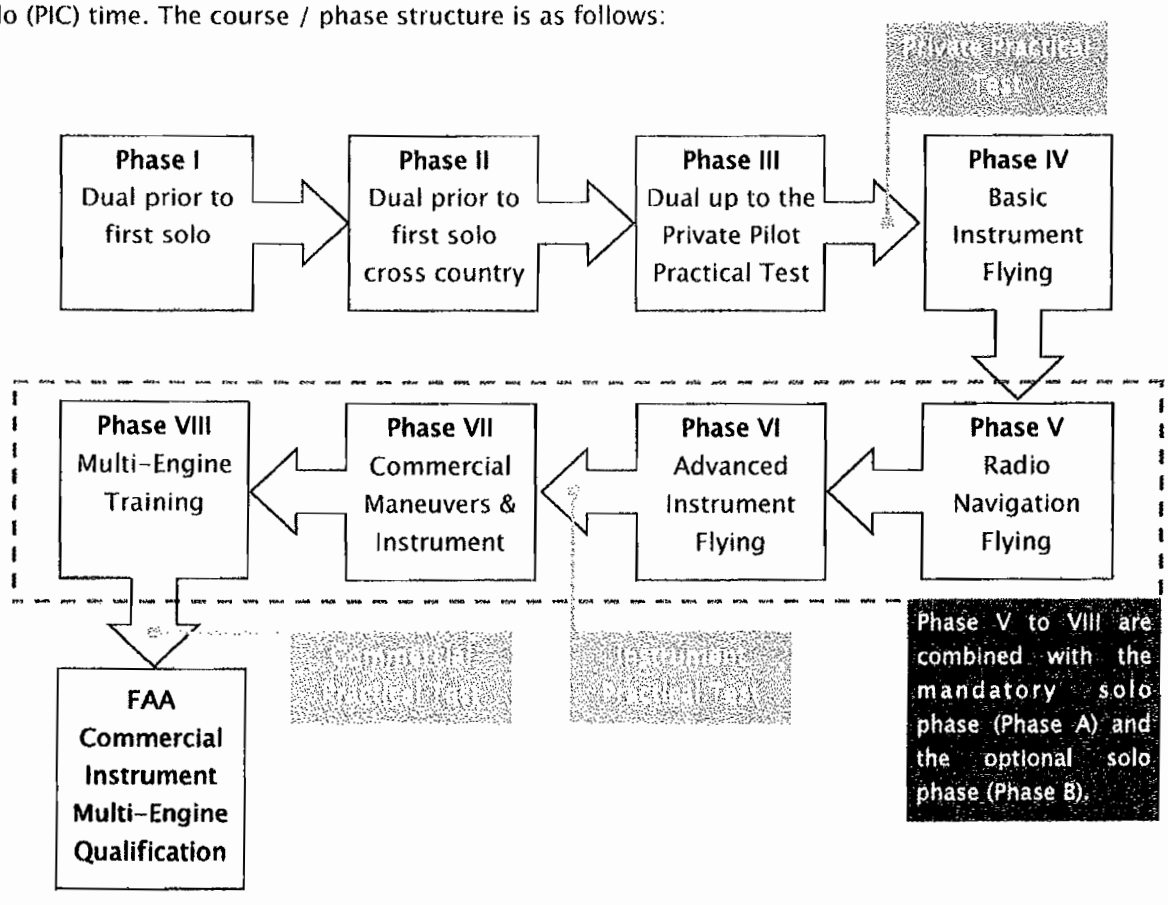
OVERVIEW

As this course combines (integrates) the Private--Instrument--Commercial--and multi-engine requirements, it has been divided into several course phases. Each phase continues building on previous experience (building blocks) to ensure maximum efficiency of the entire course.

The entire course overview is presented on the next page.

COURSE PHASES

This course has 8 course phases + 2 possible (one of which is optional) course phases to build more solo (PIC) time. The course / phase structure is as follows:



Starting with Phase V (and all the way through Phase VIII), students will start building solo time by combining the normal training flights with mandatory and optional solo flights, according to Phase A and B. All 'A' flights must be completed before M106.

PHASE B—OPTIONAL SOLO MODULE

OBJECTIVES

This phase is a additional optional solo flying module that is integrated into the normal course schedule starting week 17—after successful completion of Phase IV—that may be completed after having flown Mission 107 (ME Instrument Progress Check).

FLIGHT HOURS AND AIRCRAFT USED

This phase includes 28.0 hours PIC on the DA20.

MISSIONS

Phase B contains flight missions B1 to B11. In this phase, the Chief Instructor or Assistant Chief Instructor may decide to combine multiple missions into a single (long) mission for practical (planning) purposes, and to allow the student to build experience flying to distant areas and airports.

COMPLETION STANDARDS

Not applicable.

END OF PHASE CHECK

Not applicable.