



TRAINING MANUAL

PART 3

GLOBAL AIR SERVICES



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3 Synthetic Flight Training

3.0 General

In addition to the fleet of aeroplanes, a Flight and Navigation Procedure Trainer (FNPT II) is used by Global Air Services. The FNPT II is installed at Megara airport (LGMG) and is an Elite Evolution S812 FNPT II, Flight and Navigation Procedures Training Device, meeting the requirements specified in the JAA document "JAR-STD 3A suitable for part of the instrument training.

3.0.1 Scope

The Elite Evolution S812 FNPT II shall simulate normal conditions for ground operations (limited), take-off, in-flight manoeuvres including engine failure procedures, radio navigation, instrument approaches and landings. Actions by the crew on the simulated controls in the flight compartment shall interact with simulated system logics and dependencies in accordance with this specification and the available Aircraft data. The limits of flight and systems are specified herein.

3.0.2 General Configuration

The Elite Evolution S812 FNPT II is consisting of the following major subassemblies:

- ✓ A Cockpit layout representative of a generic twin engine Aircraft
- ✓ An enclosed Instructor Station to give the Instructor access to the simulation environment, as well as to a variety of training tools. A graphic display for various information, area- and approach tracking is also part of this facility.
- ✓ A Control Loading System which produces Aircraft configuration dependent control feelings and control travels which respond in a similar manner under the same flight conditions as in a typical twin engine Aircraft.
- ✓ A simulation computer system consisting of a state of the art Computer Hardware, complying to the current industry standard and simulation software.

3.0.3 The Flight Deck

The flight deck is designed to withstand normal loads, shocks and other conditions incidental to normal operation, transportation and assembly. The structure is sufficiently rigid to assure that there is no discernible movement of the Elite Evolution S812 FNPT II due to personnel movement or control movement within the Flight Deck.

The Flight Deck, including the Instructor Station, is enclosed. The front windows are fabricated from clear material for an undisturbed view to the visual scene.

The interior of the Flight Deck is ergonomically designed to comfortably accommodate the trainee and the Instructor.

Non-Aircraft hardware such as switches and knobs are located in the correct location and provide the same general action. They are in a similar appearance as in the Aircraft.

3.0.4 Instructor Station

The Instructor Station, consisting of two 17" TFT Flatscreens will give the Instructor access to the following functions:



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- ✓ Environment conditions
- ✓ Aircraft Status
- ✓ Freeze selection
- ✓ Repositions
- ✓ Pre-selection of environmental conditions
- ✓ Malfunction selection
- ✓ Selection of visual conditions
- ✓ Navigation area selection
- ✓ Simulated ATC communication with the Cockpit crew
- ✓ Selection of initial conditions
- ✓ FNPT & QTG control page
- ✓ Visual setup page

3.0.5 Dynamic Control Loading

The control loading system provides the pilot a precise, repeatable control force and natural control response. A monitoring and safety system is implemented, to protect both the user and the hardware from equipment failures and human error.

3.0.6 External Visual System

The standard one channel projection system provides a generic representation of the terrain and conforms to the JAR STD 3A requirements for FNPT II and FNPT II MCC.

3.0.7 Computer System

The computer system consists of the current industry standard PC.

The current industry standard of software is used for the operating system, as well as for the simulation software. The system is using standard Windows Operating Systems.

3.1 ATPL(A) Integrated Course

3.1.1 Course Structure

According to the ATPL (A) intergraded syllabous the instrument training of phase four comprises of at least 55 hours instrument flight (including 5 hours of SP/ME/IR), which contain up to 38 hours of instrument ground time in Global Air Services's FNPT II at Megara airport.

For easy reference, the used numbering of the air exercises are the same as those as in the phase 4 of the ATPL (A) intergraded course and the syllabus of phase 4 including the FNPT II is configured as analyzed in the following table:



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<u>PHASE 4 – IR</u>	<u>Airplane</u>	<u>FNPTII</u>
<u>Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTIDUTES)</u>	1	1
<u>Exercise 31: Unusual Attitudes and Recovery</u>	1	
<u>Exercise 32 Use of Partial Panel</u>	1	2
<u>Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR</u>		3
<u>Exercise 34: Radio Navigation (Applied Procedures) Use of ADF</u>		2
<u>Exercise 35: Radio Navigation (Applied Procedures) Use of DME</u>		2
<u>Exercise 36: VOR Non - Precision Approach Procedure</u>		5
<u>Exercise 37: NDB Non - Precision Approach Procedure</u>		5
<u>Exercise 38: Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures</u>		9
<u>Exercise 39: Precision Approach Procedure</u>		6
<u>Exercise 40: Long IR X-Country</u>	9,5	
<u>Exercise 41: SPICUS</u>	40	
<u>Exercise 42: Night Rating</u>	4,5	
<u>Exercise 55: IR – Multi Engine Piston - Emmergencies</u>	2	3
<u>TOTALS</u>	59,0	38,0

3.2 CPL/IR(A) Integrated Course

3.2.1 Course Structure

According to the CPL/IR (A) intergraded syllabous the instrument training of phase four comprises of at least 55 hours instrument flight (including 5 hours of SP/ME/IR), which contain up to 38 hours of instrument ground time in Global Air Services's FNPT II at Megara airport.

For easy reference, the used numbering of the air exercises are the same as those as in the phase 4 of the CPL/IR (A) intergraded course and the syllabus of phase 4 including the FNPT II is configured as analyzed in the following table:



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<u>PHASE 4 – IR</u>	<u>Airplane</u>	<u>FNPTII</u>
<u>Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTIDUTES)</u>	1	1
<u>Exercise 31: Unusual Attitudes and Recovery</u>	1	
<u>Exercise 32 Use of Partial Panel</u>	1	2
<u>Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR</u>		3
<u>Exercise 34: Radio Navigation (Applied Procedures) Use of ADF</u>		2
<u>Exercise 35: Radio Navigation (Applied Procedures) Use of DME</u>		2
<u>Exercise 36: VOR Non - Precision Approach Procedure</u>		5
<u>Exercise 37: NDB Non - Precision Approach Procedure</u>		5
<u>Exercise 38: Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures</u>		9
<u>Exercise 39: Precision Approach Procedure</u>		6
<u>Exercise 40: Long IR X-Country</u>	9,5	
<u>Exercise 41: SPICUS</u>	40	
<u>Exercise 42: Night Rating</u>	4,5	
<u>Exercise 55: IR – Multi Engine Piston - Emmergencies</u>	2	3
<u>TOTALS</u>	59,0	38,0

3.3 CPL(A) Integrated Course

3.3.1 Course Structure

According to CPL (A) intergreted syllabous the basic instrument training of phase four comprises of at least 10 hours instrument flight, which contain up to 5 hours of instrument ground time in Global Air Services's FNPT II at Megara airport.

For easy reference, the used numbering of the air exercises are the same as those as in the phase 4 of the CPL (A) intergraded course and the syllabus of phase 4 including the FNPT II is configured as analyzed in the following table:



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<u>PHASE 3 & 4 – Basic IR</u>	Airplane	FNPTII
<u>Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTIDUTES)</u>	1	
<u>Exercise 31: Unusual Attitudes and Recovery</u>	1	
<u>Exercise 32 Use of Partial Panel</u>	1	
<u>Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR</u>		2
<u>Exercise 34: Radio Navigation (Applied Procedures) Use of ADF</u>		2
<u>Exercise 35: Radio Navigation (Applied Procedures) Use of DME</u>		1
<u>Exercise 42: Night Rating</u>	4	
TOTALS	7	5

3.4 CPL(A) Modular Course

3.4.1 Course Structure

According to CPL (A) modular syllabous the basic instrument training for the applicants without an instrument rating including comprise at least 10 hours instrument flight, which contain up to 5 hours of instrument ground time in Global Air Services's FNPT II at Megara airport.

For easy reference, the used numbering of the air exercises are the same as those as in the instrument training of the CPL (A) modular course and the syllabus including the FNPT II is configured as analyzed in the following table:



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<u>Instrument Training – Basic IR</u>	<u>Airplane</u>	<u>FNPTII</u>
<u>Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTIDUTES)</u>	2	
<u>Exercise 31: Unusual Attitudes and Recovery</u>	1	
<u>Exercise 32 Use of Partial Panel</u>	1	
<u>Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR</u>	1	1
<u>Exercise 34: Radio Navigation (Applied Procedures) Use of ADF</u>		2
<u>Exercise 35: Radio Navigation (Applied Procedures) Use of DME</u>		2
<u>TOTALS</u>	5	5

3.5 PPL(A) Course

3.5.1 Course Structure

According to the PPL (A) syllabus the basic instrument training comprise at least 10 hours instrument flight, which contain up to 5 hours of instrument ground time in Global Air Services's FNPT II at Megara airport.

For easy reference, the used numbering of the air exercises are the same as those as in the the PPL (A) course and the syllabus including the FNPT II is configured as analyzed in the following table:



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PHASE 1	DUAL		SOLO	X-C D	X-C S	BRIEF
	Airplane	FNPTII				
Exercise 1: Aircraft Familiarization and Preparation for Flight						2
Exercise 2: Preparation for and action after flight						2
Exercise 3: Air experience	1					
Exercise 4: Effects of controls – Attitudes and Movements	1					
Exercise 5: Taxiing and Ground Emergencies	1					
Exercise 6: Straight and Level Flight	1					
Exercise 7: Climbing	1					
Exercise 8: Descending	1					
Exercise 9: Turning	1					
Exercise 10A: Slow Flight	1					
Exercise 10B: Stalls	1					
Exercise 11: Spin avoidance	1					
Exercise 12: Take-off and climb to downwind position	1,5					
Exercise 13: Circuit approach and landing	2					
Exercise 13E: Emergencies	1,5					
Exercise 14: Stage Check 1st SOLO	1		0,5			
-	16		0,5	0	0	4
PHASE 2						
Exercise 16: Forced landing without power	1		1,5			
Exercise 17: Precautionary landing	1		1			
Exercise 18A: Introduction to Navigation				1		
Exercise 18B Navigation problems at lower levels and in reduced visibility				1		
Exercise 18C Radio navigation		1				
Exercise 19 Introduction to Instrument Flight		1				
Exercise 20 Local Area SOLO					2	
Exercise 19A: Basic Instruments – Pattern “A”		1				
Exercise 19b: Basic Instruments – Pattern “B”		1				
Exercise 21: Advancing to Navigation				4		
Exercise 25: X-Country SOLO					2	
Exercise 26 DUAL X-Country Triangle				7		
Exercise 27 SOLO X-Country Triangle 150 NM					3	
-	2	4	2,5	13	7	0
	DUAL	FNPTII	SOLO	X-C D	X-C S	BRIEF
TOTALS	18	4	3	13	7	4
Exercise 60 FINAL CHECK						

3.6 Instrument Rating IR(A) Course

3.6.1 Course Structure

The flying training of modular IR (A) course consists of two modules, which may be taken separately or combined:

Basic Instrument Flight Module:

This comprises 10 hours of instrument time under instruction, of which up to 5 hours can be instrument ground time in FNPT II.

Procedural Instrument Flight Module:

This comprises the remainder of the training syllabus for the IR (A), 40 hours single-engine instrument time under instruction of which up to 33 hours can be instrument ground time in FNPT II. In case the applicant is holder of MEP rating and fulfil the requirements of JAR-FCL 1.261(b)(2), five more hours instrument time under instruction are needed on a multi-engine aeroplane according to JAR-FCL 1.205(b).

In case the FNPT II of Global Air Services is used then the syllabus of each module is configured as analyzed in the following table:



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<u>BASIC INSTRUMENT FLIGHT MODULE</u>	SOLO VFR	DUAL INSTRUMENT		BRIEF
		AIRPLANE	FNPTII	
Exercise 19 Introduction to Instrument Flight		1		3
Exercise 19A: Basic Instruments – Pattern “A”		1,5		
Exercise 19b: Basic Instruments – Pattern “B”		1,5		
Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTIDUTES)			1	
Exercise 31: Unusual Attitudes and Recovery			1	
Exercise 32 Use of Partial Panel			1	
Exercise 18C Radio navigation		1	2	
	0	5	5	0
<u>PROCEDURAL INSTRUMENT FLIGHT MODULE</u>				3
Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR			2	
Exercise 34: Radio Navigation (Applied Procedures) Use of ADF			2	
Exercise 35: Radio Navigation (Applied Procedures) Use of DME			2	
Exercise 36: VOR Non - Precision Approach Procedure			4	
Exercise 37: NDB Non - Precision Approach Procedure			4	
Exercise 38: Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures			6	
Exercise 39: Precision Approach Procedure			6	
Exercise 40: Long IR X-Country		5,5	4	
Exercise 42: Night Rating	0,5	4,5		
	0,5	10	30	0
<u>MULTI-ENGINE TRAINING IR</u>				
Exercise 55: IR – Multi Engine Piston - Emmergencies		2	3	
	0	2	3	0
	SOLO	AIRPLANE	FNPTII	BRIEF
TOTALS	0,5	17	38	6
Exercise 60 FINAL CHECK		1		

3.7 Single Pilot Multi Engine Piston Rating SP/ME(A) Course

3.7.1 Course Structure

The aim of the MEP(A) flying training course is to train pilots to the level of proficiency necessary to operate single pilot multi engine aeroplanes. The flying training in Global Air Services shall comprise a total of 6 hours in a single pilot multi engine aeroplane, not including all flying tests, including 2,5 hours basic visual maneuvers and 3,5 emergencies and asymmetric flight.

In case the applicant is holder of instrument rating, 5 more hours instrument time under instruction are needed on a multi-engine aeroplane according to JAR-FCL 1.205(b) of which up to 3 hours can be instrument ground time in FNPT II.

The air exercises of the course are analyzed in the following table:



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	INSTRUMENT		MULTI	BRIEF
	Airplane	FNPTII		
<u>PHASE 4 - MULTI-ENGINE TRAINING</u>				
Exercise 50: Introduction to Multi Engine Principles				6
Exercise 51: Take-Off and Climb			1	
Exercise 52: Straight and Level Flight - Descend			1	
Exercise 53: ASYMMETRIC POWER FLIGHT 'In flight' Engine Failure Procedure			2	
Exercise 54: ASYMMETRIC POWER FLIGHT "Take-Off and Approach"			2	
Exercise 55: IR – Multi Engine Piston - Emmergencies	2	3		
	2	3	6	6
TOTALS	2	3	6	6
Exercise 60 FINAL CHECK	1		1	

3.8 Instrument Rating Instructor IRI(A) Course

3.8.1 Course Structure

The course's objective is to give adequate training to the applicant in flight instruction in order to instruct the syllabus of the instrument rating course. The course is intended to develop the trainees' handling skills whilst operating the aircraft from the both the left and right-hand seats. He will be exposed to the operation of the appropriate aeroplane and/or FNPT II and will be required to demonstrate his proficiency in this area. The course aims to develop, in a constructive manner, the trainees' skills to present flight briefings, impart knowledge, assess performance and conduct debriefing.

The flying training in Global Air Services for the IRI (A) course shall comprise a total of at least 10 hours on an aeroplane and/or FNPT II, not include flying tests (JAR-FCL 1.395 (b)).

The air exercises of the course using the FNPT II are analyzed in the following table:



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IRI(A) Course	FNPTII		BRIEF
	HRS	Session	
Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTIDUTES)	0,5	1	4
Exercise 31: Unusual Attitudes and Recovery	0,5		
Exercise 32 Use of Partial Panel	0,5		
Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR	0,5		
Exercise 34: Radio Navigation (Applied Procedures) Use of ADF	0,5		
Exercise 35: Radio Navigation (Applied Procedures) Use of DME	0,5		
Exercise 36: VOR Non - Precision Approach Procedure	1	1	
Exercise 37: NDB Non - Precision Approach Procedure	1		
Exercise 38: Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures	1		
Exercise 39: Precision Approach Procedure	1		
Exercise 40: Long IR X-Country	1	1	
Exercise 42: Night Rating	2		3
	10		7
	INST	3	BRIEF
TOTALS	10		7
Exercise 60 FINAL CHECK	1		

3.9 Class Rating Instructor CRI(A) Course

3.9.1 Course Structure

The course's objective is to give adequate training to the applicant in flight instruction in order to be capable to instruct the initial training of a single-pilot multi engine piston class including asymmetric flight. The course is intended to develop the trainees' handling skills whilst operating the aircraft from the both the left and right-hand seats. He will be exposed to the operation of the appropriate aeroplane and/or FNPT II and will be required to demonstrate his proficiency in this area. The course aims to develop, in a constructive manner, the trainees' skills to present flight briefings, impart knowledge, assess performance and conduct debriefing.

The flying training in Global Air Services for the Class Rating Instructor course shall comprise a total of at least 5 hours and according to JAR-FCL 1.380 (b)(3), can be performed in Global Air Services's FNPT II located at Megara airport.

The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide.

The air exercises of the course using the FNPT II are analyzed in the following table:



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	FNPTII		BRIEF
	HRS	Session	
<u>CRI(A) Course</u>			
Exercise 50: Introduction to Multi Engine Principles			6
Exercise 51: Take-Off and Climb	1	1	
Exercise 52: Straight and Level Flight - Descend	1		
Exercise 53: ASYMMETRIC POWER FLIGHT 'In flight' Engine Failure Procedure	1,5	1	
Exercise 54: ASYMMETRIC POWER FLIGHT "Take-Off and Approach"	1,5		
TOTALS	5	2	6
Exercise 60 FINAL CHECK	1		