Technical Bureau for Consultancies, Services & Training (AVIBOARD)
www.aviboard-atc.com

Air Traffic Control

Training Courses

in collaboration with Egyptian Aviation Academy EAA

2019

AVIBOARD

Training Courses
in collaboration with Egyptian Aviation Academy EAA

Course Title:

AIR TRAFFIC CONTROL ASSISTANT/BASIC INDUCTION (ICAO 051)

Course aim
The course is designed to provide the students with a comprehensive introduction to Air Traffic Services in general and to develop specific theoretical skills in Air Traffic Services procedures and techniques required as essential base knowledge prior to rating training.

Course objectives
After completion of the course, the ATC student will have:
- Knowledge and understanding in accordance with the topics and sub-topics detailed in ICAO Annex 1.
- Knowledge of the Tower, Approach and Area Control practical training environments.
- Knowledge and understanding of the importance of teamwork and the significance of human factors within the ATC environment.

Course overview

Theory
A number of the course's theoretical components are similar to the requirements for pilot training because of the close inter relationship within the aviation environment.
During the course students will learn: Aviation Law, Rules of the Air, Air Traffic Management, Principles of Flight, Aircraft Equipment and Systems, ATM Equipment and systems, Communication, Human Factors, Meteorology and Navigation.

Simulator training
Within a simplified generic training environment students will learn about Tower, Approach and Area control.

Prerequisites
English language proficiency (minimum ICAO level 4).

Compliance with regulations
- The course is compliant with ICAO standards and recommended practices.

Objectives in brief

Introduction to the module
Content, duration, documentation, examination procedures, and social events.

Theory

- Navigation
- Meteorology
- Rules of the Air
- Human factors
- Equipment and systems
- Airspace management
- Airspace users
- ATC Licensing
- International organizations
- Alerting service

Simulation

- Tower familiarization
- Area Control Surveillance familiarization
- Approach Control Surveillance familiarization
- Appreciate the co-operation between Tower and Approach units.
- Appreciate the co-operation between Area and Approach units.

Examination

Final written examination.

Feedback to students

Continuous feedback on performance will be provided by the instructors and the course supervisor.

Course Title:

AERODROME CONTROL (ICAO 052)

Course aim

The Aerodrome Control course is designed to impart knowledge and skills to student air traffic controllers in order to enable them to receive a student certificate of competency for ICAO Aerodrome Control Instrument rating with Tower and Radar endorsements (ADI+TWR+RAD).

Course objectives

After completion of the Aerodrome Control course, the ATC student has:

- Knowledge, skills and understanding in accordance with the course content outlined briefly below (see Content in brief).
- Skills to perform safely and according to rules and regulations, providing orderly and expeditious aerodrome control service in an aerodrome environment.
- The necessary skills to work in a team.

Course overview

Theory

The training is divided into five parts, all with a different focus (see Content in brief). Human factors, airspace C and D, system degradation and multiple runways are included in all parts of the course. Theoretical events are followed by practical applications in a classroom and in a simulator. The theoretical part of the Aerodrome Control course consists of new subjects as well as reviews and enhancements of subjects from the ICAO 051 course related to aerodrome control services such as meteorology, navigation, aircraft and aerodromes.

Simulator training

The simulator training is conducted in a 3D tower simulator and consists of at least 28 evaluated individual exercises as well as exercises in a small system. The airspace/aerodrome is generic and simulates traffic in an aerodrome environment, with one active airport and single and crossing runway operations and radar service.

Prerequisites

- English language proficiency (minimum ICAO level 4).
- Air Traffic Control Assistant/Basic Induction course ICAO 051.

Compliance with regulations

- The Aerodrome Control course is compliant with ICAO standards and recommended practices.

Content in brief

The Aerodrome Control course consists of theory, theory with practical training and simulation exercises.

The course objectives are divided into five parts:

Part 1

Acquire knowledge of aerodrome layout, departure information/clearance, departure separations, handling of ground movements, go around and equipment failure. In a 3D tower simulator: 2 trained positions, AD1 (evaluated) and Approach Radar (supervised).

Part 2

Train arrival and departure information/clearance regarding VFR and IFR traffic, departure separation, spacing on final, closed taxiways, visual circling, visual approach, runway change and restricted areas.
In a 3D tower simulator: 2 trained positions, AD1 (evaluated) and AD2/ Approach Radar (supervised).

Part 3

Train arrival and departure information/clearance regarding VFR traffic, crossing VFR, VFR touch-and-go operations, SVFR operations, equipment failure and runway change.
In a 3D tower simulator: 2 trained positions, AD1 (evaluated) and AD2/ Approach Radar (supervised).

Part 4

Train arrival and departure information/clearance regarding an even mixture of IFR and VFR traffic with multiple runways, reduced runway separation, hospital flights, equipment failure, aborted take-off and cooperation between air and ground positions.
In a 3D tower simulator: 2 trained positions, AD1 (evaluated) and AD2 (supervised).

Part 5

Train cooperation between air and ground positions including unusual and emergency situations regarding IFR and VFR traffic, runway incursion, SIGMET, opposite landings, bird strike, emergency landings, com-failure and low visibility operations.
In a 3D tower simulator: 2 trained positions, AD1 (evaluated) and AD2 (supervised).

Course Title:

APPROACH CONTROL NON RADAR (ICAO 053)

Course aim

The course is designed to impart knowledge and skills to student air traffic controllers in order to enable them to receive a student certificate of competency for the ICAO Approach Control rating.

Course objectives

After completion of the course, the ATC student has:

- The knowledge, skills and understanding in accordance with the course content outlined briefly below (see Content in brief).
- The skills to manage traffic safely and according to the rules and regulations, providing an orderly and expeditious approach control service in an approach procedural environment.
- The skills those are necessary to work in a team.

Course overview

Theory

Theoretical events are followed by practical applications in a classroom and in a simulator.
The theoretical parts in this course cover new objectives containing mainly procedural separations as well as reviews and enhancements of subjects from the ICAO 051 course.
The number of training events is based on the assumption that all students on this course have completed an Air Traffic Control Assistant/ Basic Induction Course (ICAO 051).
Human factors, airspace classes C and D, and system degradation are included in all parts of the module.

Simulator training

The simulator training is conducted in an approach procedural simulator and consists of individual exercises.
The airspace/aerodrome is generic and simulates traffic in an approach procedural environment, with one active airport and an adjacent area control center with radar service.

Prerequisites

- English language proficiency (minimum ICAO level 4).
- Approved results from an Air Traffic Control Assistant/ Basic Induction course ICAO 051.

Compliance with regulations

- The course is compliant with ICAO standards and recommended practices.

Content in brief

Part 1

Acquire knowledge and skills of approach procedural control in airspace without SIDs and STARs to practice vertical and time based separations:

- Theory
- Theory – Practical training
- Simulator exercises
- Assessment

Part 2

Acquire knowledge and skills of approach procedural control in airspace without SIDs and STARs to practice vertical and distance based separations:

- Theory
- Theory – Practical training
- Simulator exercises
- Assessment

Part 3

Acquire knowledge and skills of approach procedural control in airspace with and without SIDs and STARs to practice all separations including VOR lateral separations and holding:

- Theory
- Theory – Practical training
- Simulator exercises
- Assessment

Part 4

Develop knowledge and skills of approach procedural control in airspace with SIDs and STARs to practice all separations and complex situations, including unusual and emergencies, visual approaches, IFR training, missed approaches: Page 2 (of 3)rypointnorth.com

- Theory
- Theory – Practical training
- Simulator exercises
- Assessment

Course Title:

APPROACH CONTROL - RADAR (ICAO 054)

Course aim

The course is designed to impart knowledge and skills to student air traffic controller in order to enable them to receive an student certificate of competency for ICAO Approach Control with Surveillance equipment (Radar).

Course objectives

After completion of the course, the ATC student has:

- Knowledge, skills and understanding in accordance with the course content outlined briefly below (see Content in brief).
- Have the skills to manage traffic safely and in accordance with the rules and regulations.
- The skills that enable him or her to provide orderly and expeditious radar service in an approach and terminal control area with a workload of up to 25-28 movements per hour.
- The skills that are necessary to work in a team.

Course overview

The training is divided into two phases. Theoretical events will be followed by practical applications in a simulator.

Phase 1 - Introduction

- Introductory lessons.
- Focus on establishing correct methods in handling departing, arriving and overflying traffic in normal situations and for some special events. Training is conducted as individual exercises in a modern radar simulator.

Phase 2 - Complex approach environment

Focus on increased traffic complexity and co-operation with adjacent sectors. Some exercises cover special events/emergencies. Training is conducted in a modern radar simulator.

Prerequisites

- English language proficiency (minimum ICAO level 4).
- Approved results from Air Traffic Control Assistant/ Basic Induction course ICAO 051

Compliance with regulations

- The course is compliant with ICAO standards and recommended practices.

Content in brief

Course introduction and examination procedures

- Explain the aims and objectives of the course, the management structure and outline the materials to be used.
- State the methodology and describe the assessment procedures used in the course.

Theoretical subjects followed by hands-on simulation practice

- Describe rules and methods for:
  - Radar vectoring, sequencing, separations, phraseology, strip marking and co-ordinations used in an approach service
  - Handling military flights
  - Handling VFR flights
  - Change of runway
  - Using only primary radar
  - Handling of transponder failure, communication failure, ACAS, special weather phenomena, LVP, etc
  - Traffic with priority needs
  - Holding procedures
- Describe different approach methods e.g. ILS, NDB, VA.
- Describe methods for working in approach control.
- Describe procedures used following an incident/accident and show how to fill in a report.

Individual radar exercises

- Apply methods and handle arriving, departing and overflying traffic in a correct, safe and orderly way.
- Apply correct methods for the efficient sequencing of traffic.
- Apply correct co-operation methods.
- Show an understanding of methods used when handling a variety of special occurrences.

Examination

Theoretical and Practical Final examination.

Course Title:

AREA CONTROL NON RADAR (ICAO 055)

Course aim

The course is designed to impart knowledge and skills to student air traffic controllers in order to enable them to receive a student certificate of competency for the ICAO Area Control rating.

Course objectives

After completion of the course, the student has the basic knowledge, skills and understanding to manage traffic safely and according to the rules and regulations of Document 4444, in an area procedural environment.

Course overview

The course focuses on specific tasks, separation standards and methods used in a procedural environment. This will be taught by theoretical sessions and practical exercises in a procedural simulator.
The training is conducted in a generic airspace suitable for this type of air traffic control.

Prerequisites

- English language proficiency (minimum ICAO level 4).
- Approved results from Air Traffic Control Assistant/Basic Induction course (ICAO 051)
- Meeting the authority's requirement for an ATC license

Compliance with regulations

- The course is compliant with ICAO standards and recommended practices.

Course Duration:

8 weeks (2 weeks theoretical + 6 weeks Practical)
Note: Course duration is set for local trainees, while customized courses will be designed for international students according to their needs.

Content in brief

Course introduction and examination procedures

- Course evaluation
- Progress reports
- Examination

Area control unit responsibility

- Airspace structure
- Area of responsibility – area control service
- Planning and control actions
- ATC clearances
- Co-ordinations between APP, TWR and ACC
- Traffic information

Horn airspace and local operating instructions

- Strip marking and ATC clearances
- Local airspace and regulations

Vertical and horizontal separation (RNAV excerpt)

- Standard and increased vertical separation
- Longitudinal and lateral separation

Horizontal separation, RNAV and Holding

- Introduction to the use of RNAV separations
- Separation to holding airspace

Unusual events

Assist in emergency situations

Mastery test

Review of mastery test

Simulator exercises

The simulator exercises include briefing/debriefing

Course Title:

AREA CONTROL SURVEILLANCE (RADAR)

(ICAO 054) or (054A)

Course aim:

This course is designed to acquire knowledge, skills and attitudes to trainee air traffic controllers that are necessary to enable progression to on-the-job training with the aim of obtaining an ATC License/Certificate of Competence with an ICAO Area Control Surveillance (Radar) rating.

Course objectives:

After completion of this course, the trainee Air Traffic Controller will be able to perform all duties and responsibilities of Surveillance (Radar) Controller and Planner Controller in a satisfactory level of performance.

About this Course:

This course is divided into two phases:

- **The Theoretical Phase**: Is aiming at defining the base line of competencies of the trainee Air Traffic Controllers, from which, the related new knowledge and experiences should be acquired. In this phase, the teaching strategy is adopting blended learning through classroom education. At the end of this phase the trainees will be able to demonstrate knowledge and understanding of subjects detailed in ICAO Annex 1 and ICAO Doc 4444, to the standard required.

- **The Practical Phase:** Is taking the majority of the training course time and aiming at building the skills and attitudes of the trainee Air Traffic Controller related to Surveillance (Radar) Controller & Planner. This phase depends mainly on the theoretical knowledge previously acquired and the time of practical training in a simulated environment for the object of achieving the required level of performance. At the end of this phase the trainees should demonstrate their competencies to the standard required of applying operational radar and planning control techniques and procedures to ensure a safe, orderly and expeditious service to arriving, holding, departing and transiting aircraft. In addition, trainees will manage the workload within a proposed area of responsibility.

Training Facilities:

The course will be delivered through fully equipped and air conditioned classrooms. Practical sessions is delivered through Eurocat 2000 Radar Simulator of 6 controller positions + 6 Planner Position (The trainees will be divided into 3-4 groups).

Prerequisites:

- English language proficiency (minimum ICAO level 4).
- Licensed Approach and Area non- Radar Controllers, or graduates of Approach and Area Control Procedural courses (ICAO 053-055).

Course Content:

1. **Theoretical Phase (2 weeks):**
   - Radar Theory.
   - Radar Equipment & Data Display
   - General Radar Procedures
   - Radar Identification
   - Radar Separation
   - Radar Vectoring
   - Radar Coordination
   - Emergencies and Unusual Situations
   - ACAS

2. **Practical Phase (6 weeks):**

During this phase the trainee shall demonstrate the ability to:

- Operate radar position equipment.
- Update and maintain a traffic display promptly and accurately.
- Identify primary and SSR radar targets using radar display in accordance with published radar procedures.
- Apply standard phraseology.
- Vector aircraft within en-route or area radar sector.
- Maintain the prescribed radar or non-radar separation.
- Monitor known air traffic to provide aircraft concerned with information or advice relative to any significant deviations from their ATC clearances.
- Control aircraft within an air-route or area radar sector.
- Maintain a safe, orderly and expeditious flow of air traffic.
- Carry out transfer of radar identity/control including co-ordination with approach control, adjacent ACCs/sectors, or other ATC units in accordance with published procedures.

Evaluation criteria and Certificates:

- At the end of the Theoretical Phase, the trainees will go through MCQ exams and considered successfully passed if he scored 70% or more of total score.
- At the end of the Practical Phase, the trainee's performance will be evaluated against objective check list of competencies. The acceptable level of performance to pass the exam is 70% or more.
- Successfully passed Trainees Air Traffic Controllers shall award a certificate accredited by Egyptian Aviation Academy EAA and AVIBOARD.