Federal Aviation Administration

55053
EN ROUTE
RADAR FLIGHT DATA CONTROLLER TRAINING

Facility Instruction Guide (FIG)

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1. Introducing the Course

Course 55053001 (Radar Flight Data Controller Training) is designed to prepare the Developmental/CPC-IT to perform all duties of the radar flight data position on all sectors within an area of specialization as described in FAA Order JO 3120.4, Air Traffic Technical Training. This training is administered as instructor-led training (ILT).

1.1 Instructor-led Training (ILT) and eLearning

The instructor-led training uses facility-developed instructional materials to supplement the nationally prepared curriculum. The facility lesson plans must focus on center/area chart knowledge, flight data processing, and computer operations. The nationally developed lesson plans for course 55053 are:

- Lesson 1 – *Air Traffic Service Routes and Airspace*
    - Recommended WBT course 57056, Air Traffic Service Routes and Airspace (Formerly “Jet Route Structure”), or current course
- Lesson 2 – *Voice Switching and Control System (VSCS)*
    - Required WBT course 57100, ATCS VSCS, or current course
- Lesson 3 – *Flight Progress Strip Distribution*
- Lesson 4 – Computer Operational Equipment
    - Recommended WBT course #57071003, Computer Operational Equipment – Flight Strip Printer (FSP), or current course
- Lesson 5 – *Computer Field Format*
- Lesson 6 – *Computer Command Composition and Entry*

2. Instructional Activities and Assessment

2.1 Practice Exercises

The course includes practice exercises designed to provide the students opportunities to perform the duties related to the radar flight data controller position. The practice exercises are not scored, but the instructor will verify proficiency.

- Lesson 3 – *Flight Progress Strip Distribution*
    - Practice Exercise 1: Flight Plan Information
        - Purpose: to manually prepare a flight strip.
- Lesson 4 – *Computer Operational Equipment*
    - Practice Exercise 1: Loading Flight Strip Printer (FSP) Paper
        - Purpose: to practice refilling the FSP with paper.
    - Practice Exercise 2: ERIDs Checklist
        - Purpose: to practice ERIDs functions.
        - This exercise should be completed in the Test and Training Lab (TTL) at an ERIDS console.

- Lesson 5 – *Computer Field Formats*
  - Practice Exercise 1: Computer Field Format
    - Purpose: to practice inputting Command IDs, and observing and recording the results.
  - Practice Exercise 2: Command ID
    - Purpose: to practice inputting and requesting data in the proper format and sequence.
      - This exercise should be completed in the Test and Training Lab (TTL) at the RA position.
      - A scenario needs to be created and labeled “55053_L05_PE02”.

STEP	REQUIREMENT
1	Create a scenario named 55053_L05_PE02
2	Set scenario run length to 1 hour.
3	Targets are not required.
4	Do not mark training sector as “*Live*”.
5	Import weather reconstitution message.

- Lesson 6 – *Computer Command Composition Entry*
  - Practice Exercise 1: Route Amendment Correction
    - Purpose: to practice correcting route amendments.
  - Practice Exercise 2: Using Proper Computer Sequences and Format
    - Purpose: to practice using proper computer sequences and formats.
  - Practice Exercise 3: Composing Field Amendments
    - Purpose: to practice composing field amendments.
      - This exercise should be completed in the TTL at the RA position.
      - A scenario needs to be created and labeled “55053_L06_PE03”.

STEP	REQUIREMENT
1	Create a new scenario named 55053_L06_PE03.
2	Set scenario run length to 45 minutes.
3	No targets are required.
4	Import weather reconstitution message.
5	Enter SA commands to enable SIDs and STARs.

      - Each student’s worksheet requires entry of four local flight plans before running the scenario.

- Practice Exercise 4: Command Composition and Entry
  - Purpose: to practice composing and entering commands.
    - This exercise should be completed in the TTL at the RA position.
    - A scenario needs to be created and labeled “55053_L06_PE04”.

STEP	REQUIREMENT
1	Create a new scenario named 55053_L06_PE04.
2	Set scenario run length to 1 hour.
3	Import weather reconstitution message.
4	Select sector(s) that will enable an RF message for an aircraft to an adjacent ARTCC.
5	Select sector(s) that will enable an RF message for an aircraft to an adjacent ARTS/STARS facility.
6	Do not check training sector as “*Live*”.
7	Enter weather station reports to be used in the scenario.
8	Enable AARs, ADRs, ADARs
9	Create a stream of 10 turbojet aircraft 3 minutes in trail that are routed over a fix or NAVAID that enter an adjacent facility (ARTS/STARS preferred). Name the targets DAL1 through DAL10. Have the first target enter the training sector at 10 minutes.

    - Each student’s worksheet requires instructor entry of seven local flight plans before running the scenario.

2.2 Knowledge Checks

Knowledge checks are questions used to ensure that critical information is retained. They occur throughout the course and are not scored.

2.3 End-of-Lesson Tests

The instructor should administer and grade the end-of-lesson test upon completion of each lesson. There is one test and one alternate test for each lesson. The passing score is 70%. If a student does not achieve a score of 70%, allow the student time to review the material, then administer one retake using the alternate end-of-lesson test. If the student does not score a 70% or higher on the retake, refer the student to their Training Manager.

2.4 Performance Assessments

Lesson 1: *Air Traffic Service Routes and Airspace*

- A locally prepared performance assessment will be administered after the end-of-lesson test. This performance assessment is designed to test the skills necessary to perform the duties related to the radar flight data controller position.

- The instructor will verify mastery of the objective using locally developed answer keys and passing score requirements. Assessment and remediation strategies, if applicable, will be determined by the local facility and administered in accordance with national and local directives.
- Performance Assessment 1: Chart Completion
    - The purpose of this activity is to have the student demonstrate knowledge of Air Traffic Routes and Airspace in and adjacent to the local facility area.
        - Students will chart a center area depicting the location of navigation aids (NAVAIDs), sector boundaries, adjacent center boundaries, and special use airspace in accordance with FAA JO 3120.4, Appendix D and local directives.

Lesson 2: Voice Switching and Control System (VSCS)

- A performance assessment will be administered prior to the end-of-lesson test. It is designed to assess the skills to perform the duties related to the radar flight data controller position.
- The instructor must verify mastery of the objectives using the performance assessment checklist. Students are required to demonstrate 70% proficiency with all checklist items. Those checklist items listed as “if applicable” are not required for facilities who do not have the capability to replicate that function. If the student fails to accurately complete any of the items on the checklist, the instructor must remediate by re-teaching the content. Instructors will then verify the student’s mastery of the objectives using the performance assessment checklist. Students who are unable to demonstrate 70% mastery of the objectives will be referred to their Training Manager.
- Performance Assessment 1: VSCS Equipment
    - The purpose of this activity is to assess the performance of the student to operate VSCS equipment.
        - Due to the differences between the equipment in the TTL and the live VSCS, facilities must use the VSCS training tool or an actual vacant sector, if possible.

2.5 Locally Prepared Materials

Instructor may use locally developed materials as needed to augment the national training. Assessment and remediation strategies will be determined by the local facility and administered in accordance with national and local directives.

3. Conducting the Course

The TA or their designee(s) will organize and conduct the course. This includes:

- Reviewing the course requirements
- Developing and/or reviewing the schedule
- Preparing to conduct the course

Before the course starts, the instructor(s) should review each lesson and associated PowerPoints, and test the animation on the PowerPoint. Some lessons contain embedded videos; therefore, classroom speakers should be tested as well. Report any issues with training materials to the TA.

3.1 Course Schedule

	Estimated Time
Lesson 1: Air Traffic Service Routes and Airspace	
*WBT: Course 57056 or current course	1 hour
ILT: Air Traffic Service Routes and Airspace	1 hour 30 minutes
End-of-Lesson Test - Knowledge (ELT01_L01)	30 minutes
Performance Assessment (locally prepared) and Study Time	80 hours (or locally determined)
Lesson 2: Voice Switching and Control System	
WBT: Course 57100 or current course	4 hours
ILT: Voice Switching and Control System	1 hour
End-of-Lesson Test - Knowledge (ELT01_L02)	30 minutes
TTL: End-of-Lesson Test - Performance (ELT02_L02)	30 minutes per student/instructor team
Lesson 3: Flight Progress Strip Distribution	
ILT: Flight Progress Strip Distribution	1 hour
End-of-Lesson Test - Knowledge (ELT01_L03)	30 minutes
Lesson 4: Computer Operational Equipment	
ILT: Computer Operational Equipment	1 hour
*WBT: Course 57071003 or current course	30 minutes
End-of-Lesson Test - Knowledge (ELT01_L04)	30 minutes
TTL: Practice Exercise 1, Loading FSP Paper	10 minutes per student/instructor team*
TTL: Practice Exercise 2, ERIDs Checklist	20 minutes per student/instructor team*
Lesson 5: Computer Field Format	
ILT: Computer Field Format	1 hour 30 minutes
End-of-Lesson Test - Knowledge (ELT01_L05)	30 minutes
TTL: Practice Exercise 2, Command ID	30 minutes per student/instructor team*
Lesson 6: Computer Command Composition and Entry	
ILT: Computer Command Composition and Entry	2 hours
End-of-Lesson Test - Knowledge (ELT01_L06)	30 minutes
Additional locally developed content	Facility-determined

4. Icon Legend

	Description
	The Activity icon indicates an exercise, lab, or hands-on activity.
	The Discussion Question icon signals a discussion question to be asked to the students.
	The Handout icon indicates a handout is to be distributed to the students.
	The Instructor Note icon is in hidden text and indicates text that is for the instructor only.
	The Multimedia icon indicates a video or audio clip is in the presentation.
	The Phraseology icon indicates that phraseology is in the content.
	The QA icon indicates a question to be asked to the entire class by the instructor.
	Warning icon indicates a safety critical note.
	The WBT icon indicates a component of web-based training.
	The Click icon indicates a PPT slide with click-based functionality to present additional information.

4.1 Hidden Text in Lessons and End of Lesson Tests

Instructor notes and answers to knowledge checks and test questions are shown in Hidden Text in the Instructor lessons and tests only. The tests also contain references and lesson plan page numbers for each question in hidden text. This information is not visible in student versions of the material.

To view hidden text in a Word document, click the Home tab, then click the Paragraph symbol (¶).

TTL: Practice Exercise 3, Command Composition and Entry	30 minutes per student/instructor team*
TTL: Practice Exercise 4, Entering Miscellaneous and Information Request Commands	1 hour per student/instructor team*
Total Length (Rounded to the next hour) *Supplemental training	**100 hours or approximately 13 class days, without breaks**

*NOTE: TTL exercise duration will vary based on class size.

4.1. Course Agenda

The start time for the training is dependent upon the location of the training. The agenda should include six to seven training hours for each day. Hours needed for each topic may vary greatly from one topic to the next. The hours provided at the beginning of each lesson are for planning purposes only. Factors that can impact the length of a topic include class size, energy level, instructor's style, etc.

4.2. Training Materials

The following materials are required to conduct this training:

- Instructor Lesson Plans (LP)
- PowerPoint (PPT) presentations for each lesson
- Student Lesson Plans (SLP) one copy per participant per lesson
- Computer/laptop loaded with the PowerPoint program and presentations
    - Ensure the computer is capable of playing videos with sound
- Sign-in Sheet, if applicable
- At a minimum provide students access to the following references:
    - TI 6110.101, En Route Automation Modernization (ERAM) Air Traffic Manual (ATM): RA Position User Manual
    - TI 6110.100, En Route Automation Modernization (ERAM) Air Traffic Manual (ATM): R Position Manual
    - TI 6110.108, En Route Automation Modernization (ERAM), Quick Reference Controller Card
    - FAA Order JO 7110.65, Air Traffic Control
    - Facility Standard Operating Procedures
    - Sector Binders
- Handouts
    - Lesson 1: *Air Traffic Service Routes and Airspace*
        - End-of-Lesson Test (ELT01_L01)

        - Two copies of an unlabeled chart of their center area for use in completing the practice exercise and end-of-lesson test
        - A facility-prepared center federal airways and jet routes list
        - A facility-prepared list of SIDs and STARs
        - Facility-prepared local controller charts
        - IFR En Route Low and High Altitude chart
        - Locally prepared performance assessment: completion instructions, handouts, and any specific content will be developed by the instructor.
    - Lesson 2: *Voice Switching and Control System (VSCS) Equipment*
        - Handout Lesson 2 Performance Assessment (ELT02_L02)
        - End-of-Lesson Test (ELT01_L02)
    - Lesson 3: *Flight Progress Strip Distribution*
        - Handout Lesson 3 – Practice Exercise (HO01_L03)
        - End-of-Lesson Test (ELT01_L03)
    - Lesson 4: *Computer Operational Equipment*
        - Handout Lesson 4 – Practice Exercise (HO01_L04)
        - End-of-Lesson Test (ELT01_HO04)
    - Lesson 5: *Computer Field Format*
        - Handout Lesson 5 – Practice Exercises (HO01_L05)
        - Local facility control room layout chart
        - End-of-Lesson Test (ELT01_L05)
    - Lesson 6: *Computer Command Composition and Entry*
        - Handout Packet Lesson 6 – Practice Exercises (HO01_L06)
        - End-of-Lesson Test (ELT01_L06)
- Local facility provided information
    - Lesson 1
        - Page 9 - Be prepared to discuss how the Radar Flight Data position is utilized in your local facility.
        - Page 11 - Chart completion requirements derived from local directives
        - Page 16 - Be prepared to discuss your local chart updating process.
        - Page 38 - Be prepared to use local examples from the IFR En Route High and Low Altitude Charts and the Center Federal Airways and Jet Routes List.
        - Page 41 - On local controller charts, be prepared to point out location of intersections on Local Controller Charts.
        - Page 43 - On Local Controller Charts, be prepared to point out distances between intersections and NAVAIDs, NAVAIDs and other NAVAIDs, and intersections and DME fixes.

- Lesson 3
  - Page 4 - Excerpts from local directives containing strip: marking, delivery methods, and procedures
  - Page 38 - Facility printer assignments as Primary, Backup, and Second Backup
- Lesson 5
  - Page 22 - Classified Speed, locally adapted value
  - Page 31 - Altitude at which “VFR” or “OTP” is the Field 08 (Altitude) without a specific altitude added, such as “VFR/85”, will process at a locally adapted altitude.
- Lesson 6
  - Practice Exercise 3 - On the exercise sheets for each student, complete flight plan information to be entered by students during exercise. This information will be written in the four provided “FP Info” rows (1a, 2a, 3a, and 4a).
  - Practice Exercise 4 - On the exercise sheets for each student, complete flight plan information to be entered by students during exercise. This information will be written in the six provided “FP Info” rows (1a, 2a, 5a, 8a, 9a, and 19a).

5. Course Checklist

This checklist includes activities to be completed before, during, and after the course. Although you may not be responsible for completing all of the items, you should ensure these items have been completed prior to conducting the course. You may also want to add or remove items, as applicable.

Before the Training

At Least Two Months Prior to Training

- ❑ Identify and coordinate with other instructors assisting with the course.
- ❑ Identify potential participants. These names may come from the Training department at your facility.
- ❑ Create a roster for the course.
- ❑ Select dates and times for the course. *The course must meet the minimum days required in the course description.*
- ❑ Arrange for and check the location where the course will be facilitated.
- ❑ Coordinate a planned schedule for the lab.
- ❑ Notify the facility scheduler of course dates. Try to do this early enough that the scheduler can post the area schedule with those attending the training already removed from the area schedule.
- ❑ Review the course materials.
- ❑ Develop the agenda.

At Least One Month Prior to Training

- ❑ Prepare materials (e.g., make copies of the Student lessons, handouts, and End of Lesson Tests (ELTs). From the INET site, download the **Acrobat (PDF)** version of the Student and Instructor lessons, handouts, and end of lesson tests (ELTs) to print copies. The **Acrobat (PDF)** instructor lessons contain hidden text not visible in the student lessons. Answers to practice exercises and knowledge checks as well as instructor notes are in hidden text. The **Acrobat (PDF)** Instructor ELT contains answers and references not visible in the **Acrobat** (PDF) Student ELT.
- ❑ Make sure that you have adequate copies of the required handouts.
- ❑ Order equipment (easels, chart paper, markers, computer and projector, as needed).
- ❑ Develop the required facility exercises and scenarios.
- ❑ Send a completed Sample Participant Letter to participants in the course.

At Least One Week Prior to Training

- ❑ Secure copies of all reference materials.
- ❑ Acquire facility specific training materials such as the unlabeled chart of the local center area.
- ❑ Supervise delivery of the equipment, supplies, and materials.

- ❑ Ensure sufficient quantities of Student lessons, handouts, and ELTs are available.
- ❑ Determine class start time for first day.

Day Before the Training

- ❑ Confirm which instructor will teach each topic.
- ❑ Verify room and lab availability.

Day of the Training

- ❑ Inspect the room for correct setup, temperature, and lighting.
- ❑ Double check equipment and supplies.
- ❑ Take care of any problems with the room or equipment.
- ❑ Verify participants present with the class roster.

After the Training

- ❑ Supervise the return of equipment, supplies, and resource materials.
- ❑ Review the end-of-course evaluations.
- ❑ Note any changes to topics that will enhance your next course.
- ❑ Forward the completed roster to the participants' facility Training Manager to ensure credit is given in both eLMS and TRAX.

6. Sample Participant Letter

The DOT Congressional Mandate (PL105-277) requires that the goals of the training are included in this letter. Send a letter in advance to all participants listing the goals of the training as mandated by PL105–277.

(*Date*)

Dear (*Participant's Name*):

You will be attending Course 55053 Radar Flight Data Controller Training from (*beginning date*) to (*ending date*). The training will begin at (*time*) and end at (*time*) each day. The training will be held at (*location*).

The purpose of this letter is to provide information regarding the course.

This course is designed to prepare the Developmental/CPC-IT to perform independently all the duties of the radar flight data controller on all sectors. The course goals are as follows:

- Identify characteristics of Air Traffic Service Routes and Airspace
- Identify the components, functions and procedures of Voice Switching and Control System (VSCS) Equipment
- Recognize procedures for flight progress strip distribution
- Identify select functions of control position consoles
- Identify computer command formats
- Describe command functionality

The training methods used in the course involve high levels of voluntary involvement by course participants.

If you have any questions about the course, please let me know. The best time to reach me is (days, time, phone no., facility address). I am looking forward to seeing you at the course.

Sincerely,

(Instructor's name)

NOTE: DOT Congressional Mandate (PL105-277) requires that the goals of the training are included in this letter.

7. Course Evaluation Form

Course _____

Facility and Date _____

1. Overall, how would you rate the effectiveness of this course? (Circle your rating.)

1	2	3	4	5	6	7	8	9
Poor				**Good**				**Excellent**

2. What was the most effective part of this course?

3. What was the least effective part of this course?

4. What could be done to improve the effectiveness of this course?

5. Please add any other comments or suggestions.