Federal Aviation Administration

Initial En Route Qualification Training

Instructor
Lesson 05
Flight Progress Strips

Course 50148001

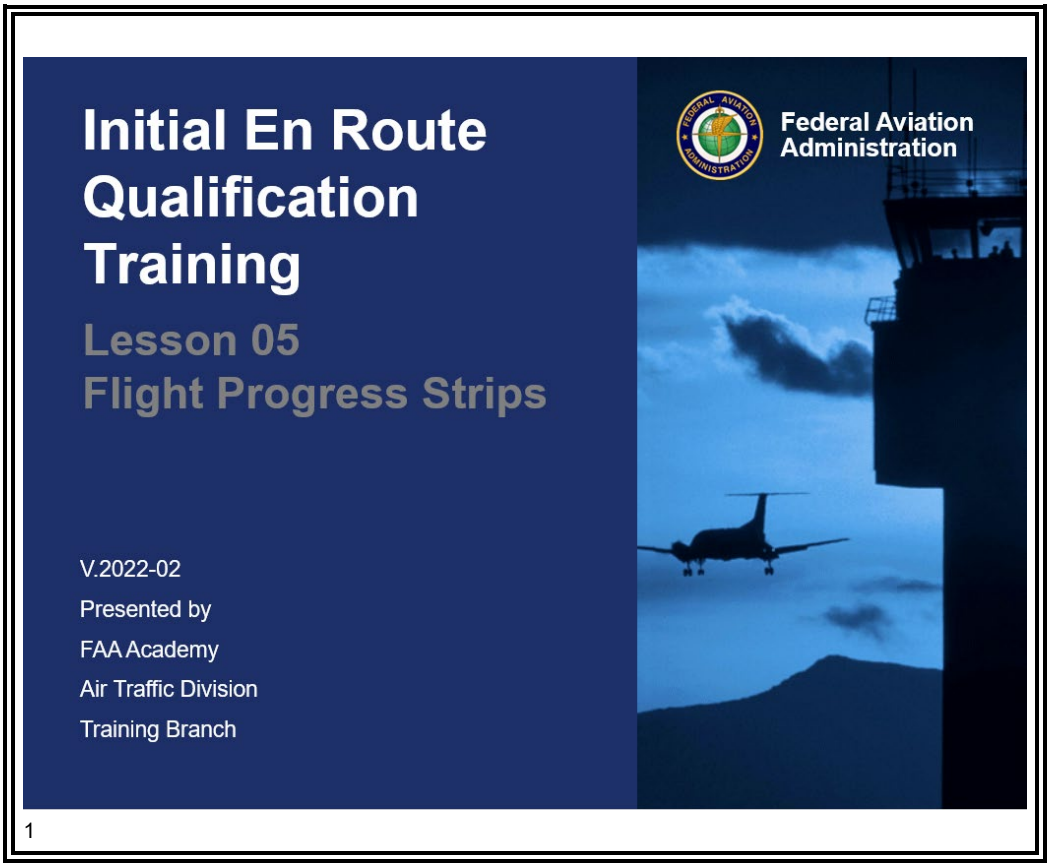
LESSON PLAN DATA SHEET

COURSE NAME:	INITIAL EN ROUTE QUALIFICATION TRAINING
COURSE NUMBER:	50148001
LESSON TITLE:	FLIGHT PROGRESS STRIPS
DURATION:	8+15 HOURS
DATE REVISED:	2022-02
VERSION:	V.2022-02
REFERENCE(S):	FAA ORDER JO 7110.65, AIR TRAFFIC CONTROL
HANDOUT(S):	NONE
EXERCISE/(S)/ ACTIVITY(S):	ACTIVITY 1: PROPOSAL/DEPARTURE STRIP ACTIVITY 2: EN ROUTE STRIP ACTIVITY 3: ARRIVAL STRIP ACTIVITY 4: FLIGHT PROGRESS STRIP CHALLENGE EXERCISE 1: IDENTIFYING INFORMATION ON FLIGHT PROGRESS STRIPS EXERCISE 2: COMPUTING AND RECORDING PLUS TIMES AND ESTIMATES EXERCISE 3: RECORDING FLIGHT PLANS AND DETERMINING FIX POSTING (USE AERO CENTER MAP WITH JET ROUTES FOR THIS EXERCISE)
END-OF-LESSON TEST:	YES *(REFER TO ELT05.PDF)*
PERFORMANCE TEST:	NONE
MATERIALS:	NONE
OTHER PERTINENT INFORMATION:	*INSTRUCTOR KEY FOR THE ELEARNING(S) IS INCLUDED AS AN APPENDIX IN THIS DOCUMENT*

☞ ***NOTE:*** *As you prepare for this lesson, recall and be prepared to talk about examples and personal experiences that illustrate or explain the teaching points in the lesson.*

INTRODUCTION

Gain Attention



You have been introduced to the airspace for which you are responsible including airways, NAVAIDs, MEAs, sectors, Special Use Airspace, fixes, and mileages, etc. Now you will be introduced to flight progress strips. The ability to accurately recall your airspace will allow you to use flight progress strips to safely and efficiently move aircraft through your sector.

INTRODUCTION *(Continued)*

Opening Scenario

FLIGHT PROGRESS STRIPS

2

Flight progress strips are an official record of control data and are used to reconstruct flight activities in the event of a systems error, deviation, or accident. Even with advanced automation systems, strips are still required in the field.

You will use flight progress strips to anticipate and organize flights entering, within, and leaving your airspace. It is essential for controllers to be proficient in quickly identifying and interpreting the data contained in the various types of flight progress strips.

Purpose

In this lesson, you will be taught how to prepare flight progress strips for departure, arrival, and en route flight plans, including which fix postings are required for a given flight plan based on the filed route and where to enter this data on the flight progress strip. You will also learn how to determine and enter estimates using plus times.

Continued on next page

INTRODUCTION *(Continued)*

Lesson Objectives

LESSON OBJECTIVES

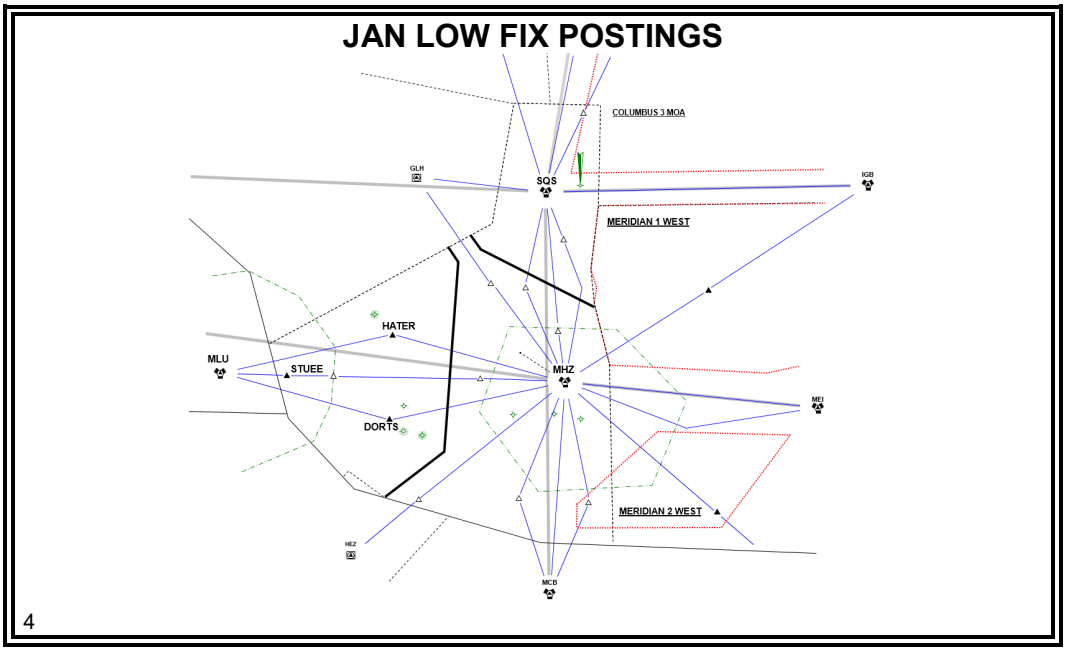
- On an End-of-Lesson Test, and in accordance with FAA Order JO 7110.65 and the Aero Center (ZAE) Map, you will:
  - Determine the required fix postings for departure, arrival, and en route aircraft
  - Identify designated spaces for data entries and control symbols
  - Determine estimates using plus times

3

☞ ***NOTE:*** *Teach from graphic.*

FIX POSTINGS

JAN Low Altitude Fix Postings
Aero Center Map



- This section covers Fix Posting Areas (FPAs) for Aero Center (Jackson Low sector).

- Jackson Low sector is divided into three FPAs (SQS, MHZ, VKS).
  - These FPAs are also used as bay headers
    - Bay headers allow for a more organized traffic search since there is **only** one strip per aircraft in each FPA

- Each route or airway in the Jackson Low sector has a specific fix posting for each FPA.

  Example: Victor 18 has two fix postings: one at MHZ and one at STUEE, which is posted under the VKS bay header.

NOTE: A list of JAN Low sector fix postings for both victor and jet airways is included in Appendix A of this lesson.

- Each airway/route has at least one fix posting (strip) in the Jackson Low sector.

☞ ***NOTE:*** *Explain to students that there should be a flight progress strip for each fix posting area that an aircraft traverses in the sector.*

Continued on next page

FIX POSTINGS *(Continued)*

Jackson Low Altitude Fix Postings (Cont'd)
Aero Center Map

⊙ Airway fix postings:

- V9
  - SQS
  - MHZ
- V11
  - SQS
  - MHZ
- V18
  - STUEE - Posted at VKS
  - MHZ
- V74
  - MHZ
- V245
  - MHZ
- V278
  - SQS
- V417
  - DORTS - Posted at VKS
  - MHZ
- V427
  - HATER - Posted at VKS
  - MHZ

Continued on next page

FIX POSTINGS *(Continued)*

Jackson Low Altitude Fix Postings (Cont'd)
Aero Center Map

- V535
  - SQS
- V555
  - SQS
  - MHZ
- V557
  - SQS
  - MHZ

FLIGHT PROGRESS STRIPS

Stripmarking Use
JO 7110.65, par. 2-3-1

⊙ Flight progress strips are used to record data on air traffic and clearances that is required for control and other air traffic services.

- Maintain **only** necessary current data
  - Remove strips when **no** longer required for control purposes
- Do **not** erase or overwrite
  - Use an “X” to delete:
    - → Climb/descend and maintain arrows
    - → At or above/below symbols
    - → Cruise symbol
    - → Unwanted altitude information

☞ ***NOTE:*** *Show examples on the board.*

  - Write new altitude information immediately adjacent to old information and within the same space
    - → Draw a horizontal line through other items
    - → Do **not** draw a line through an altitude until the aircraft reports or is observed (valid Mode C) leaving the altitude

⊙ Preplanning may be written in red.

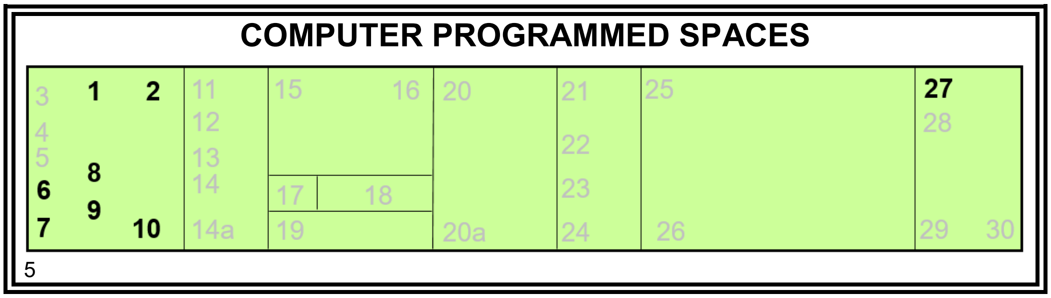
- Rewrite in black after the clearance is issued
  - Do **not** overwrite

☞ ***NOTE:*** *Explain to students that in some instances they may circle red text in black.*

⊙ Manually prepared strips **must** conform to the same format as machine-generated strips.

FLIGHT PROGRESS STRIPS *(Continued)*

Computer Programmed Spaces
JO 7110.65, par. 2-3-2



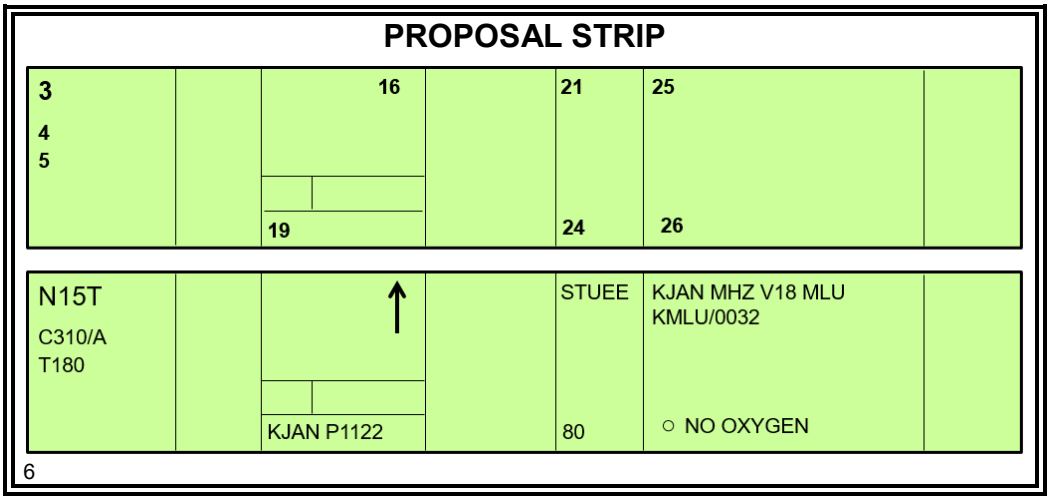
NOTE: For a complete list of the spaces where data is entered on a flight progress strip, see Appendix B.

⊙ The computer will put information in the following computer-programmed spaces:

- Space 1 - Verification symbol, if required
- Space 2 - Revision number
- Space 6 - Sector number
- Space 7 - Computer Identification (CID) number
- Space 8 - Estimated ground speed
- Space 9 - Strip Request (SR) originator or revised ground speed
- Space 10 - Strip number
- Space 27 - Mode 3/A beacon code, if applicable

PROPOSAL STRIP

Proposal Strip
JO 7110.65, pars. 2-3-6, 2-3-2, 2-3-8, table 2-3-10;



⊙ A proposal strip should include the following information:

- Space 3 - Aircraft Identification (AID)
  - Appropriate prefix followed by a combination of letters and/or numbers
  - Seven maximum allowable characters
- Space 4 - Aircraft data
  - Number of aircraft, if more than one
  - Heavy indicator, if appropriate
    - → "H" followed by slant (/)
  - Type aircraft

NOTE: JO 7110.65 par. 2-3-6 requires, in both automated and non-automated environments, the use of the approved aircraft type codes contained in Appendices A-C to indicate aircraft type.

  - Equipment suffix
    - → Appropriate letter preceded by slant (/) and following aircraft type indicating aircraft's transponder, DME, or RNAV capability

Continued on next page

PROPOSAL STRIP *(Continued)*

Proposal Strip (Cont'd)
JO 7110.65, pars. 2-3-6, 2-3-2, 2-3-8, table 2-3-10;

	No Transponder	Transponder – No Mode C	Transponder With Mode C
No DME	X	T	U
DME	D	B	A
TACAN Only	M	N	P
RNAV	Y	C	I

NOTE: Equipment suffix determines type of clearance/routing aircraft can accept. For example, a /X cannot accept a clearance with a DME crossing restriction and in a radar environment, a /X cannot ident for radar identification.

NOTE: The above chart lists **only** those suffixes most commonly used in ZAE nonradar labs. The complete chart from FAA Order JO 7110.65 is in Appendix C of this lesson.

- Space 5 - Filed true airspeed
  - "T" followed by two to four digits
  - "SC" = Speed Classified
- Space 16 - Departure arrow (↑)
- Space 19 - Fix and proposed departure time
  - Location identifier
  - "P" followed by 4-digit Proposal time (P-time)
- Space 21 - Next posted fix or coordination fix

Continued on next page

PROPOSAL STRIP *(Continued)*

Proposal Strip (Cont'd)
JO 7110.65, pars. 2-3-6, 2-3-2, 2-3-8, table 2-3-10;

- Space 24 - Requested altitude
  - Single altitude
    - → Two or three digits representing altitude in hundreds of feet
  - Altitude block
    - → "(Altitude)B(altitude)"
    - → Lowest altitude first
- Space 25 - Point of origin, route, and destination
  - Location identifier
  - Victor airways, jet routes, or direct routes
  - Estimated Time En Route (ETE) follows destination on general aviation departure aircraft
    - → To convert ETE to Estimated Time of Arrival (ETA), add ETE to departure time. General aviation pilots are required to file ETE.
- Space 26 - Pertinent remarks
  - Use plain language, or
  - Words/phrases/symbols contained in FAA Order JO 7110.65, par. 1-2-1

NOTE: KJAN proposal strips do not have a dedicated space for a MHZ VORTAC progress time. If a MHZ progress time is needed for separation, it must be recorded in space 26 using this format: MHZ/XXXX. KGWO proposal strips do not have a dedicated space for a SQS VORTAC progress time. If a SQS progress time is needed for separation, it must be recorded in space 26 using this format: SQS/XXXX.

☞ ***NOTE:*** *Examples: Minimum fuel, point out/radar vector/speed adjustment information or sector/position number (in accordance with FAA Order JO 7110.65, paragraph 2-2-1, or North American Route Program [NRP]).*

- Space 27 - Beacon code
  - Normally assigned by the computer

Continued on next page

PROPOSAL STRIP *(Continued)*

Proposal Strip (Cont'd)
JO 7110.65, pars. 2-3-6, 2-3-2, 2-3-8, table 2-3-10;

PROPOSAL STRIP EXAMPLES

UAL80 B721/A T420 66 **381** 01		↑ KJAN P1200		STUEE 160	KJAN MHZ V18 MLU KSHV **O** SLOW CLIMBER	1521
N1234 PA32/A T160 66 **244** 01		↑ KGWO P1200		MHZ 80	KGWO SQS V9 KMCB/0047 **O** NO OXYGEN	1541
N457 C172/A T150 66 **133** 01		↑ KVKS P1200		MLU 100	KVKS MLU V18 EIC KSHV/0110	1104 ZFW

7

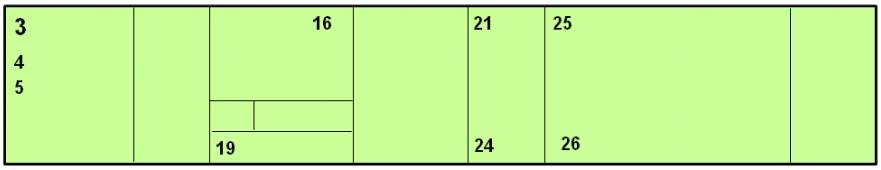
☞ ***NOTE:*** *Discuss examples with students.*

Continued on next page

PROPOSAL STRIP *(Continued)*

Knowledge Check

KNOWLEDGE CHECK



QUESTION: Filed True Airspeed is entered in space _____.

A. 5

B. 19

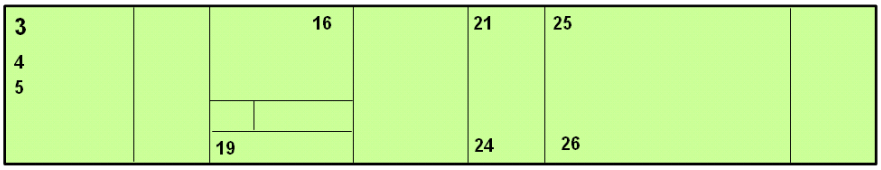
C. 24

8

☞ ***NOTE:*** *Click once to show answer.*

ANSWER: *A*

KNOWLEDGE CHECK



QUESTION: Proposed Departure Time is entered in space _____.

A. 19

B. 25

C. 26

9

☞ ***NOTE:*** *Click once to show answer.*

ANSWER: *A*

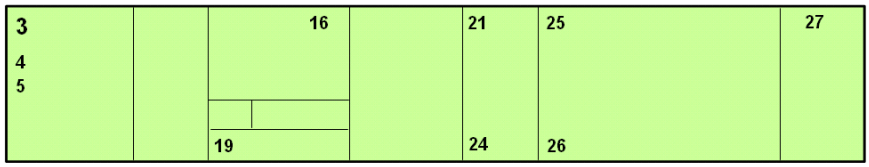
Continued on next page

PROPOSAL STRIP *(Continued)*

Knowledge Check (Cont'd)

KNOWLEDGE CHECK

QUESTION: What information is entered in the spaces on the strip below?



10

☞ ***NOTE:*** *Click 10 times to build graphic.*

ANSWERS:

Space 3 - Aircraft ID

Space 4 - Number of aircraft, heavy, type, and suffix

Space 5 - Filed true airspeed

Space 16 - Departure arrow

Space 19 - Fix identifier and proposed departure time

Space 21 - Next posted fix

Space 24 - Requested altitude

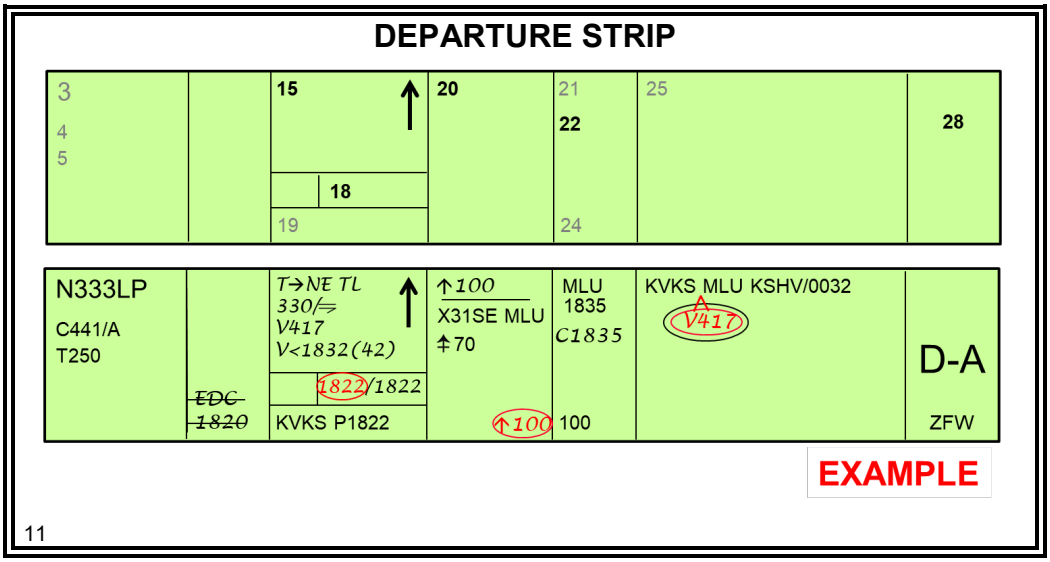
Space 25 - Point of origin, route, destination

Space 26 - Pertinent remarks

Space 27 - Beacon code

DEPARTURE STRIP

Departure Strip
JO 7110.65, par. 2-3-2



☞ ***NOTE:*** *Point out the following information and discuss examples with students.*

⊙ A departure strip should include the following information:

- Space 15 - Clearance information for departing aircraft
- Space 18 - Departure time (assumed and/or actual)
- Space 20 - Altitude information
  - Including restrictions
- Space 22 – Pilot's estimated time over next fix, Center estimated time over next fix (written in the format "C1234") under the pilot's estimated time.
- Space 28 - Miscellaneous control data
  - Clearance limit
- Spaces 29-30 - Transfer-of-control data and coordination indicator, if required

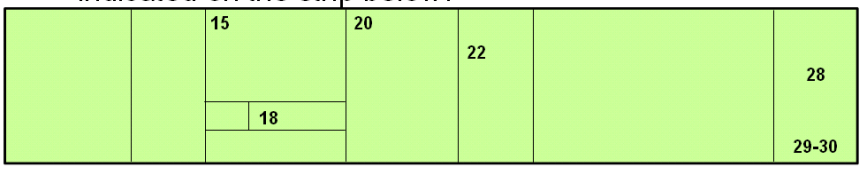
Continued on next page

DEPARTURE STRIP *(Continued)*

Knowledge Check

KNOWLEDGE CHECK

QUESTION: What information is displayed in the space indicated on the strip below?



12

☞ ***NOTE:*** *Click 7 times to build graphic.*

ANSWERS:

Space 15 - Clearance information for departing aircraft

Space 18 - Departure time (actual or assumed)

Space 20 - Altitude information

Space 22 – Pilot's estimated time over next fix, Center estimated time over next fix

Space 28 - Miscellaneous control data

Spaces 29-30 - Transfer-of-control data and Coordination indicator

Continued on next page

DEPARTURE STRIP *(Continued)*

Knowledge Check (Cont'd)

KNOWLEDGE CHECK

N3326X C182/A T120 66 01		↑ KJAN P1640		GLH 80	KJAN MHZ V74 KPBF/0115	
N2340 C177/A T100 66 01		↑ KVKS P1642		MHZ 70	KVKS MHZ V18 KMEI/0105	

13

☞ ***NOTE:*** *Click 2 times to show answers.*

☞ ***NOTE:*** *Explain to students that "0115" and "0105" indicated at the end of the routes in the strips above are* ***not*** *the total number of minutes, but rather the hour (first two digits) and minutes (last two digits). For example, "0115" represents 1 hour and 15 minutes.*

ANSWER: *1755*

ANSWER: *1747*

Continued on next page

DEPARTURE STRIP *(Continued)*

Knowledge Check (Cont'd)

KNOWLEDGE CHECK

QUESTION: Determine the ETA for each aircraft on the the strips below. (Use the P time as the departure time.)

N27652 BL17/A T130 66 01		↑ KGWO P1443		GLH 80	KGWO SQS V278 KTXK/0134	
N4343L BE30/G T280 66 01		↑ KJAN P1320		HEZ 160	KJAN MHZ V245 KAEX/0036	ZHU

14

☞ ***NOTE:*** *Click 2 times to show answers.*

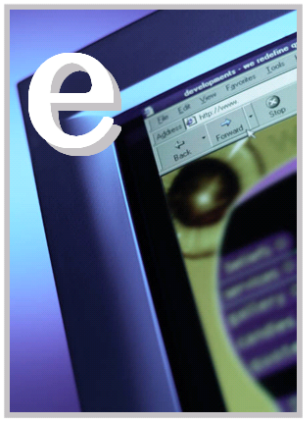
ANSWER: *1617*

ANSWER: *1356*

DEPARTURE STRIP *(Continued)*

Activity 1

PROPOSAL/DEPARTURE STRIP ACTIVITY



Purpose: to practice identifying and labeling designated spaces on proposal and departure strips

15

☞ ***NOTE:*** *Have the students access the IET eLearning menu and select the Proposal/Departure Strip activity for Lesson 5.*

Description

In this activity, you will practice identifying and labeling designated spaces on proposal and departure strips.

Directions

Access the IET eLearning menu. Select **Lesson 5 – Flight Progress Strips**. Click on the title to launch the **Proposal/Departure Strip** activity.

Time Allotted

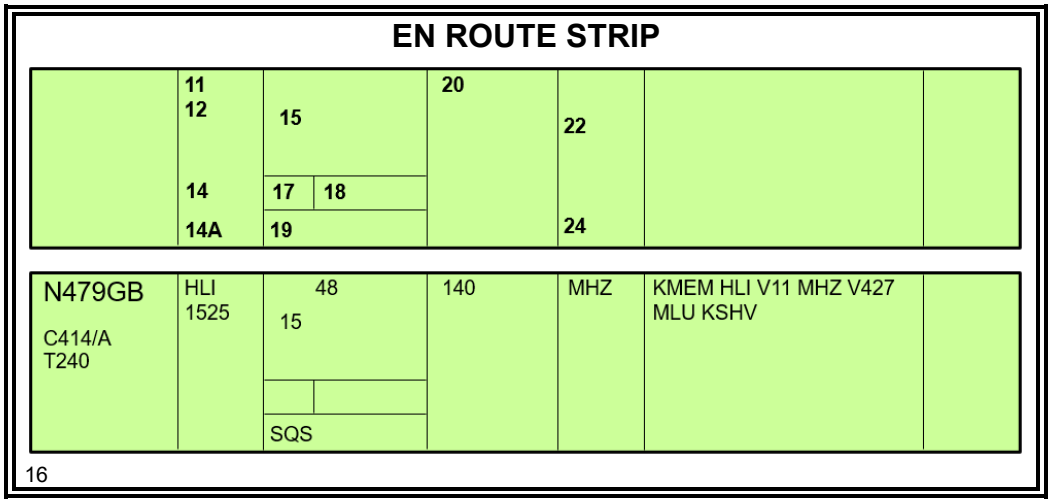
10 minutes

☞ ***NOTE:*** *Refer to Appendix D for the Instructor Key for this eLearning activity.*

☞ ***NOTE:*** *Remember to disable the eLearning after the students complete the eLearning.*

EN ROUTE STRIP

En Route Strip
JO 7110.65, par. 2-3-2



☞ ***NOTE:*** *Discuss examples with students.*

⊙ An en route strip should include the following information:

- Space 11 - Previous fix
- Space 12 - Estimated time over previous fix

NOTE: The time in Space 12 of an en route flight strip is usually a center estimate.

- Space 14A - Plus time expressed in minutes from the previous fix to the posted fix
  - Determined by the distance between the two fixes and the speed of the aircraft using the Quick Estimate Method

NOTE: Calculations for Plus Time and Post Fix Estimates will be explained in subsequent slides.

- Space 15 - Center estimate over the posted fix
- Space 19 - Posted fix
- Space 20 - Altitude information

Continued on next page

EN ROUTE STRIP *(Continued)*

En Route Strip (Cont'd)
JO 7110.65, par. 2-3-2

⊙ An en route strip may also include the following information:

- Space 14 - Actual departure time entered on first fix posting after departure
- Space 17 - Pilot-estimated time over fix
- Space 18 - Actual time over fix
- Space 22 – Pilot's estimated time over next fix, center estimated time over next fix (calculate center estimates only when you need to prove separation)
- Space 24 – Requested Altitude

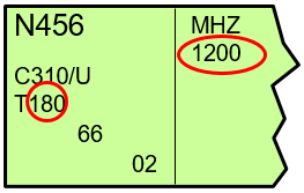
Quick Estimate Method

DETERMINE DISTANCE TRAVELED

DT = MPM x TM

Example:

12:07



18 / 6 = 3 (MPM)

1207 - 1200 = 7 (TM)

3 x 7 = 21 (DT)

The aircraft has flown 7 minutes past MHZ at 3 miles per minute and should be approximately 21 miles past MHZ.

17

☞ ***NOTE:*** *Click 4 times to build graphic.*

⊙ Quick Estimate Method

- Use this method to determine the distance an aircraft will travel in an allotted time
  - Divide the first two digits of the aircraft's speed by 6 to determine Miles Per Minute (MPM)
  - Distance Traveled (DT) equals MPM multiplied by Time in Minutes (TM)

NOTE: Time in minutes comes from difference between fix time and clock time.

Example: An aircraft has a MHZ estimate of 1200. Clock time is 1207. True airspeed is 180 knots (3 miles per minute). Aircraft has flown 7 minutes past MHZ at 3 miles per minute and should be approximately 21 miles past MHZ.

DT = 3 x 7
DT = 21 miles

Continued on next page

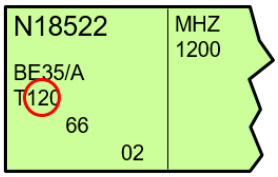
EN ROUTE STRIP *(Continued)*

Quick Estimate Method (Cont'd)

DETERMINE CENTER ESTIMATES

$$TM = \frac{DT}{MPM}$$

Example:



58 = DT between MHZ and SQS

12 / 6 = 2 MPM

58 / 2 = 29 (TM)

The aircraft is traveling 58 miles (DT) between MHZ and SQS at 2 miles per minute (MPM). The time in minutes for this travel is 29 minutes, which added to the MHZ estimate of 1200, means the estimate for SQS is 1229.

18

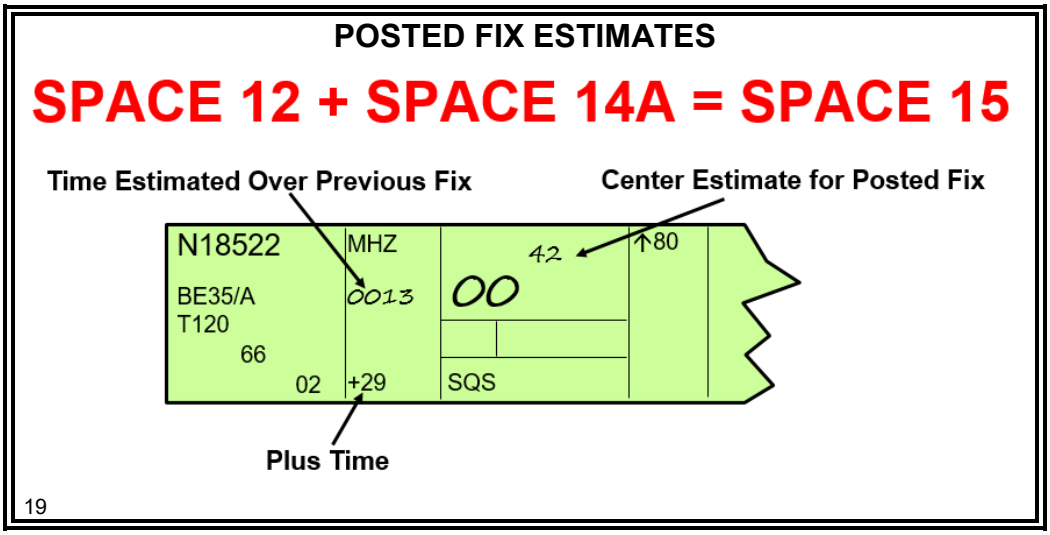
☞ ***NOTE:*** *Click 3 times to build graphic.*

- Use this method to compute center estimates at fixes

Continued on next page

EN ROUTE STRIP *(Continued)*

Post Fix Estimate



⊙ Use this method to compute posted fix estimates.

- Time estimated over the previous fix added to the plus time results in the center estimate for the posted fix

☞ ***NOTE:*** *Show an example on the board.*

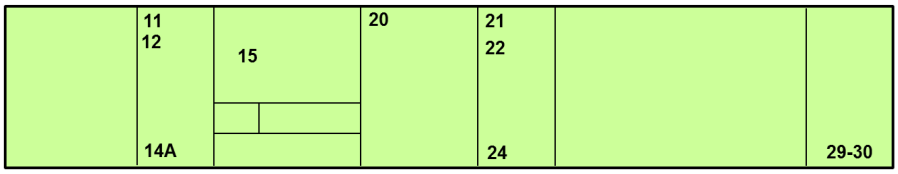
Continued on next page

EN ROUTE STRIP *(Continued)*

Knowledge Check

KNOWLEDGE CHECK

QUESTION: What information is displayed in the following spaces of an en route strip?



20

☞ ***NOTE*:** *Click 9 times to show answers.*

ANSWERS:

Space 11 - Previous fix

Space 12 - Previous fix estimate

Space 14A - Plus time

Space 15 - Center estimate for posted fix

Space 20 - Altitude information

Space 21 - Next fix

Space 22 – Pilot's estimated time over next fix, center estimated time over next fix (calculate center estimates only when you need to prove separation)

Space 24 – Requested altitude

Spaces 29-30 - Coordination indicator

Continued on next page

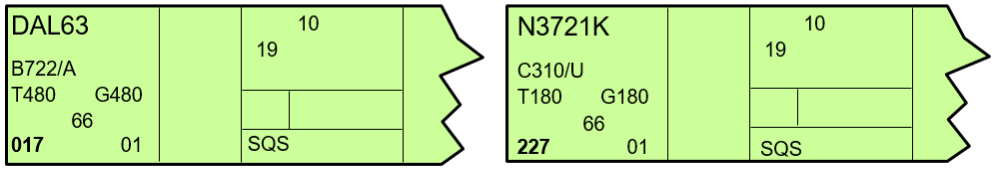
EN ROUTE STRIP *(Continued)*

Knowledge Check (Cont'd)

KNOWLEDGE CHECK

Using the strips below and the Quick Estimate Method, answer the following questions:

Time: 1905



21

☞ ***NOTE:*** *Click 8 times to display questions and answers.*

QUESTION: How many MPM is DAL63 traveling?

ANSWER: *8 MPM*

QUESTION: Approximately how far from SQS is DAL63?

ANSWER: *40 miles*

QUESTION: How many MPM is N3721K traveling?

ANSWER: *3 MPM*

QUESTION: Approximately how far from SQS is N3721K?

ANSWER: *15 miles*

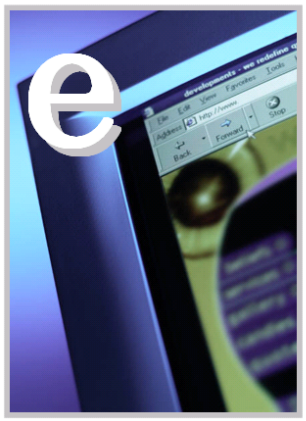
☞ ***NOTE:*** *Show students the MPM chart used for nonradar.*

Continued on next page

EN ROUTE STRIP *(Continued)*

Activity 2

EN ROUTE STRIP ACTIVITY



Purpose: to practice identifying and labeling designated spaces on en route strips

22

☞ ***NOTE:*** *Have the students access the IET eLearning menu and select the En Route Strip activity for Lesson 5.*

Description

In this activity, you will practice identifying and labeling designated spaces on en route strips.

Directions

Access the IET eLearning menu. Select **Lesson 5 – Flight Progress Strips**. Click on the title to launch the **En Route Flight Strips** activity.

Time Allotted

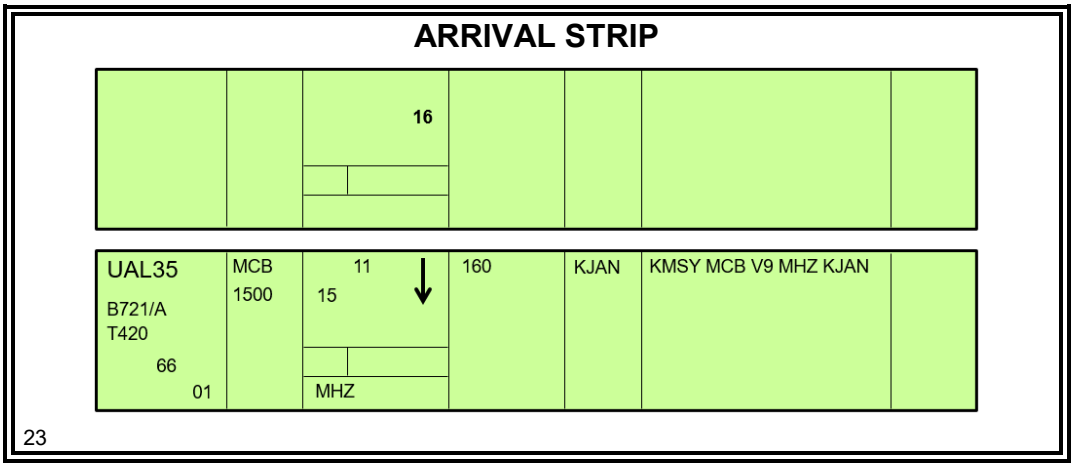
10 minutes

☞ ***NOTE:*** *Refer to Appendix D for the Instructor Key for this eLearning activity.*

☞ ***NOTE:*** *Remember to disable the eLearning after the students complete the eLearning.*

ARRIVAL STRIP

Arrival Strip
JO 7110.65,
par. 2-3-2



☞ ***NOTE:*** *Discuss examples with students.*

⊙ An arrival strip should include the following information:

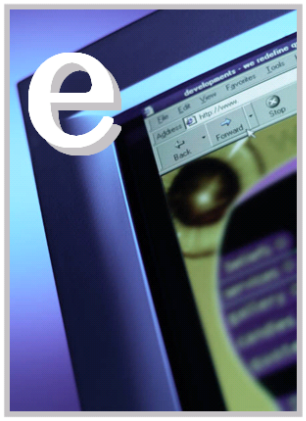
- Space 16 - Arrival arrow (↓)

Continued on next page

ARRIVAL STRIP *(Continued)*

Activity 3

ARRIVAL STRIP ACTIVITY



Purpose: to practice identifying and labeling designated spaces on arrival strips

24

☞ ***NOTE:*** *Have the students access the IET eLearning menu and select the Arrival Strip activity for Lesson 5.*

Description

In this activity, you will practice identifying and labeling designated spaces on arrival strips.

Directions

Access the IET eLearning menu. Select **Lesson 5 – Flight Progress Strips**. Click on the title to launch the **Arrival Strip** activity.

Time Allotted

10 minutes

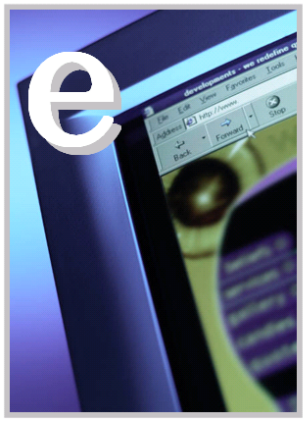
☞ ***NOTE:*** *Refer to Appendix D for the Instructor Key for this eLearning activity.*

☞ ***NOTE:*** *Remember to disable the eLearning after the students complete the eLearning.*

FLIGHT PROGRESS STRIP CHALLENGE

Activity 4

FLIGHT PROGRESS STRIP CHALLENGE ACTIVITY



Purpose: to practice identifying and labeling designated spaces on proposal, en route, and arrival strips

25

☞ ***NOTE:*** *Have the students access the IET eLearning menu and select the Flight Progress Strip Challenge activity for Lesson 5.*

Description

In this activity, you will practice identifying and labeling designated spaces on proposal, en route, and arrival strips.

Directions

Access the IET eLearning menu. Select **Lesson 5 – Flight Progress Strips**. Click on the title to launch the **Flight Progress Strip Challenge** activity.

Time Allotted

15 minutes

☞ ***NOTE:*** *Refer to Appendix D for the Instructor Key for this eLearning activity.*

☞ ***NOTE:*** *Remember to disable the eLearning after the students complete the eLearning.*

EXERCISE 1: IDENTIFYING INFORMATION ON FLIGHT PROGRESS STRIPS

Exercise 1

IDENTIFYING INFORMATION ON FLIGHT PROGRESS STRIPS EXERCISE

Purpose: to practice identifying information on flight progress strips

Directions: review provided strips and answer the corresponding questions

26

Directions

Items 1 through 15 are short answer. Review the strips provided to answer the questions. All strips in this exercise would be posted in the same bay. Some questions refer to more than one strip. Write your answers in the spaces provided.

Questions

EXERCISE 1 STRIPS – Q1, Q2, Q3

N6264L BE35/A T130 66 02	DORTS 1401	26 14 MHZ	70	KJAN	KMLU V417 MHZ KJAN/1431	

27

QUESTION 1: What is N6264L's filed true airspeed?

ANSWER: *130*

QUESTION 2: What type of strip is this?

ANSWER: *Arrival*

QUESTION 3: What is the assigned altitude for N6264L?

ANSWER: *70*

Continued on next page

EXERCISE 1: IDENTIFYING INFORMATION ON FLIGHT PROGRESS STRIPS (*Continued*)

Questions (Cont'd)

EXERCISE 1 STRIPS – Q4, Q5

N215LJ LJ24/A T400 66 01		↑ KJAN P1410		STUEE 160	KJAN MHZ V18 MLU KMLU/0017	

28

QUESTION 4: What is the next fix for N215LJ?

ANSWER: *STUEE*

QUESTION 5: What type of strip is this?

ANSWER: *Proposal*

EXERCISE 1 STRIPS – Q6, Q7, Q8

LN43X PA24/I T220 66 04	SQS 1418	33 14 MHZ	170	MCB	KMEM./.SQS V9 MCB RYTHM3 KMSY/1527	ZHU

29

QUESTION 6: What is the filed true airspeed for LN43X?

ANSWER: *220*

QUESTION 7: What type of strip is this?

ANSWER: *En route*

QUESTION 8: To which facility has flight plan information been forwarded?

ANSWER: *ZHU (Houston Center)*

Continued on next page

EXERCISE 1: IDENTIFYING INFORMATION ON FLIGHT PROGRESS STRIPS *(Continued)*

Questions (Cont'd)

EXERCISE 1 STRIPS – Q9, Q10

CGFPL M20P/A T140 66 01		↑ KJAN P1428		GLH 120	KJAN MHZ V74 KPBF/0108	
N6264L BE35/A T130 66 02	DORTS 1401	26 14 ↓ MHZ	70	KJAN	KMLU V417 MHZ KJAN	

30

QUESTION 9: If CGFPL is ready to depart at the proposed time, will it depart before N6264L arrives at MHZ VORTAC?

ANSWER: *No*

QUESTION 10: What type of strip is CGFPL?

ANSWER: *Proposal*

EXERCISE 1 STRIPS – Q11, Q12

N555SC C425/A T240 66 03	GLH 1408	27 14 MHZ	160	MCB	KPBF V74 MHZ V9 KMCB/1445	ZHU

31

QUESTION 11: What is the previous fix for N555SC?

ANSWER: *GLH*

QUESTION 12: What type of strip is this?

ANSWER: *En route*

Continued on next page

EXERCISE 1: IDENTIFYING INFORMATION ON FLIGHT PROGRESS STRIPS *(Continued)*

Questions (Cont'd)

EXERCISE 1 STRIPS – Q13, Q14, Q15

FDX1726 B772/A T440 66 03	MEI 1419	32 14 MHZ	160	STUEE	KATL MEI V18 MLU KSHV	

32

QUESTION 13: What is the posted fix for FDX1726?

ANSWER: *MHZ*

QUESTION 14: What type of strip is this?

ANSWER: *En route*

QUESTION 15: If the time is now 1400, in how many minutes is FDX1726 expected over the posted fix?

ANSWER: *32*

EXERCISE 2: COMPUTING AND RECORDING PLUS TIMES AND ESTIMATES

Exercise 2

COMPUTING AND RECORDING PLUS TIMES AND ESTIMATES EXERCISE

Purpose: to practice computing plus times and posted fix estimates

Directions: review provided strips and determine plus times or posted fix estimates as appropriate

33

Directions

For items 1 through 6, use the strips provided to compute the plus times for inactive flights and posted fix estimates for active flights. Write your answers in the spaces provided. Refer to the Aero Center map to obtain mileages.

☞ ***NOTE:*** *Students will need to use values from the MPM chart.*

☞ ***NOTE:*** *After students have completed the exercise, you may select students to write answers on the board or show students answers using the graphics. Click the button once to make the answer appear on the strip in each graphic. Student's answers should be within plus or minus one minute.*

Continued on next page

EXERCISE 2: COMPUTING AND RECORDING PLUS TIMES AND ESTIMATES *(Continued)*

Questions

1. COMPUTE THE PLUS TIME

N172 C210/A T185 66 02	KVKS P1225	 MHZ		SQS 90	KVKS MHZ V9 SQS KGWO/0042

34

☞ ***NOTE:*** *Click once to show answer.*

ANSWER: *+14*

NOTE: VKS-MHZ approximately 42 miles

2. COMPUTE THE PLUS TIME

N172 C210/A T185 66 03	MHZ	↓ SQS		KGWO 90	KVKS MHZ V9 SQS KGWO/0042

35

☞ ***NOTE:*** *Click once to show answer.*

ANSWER: *+19*

Continued on next page

EXERCISE 2: COMPUTING AND RECORDING PLUS TIMES AND ESTIMATES *(Continued)*

Questions (Cont'd)

3. COMPUTE THE PLUS TIME

AAL7 MD82/L T420 66 02	KJAN P1430 +11	 STUEE		MLU 160	KJAN MHZ V18 MLU CQY6 KDFW	 ZFW

36

☞ ***NOTE:*** *Click once to show answer.*

ANSWER: *+11*

4. COMPUTE THE FIX ESTIMATE

N44AS BE9L/A T250 66 02	GLH 1026	↓ MHZ	110	KJAN	KPBF V74 MHZ KJAN	

37

☞ ***NOTE:*** *Click once to show answer.*

ANSWER: *1045*

Continued on next page

EXERCISE 2: COMPUTING AND RECORDING PLUS TIMES AND ESTIMATES *(Continued)*

Questions (Cont'd)

5. COMPUTE THE FIX ESTIMATE

A31748 A10/P T310 66 02	IGB 1421	↓ SQS	100	KGWO	KCBM IGB V278 SQS KGWO

38

☞ ***NOTE:*** *Click once to show answer.*

ANSWER: *1439*

6. COMPUTE THE FIX ESTIMATE

N68TR C182/A T185 66 01	HEZ 1748	↓ MHZ	70	KJAN	KAEX V245 MHZ KJAN

39

☞ ***NOTE:*** *Click once to show answer.*

ANSWER: *1814*

EXERCISE 3: RECORDING FLIGHT PLANS AND DETERMINING FIX POSTINGS

Exercise 3

RECORDING FLIGHT PLANS AND DETERMINING FIX POSTING EXERCISE

Purpose: to practice recording flight plans and determining fix postings

Directions: copy flight progress strips read by your instructor, determine fix postings, and then prepare flight progress strips

40

Part 1 Directions

Your instructor will read ten flight plans, which you will copy on the **bottom** strip on each of the next ten pages.

☞ ***NOTE:*** *Walk through the first strip (Parts 1 and 2) with students and then have them complete the rest of the exercise individually.*

☞ ***NOTE:*** *Read the first flight plan strip of each item to students. Have them record the flight plan information on the first strip for each item. When reading the flight plans, do **not** give next fix and estimate. Students will determine fixes and estimates in Part 2. Give **only**:*

- *Previous fix and estimate, or*
- *Departure airport and proposed time*

Continued on next page

EXERCISE 3: RECORDING FLIGHT PLANS AND DETERMINING FIX POSTINGS *(Continued)*

Part 2 Directions

You will use the flight plan proposal information copied in Part 1 of this exercise to determine the fix posting(s) required. Using the blank strips supplied in Part 1, copy the estimates and prepare all required strips for each of the ten flight plans. You may **not** need to use all the strips provided. Also, you may want to remove the pages from your binder for ease of use during this exercise.

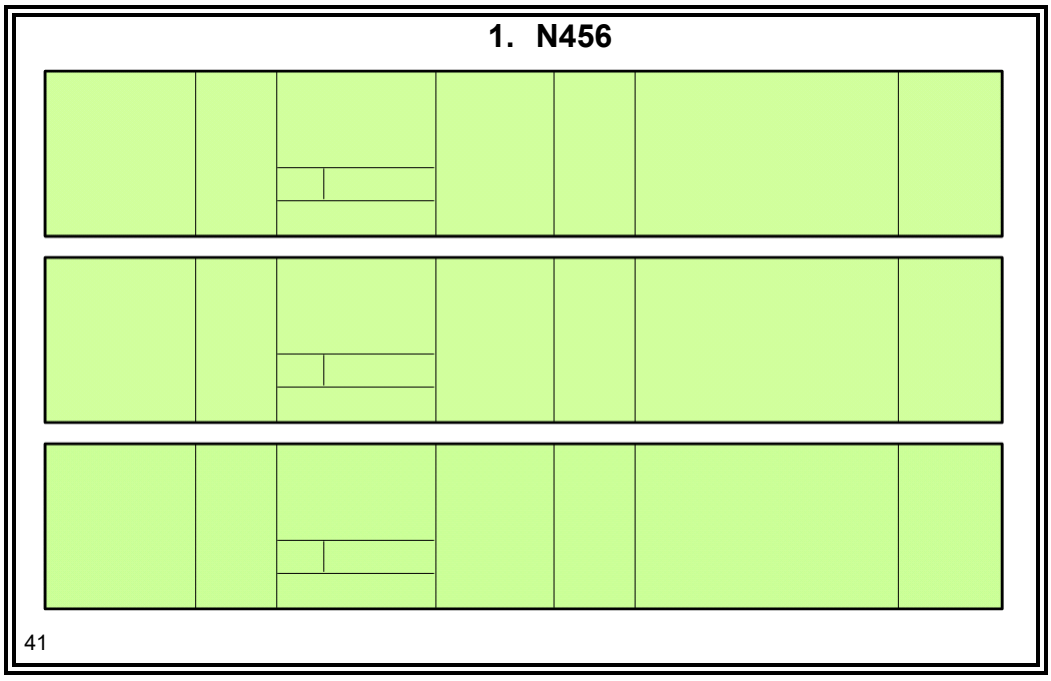
☞ ***NOTE:*** *After students have completed Parts 1 and 2, you may select students to write answers on the board or show students answers using the graphics. Click the button once to make the answers appear on the strips in each graphic. Have students correct their strips.*

☞ ***NOTE:*** *ETEs/ETAs omitted on purpose.*

Continued on next page

EXERCISE 3: RECORDING FLIGHT PLANS AND DETERMINING FIX POSTINGS *(Continued)*

Strips



ANSWER:

N456 C310/U T180	MHZ +16	↓ DORTS		VKS 100	KGWO SQS V9 MHZ V417 DORTS VKS KVKS
N456 C310/U T180	KGWO P0700 +22	 MHZ		DORTS 100	KGWO SQS V9 MHZ V417 DORTS VKS KVKS
N456 C310/U T180		↑ KGWO P0700		MHZ 100	KGWO SQS V9 MHZ V417 DORTS VKS KVKS

Continued on next page

EXERCISE 3: RECORDING FLIGHT PLANS AND DETERMINING FIX POSTINGS *(Continued)*

Strips (Cont'd)

2. AHAB56

42

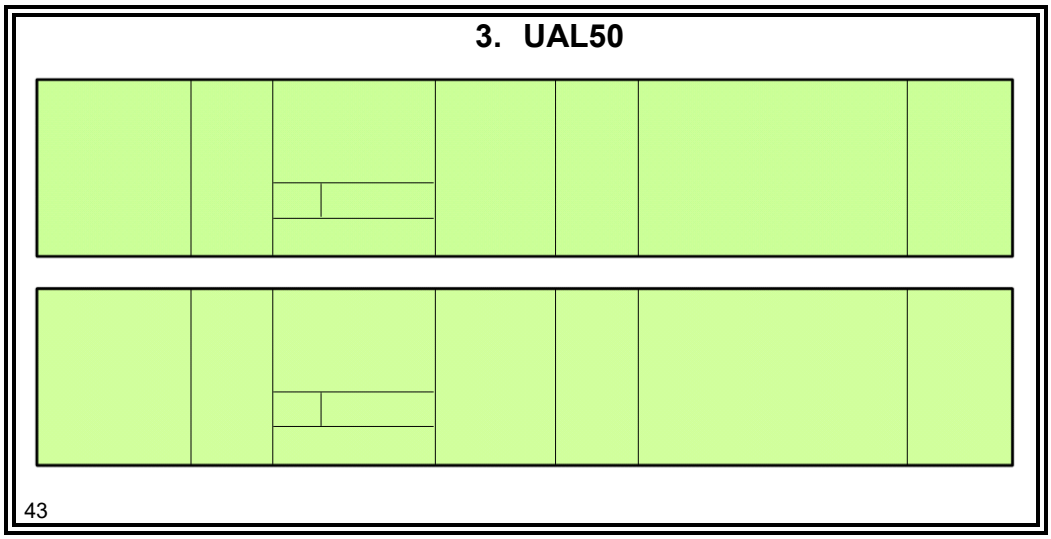
ANSWER:

AHAB56 H/B52/I T440	KGWO P1630 +11	 MHZ		MEI 170	KGWO SQS V9 MHZ V18 KMEI	
AHAB56 H/B52/I T440		↑ KGWO P1630		MHZ 170	KGWO SQS V9 MHZ V18 KMEI	

Continued on next page

EXERCISE 3: RECORDING FLIGHT PLANS AND DETERMINING FIX POSTINGS *(Continued)*

Strips (Cont'd)



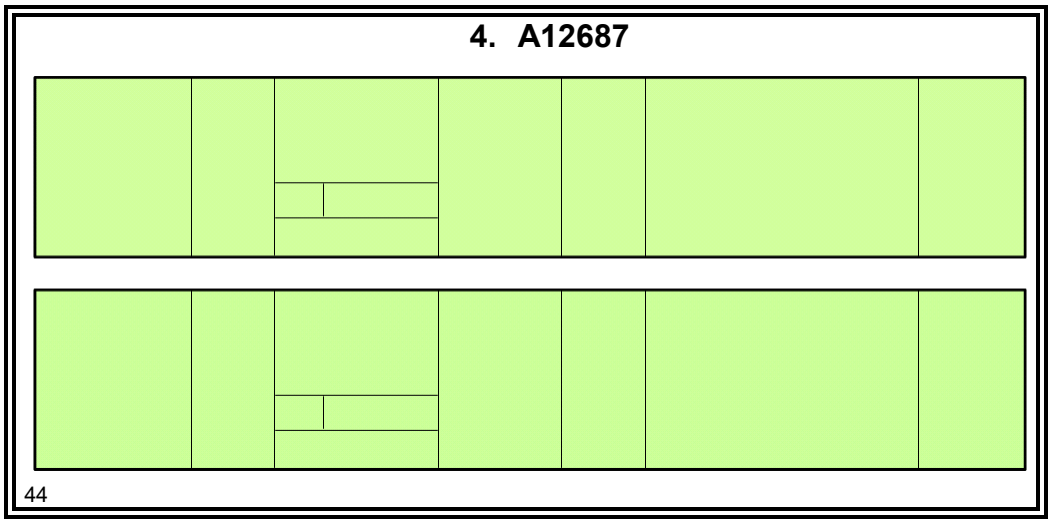
ANSWER:

UAL50 B722/A T450	KJAN P1630 +8	SQS		HLI 170	KJAN MHZ V9 SQS V11 HLI KMEM	
UAL50 B722/A T450		↑ KJAN P1630		SQS 170	KJAN MHZ V9 SQS V11 HLI KMEM	

Continued on next page

EXERCISE 3: RECORDING FLIGHT PLANS AND DETERMINING FIX POSTINGS *(Continued)*

Strips (Cont'd)



ANSWER:

A12687 C130/A T320	GLH +7	↓ SQS		KGWO 100	KJAN MHZ V74 GLH V278 SQS KGWO TEST FLIGHT
A12687 C130/A T320		↑ KJAN P1700		GLH 100	KJAN MHZ V74 GLH V278 SQS KGWO TEST FLIGHT

Continued on next page

EXERCISE 3: RECORDING FLIGHT PLANS AND DETERMINING FIX POSTINGS *(Continued)*

Strips (Cont'd)

5. N273X

45

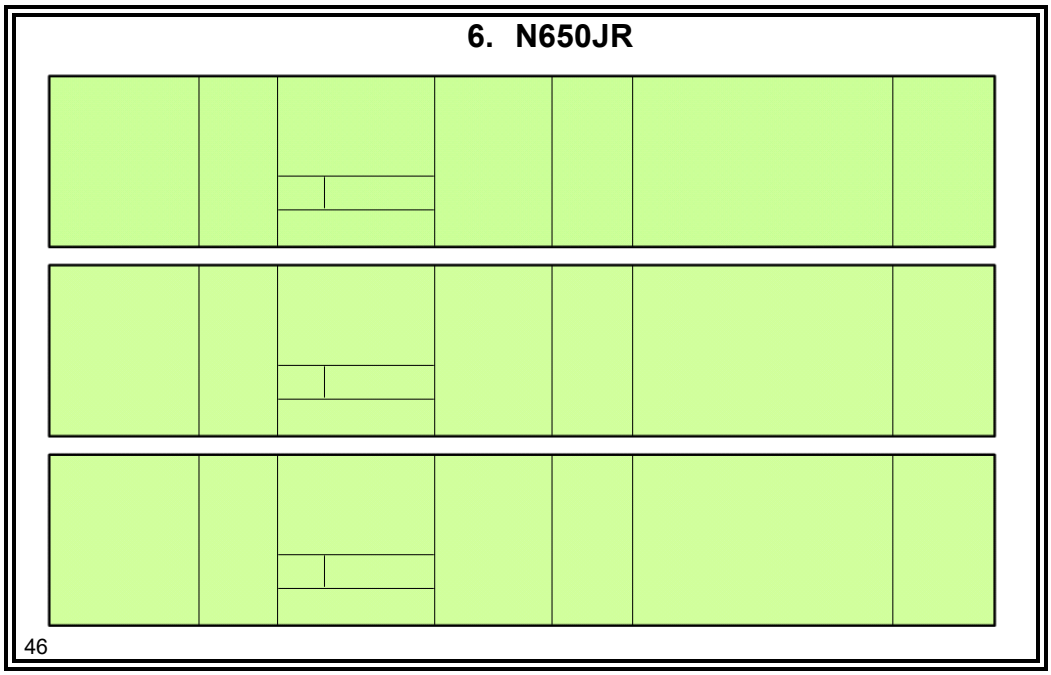
ANSWER:

N273X C340/A T190	KVKS P1630 +16	 MHZ		MCB 150	KVKS MHZ V9 KMCB	 ZHU
N273X C340/A T190		 ↑ KVKS P1630		MHZ 150	KVKS MHZ V9 KMCB	

Continued on next page

EXERCISE 3: RECORDING FLIGHT PLANS AND DETERMINING FIX POSTINGS *(Continued)*

Strips (Cont'd)



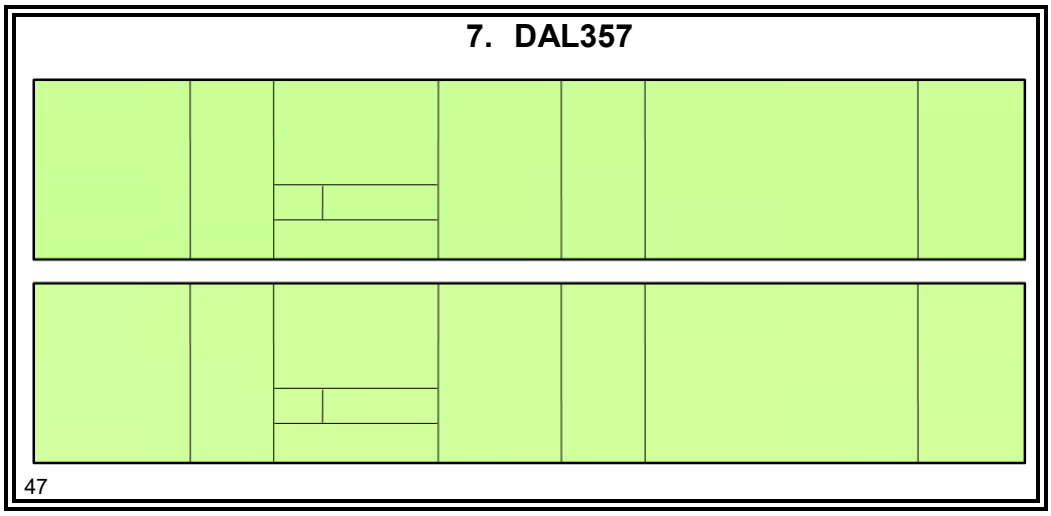
ANSWER:

N650JR LJ25/G T420	MHZ +7	HATER		MLU 160	KGWO SQS V11 MHZ V427 MLU KSHV	ZFW
N650JR LJ25/G T420	KGWO P1420 +11	MHZ		HATER 160	KGWO SQS V11 MHZ V427 MLU KSHV	
N650JR LJ25/G T420		↑ KGWO P1420		MHZ 160	KGWO SQS V11 MHZ V427 MLU KSHV	

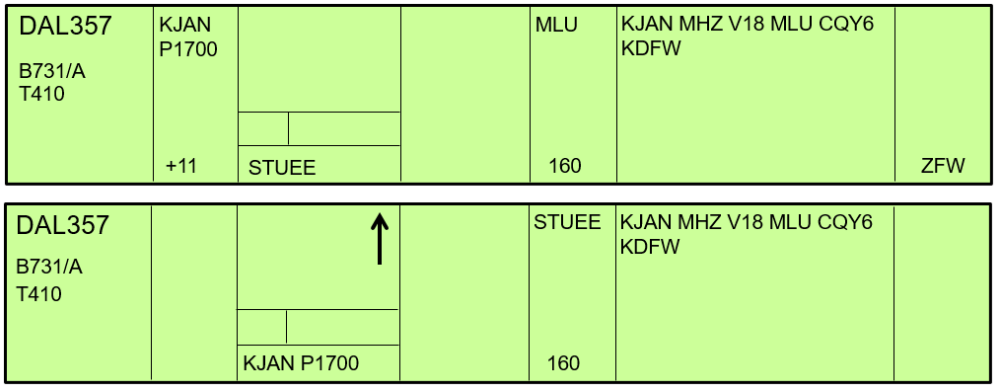
Continued on next page

EXERCISE 3: RECORDING FLIGHT PLANS AND DETERMINING FIX POSTINGS *(Continued)*

Strips (Cont'd)



ANSWER:



Continued on next page

EXERCISE 3: RECORDING FLIGHT PLANS AND DETERMINING FIX POSTINGS *(Continued)*

Strips (Cont'd)

8. N15T

48

ANSWER:

N15T C310/A T180	KJAN P1122 +28	↓ STUEE		MLU 80	KJAN MHZ V18 MLU KMLU	
N15T C310/A T180		↑ KJAN P1122		STUEE 80	KJAN MHZ V18 MLU KMLU	

Continued on next page

EXERCISE 3: RECORDING FLIGHT PLANS AND DETERMINING FIX POSTINGS *(Continued)*

Strips (Cont'd)

9. N320PB

49

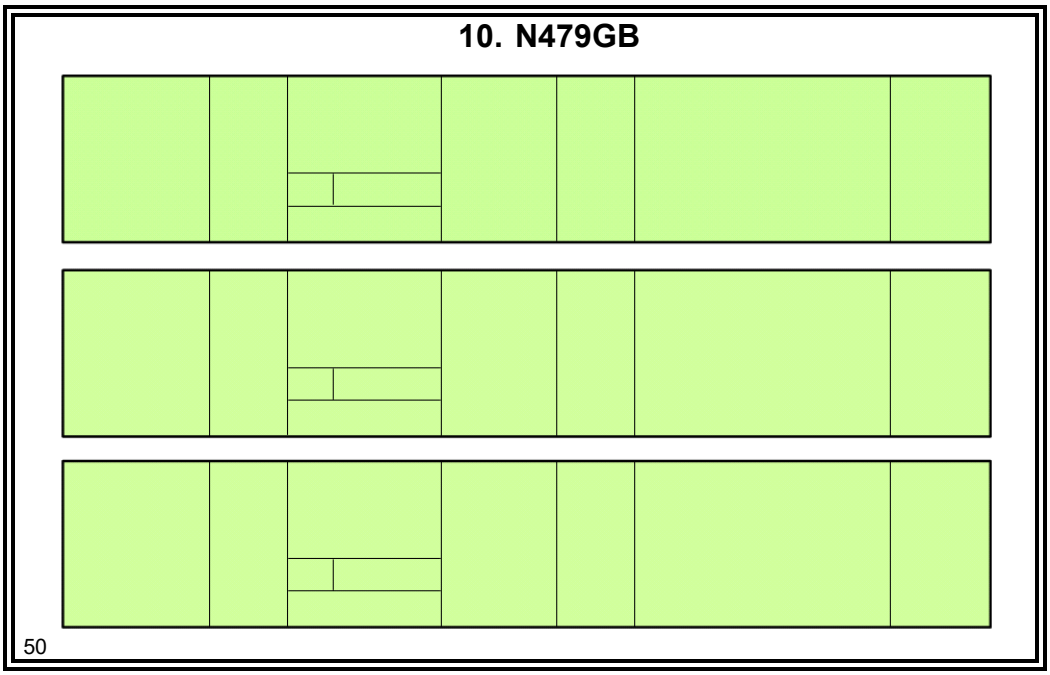
ANSWER:

N320PB C340/A T200	MHZ 1843	02 19 SQS	110	UJM	KSHV MLU V18 MHZ V9 UJM KMEM	
N320PB C340/A T200	STUEE 1818	43 18 MHZ	110	SQS	KSHV MLU V18 MHZ V9 UJM KMEM	
N320PB C340/A T200	MLU 1812	18 18 STUEE	110	MHZ	KSHV MLU V18 MHZ V9 UJM KMEM	

Continued on next page

EXERCISE 3: RECORDING FLIGHT PLANS AND DETERMINING FIX POSTINGS *(Continued)*

Strips (Cont'd)



ANSWER:

N479GB C414/A T240	MHZ 1602	14 16 HATER	140	MLU	KMEM HLI V535 SQS V11 MHZ V427 MLU KSHV	ZFW
N479GB C414/A T240	SQS 1548	02 16 MHZ	140	HATER	KMEM HLI V535 SQS V11 MHZ V427 MLU KSHV	
N479GB C414/A T240	HLI 1525	48 15 SQS	140	MHZ	KMEM HLI V535 SQS V11 MHZ V427 MLU KSHV	

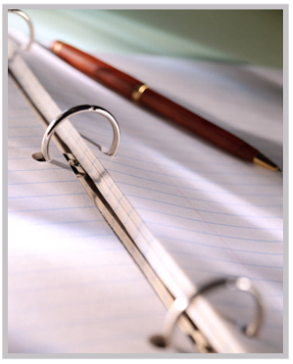
IN CONCLUSION

Lesson Review

LESSON REVIEW

The following topics were covered in this lesson:

- Fix postings for departure, arrival, and en route aircraft
- Designated spaces for data entries and control symbols
- Calculating estimates using plus times



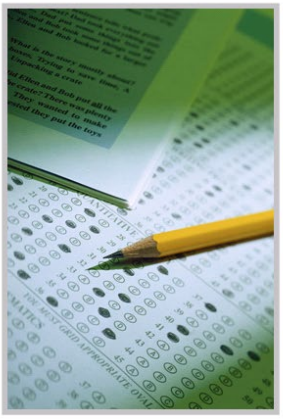
51

☞ ***NOTE:*** *Teach from graphic. Review and elaborate briefly on the topics covered in this lesson.*

End-of-Lesson Test

END-OF-LESSON TEST

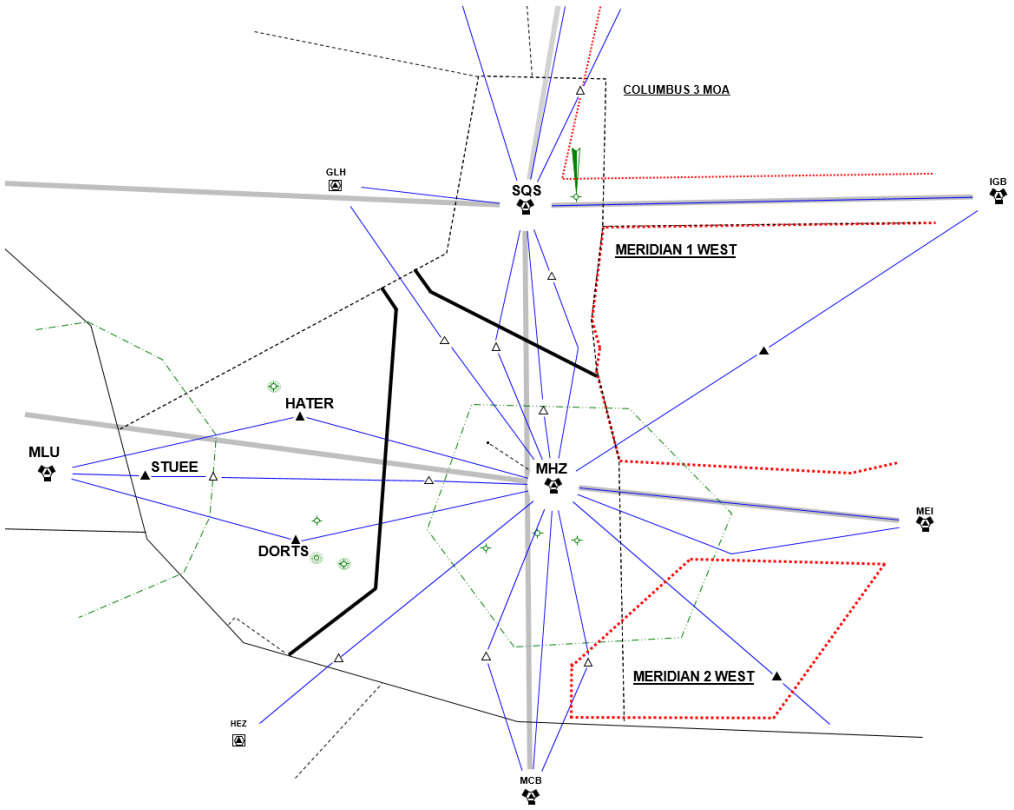
Flight Progress Strips



52

APPENDIX A: FIX POSTING AREAS

Fix Posting Areas

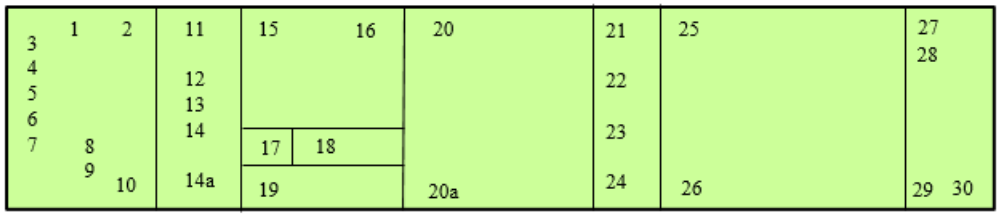


JAN Low Fix Postings

V9	SQS MHZ
V11	SQS MHZ
V18	STUEE MHZ
V74	MHZ
V245	MHZ
V278	SQS
V417	DORTS MHZ
V427	HATER MHZ
V535	SQS
V555	SQS MHZ
V557	SQS MHZ

APPENDIX B: FLIGHT PROGRESS STRIP FOR EN ROUTE DATA ENTRIES

Flight Progress Strip Spaces
JO 7110.65, par. 2-3-2



⊙ This is a nonradar strip.

Key

SPACE	CONTENT
1	Verification symbol, if required
2	Revision number (**Not** used in ERAM)
3	Aircraft Identification (AID)
4	Number of aircraft if more than one, Heavy Aircraft indicator if appropriate, type of aircraft, and equipment suffix H/ - Heavy
5	Filed true airspeed
6	Sector number
7	Computer Identification (CID) number, if required
8	Estimated ground speed
9	Revised ground speed or Strip Request (SR) originator
10	Strip number
11	Previous fix
12	Estimated time over previous fix
13	Revised estimated time over previous fix
14	Actual time over previous fix, or actual departure time entered on first fix posting after departure
14a	Plus time expressed in minutes from the previous fix to the posted fix
15	Center-estimated time over fix (in hours and minutes) or clearance information for departing aircraft
16	Arrows to indicate if aircraft is departing (↑) or arriving (↓)
17	Pilot-estimated time over fix

Continued on next page

APPENDIX B: FLIGHT PROGRESS STRIP FOR EN ROUTE DATA ENTRIES *(Continued)*

Key (Cont'd)

SPACE	CONTENT
18	Actual time over fix, time leaving holding fix, arrival time at nonapproach control airport if space 19 is the airport, or symbol indicating cancellation of IFR flight plan for arriving aircraft, or departure time (actual or assumed)
19	Fix (for departing aircraft, add proposed departure time)
20	Altitude information (in hundreds of feet)
20a	**OPTIONAL USE,** when voice recorders are operational; **REQUIRED USE,** when the voice recorders are not operating and strips are being use at the facility. This space is used to record reported RA events. The letters RA followed by a climb or descent arrow (if the climb or descent action is reported) and the time (hhmm) the event is reported.
21	Next posted fix or coordination fix
22	Pilot's estimated time over next fix, or arrival time (at non approach control airport) if space 21 is the airport.
23	Arrows to indicate north (↑), south (↓), east (→), or west (←) direction of flight if required
24	Requested altitude
25	Point of origin, route as required for control and data relay, and destination
26	Pertinent remarks, minimum fuel, point out/radar vector/speed adjustment information or sector/position number (when applicable in accordance with JO 7110.65, paragraph 2-2-1, or NRP
27	Mode 3/A beacon code, if applicable
28	Miscellaneous control data (expected further clearance time, time cleared for approach, etc.)
29-30	Transfer-of-control data and Coordination indicators

⊙ Facility air traffic managers may authorize the optional use of spaces 13, 14, 14a, 22, 23, 24, and 28 for point out information, radar vector information, speed adjustment information, or transfer-of-control data.

APPENDIX C: EQUIPMENT QUALIFIERS

Equipment Qualifiers
JO 7110.65, par. 2-3-8, table 2-3-10

Separation Standard	Navigation Capability	Transponder Capability	Suffix
RVSM	Any	Failed Transponder	/H
	Any	Failed Mode C	/O
	No RNAV, No GNSS	Transponder with Mode C	/W
	RNAV, No GNSS	Transponder with Mode C	/Z
	GNSS	Transponder with Mode C	/L
Non-RVSM	No DME	No Transponder	/X
		Transponder, no Mode C	/T
		Transponder with Mode C	/U
	DME	No Transponder	/D
		Transponder, no Mode C	/B
		Transponder with Mode C	/A
	TACAN	No Transponder	/M
		Transponder, no Mode C	/N
		Transponder with Mode C	/P
	RNAV, No GNSS	No Transponder	/Y
		Transponder, no Mode C	/C
		Transponder with Mode C	/I
	GNSS	No Transponder	/V
		Transponder, no Mode C	/S
		Transponder with Mode C	/G

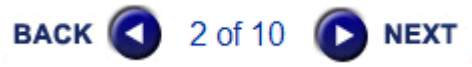
APPENDIX D: INSTRUCTOR KEY FOR ELEARNING ACTIVITIES

Purpose

This document serves as a guide for facilitating the eLearning activities of the Initial En Route Training course and provides an overview of the objectives and content of the eLearning activities within this lesson.

Navigation

- To navigate within the eLearning activities, a Navigation Bar is positioned at the top right of the page and contains the following options:
  - MAIN MENU: Allows students to access a main menu listing all of the eLearning activities
  - RESOURCES: Allows students to access additional resources, including:
    - A **Glossary** link
    - A **References** link
    - A **Help** link
  - EXIT: Allows students to exit from the eLearning activity at any time



- To navigate within an activity, a navigation tab is also positioned near the top right of the screen, just below the navigation bar.
  - The navigation tab contains the following buttons:
    - BACK: When active, returns students to the previous page
    - NEXT: When active, allows students to advance to the next page

NOTE: Inactive BACK and NEXT buttons indicate students are at the beginning or at the end of a lesson.

Navigation Tips

- To refresh a page or reset an activity, press **F5**.
- You can advance to a specific page in the activity without completing the activity. Click the **NEXT** or **BACK** buttons until the page is displayed.

Continued on next page

APPENDIX D: INSTRUCTOR KEY FOR ELEARNING ACTIVITIES (*Continued)*

Lesson Title

Lesson 5 Flight Progress Strips

eLearning Objective

The objective of the eLearning activities is to reinforce identifying control symbols and designated spaces for data entries and control symbols on flight progress strips.

eLearning Activities

⊙ Lesson 5 contains the following eLearning activities:

- Activity 1: Proposal/Departure Strip
- Activity 2: En Route Strip
- Activity 3: Arrival Strip
- Activity 4: Flight Progress Strip Challenge

Activity 1: Proposal/Departure Strip

Activity 1 Description

In this activity, students are presented with blank flight progress strips and flight progress strip data. Students **must** drag and drop data to the correct space on the flight progress strip. They are also presented with completed flight progress strips and **must** drag and drop data to the corresponding places on the table. In addition, students are given hot spot questions related to flight progress strips spaces.

Activity 1 Content

⊙ Page 1 contains an activity introduction.

⊙ Pages 2-7 contain a drag and drop activity for departure and proposal strips.

⊙ Pages 8 and 9 contain a series of hot spot questions, in which students are given a flight progress strip space name and then **must** click the corresponding space on the flight progress strip image.

Continued on next page

APPENDIX D: INSTRUCTOR KEY FOR ELEARNING ACTIVITIES *(Continued)*

Activity 1 Specifics

- ⊙ Drag and drop questions
  - On pages 2-7, if students drag and drop flight data to an incorrect space on the flight progress strip or on the data table, the data will snap back to its original position.
- ⊙ Hot spot questions
  - On pages 8 and 9, students have two attempts to answer before they are given the correct answer.

Activity 2: En Route Strip

Activity 2 Description

In this activity, students are presented with blank flight progress strips and flight progress strip data. Students **must** drag and drop data to the correct space on the flight progress strip. They are also presented with completed flight progress strips and **must** drag and drop data to the corresponding places on the table. In addition, students are given hot spot questions related to flight progress strips spaces.

Activity 2 Content

- ⊙ Page 1 contains an activity introduction.
- ⊙ Pages 2-7 contain a drag and drop activity for en route strips.
- ⊙ Pages 8 and 9 contain multiple choice questions regarding the en route strip.

Activity 2 Specifics

- ⊙ Drag and drop questions
  - On pages 2-7, if students drag and drop flight data to an incorrect space on the flight progress strip or on the data table, the data will snap back to its original position.
- ⊙ Multiple choice questions
  - On pages 8 and 9, students have two attempts to answer before they are given the correct answer.

Continued on next page

APPENDIX D: INSTRUCTOR KEY FOR ELEARNING ACTIVITIES *(Continued)*

Activity 3: Arrival Strip

Activity 3 Description

In this activity, students are presented with blank flight progress strips and flight progress strip data. Students **must** drag and drop data to the correct space on the flight progress strip. They are also presented with completed flight progress strips and **must** drag and drop data to the corresponding places on the table. In addition, students are given hot spot questions related to flight progress strips spaces.

Activity 3 Content

- Page 1 contains an activity introduction.
- Pages 2-7 contain a drag and drop activity for arrival strips.
- Page 8 contains one multiple choice question regarding the arrival strip.

Activity 3 Specifics

- Drag and drop questions
  - On pages 2-7, if students drag and drop flight data to an incorrect space on the flight progress strip or on the data table, the data will snap back to its original position.
- Multiple choice question
  - On page 8, students have two attempts to answer before they are given the correct answer.

Activity 4: Flight Progress Strip Challenge

Activity 4 Description

This eLearning activity allows students to test their knowledge of proposal/departure, en route, and arrival strips by completing timed quiz questions. There are a total of 15 hot spot questions in Round 1.
In Round 2, students are presented with a different set of questions and should attempt to answer more questions correctly as well as to improve their time from the previous round.

Continued on next page

APPENDIX D: INSTRUCTOR KEY FOR ELEARNING ACTIVITIES *(Continued)*

Activity 4 Content

- ⊙ Pages 1 and 3 contain an activity introduction.
- ⊙ Page 2 contains a hot spot quiz with 15 questions regarding proposal/departure, en route, and arrival strips.
- ⊙ Page 4 contains a hot spot quiz with 15 questions regarding proposal/departure, en route, and arrival strips.

Activity 4 Specifics

- ⊙ Hot spot quizzes
  - Students have 5 minutes to complete each quiz.
  - Students have one attempt to answer the question before they are given the correct answer.
  - At the end of each quiz, students will see their quiz results. They should click **REVIEW ANSWERS** to see their marked answers and the correct answers.