



**Federal Aviation
Administration**

***55054001
EN ROUTE
RADAR ASSOCIATE
CONTROLLER TRAINING PART A:
BASIC CONCEPTS***

**Lesson 1: Recording Clearances and
Control Information**

Version: 1.0 2022.08

INSTRUCTOR LESSON PLAN

PAGE INTENTIONALLY LEFT BLANK










LESSON PLAN DATA SHEET

Course Name	En Route Radar Associate Controller Training Part A: Basic Concepts
Course Number	55054001
Lesson Title	Recording Clearances and Control Information
Duration	3 hours, 30 minutes (includes lesson, practice exercises, and ELT)
Version	1.0 2022.08
Reference(s)	JO 7110.65, Air Traffic Control; JO 7210.3 Facility Operation and Administration; JO 7340.2, Contractions
Prerequisites	NONE
Handout(s)	⊙ Practice Exercise 1-4, <i>HO01_L01 (Print prior to class)</i>
Exercise / Activity	Refer to handout for: ⊙ Practice Exercise 1: Flight Strip Data Locations ⊙ Practice Exercise 2: Strip Marking Symbols ⊙ Practice Exercise 3: Recording Clearances and Control Information ⊙ Practice Exercise 4: Flight Strip Marking
Scenario	NONE
Assessments	⊙ YES - Written (<i>Refer to ELT01_L01, print prior to class</i>)
Materials and Equipment	⊙ Local Strip Marking material as appropriate ⊙ Pencil and/or pen in black and red
Other Pertinent Information	⊙ Ensure lesson materials are downloaded to the classroom computer ⊙ Appendix: Location Identifiers ⊙ Course 57826, RECORDING CLEARANCES and CONTROL INFORMATION, or current course, is available as supplemental training for this lesson ⊙ This lesson is based on ERAM EAE410 ⊙ The lesson has been reviewed and reflects current orders and manuals as of April 2022



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

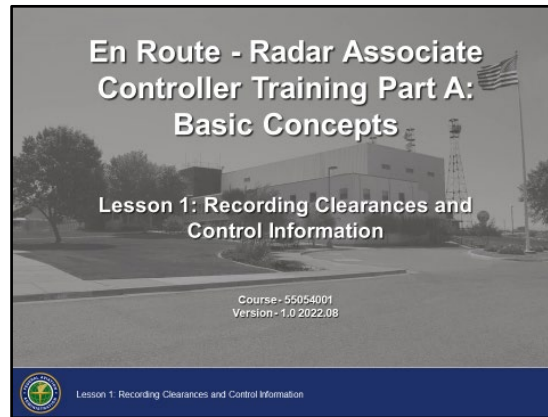
LESSON ICON LEGEND

	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 WBT icon indicates a component of web-based training.
	The Click icon indicates a PPT slide with click-based functionality to present additional information.
	The Definition icon indicates a published definition.

PAGE INTENTIONALLY LEFT BLANK

LESSON INTRODUCTION

Lesson Overview



Recording Clearances and Control Information

LESSON INTRODUCTION *(CONT'D)*

Lesson Overview (Cont'd)

Recording Clearances and Control Information					
N991L	JAMMZ	17-58-02	110 ✓	CARFF KCDS V14 TUL KTUL/1848	6621
BE90/A	1740		130	1759	
117 03	HBR				

Lesson 1: Recording Clearances and Control Information 1

Overview

Flight progress strips are the official record of control data used to reconstruct flight activities in the event of a systems error, deviation, or accident. One of the requirements to become a radar associate controller is the ability to record clearance and control information on flight progress strips in a clear and concise manner. Forming good strip marking habits will help you become a successful controller.


LESSON INTRODUCTION *(CONT'D)*

Lesson Objectives

Lesson Objectives

At the end of this lesson, you will be able to identify:

- Flight progress strip notations
- Flight strip data entries

Lesson 1: Recording Clearances and Control Information2



Review the lesson objectives.

Objectives

- ⦿ At the end of this lesson, you will be able to identify:
 - Flight progress strip notations
 - Flight strip data entries

NOTE: There will be a graded end-of-lesson test upon completion of the lesson. The passing score is 70%. If you do not achieve a score of 70%, you will be provided study time and one retake of an alternate end-of-lesson test.


PURPOSE OF STRIP MARKING


Post Current Data

JO 7110.65, par.
2-3-1

Post Current Data

- Clearance information must be current, obsolete data may confuse the current state of the flight
 - Maintain required data only
 - Remove strips when no longer required for control purposes



 Lesson 1: Recording Clearances and Control Information 3

Post Current Data



Old image will automatically fade to new graphic.

- ⦿ Clearance information on flight strips must be current to be useful; obsolete data may confuse the current state of the flight
 - Maintain required data only
 - Remove strips from flight progress boards when no longer required for control purposes
-

PURPOSE OF STRIP MARKING (CONT'D)

Records Clearances

JO 7110.65, par.
2-3-1


Strip Marking Records Clearances

- Strip Marking records data on air traffic and clearances required for control and other air traffic control services
 - Proper strip marking is an abbreviated format for recording data
 - Clearances should be correctly represented in strip marking

13	31	100	↓80
SQS			

13	31	170	↓50
SQS			

X 5 SW
SQS ± 80

Lesson 1: Recording Clearances and Control Information4

Strip Marking Records Clearances

- Strip marking is used to record data on air traffic, clearances required for control, and other air traffic control services
 - Proper strip marking is an abbreviated format for recording data
 - Clearances should be correctly represented in strip marking

“...DESCEND
AND MAINTAIN
EIGHT
THOUSAND”

13	31	100	↓80
SQS			

“...CROSS FIVE
MILES SOUTHWEST
OF SIDON AT OR
BELOW EIGHT
THOUSAND,
MAINTAIN FIVE
THOUSAND”

13	31	170	↓50
SQS			

X 5 SW
SQS ± 80

NOTE: This lesson uses machine-generated flight strips, but the strip marking is the same for manual flight strips. The blue text in this lesson is used for emphasis on block numbers and specific strip marking examples.

PURPOSE OF STRIP MARKING (CONT'D)

Standard Hand-Printed Characters

JO 7110.65, FIG 2-3-1

Standard Hand-Printed Characters							
Typed	Hand Printed	Typed	Hand Printed	Typed	Hand Printed	Typed	Hand Printed
A	A	K	K	U	U	1	1
B	B	L	L	V	V	2	2
C	C	M	M	W	W	3	3
D	D	N	N	X	X	4	4
E	E	O	O	Y	Y	5	5
F	F	P	P	Z	Z	6	6
G	G	Q	Q			7	7
H	H	R	R			8	8
I	I	S	S			9	9
J	J	T	T			0	0

Lesson 1: Recording Clearances and Control Information

Standard Hand-Printed Characters

- ⦿ If strip marking is to be effective, it must be legible and easily interpreted
- ⦿ Use standard characters in the proper data locations as directed by JO 7110.65
- ⦿ Manually prepared strips shall conform to the same format as machine-generated strips
- ⦿ Altitude information may be written in thousands of feet provided the procedure is authorized by the facility manager, and is defined in a facility directive, i.e. 5,000' as 5 and 2,800' as 2.8

NOTE: A slant line crossing through the number zero and underline of the letter "s" on handwritten portions of flight progress strips are required only when there is reason to believe the lack of these markings could lead to misunderstanding. A slant line crossing through the number zero is required on all weather data.

Examples: Ø, S, Z

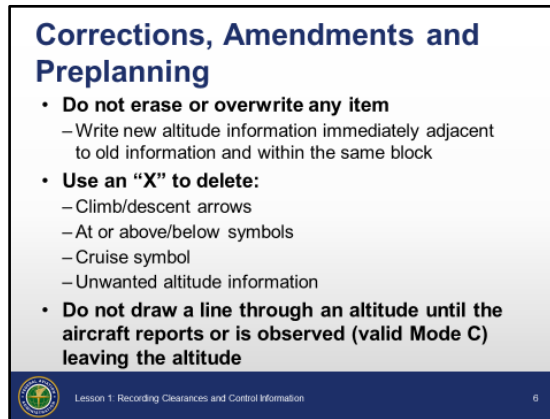


Identify if your facility authorizes thousands of feet.

PURPOSE OF STRIP MARKING *(CONT'D)*

Corrections, Amendments and Preplanning

JO 7110.65, par.
2-3-1



Corrections and Amendments

- ⦿ Do not erase or overwrite any item
 - Write new altitude information immediately adjacent to old information and within the same block
 - Use an “X” to delete:
 - Climb/descent and maintain arrow
 - At or above/below symbol
 - Cruise symbol
 - Unwanted altitude information
- ⦿ 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
 - Must be distinguished from the current ATC clearance

PURPOSE OF STRIP MARKING (CONT'D)

Corrections, Amendments and Preplanning (Cont'd)

JO 7110.65, par.
2-3-1, FIG 2-3-7

Correct				Incorrect			
AAL2610 MD83/L T438 G452 Ø2 162 Ø1	HUMBO	19	39	AAL2610 MD83/L T438 G452 Ø2 162 Ø1	HUMBO	19	39
		290	210			290	210
		150				150	
DAL44 B752/L T454 G468 Ø2 623 Ø1	SOPIE	Ø1	58	DAL44 MD83/L T454 G468 Ø2 623 Ø1	SOPIE	Ø1	58
		340				340	
		240	✓			240	✓



Slide is animated, 1 click.

Correct				Incorrect			
AAL2610 MD83/L T438 G452 Ø2 162 Ø1	HUMBO	19	39	AAL2610 MD83/L T438 G452 Ø2 162 Ø1	HUMBO	19	39
		290	210			290	210
		150				150	

Example: AAL2610 was cleared to FL210 and reported out of FL290. Prior to reaching FL210 the flight was cleared lower to 15,000'. The incorrect example shows a report leaving FL210.



Compare and contrast how the incorrect example shows ambiguity about leaving FL210.



Click to show next example.

Correct				Incorrect			
DAL44 B752/L T454 G468 Ø2 623 Ø1	SOPIE	Ø1	58	DAL44 MD83/L T454 G468 Ø2 623 Ø1	SOPIE	Ø1	58
		340				340	
		240	✓			240	✓

Example: DAL44 reports level at FL240. The down arrow is crossed out with an "X" to avoid looking like an "at or below" arrow.



Compare and contrast how the incorrect example looks like a "at or below" arrow in the altitude block.

PURPOSE OF STRIP MARKING (CONT'D)

Knowledge Check

Knowledge Check

Which flight strip has properly printed characters?

A.

B.

C.

D.

Lesson 1: Recording Clearances and Control Information

Question: Which flight strip has properly printed characters?



Answer: B



Responses A, C and D contain misformed characters and zeros without a diagonal line.



PURPOSE OF STRIP MARKING *(CONT'D)*

Knowledge Check

Knowledge Check

How is unwanted altitude information indicated in strip marking?

A. Overwrite the attitude with bold pen
B. Draw a single horizontal line through the altitude
C. Place an "X" over the altitude

 Lesson 1: Recording Clearances and Control Information  9

Question: How is unwanted altitude information indicated in strip marking?





Answer: C. Place an "X" over the altitude

PURPOSE OF STRIP MARKING (CONT'D)

Knowledge Check

Knowledge Check
When should flight strips be removed from flight progress boards?
A. When the pilot checks on frequency
B. At the end of your shift
C. When no longer required for control purposes

 Lesson 1: Recording Clearances and Control Information  10

Question: When should flight strips be removed from flight progress boards?



Answer: C. When no longer required for control purposes

TYPES OF FLIGHT STRIPS

Proposal Strips

JO 7110.65, FIG 2-3-2

Proposal Strips				
SWA6557 B737/L T475 Ø2 245 Ø1	↑ 16	KHOU P165Ø 19	38Ø	KHOU STYCK7 DOLEY ZEMMA TSDLE3 KOKC 1006 SLOW CLIMBER
N9281B P46T/G T241 24 439 Ø1	↑ 16	KFSM P1422 19	11Ø	KFSM FSM V289 DGD V72 MAP V238 DELMA V234 ENL KFWC 2702 NO OXYGEN
N739ZR C82R/G T121 36 269 Ø1	↑ 16	KFYV P12Ø3 19	7Ø	KMKO HANIG V532 FSM V74 LIT KLIT/Ø124 1424

SWA6557 B737/L T475 Ø2 245 Ø1	↑ 16	KHOU P165Ø 19	38Ø	KHOU STYCK7 DOLEY ZEMMA TSDLE3 KOKC 1006 SLOW CLIMBER
N9281B P46T/G T241 24 439 Ø1	↑ 16	KFSM P1422 19	11Ø	KFSM FSM V289 DGD V72 MAP V238 DELMA V234 ENL KFWC 2702 NO OXYGEN
N739ZR C82R/G T121 36 269 Ø1	↑ 16	KFYV P12Ø3 19	7Ø	KMKO HANIG V532 FSM V74 LIT KLIT/Ø124 1424


Proposal Strips

- ⦿ Proposal strips represent the initial departure airport
 - Block 16 - Up arrow indicates a departing flight
 - Block 19 - Proposed departure time
 - Ground speed and sector times are not computed

TYPES OF FLIGHT STRIPS (CONT'D)

Departure Strips - Data Entries

JO 7110.65, FIG 2-3-2

Departure Strips - Data Entries					
N38TS	T→S TL ↑ 235 ⇒ V278 SQS	15	GLH	KGWO SQS V278 VUZ KBHM/0055	3603
PC12/G T280 02 168 01	KGWO P1204	X17 W SQS ↓ 60 20	150	26 C LV30	28 D-A 29-30
15. Clearance information for departing aircraft 18. Departure time (actual or assumed) 20. Altitude information 26. Remarks 28. Miscellaneous control data 29-30. Transfer of control data and coordination indicators					
 Lesson 1: Recording Clearances and Control Information 12					

N38TS	T→S TL ↑ 235 ⇒ V278 SQS	15	GLH	KGWO SQS V278 VUZ KBHM/0055	3603
PC12/G T280 02 168 01	KGWO P1204	X17 W SQS ↓ 60 20	150	26 C LV30	28 D-A 29-30

Departure Strips

- ⊙ Block 15 - Clearance information for departing aircraft
- ⊙ Block 18 - Departure time (actual or assumed)
- ⊙ Block 20 - Altitude information
 - Including restrictions
 - In hundreds of feet or as per facility directive
- ⊙ Block 26 - Pertinent remarks
- ⊙ Block 28 - Miscellaneous control data
 - Clearance limit
 - Expected further clearance time
 - Time cleared for approach, etc.
- ⊙ Blocks 29 and 30 - Transfer-of-control data and coordination indicator, if required

TYPES OF FLIGHT STRIPS (CONT'D)

En Route Strips - Data Entries

JO 7110.65, FIG 2-3-2

En Route Strips - Data Entries									
N234	UJM	11	15	42	150 ✓	MHZ	KSUS./UJM V9 MCB V9 RAYOP KNEW/1750	1005	
PC12/G T265 G267 02	1529	12	15		20	1556			
104 03	14a	SOS	19	20a					ZHU

11. Previous fix
12. Estimated time over previous fix
14a. Plus time, in minutes, previous fix to the posted fix
15. Center estimated time over posted fix
19. Posted fix
20. Altitude information
20a. TCAS Resolution Advisory (RA) events

Lesson 1: Recording Clearances and Control Information 13

N234	UJM	11	15	42	150 ✓	MHZ	KSUS./UJM V9 MCB V9 RAYOP KNEW/1750	1005	
PC12/G T265 G267 02	1529	12	15		20	1556			
104 03	14a	SOS	19	20a					ZHU

En Route Strips

NOTE: Flight strips for en route flights contain fix and time data which aid in determining the aircraft position. Altitude information is always present.

Further information found on the flight strips, include:

- ⦿ Block 11 - Previous fix
- ⦿ Block 12 - Estimated time over previous fix
- ⦿ Block 14a - Plus time expressed in minutes from the previous fix to the posted fix
- ⦿ Block 15 - Center estimated time over posted fix
- ⦿ Block 19 - Posted fix
- ⦿ Block 20 - Altitude information
- ⦿ Block 20a - TCAS Resolution Advisory (RA) events
 - Optional when voice recorders are operational
 - Required when voice recorders are not operating and strips are used
 - Record RA's climb or descend arrow and time event is reported

TYPES OF FLIGHT STRIPS (CONT'D)

Arrival Strips - Data Entries

JO 7110.65, FIG
2-3-2

Arrival Strips - Data Entries					
N35VC	BARNE	17	30	↓ 16	170
C402/G					
T205 G257	1723				
02					
234	02				
		KTVR			
16. Arrival arrow					

Lesson 1: Recording Clearances and Control Information 14

N35VC	BARNE	17	30	↓ 16	170	KCLL./AEX V245 BARNE KTVR	2776
C402/G							
T205 G257	1723						
02							
234	02						
		KTVR					

Arrival Strips

⦿ Block 16 - Arrival arrow

- Generated by the automation based on local adaptation

NOTE: Arrival strips will contain a down arrow in block 16 to indicate an approach clearance may be needed for this flight.

FLIGHT STRIP DATA ENTRIES

Computer Programmed Blocks

JO 7110.65, FIG 2-3-2

Computer Programmed Blocks					
N726PG	SAF	19	40	16	240
BE40/L	069				
T455 G257 8	031				
616/42 9	1933				
7 512	10 05/1	KLIT	LESME	KSAF/1945	5670
KSAF					

6. Sector number
7. Computer ID (CID)
8. Estimated ground speed
9. Sector/Strip Request (SR) originator
10. Strip number/revision
16. Arrow; departing "↑", arriving "↓"

Lesson 1: Recording Clearances and Control Information 15

N726PG	SAF	19	40	16	240	KLIT	LESME	KSAF/1945	5670
BE40/L	069								
T455 G257 8	031								
616/42 9	1933								
7 512	10 05/1								
		KSAF							

Computer Programmed Blocks

- Some flight strip block fields are generated by the automation and include:

- Block 6 - Sector number
- Block 7 - Computer identification number (CID)
- Block 8 - Estimated ground speed
 - Not displayed on proposal strips
- Block 9 - Sector/Strip Request (SR) originator
- Block 10 - Strip number (strip number/revision number)
- Block 16 - Arrow; departing "↑", arriving "↓"

NOTE: For a complete list of the blocks in which data is entered on a flight progress strip, see FAA Order JO 7110.65, par. 2-3-2.

FLIGHT STRIP DATA ENTRIES (CONT'D)

Flight Strip Data Locations

JO 7110.65, FIG 2-3-2

Flight Strip Data Locations				
3 AWI3973	↑	PTW 21	KPHL PTW PTW320 CHLSE V499 CFB V29 SYR KSYR/0120	27 3420
4 CRJ2/Q		24 200	25	
5 T384			26	29-30
18 088 01	KPHL P1425 19			

3. Aircraft identification
4. Number, type aircraft/suffix
5. Filed true airspeed
19. Fix, proposed time
21. Next fix
24. Requested altitude
25. Point of origin, route of flight
26. Remarks
27. Beacon code
29-30. Transfer of control data and coordination indicators

Lesson 1: Recording Clearances and Control Information 10

3 AWI3973	↑	PTW 21	KPHL PTW PTW320 CHLSE V499 CFB V29 SYR KSYR/0120	27 3420
4 CRJ2/Q		24 200	25	
5 T384			26	29-30
18 088 01	KPHL P1425 19			

Flight Strip Data Locations

- ⊙ Block 3 - Aircraft identification
 - Appropriate prefix followed by a combination of letters and/or numbers
 - Seven maximum allowable characters
- ⊙ Block 4 - Aircraft data
 - Number of aircraft, if more than one
 - Heavy indicator, if appropriate
 - Type aircraft
 - Equipment suffix
- ⊙ Block 5 - Filed true airspeed
 - "T" followed by two, three, or four digits
 - SC - Speed classified
- ⊙ Block 19 - Fix and proposed departure time
 - Location identifier
 - For departing aircraft, add proposed departure time
 - "P" followed by four-digit proposal time
- ⊙ Block 21 - Next posted fix or coordination fix

Continued on next page

FLIGHT STRIP DATA ENTRIES (CONT'D)

Flight Strip Data

Locations (Cont'd)

JO 7110.65, FIG 2-3-2

- ⊙ Block 24 - Requested altitude
 - Two or three digits representing altitude in hundreds of feet or as per facility directive
 - OTP or OTP/(altitude)
 - VFR conditions on top
 - Altitude block
 - (altitude)B(altitude)
 - Lowest altitude first
- ⊙ Block 25 - Point of origin, route, destination, and Estimated Time of Arrival (ETA), Estimated Time En route (ETE)
 - Location identifier
 - Victor airways, jet routes, or direct routes
 - ETA
 - Follows destination on general aviation arrival aircraft
 - ETE
 - Follows destination on general aviation departure aircraft

NOTE: To convert ETE to ETA, add ETE to departure time to determine ETA. General aviation pilots are required to file ETE.
- ⊙ Block 26 - Pertinent remarks
 - Use plain language or words, phrases, or symbols contained in JO 7110.65, Table. 1-2-1

Examples: Minimum fuel, point out, radar vector, speed adjustment information, sector/position number (in accordance with JO 7110.65, par. 2-2-1), or NRP
- ⊙ Block 27 - Beacon code
 - Normally assigned by the computer
- ⊙ Blocks 29 and 30 - Transfer-of-control data and coordination indicator

FLIGHT STRIP DATA ENTRIES (CONT'D)



Knowledge Check

Knowledge Check

3		11	15	16	20	21	25	27
4								28
5		8	12	18				29-30
7	10	14a	19	20a	24	26		

What block contains Filed True Airspeed?

A. 4
B. 5
C. 8

 Lesson 1: Recording Clearances and Control Information  17

Question: What block contains Filed True Airspeed?



Answer: B. 5

FLIGHT STRIP DATA ENTRIES (CONT'D)



Knowledge Check

Knowledge Check

3		11	15	16	20	21	25	27
4								28
5		8	12	18				29-30
7	10	14a	19	20a	24	26		

What block contains Proposed Departure Time?

A. 15
B. 18
C. 19

 Lesson 1: Recording Clearances and Control Information  18

Question: What block contains Proposed Departure Time?



Answer: C. 19

FLIGHT STRIP DATA ENTRIES (CONT'D)



Knowledge Check

Knowledge Check

3		11	15	16	20	21	25	27
4								28
5		8	12	18				29-30
7	10	14a	19	20a	24	26		

Miscellaneous Control Data (e.g., clearance limit, EFC, time cleared for approach) is entered in which block?

A. 25
B. 26
C. 28

 Lesson 1: Recording Clearances and Control Information  19

Question: Miscellaneous Control Data (e.g., clearance limit, EFC, time cleared for approach) is entered in which block?



Answer: C. 28

FLIGHT STRIP DATA ENTRIES (CONT'D)



Knowledge Check

Knowledge Check

3		11	15	16	20	21	25	27
4								28
5		8	12	18				29-30
7	10	14a	19	20a	24	26		

Departure Time (actual or assumed) is entered in which block?

A. 15
B. 18
C. 19

 Lesson 1: Recording Clearances and Control Information  20

Question: Departure Time (actual or assumed) is entered in which block?



Answer: B. 18

FLIGHT STRIP DATA ENTRIES (CONT'D)



Knowledge Check

Knowledge Check

3		11	15	16	20	21	25	27
4								28
5		8	12	18				29-30
7	10	14a	19	20a	24	26		

Altitude Information is entered in which block?

A. 20
B. 21
C. 25

 Lesson 1: Recording Clearances and Control Information  21

Question: Altitude Information is entered in which block?



Answer: A. 20

FLIGHT STRIP DATA ENTRIES (CONT'D)

Knowledge Check

The slide displays a flight strip layout with various numbered blocks. The blocks are arranged in a grid-like fashion. The question asks: "Departure Instructions are entered in which block?" with three options: A. 15, B. 25, and C. 28.

Knowledge Check

Departure Instructions are entered in which block?

A. 15
B. 25
C. 28

Lesson 1: Recording Clearances and Control Information

Question: Departure Instructions are entered in which block?



Answer: A. 15

FLIGHT STRIP DATA ENTRIES (CONT'D)



Knowledge Check

Knowledge Check

3		11	15	16	20	21	25	27
4								28
5		8	12	18				
7	10	14a	19	20a	24	26		29-30

Which block contains a Center Estimate over Posted Fix for en route flights?

A. 11
B. 15
C. 21

 Lesson 1: Recording Clearances and Control Information  23

Question: Which block contains a Center Estimate over Posted Fix for en route flights?



Answer: B. 15

FLIGHT STRIP DATA ENTRIES (CONT'D)



Knowledge Check

Knowledge Check

3		11	15	16	20	21	25	27
4								28
5		8	12	18				29-30
7	10	14a	19	20a	24	26		

RA events are recorded in which block?

A. 20a
B. 25
C. 26

 Lesson 1: Recording Clearances and Control Information  24

Question: RA events are recorded in which block?



Answer: A. 20a

FLIGHT STRIP DATA ENTRIES (CONT'D)



Knowledge Check

Knowledge Check

3		11	15	16	20	21	25	27
4								28
5		8	12	18				29-30
7	10	14a	19	20a	24	26		

Which block will contain an arrow to indicate departing/arriving flights?

A. 15
B. 16
C. 20

 Lesson 1: Recording Clearances and Control Information  25

Question: Which block will contain an arrow to indicate departing/arriving flights?



Answer: B. 16

FLIGHT STRIP DATA ENTRIES (CONT'D)



Knowledge Check

Knowledge Check

3		11	15	16	20	21	25	27
4								28
5		8	12	18				29-30
7	10	14a	19	20a	24	26		

Which block contains the Estimated Time over Previous Fix?

A. 12
B. 18
C. 21

 Lesson 1: Recording Clearances and Control Information  28

Question: Which block contains the Estimated Time over Previous Fix?



Answer: A. 12

PAGE INTENTIONALLY LEFT BLANK

PRACTICE EXERCISE 1: FLIGHT STRIP DATA LOCATIONS

Practice Exercise 1: Flight Strip Data Locations

- **Purpose**
 - Review computer generated flight strip data locations
- **Materials**
 - Practice exercise 1 from Lesson 1 handout
 - Pencil or pen
- **Directions**
 - Use the flight strip examples provided to answer the questions



Lesson 1: Recording Clearances and Control Information

27

Purpose

Review computer generated flight strip data locations

Materials



Handout: *HO01_L01*

- ⦿ Practice exercise 1 from Lesson 1 handout
 - ⦿ Pen or pencil
-

Directions

This exercise takes approximately 30 minutes to complete. Use the flight strip examples provided to answer the questions.




After all students have finished, click back and forth to review answers on slide #29, and #30.

PRACTICE EXERCISE 1: FLIGHT STRIP DATA LOCATIONS *(CONT'D)*


Practice Exercise 1

N6264L BE35/G T130 G125 02 117 03	PRX 1401 KMLC	14 ³² ↓ 80		KPRX V583 MLC KMLC/1435	1257
N215LJ LJ24/L T400 52 320 01		↑		FUZ KMLC MLC J105 FUZ J131 EDNAS LLO V161 CSI KERV/0110	5611
LN43X PA42/G T220 G230 02 359 03	URH 1421 MLC	14 ³⁷ 170		VIANE KDUK URH V63 SGF KSGF/1519	6621 ZME

 Lesson 1: Recording Clearances and Control Information 28

Practice Exercise 1 (Cont'd)

CGFPL M20P/G T140 02 663 01		↑		BYP KMLC MLC FINGR5 KDAL/0100	6336
N555SC C414/G T240 G242 02 276 03	MINGG 1414 MLC	14 ²⁷ 170		FSM KAMA./J.BGD V272 FSM V74 LIT KLIT/1518	2113 ZME
FDX1726 H/B763/L T440 G445 02 527 01	LIT 1411 MLC	14 ³² 220		BYP KMEM LIT J6 KLUBB J105 MLC FINGR5 KDFW	4227

 Lesson 1: Recording Clearances and Control Information 29

PRACTICE EXERCISE 1 FLIGHT STRIP DATA LOCATIONS *(CONT'D)*

1. What is N6264L's filed true airspeed?	<i>T130</i>
2. What is the previous fix for N555SC?	<i>MINGG</i>
3. What is the previous fix estimate for N555SC?	<i>1414</i>
4. What is the ground speed for LN43X?	<i>230</i>
5. What is the next fix for N215LJ?	<i>FUZ</i>
6. Which are proposal strips?	<i>N215LJ, CGFPL</i>
7. Which are arrival strips?	<i>N6264L</i>
8. Which are en route strips?	<i>LN43X, N555SC, FDX1726</i>
9. What is the assigned altitude for N6264L?	<i>80</i>
10. What is the posted fix for FDX1726?	<i>MLC</i>
11. What is the center-estimated time over posted fix for LN43X?	<i>1437</i>
12. Which aircraft is expected over MLC first?	<i>N555SC</i>
13. If the time is 1400, how many minutes from now is FDX1726 expected to be over the posted fix?	<i>32</i>
14. Which departure(s) are filed with a lower requested altitude than FDX1726?	<i>N215LJ, CGFPL</i>
15. Which aircraft are filed with jet routes?	<i>N215LJ, FDX1726</i>
16. If CGFPL is ready to depart at the proposed time, will it depart before N6264L arrives at MLC?	<i>No</i>

GENERAL INFORMATION

Aircraft Reported at Assigned Altitude

JO 7110.65, FIG 2-3-2, FIG 2-3-7

Aircraft Reported at Assigned Altitude

✓

DAL2370	BAYLI	15	49	360 ✓	SLN	KCVG LOVEY6	AXC	SPI	4032
8738/L	1528	19		340 ✓	1606	J80 MCI J24	OATHE		
T447 05						JAGGR3	KDEN		
287 04			MCI						

Lesson 1: Recording Clearances and Control Information

360 ✓	SL
340 ✓	1606

✓

- ⦿ Aircraft reported at assigned altitude
 - Used in block 20
 - Pilot reported or observed Mode C

GENERAL INFORMATION (CONT'D)

Information Forwarded

JO 7110.65, FIG 2-3-2, FIG 2-3-8

Information Forwarded							
N92610	GULLI	16	49	110	RZC	KCSM BFV V140 ARG KARG/1840	2661
P32R/A T130 G145 15 083 04	1621	52	(1656)	(1130)	(1745)		
	TUL						
N501DT	MCL	10	(53)	70-110 X50 E FSM ±90	LRF	KOKC IRW V272 FSM V74 LIT V54 UJM KHEE/1137	4360
C441/G T240 G251 18 444 03	1033	52			1119		
	FSM						

49	110	RZC	KCSM
	(1130)	(1745)	KA
(1656)			
IL			

10	(53)	70-110 X50 E FSM ±90	LRF	KOKC IRW V272 FSM V74 LIT V54 UJM KHEE/1137	V532 FSM	4360
			1119			
SM						

⊙ Information forwarded

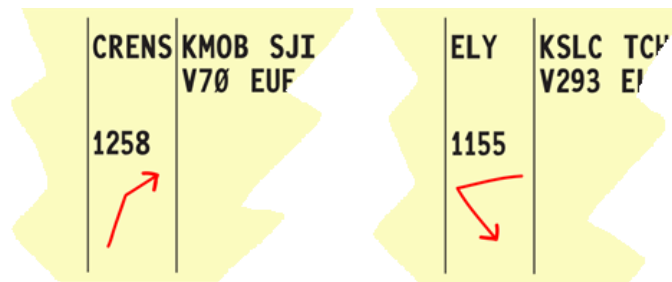
- Used in any block
- Circle control information in red when forwarded

GENERAL INFORMATION (CONT'D)

Direction of Flight

JO 7110.65, FIG 2-3-2

Direction of Flight									
N3088X P46T/A T215 G221 287 03	STETS	121 ⁴²	60✓	CRENS	KMOB SJI V552 MVC	4610			
	1233			1258	V70 EUF KEUF/1314				
	MVC								
N915CD BE9L/A T230 G241 368 02	BVL	11 ³¹	140✓	ELY	KSLE TCH V32 BQU	0765			
	1108			1155	V293 ELY KELY/1154				
	BQU								



⦿ Direction of flight

- Used in block 23
- Represents a generalized flight path

GENERAL INFORMATION (CONT'D)

IAFDOF

JO 7110.65, FIG
2-3-2, FIG 2-3-7

Inappropriate Altitude for Direction of Flight (<u>Alt.</u>)							
N4831M	CQO	16	58	80✓	VNA	KCHA G00 V243 AYS T207 OMN KDAB/1907	1025
BE36/G T156 G168 09	1628				1733		
019 02		HEFIN					

Lesson 1 Recording Clearances and Control Information 33

80✓	VNA
	1733

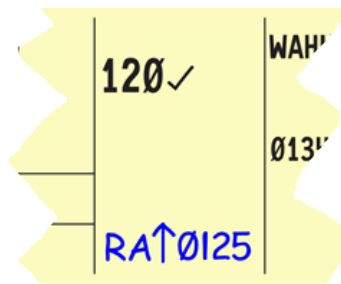
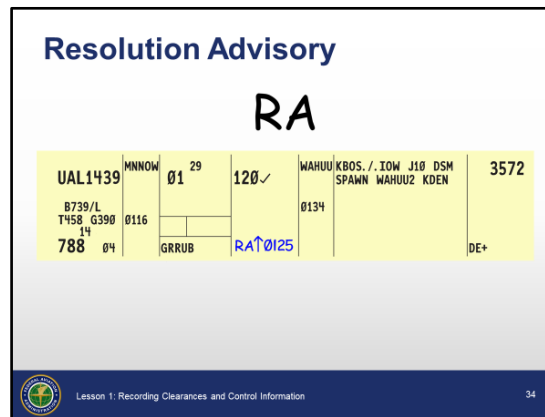
(Alt.)

- ⦿ Inappropriate Altitude for Direction of Flight (IAFDOF)
 - Used in blocks 20 or 24
 - Altitude underlined in red

GENERAL INFORMATION (CONT'D)

Resolution Advisory

JO 7110.65, FIG 2-3-2



RA (Pilot Reported Maneuver and Time)

- ⦿ Resolution Advisory to Traffic Alert and Collision Avoidance System (TCAS) event
 - Used in block 20a
 - RA followed by:
 - Climb or descent arrow and
 - Time event is reported



Explain the RA event maneuver in the example; the pilot received an RA climb at time 0125.

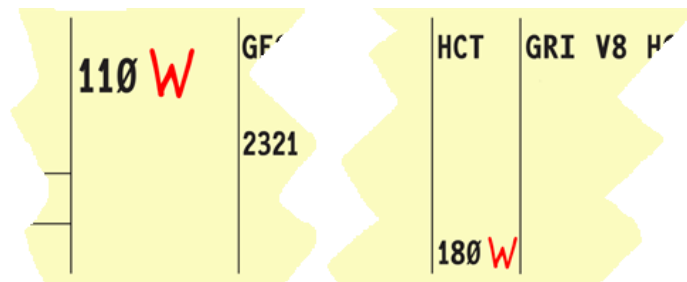
GENERAL INFORMATION (CONT'D)

Warning

JO 7110.65, FIG
2-3-2, FIG 2-3-8

Warning												
En Route Strip												
N171DC	BYI	23	03	110	W	GEGME	KTWF	TWF	V269	BYI	2607	
820/A	T240	G256	2247			2321	V4	CKW	V6	MBW	V100	
539	02		MLD				BFF	KBFF	0047			
Proposal Strip												
N83AJ				↑		HCT	GRI	V8	HCT	J60	DVV	2012
PC12/G	T230											
914	01		KGRI	P1125		180	W					

Lesson 1: Recording Clearances and Control Information 35



W

Warning

- Used in block 20 or 24 to alert controller that action must be taken
- Usually adjacent to altitude
- Written in red
- If due to terrain, indicate the minimum altitude necessary for safe flight

GENERAL INFORMATION (CONT'D)

Emergency

JO 7110.65, FIG
2-3-2, FIG 2-3-8

Emergency

E

DAL1425	KELN	16 ⁴⁹	310✓	PEETT	KATL JACCC2 KELN Q58 PEETT THMP RAVNN6 KBWI	1025
MD88/L T438 G482 083 ³⁶ 04	1632	49 LUMAY		1658	E #1 ENGINE OUT	

Lesson 1: Recording Clearances and Control Information 38

E

KATL JACCC2 KELN
Q58 PEETT THMP
RAVNN6 KBWI

E #1 ENGINE
OUT

E

⊙ Emergency

- Used in block 26, pertinent remarks
- Written in red
- Note the nature of emergency

GENERAL INFORMATION (CONT'D)

Tower Jurisdiction

JO 7110.65, FIG
2-3-2, Table 2-3-
11

Z

Tower Jurisdiction									
SWA818	BASAY	01	130	160	KDAL	ESNYE4	EAKER	4352	
8737/L	287				TUL				
T430 G447	020								
18	0057								
864	03								
	TUL								

H7

37

ER | 4352

H-SW

0112

20 SW

Z

⦿ Tower Jurisdiction

- Used in block 28

GENERAL INFORMATION (CONT'D)

Knowledge Check

Knowledge Check



Which example indicates a pilot checking in at their assigned altitude?

A. B. C.


130 ✓ HC

130 HC

130 ☆ HC

 Lesson 1: Recording Clearances and Control Information  38

Question: Which example indicates a pilot checking in at their assigned altitude?

 **Answer:** A.

130 ✓ HC

GENERAL INFORMATION (CONT'D)



Knowledge Check

Knowledge Check


How is a TCAS Resolution Advisory recorded?

A. B. C.

<div>160✖ ↓50 TCAS↓ 1842</div>	<div>PH 01</div>	<div>160✖ ↓50 RA↓1842</div>	<div>PH 01</div>	<div>160✖ ↓50 1842↓RA</div>	<div>PH 01</div>
--	----------------------	-------------------------------------	----------------------	-------------------------------------	----------------------

 Lesson 1: Recording Clearances and Control Information  39

Question: How is a TCAS Resolution Advisory recorded?

 **Answer: B.**

160✖
↓50
RA↓1842

PH
01

GENERAL INFORMATION (CONT'D)

Knowledge Check

Knowledge Check


What is the strip marking for aircraft emergencies?

A. B. C.

E SMOKE IN COCKPIT	W SMOKE IN COCKPIT	E SMOKE IN COCKPIT
------------------------------	------------------------------	------------------------------

Lesson 1: Recording Clearances and Control Information 40

Question: What is the strip marking for aircraft emergencies?

**Answer: C.**

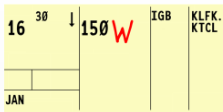
E SMOKE IN COCKPIT

GENERAL INFORMATION (CONT'D)



Knowledge Check

Knowledge Check

What does this strip marking represent?



A. The route of flight is a zig-zag pattern
B. A warning is associated with the current altitude
C. The route of flight is a general westerly direction

 Lesson 1: Recording Clearances and Control Information  41

Question: What does this strip marking represent?



Answer: B. A warning is associated with the current altitude

GENERAL INFORMATION (CONT'D)

Knowledge Check

Knowledge Check

Which strip marking indicates altitude and restriction were coordinated?

A. B. C.

Lesson 1: Recording Clearances and Control Information 42

Question: Which strip marking indicates altitude and restriction were coordinated?

Answer: C.

CLEARANCE ABBREVIATIONS

Cleared to Depart From Fix

JO 7110.65, FIG 2-3-2, par. 2-3-10, Table. 2-3-11

Cleared to Depart From Fix

D

N838JS		1		KSUX SUX V159 OVR V307 PME GATTS CVE RIICES KIAH/0154	1405
C56X/L T410 160 01		1555			<i>D</i>
	KSUX P0203		410		

Lesson 1: Recording Clearances and Control Information 43

OVR CVE 154	1405 <i>D</i>
-------------------	------------------

D

- ⊙ Cleared to depart from the fix
 - Used in block 28 on originating IFR clearance strip only
 - Departing from airport
 - Airfile - Depart from fix

CLEARANCE ABBREVIATIONS (CONT'D)

Cleared to Destination Airport

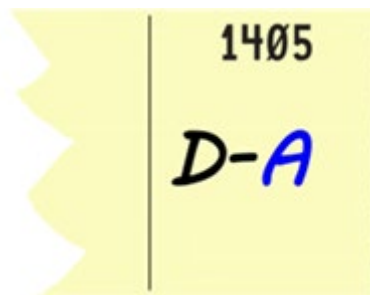
JO 7110.65, FIG
2-3-2, Table 2-3-
11

Cleared to Destination Airport

A

N838JS		1		KSUX SUX V159 OVR V307 PWE CATT5 CVE RIICE8 KIAH/0154	1405
C56X/L T410 14 160 01		ISSS			<i>D-A</i>
	KSUX P0203		410		

Lesson 1: Recording Clearances and Control Information 44



A

- ⦿ Cleared to destination airport
 - Follows “D” in block 28

CLEARANCE ABBREVIATIONS (CONT'D)

Cleared to the Fix

JO 7110.65, FIG 2-3-2, Table 2-3-11

Cleared to Posted Fix or Other Fix					
F					
N773AG BE50/A T154 G168 10 019 04	CZI 1232 DDY	12 ⁵⁴ 110✓	MBW 1323	KBIL BIL V611 DDY V85 FIPSS KBJC/1458	4623 F
F (FIX)					
N223BB BE36/A T172 G186 13 439 03	ELLON 2041 MOL	20 ⁴⁴ 70✓	CSN 2115	KLYH LYH V143 MOL CSN KJYO/2126	1323 F-TIRGA

Lesson 1: Recording Clearances and Control Information 45

12 ⁵⁴ 110✓ DDY	MBW 1323	KBIL BIL V611 DDY V85 FIPSS KBJC/1458	4623 F
ON 20 ⁴⁴ 70✓ MOL	CSN 2115	KLYH LYH V143 MOL CSN KJYO/2126	1323 F-TIRGA

F or F(Fix)

⊙ Cleared to the fix

- Used in block 28
- Fix need not be recorded if:
 - The aircraft is cleared to the posted fix
- “F” followed by a fix/waypoint when clearance limit is other than the posted fix

CLEARANCE ABBREVIATIONS (CONT'D)

Depart

JO 7110.65, FIG
2-3-2, FIG 2-3-7

Depart

T→

N3030G	T→N TR ↑ 060⇒V255	↑90	HYS	KGCK GCK V255 HYS V549 TKO V216 PWE V307 OVR V172 LINDE KPRO/0133	2012
BESL/A T260 16 338 01	1355/ KGCK P1250		160		D-A

Lesson 1: Recording Clearances and Control Information

48

T→

N TR ↑
060⇒V255

↑90

H'

1355/

KGCK P1250

1.

T→

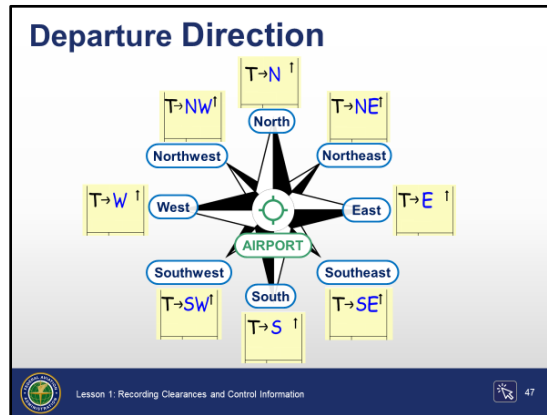
☉ Depart

- Used only at airports within Class D or E surface areas
- Used in block 15 on departure strip only

CLEARANCE ABBREVIATIONS (CONT'D)

Departure Direction

JO 7110.65, FIG 2-3-2, FIG 2-3-7



Departure Direction



Slide is animated, 1 click.

T→(Compass Point)



Explain the airport is represented in the center of the compass rose.



Click 1 time to show N-S-E-W cardinal points and strip marking. The other four inter-cardinal points follow after a slight delay.

⦿ Departure direction

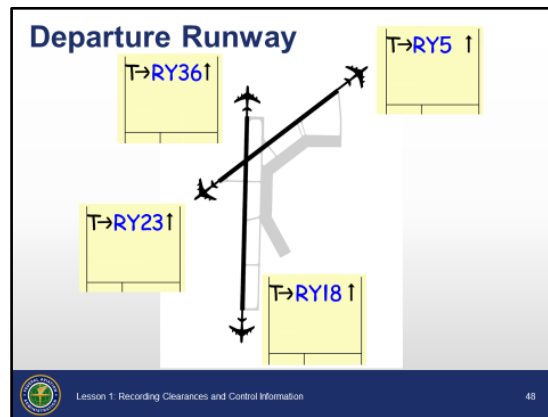
- Specify direction of departure
- Direction of departure follows **T→**
- To provide separation
- Use eight compass points

CLEARANCE ABBREVIATIONS *(CONT'D)*

Departure Runway

JO 7110.65, FIG
2-3-2, FIG 2-3-7

JO 7340.2



RY(Departure Runway)

- ⦿ Departure runway
 - Direction of departure follows **T→**
 - Specify the runway number
-

CLEARANCE ABBREVIATIONS (CONT'D)

Turn Left or Turn Right

JO 7110.65, FIG 2-3-2, Table 2-3-12

Turn Left or Turn Right			
TL or TR			
DAL338	T→S TL ↑	VV83578	T→RY18 ↑
MD88/L		P8/L	
T420		T420	
02	I313/	02	I320/
567 01	KMLC P1315	987 01	KMLC P1325

Lesson 1: Recording Clearances and Control Information 49

T→S TL ↑
I313/
KMLC P1315

T→RY18 ↑
I320/
KMLC P1325

TL or TR

☉ Turn Left or Turn Right

- Used in block 15
- This clearance element must be followed by instructions to join a route or proceed to a NAVAID/fix/waypoint
- Left or Right turn follows direction or runway instructions

CLEARANCE ABBREVIATIONS (CONT'D)

Departure Heading

JO 7110.65, FIG
2-3-2, Table 2-3-
12

Departure Heading			
TR or TL (Heading)			
AAL63 B777/L T450 02 817 01	T→N TR 060 ↑ 1913/ KMLC P1915	N3721K C310/G T160 02 227 01	T→N TL 300 ↑ 1927/ KMLC P1930

Lesson 1: Recording Clearances and Control Information 50

T→N TL 300 ↑	T→N TR 060 ↑
1927/ KMLC P1930	1913/ KMLC P1915

TL or TR (Heading)

☉ Turn Left or Turn Right (heading)

- Used in block 15
- Magnetic heading to be flown:
 - 001 through 360
- This clearance element must be followed by instructions to join a route

CLEARANCE ABBREVIATIONS *(CONT'D)*

Until

JO 7110.65, FIG
2-3-2, FIG 2-3-7

Until

/

N462LT PA46/A T195 079 01	T→RY17 ↑ TL 045/ =V6 I357/ KGRI P2024	↑ 90 180	KGRI GRI V6 OVR V172 LINDE KPRO/0105	1534 D-A
---	---	-------------	---	-------------

Lesson 1: Recording Clearances and Control Information
51

T→RY17 ↑

TL 045/

=V6

I357/

KGRI P2024

/

⦿ Until

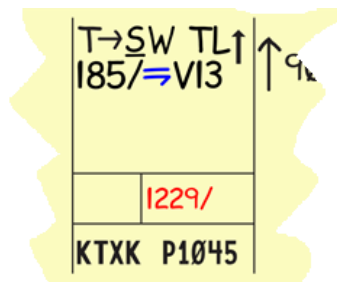
- Used in any block
- Follows departure instructions if a heading is specified
- May also be used with altitude restrictions associated with (time)/(fix)

CLEARANCE ABBREVIATIONS (CONT'D)

Join or Intercept Airway, Jet Route, Track, or Course

JO 7110.65, FIG
2-3-2, FIG 2-3-7

Join or Intercept Airway, Jet Route, Track, or Course					
N69HE SR22/G T160 02 241 01	T→SW TL↑ I85/→VI3	↑90	EIC	KTXX TXK V13 EIC V566 AEX V114 LSU KREG/0145	3042 D-A
	I229/			CLV30	
	KTXX P1045		90		
N24981 C152/T 110 28 788 01	T→NE TR↑ 070/→ EAU103R	↑50	BELGO	KEAU EAU EAU103 BELGO KV10/0035	2731 D-VIQ
	I210/			CLV30	
	KEAU P1355		50		



⊙ Join or intercept airway, jet route, track, or course

- Used in block 15 or 25
- Typically follows “/” (until)

CLEARANCE ABBREVIATIONS (CONT'D)

Before and After

JO 7110.65, FIG 2-3-2, FIG 2-3-7

Before and After				>	<
N680DC	T→N TL 300/→V510	↑ 60	AXN	KSTC SIYON V510 AXN V2 FAR V181 GFK V430 MOT J483 YXE J515 YEG J510 YYD V301 XT R4 PR CYPR/0330	0743
C680/L 440 22 109 01	RLS I MIN<N2I 1644/	KSTC P1620	410	CLV30	D-A
"...RELEASE ONE MINUTE AFTER NOVEMBER TWO ONE..."					
N307RJ	TUL 16 20 80↓60	ANY	KFSM V74 KDCC/1806	1006	
T206/A T135 G148 36 009 03	1541 PER	60-1611	1653		
"...DESCEND TO REACH SIX THOUSAND AT OR BEFORE ONE SIX ONE ONE..."					

Lesson 1: Recording Clearances and Control Information 53

T→N TL 300/→V510	↑↑
RLS I MIN<N2I	
1644/	
KSTC P1620	

80↓60	
60-1611	1

> <

⦿ Before and after

- Used in any block
- May be used with:
 - Successive departures
 - Altitude restrictions related to time/fix

Examples: "...RELEASE ONE MINUTE AFTER NOVEMBER TWO ONE..."

"...DESCEND TO REACH SIX THOUSAND AT OR BEFORE ONE SIX ONE ONE..."

CLEARANCE ABBREVIATIONS (CONT'D)

Hold for Release

JO 7110.65, par.
4-3-4.b, FIG 2-3-
2

Hold For Release					
HFR					
N520CE	T→S TL 130/⇒VII4 HFR	↑ 90	UIM	KGYI BYP V114 VEILS KFSM/0200	4616
SR22/G T190 37 573 01					D-A
	KGYI P1600		90		

Lesson 1: Recording Clearances and Control Information 54

T→S TL 130/⇒VII4 HFR	↑ 90
KGYI P1600	

HFR

⦿ Hold for Release

- Used in block 15 in conjunction with departure clearances
- HFR instructions are used to inform a pilot or a controller that a departure clearance is not valid until additional instructions are received

CLEARANCE ABBREVIATIONS (CONT'D)

Release

JO 7110.65, FIG
2-3-2, Table 13-
1-3

Release		RLS	
N342GF	T→SW TR↑ 235/⇒V26	↑90	FGT KEAU EAU V26 KRMF/0100
SR22/G	RLS 1 MIN< N667PC		3655
T160	I558/		D-A
788 01	KEAU P1600	90	CLV30
N667PC	T→SW TL↑ 145/⇒V129	↑80	ODI KEAU EAU V129 SPI KSPI/0200
PA46/G			0623
T160	I557/		D-A
607 01	KEAU P1600	80	CLV30

"RELEASE CIRRUS TWO GOLF FOXTROT ONE MINUTE AFTER MALIBU SEVEN PAPA CHARLIE"

Lesson 1 Recording Clearances and Control Information 55

T→SW TR↑↑ 235/⇒V26
RLS 1 MIN< N667PC
I558/
KEAU P1600

RLS

⊙ Release

- Used in block 15 in conjunction with departure clearance
- Issued when aircraft can be released for departure if Hold For Release was previously issued
- May be used for successive departures with additional instructions
- Issued to tower

Example: "RELEASE CIRRUS TWO GOLF FOXTROT ONE MINUTE AFTER MALIBU SEVEN PAPA CHARLIE"


NOTE: The flight strips examples represent a traffic situation where 2 aircraft are released with a restriction for 1 minute separation for the second departure, N342GF.

CLEARANCE ABBREVIATIONS (CONT'D)

Released Your Discretion

JO 7110.65, FIG
2-3-2

JO 7340.2

Released Your Discretion				<u>SYD</u>	
N456	T→S -BFV	↑ 70	IRW	KCSM BFV V272 FSM KFSM/0130	4327
C310/A T180 02	SYD N234 (1651/)			CLV30	D-A
439 01	KCSM P1650	70			
NOTE: Indicates assumed departure time as being coordinated with next sector					
N234	IFI	16 50	80✓	KSMO GULLI V140 BFV KCSM/1654	4267
C172/G T115 G121 02	1615	50	1651	CPT	(APCH) APCH 1645
037 03	KCSM				
"VISUAL SEPARATION APPROVED BETWEEN TWIN CESSNA FOUR FIVE SIX AND SKYHAWK TWO THREE FOUR. TWIN CESSNA FOUR FIVE SIX RELEASED."					
 Lesson 1: Recording Clearances and Control Information 50					

T→S -BFV	↑ ↑ 70
SYD N234	
(1651/)	
KCSM P1650	

SYD

⊙ Released Subject Your Discretion

- Used in block 15
- Issued to tower when using visual separation

Example: "VISUAL SEPARATION APPROVED BETWEEN TWIN CESSNA FOUR FIVE SIX AND SKYHAWK TWO THREE FOUR. TWIN CESSNA FOUR FIVE SIX RELEASED."

NOTE: The flight strip examples represent visual separation being applied by a tower with approval granted for the tower controller to release N456 when, in their judgement, they can provide separation by observing both aircraft.

CLEARANCE ABBREVIATIONS (CONT'D)

Clearance Void Time

JO 7110.65, FIG
2-3-2, FIG 2-3-7

Clearance Void If Not Off By

V < (Time)

N2895L	T→N -AUW V<1805 (10)	↑ 70	GRB	KCWA AUW V26 GRB V420 TVC V320 PLN KMCD/0200	1006
P28T/G T130 52 219 01	1758/ KCWA P1800	70	CLV30	D-A	

Lesson 1: Recording Clearances and Control Information 57

T→N
-AUW
V<1805 (10)

1758/
KCWA P1800

V<(Time)

- ☉ Clearance void if aircraft not off by (time)
 - Used in block 15 followed by a time
 - Used to avoid delay for other traffic at airports:
 - Where communications with aircraft are difficult until airborne
 - Provide alternate instructions requiring pilots to advise ATC of intentions



Alternate instructions are detailed on next slide.

CLEARANCE ABBREVIATIONS (CONT'D)

Altitude
Instructions
Climb/
Descend

JO 7110.65, FIG
2-3-2, FIG 2-3-7

Climb and Maintain *(altitude)*

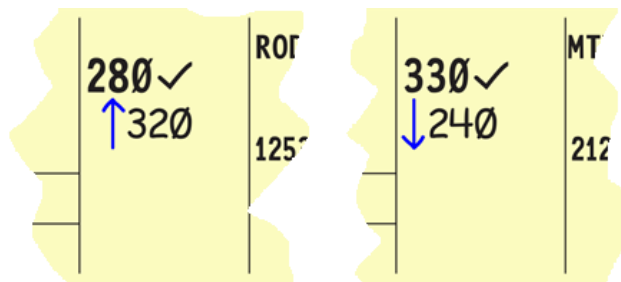
Descend and Maintain *(altitude)*

↑ OR ↓

UAL374 8739/L T435 G414 49 864	BENSH 1221 03	12 32 <div style="border: 1px solid black; width: 100%; height: 100%; position: relative;"> <div style="position: absolute; top: 0; left: 0; width: 100%; height: 100%; background-color: #ffffcc;"></div> </div> HACKS	280 ✓ <div style="border: 1px solid blue; width: 100%; height: 100%; position: relative;"> <div style="position: absolute; top: 0; left: 0; width: 100%; height: 100%; background-color: #ffffcc;"></div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); color: blue; font-weight: bold;">↑ 320</div> </div>	ROD 1253	KIAD BUNZZ3 RAMAY Q72 HACKS J149 ROD WATSN3 KORD	1737 ZAU
DAL2084 MD88/L T452 G478 16 607	DENNI 2059 03	21 15 <div style="border: 1px solid blue; width: 100%; height: 100%; position: relative;"> <div style="position: absolute; top: 0; left: 0; width: 100%; height: 100%; background-color: #ffffcc;"></div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); color: blue; font-weight: bold;">↓ 240</div> </div> BNA	330 ✓ <div style="border: 1px solid blue; width: 100%; height: 100%; position: relative;"> <div style="position: absolute; top: 0; left: 0; width: 100%; height: 100%; background-color: #ffffcc;"></div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); color: blue; font-weight: bold;">↓ 240</div> </div>	MTHW 2121	KSTL DRUSE5 BNA NEWBB IHAVE MTHW CHPPRI KATL	1323

Lesson 1: Recording Clearances and Control Information

59



⦿ Altitude Instructions

- Used in block 20
 - Climb/descend and maintain arrow (altitude)

CLEARANCE ABBREVIATIONS (CONT'D)

At

JO 7110.65, FIG
2-3-2, FIG 2-3-7

At

@

N52DW B36/G T165 G172 Ø2 130 Ø2	SPS 1623	16 ⁴⁸ ↓	110 ↓ 60 X15W SPS @ 80	KGGG GGG V114 CDS KCDS/1654	1301
		KCDS			

Lesson 1: Recording Clearances and Control Information 60

23

16 ⁴⁸ ↓	110 ↓ 60 X15W SPS @ 80
KCDS	

@

⦿ At

- Used in block 20
- When a restriction occurs at a specific point
- Usually precedes altitude/speed

CLEARANCE ABBREVIATIONS *(CONT'D)*

At or Above/Below

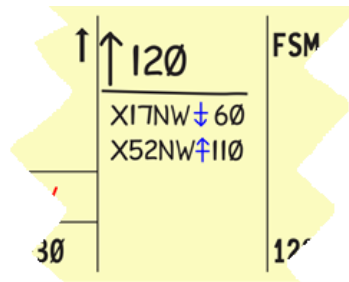
JO 7110.65, FIG 2-3-2, FIG 2-3-7

At or Above (altitude)
At or Below (altitude)

↑ OR ↓

N69HE	T→NW -TXK	↑ 120	FSM	KTXK TXK V289 FSM V74 BUTCH KSNL/0055	2603
SR22/G T180 23 137 01	TXK P1430	X17NW↓60 X52NW↑110	120	CLV30	D-A

Lesson 1: Recording Clearances and Control Information 61



⦿ At or above/below arrows

- Used in block 20
- Includes a fix/radial/airway, followed by an altitude

CLEARANCE ABBREVIATIONS (CONT'D)

Block Altitude Assignment

JO 7110.65, FIG 2-3-2, FIG 2-3-7

Block Altitude Assignment									
(Alt.)B(Alt.)									
RCH245	ACH	18	16	2400260	PAYSO	KAMA	IWA	KIMA	6553
3/C17/L	068	038	1803	2000220	157	031	1843		
T467 G425									
38									
050	05	ONM	338/011						

Lesson 1: Recording Clearances and Control Information 62

2400260	PAYSO
2000220	157
	031
	1843
011	

(Alt.)B(Alt.)

- ⦿ Block altitude assignment
 - Used in block 20
 - Altitudes are inclusive
 - First altitude must be lower than the second

CLEARANCE ABBREVIATIONS (CONT'D)

Climb/ Descend at Pilot's Discretion

JO 7110.65, FIG
2-3-2, Table 2-3-
11

Climb/Descend at Pilot's Discretion									
PD									
AAL352	RSK	18	15	330✓	BGD	SJC. / ILC J58 FTI J8	2606		
8738/L				↓170 PD		BGD ROLLS CAMET3			
T455 G482	1756	52			1838	KOKC			
287	83	FTI							

"...DESCEND AT PILOT'S DISCRETION, MAINTAIN ONE SEVEN THOUSAND"

Lesson 1 Recording Clearances and Control Information 63

330✓	BC
↓170 PD	1835

PD

- ⦿ Climb/descend at pilot's discretion
 - Used in block 20

Example: "...DESCEND AT PILOT'S DISCRETION, MAINTAIN ONE SEVEN THOUSAND"

CLEARANCE ABBREVIATIONS (CONT'D)

Reported Other Than Assigned Altitude

JO 7110.65, FIG
2-3-2, FIG 2-3-8

Reported Other Than Assigned Altitude							
Alt.							
N981SM	TOY	12 ⁴⁸	110	LUPCE	KEMP EMP V12 SHB	3461	
M20P/A			(120)✓	1310	KGEZ/1341		
T145 G153	1221						
Ø7							
Ø86 Ø4		BIB					

Aircraft was assigned 110 but reported on frequency level at 120

Lesson 1: Recording Clearances and Control Information 64

110	LUP
(120)✓	131

Alt.

- ⦿ Aircraft reported at other than assigned altitude
 - Used in block 20
 - Write reported altitude and circle it in black

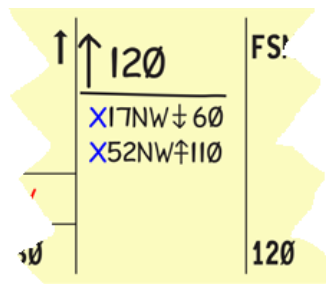
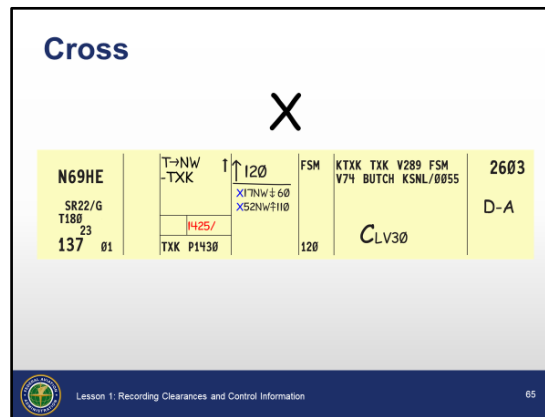
Example: Aircraft was assigned 110 but reported on frequency level at 120

NOTE: In some cases, an aircraft may have been assigned an altitude by another controller without proper coordination.

CLEARANCE ABBREVIATIONS (CONT'D)

Cross

JO 7110.65, FIG
2-3-2, FIG 2-3-7,
Table 2-3-11



X

⦿ Cross

- Used in block 20
- Cross a fix/radial/airway
- Followed by a restriction

NOTE: "X" to delete unwanted altitude information appears above the restriction bar and "X" as control symbology appears below.

CLEARANCE ABBREVIATIONS (CONT'D)

Cleared to Hold

JO 7110.65, FIG 2-3-2, Table 2-3-11

Cleared to Hold (Instructions Issued)

N783AL	HOLYO	16 ³⁹	140✓	OBH	KEIK AKO V80 LBF V172 OLU KOLU/1715	2131
BE20/G T266 G272 Ø57 ³⁷	1623	39		1704		H-SW V80
	LBF					

“...CLEARED TO NORTH PLATTE VOR/DME. HOLD SOUTHWEST ON VICTOR EIGHTY. NO DELAY EXPECTED.”

Lesson 1: Recording Clearances and Control Information

68

0	16 ³⁹	140✓	OBH	KEIK AKO V80 LBF V172 OLU KOLU/1715	2131
			1704		H-SW V80
	39				
	LBF				

H

- ⦿ Cleared to hold and instructions issued
 - Used in block 28
 - Followed by a dash and detailed holding instructions, including:
 - Direction from fix
 - Holding fix, if not posted fix
 - Radial, course, azimuth, or route on which aircraft will hold
 - Leg length in minutes or miles if other than standard

Example: “...CLEARED TO NORTH PLATTE VOR/DME. HOLD SOUTHWEST ON VICTOR EIGHTY. NO DELAY EXPECTED.”

NOTE: The holding fix may be omitted if it matches the point indicated in block 19.

CLEARANCE ABBREVIATIONS (CONT'D)

Hold - DME Fix

JO 7110.65, FIG
2-3-2, FIG 2-3-8

DME Holding and Instructions

N1625	TUL	16 ⁴¹	340✓	MIRME KOQU SANTT BWZ LAYED IIU BLANS TUL BGD MIRME FTI J8 FLYBY PGS MARUE DSNEE1 KSNA/1838	7463
GLF4/L T480 G432 06 137 03	1603	41	BGD	1658	

“...CLEARED TO BORGER ZERO NINER ZERO RADIAL TWO ZERO MILE FIX. HOLD EAST ON THE ZERO NINER ZERO RADIAL, ONE ZERO MILE LEGS. EXPECT FURTHER CLEARANCE ONE SEVEN ZERO ZERO.”

Lesson 1: Recording Clearances and Control Information
67

16 ⁴¹ <div style="border: 1px solid black; padding: 2px; display: inline-block;">41</div> BGD	340✓	MIRME KOQU SANTT BWZ LAYED IIU BLANS TUL 1658 BGD MIRME FTI J8 FLYBY PGS MARUE DSNEE1 KSNA/1838	7463
--	------	---	--------------



⦿ DME Holding

- Used in block 28
- Upper portion of “H” indicates distance from the station to the fix
- Lower portion of “H” indicates length of holding pattern
 - Remember: legs are on the bottom, like your body
- Also, include radial, course, azimuth, or route on which aircraft will hold
- Expect Further Clearance (EFC) follows instructions


Example: “...CLEARED TO BORGER ZERO NINER ZERO RADIAL TWO ZERO MILE FIX. HOLD EAST ON THE ZERO NINER ZERO RADIAL, ONE ZERO MILE LEGS. EXPECT FURTHER CLEARANCE ONE SEVEN ZERO ZERO.”

NOTE: The holding fix may be omitted if it matches the point indicated in block 19.

CLEARANCE ABBREVIATIONS (CONT'D)

Cleared Over the Fix

JO 7110.65, FIG 2-3-2, Table 2-3-11

Cleared Over the Fix							
V							
AAL2860	HUDAD	16	41	200✓	DOGIN/KDFW CDS V114	HUDAD2 PNH KAMA	4174
MD83/L T460 G451 04	1633	41			1649		H ✓
642	04	CDS					
<p>"...CLEARED TO AMARILLO AIRPORT VIA VICTOR ONE FOURTEEN"</p> <p>or</p> <p>"...CLEARED TO AMARILLO AIRPORT VIA LAST ROUTING CLEARED"</p>							
 Lesson 1: Recording Clearances and Control Information 68							

IN KDFW HUDAD2 HUDAD CDS V114 PNH KAMA	4174
	H ✓

V

⦿ Cleared over the fix

- Used in block 28 to mark over:
 - F - Clearance limit, or
 - H - Holding instructions
- Cancels previously issued clearance limit and holding instructions

Examples: "...CLEARED TO AMARILLO AIRPORT VIA VICTOR ONE FOURTEEN"

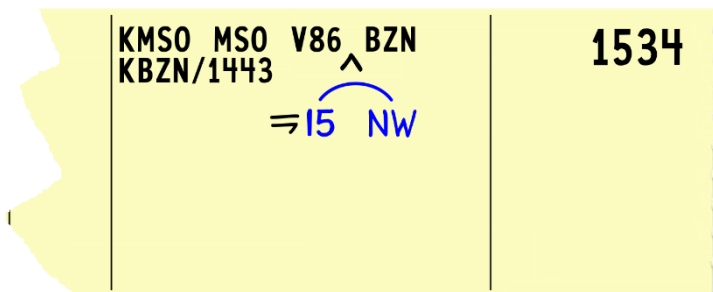
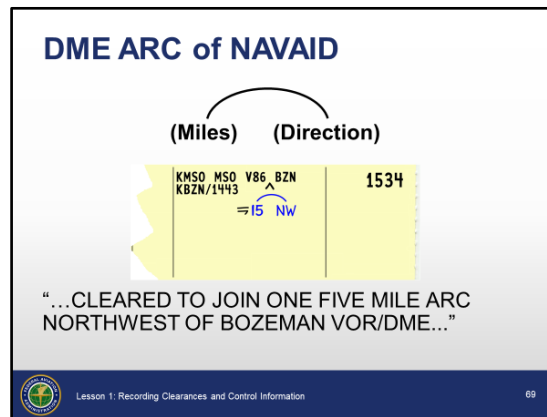
or

"...CLEARED TO AMARILLO AIRPORT VIA LAST ROUTING CLEARED"

CLEARANCE ABBREVIATIONS (CONT'D)

DME Arc of NAVAID

JO 7110.65, FIG 2-3-2, FIG 2-3-8



(Miles) (Direction)

☉ DME Arc

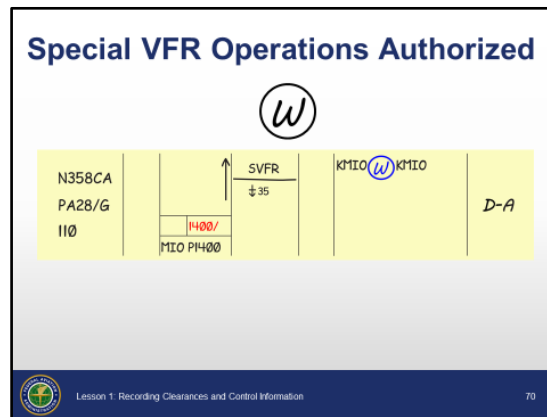
- Used in block 25
 - Miles on left
 - Direction on right

Example: "...CLEARED TO JOIN ONE FIVE MILE ARC NORTHWEST OF BOZEMAN VOR/DME..."

CLEARANCE ABBREVIATIONS (CONT'D)

Special VFR Operations Authorized

JO 7110.65, FIG 2-3-2, FIG 2-3-7



- ⦿ Special VFR operations
 - Used in block 25
 - Block used may be locally adapted for each facility
 - Used to authorize local Special VFR operations in the vicinity of an airport until a specified time
 - Instruct aircraft to maintain Special VFR conditions (altitude, if appropriate)

CLEARANCE ABBREVIATIONS (CONT'D)

Pilot Canceled Flight Plan

JO 7110.65, FIG
2-3-2, FIG 2-3-8

Pilot Canceled IFR

℄

N33083	GLASS	16 ²³	70✓	KVTH VTH V234 GLASS V335 MWA KHSB/1638	1737
P28A/G T105 G123 393 ¹⁴ 04	1551	23 ℄ 1628			H ^S ₁₈₀
		MWA			

Lesson 1: Recording Clearances and Control Information 71

℄

16 ²³	70✓
23 ℄ 1628	
MWA	

℄

- ⦿ Pilot canceled flight plan
 - Used in block 18
 - Include a four-digit time

CLEARANCE ABBREVIATIONS (CONT'D)

Knowledge Check

Knowledge Check

How is "depart" recorded in block 15?

A.



D→↑

B.

Dept → ↑

C.

T→↑

 Lesson 1: Recording Clearances and Control Information  72

Question: How is "depart" recorded in block 15?

T→↑



Answer: C.

CLEARANCE ABBREVIATIONS *(CONT'D)*

Knowledge Check

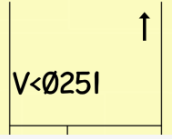
Knowledge Check

What does this strip marking represent?


A. "CLEARANCE VOID IF NOT OFF BY ZERO TWO FIVE ONE"

B. "JOIN VICTOR AIRWAY AFTER ZERO TWO FIVE ONE"


C. "VFR AFTER ZERO TWO FIVE ONE"



The image shows a yellow rectangular strip marking. Inside the rectangle, the text 'V<0251' is written in black. To the right of the text, there is a small black upward-pointing arrow.



Lesson 1: Recording Clearances and Control Information



73

Question: What does this strip marking represent?



Answer: A. "CLEARANCE VOID IF NOT OFF BY ZERO TWO FIVE ONE"

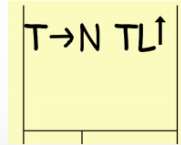
CLEARANCE ABBREVIATIONS *(CONT'D)*



Knowledge Check

Knowledge Check

What does this strip marking represent?

A. "TAKE OFF NORTH, TURN LEFT"
B. "DEPART NORTH, TURN LEFT"
C. "DEPART NOW, TURN LEFT"



Lesson 1: Recording Clearances and Control Information74

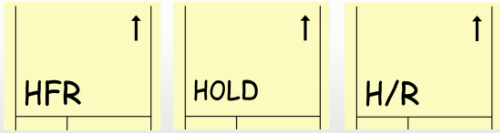


Question: What does this strip marking represent?



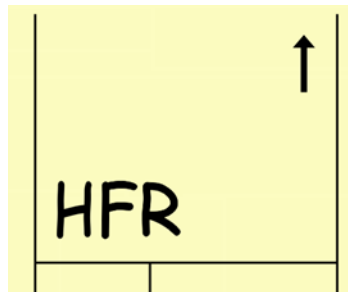
Answer: B. "DEPART NORTH, TURN LEFT"

CLEARANCE ABBREVIATIONS *(CONT'D)*

Knowledge Check

Knowledge Check
How is "HOLD FOR RELEASE" recorded in block 15?
A. B. C.

 Lesson 1: Recording Clearances and Control Information  75

Question: How is "HOLD FOR RELEASE" recorded in block 15?



Answer: A.

CLEARANCE ABBREVIATIONS (CONT'D)

Knowledge Check

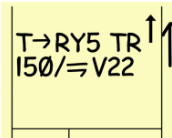
Knowledge Check



What does this strip marking represent?

A. "DEPART RUNWAY FIVE TILL REACHING ONE FIVE THOUSAND THEN CROSS VICTOR TWENTY-TWO"

B. "DEPART RUNWAY FIVE TURN RIGHT HEADING ONE FIVE ZERO UNTIL JOINING VICTOR TWENTY-TWO"

C. "DEPART RUNWAY FIVE TO REACH ONE HUNDRED FIFTY FEET BY JOINING VICTOR TWENTY-TWO"



Lesson 1: Recording Clearances and Control Information78

Question: What does this strip marking represent?



Answer: B. "DEPART RUNWAY FIVE TURN RIGHT HEADING ONE FIVE ZERO UNTIL JOINING VICTOR TWENTY-TWO"

CLEARANCE ABBREVIATIONS (CONT'D)

Knowledge Check

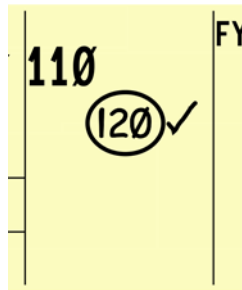
Knowledge Check

Which strip marking indicates the aircraft checked in at an altitude other than its assigned altitude?

A. B. C.

Lesson 1: Recording Clearances and Control Information 77

Question: Which strip marking indicates the aircraft checked in at an altitude other than its assigned altitude?



Answer: A.

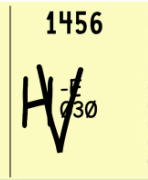
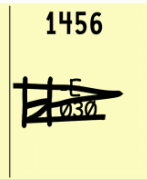
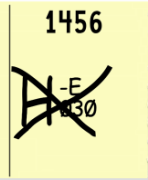
CLEARANCE ABBREVIATIONS (CONT'D)

Knowledge Check

Knowledge Check

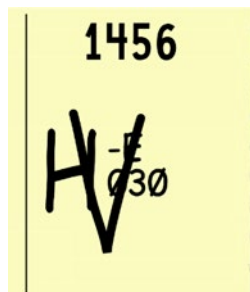
Which strip marking indicates cleared over fix?

A. B. C.

1456 	1456 	1456 
---	---	---

Lesson 1: Recording Clearances and Control Information 78

Question: Which strip marking indicates cleared over fix?



Answer: A.

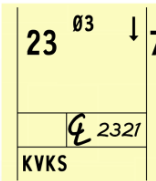
CLEARANCE ABBREVIATIONS (CONT'D)


Knowledge Check

Knowledge Check


What does this strip marking represent?

A. Pilot canceled IFR at 2321
B. Pilot reported over the clearance limit at 2321
C. Pilot called leaving assigned altitude at 2321





Lesson 1: Recording Clearances and Control Information



79

Question: What does this strip marking represent?



Answer: A. Pilot canceled IFR at 2321

CLEARANCE ABBREVIATIONS (CONT'D)

Knowledge Check



Knowledge Check

How would you record; "CLEARED TO JACKSON TWO FIVE ONE RADIAL TWO ZERO MILE FIX, HOLD SOUTHWEST ON TWO FIVE ONE RADIAL, ONE FIVE MILE LEGS, EXPECT FURTHER CLEARANCE AT ONE ONE TWO ZERO"?

A. 3425
H²⁵¹-SW
15
1120

B. 3425
H²⁰-SW
15 251
1120

C. 3425
H¹⁵-SW
20 251
1120

 Lesson 1: Recording Clearances and Control Information  80

Question: How would you record: "CLEARED TO JACKSON TWO FIVE ONE RADIAL TWO ZERO MILE FIX, HOLD SOUTHWEST ON TWO FIVE ONE RADIAL, ONE FIVE MILE LEGS, EXPECT FURTHER CLEARANCE AT ONE ONE TWO ZERO"?

3425
H²⁰-SW
15 251
1120



Answer: B.



CLEARANCE ABBREVIATIONS (CONT'D)

Knowledge Check

Knowledge Check

How do you record "IF NOT OFF BY 2235, ADVISE (facility) NO LATER THAN 2245 OF INTENTIONS"?

A.	B.	C.
<div><div>↑</div><div>V<2235/45</div></div>	<div><div>↑</div><div>V<2245</div></div>	<div><div>↑</div><div>V<2235 (45)</div></div>

 Lesson 1: Recording Clearances and Control Information  B1

Question: How do you record: "IF NOT OFF BY 2235, ADVISE (facility) NO LATER THAN 2245 OF INTENTIONS"?



Answer: C.

↑

V<2235 (45)

MISCELLANEOUS ABBREVIATIONS

Report Leaving

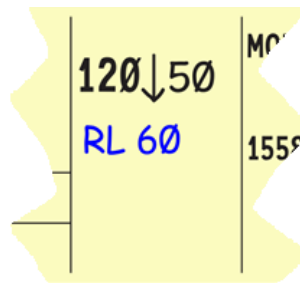
JO 7110.65, FIG
2-3-2

JO 7340.2

Report Leaving									
RL									
N8887B	ABR	15	35	120↓50	MOT	KFSD FSD ABR V15			2012
BESL/A				RL 60	1558	MOT KMOT/1600			
T265 G241	1504	34							
864	05	BIS							

“...REPORT LEAVING SIX THOUSAND”

Lesson 1: Recording Clearances and Control Information 82



RL

⊙ Report Leaving

- Used in block 20
- With altitude reports

Example: “...REPORT LEAVING SIX THOUSAND”

MISCELLANEOUS ABBREVIATIONS (CONT'D)


Report Reaching

JO 7110.65, FIG
2-3-2

JO 7340.2

Report Reaching						
RR						
N719CS	MLT	16	12	110	KSFM ENE V93 BGR V471 MLT KPQI/1612	4673
SR22/G	1545	12		↓60 RR		
T154 G161						
137 03	KPQI					

“...REPORT REACHING SIX THOUSAND”

 Lesson 1: Recording Clearances and Control Information 83



RR

⦿ Report Reaching

- Used in block 20
- With altitude reports

Example: “...REPORT REACHING SIX THOUSAND”

MISCELLANEOUS ABBREVIATIONS (CONT'D)

Report Passing, Report Crossing

JO 7110.65, FIG
2-3-2, Table 2-3-
12

**Report Passing (fix/altitude),
Report Crossing (radial bearing,
etc.)**

RP, RX

N8787P	FSD	16 21	90✓	CNG	KFSD FSD V15 SUX V175 VIH FAM V540 CNG KPAH/1637	1572
PA24/A T135 G141 15 439 04	1602			1632	RX MW A238R RP ALING	ZME
<p>“...REPORT CROSSING MARION TWO THREE EIGHT RADIAL, REPORT PASSING ALING”</p>						

Lesson 1 Recording Clearances and Control Information

32	KFSD FSD V15 SUX V175 VIH FAM V540 CNG KPAH/1637 RX MW A238R RP ALING	ZME
----	---	-----

RP, RX

⊙ Report Passing, Report Crossing

- Used in block 26
- With fix, radial, or DME reports

Example: “...REPORT CROSSING MARION TWO THREE EIGHT RADIAL, REPORT PASSING ALING”

NOTE: When the report is received, record the time.

MISCELLANEOUS ABBREVIATIONS (CONT'D)

Communications Transfer

JO 7110.65, FIG 2-3-2, FIG 2-3-8

Communication Transfer							
C (Time/Fix/Altitude)							
N353GS	ZEDDI	16 ⁴⁶	80✓	YOHER	3DW	SGF	V132 CNU
C172/G	1617			1722	V350	YOHER	KBEC/1725
T115 G105		45	1645				
137 ¹⁵	04	CNU					
				C47W			
				3561			

Lesson 1: Recording Clearances and Control Information 85

16 ⁴⁶	80✓	YOHER	3DW	SGF	V132 CNU
		1722	V350	YOHER	KBEC/
45	1645				
CNU					C47W

C(Time/Fix/Altitude)

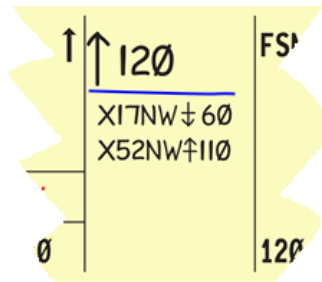
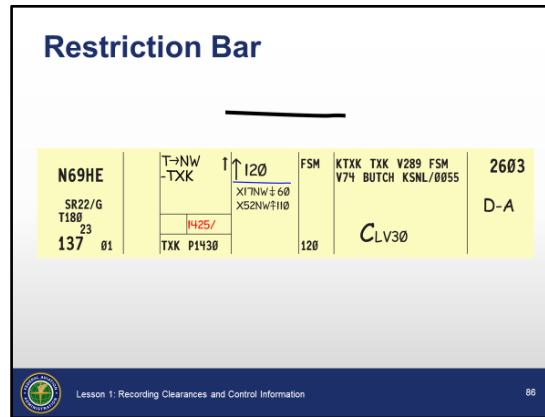
⦿ Communications transfer

- Used in block 26
 - Include time, fix, or altitude, unless compliance is expected upon receipt
- Insert frequency when other than standard
 - Unless covered in an LOA, frequency is assigned when clearance is issued through:
 - FSS
 - Tower

MISCELLANEOUS ABBREVIATIONS (CONT'D)

Restriction Bar

JO 7110.65, FIG 2-3-2, FIG 2-3-7



⦿ Restriction bar

- Used in block 20
- Separates altitude assignments from altitude restrictions
- Restrictions modify how to get to assigned altitude

MISCELLANEOUS ABBREVIATIONS (CONT'D)

Knowledge Check

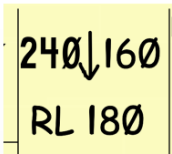
Knowledge Check



What does this strip marking represent?

A. "DESCEND AND MAINTAIN ONE SIX THOUSAND ROUTE LEFT TO FLIGHT LEVEL ONE EIGHT ZERO"

B. "DESCEND AND MAINTAIN FLIGHT LEVEL ONE EIGHT ZERO REACH LOWER TO ONE SIX THOUSAND"

C. "DESCEND AND MAINTAIN ONE SIX THOUSAND REPORT LEAVING FLIGHT LEVEL ONE EIGHT ZERO"



Lesson 1: Recording Clearances and Control Information87

Question: What does this strip marking represent?



Answer: C. "DESCEND AND MAINTAIN ONE SIX THOUSAND REPORT LEAVING FLIGHT LEVEL ONE EIGHT ZERO"

MISCELLANEOUS ABBREVIATIONS *(CONT'D)*

Knowledge Check



Knowledge Check

What does this strip marking represent?

KLIT./GLH V74 JAN
KJAN/1640

RP JELMI

A. "RADAR POINTOUT AT JELMI"
B. "REPORT PRIOR TO JELMI"
C. "REPORT PASSING JELMI"

 Lesson 1: Recording Clearances and Control Information  88

Question: What does this strip marking represent?



Answer: C. "REPORT PASSING JELMI"

MISCELLANEOUS ABBREVIATIONS (CONT'D)

Knowledge Check

Knowledge Check

What does this strip marking represent?


A. "CLIMB TO (*requested altitude*) ONE FIVE MILES EAST OF MONROE "

B. "CONTACT (*next facility/sector*) ONE FIVE MILES EAST OF MONROE"


C. "CLEARED TO HOLD ONE FIVE MILES EAST OF MONROE"

KJAN JAN V18 MLU
V94 GGG KGGG/1736

C15E MLU



Lesson 1: Recording Clearances and Control Information



89

Question: What does this strip marking represent?



Answer: B. "CONTACT (*next facility/sector*) ONE FIVE MILES EAST OF MONROE"

CONTROL INFORMATION SYMBOLS

Radar Contact

JO 7110.65, FIG 2-3-2, FIG 2-3-8

JO 7210.3, par. 6-1-6

Radar Contact

R

UAL586	ARLYN	17 ⁴⁸	360	FSM	KORD ACITO ADELL ARLYN STL FSM KOMMA RRNET SEEVR4 KDFW	1323
A319/L T475 G431 15 587 04	1731			1827 <i>R</i>		
	STL					

Lesson 1: Recording Clearances and Control Information 90

FSM	KORD ACITO
1827	ARLYN STL
<i>R</i>	RRNET SF

R

⊙ Radar contact

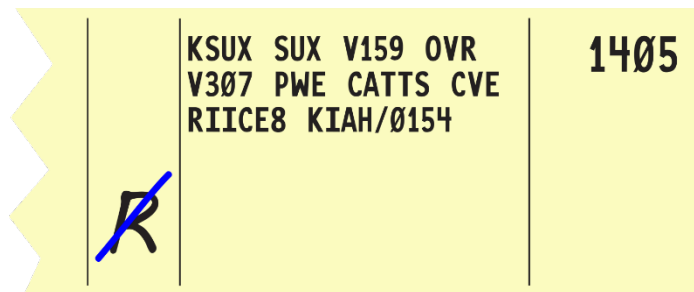
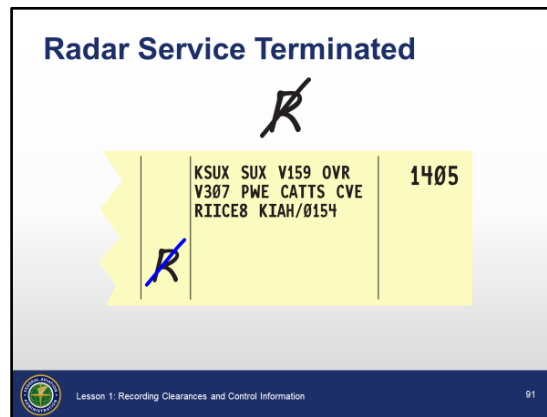
- Used in block 24
- Block may be locally adapted for each facility

NOTE: Facility air traffic managers may authorize the optional use of block 13, 14, 14a, 22, 23, 24, or 28 for transfer of control data.

CONTROL INFORMATION SYMBOLS (CONT'D)

Radar Service Terminated

JO 7110.65, FIG 2-3-2, FIG 2-3-8



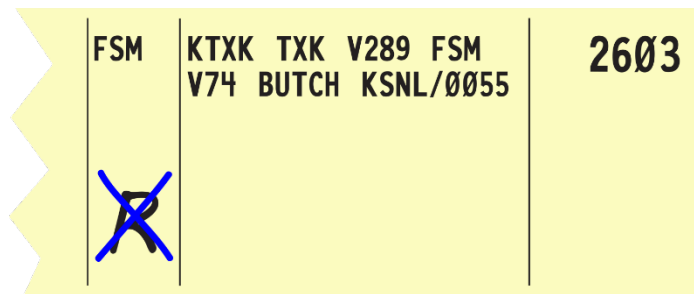
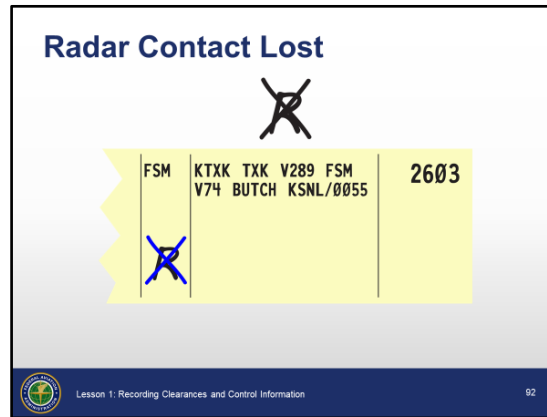
~~R~~

- ⦿ Radar service terminated
 - Place a slash through the R

CONTROL INFORMATION SYMBOLS *(CONT'D)*

Radar Contact Lost

JO 7110.65, FIG
2-3-2, FIG 2-3-8

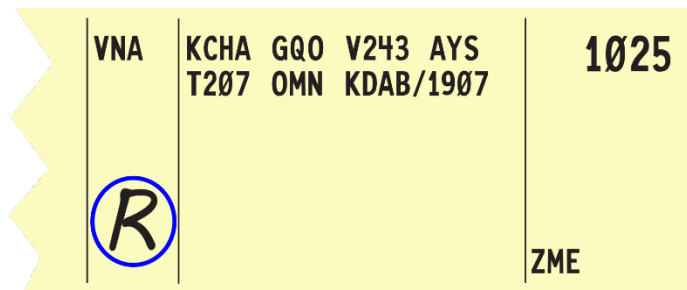
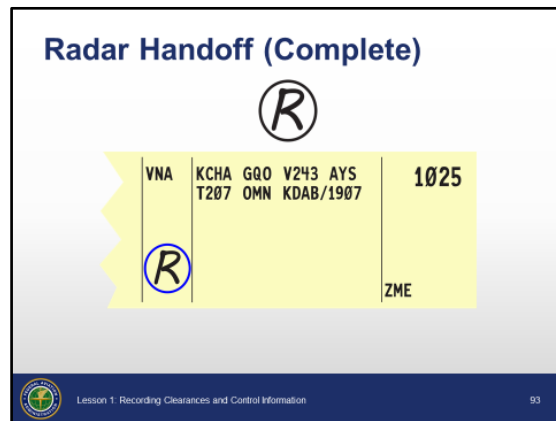


- ⦿ Radar contact lost
 - Used in block 24
 - Place an X over the R
 - Possibly caused by:
 - Terrain
 - Radar outage
 - Transponder failure
-

CONTROL INFORMATION SYMBOLS *(CONT'D)*

Radar Handoff Complete

JO 7110.65, FIG
2-3-2, FIG 2-3-8



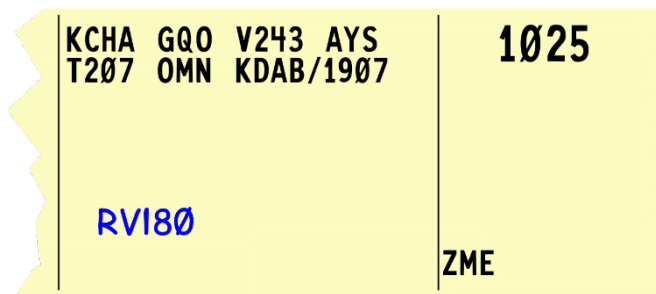
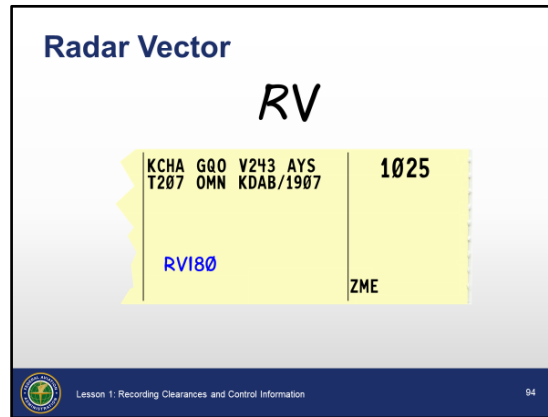
- ⦿ Radar handoff complete
 - Circle R in black when handoff is completed

CONTROL INFORMATION SYMBOLS *(CONT'D)*

Radar Vector

JO 7110.65,
Table 2-3-1, FIG
2-3-2, FIG 2-3-8

JO 7210.3, par.
6-1-6



RV

⦿ Radar vector

- Used when assigning a vector to an aircraft
- Assigned heading follows the V

NOTE: Facility air traffic managers may authorize the optional use of block 13, 14, 14a, 22, 23, 24, or 28 for radar vector information.

CONTROL INFORMATION SYMBOLS (CONT'D)

Pilot Resumed Own Navigation

JO 7110.65, FIG
2-3-2, FIG 2-3-8

Pilot Resumed Own Navigation

RX

KCHA GQO V243 AYS T207 OMN KDAB/1907	1025
RV180	ZME

Lesson 1: Recording Clearances and Control Information 95

KCHA GQO V243 AYS T207 OMN KDAB/1907	1025
RV180	ZME

RX

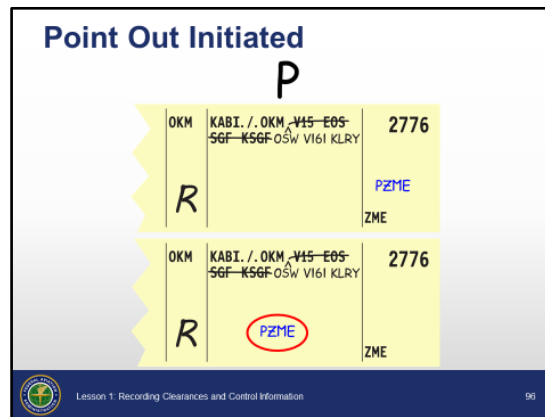
- ⦿ Pilot resumed own navigation
 - Cross out "V" and heading when the aircraft has returned to its own navigation

CONTROL INFORMATION SYMBOLS (CONT'D)

Point Out Initiated

JO 7110.65, FIG 2-3-2, FIG 2-3-8

JO 7210.3, par. 6-1-6



P(Facility/Sector)

⦿ Point out initiated

- Used in block 26
 - May be locally adapted
 - Indicate facility, sector, or position to which aircraft is pointed out
 - Circle in red when point out is completed

NOTE: The caret symbol (^) indicates inserted route elements.

NOTE: Facility air traffic managers may authorize the optional use of block 13, 14, 14a, 22, 23, 24, or 28 for point out information.

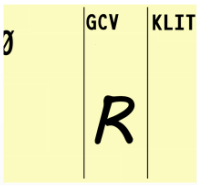
CONTROL INFORMATION SYMBOLS *(CONT'D)*



Knowledge Check

Knowledge Check

What does this strip marking represent?

- A. The aircraft is ready to depart
- B. The route of flight was revised
- C. The flight is radar identified

	GCV	KLIT
		

 Lesson 1: Recording Clearances and Control Information  97

Question: What does this strip marking represent?



Answer: C. The flight is radar identified

CONTROL INFORMATION SYMBOLS *(CONT'D)*



Knowledge Check

Knowledge Check

How would you indicate "RADAR CONTACT LOST"?


A. B. C.

20	HLI	KGWO	20	HLI	KGWO	20	HLI	KGWO
	R			R			RL	

 Lesson 1: Recording Clearances and Control Information  98

Question: How would you indicate "RADAR CONTACT LOST"?

20	HLI	KGWO
	R	

 **Answer: B.**

CONTROL INFORMATION SYMBOLS (CONT'D)

Knowledge Check


Knowledge Check



What does this strip marking represent?

- A. Radar vector is coordinated
- B. Radar service terminated
- C. Radar handoff is complete

60

KJAN



Lesson 1: Recording Clearances and Control Information

Question: What does this strip marking represent?



Answer: C. Radar handoff is complete

APPROACH ABBREVIATIONS

Approach Information

JO 7110.65, FIG 2-3-2

JO 7340.2

Approach Clearance			
APCH			
N916MH C172/G T115 G121 605 03	OSW 1640 50 KMIO	16 ⁵⁰ ↓ 70 ↓	KTOP TOP V131 CNU V307 OSW KMIO/1650 CPT
4360 APCH 1645			
"...CLEARED APPROACH MIAMI AIRPORT"			

Lesson 1: Recording Clearances and Control Information 100

16 ⁵⁰ ↓ 70 ↓	KTOP TOP V131 CNU V307 OSW KMIO/1650 CPT	4360 APCH 1645
----------------------------	--	----------------------

APCH

⊙ Approach Clearance

- Used in block 28
 - Write and circle in red when coordinated
 - Write in black when aircraft is cleared for approach
 - Include runway, if needed
 - Including four-digit time when aircraft was cleared for approach
- Implies pilot may execute approach of his/her choice

Example: "...CLEARED APPROACH MIAMI AIRPORT"

Continued on next page

APPROACH ABBREVIATIONS *(CONT'D)*

Approach Information (Cont'd)

JO 7110.65,
Table 2-3-12

JO 7340.2

-
- ⊙ The following specific approach procedure abbreviations are entered in block 28:
 - CT - Contact approach
 - TA - TACAN approach
 - GPS - GPS approach
 - RNAV - RNAV approach
 - VR - VOR approach
 - ILS - ILS approach
 - SI - Straight-in approach
 - NDB - Nondirectional radio beacon approach
 - VA - Visual approach
 - ⊙ The following approach segment abbreviations are entered where appropriate:
 - Used when the pilot reports position(s) during the approach
 - I - Initial approach
 - PT - Procedure turn
 - FAF - Final approach fix
 - FA - Final approach
 - MA - Missed approach
 - ⊙ You may need additional reports to provide separation
 - If requested, record in block 26
 - When pilot reports position, mark the time next to the request
-

APPROACH ABBREVIATIONS (CONT'D)

Cruise Clearance


JO 7110.65, FIG 2-3-2, FIG 2-3-7

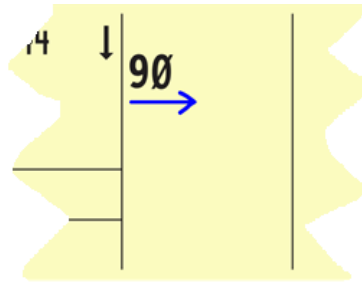
Cruise Clearance

→

N235SL	ZUN	02 ⁴⁴	↓	90	KPRC DRK V12 ZUN KXNI/0247	4240
COL 4/G T175 G188 49	0244					
539 02	KXNI					

"...CLEARED TO PERRY AIRPORT, CRUISE SIX THOUSAND"

 Lesson 1: Recording Clearances and Control Information 101



⦿ Cruise Clearance

- Used in block 20
- Also clears the aircraft for approach

Example: "...CLEARED TO PERRY AIRPORT, CRUISE NINER THOUSAND"

APPROACH ABBREVIATIONS (CONT'D)

Through Clearance

JO 7110.65,
pars. FIG 2-3-2,
4-2-6, Table 2-3-
11

Through Clearance					
N619PA BE20/G T300 6284 02 505 03	OSUYE 0435 0451 KTXK	48 1 70	KAFW./OSUYE V573 TXK KTXK/1653 CPT	4012 APCH 0439	
N619PA BE20/G T300 02 293 01	V<0515 (20) 0510/ KTXK P0505	1 ↑ 50	PBF KTXK TXK V16 UJM KREE/0048 C LV30 10-DEPT 150	4231 T-A ZME	
"...CLEARED THROUGH TEXARKANA AIRPORT TO HELENA AIRPORT VIA..."					

Lesson 1: Recording Clearances and Control Information 102

T

⊙ Through Clearance

- Used in block 28
- You may clear an aircraft through intermediate stops
- Typically follows an approach clearance

Example: "...CLEARED THROUGH TEXARKANA AIRPORT TO
HELENA AIRPORT VIA..."



APPROACH ABBREVIATIONS (CONT'D)

Knowledge Check

Knowledge Check

How do you record "CLEARED VOR APPROACH"?

A.	B.	C.
4012	4012	4012
V-APCH 0439	VOR 0439	VR 0439

 Lesson 1: Recording Clearances and Control Information  103

Question: How do you record "CLEARED VOR APPROACH"?



Answer: C.

4012

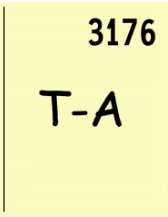
VR
0439



APPROACH ABBREVIATIONS *(CONT'D)*

Knowledge Check

Knowledge Check
What does this strip marking represent?

A. "CLEARED TO TRANSIT
(destination) AIRPORT"
B. "CLEARED THROUGH TO
(destination) AIRPORT"
C. "CLEARED TO TRAIN AT
(destination) AIRPORT"



 Lesson 1: Recording Clearances and Control Information  104

Question: What does this strip marking represent?



Answer: B. "CLEARED THROUGH TO (destination) AIRPORT"

APPROACH ABBREVIATIONS (CONT'D)

Knowledge Check

Knowledge Check



How do you record "CRUISE FIVE THOUSAND"?

A. B. C.


50
→

50
↓

50
↘

 Lesson 1: Recording Clearances and Control Information  105

Question: How do you record "CRUISE FIVE THOUSAND"?


 **Answer: A.**

50
→

PRACTICE EXERCISE 2: STRIP MARKING SYMBOLS

Practice Exercise 2: Strip Marking Symbols

- **Purpose**
 - Review strip marking symbols
- **Materials**
 - Practice exercise 2 from Lesson 1 handout
 - Pencil and/or pen in black and red
- **Directions**
 - Write the proper symbol for each clearance item. Use the appropriate color if necessary.


 Lesson 1: Recording Clearances and Control Information 106

Purpose	Review strip marking symbols
----------------	------------------------------

Materials	 Handout: <i>HO01_L01</i>
------------------	--


- ⦿ Practice exercise 2 from Lesson 1 handout
 - ⦿ Pencil and/or pen in black and red
-

Directions	This exercise takes approximately 30 minutes to complete. Write the proper symbol for each clearance item. Use the appropriate color if necessary.
-------------------	--

 *After all students have finished, review answers. Suggested method: have students write answers on board.*

Continued on next page

PRACTICE EXERCISE 2: STRIP MARKING SYMBOLS (CONT'D)

1.	At or above	\uparrow
2.	Alternate instruction	()
3.	IAFDOF altitude	<u>(Alt.)</u>
4.	Clearance void	V<(Time)
5.	Depart	T→
6.	Cruise	→
7.	Aircraft reported at assigned altitude	✓
8.	Until	/
9.	Direction of flight indicator	
10.	Communications transfer	C(Time/Fix/Altitude)
11.	Join/intercept	⇒
12.	At or below	↓
13.	Emergency	E (red)
14.	Restriction bar	—
15.	Information forwarded	O (red)
16.	Radar contact	R
17.	Report at other than assigned altitude	(Alt.)
18.	Radar handoff completed	Ⓡ
19.	Pilot canceled flight plan	℄
20.	Cross	X

PRACTICE EXERCISE 2: STRIP MARKING SYMBOLS (CONT'D)

21. Radar Service Terminated

~~R~~

22. Local SVFR

W

23. Radar Vector

RV

24. Before

>

25. Radar Contact Lost

~~R~~

26. Point Out Initiated

P

27. Pilot Resumed Own Navigation

~~RV~~

28. Block Altitude Assignment

(Alt.) B (Alt.)

29. After

<

30. Arc

(Miles) (Direction)

31. Warning

W (red)

PRACTICE EXERCISE 2: STRIP MARKING SYMBOLS (CONT'D)

Exercise Review

The instructor will review Exercise 2 answers.



Review Exercise 2 answers on the following PowerPoint slides, each slide contains 3 answers numbered to match the exercise questions. The correct answer is in blue or red, as appropriate.



Click once for each slide.

Practice Exercise 2: Strip Marking Symbols (Cont'd)

1. At or Above
↑ 120
XS2NW F110

2. Alternate Instruction
↑ OTP
(60)

3. IAFDOF Altitude
80 ✓

Lesson 1: Recording Clearances and Control Information 107

Practice Exercise 2: Strip Marking Symbols (Cont'd)

4. Clearance Void
T→N
-MLC
V<1805 (10)
1758/
KMLC P1800

5. Depart
T→N TR↑
0600=V6
1355/
KMLC P1400

6. Cruise
60 →

Lesson 1: Recording Clearances and Control Information 108

Practice Exercise 2: Strip Marking Symbols (Cont'd)

7. Reported at Assigned Altitude
160 ✓

8. Until
T→RY18↑
TR 300/
=V6
1357/
KMLC P1400

9. Direction of Flight Indicator
TUL K
↗

Lesson 1: Recording Clearances and Control Information 109

Practice Exercise 2: Strip Marking Symbols (Cont'd)

10. Communications Transfer
KOKC V6 KHO
C47E

11. Join/Intercept
T→N TL↑
300/=V6
1229/
KMLC P1230

12. At or Below
↑ 120
X17NW ± 60

Lesson 1: Recording Clearances and Control Information 110

Practice Exercise 2: Strip Marking Symbols (Cont'd)

13. Emergency
IEM V6 KOKC
E #2 ENGINE OUT

14. Restriction Bar
↑ 120
X17NW ± 60
XS2NW F110

15. Information Forwarded
110
150

Lesson 1: Recording Clearances and Control Information 111

Practice Exercise 2: Strip Marking Symbols (Cont'd)

16. Radar Contact
KHOT V6
R

17. Reported at Other Than Assigned Altitude
110
120 ✓

18. Radar Handoff Completed
FYV
R

Lesson 1: Recording Clearances and Control Information 112

Practice Exercise 2: Strip Marking Symbols (Cont'd)

19. Pilot Canceled Flight Plan
16
52
MLC

20. Cross
↑ 120
X17NW ± 60
XS2NW F110

21. Radar Service Terminated
R

Lesson 1: Recording Clearances and Control Information 113

Practice Exercise 2: Strip Marking Symbols (Cont'd)

22. Local SVFR
KMIO (U) KMIO

23. Radar Vector
KCHA G00 V
1207 OMN K
RV180

24. Before
80 ↓ 60
60→1611

Lesson 1: Recording Clearances and Control Information 114

PRACTICE EXERCISE 2: STRIP MARKING SYMBOLS (CONT'D)

Exercise Review (Cont'd)

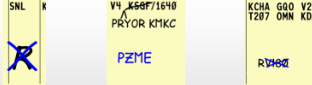
The instructor will continue review of Exercise 2 answers.

Practice Exercise 2: Strip Marking Symbols (Cont'd)

25. Radar Contact Lost

26. Point Out Initiated

27. Pilot Resumed Own Navigation



SNL K

V4 K50F/1610
PRYOR K1K1C

KCHA G00 V2
T207 OMN KDI

PZME

R1W08


Lesson 1: Recording Clearances and Control Information 115

Practice Exercise 2: Strip Marking Symbols (Cont'd)

28. Block Altitude Assignment

29. After

30. Arc



1908230

T→N TL 1
300/→V6
RLS 1120N-N21
10441/


KMLC P1645

KOKC V4 KTUL
29 SW→V14

Lesson 1: Recording Clearances and Control Information 116

Practice Exercise 2: Strip Marking Symbols (Cont'd)

31. Warning




20 W

Lesson 1: Recording Clearances and Control Information 117

PRACTICE EXERCISE 3: RECORDING CLEARANCES AND CONTROL INFORMATION

Practice Exercise 3: Recording Clearances and Control Information

- **Purpose**
 - Review and practice strip marking on flight strips using proper characters and symbols in the correct locations
- **Materials**
 - Practice exercise 3 from Lesson 1 handout
 - Appendix: Location Identifiers
 - Pencil and/or pen in black and red
- **Directions**
 - Record the clearances and control information on the flight progress strips as per the clearance/request read by the instructor

 Lesson 1: Recording Clearances and Control Information 118

Purpose

Review and practice strip marking on flight strips using proper characters and symbols in the correct locations

Materials



Handout: *HO01_L01*

- ⦿ Practice exercise 3 from Lesson 1 handout
 - ⦿ Appendix: Location Identifiers
 - ⦿ Pencil and/or pen in black and red
-

Directions

This exercise takes approximately 30 minutes to complete. Record the clearances and control information on the flight progress strips as per the clearance/request read by the instructor.



After you read each clearance/transmission and the students have finished, click to reveal the correct strip marking, review with the students. Each strip should be completed then answers revealed prior to doing the next question. Suggested method: have students write answers on board.

Continued on next page

PRACTICE EXERCISE 3: RECORDING CLEARANCES AND CONTROL INFORMATION (CONT'D)

1.

"Bonanza five six seven, cleared to Huron Regional (KHON) airport via depart northwest, turn left, fly heading two two zero until joining victor twenty-six, victor twenty-six. Cross six miles southwest of Eau Claire (EAU) airport at or below niner thousand, climb and maintain one zero thousand. squawk two three six five. Contact Bravo Center one two five point zero leaving three thousand."

N567		↑	FGT	KEAU EAU V26 HIN KHON/Ø11Ø	2365
BE36/G					
T18Ø					
15					
Ø19 Ø1	KEAU P121Ø		1ØØ		



Click to show answer when all students are finished.

N567		T→NW TL ↑ 22Ø/⇒V26	↑ 1ØØ X65W ± 9Ø	FGT	KEAU EAU V26 HIN KHON/Ø11Ø	2365
BE36/G						
T18Ø						
15						
Ø19 Ø1	KEAU P121Ø		1ØØ		CLV3Ø	D-A

PRACTICE EXERCISE 3: RECORDING CLEARANCES AND CONTROL INFORMATION (CONT'D)

3.

"Cheyenne two five six quebec, cleared to Roswell Airport (KROW) via Santa Fe (SAF) VORTAC, as filed. Cross six miles south of Santa Fe VORTAC at or below one one thousand, climb and maintain one three thousand. Squawk four six one two. Contact Bravo Center one two five point zero two minutes after departure."

N256Q PAY2/G T245 02 692 01		↑	OTO	KSAF SAF V83 CME KROW/0040	4612
	KSAF	130			



Click to show answer when all students are finished.

N256Q PAY2/G T245 02 692 01		↑ ↑ 130 X65 SAF ±110	OTO	KSAF SAF V83 CME KROW/0040	4612 D-A
	KSAF	130	C ₂ MIN < DEPT		

PRACTICE EXERCISE 3: RECORDING CLEARANCES AND CONTROL INFORMATION (CONT'D)

4.

"King air five six three juliett, cleared to Bryce Canyon (KBCE) airport via depart southwest direct Grand Junction (JNC), Victor eight. Cross two one miles southeast Grand Junction VOR at and maintain one four thousand. Squawk six two three one. Contact Bravo Center one two five point zero at Grand Junction."

N563J		↑	JNC	KGJT JNC V8 BCE KBCE/Ø14Ø	6231
BE9L/G T23Ø Ø2					
142 Ø1		KGJT P163Ø	14Ø		



Click to show answer when all students are finished.

N563J	T→SW -JNC	↑	JNC	KGJT JNC V8 BCE KBCE/Ø14Ø	6231
BE9L/G T23Ø Ø2		↑ 14Ø			
142 Ø1		X2ISE JNC @	14Ø	C@ JNC	D-A

PRACTICE EXERCISE 3: RECORDING CLEARANCES AND CONTROL INFORMATION (CONT'D)

5.

“Delta twenty-one, cleared to Tulsa (TUL) VORTAC, hold north as published, no delay expected. Descend and maintain one one thousand. Contact Tulsa approach one one niner point two at one two three zero zulu.”

DAL21	ARG	03 ⁴¹ ↓	180		KATL./ARG J46 TUL KTUL	2633
H/B763/L T445 G453 02	0310					
511 01		KTUL				TUL



Click to show answer when all students are finished.

DAL21	ARG	03 ⁴¹ ↓	180 ↓ 110		KATL./ARG J46 TUL KTUL	2633
H/B763/L T445 G453 02	0310					
511 01		KTUL			C 1230	H ^{-N} TUL

PRACTICE EXERCISE 3: RECORDING CLEARANCES AND CONTROL INFORMATION *(CONT'D)*

6.

“Bravo Center, mooney two niner one one echo estimating Neosho (EOS) two one zero niner at seven thousand.”

N2911E	TUL	21 ¹⁰	90	SGF	KOKC IRW V14 SGF KSGF/2139	2633
M20P/G T145 G153 02 964 03	2041			2134		
		EOS				



Click to show answer when all students are finished.

N2911E	TUL	21 ¹⁰	90	SGF	KOKC IRW V14 SGF KSGF/2139	2633
M20P/G T145 G153 02 964 03	2041	09	70 ✓	2134		
		EOS				

PRACTICE EXERCISE 3: RECORDING CLEARANCES AND CONTROL INFORMATION (CONT'D)

7.

"Southwest thirty-three twelve, cleared to Will Rogers World Airport (KOKC) via last routing cleared."

SWA3312 B737/L T437 G449 37 226 03	TCC	23 00		390✓	RUSTS	KLAS. / .ZUN J6 PNH RUSTS GHOST3 KOKC	1770 F
	2224	30			2348		
		PNH					



Click to show answer when all students are finished.

SWA3312 B737/L T437 G449 37 226 03	TCC	23 00		390✓	RUSTS	KLAS. / .ZUN J6 PNH RUSTS GHOST3 KOKC	1770 F
	2224	30			2348		
		PNH					

PRACTICE EXERCISE 3: RECORDING CLEARANCES AND CONTROL INFORMATION *(CONT'D)*

8.

"Mars three one, cross Chisum (CME) VORTAC at or above flight level two zero zero, climb and maintain block flight level two four zero through flight level two five zero. Contact Bravo Center three two six point zero."

MARS31	ABI	19 ⁴²	140B150✓	TCS	KABI ABI J65 PXR KIWA	7221
2/AV8/I				2002		
T400 G391	1904	30				
45						
814 03		CME				



Click to show answer when all students are finished.

MARS31	ABI	19 ⁴²	140B150✓	TCS	KABI ABI J65 PXR KIWA	7221
2/AV8/I			↑240B250	2002		
T400 G391	1904	30	x↑200			
45						
814 03		CME			C	

PRACTICE EXERCISE 3: RECORDING CLEARANCES AND CONTROL INFORMATION *(CONT'D)*

9.

"Skylane six two one one four, radar contact five miles west of Neosho (EOS). Cleared to Drake Field (KFYV) airport via Neosho Victor thirteen, as filed. Climb and maintain niner thousand. Squawk two two three three."

N62114 C182/G T125 06 009 01		↑	EOS	KMIO EOS V13 BOYLE KFYV/0050	2233 ○PICKUP OVER KMIO
	KMIO P1900	90			



Click to show answer when all students are finished.

N62114 C182/G T125 06 009 01		↑ ↑ 90	EOS	KMIO EOS V13 BOYLE KFYV/0050	2233 D-A
			R		
	KMIO P1900	90			

PRACTICE EXERCISE 3: RECORDING CLEARANCES AND CONTROL INFORMATION (CONT'D)

10.

"Pilatus niner two delta zulu, cleared to Fort Smith (KFSM) airport as filed. Climb and maintain one zero thousand. Expect one seven thousand one zero minutes after departure. Squawk four one six two. Released for departure after one eight two zero."

N92DZ PC12/G T260 32 057 01		↑		BUTCH	KTUL TUL V74 FSM KFSM/0030	4162
		KTUL P1820		170		ZME



Click to show answer when all students are finished.

N92DZ PC12/G T260 32 057 01		↑ 100		BUTCH	KTUL TUL V74 FSM KFSM/0030	4162
		RLS <1820				D-A
		KTUL P1820		170	EXPECT 170 10 < DEPT	ZME

PRACTICE EXERCISE 3: RECORDING CLEARANCES AND CONTROL INFORMATION (CONT'D)

11.

Time: 0130.

"Malibu four delta charlie cleared approach. Contact North Platte (KLBF) tower one one eight point two procedure turn."

N914DC P46T/G T150 G141 12 759 04	YOZLE	01 ³⁵ ↓	120		KLNK LNK V138 GRI V6 LBF KLBF/0138	4306
	0113	33				
	KLBF					



Click to show answer when all students are finished.

N914DC P46T/G T150 G141 12 759 04	YOZLE	01 ³⁵ ↓	120		KLNK LNK V138 GRI V6 LBF KLBF/0138	4306
	0113	33				
	KLBF				CPT	APCH 0130

PRACTICE EXERCISE 3: RECORDING CLEARANCES AND CONTROL INFORMATION *(CONT'D)*

12.

"Bonanza eight one six niner romeo, cleared to Scottsbluff (BFF) VORTAC, hold east as published, no delay expected. Report passing six miles west of Alliance (AIA)."

N8169R	AIA	10 ¹⁵ ↓	120 ✓		KCKP SUX V100 BFF KBFF/1017	3115
BE35/G T165 G135 16 906 04	1001	14				
		KBFF				



Click to show answer when all students are finished.

N8169R	AIA	10 ¹⁵ ↓	120 ✓		KCKP SUX V100 BFF KBFF/1017	3115
BE35/G T165 G135 16 906 04	1001	14				H ^{-E} BFF
		KBFF			RP 6W AIA	

PRACTICE EXERCISE 3: RECORDING CLEARANCES AND CONTROL INFORMATION (CONT'D)

13.

“Caravan niner six niner seven bravo, cleared to Mineral Wells (KMWL) airport via depart south, direct McAlester (MLC), victor sixty-three, as filed. Climb and maintain one two thousand, report leaving one one thousand. Squawk one one two six. Contact Bravo Center one two five point zero leaving three thousand.”

N9697B		↑	URH	KMLC MLC V63 UKW V17 MQP KMWL/Ø1ØØ	1126
C2Ø8/G T175 22 442 Ø1					
		KMLC PØ1ØØ	12Ø		




Click to show answer when all students are finished.

N9697B		T→S -MLC	↑ ↑ 12Ø	URH	KMLC MLC V63 UKW V17 MQP KMWL/Ø1ØØ	1126
C2Ø8/G T175 22 442 Ø1						
		KMLC PØ1ØØ	RL 11Ø	12Ø	CLV3Ø	D-A

PRACTICE EXERCISE 4: FLIGHT STRIP MARKING

Practice Exercise 4: Flight Strip Marking

- **Purpose**
 - Review and practice strip marking on flight strips using proper characters and symbols in the correct locations
- **Materials**
 - Practice Exercise Handout: Flight Strip Marking
 - Appendix: Location Identifiers
 - Pencil and/or pen in black and red
- **Directions**
 - Record the clearances and control information on the flight progress strips as per the clearance/request read by the instructor

 Lesson 1: Recording Clearances and Control Information 132

Purpose	Review and practice strip marking on flight strips using proper characters and symbols in the correct locations
----------------	---

Materials



Handout: *HO01_L01*

- ⦿ Practice exercise 4 from Lesson 1 handout
 - ⦿ Appendix: Location Identifiers
 - ⦿ Pencil and/or pen in black and red
-

Directions

This exercise takes approximately 30 minutes to complete. Record the clearances and control information on the flight progress strips as per the clearance/request read by the instructor.



After you read each clearance/transmission and the students have finished, click to reveal the correct strip marking, review with the students. Each strip should be completed then answers revealed prior to doing the next question. Suggested method: have students write answers on board.

Continued on next page

PRACTICE EXERCISE 4: FLIGHT STRIP MARKING

(CONT'D)

1.

Time 1158.

"American ten ninety-two cleared to Dallas Fort-Worth (KDFW) airport as filed. Climb and maintain one six thousand. Squawk one zero zero one."

AAL1092 B738/L T465 39 100 01		↑		PEJAY	KTUL PEJAY AXXEE SEEV4 KDFW	1001
		KTUL P1200	160			



Click to show answer when all students are finished.

AAL1092 B738/L T465 39 100 01		↑ ↑ 160		PEJAY	KTUL PEJAY AXXEE SEEV4 KDFW	1001
						D-A
		1158/ KTUL P1200	160			

PRACTICE EXERCISE 4: FLIGHT STRIP MARKING (CONT'D)

2.

Time 1152.

"Pilatus niner eight six alpha charlie, cleared to Topeka (KTOP) airport via depart northwest, direct Winner (ISD) VOR, Victor seventy-one. Climb and maintain one five thousand. Squawk one zero zero two. Contact Bravo Center one two five point zero leaving three thousand."

N986AC PC12/G T265 46 102 01		↑	ONL	KICR ISD V71 TOP KTOP/0110	1002
	KICR P1200	150			



Click to show answer when all students are finished.

N986AC PC12/G T265 46 102 01	T→NW -ISD	↑ ↑ 150	ONL	KICR ISD V71 TOP KTOP/0110	1002
					D-A
	1152/	KICR P1200	150	CLV30	

PRACTICE EXERCISE 4: FLIGHT STRIP MARKING

(CONT'D)

3.

Time 1558.

"Skyhawk seven niner one seven two, cleared to Janesville (KJVL) airport via depart south, turn left, fly heading one five zero until joining victor ninety-seven, victor ninety*seven. Climb and maintain niner thousand. Squawk one zero zero three. Contact Bravo Center one two five point zero leaving three thousand."

N79172 C172/G T115 32 102 01		↑	LNR 90	KLSE CDI V97 JVL KJVL/0115	1003
	KLSE P1600				



Click to show answer when all students are finished.

N79172 C172/G T115 32 102 01		T→S TL ↑ 150/⇒V97 ↑ 90	LNR 90	KLSE CDI V97 JVL KJVL/0115 CLV30	1003 D-A
	1558/ KLSE P1600				

PRACTICE EXERCISE 4: FLIGHT STRIP MARKING (CONT'D)

4.

"Bravo Center, aztec one five six is level at one zero thousand."

"Aztec one five six cleared to Myton (MTU) VOR/DME, no delay expected. Descend and maintain six thousand, report leaving eight thousand."

N156	JNC	16 ³²	100	TCH	KBMC CAUSE V484 HBU KGUC/1757	1004
PA27/G T180 G162 02 103 04	1557			1706		
		MTU				



Click to show answer when all students are finished.

N156	JNC	16 ³²	100✓ ↓60	TCH	KBMC CAUSE V484 HBU KGUC/1757	1004
PA27/G T180 G162 02 103 04	1557			1706		F
		MTU	RL80			

PRACTICE EXERCISE 4: FLIGHT STRIP MARKING

(CONT'D)

5.

"Bravo Center, sundowner two three four estimating Butler (BUM) one six three zero, level eight thousand. Emporia (EMP) next."

N234	ROACH	16 ³⁰	80	EMP	KEFS. /. ROACH V234 HUT KHUT/1735	1005
BE23/G T115 G110 02 104 04	1600			1659		
		BUM				



Click to show answer when all students are finished.

N234	ROACH	16 ³⁰	80✓	EMP	KEFS. /. ROACH V234 HUT KHUT/1735	1005
BE23/G T115 G110 02 104 04	1600	30		1659		
		BUM				

PRACTICE EXERCISE 4: FLIGHT STRIP MARKING

(CONT'D)

6.

"Bravo Center, bonanza one four seven is level at one five thousand."

"Bonanza one four seven, cleared to Livingston (LVT) VOR/DME, hold southwest on two four five radial, expect further clearance one six four zero."

N147 BE36/G T165 G172 07 105 04	BEVEE	16 ³⁰	150	LOZ	KHZD BEVEE V140 AZQ V115 HVQ KCRW/1728	1006
	1603			1650		
	LVT					



Click to show answer when all students are finished.

N147 BE36/G T165 G172 07 105 04	BEVEE	16 ³⁰	150✓	LOZ	KHZD BEVEE V140 AZQ V115 HVQ KCRW/1728	1006
	1603			1650		H -SW 245 1640
	LVT					

PRACTICE EXERCISE 4: FLIGHT STRIP MARKING (CONT'D)

7.

"Bravo Center, american twenty-four ten level at flight level three zero zero, declaring an emergency due to a fuel leak."

AAL2410	LIT	16 ²⁷	300	FEWW	KMEM./LIT J66 MEEOW FEWW SEEVR4 KDFW	1007
A319/L T468 G455 33 106 05	1603			1634		
		MEEOW				



Click to show answer when all students are finished.

AAL2410	LIT	16 ²⁷	300✓	FEWW	KMEM./LIT J66 MEEOW FEWW SEEVR4 KDFW	1007
A319/L T468 G455 33 106 05	1603			1634		
		MEEOW			E FUEL LEAK	

PRACTICE EXERCISE 4: FLIGHT STRIP MARKING

(CONT'D)

8.

"Bravo Center, chancellor two five three tango level at one seven thousand."

"Chancellor two five three tango, maintain one seven thousand until one eight miles east Sidney (SNY), climb and maintain flight level one niner zero."

N253T	SNY	21 ³⁰	170	GRI	KRWL EDIFY V6 DSM KDSM/2252	1102
C414/G T210 G243 15 109 03	2105			2157		
		LBF				



Click to show answer when all students are finished.

N253T	SNY	21 ³⁰	170 ✓ ↑ 190 170 / 18E SNY	GRI	KRWL EDIFY V6 DSM KDSM/2252	1102
C414/G T210 G243 15 109 03	2105			2157		
		LBF				

PRACTICE EXERCISE 4: FLIGHT STRIP MARKING

(CONT'D)

9.

"Bravo Center, bonanza one six sierra level at one two thousand estimating Vichy (VIH) at one six three zero."

"Bonanza one six sierra maintain one two thousand until three five miles northeast Vichy, descend and maintain one zero thousand. Report leaving one one thousand."

N16S	STEER	16 ³⁰	120	SGF	KCPS STL V14 IRW KOKC/1807	1103
BE35/G						
T165 G170	1617			1702		
22						
110 04		VIH				



Click to show answer when all students are finished.

N16S	STEER	16 ³⁰	120 ✓	SGF	KCPS STL V14 IRW KOKC/1807	1103
BE35/G			↓100			
T165 G170	1617		120 / 35NE	1702		
22		30	RL110			
110 04		VIH				

PRACTICE EXERCISE 4: FLIGHT STRIP MARKING (CONT'D)

10.

"Bonanza five two one cleared to McAlester VORTAC, hold north on the McAlester (MLC) three six zero radial, expect further clearance one six five five. Maintain one one thousand until one eight miles east of Okmulgee (OKM) VOR/DME, cross McAlester at and maintain six thousand. Report leaving eight thousand."

N521	OKM	16 ⁴⁸	110	RIGYA	KEOS EOS V15 ACT KACT/1808	1301
BE36/G T165 G172 37 110 04	1630			1707		
		MLC				



Click to show answer when all students are finished.

N521	OKM	16 ⁴⁸	110 ↓60 110 / 18E OKM X @ RL80	RIGYA	KEOS EOS V15 ACT KACT/1808	1301
BE36/G T165 G172 37 110 04	1630			1707		H ^{-N} 360 1655
		MLC				

PRACTICE EXERCISE 4 FLIGHT STRIP MARKING

(CONT'D)

11.

"Twin bonanza four five tango descend and maintain seven thousand, report reaching."

N45T	CZI	12 ⁵⁴	110	MBW	KBIL BIL V611 DDY V85 FIPSS KBJC/1458	4623
BE50/G	1232			1323		
T154						
10						
019 04		DDY				



Click to show answer when all students are finished.

N45T	CZI	12 ⁵⁴	110	MBW	KBIL BIL V611 DDY V85 FIPSS KBJC/1458	4623
BE50/G	1232		↓ 70 RR	1323		
T154						
10						
019 04		DDY				

PRACTICE EXERCISE 4: FLIGHT STRIP MARKING

(CONT'D)

12.

Time 1756.

"Sierra six eight six alpha uniform cleared to Iowa City (KIOU) airport via depart north, turn left, fly heading three one five until joining victor sixty-seven, victor sixty seven. Climb and maintain eight thousand. Squawk one five zero one. Contact Bravo Center one two five point zero leaving three thousand. Clearance void if not off by one eight one zero."

N686AU		↑	MWA	KPAH CNG V67 IOW KIOU/0210	1501
BE24/G					
T148					
31					
113 01		KPAH P1800	80		



Click to show answer when all students are finished.

N686AU		T→N TL ↑ 315/⇒V67 ↑80	MWA	KPAH CNG V67 IOW KIOU/0210	1501
BE24/G		V<1810			
T148					
31		1756/			
113 01		KPAH P1800	80	CLV30	D-A

PRACTICE EXERCISE 4: FLIGHT STRIP MARKING

(CONT'D)

13.

"Bravo Center, mooney two niner one one echo progressing Neosho (EOS) at one three zero five, level niner thousand, estimating Springfield (SGF) one three three six."

N2911E	TUL	13 ⁰⁵	90	SGF	KOKC IRW V14 SGF KSGF/2139	2633
M20P/G T145 G153 02 964 03	1236	05				
		E0S				



Click to show answer when all students are finished.

N2911E	TUL	13 ⁰⁵	90 ✓	SGF 1336	KOKC IRW V14 SGF KSGF/2139	2633
M20P/G T145 G153 02 964 03	1236	05	1305			
		E0S				


CONCLUSION

Lesson Summary

Lesson Summary

This lesson covered:

- Purpose of strip marking
- Post current data
- Record clearances
- Standard characters
- Corrections and amendments

 Lesson 1: Recording Clearances and Control Information 143



Review and elaborate briefly on the following topics. Ask students if they have questions about any of the concepts covered in the lesson.

Summary


- ⦿ Purpose of strip marking
 - Flight progress strips are official records of control data
- ⦿ Post current data
- ⦿ Record clearances
 - Ensure data placed in the proper location
 - Manually prepared strips shall conform to the same format as machine-generated strips
- ⦿ Standard characters
 - Use characters and symbols that are properly formed and legible
- ⦿ Corrections and amendments
 - Corrections, amendments and/or preplanning must be distinguished from the current ATC clearance
 - Do not erase or overwrite

CONCLUSION *(CONT'D)*

Lesson Summary (Cont'd)

Lesson Summary (Cont'd)

- Types of flight strips
- Flight strip data entries
- General information
- Clearance abbreviations
- Miscellaneous abbreviations
- Control information symbols
- Approach abbreviations

Lesson 1: Recording Clearances and Control Information147

- ⊙ Types of flight strips
 - Proposal strips
 - Departure strips
 - En Route strips
 - Arrival strips
- ⊙ Flight strip data entries
 - Computer programmed blocks
 - Flight strip data locations
- ⊙ General information
 - Report level
 - Coordinated
 - Direction arrow
 - IAFDOF
 - Resolution advisory (pilot reported TCAS event)
 - Warning
 - Emergency
 - Tower jurisdiction

Continued on next page

CONCLUSION *(CONT'D)*

Lesson Summary (Cont'd)

- ⊙ Clearance abbreviations
 - Cleared to depart from the fix
 - Cleared to airport (point of intended landing)
 - Depart
 - Cleared to the fix
 - Turn left, turn right
 - Until
 - Join
 - After, before
 - Hold for release
 - Release
 - Released your discretion
 - Void after
 - Climb and maintain, Descend and maintain
 - At
 - At or above, at or below
 - Block altitude
 - Cleared to climb/descend at pilot's discretion
 - Report at other than assigned altitude
 - Cleared to cross: airway, fix, radial, airway
 - Hold
 - Cleared over the fix
 - DME arc
 - SVFR
 - Cancel IFR

Continued on next page

CONCLUSION *(CONT'D)*

Lesson Summary (Cont'd)

-
- ⊙ Miscellaneous abbreviations
 - Report leaving
 - Report reaching
 - Report crossing
 - Report passing (fix/altitude)
 - Alternate instructions
 - Communications transfer
 - Restriction bar
 - ⊙ Control information symbols
 - Radar contact
 - Radar service terminated
 - Radar contact lost
 - Radar handoff complete
 - Radar vectors
 - Resume own navigation
 - Point out
 - ⊙ Approach abbreviations
 - Procedure abbreviation
 - Approach segment abbreviations
 - Cruise clearance
 - Through clearance



Hand out and administer the End-of-Lesson Test. Provide feedback on missed items, including why particular answers are correct, as well as why some responses are incorrect.

PAGE INTENTIONALLY LEFT BLANK

APPENDIX: LOCATION IDENTIFIERS

Alphabetical By ID	
ID	Name
AIA	Alliance
BFF	Scottsbluff
BFV	Burns Flat
BUM	Butler
CME	Chisum
EAU	Eau Claire
EMP	Emporia
EOS	Neosho
FSM	Fort Smith
HON	Huron
HVE	Hanksville
IRW	Will Rogers
ISD	Winner
JNC	Grand Junction
KBCE	Bryce Canyon Airport
KDFW	Dallas-Fort Worth Airport
KFSM	Fort Smith Airport
KFYV	Drake Field Airport
KGJT	Grand Junction Airport
KIOW	Iowa City Airport
KJVL	Janesville Airport
KLBF	North Platte Airport
KMWL	Mineral Wells Airport
KOKC	Will Rogers World Airport
KROW	Roswell Airport
KTOP	Topeka Airport
LVT	Livingston
MLC	McAlester
MTU	Myton
OKM	Okmulgee
PGO	Rich Mountain
PRX	Paris
SAF	Santa Fe
SGF	Springfield
SNY	Sidney
TUL	Tulsa
VIH	Vichy

Alphabetical by Name	
Name	ID
Alliance	AIA
Bryce Canyon Airport	KBCE
Burns Flat	BFV
Butler	BUM
Chisum	CME
Dallas-Fort Worth Airport	KDFW
Drake Field Airport	KFYV
Eau Claire	EAU
Emporia	EMP
Fort Smith	FSM
Fort Smith Airport	KFSM
Grand Junction Airport	KGJT
Grand Junction	JNC
Hanksville	HVE
Huron	HON
Iowa City Airport	KIOW
Janesville Airport	KJVL
Livingston	LVT
McAlester	MLC
Mineral Wells Airport	KMWL
Myton	MTU
Neosho	EOS
North Platte Airport	KLBF
Okmulgee	OKM
Paris	PRX
Rich Mountain	PGO
Roswell	KROW
Santa Fe	SAF
Scottsbluff	BFF
Sidney	SNY
Springfield	SGF
Topeka Airport	KTOP
Tulsa	TUL
Vichy	VIH
Will Rogers	IRW
Will Rogers World Airport	KOKC
Winner	ISD