

Initial En Route Qualification Training

Lesson 15
Arrival and Approach
Procedures

Course 50148001

LESSON PLAN DATA SHEET

COURSE NAME: INITIAL EN ROUTE QUALIFICATION TRAINING

COURSE NUMBER: 50148001

LESSON TITLE: ARRIVAL AND APPROACH PROCEDURES

DURATION: 7+30 HOURS

DATE REVISED: 2022-02 **VERSION:** V.2022-02

REFERENCE(S): FAA ORDERS JO 7110.65, AIR TRAFFIC CONTROL; N JO 7110.558;

AERONAUTICAL INFORMATION MANUAL (AIM)

HANDOUT(S): inbounds.f2k, FRAHE.f2k and APCH.f2k - EXERCISE STRIPS

EXERCISE(S)/ EXERCISE 1: ARRIVAL CLEARANCE PHRASEOLOGY AND

ACTIVITY(S): STRIPMARKING

EXERCISE 2: APPROACH CLEARANCE PHRASEOLOGY AND

STRIPMARKING

EXERCISE 3: ARRIVAL COORDINATION, ARRIVAL CLEARANCES,

APPROACH CLEARANCES, AND STRIPMARKING ACTIVITY: INBOUND AND ARRIVAL CLEARANCES

END-OF-LESSON

TEST:

YES

PERFORMANCE

TEST:

NONE

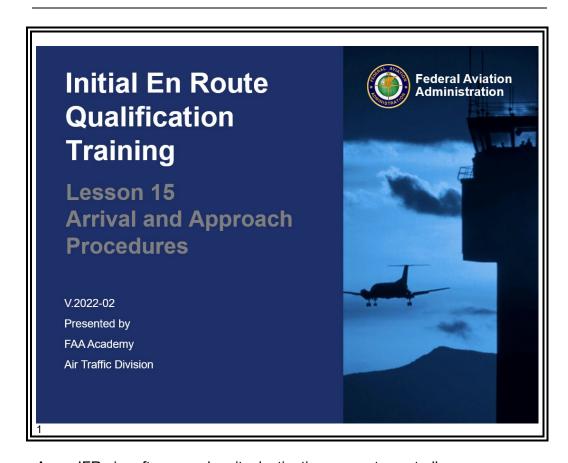
MATERIALS: NONE

OTHER PERTINENT INFORMATION:

DISCLAIMER

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INTRODUCTION



As an IFR aircraft approaches its destination, en route controllers are responsible for transitioning the aircraft from the en route environment to its destination airport. In the previous lesson on holding, you learned the basic procedures to transition aircraft into holding. In this lesson, you will learn how to safely and efficiently transition an aircraft to its destination. This transition may include working with an approach control, nonapproach control tower, or an airport for which you have control.

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INTRODUCTION (Continued)



Knowledge of arrival/approach procedures enables you to devote more time and attention to your primary duty of separating aircraft. Forwarding arrival information to the appropriate facilities and issuing approach clearances are important air traffic control functions you will be performing throughout your career.

Purpose

This lesson will cover arrival information you **must** forward to nonapproach control towers, and approach controls. In addition to the phraseology used, the lesson will also cover the terminology for approach clearances, instrument approaches, and approach charts.

INTRODUCTION (Continued)

Lesson Objectives

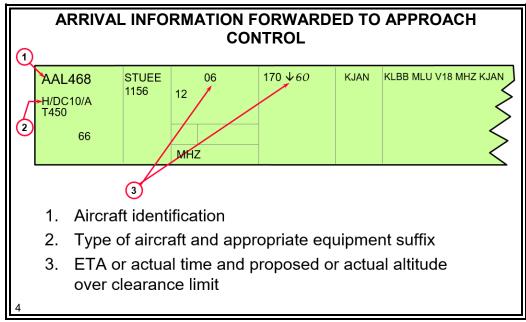
LESSON OBJECTIVES

- On an End-of-Lesson Test and in accordance with FAA Orders JO 7110.65, you will identify:
 - Terminology associated with instrument approach procedures
 - Conditions for issuing an approach clearance
 - Responsibilities and phraseology for issuing arrival/approach clearances
 - Arrival information forwarded to approach controls and nonapproach control towers
 - Responsibilities and phraseology for issuing cruise clearances
 - Advance descent procedures

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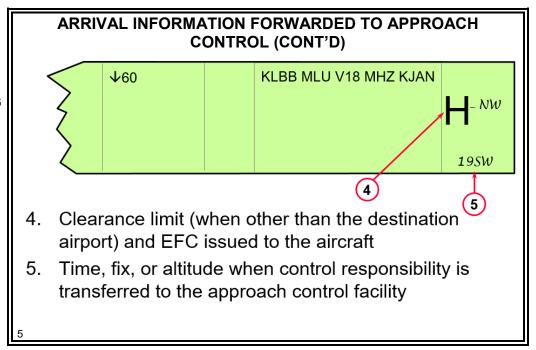
ARRIVAL INFORMATION

Approach Control Facilities JO 7110.65, pars. 2-3-10, 4-7-6



- Information to forward to approach control:
 - Aircraft identification
 - Type of aircraft (including "Heavy" when appropriate) and appropriate equipment suffix
 - Include number of aircraft, if appropriate
 - Expected Time of Arrival (ETA) or actual time and proposed or actual altitude over clearance limit

Approach Control Facilities (Cont'd) JO 7110.65, pars. 2-3-10, 4-7-6

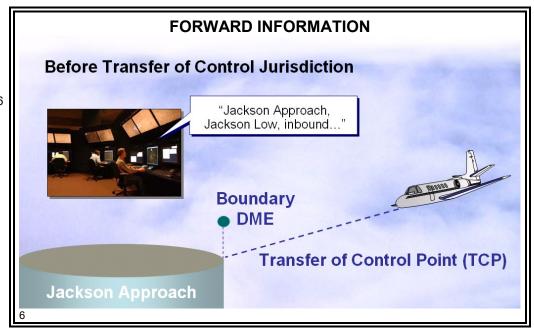


 Clearance limit (when other than the destination airport) and Expect Further Clearance (EFC) issued to the aircraft

NOTE: The ZAE/JAN APCH LOA requires forwarding of destination airport if other than KJAN.

 Time, fix, or altitude when control responsibility is transferred to the approach control facility

Approach Control Facilities (Cont'd) JO 7110.65, pars. 2-3-10, 4-7-6



- When to forward arrival information to approach control facilities:
 - Before transfer of control jurisdiction

→ Phraseology

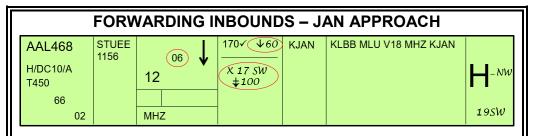
"(Identification), (type of aircraft), ESTIMATED/OVER (clearance limit), (time), (altitude), EFC (time).

If required,

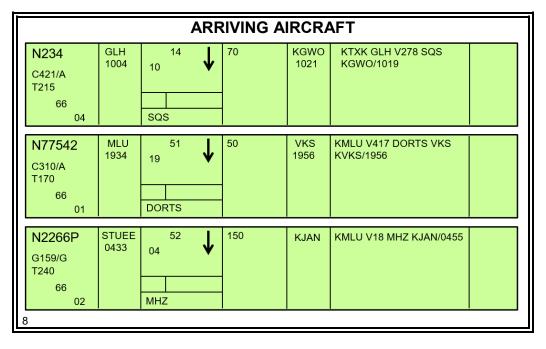
YOUR CONTROL AT (time, fix, or altitude)."

Approach
Control
Facilities
(Cont'd)
JO 7110.65,
pars. 2-3-10, 4-7-6

Phraseology Example



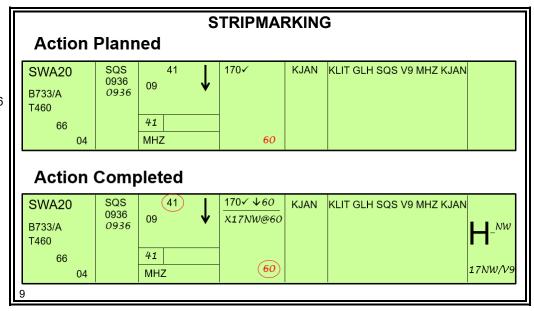
"American Four Sixty-Eight, Heavy D-C Ten slant Alfa, estimated Magnolia VORTAC one two zero six, descending to six thousand with a restriction to cross one seven miles southwest Magnolia VORTAC at or below one zero thousand. Your control one niner miles southwest Magnolia VORTAC."



Stripmarking

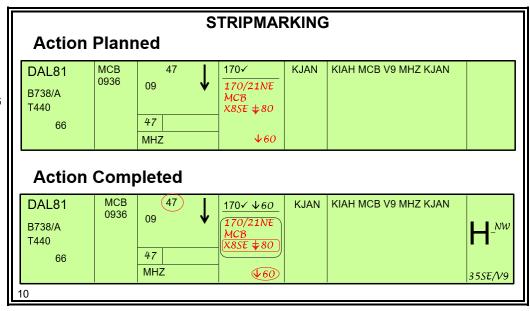
Arriving aircraft are indicated by a down arrow in space 16

Approach Control Facilities (Cont'd) JO 7110.65, pars. 2-3-10, 4-7-6



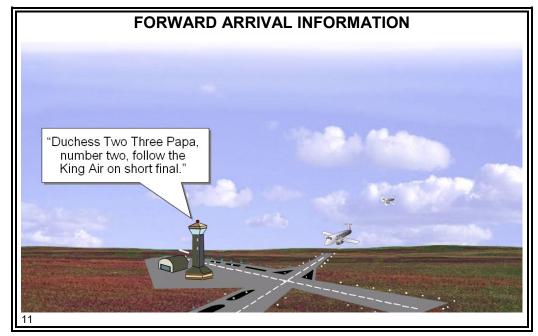
Circle coordinated information in red.

Approach Control Facilities (Cont'd) JO 7110.65, pars. 2-3-10, 4-7-6



- Minutes space 15
- Altitude and any restrictions inside Transfer of Control Point (TCP) - space 20
- Clearance limit if other than destination airport space 28
- Pertinent remarks space 26
- Record preplanned actions in red
- Record completed actions in black
 - Transfer of Control Point (TCP) space 29

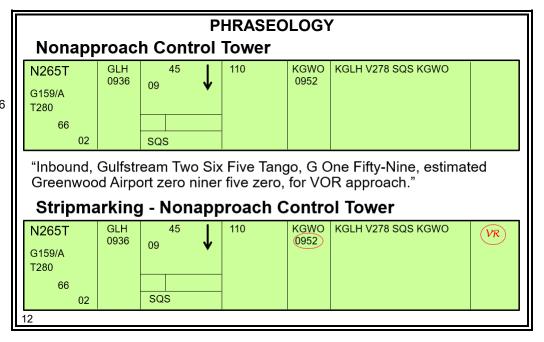
Nonapproach Control Towers JO 7110.65, pars. 2-1-16, 4-7-6, 7-4-3



- Information to forward to nonapproach control towers:
 - Aircraft identification
 - Type of aircraft
 - ETA
 - · Type of instrument approach the aircraft will execute, or
 - Position of aircraft on visual approach
- ⊙ When to forward arrival information to nonapproach control towers
 - Soon enough to permit adjustment of traffic flow
 - Prior to issuing clearance which would require flight within the surface area

Nonapproach Control Towers (Cont'd) JO 7110.65, pars. 2-1-16, 4-7-6





Stripmarking

- Arriving aircraft are indicated by a down arrow in space 16
- Circle coordinated information in red.
 - Minutes space 22
 - Type of approach space 28
- Record preplanned information in red
- Record completed information in black

Knowledge Check

KNOWLEDGE CHECK

♦ QUESTION: An aircraft landing at KGWO estimated the SQS VORTAC at 1615. At 1610, the aircraft is cleared for approach. At 1615, the inbound is passed to GWO Tower. Why is this procedure incorrect?

KNOWLEDGE CHECK

② QUESTION: What is the phraseology for passing this inbound?

MES3412 UJM 1312 13 150 KGWO KMEM UJM V9 SQS KGWO VR

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ARRIVAL CLEARANCES

Arrival Clearance Information JO 7110.65, pars. 2-1-16, 2-1-17, 4-7-1

- Clear an aircraft to a clearance limit by specifying the following:
 - · Name of either:
 - Fix or Airport
 - Route of flight
 - Altitude instructions
 - Holding instructions, EFC, and additional delay information, as required

ARRIVAL CLEARANCES (Continued)

Arrival Clearance Information (Cont'd) JO 7110.65, pars. 2-1-16,

2-1-17, 4-7-1

- Instructions regarding further communications by stating:
 - Facility name
 - Frequency
 - → Not required for FDU
 - When to initiate contact:
 - \rightarrow Time
 - \rightarrow Fix
 - → Altitude
 - → Compliance expected upon receipt if **no** other instructions
- Transfer communications
 - At approach control facilities, early enough to allow receiving facility to clear aircraft beyond the clearance limit before the aircraft reaches it

+ Phraseology Example

"American Twelve cleared to Magnolia VORTAC. Descend and maintain six thousand. Hold northwest as published, **no** delay expected. Contact Jackson Approach one one niner point two two six miles southwest of Magnolia VORTAC."

ARRIVAL CLEARANCES (Continued)

Arrival Clearance Information (Cont'd) JO 7110.65, pars. 2-1-16, 2-1-17, 4-7-1



Phraseology Example



"King Air Eight Two Niner, cleared to Magnolia VORTAC, maintain one seven thousand until two one miles northeast of McComb VORTAC, cross one seven miles southeast of Magnolia VORTAC at or below niner thousand, descend and maintain six thousand. Hold northwest as published, no delay expected. Contact Jackson Approach one one niner point two three five miles southeast Magnolia VORTAC."

- At airports with approach control service:
 - En route facility clears arriving aircraft to the clearance limit
 - Approach control facility issues approach clearance and provides separation for aircraft under their control

Exercise 1

EXERCISE 1: ARRIVAL CLEARANCE PHRASEOLOGY AND STRIPMARKING



Purpose: to practice identifying and using correct phraseology

Directions: mark each strip and write the correct phraseology

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Directions

Mark each strip and write the phraseology specifying the Transfer of Control Point for passing each inbound in questions 1 through 4. Additionally on question 4, write the phraseology to issue an arrival clearance.

Questions

-	Time: 092	0	EXI	RC	ISE 1 –	QUES	TION 1	
	AAL21 B738/A T450 66 01	HEZ 0923	31 09 MHZ	\	170	KJAN	KIAH HEZ V245 MHZ KJAN	
1	7							

Inbound:	 			

Questions (Cont'd)

Time: 133	0	EXERO	CISE 1 –	QUES ⁻	TION 2	
AAL212 B738/A T450 66	GLH 1333	13 43	170	KJAN	KFSM V74 MHZ KJAN	
04		MHZ				

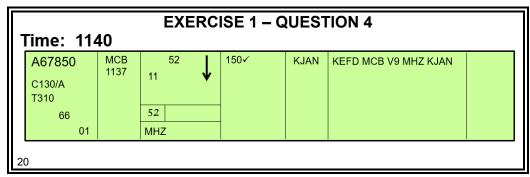
Inbound:				

Questions (Cont'd)

	Time: 113	35	EXER	CISE 1 -	- QUES	TION 3	
	N242P BE20/A T240 66 02	STUEE 1131	50 11 MHZ	110	KJAN	KSHV MLU V18 MHZ KJAN/1155	
_	19		•	•	·		

Inbound:				

Questions (Cont'd)



NOTE: Forward arrival information to JAN APCH and issue arrival clearance to aircraft. Ensure A67850 is in your airspace before issuing a descent clearance, or obtain control from PCU LO, or issue a crossing restriction to clear PCU LO airspace.

Inbound:	
	Continued on next page

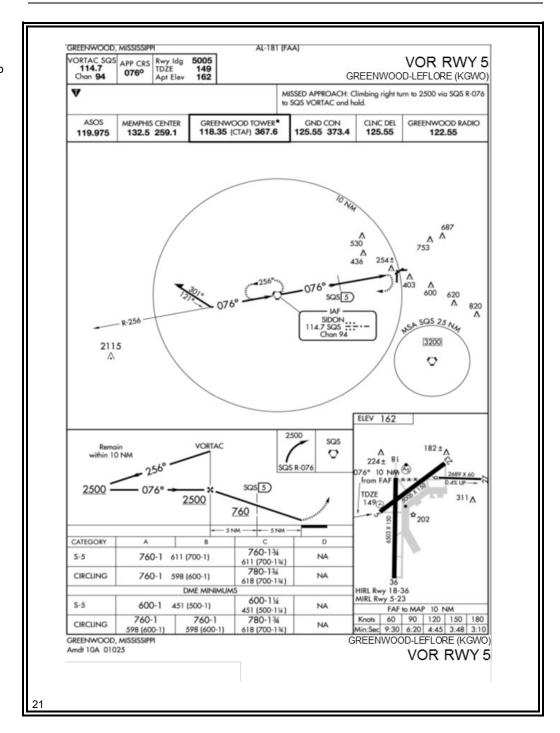
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Questions (Cont'd)	Arrival Clearance:	

APPROACH CLEARANCES

Terms JO 7110.65, Pilot/Controller Glossary	An approach clearance is authorization by ATC for a pilot to conduct an instrument approach. The type of instrument approach for which a clearance and other pertinent information is provided in the approach clearance when required.
	An Instrument Approach Procedure (IAP) is a series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually. It is prescribed and approved for a specific airport by competent authority.
	Instrument Approach Procedures (IAP) Charts portray the aeronautical data which is required to execute an instrument approach to an airport.
	A missed approach is a maneuver conducted by a pilot when an instrument approach cannot be completed to a landing. The route of flight and altitude are shown on instrument approach procedure charts.

Approach Charts AIM, par. 9-1-4b

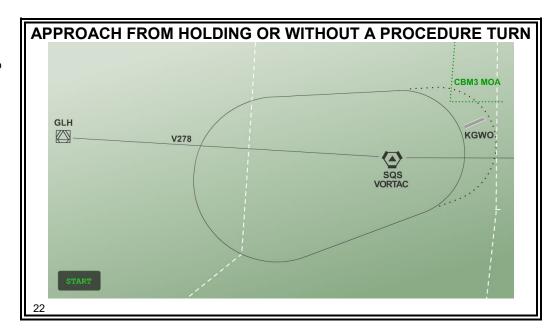


Approach Charts (Cont'd)

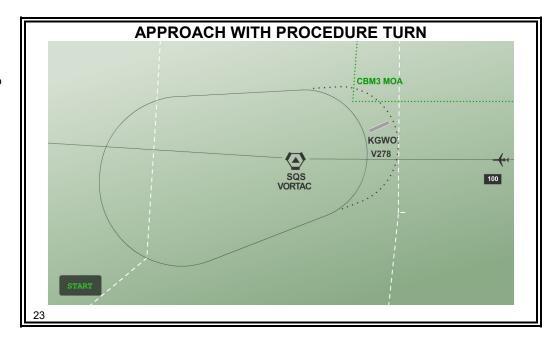
AIM, par. 9-1-4b

- Each approach chart depicts:
 - Initial approach fix
 - Navigational data
 - Communications information
 - Airport sketch
 - Missed approach procedure

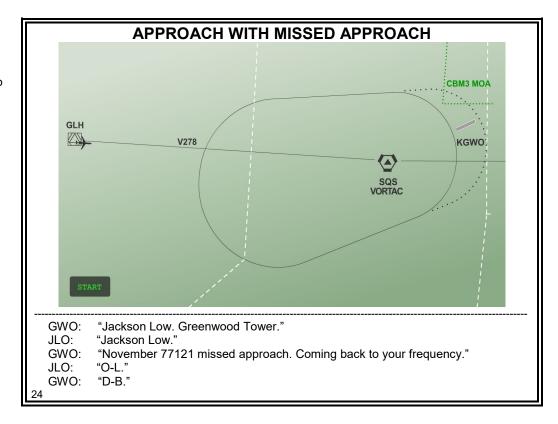
Approach Information AIM, par. 9-1-4b



Approach Information (Cont'd) AIM, par. 9-1-4b



Missed Approach Information AIM, par. 9-1-4b



Approach Information JO 7110.65, pars. 2-9-2, 4-7-10

- Provide current approach information to aircraft at airports for which you provide approach control services:
 - On initial contact, or
 - As soon as possible after initial contact

NOTE: Ensure pilot has current weather prior to beginning approach.

- Include the following information:
 - NOTAMS and other current pertinent information
 - Approach clearance or type of approach to expect
 - If two or more approaches are published, and
 - Clearance limit does **not** indicate which approach will be used
 - Runway
 - If different from that to which instrument approach will be made
 - Surface wind
 - Ceiling and visibility, if
 - Reported ceiling is below 1,000 feet or highest circling minima (whichever is greater), or
 - Visibility is less than 3 miles
 - Altimeter setting for destination airport

T Phraseology

"VERIFY YOU HAVE INFORMATION ALPHA"

- Inform pilot where automated weather data may be obtained
 - If pilot requests



"(Airport) AWOS/ASOS WEATHER AVAILABLE ON (frequency)."

Phraseology

Inform pilot if weather is not available.

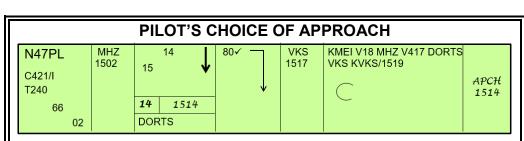
Approach Clearances JO 7110.65, pars. 4-8-1, 4-8-2

- Issue approach clearance after preceding aircraft has landed or canceled IFR except when applying:
 - Radar procedures
 - Timed or Visual approaches

NOTE: Radar procedures and timed or visual approaches are covered in later stages of training.

- Clear aircraft for standard instrument procedures only.
 - The procedures **must** commence at an Initial Approach Fix
 - Where adequate radar coverage exists, an aircraft may be vectored to final approach course in accordance with FAA Order JO 7110.65, paragraphs 5-9-1 and 5-9-2 (taught in a later lesson)

→ Phraseology Example



"Cessna Four Seven Papa Lima, cleared approach Vicksburg airport, report cancellation of IFR this frequency or with Aero Center Flight Data, change to advisory frequency approved.

 Authorize pilots to execute any standard instrument approach procedure for that airport.



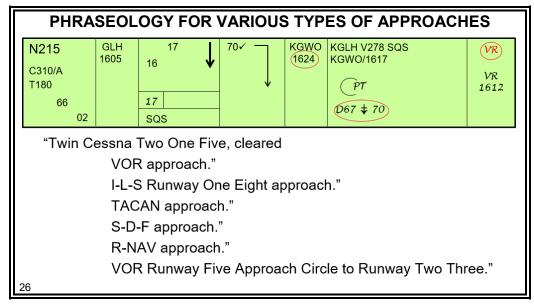
"CLEARED APPROACH."

Phraseology

Issuing Approach Clearances (Cont'd) JO 7110.65, pars. 4-8-1, 4-8-2, 4-8-6

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Phraseology



- To require a particular approach:
 - Specify name of approach as published on approach chart

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"CLEARED (type) APPROACH."

Phraseology

- If **only** one approach of a particular type is published, the approach need **not** be identified by runway reference
- Circling approach
 - Circling approach instructions may only be given for aircraft landing at airports with operational control towers.



"CIRCLE TO RUNWAY (number),"

Phraseology

Issuing Approach Clearances (Cont'd) JO 7110.65, pars. 4-8-1, 4-8-2, N JO 7110.558 →

ナ Phraseology Example

AP	PROA	CH A	ΓAIR	PORT W	ITHO	UT ATC SERVICES	<u> </u>
N2245G C182/A T130	MHZ 1317	13	↓	60 ✓	VKS 1352	KMEI MHZ V417 DORTS VKS KVKS/1352	АРС Н 1347
66 03		47 134 DORTS	ł7			C	

"Cessna Two Two Four Five Golf, cleared approach Vicksburg Airport, report cancellation of IFR this frequency or with Aero Center Flight Data, change to advisory frequency approved."

Note: For Aero Center the approach clearance for Vicksburg must be issued prior to the DORTS center estimate.

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• At airports without air traffic control services, include destination airport with approach clearance.

NOTE: At airports with nonapproach control towers, En Route facility clears aircraft for approach; nonapproach control tower clears aircraft to land.

NOTE: At airports without ATC services, En Route facility clears aircraft for approach; a clearance to land is **not** issued.

- Before instructing an IFR aircraft arriving at an airport not served by an air traffic control tower or FDU to change to advisory frequency, provide the pilot with instructions on how to cancel his/her IFR flight plan.
 - Airports with an air/ground communications station:

→ Phraseology

"(Call sign) REPORT CANCELLATION OF IFR ON (frequency)"

Airports without an air/ground communications station: (eg.VKS, 0M8)

→ Phraseology

"(Call sign) REPORT CANCELLATION OF IFR THIS FREQUENCY OR WITH (ATC controlling facility's) FLIGHT DATA".

→ Phraseology Example

"N13YH report cancellation of IFR this frequency or with Aero Center Flight Data".

Issuing Approach Clearances (Cont'd) JO 7110.65, pars. 4-8-1, 4-8-2, N JO 7110.558

Transfer communications

- At nonapproach control towers, prior to operation within Class D surface area
- At airports **not** served by a tower or FDU, approve a change to advisory frequency when you **no** longer require direct communications



"CHANGE TO ADVISORY FREQUENCY APPROVED."

Phraseology

Acknowledging cancellation of IFR



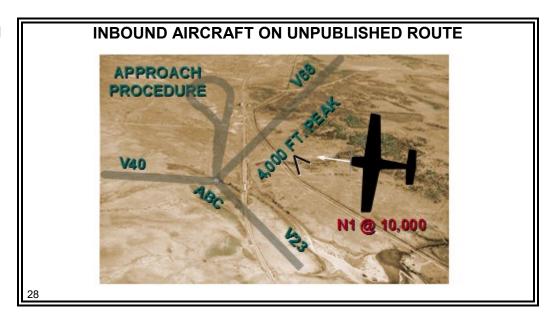
• Respond to a pilot's cancellation of his/her IFR flight plan as follows:

Phraseology

"(Call sign) IFR CANCELLATION RECEIVED".

APPROACH CLEARANCES FOR AIRCRAFT ON UNPUBLISHED ROUTES

Unpublished Routes JO 7110.65, par. 4-8-1



- Issue the approach clearance **only** after aircraft is:
 - Established on a segment of a published route or an instrument approach procedure
 - Assigned an altitude to maintain until established on a segment of a published route or an instrument approach procedure
 - Altitude must ensure terrain and obstruction clearance

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CRUISE CLEARANCES

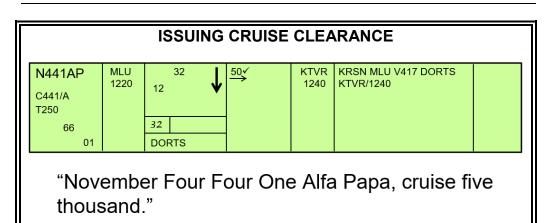
Conditions JO 7110.65, Pilot/Controller Glossary

- A cruise clearance authorizes pilot to proceed to and make an approach at the destination airport:
 - When used in conjunction with airport clearance limit, or
 - At an airport which does **not** have a published instrument approach procedure
 - Not an authorization for pilot to descend under IFR conditions below minimum IFR altitude
 - Provides means for aircraft to proceed to destination airport, descend, and land in accordance with Code of Federal Regulations (CFRs) governing VFR flight operations

NOTE: Provides Search and Rescue (SAR) protection until IFR flight plan is canceled or closed.

Issuing Cruise Clearance JO 7110.65, pars. 4-5-7, 4-8-1





- If the aircraft is on an unpublished route:
 - Issue appropriate crossing restriction to ensure terrain clearance until aircraft reaches fix/point/route where altitude information is available to the pilot

CRUISE CLEARANCES (Continued)

Issuing Cruise Clearance (Cont'd) JO 7110.65, pars. 4-5-7, 4-8-1

- At airports where **no** instrument approach procedure is published:
 - Issue a cruise clearance with **no** crossing restriction
 - Authorizes pilot to determine minimum IFR altitude as prescribed in 14 CFR Part 91.177

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"CRUISE (altitude)."

Phraseology

"MAINTAIN (altitude) UNTIL (time, fix, waypoint),

or

(number of miles/minutes) MILES/MINUTES PAST (fix, waypoint)."

"CROSS (fix, point, waypoint),

or

INTERCEPT (route) AT OR ABOVE (altitude), CRUISE (altitude)."

Pilot's Responsibilities

JO 7110.65, Pilot/Controller Glossary Pilot is assigned altitude to cruise airspace from ATC assigned altitude to minimum IFR altitude.

NOTE: Controller **must** protect those altitudes.

- Pilot may climb, descend, or level off at any altitude within the block of airspace.
 - Climb/descent within the block is made at pilot's discretion
 - Once pilot verbally reports leaving an altitude, they cannot return to that altitude without ATC clearance

ADVANCE DESCENT CLEARANCES FOR ARRIVALS NEAR COMMON BOUNDARY

Advance Descent Clearance JO 7110.65, par. 4-7-2

- Coordinate with the receiving facility for a lower altitude.
- Issue clearance, as appropriate, at a distance sufficient to allow for:
 - Normal descent and speed reduction

EXERCISE 2: APPROACH CLEARANCE PHRASEOLOGY AND STRIPMARKING

Exercise 2

EXERCISE 2: APPROACH CLEARANCE PHRASEOLOGY AND STRIPMARKING



Purpose: to practice using correct phraseology for approach clearances

Directions: write the phraseology for each inbound and approach clearance

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Directions

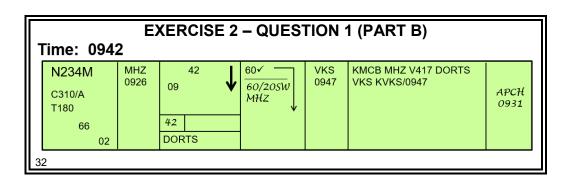
Write the phraseology for each inbound and each approach clearance in items 1 through 3. Mark strips accordingly. Be prepared to recite your answers to the class.

Questions

	EXERCISE 2 – QUESTION 1 (PART A)						
-	Time: 093	31					
	N234M C310/A T180 66 02	MHZ 0926	42 09 42 DORTS	60√	VKS 0947	KMCB MHZ V417 DORTS VKS KVKS/0947	
3	31						

NOTE: Consider JAN approach airspace.

1.	Approach Clearance:	



NOTE: Consider JAN approach airspace

1.	Frequency change after DORTS progress:

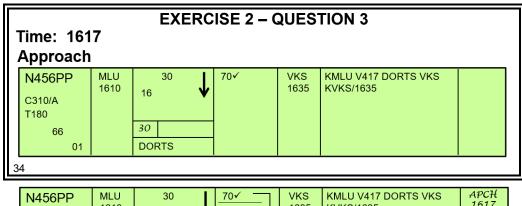
Questions (Cont'd)

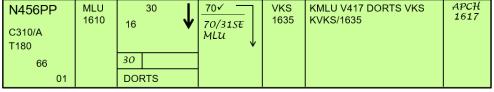
EXERCISE 2 – QUESTION Time: 1624 VOR Approach			ΓΙΟΝ 2				
	N77121 BE30/I T280 66	GLH 1623	30 16 30 sqs	110~	KGWO 1635	KLIT GLH V278 SQS KGWO/1635	
3	33						

NOTE: Consider D67 and CBM MOA airspace (position report or restriction) when issuing clearance or obtain control of aircraft. Block the airspace with D67.

2.	Coordination with D67:				
	Coordination with	GWO (Inbound):			
	Approach Clearan	ce:			
	_				
	_				
				Continued on next page	

Questions (Cont'd)





NOTE: Consider MLU approach airspace

3.	Approach Clearance:	

EXERCISE 3: ARRIVAL COORDINATION, ARRIVAL CLEARANCES, APPROACH CLEARANCES, AND STRIPMARKING

Exercise 3

EXERCISE 3: ARRIVAL COORDINATION, ARRIVAL CLEARANCES, APPROACH CLEARANCES, AND STRIPMARKING



Purpose: to practice using correct stripmarking

Directions: complete the strips based on information provided by instructor

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Directions

In this exercise, you will practice marking strips based on arrival and approach information.

Your instructor will provide 3 separate sets of flight progress strips—one set for arrival (inbound) coordination, one set for arrival (FRAHE) clearances, and one set for approach clearances. Students will be called to the board one at a time to mark the strips while they coordinate arrivals, issue arrival clearances, and issue approach clearances.

ACTIVITY: INBOUND AND ARRIVAL CLEARANCES

Activity

INBOUND AND ARRIVAL CLEARANCES ACTIVITY



Purpose: to practice identifying and using correct phraseology for issuing inbound and arrival clearances

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Description

In this activity, you will practice identifying and using correct phraseology for issuing inbound and arrival clearances. In addition, you will work with the stripmarking associated with inbound and arrival clearances.

Directions

Access the IET eLearning menu. Select **Lesson 15 – Arrivals and Approach Procedures**. Click on the titles to launch the **Inbound and Arrival Clearances** activities.

Time Allotted

30 minutes

IN CONCLUSION

Lesson Review

LESSON REVIEW

The following topics were covered in this lesson:

- Arrival information
- Approach clearances
- Approach clearances for aircraft on unpublished routes
- Approach information
- Cruise clearances
- Advance descent clearances for arrivals near common boundary



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End-of-Lesson Test

END-OF-LESSON TEST

Arrival and Approach Procedures



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