STUDENT HANDOUT

INSTRUMENT FLIGHT SUBJECTS
BOOK II

5/69

JULY 1966

DEPARTMENT OF FIXED WING TRAINING

UNITED STATES ARMY AVIATION SCHOOL

FORT RUCKER, ALABAMA

TABLE OF CONTENTS

File No. 5-635-3
69-635-3

PERFORMANCE OBJECTIVES

FLIGHT PLANS

1. KNOWLEDGES: Given a performance check, the student will, without the aid of notes or references, be able to correctly work at least 80 percent of the exercise when asked to -

(Period one of three periods)

a. List a situation in which a local flight plan (DD Form 1080) may be used.

b. List 2 situations in which a local flight plan (DD Form 1080) may not be used for VFR flight within the local area.

c. List the type of time which should be used in filing flight plans (GMT, local, Pacific, etc.).

d. Explain the method of determining ETE on the local flight plan.

e. List the weather requirement for use of the local flight plan.

f. List at least 1 item of information which could be placed in the remarks section of the flight plan.

g. List 2 situations in which a DD Form 175 would have to be filed when operating from a military base.

h. Explain the pilot's responsibility in regard to the manifest portion of DD Form 175.

i. Write the radio call of an aircraft, when given the aircraft serial number.

j. Explain, in writing, the method of determining -

(1) The mileage for a VFR flight.

(2) Mileage for an IFR flight.

(3) ETE for a VFR flight.

(4) ETE for an IFR flight.

(5) ETE to the alternate for an IFR flight.

(6) Fuel on board.

k. Explain the method for determination of the instrument card expiration date.

l. Write the page number of the section 1 FLIP Manual on which VIP and Honors Codes may be found.

m. Explain the responsibility which the pilot assumes when filing for a standard instrument departure on a flight plan.

n. List at least 3 items of information which might be included in the remarks section of the DD Form 175.

o. Write the weather briefing void time for a proposed flight when given the time of weather briefing.

(Period two of three periods)

p. The student will, without the aid of notes or reference, be able to score at least 80 percent on an exercise when asked to -

(1) Explain, in writing, when an FAA Form 398 is to be used.

(2) Explain the use of the entries -

(a) DVFR.

(b) [redacted].

(3) Explain, in writing, the semicircular rule for VFR and IFR aircraft separation.

(4) List 3 items which might be included in the remarks section of the FAA Form 398.

q. The student will, without the aid of notes or reference, be able to write without error -

(1) The 3 sources of weather information which a pilot could use in a particular situation.

(2) The procedure for filing a flight plan at a -

(a) Military field.

(b) Civil field with FAA facilities.

(c) Civil field without FAA facilities.

(3) The procedure for closing a flight plan -

(a) At a military field.

(b) At a civil field with FAA facilities.

(c) At a civil field without FAA facilities.

(d) While airborne.

(4) The length of time that an IFR flight plan should be filed prior to the estimated time of departure.

r. The student will, without the aid of notes, be able to correctly list at least 4 services provided by FAA flight service stations.

(Period three of three periods)

None.

2. SKILLS:

(Period one of three periods)

None.

(Period two of three periods)

None.

(Period three of three periods)

Given a situation, appropriate charts, and appropriate flight plan form, the student will, without reference to notes, be able to fill out a flight plan form corresponding to the situation given.

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STUDENT OUTLINE

FLIGHT PLANS

1. Types of flight plans.

   a. DD Form 1080. P19

      (1) When used. flight must be VFR in local area
      (a) landing not authorized except at authorized
      (b) auxiliary landing site.
      (c) point = d origin is end of flight.

      (2) Entries.

   b. DD Form 175.

      (1) When used. P 21

      (2) Entries. P 21

   c. FAA Form 398.

      (1) When used.

(2) Entries. P. 21

2. Filing and closing of flight plans.

a. Military field. in person at operations desk.

b. Civil field with FAA facilities. in person with FAA atendant

c. Civil field without FAA facilities.

(1) Filing. by telephone or in airplane IFR before leave :30 at least. & get weather on radio. FSS takes radio flight planning. (255.4 VHF.)

(2) Closing. IF VFR in 3NM OF air port close flight plan with FSS & request to advise another authority if you desire

3. Practical exercise.

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STUDENT HANDOUT

FLIGHT PLANS

MILITARY FLIGHT PLAN SAMPLE		AIRCRAFT UNIT OF ASSIGNMENT/HOME STATION (1) USAAVNS, Ft Rucker, Alabama		AIRCRAFT SERIAL NO. (2) 51-4789
TYPE OF FLIGHT PLAN ☒ IFR (3) ☐ DVFR ☐ VFR ☐ FVFR	RADIO CALL/TO CODE (4) R 14789	AIRCRAFT DESIGNATION (5) U-6A	ESTIMATED TRUE AIRSPEED (6) 105	DEPARTURE TIME (Z) PROPOSED (7) 1420 ACTUAL
INITIAL CRUISING ALTITUDE (8) 5000	POINT OF DEPARTURE (9) OZR	STANDARD INSTRUMENT DEPARTURE		
		NAME AND NUMBER (10) Abbeville 2	TO (11) Eufaula	

(1) Self-explanatory.

(2) Complete aircraft serial number.

(3) Place a check mark in appropriate box; for a composite flight plan check both VFR and IFR.

(4) Radio call.

(5) Type, model, and series; include transponder and/or DME code as appropriate.

(6) TAS (in knots) to be maintained at initial cruising altitude.

(7) Greenwich Mean Time (GMT), actual departure time to be entered by Operations personnel.

(8) Altitude/flight level requested for the first leg of an IFR flight. For VFR flight enter "VFR." For IFR/VFR on-top flights enter "VFR/OT." If subsequent altitude changes are desired, enter the altitude/flight level and location of the change (EXAMPLE: 7000/ATL) in the remarks section or request altitude change in flight with the ARTCC or FSS as appropriate. For FVFR (flight-following) altitude must be shown.

(9) Name or 3-letter station identifier of the installation.

(10) Where a SID is not published or will not be used, leave blank. In lieu of a SID, enter "request radar departure", if appropriate.

(11) Termination point of the SID (published transition point, if one is used).

IFR	VFR	ROUTE OF FLIGHT		TO	ETE/EET
✓		V-241 ATL, V-837 SPA	(12)	Spartanburg Apt (SPA)	02+45
		SAMPLE			
	✓	Dir EUF, V-70, V-35 MCN, V-56 AGS	(13)	Bush Field (AGS/R)	02+30
	✓	V-155 RIC		Byrd Field (RIC)	03+30
✓		V-241 ATL	(14)		01+25
	✓	V-837 SPA		Spartanburg Apt (SPA)	01+20
	✓	DIR EVR, DIR BFM	(15)	Brookley AFB(BFM)	01+20

(12) Example of an IFR entry.

NOTE: Do not combine IFR and VFR route segments on the same line entry.

This entry is for an IFR flight from Cairns Army Airfield to Spartanburg, S.C. The ETE shown is the estimated elapsed time from point of takeoff to the last fix shown under "Route of Flight."

(13) Example of a VFR entry with a refueling stop. This entry is for a flight from Cairns Army Airfield to Byrd Field, Richmond, Virginia with a refueling stop at Bush Field, Augusta, Georgia. The /R following the 3-letter identifier shows that refueling is planned. For a passenger stop only, delete the /R. An ETE is shown between each stop, computed from airport to airport. Time to be spent on the ground at an en route stop is not included in the ETE. After takeoff at the en route stop, the aviator must contact the nearest FSS and request that his ETA be forwarded to the next stop. Note in the example given the ETE from OZR to AGS is 02+30 and the ETE from AGS to RIC is 03+30.

(14) Example of a composite IFR/VFR flight plan. On the first line, no entry appears under the "TO" column because no stop is involved. A separate ETE must be shown for each portion of the flight. Note in the example given, the ETE for the IFR portion is 01+25; the ETE for the VFR portion is 01+20. The entries for a composite VFR/IFR flight plan would be identical to the example given here.

(15) Example of a VFR entry.

REMARKS (16)					
(17) Request practice GCA. (18) 1 VOR, no de-ice, no oxygen, etc.					
RANK/HONOR CODE (19)	PSGR/CARGO CODE (20)				
HOURS FUEL ON BOARD (21)	DIST TO DESTN (22)	ALTERNATE AIR FIELD (23) SAMPLE		ETE TO ALTN (24)	REQUEST CLEARANCE AFTER (25)
INST RATING (26)	SIGNATURE OF PILOT IN COMMAND (27)		SIGNATURE OF APPROVING AUTHORITY (28)		DATE (29)

(16) Only information essential to safe and efficient control of air traffic will be placed in this section.

(17) Example of entry.

(18) Example of entry.

(19) Rank and honor code in accordance with AR 95-11 (EXAMPLE: VIP 7H).

(20) Passenger/cargo code in accordance with AR 95-11.

(21) Fuel aboard aircraft including reserve shown in hours and minutes using 4 digits. EXAMPLES: 06+00, 04+30, etc.

(22) VFR. The distance from the point of departure to the destination airport measured along the planned route of flight.

IFR. Distance (including SID, if applicable) from point of departure to initial approach fix or facility intended to be used for approach to destination airport, measured along planned route of flight.

(23) VFR. Blank, no entry required.

IFR. Name or 3-letter identifier of alternate airport when required by AR 95-2, otherwise left blank. On an IFR with stop, alternate listed is for first point of intended landing. Alternates required for subsequent stops will be included in flight plan filed in flight.

(24) Time required to fly from filed destination to airfield shown in Item 23, "alternate airfield" based on flight at last assigned altitude.

(25) No entry by pilot. Operations personnel may use box to enter earliest time an ATC clearance may be requested by pilot.

(26) Army aviators: Enter 1, 2, or 3 as appropriate.

(27) Signed by "pilot in command" when he does not have clearing authority, otherwise blank.

(28) Signed by "pilot in command" when he has his own clearing authority; otherwise to be signed by individual acting as clearing authority for flight.

(29) Self-explanatory.

CREW/PASSENGER LIST

DUTY	NAME AND INITIALS	GRADE	SERVICE NO.	ORGANIZATION AND LOCATION
PILOT IN COMMAND				
(30)	(31)	(32)	(33)	(34)
	SAMPLE			

(35) PILOTS PREFLIGHT CHECKLIST

	NOTAMS		AIRSPACE RESTRICTIONS		AIRCRAFT/DESTINATION NAV AIDS
	WEATHER AND WINDS		CHARTS, PUBLICATIONS, MAPS		DD FORM 365F (*Weight and Balance Clearance Form F*)

DD FORM 1 NOV 64 175 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

(30) Flying duty symbol for each occupant of the aircraft.

(31) Self-explanatory.

(32) Military rank, use CIV for civilian.

(33) Self-explanatory.

(34) Organization and location of unit of assignment.

EXAMPLE: FW, USAAVNS, Fort Rucker, Alabama

(35) Included only as a preflight reminder; the pilot will place a check mark in each box.

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PERFORMANCE CHECK NO. 1

FLIGHT PLANS

The purpose of this exercise is to give you practice in filling out DD Form 175 and FAA Form 398. Use Flip En Route Low Altitude US L-20 and the following information:

> You are a 3-2 Army aviator stationed at Fort Rucker, Alabama. Your aircraft is a UH-1A, serial number 58-7711, equipped with an all-channel UHF transmitter-receiver. Usable fuel on board is 2,080 pounds. Plan on using 80 pounds for warmup and taxi. Use a consumption rate of 400 pounds per hour. Use 75 knots as the true airspeed and 90 knots as the groundspeed for all legs of this flight.

REQUIREMENTS:

1. Prepare a copy of the DD Form 175 for an IFR flight from Lawson Army Airfield, Fort Benning, Georgia (LSF) to Atlanta Municipal, Atlanta, Georgia (ATL) via direct Columbus VOR, V-241 Atlanta VOR, altitude 3,000 feet. Use Macon Airport, Macon, Georgia (MCN) as your alternate. Estimate your time of departure as 1200 EST.

2. Prepare a copy of an FAA Form 398 for a VFR return flight to Lawson Army Airfield from Atlanta via the same airway route, using the same groundspeed, fuel load, and consumption rate. Use 2,500 feet initial altitude. Estimated time of departure, 2000Z.

Do at home!!

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PERFORMANCE CHECK NO. 2

FLIGHT PLANS

T (F) 1. Local flight plans may be used at the discretion of the pilot for any flight conducted within the local area, except when the flight is terminated at another airport or prolonged stops are anticipated.

T (F) 2. On a flight plan for a flight originating from an airport within the Eastern Time Zone and terminating in the Central Time Zone, times filed should be in Eastern Standard Time.

3. ETE on a local flight plan (DD Form 1080) is -

   a. The time between takeoff and touchdown at the point of first intended landing.

   (b.) The time between takeoff and estimated time of final landing at the point of departure.

   c. The estimated flight time only between takeoff and final touchdown.

   d. The estimated flight time between takeoff and arrival over the destination facility if the flight is an IFR local flight.

4. An item of information which should be listed in the "Remarks" section of the DD Form 1080 is -

   (a.) Remarks concerning anticipated stops.

   b. Information as to weight and balance for Class II aircraft.

   c. Fuel requirement for the flight.

   d. Instrument rating of the pilot and copilot.

5. List 2 situations which would require a pilot to file a DD Form 175 when operating from a military field.

   a. IFR

   b. landing at another installation
   a leaving local flying area

T (F) 6. The manifest portion of the DD Form 175 must include the pilot and crewmembers, but need not include passenger personnel below Code 7 unless such personnel are on orders entitling them to "hazardous duty" pay.

7. If you are flying an Army aircraft, serial number 59-7264, equipped with a coded radar beacon transponder, what radio call should you list in the radio call box of the DD Form 175?

R 9-7264

8. The mileage listed on a DD Form 175 for a IFR flight is the mileage from intlotin to intlotin.

9. The ETE listed on the DD Form 175 for an IFR flight should be the estimated time between -

a. Takeoff and touchdown at the destination.

(b) Takeoff and arrival over the radio facility serving the destination.

c. Arrival at cruising altitude and arrival over the radio facility serving the destination.

d. Takeoff and arrival over the alternate airport.

10. The ETE to the alternate is the estimated time from Jeseem to alternate Jeseem.

11. An Army aviator was awarded a 3-2 instrument rating on 31 July 1964. His birthday was 10 January. When does that instrument card expire? (Be able to explain your answer.)

Once or more goes to next birthday
If less than one is good to the following
birthday. 17 mo + 29 days.

12. On a particular flight you will be carrying, as a passenger in your aircraft, the governor of one of the states of the United States. What code designation should you enter in the "Highest Rank on Board" block of your flight plan?

2

(T) F 13. A pilot filing a specific SID for an airport must have all SID's for the airport, inasmuch as he may be given a SID other than the one filed.

14. List 3 items of information which could be listed in the "Remarks" section of the DD Form 175.

a. aircraft limitations or equipment limitations

b. type of landing desired OCA or ADF etc.

c. approach desired.

15. If your weather briefing for a particular flight was completed at 1045 Central, what is the weather briefing void time which will be entered on the DD Form 175? ~~1245 OR~~ 1815Z

16. The FAA Form 398 would normally be used -

a. Only for VFR flights from civil fields.

b. Only for IFR flights from civil fields.

c. For both IFR and VFR flights departing from civil fields, except when such flights will be operating through or in a coastal ADIZ.

d. For all flights originating from civil fields.

17. When should FVFR services not be requested?

a. When the ceiling is less than 1,000 feet.

b. When the ceiling and visibility is unlimited.

c. When the flight is through a joint use restricted area.

d. When the flight is being conducted under IFR.

18. A pilot is planning an IFR flight within noncontrolled airspace. The magnetic course is 175°. A heading of 185° will be required to maintain the course. According to the semicircular rule, the pilot should -

a. File for an odd thousand-foot level; however, ATC may assign him an even thousand.

b. File for an even thousand-foot level; however, ATC may assign him an odd thousand-foot level.

c. File for and fly an odd thousand-foot level.

d. File for and fly an even thousand-foot level.

19. A pilot might use a DVFR flight plan for -

a. An IFR flight through a coastal ADIZ.

b. Any flight in or through a joint use restricted area.

c. Any flight in or through a coastal ADIZ.

(d) A VFR flight within or through an ADIZ.

20. List 2 items of information which might be listed in the "Remarks" section of the FAA Form 398.

P, 17

a. radio equipment

b. any remarks deemed necessary to pilot

21. List 3 sources of weather information which could be used by aviators.

a. FSS

b. USAF weather facility

c. US Weather Bureau aviation center,

22. On an IFR flight plan your ETD is 1900Z. According to ATC practices, your flight plan should be filed no later than (disregard local SOP) -

a. 1800Z.

b. 1815Z.

(c.) 1830Z.

d. 1845Z.

(T) F 23. In certain situations, flight plans may be closed while airborne with an FSS, military tower, or civil tower.

24. In closing a flight plan while airborne, the aircraft should be within 3 NM of the field.

25. In closing a flight plan at a civil field with FAA facilities, the pilot should -

a. Close airborne with the FAA Flight Service Station.

b. Close airborne with the nearest military tower.

c. Close by radio with the civil tower serving the field upon landing.

(d.) Close personally with the FSS.

26. List 4 services provided by FAA Flight Service Stations.

a. weather info

b. flight following

c. aid in search & rescue

d. help in flight planning

27. For VFR purposes, [redacted], failure to report within 0+30 past the filed ETA will normally result in a communications and ramp check being initiated.

28. On an IFR flight plan you are considered to be overdue lost if you fail to report within 0+30.

PERFORMANCE CHECK NO. 2 - KEY

FLIGHT PLANS

False 1. Local flight plans are not to be used for IFR flights within the local flying area.

False 2. Times filed are to be Greenwhich Mean Time.

3. b.

4. a. Information as to weight and balance should be entered in the block provided. Fuel required need not be listed; although the pilot must be cognizant of fuel required. The DD Form 1080 is used strictly for VFR local flights and instrument rating is superfluous.

5. a. Cross-country flights outside the local flying area.

b. IFR flights.

c. Flights within the local flying area where prolonged stops are anticipated and facilities are not available for notifying the home base of progress, at no expense to the Government.

d. Flights within the local flying area which terminate at other than home base.

False 6. All personnel must be included in the manifest.

7. R 97264.

8. Airport of origin to destination airport.

9. b.

10. Radio facility serving the destination to radio facility serving the alternate.

11. 10 January 1966. Instrument cards expire on the aviator's birthday closest to one year from date issued.

12. Code 2.

True 13.

14. a. Information as to anticipated stops.

b. Honors requested by any codes aboard.

c. Requests for approaches if such approaches operate noncontinuously (i.e., certain GCA's).

d. No oxygen - if flight handling might be affected by lack of oxygen.

15. 1815Z.

16. d.

17. d.

18. c. The semicircular rule is based on the magnetic course being flown. It is applicable to VFR flights at and above 3,000 feet above ground level and to IFR flights operating outside controlled airspace. ATC may modify the semicircular rule for IFR flights only when such flights are within controlled airspace.

19. d.

20. a. Source of weather briefing.

b. Weight and balance information, if applicable.

c. Radio information as applicable.

d. Information as to anticipated stops.

e. Manifest extension.

f. Any remarks deemed necessary by the pilot.

21. a. Weather facility at an established base operations.

b. FAA Flight Service Station.

c. U.S. Weather Bureau.

d. USAF weather briefing facilities.

22. c. One-half hour prior to ETD.

True 23.

24. 3 NM.

25. d.

26. a. Weather briefing service.

b. Help in flight planning, if requested.

c. Flight-following for VFR flights, if requested.

d. Transmittal of messages (RON's, etc.).

e. Scheduled weather broadcasts.

f. Aid in search and rescue.

27. 30 minutes.

28. 30 minutes past the ATC estimate for a compulsory reporting point.

LOCAL FLIGHT CLEARANCE

STATION		DATE
TYPE A/C	A/C NO.	MISSION

OCCUPANTS *(State whether crew or passenger. List additional passengers on reverse.)*

DUTY SYMBOL	NAME AND INITIALS	GRADE	SERVICE NO.	HOME STATION
	all people on board.			

SAMPLE

done in 2 time all the time aircraft will be gone. do count ground run up time amount of time to stay air borne

ETD	ETE (Home base)	HOURS OF FUEL	AUXILIARY BASE OF 1ST INTENDED LANDING
			1st landing.

FORM "F" FILED AT	DATE FILED (Day, month, year)
Weight + balance where filed & date.	

WEATHER IS FORECAST TO REMAIN VFR FOR THE DURATION OF THIS FLIGHT. I AM FAMILIAR WITH ALL CURRENT REGULATIONS AFFECTING THIS FLIGHT AND THIS FLIGHT WILL BE CONDUCTED IN ACCORDANCE WITH SUCH REGULATIONS.

CLEARANCE AUTHORITY	PILOT'S SIGNATURE
95-1	[signature]
ACTUAL DEPARTURE	**ACTUAL ARRIVAL**
TOWER USE	TOWER USE

REMARKS

if will land more than once tell where & how long. expected E.T.D. special areas of opperations.

Restrictions to use!

DD FORM 1 JAN 58 1080 REPLACES AF FORM 113, 1 NOV 51, WHICH MAY BE USED. ★ GPO: 1958 O - 452998

1. flight must be VFR
2. flight must end at point of origin.
3. landings only at authorized actualy landing sites.

19

175-1 Weather Form

FLIGHT WEATHER BRIEFING

AIRCRAFT NO.	BRIEFING NO.	DATE

I. TAKEOFF DATA

RUNWAY TEMP.	PRESSURE ALT.	TEMP DEVIATION	VAPOR PRESSURE	SPECIFIC HUMIDITY	DENSITY ALTITUDE

CLIMB WINDS: any forcast wind is given in true direction

REMARKS

II. ENROUTE DATA

Previously selected →

FLIGHT LEVEL	TEMPERATURE	WINDS

CLOUDS AT FLIGHT LEVEL ____ ☐ YES ☐ NO ☐ IN AND OUT

VISIBILITY AT FLIGHT LEVEL ____ ☐ HAZE ☐ DUST ☐ SMOKE ☐ PRECIPITATION

MINIMUM CEILING ENROUTE	MAXIMUM CLOUD TOPS	MINIMUM FREEZING LEVEL

THUNDERSTORMS	TURBULENCE		PRECIPITATION		ICING	
NONE	NONE		NONE		NONE	
FEW	CAT	LGT	RAIN	DRZL	CLEAR	LGT
SCATTERED	TSTM	MOD	SHOWERS	SNOW	RIME	MOD
NUMEROUS		SVR	FREEZING		MIXED	SVR
HAIL					IN CLOUDS	

so you know if loose communication systems WHICH WAY TO VFR CONDITIONS

SAMPLE

III. TERMINAL DATA

DESTINATION (Existing): existing weather does not matter

FORECAST: forcast at or above published minim AT ETA (Z To Z)

ALTERNATE (Existing): if weather less than VFR 1 hour befr 1 hour after 1000 3 must have alternate

FORECAST (Z To Z)

IV. COMMENTS/REMARKS

could be less

VOID TIME: 1½ hours a max

EXTENDED TO: by clearence authority at military base / at civilian pilot can do it.

FORECASTER

V. TELEVISION/TELEPHONE BRIEFING RECORD

WEATHER FACILITY

TAPE NO.	START	STOP	PHONE CHARGE

DD FORM 1 NOV 64 175-1

2 types of alternate no radar approach 2000 below + 3 miles

if published instrument approach 800-1 700-2 600-3 but not less than published minimums one hour before + 1 hour after

USED TO DEPART MILITARY FIELDS
IF CANT USE 1080 USE 175

MUST REQUEST VFR IF IFR CONDITIONS EXIST / REQUEST VFR DEPART THEN GO IFR.

DEFENCE VISUAL FLIGHT RULES

MILITARY FLIGHT PLAN	AIRCRAFT UNIT OF ASSIGNMENT/HOME STATION	AIRCRAFT SERIAL NO.

TYPE OF FLIGHT PLAN	RADIO CALL/TD CODE	AIRCRAFT DESIGNATION	ESTIMATED TRUE AIRSPEED	DEPARTURE TIME (Z) PROPOSED	ACTUAL
☐ IFR ☐ DVFR ☐ VFR	5 DIGITS ARMY(R)	LODE TRANSPONDER CODE	IN K	Z	Z

INITIAL CRUISING ALTITUDE	POINT OF DEPARTURE	STANDARD INSTRUMENT DEPARTURE NAME AND NUMBER	TO
VFR ANYTHING / IFR ATENTITIVE	3 LETTER CODE IFR SUPPL.	P.83 NAME OF SID / CAN USE RADAR DEPART.	HOW FAR ON THE SID

CAN GIVE ANY SID NOT JUST THE ONE FILED FOR.

IFR	VFR	ROUTE OF FLIGHT	TO	ETE/EET
		NAV AIDS & AIR WAY NO.	AIR PORT GOING TO LAND.	
		IF NO AIR WAY MUST FLY DIRECT.	JAX (R)	

WRITE OUT NAME IF NO CODE & STATE.

(R) — WISH REFUEL THERE.

REMARKS limitations of aircraft & equipment. Ground TIME for refueling. ETC. Type of approach desired.

SAMPLE

RANK/HONOR CODE	PSGR/CARGO CODE
SEC II FLIP CODE.	

HOURS FUEL ON BOARD	DIST TO DESTN.	ALTERNATE AIR FIELD	ETE TO ALTN	REQUEST CLEARANCE AFTER
FULE	N.M.	IF APPLICABLE, IFR TO APPROACH FIX, VFR TO AIRPORT. IFR TO APPROACH FIX		

USE AGE FULE IN FLIGHT

INST RATING	SIGNATURE OF PILOT IN COMMAND	SIGNATURE OF APPROVING AUTHORITY	DATE
STANDARD OR ?	[signature]		

CREW/PASSENGER LIST

DUTY	NAME AND INITIALS	GRADE	SERVICE NO.	ORGANIZATION AND LOCATION
PILOT IN COMMAND				
	CREW			
	PASSANGERS			
	SEPERATE SHEET			
	IF NEEDED			

PILOTS PREFLIGHT CHECKLIST

☐	NOTAMS	☐	AIRSPACE RESTRICTIONS	☐	AIRCRAFT/DESTINATION NAV AIDS
☐	WEATHER AND WINDS	☐	CHARTS, PUBLICATIONS, MAPS	☐	DD FORM 365F (Weight and Balance Clearance Form F)

DD FORM 1 NOV 64 175 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

IFR MUST BE FILED 00:30 BEFOR FLIGHT ETD.

FEDERAL AVIATION AGENCY

FLIGHT PLAN

FORM APPROVED
BUDGET BUREAU NO 04-R072 1

1 TYPE OF FLIGHT PLAN	2 AIRCRAFT IDENTIFICATION	3 AIRCRAFT TYPE	4 ESTIMATED TRUE AIR SPEED (Knots)	5 DEPARTURE TIME	
☒ ~~VFR~~ ☐ VFR ☐ IFR ☐ DVFR	RADIO CALL			PROPOSED (Z)	ACTUAL (Z)

6 INITIAL CRUISING ALTITUDE	7 POINT OF DEPARTURE	8 ROUTE OF FLIGHT

9 DESTINATION (Airport & City)	10 ALTITUDE CHANGES EN ROUTE	11 ESTIMATED TIME EN ROUTE		12 FUEL ON BOARD	
		HOURS	MINUTES	HOURS	MINUTES

13 ALTERNATE AIRPORT	14 REMARKS

15 NAME OF PILOT	16 ADDRESS OF PILOT OR AIRCRAFT HOME BASE	17 NO. OF PERSONS ABOARD

18 COLOR OF AIRCRAFT	19 FLIGHT WATCH STATIONS (FAA use)

FAA FORM 398 (6-62)
USE PREVIOUS EDITIONS.

SEE REVERSE

CLOSE FLIGHT PLAN UPON ARRIVAL

SAMPLE

U.S. GOVERNMENT PRINTING OFFICE: 1962 OF—664741

PILOT'S PREFLIGHT CHECK LIST

- WEATHER ADVISORIES
- EN ROUTE WEATHER
- DESTINATION WEATHER
- ALTERNATE WEATHER
- FORECASTS
- WINDS ALOFT
- NOTAMS
- AIRSPACE RESTRICTIONS
- MAPS

DATE

FLIGHT LOG

DEPARTURE POINT	VOR IDENT	VOR FREQ	RADIAL TO/FROM	DISTANCE LEG	DISTANCE REMAINING	TIME PT-TO-PT CUMULATIVE	TIME TAKEOFF ETA	TIME TAKEOFF ATA	GROUND SPEED
CHECK POINTS									
DESTINATION					TOTAL				

POSITION REPORT FVFR report hourly, IFR as required by ATC

ACFT IDENT	POSITION	TIME	ALT	IFR VFR	EST NEXT FIX	NAME OF SUCCEEDING FIX	PIREPS

REPORT: CONDITIONS ALOFT CLOUD TOPS, BASES, LAYERS, VISIBILITY, TURBULENCE, HAZE, ICE, THUNDERSTORMS

CLOSE FLIGHT PLAN UPON ARRIVAL

Weather Briefing
FSS
USAF ON TELEPHONE (BACK OF IFR SUPPLEMENT)
US WEATHER BUREAU AVIATION SECTION

PERFORMANCE OBJECTIVES

EN ROUTE AND APPROACH CHARTS

1. KNOWLEDGES:

(Period one of three periods)

With the aid of the approach charts legend and given an approach chart, the student will be able to write the following information and where it is found:

a. Name of the airdrome and city.

b. Type of approach.

c. Revision date.

d. Series code and authority.

e. Tower, approach control, and ground control frequencies.

f. Types of radar available.

g. Minimum safe altitudes--100 ~~KM~~ NM and 25 ~~NM~~ NM. radius.

h. Plan view.

(1) Elevation of highest obstacle (with - without lights).

(2) Elevation of highest terrain.

(3) Procedure turn direction.

(4) Voice capabilities.

(5) Transition points (altitude, direction, and distances).

i. Profile view.

(1) Minimum - maximum - mandatory altitudes.

(2) Landing minimum (true - absolute altitude).

(3) Missed approach text.

(4) RBN to missed approach.

(5) Radials are abbreviated "rad" - mag headings.

(6) Rule for sliding scale when published.

(7) Rule for using RVR when published.

j. Airport sketch.

(1) Field elevations.

(2) Position of control tower beacon.

(3) Runway directions and lengths (type of construction).

(4) Distance and direction from approach facility.

(5) Type (system) of approach lights.

(Period two of three periods)

Without the aid of references, the student will be able to perform all of the following:

k. Draw a holding pattern and explain times of legs (inbound and outbound), rates of turn, direction of turn (standard and nonstandard), and crosswind correction procedures.

l. Name the 3 items mentioned in all holding clearances.

m. Draw the 3 entry procedures for entering a holding pattern; explain procedures used with each.

(Period three of three periods)

2. SKILLS:

When given an en route chart, approach chart, and approach chart legend, the student will be able to work a practical exercise with an accuracy of 80 percent.

File No. 5-637-3
69-637-3

STUDENT OUTLINE

EN ROUTE AND APPROACH CHARTS

1. Description and purpose.

2. Arrangement in flip.

   a. Area.

   b. Alphabetically listed.

      (1) Civil.

      (2) Military.

3. Chart heading.

   a. Revision data.

b. Type of approach.

c. Geographical name.

d. Airport name.

e. Navigational radio data.

f. Tower frequencies.

g. Approach control frequencies.

h. Ground control frequencies.

4. Plan view.

a. Approach data.

b. Hazards.

5. Profile view.

6. Airport chart.

7. Holding procedures. ~~Over~~ less than 1,400

a. Holding pattern. initial leg is 1 min in board leg
standard is right turns 1 min leg
non standard left turns or else
gives holding fix given a time on the end of holding course.

b. Standard/nonstandard holding.

c. Holding clearance.

d. Entry procedures. 70°

after entering holding pattern always turn into holding air space.

always turn shortest way to // holding course.

e. Crosswind correction.

If in bound drift correction is 10° or less or out bound legs double correction in opposite direction if more than 10° correction needed add 10° to what you had to hold on in bound to hold course

8. Practical exercise.

EN ROUTE AND APPROACH CHARTS

VOR EN ROUTE EXERCISE
SITUATION I

This exercise is designed for use with flip en route LO ALT - US (L-14-L-20).

1. You plan to fly IFR from Redstone Army Airfield, Huntsville, Alabama to Charlotte, N.C., (Douglas). What is the distance for this flight if you fly direct Huntsville, V-54 Fort Mill, and V-37 Charlotte?

2. Based on MEA's, MRA's, MCA's, and the semicircular rule for IFR flights, what is the lowest altitude that would satisfy all requirements for this flight?

3. What is the frequency and identification of Huntsville VOR?

4. Departing Huntsville VOR, your course indicator should read: Course selector _____, TO-FROM indicator _____, Deviation indicator _____.

5. To check your arrival over Princeton Intersection, you would tune to: Station _____, Frequency _____, Course selector _____, TO-FROM _____.

6. Using the course selector setting you chose in question 5, will the deviation indicator be left or right prior to reaching Princeton International?

7. Approximately 40 miles east of Huntsville, you tune your receiver to: Station _____, Frequency _____, Course selector _____, TO-FROM indicator _____.

8. What is the identification and frequency of the facility used to fix Fort Oglethorpe Intersection?

9. You report over Chattanooga at 5,000 feet. Would clearance to climb to and maintain 9,000 feet after passing Crandall Intersection be valid?
If no, explain.

10. List the 2 facilities that are specified for establishing Sunset Intersection.

    a.

    b.

11. Is there an MCA for Inman Intersection?

    If yes, what is the altitude and applicable flight direction?

12. What is the minimum altitude which could be assigned by ARTC which will meet all requirements for the flight from Charlotte to Atlanta?

13. What flight service station handles the communications traffic for Charlotte?

14. En route from Fort Mill to Greenwood, you tune your receiver to Spartanburg VOR and find the deviation indicator centers with the course selector set to 300°. What is your position in relation to Whitmore Intersection? (e.g., north, east, etc.)

15. West of Greenwood, you tune Anderson VOR and set the course selector to 123°. Prior to reaching IVA Intersection, the deviation indicator will be _____ (left, right); the TO-FROM will indicate _____.

16. What is the MEA between Homer and Talmo Intersection?

SITUATION II

Use Fort Rucker, Alabama, approach chart (VOR 6)

17. The frequency used for the Cairns VOR is 111.2 ~~OZR~~ and the 3-letter identifier is OZR.

18. The field elevation at Cairns Field is 305'.

19. The longest runway at Cairns Army Airfield is 5000 feet long and 150 feet wide.

20. 1700 feet MSL is the minimum altitude authorized for procedure turn.

21. After procedure turn, you would be able to let down to 705 feet MSL if you could ascertain you were inside BELLWOOD Intersection.

4000-1 55

22. The lowest applicable minimum for this approach is 400 feet and 3/4 mile.

23. At 80K on final, the time from VOR to missed approach is at VOR Cone.

24. You would climb to what indicated altitude if you executed a missed approach 2,000.

25. You would climb out on the 165° radial to HEIGHT for a missed approach on this facility. TO HARTFORD int.

SITUATION III

MET.

Use Memphis, Tennessee approach chart (ADF). 1

26. What lighting facilities are there on the Memphis Metropolitan Airport?

27. You are arriving in the Memphis area from the north. You would expect to contact Memphis approach control on 5503 mc UHF.

28. The distance from the Kerrville Intersection to the outer compass locator (LOM) is 19.6 NM miles.

29. The airport elevation at Memphis Metropolitan Airport is 331 feet.

30. The inbound magnetic bearing to the LOM from the Kerrville Intersection is 192°.

31. What is the identifier of the outer ~~compass~~ fan marker? — —

32. What is the identifier of the LOM? — MF & CODE.

33. The frequency of the LMM is ~~[illegible]~~ 0 and it is identified by the 2-letter identifier ~~[illegible]~~.

34. At 70K on final, the time from the final fix inbound is 3! minutes and 3? sec seconds.

PERFORMANCE OBJECTIVES

RADIO NAVIGATION

1. KNOWLEDGES: None.

2. SKILLS: When given a ground school copy of DOD FLIP, appropriate en route and approach charts, a Weems plotter, and suitable descriptions of hypothetical pre-flight, in-flight or post-flight situations, the student will be able (with the aid of notes) to write no less than 70 percent of the correct answers to a practical exercise within the allotted time. The problems included in the practical exercise will cover any combination of selected performance objectives for the following periods (previously completed):

   (Periods one, two, and three of three periods)

   a. ADF.

   b. VOR.

   c. DOD Flip.

   d. ADF and VOR en route and approach.

   e. GCA and ILS.

File No. 5-634-3
69-634-3

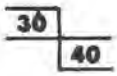
PRACTICAL EXERCISE NO. 1

RADIO NAVIGATION

The purpose of this exercise is to provide a comprehensive review of the aids to radio navigation and DOD FLIP. It is to be completed using the ground school edition of the DOD FLIP.

1. What is the meaning of the following enroute chart symbols?

   a. 3000.
      *2600.

   b. 

   c. 

2. What is the meaning of the following approach chart symbols?

   a. 

   b. 2000

   c. 2500

3. What do the following radio class designations indicate?

   a. BVOR - VOT.

   b. HW.

4. What does the NOTAM (CEW QAQOM 291200-292200) indicate?

5. Name the publication cycle for:

   a. IFR's and Enroute Low-Altitude Charts.

   b. VFR's.

   c. Airdrome sketches.

6. What services and fuel are available at Mobile, Alabama (Bates Field)?

7. What is the length of the longest runway at Brundidge, Alabama, Municipal Airport? Is it hard-surfaced?

8. What frequency is used for pilot-to-forecaster service?

9. In what section and on what page in the DOD FLIP would you find information pertaining to USAF weather briefing facilities?

10. Where in the DOD FLIP will you find listings of preferred routes?

11. Where in the DOD FLIP will you find frequencies used for ground control?

12. List the preferred route from Miami, Florida to Atlanta, Georgia.

13. Describe the ground VOR receiver check at Youngstown, Ohio.

14. VOR stations transmitting between 108.1 to 111.9 mc would use the odd decimals. (True - False).

15. What is the approximate reception range of a VOR station at 1000 feet above the surface?

16. Can a voice transmission be received over a VOR frequency when the selector switch is in the VAR LOC position?

17. What is the allowable tolerance when making a ground VOR receiver check?

18. After tuning the omni receiver, you get a centered needle with a TO indication with the course selector set on 030°. This would mean you are located on the 030° radial. (True - False)

19. In the above problem, if you reverse the course selector (set 210°), you would receive a FROM indication. (True - False)

20. List the steps for intercepting a predetermined track to a VOR station using the standard angle of intercept of 45°.

a.

b.

c.

d.

21. What is used to determine station passage when using omni?

22. You are cleared to hold (standard) on the 150° radial of an omni station. Inbound to the station on a track of 330°, you find it necessary to steer 325° to make good the track. To what heading will you turn for the outbound leg of the pattern?

23. What is the purpose of a fan marker?

24. Four-course, low-frequency radio ranges may be used with the ADF as a non-directional beacon. (True - False)

25. How do dumbbell markers differ from fan markers?

26. After properly tuning a navaid, you are unable to receive an identification signal. What does this indicate?

27. On enroute charts, LF/MF beam bearings are published as _____ (inbound - outbound) and _____ (magnetic - true).

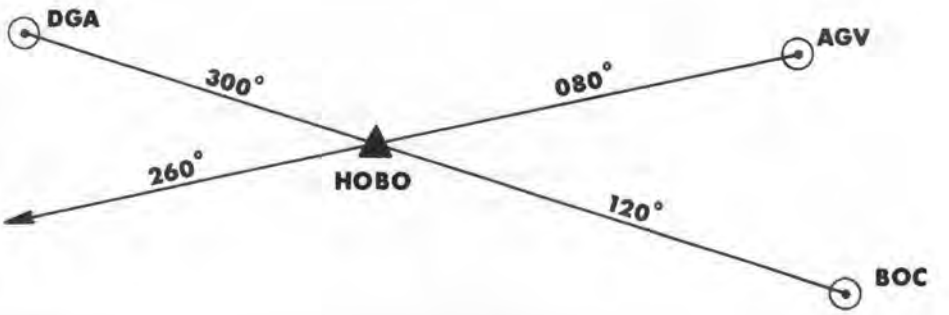
28. Initial tuning of the ADF receiver should be done with the function switch in which of the following positions?

    a. ANT.

    b. COMP.

    c. LOOP.

NOTE: Use the following diagram for questions 29 through 32.



29. If you depart AGV and find it necessary to steer a heading of 275° due to a north wind, what should the ADF indicate when you reach HOBO Intersection if your receiver is tuned to DGA?

30. What would the ADF indicate if your receiver were tuned to BOC in the above situation?

31. You are inbound to AGV under a no-wind condition and your receiver is tuned to DGA. If the ADF indicates 260°, where are you in relation to HOBO Intersection?

32. You are inbound to BOC under a no-wind condition and your receiver is tuned to AGV. If the ADF indicates 325°, where are you in relation to HOBO Intersection?

33. Give three disadvantages of using commercial broadcasting stations for ADF.

34. What is a relative bearing?

35. Your magnetic heading is 040° and the ADF indicates 0°; the direction to the station is _____.

36. Your magnetic heading is 360° and the ADF indicates 040°; the direction to the station is _____.

37. Your magnetic heading is 020° and the ADF indicates 020°; the direction to the station is _____.

38. Your magnetic heading is 060° and the ADF indicates 340°; the direction to the station is _____.

39. You are directed to intercept and track inbound to an NDB on an inbound track of 070°, using double-the-angle method. After paralleling the track, the ADF indicates 025°. To what heading should you turn to intercept this track? What will the ADF indicate when you reach the track?

40. You are on a heading of 275° and the ADF indicates 090°. Three minutes later, with heading unchanged, the ADF indicates 105°. What is the time to the station? What is the direction to the station?

41. Frequently, ADF approaches utilize the LOM. (True - False)

42. The frequency span of the AN/ARN-59 ADF receiver is 190 to 1750 kc. (True - False)

43. A nondirectional beacon (homer) classed as HH would have a power output of

_____.

44. Can you determine if there is a GCA at Jacksonville NAS with reference only to IFR's?

45. A missed approach shall be executed when communication on final approach is lost for more than _____ seconds during a PAR approach or for more than _____ seconds during an ASR approach.

NOTE: Use the enroute charts (Low-Altitude Enroute Charts 17 and 18) for questions 46 through 51.

46. You are approaching Jacksonville form the south on V-3 (panel H). You want to establish your position over Bayard Intersection. To what station would you tune your omni receiver? What frequency?

47. In the above problem, with your course selector set on 109°, what indication would you have if you had passed Bayard Intersection? (To - From) (Left - Right)

48. You now re-tune to continue on V-3. To what frequency would you tune the receiver? What identification should you receive?

49. You must now establish your position over Sunbeam Intersection; you tune to Cecil NAS omni and set the course selector on 091°. What is your position relative to Sunbeam Intersection if the deviation indicator shows a left deflection?

50. Is 353.5 mc used by the Jacksonville Center? If yes, at what locations?

51. What is the Jacksonville NAS Approach Control UHF frequency? Departure control?

NOTE: Use the Low-Altitude Enroute Charts 17 and 18 and New Orleans International Approach Charts for questions 52 through 68. Flight is from Cairns Army Airfield to New orleans International Airport, via direct Hartford Intersection, V-241 CEW, V-22 BFM, V-242 MOB, V-20 MSY. Rotary wing instrument flight in UH-1B and glide slope. Fixed wing instrument flight in U-6 without glide slope. Fixed wing instrument classes omit questions 55a, 56a, and 60a.

52. What is the distance for this flight?

53. What is the highest MEA along this route?

54. You are directed to contact New Orleans Center over Darlington Intersection. In addition to DHN, what station should you use to fix this intersection?

55. Approaching Crestview on V-241, your course selector should be set on _____°. The radial is _____.

55a. Approaching Crestview on V-241, your No. 2 needle will point to _____°. The radial is _____.

56. Departing Crestview on V-22, your course selector should be set on _____°.

56a. Departing Crestview on V-22, your No. 2 needle will point to _____°. The radial is _____.

57. En route from Harold to Saufley VOR, your course selector should be set to _____°.

58. After passing Saufley, you are directed to report over Dale Intersection. Give the identifiers of the two stations that you should use to fix Dale.

59. The Gulfport VOR is located on an airport. What is the name of this airport?

60. What two radio facilities are used to fix Slidell Intersection?

60a. What will the No. 2 needle on the RMI indicate over Slidell if the VOR receiver is tuned to PCU VOR?

61. The distance from Slidell Intersection to Clam Intersection is _____NM. From Clam Intersection to New Orleans VOR is _____NM.

62. Before reaching New Orleans VOR, you contact New Orleans Approach Control on _____ mc and are directed to hold east of the VOR on the 057° radial. Immediately upon reaching the station, you should turn (left-right) to a heading of _____ (no wind). To fix your position abeam the station, the course selector should be set to _____°.

63. You are holding at 3000 feet. While inbound to the station, you receive VOR approach clearance. You elect to fly out from the station to lose altitude. The minimum altitude to which you may descend while outbound is _____ feet, _____ (absolute or true).

64. What are your minimums for this approach?

65. You estimate your groundspeed to be 75 knots. What will be the approximate time from the station to the field?

66. You are unable to establish contact and make a missed approach. You request an ILS approach and are cleared direct to the LOM at 2000 feet. Your ADF receiver should now be tuned to _____kc.

67. Upon arrival at the LOM, you are cleared for "an ILS approach to runway 10". As you depart the LOM inbound, your time to pull up at 75 knots is _____. (Use New Orleans ADF Approach Plate.)

68. What are your minimums for this approach?

69. As you cross the LOM, what signal should you receive over the marker beacon receiver? The LMM?

NOTE: Use the Pensacola Municipal Back-Course ILS Runway 34 Approach Chart for questions 70 through 75.

70. You are cleared for an ILS approach landing, runway 34. What are your approach minimums?

71. What is the final-approach fix?

72. Inbound on final, your vertical needle is deflected to the blue section of the indicator; you should correct to the (right - left)?

73. The highest obstruction on this chart is _____ feet (MSL).

74. While inbound on this approach, the deviation needle of the ILS indicator is directional. (True - False)

75. What is the minimum safe altitude within 25 NM of Pensacola Municipal?

File No. 5-634-3
69-634-3

PRACTICAL EXERCISE NO. 2

RADIO NAVIGATION

The following questions are to be answered using charts L-17 and L-18:

1. The scale of charts L-17 and L-18 is _____.

2. Tucumcari, New Mexico is in the _____ time zone (L-4, panel H).

3. Airways and airspace within the continental United States shown on the low-altitude enroute charts are effective up to, but not including, _____ feet ((MSL), absolute) altitude.

4. In conducting a flight from Salt Lake City, Utah to El Paso, Texas, you would use charts _____.

5. Is the frequency 338.2 mc available at Denver ARTCC? If so, where is the transceiver located?

6. Is radar control available at Kansas City ARTCC?

7. What is the variation at Idaho Falls (L-9, panel B)?

8. What is the meaning of the L-75 at Fanning Airport, Idaho Falls, Idaho?

9. What is the distance between Idaho Falls and Pocatello along V-21 (L-9, panel B)?

10. What is the frequency of the Pocatello LOM (L-7, panel D)?

11. Is there a minimum crossing altitude specified for Pocatello? If yes, what are the applicable airways, altitudes, and directions of flight (L-7, panel D)?

12. What is the distance and magnetic direction from Pocatello to Mountain Home VOR (panel B)?

13. What is the distance and direction from Green River Intersection (south of Big Piney on V-4) to Big Piney VOR (L-8, panel E)?

14. List the restriction for R-6405.

15. Big Piney is situated in what ARTCC area?

16. R-6412 is applicable to _____ airways (L-7, panel D).

17. What is the meaning of the  sign on V-32, ENE of Salt Lake City?

PRACTICAL EXERCISE NO. 1 - KEY

RADIO NAVIGATION

1. a. 3000 is minimum enroute altitude.
   *2600 is the MOCA.

   b. Changeover point between stations.

   c. Bypass reporting point for V-10 eastbound.

2. a. Arrow on chart indicates procedure turn side.

   b. Minimum altitude.

   c. Mandatory altitude.

3. a. VOR with scheduled Wx broadcast, VOR test facility.

   b. 50- to 2000-watt homing beacon without voice.

4. CEW omni is shut down for maintenance on the 29th between 1200Z and 2200Z.

5. a. 4 weeks.

   b. 8 weeks.

   c. 3 months.

6. A+ACJ 115/145, 100/130, 80/87 and jet fuel, type unknown.

7. 3000 - yes.

8. 344.6 mc.

9. IFR supplement, page 275.

10. Section II, page 48.

11. IFR and VFR supplement.

12. Miami VORTAC, V-7, Lakeland VORTAC, V-157, Alma VORTAC, V-5, McDonough VORTAC (L-19, L-18, L-20).

13. 182°. Compass rose - end of runway 18.

14. False.

15. 35 NM.

16. Yes.

17. ± 4°.

18. False.

19. True.

20. a. Determine location of track (parallel if necessary).

    b. Set the course selector on the desired inbound track.

    c. Turn to a heading which is 45° from the inbound track.

    d. When the needle centers, you are on track; turn to the track heading inbound.

21. Reversal of TO-FROM indicator.

22. 160.

23. It is used as a position fix, a holding fix, reporting point, an approach fix, or some similar function.

24. True.

25. The radiation pattern is narrow through the center.

26. Aid is unreliable.

27. Inbound - magnetic.

28. ~~ANT.~~ COMPASS

29. ~~25°~~. 176° APF VOR 300°

30. ~~205°~~. 356° 120° VOR

31. Southwest.

32. Northwest. W ADG

33. Infrequent identification, odd hours of operation, and adverse locations.

34. A bearing to the station relative to the heading of the aircraft (clockwise).

35. 40°.

36. 40°.

37. 40°.

38. 40°.

39. Heading 120°, RB at track 310°.

40. 12 minutes, 20°.

41. True.

42. True.

43. 2000 watts or more.

44. Yes.

45. 5 seconds PAR and 30 seconds ASR.

46. Cecil NAS 108.2.

47. From - right.

48. 114.5 and JAX.

49. South.

50. Yes, Dothan and Charleston.

51. 300.4 and 263.6 mc on both.

52. 264 NM.

53. 2500 feet.

54. MAI.

55. 253°, 073° radial.

55a. 253°, 073° radial.

56. 248°.

56a. 068°, 248°.

57. 223°.

58. NUN (108.8) and ~~EVR~~ MVC (116.8).

59. Gulfport Municipal.

60. MSY (113.2) and PCU (112.2).

60a. 354°.

61. 7 NM and 18 NM.

62. 284.7 - right - 057° - 147° (abeam).

63. 1500 feet MSL.

64. 400-1 straight-in; 500-1 circling.

65. 3 minutes 31 seconds.

66. 338 kc.

67. 5 minutes 16 seconds.

68. F/W 400-1 without GS; R/W with GS 200 1/2.

69. OM continuous dashes, MM alternating dots and dashes.

70. 400-1.55

71. ~~Blanchard Intersection (PNS).~~ JOSEPH INT.

72. Right.

73. ~~485.~~ 539

74. False. ?

75. ~~2400 feet.~~ 2300 feet.

PRACTICAL EXERCISE NO. 2 - KEY

RADIO NAVIGATION

1. 1 inch = 12 NM.
2. Mountain.
3. 18,000 MSL.
4. L-8, L-5, L-4 or L-7, L-5, L-4.
5. Yes - Rapid City and Crawford.
6. Yes.
7. 17 1/2° E.
8. Lighting capability. 7500 feet is length of longest runway.
9. 47 NM.
10. 219 kc.
11. Yes - V-21, 257, 8500, southbound.
12. 138 NM - 255°.
13. 47 NM - 345°.
14. Ground to 40,000 feet.
15. Salt Lake City.
16. V-21, 253.
17. VOR receiver changeover point.

PERFORMANCE OBJECTIVES

IFR FLIGHT PLANNING AND NAVIGATION

1. KNOWLEDGES: Utilizing the rules for IFR flight procedures and without the aid of references, the student will be able to write 70 percent of the following:

(Period one of eight periods)

a. The weather minima for -

(1) Takeoff.

(2) Destination.

(3) Flights not requiring an alternate airport.

(4) Flights requiring an alternate (minimums).

(a) With an approach facility.

(b) With no approach facility.

b. The copilot requirements for IFR rotary wing flights.

(1) Forecast instrument conditions.

(2) Instrument flight conditions in a high-density area.

(3) Name at least 3 of the publications used to aid in the selection of appropriate routes.

(4) Select en route altitudes using -

(a) MEA's MOCA's, and semicircular rule.

(b) Freezing level reports, icing conditions, and winds aloft.

(5) Name at least 2 items which would be contained in NOTAM.

(Period two of eight periods)

(6) The rule for determining ETE to the destination and alternate.

(7) The 4 items which must be considered for fuel requirements in all IFR flights.

(8) Initial contact - no report to follow.

(9) Initial contact - report follows.

(10) Reporting in a radar environment.

(11) At least 6 of the 12 mandatory reports covered in the flip planning document.

(12) The 7 items contained in a position report.

(Periods three through eight of eight periods)

When given a practical exercise requiring the planning of an IFR cross-country flight and use of proper in-flight procedures, the student will complete each activity outlined below with a degree of accuracy of 80 percent.

Equipment provided: Flip planning document,en route and terminal publications, navigation worksheets, DD Form 175, and FAA Form 398.

Data provided: Pertinent excerpts of teletype weather reports, terminal area forecast, winds aloft, and NOTAM.

c. For the given flight situation, the student will plan the flight and write the calculations on the navigation worksheet including -

(1) Magnetic course on each leg as published or measured by the student.

(2) Distance for each leg of the flight and the total distance.

(3) Magnetic wind and velocity for each leg of flight.

(4) Average magnetic variation for the flight.

(5) True airspeed based on cruising characteristics of the aircraft, altitude, and forecast temperature.

(6) Groundspeed for each leg, based upon true airspeed, course, and winds.

(7) Estimated time en route for each leg and the total time en route.

(8) Repeat items "(1) through (7) above," for the flight to the alternate.

(9) Total fuel required for the flight (given consumption rate).

d. After determining all flight plan data "a above," the student will write all entries required on the DD Form 175 or FAA Form 398, as appropriate.

e. For given in-flight situations, the student will calculate if necessary and write -

(1) True airspeed based on in-flight conditions.

(2) True altitude based on in-flight conditions.

(3) Actual groundspeed based upon ATA's over check points.

(4) ETA's or revised ETA's for reporting points based on actual groundspeed.

(5) Actual wind conditions encountered on a given leg of flight.

(6) Actual fuel consumption and remaining fuel in time.

2. SKILLS: None.

File No. 5-641-8
69-641-8

STUDENT OUTLINE

IFR FLIGHT PLANNING AND NAVIGATION

1. Weather.

a. Takeoff. standard ord. 400 ft. for take off.

b. Destination. at or above published minima at ETD.

c. Alternate. less than 1000 - 3 at 1 hour before or after must have alternate.

(1) When required.

if brown symbol must have 2000 ⓓ or better Provider

if blue symbol must study scale 800 - 1 700 - 2 but never less than published minima.

(2) Alternate minimums, if required.

d. En route. must not file into icing conditions

even with icing equipment never into heavy icing conditions

severe thunder storms etc.

2. Copilot requirements.

if filing into known or forecast IFR must have co pilot

co pilots don't have to be qualified.

in high density area co pilot must be fully rated that is

3. Route selection.

check preferred route (section II)

weather, MEA

restricted air space (sole use must have own clearance)

4. Selection of altitude.

~~max~~ MEA . direction flying the odd or even 1000s

icing conditions get best winds for fuel consumption.

5. NOTAM, special notices, and VOR shutdowns.

short term special notices

6. Estimated time en route.

a. Destination. ground speeds & distance from point of departure to nav. aid which serves approach fix.

b. Alternate. from destination approach fix to IFR it is computed to Approach fix if VFR airport it is from destination approach fix to airport. figure G.S. plus 45 minute extra at alternate.

7. Fuel requirement for flight.

3

8. En route procedures.

a. Initial contacts. when ever you take up a new frequency.

"with" full report at compulsory reporting point. just name of position.

over an open when Δ just call up. ID give ETA (scale) + altitude when talk to

radar environment. any after ID + give altitude

b. Position reports.

(1) When in radar environment.

dont make any except on request.

SEC II # 3
SUB # F-G

(2) **Mandatory reports.**

(a) any copth 1697 O cala.

(b)

(c)

(d)

(e)

(f)

(g)

(h)

(i)

(j)

(k)

(l)

(3) Position report content. on back of IFR SUPPLEMENT.

(a) ID

(b) B. POSSITION

(c) TIME

(d) ALTITUDE / FL

(e) IFR DON'T NEED TELL TYPE FLIGHT PLAN.

(f) NEXT REPORTING POINT
ETA

(g) NAME NEXT SUCCEEDING REPORTING POINT,
ROUTE OF FLIGHT,

REMARKS,

9. Use of the flight log.

10. Practical exercises.

File No. 5-641-8
69-641-8

PERFORMANCE CHECK NO. 1

IFR FLIGHT PLANNING AND NAVIGATION

1. As a standard helicopter instrument rated pilot, your minimums, according to Army regulations, are _____.

2. What are your weather minimums for selecting the destination on an IFR flight?

3. The minimums for selecting an alternate with a facility and an approved approach are _____, _____, or _____.

   What is the time requirement?

4. Give the copilot requirements for flights -

   a. Into instrument conditions.

   b. Into high-density area.

5. Name 3 of the 6 publications you would normally use in planning an instrument cross-country flight.

   a.

   b.

   c.

6. What is an MEA?

7. Name 2 of the 4 information groupings covered in NOTAM.

   a.

   b.

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PERFORMANCE CHECK NO. 2

IFR FLIGHT PLANNING AND NAVIGATION

1. What 2 points do you use when determining ETE from the destination to the alternate?

   a.

   b.

2. Name the 4 items which must be considered on all IFR flights during the planning phase.

   a.

   b.

   c.

   d.

3. En route procedures require 2 types of initial contact reports. Name the 2 types.

   a.

   b.

4. When flying in a radar environment, is the pilot relieved of his responsibility for making position reports over compulsory reporting points? (Yes or No)

5. There are 12 mandatory reports with which the pilot must be familiar. Name 6 of them.

   a.

   b.

   c.

   d.

   e.

   f.

6. Write the 7 items contained in an IFR position report in the correct order.

   a.

b.

c.

d.

e.

f.

g.

873

File No. 5-641-8
69-641-8

PRACTICAL EXERCISE #1

IFR FLIGHT PLANNING AND NAVIGATION

Charts L-13 and L-14

PROBLEM: Plan an IFR flight from Reese AFB, Lubbock, Texas, (LBB), panel A, to Tinker AFB, Oklahoma City (OKC), panel C, with McAlister Municipal (MLC), panel D, as your alternate.

AIRCRAFT:	UH-1B, Serial No. 59-1660
COMMUNICATIONS EQUIPMENT:	ARC-55 / T-366A
NAVIGATION EQUIPMENT:	ARN-59 /ARN-30A
TAS:	75 knots
FUEL ON BOARD:	2080 pounds
FUEL CONSUMPTION RATE:	420 pounds/hour
WARMUP AND TAXI FUEL:	60 pounds
ETD:	0600 C
ROUTE TO DESTINATION:	Direct Lubbock VOR, V-14, Oklahoma City VOR, direct Tinker VOR
ROUTE TO ALTERNATE:	V-272
ALTITUDE:	Select the most desirable altitude, considering winds aloft, direction of flight, and MEA's
WEATHER:	Check appropriate entries of Form DD 175-1
APPROACHES:	Plan for an VOR approach at Tinker AFB

Part I: PREFLIGHT PHASE

1. Fill out a complete DD 175.
2. Fill out a complete flight log DA 2283.
3. What is the ETE for the destination? For the alternate?
4. What is the total fuel requirement for this flight?

Part II: IN-FLIGHT PHASE

Your initial ATC clearance reads: "ATC clears RC-91660 to the Tinker VOR via direct Lubbock, V-14 Oklahoma City, direct Tinker. Maintain 5000, contact Fort Worth Center on 307.8 mc over Lubbock VOR."

1. You arrive over Lubbock VOR at 1210Z: Write out your:

   a. Initial call-up. LUB R. CONTROL 91660 ~~07 5000~~ PTALIP 07 500

   b. Report. LUB R 1660 CLUB CDS 04 HBR.

2. You arrive over Matador intersection at 1242Z. What has been your groundspeed (in knots)? ~~78K~~ 79K -7 B.C.9.

3. Would it be necessary to revise your estimate for Childress? If yes, write out the report. FT WORTH CENTER R91660 MATADOR 5000 CDS 15 HBR.

4. You report over Childress VOR at 1314Z. Between Matador intersection and Childress VOR you found it necessary to steer an MH of 042°. What is the actual wind velocity based on a TAS of 75 knots?

   14K °/ ~~14~~ 149° knots (magnetic)?

5. You are instructed to contact Oklahoma City Approach Control on 232.1 mc at 1445Z. Write out the initial call-up. OKC R9860 PTPS HBR 55 5000

6. Does Oklahoma City Approach Control have radar available?

   [redacted] yes.

7. Does Tinker AFB have approach radar? If yes, list the UHF frequencies available.

   389.8 316.7 301.5

8. Give the bearing and distance from the VOR station to the field.

FLIGHT WEATHER BRIEFING

AIRCRAFT NO.	BRIEFING NO.	DATE
59-1660	1	1-1-66

I. TAKEOFF DATA

RUNWAY TEMP.	PRESSURE ALT.	TEMP DEVIATION	VAPOR PRESSURE	SPECIFIC HUMIDITY	DENSITY ALTITUDE
+21°C	9200				

CLIMB WINDS

REMARKS FORECAST WINDS SAMPLE

3-2718/15° 5-2830/11° 7-3030/7° 9-3335/3°

II. ENROUTE DATA

FLIGHT LEVEL	TEMPERATURE	WINDS
		SEE FORECAST

CLOUDS AT FLIGHT LEVEL ____
☐ YES ☐ NO ☑ IN AND OUT

VISIBILITY AT FLIGHT LEVEL 2
☑ HAZE ☐ DUST ☑ SMOKE ☐ PRECIPITATION

MINIMUM CEILING ENROUTE	MAXIMUM CLOUD TOPS	MINIMUM FREEZING LEVEL
2000	12000	10,000

THUNDERSTORMS	TURBULENCE	PRECIPITATION	ICING
☑ NONE	NONE	☑ NONE	☑ NONE
FEW	CAT ☑ LGT	RAIN DRZL	CLEAR LGT
SCATTERED	TSTM MOD	SHOWERS SNOW	RIME MOD
NUMEROUS	SVR	FREEZING	MIXED SVR
HAIL			IN CLOUDS

III. TERMINAL DATA

DESTINATION (Redacted)

FORECAST
TIK 9 @ 34KH 2715/996 (1300 Z To 1600 Z)

ALTERNATE (Redacted)

FORECAST
MLC 8 @ 2 2915/994 (1400 Z To 1800 Z)

IV COMMENTS/REMARKS

VOID TIME	EXTENDED TO	FORECASTER
1330Z		

V. TELEVISION/TELEPHONE BRIEFING RECORD

WEATHER FACILITY

TAPE NO.	START	STOP	PHONE CHARGE

DD FORM 1 NOV 64 175-1

PRACTICAL EXERCISE #2

IFR FLIGHT PLANNING AND NAVIGATION

Charts L-19 and L-20

PROBLEM: Plan an IFR flight from Warner-Robins AFB, Georgia, (WRB) to Simmons AAF, Fort Bragg, North Carolina,(FBG). Use Seymour Johnson AFB as your alternate.

AIRCRAFT:	UH-1D, Serial No. 61-3177
COMMUNICATIONS EQUIPMENT:	ARC-55 / T-366A
NAVIGATION EQUIPMENT:	ARN-59 / ARN-30D / APX-44 (SIF)
CAS:	75 knots
FUEL ON BOARD:	2080 pounds
FUEL CONSUMPTION RATE:	420 pounds/hour
WARMUP AND TAXI FUEL:	60 pounds
ETD:	0800 E
ROUTE TO DESTINATION:	Dir MCN, V-56 FLO, V-3E FAY, Dir FBG
ROUTE TO ALTERNATE:	Direct
ALTITUDE:	Select most desirable altitude,considering winds aloft, direction of flight, and MEA's
WEATHER:	Check appropriate entries on DD Form 175-1
APPROACHES:	Plan for a VOR approach at FBG

REQUIREMENTS:

1. Fill out a complete DD 175.
2. Fill out a complete flight log.
3. What is your TAS?
4. What is the total fuel requirement for this flight? (Include warmup, destination, alternate, and reserve.)

5. What are your weather minimums for a VOR straight-in approach at FBG?

6. What is the missed-approach procedure for this approach?

7. What is the time en route to the alternate?

8. Does GSB have an ILS?

9. If yes, what are your minimums for a front-course approach?

10. Using the FBG VOR RW 27 approach plate, answer the following questions:

    a. Would you expect to hold standard or nonstandard?

    b. Does RW 9-27 have high-intensity approach lights?

    c. What is the time from VOR to missed approach?

    d. Is radar available at FBG; and if so, who is the controlling agency?

    e. On what frequency would you expect to contact Simmons tower?

    f. What is the FBG VOR frequency?

    g. What is the transition from FAY to FBG?

FLIGHT WEATHER BRIEFING	AIRCRAFT NO. 61-3177	BRIEFING NO. 1	DATE 1-1-66

I. TAKEOFF DATA

RUNWAY TEMP.	PRESSURE ALT.	TEMP DEVIATION	VAPOR PRESSURE	SPECIFIC HUMIDITY	DENSITY ALTITUDE
+10°C	294'				

LIMB WINDS

REMARKS FORECAST WINDS SAMPLE

MCN 2-2205/+10° 4-2420/+4° 6-2620/+2° 8-2920/-2°

II. ENROUTE DATA

FLIGHT LEVEL	TEMPERATURE	WINDS
		SEE FORECAST

CLOUDS AT FLIGHT LEVEL ____
☐ YES ☐ NO ☑ IN AND OUT

VISIBILITY AT FLIGHT LEVEL 2
☑ HAZE ☐ DUST ☐ SMOKE ☑ PRECIPITATION

MINIMUM CEILING ENROUTE	MAXIMUM CLOUD TOPS	MINIMUM FREEZING LEVEL
900' @ FL0	18M	7000

THUNDERSTORMS		TURBULENCE			PRECIPITATION			ICING		
☑	NONE	☑	NONE			NONE			NONE	
	FEW		CAT	LGT		RAIN	☑ DRZL		CLEAR	☑ LGT
	SCATTERED		TSTM	MOD		SHOWERS	SNOW	☑	RIME	MOD
	NUMEROUS			SVR		FREEZING			MIXED	SVR
	HAIL							☑	IN CLOUDS	

ABOVE 7000

III. TERMINAL DATA

DESTINATION (redacted)

FORECAST
FBG S@2LF 2405/003 (1530 ZTo 1830 Z)

ALTERNATE (redacted)

FORECAST
GSB 9@20@4 2210/000 (1600 ZTo 1900 Z)

IV. COMMENTS/REMARKS

VOID TIME	EXTENDED TO	FORECASTER
1330Z		W.L.H.

V. TELEVISION/TELEPHONE BRIEFING RECORD

WEATHER FACILITY

TAPE NO.	START	STOP	PHONE CHARGE

DD FORM 1 NOV 64 175-1

File No. 5-641-8
69-641-8

PRACTICAL EXERCISE #3

IFR FLIGHT PLANNING AND NAVIGATION

Charts L-17 and L-18

PROBLEM: Plan an IFR flight from Tallahassee Municipal Airport, Florida, (TLH), panel G, to Pensacola Municipal Airport, Florida, (PNS), panel E, with Bates Field, Mobile, Alabama, (MOB), panel E, as your alternate.

AIRCRAFT:	UH-1D, Serial No. 58-3456
COMMUNICATIONS EQUIPMENT:	ARC-55 / T-366A
NAVIGATION EQUIPMENT:	ARN-59 / ARN-30D / APX-44 (SIF)
TAS:	73 knots
FUEL ON BOARD:	2080 pounds
FUEL CONSUMPTION RATE:	420 pounds/hour
WARMUP TAXI FUEL:	60 pounds
ETD:	1000 EST
ROUTE TO DESTINATION:	ILS LOC to Havana intersection, V-7 Hinson, V-22 Harold, Dir Pensacola ~~LOM~~ (PNS) RADIO BEACON P.N.S.
ROUTE TO ALTERNATE:	V-22 Brookley VOR, V-242 Mobile VOR
ALTITUDE:	Plan on using 4000 feet to destination and alternate
WEATHER:	Check appropriate entries on DD Form 175-1 (NOTE: DD Form 175-1 used in lieu of FSS weather briefing.)
APPROACHES:	Plan on an ~~ILS~~ ADF approach to PNS

SITUATION I

1. Fill out a complete FAA Form 398.
2. Fill out a complete flight log.
3. What is the mileage from TLH to the PNS ~~LOM~~? RADIO BEACON

4. What should you list as ETE to the destination?

5. What is the ETE from the destination to the alternate?

6. What is the fuel requirement for this flight?

7. What should you list as the fuel on board?

8. If, in order to obtain weather for this flight, it was necessary to call the nearest USAF weather briefing facility (Robins AFB), list the area code and telephone number you should use. Is it necessary to use USAF weather at TLH? Why?

9. The following clearance is delivered for the flight: "ATC clears RC 83456 to the Harold intersection via V-7; V-22 Harold maintain 4000. Contact TLH departure control on 317.4 after takeoff."

YOU TAKE OFF RUNWAY 36 AT 1515Z

10. Must you report reaching 4000 feet?

11. What will your RMI #2 needle indicate over Havana intersection if you tune your VOR receiver to TLH to establish the fix?

12. You arrive over Havana at 1530Z. Is a report required?

TLH DEPARTURE CONTROL INSTRUCTS YOU CONTACT JACKSONVILLE CENTER OVER MARIANNA.

13. You intercept V-22 at Hinson at 1538Z. Is a report required? Why?

14. What is the frequency of the facility you should use to maintain V-22 inbound to Marianna?

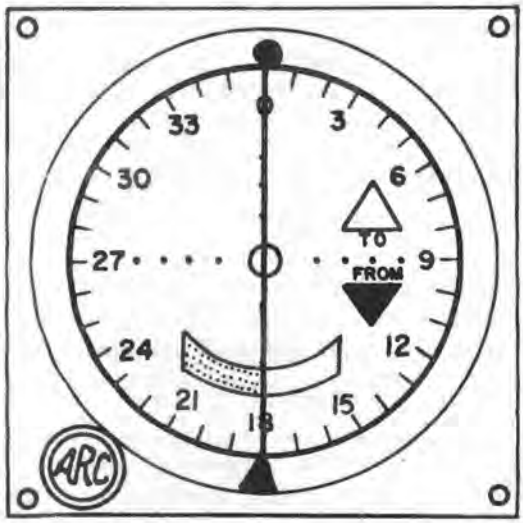
15. You arrive over MAI at 1603Z. Write out your initial contact with Jacksonville Center.

16. Is any other report required? If so, what?

JAX CENTER "ROGERS" YOU AND INSTRUCTS YOU TO "CLIMB TO AND MAINTAIN 6000." CONTACT JAX CENTER ON 385.4 OVER DEFUNIAK SPRINGS INTERSECTION.

17. Write out the report you should send.

18. You tune the DHN VOR for the purpose of establishing the Chipley intersection. Based on the indications shown below, where are you in relation to Chipley?



19. You were over Chipley at 1615Z and arrive over DeFuniak Springs intersection at 1637Z. What has been your groundspeed for this leg of the flight?

20. Write out the call-up you will send to JAX Center over DeFuniak Springs intersection.

21. What are the magnetic winds at 6000 feet if your heading between Corky intersection and the CEW VOR was 277°, groundspeed 85 knots, CAS 70 knots, and free-air temperature +15°C? _____ / _____ knots.

22. You reported over CEW at 1700Z. Based on the new wind computed in question 21, what will be your ETA at Harold intersection? At the PNS LOM?

23. JAX Center instructs you to contact PNS approach control on 286.0 over Baker intersection. You call over Baker and receive the following clearance: "RC 83456 is cleared to the Pensacola ~~LOM~~ from over Harold intersection Direct to maintain 6000. Upon reaching the ~~LOM~~, Hold North on the localizer course, left turns Expect Approach Clearance at 1735Z."

24. Upon reaching the ~~LOM~~ on a heading of 220°, should you turn left or right to enter the holding pattern?

25. Inbound in the holding, you find it necessary to hold a heading of 151°. What should your heading be while outbound in the holding pattern?

26. In the event of loss of communications while in the holding pattern, when should you begin your descent to procedure-turn altitude?

27. At 1730Z you are cleared for an ~~ILS~~ approach to runway ~~16~~, circle to land runway ~~34~~. What are your minimums for this approach?

28. If your groundspeed on final is 80 knots, what should be your time from the ~~LOM~~ to pullup?

SITUATION II

Use the instrument approach chart for the front-course ILS approach to Herndon Field, Orlando, Florida, to answer the remaining questions.

1. How many UHF tower frequencies are available at Herndon?

2. What are your lowest straight-in landing minimums for an ILS approach to runway 7?

3. Assume you are holding southwest of the LOM on the localizer course and are cleared for an ILS approach to runway 7. May you let the holding pattern serve as your procedure turn for the approach? Explain your answer.

4. Which runways at Herndon have high-intensity approach lights?

5. What are your takeoff minimums if you are departing on runway 7?

FLIGHT WEATHER BRIEFING

AIRCRAFT NO.: 58-3456 | BRIEFING NO.: 1 | DATE: 1-1-66

I. TAKEOFF DATA

RUNWAY TEMP.	PRESSURE ALT.	TEMP DEVIATION	VAPOR PRESSURE	SPECIFIC HUMIDITY	DENSITY ALTITUDE
+6°C	80'				

CLIMB WINDS:

REMARKS: SAMPLE

II. ENROUTE DATA

FLIGHT LEVEL	TEMPERATURE	WINDS
9000	+2°C	4-0315

CLOUDS AT FLIGHT LEVEL: ☐ YES ☐ NO ☑ IN AND OUT

VISIBILITY AT FLIGHT LEVEL: 3 — ☐ HAZE ☐ DUST ☐ SMOKE ☑ PRECIPITATION

MINIMUM CEILING ENROUTE	MAXIMUM CLOUD TOPS	MINIMUM FREEZING LEVEL
200'	16000	6000

THUNDERSTORMS	TURBULENCE	PRECIPITATION	ICING
✓ NONE	NONE	NONE	NONE
FEW	CAT ✓ LGT	✓ RAIN DRZL	CLEAR LGT
SCATTERED	TSTM MOD	SHOWERS SNOW	✓ RIME MOD
NUMEROUS	SVR	FREEZING	MIXED SVR
HAIL			✓ IN CLOUDS
			AT OR ABOVE 6000

III. TERMINAL DATA

DESTINATION ([redacted])

FORECAST: PNS 4⊕IR 1610/998 (1700 Z To 1900 Z)

ALTERNATE ([redacted])

FORECAST: MOB 25 ⊕ 4 HK 1710/982 (1730 Z To 2000 Z)

IV. COMMENTS/REMARKS

NOTAM:

PNS - ~~[redacted]~~

Q AI EW

VOID TIME	EXTENDED TO	FORECASTER
1600		W.B.H.

V. TELEVISION/TELEPHONE BRIEFING RECORD

WEATHER FACILITY:

TAPE NO.	START	STOP	PHONE CHARGE

DD FORM 1 NOV 66 175-1

File No. 5-641-8
69-641-8

PRACTICAL EXERCISE #4

IFR FLIGHT PLANNING AND NAVIGATION

Charts L-17 and L-18

PROBLEM: Plan an IFR flight from Cairns AAF, Fort Rucker, Alabama, (OZR), panel F, to Key Field, Meridian, Mississippi, (MEI), panel E, with Bates Field, Mobile, Alabama, (MOB), panel E, as your alternate.

AIRCRAFT:	UH-1D, Serial No. 61-1238
COMMUNICATIONS EQUIPMENT:	ARC-55 / T-366A
NAVIGATION EQUIPMENT:	ARN-59 / ARN-30D / APX-44 (SIF)
TAS:	80 knots
FUEL ON BOARD:	2380 pounds
FUEL CONSUMPTION RATE:	420 pounds/hour
WARMUP AND TAXI FUEL:	60 pounds
ETD:	2000 C
ROUTE TO DESTINATION:	Banks No. 2 departure from Cairns, V-7 to Montgomery VOR, V-154 to Meridian VOR
ROUTE TO ALTERNATE:	V-154 Kewanee VOR, V-209 Mobile VOR
ALTITUDE:	Select the most desirable altitude, considering winds aloft, direction of flight, and MEA's
WEATHER:	Check appropriate entries on form DD 175-1

Part I: PREFLIGHT PHASE

For classroom purposes, assume wind and TAS for climb-out to be the same as for the cruising altitude.

1. Fill out a complete DD Form 175.
2. Fill out a complete flight log.
3. Over what point will you make your transition from SID to V-7?

4. What is the total fuel requirement for this flight (warmup, destination, alternate, and 45-minute reserve)?

5. Name the ARTC Centers responsible for handling this flight to the destination. To the alternate.

6. Which FSS frequencies will you expect Maxwell (MXF) in the Montgomery area to have?

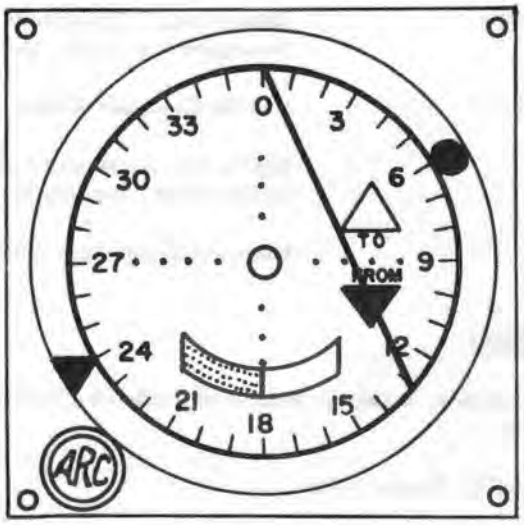
Part II: IN-FLIGHT PHASE

Initial ATC clearance reads: "ATC clears RC-11238 to the Kewanee VOR via the Banks 2 departure; thence via flight plan route. Maintain 4000 feet in controlled airspace. Contact Jacksonville Center on 353.5 mc over Skipperville intersection."

1. You are cleared for takeoff and, when airborne, your clock reads 2005 C. What time were you off (Zulu)?

2. You arrive over Skipperville intersection at 0218Z. Write out the report.

3. You are instructed to contact Atlanta Center on 351.9 mc over Banks intersection. You tune in Eufaula omni and observe the following indications:



What is your position in relation to Banks?

4. You arrive over Montgomery omni at _____Z. Write out your position report to Atlanta Center after establishing radio contact.

5. You arrive over Selma VOR at 0334Z. What has been your groundspeed (in knots)?

6. What are your magnetic winds at 4000 if your heading between Montgomery VOR and Selma VOR was 263°, groundspeed _____ knots, calibrated airspeed _____ knots, and free-air temperature 13°C?

_____° / _____ knots.

7. Will it be necessary to change your Kewanee VOR estimate? If yes, what is the new ETA? _____Z.

8. At 0440Z, you smell smoke in the cockpit. On checking, you find it to be coming from an electrical fire. You immediately determine that your ADF and marker beacon circuit breakers have popped and will not stay in when re-set. Must you report this to anyone?

9. The situation deteriorates. At 0445Z, you lose your generator and secure all unnecessary electrical equipment. You advise Atlanta Center of your difficulty. The center directs you to contact Meridian Approach Control on 354.0 mc for a radar vector to Meridian NAAS. Does Meridian NAAS also have approach radar? If yes, what are the minimums?

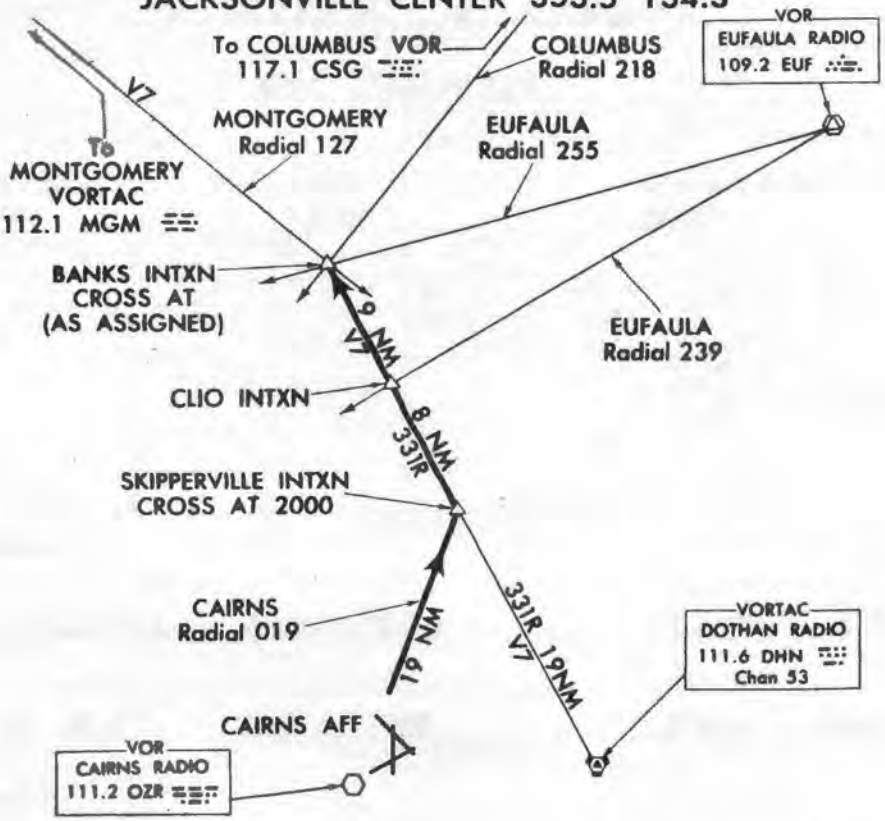
10. What is the correct call when contacting Meridian NAAS tower?

11. What UHF ground control frequency will you use?

SID

BANKS NO. 2 DEPARTURE

CAIRNS GROUND CONTROL 248.2 121.9
CAIRNS CLEARANCE DELIVERY 370.3
CAIRNS TOWER 241.0 126.2
CAIRNS DEPARTURE CONTROL 237.5 125.4
JACKSONVILLE CENTER 353.5 134.3



INSTRUCTIONS: Climb northeast-bound on the CAIRNS VOR 019R to SKIPPERVILLE INTXN; thence via V7 to BANKS INTXN. Cross SKIPPERVILLE INTXN at 2000. Cross BANKS INTXN at (as assigned).

Chart not to scale

FLIGHT WEATHER BRIEFING

AIRCRAFT NO.: 61-1258 | BRIEFING NO.: 1 | DATE: 1-1-66

I. TAKEOFF DATA

RUNWAY TEMP.	PRESSURE ALT.	TEMP DEVIATION	VAPOR PRESSURE	SPECIFIC HUMIDITY	DENSITY ALTITUDE
+21°C	300'				

CLIMB WINDS

REMARKS WINDS ALOFT FORECAST SAMPLE

3-2610/15° 5-2820/11° 7-2925/7° 9-2935/3°

II. ENROUTE DATA

FLIGHT LEVEL	TEMPERATURE	WINDS
		SEE FORECAST

CLOUDS AT FLIGHT LEVEL ____
☑ YES ☐ NO ☐ IN AND OUT

VISIBILITY AT FLIGHT LEVEL 1
☐ HAZE ☐ DUST ☐ SMOKE ☑ PRECIPITATION

MINIMUM CEILING ENROUTE	MAXIMUM CLOUD TOPS	MINIMUM FREEZING LEVEL
700	35M	12M

THUNDERSTORMS	TURBULENCE	PRECIPITATION	ICING
☐ NONE	☐ NONE	☐ NONE	☐ NONE
☐ FEW	☐ CAT ☐ LGT	☑ RAIN ☐ DRZL	☑ CLEAR ☐ LGT
☑ SCATTERED	☐ TSTM ☐ MOD	☑ SHOWERS ☐ SNOW	☑ RIME ☐ MOD
☐ NUMEROUS	☐ ☑ SVR	☐ FREEZING	☑ MIXED ☐ SVR
☐ HAIL	IN CB		☑ IN CLOUDS
			IN TH STMS.

III. TERMINAL DATA

DESTINATION [redacted]

FORECAST
MEI 8 ⊕2R 3910/980 (0900 Z TO 0700 Z)

ALTERNATE [redacted]

FORECAST
MOB 20 ⊕3 RW 2712/994 (0800 Z TO 1100 Z)

IV. COMMENTS/REMARKS

VOID TIME	EXTENDED TO	FORECASTER
0245 Z		W.E.H.

V. TELEVISION/TELEPHONE BRIEFING RECORD

WEATHER FACILITY

TAPE NO.	START	STOP	PHONE CHARGE

DD FORM 1 NOV 64 175-1

File No. 5-641-8
69-641-8

PRACTICAL EXERCISE #5

IFR FLIGHT PLANNING AND NAVIGATION

Charts L-17 and L-18

PROBLEM: Plan an IFR flight from Lawson AAF, Columbus, Georgia, (LSF), panel F, to New Orleans, Moisant International Airport (MSY), panel D, with Mobile (Bates Field) (MOB), panel E, as your alternate.

AIRCRAFT:	UH-1D, Serial No. 62-7733
COMMUNICATIONS EQUIPMENT:	ARC-55 / T-366A
NAVIGATION EQUIPMENT:	ARN-59 / ARN-30D / APX-44 (SIF)
TAS:	85 knots
FUEL ON BOARD:	3380 pounds
FUEL CONSUMPTION RATE:	450 pounds/hour
WARMUP AND TAXI FUEL:	60 pounds
ETD:	1300 E
ROUTE TO DESTINATION:	Direct Eufaula VOR, V-241 Crestview VOR, V-22 Brookley VOR, V-242 Mobile VOR, V-20 New Orleans VOR, direct New Orleans LOM
ROUTE TO ALTERNATE:	V-20 Mobile VOR
ALTITUDE:	Select the most desirable altitude, considering winds aloft, direction of flight, and MEA's
WEATHER:	Check appropriate entries on DD Form 175-1
APPROACH:	Plan for an ILS approach at New Orleans International Airport

Part I: PREFLIGHT PHASE

1. Fill out a complete DD Form 175.
2. Fill out a complete flight log.
3. Decode NOTAM's for BIX and NUN.

4. What is the total distance for this flight (destination and alternate in NM)?

5. How much fuel reserve must you allow (in pounds)?

6. Is a fuel stop necessary? (Yes - No)

7. What is the total fuel requirement for this flight (warmup, destination, alternate, and 45-minute reserve)?

Part II: IN-FLIGHT PHASE

Initial ATC clearance reads: "ATC clears RC-2-7733 to the New Orleans International Airport via direct Eufaula VOR; thence, via flight plan route. Maintain 6000 feet while in control areas; contact Jacksonville Center on 317.6 mc over Eufaula VOR."

1. Through what remote facility would you be calling Jacksonville Center on 317.6 mc?

2. You check your position over Eufaula VOR at 1816Z. You later check your position over Abbeville intersection at 1830Z. What groundspeed have you made good (in knots)?

3. Using your new groundspeed, what time do you estimate Dothan VOR (Zulu)?

4. If you use Albany VOR (ABY) to fix Abbeville intersection, what course-selector setting would you use to get a TO indication?

   Before reaching Abbeville, the needle should be deflected to the _____.

5. If you arrive over Dothan VOR at 1845Z, and between Eufaula and Dothan have held a magnetic heading of 215° and TAS 85 knots, what is the magnetic wind direction and velocity? _____° / _____ knots

6. What two omni stations would you use to check Harold intersection (between CEW and NUN)?

7. What are your weather minimums for a GCA approach at Moisant International Airport?

8. What are the New Orleans UHF approach control frequencies for the approach to the international airport?

FLIGHT WEATHER BRIEFING

AIRCRAFT NO.: 62-7933 | BRIEFING NO.: 1 | DATE: 1-1-66

I. TAKEOFF DATA

RUNWAY TEMP.	PRESSURE ALT.	TEMP DEVIATION	VAPOR PRESSURE	SPECIFIC HUMIDITY	DENSITY ALTITUDE
22°C	230'				

CLIMB WINDS

REMARKS: FORECAST WINDS SAMPLE

2-2216/19° 4-3018/14° 6-3520/10°

II. ENROUTE DATA

FLIGHT LEVEL	TEMPERATURE	WINDS
		SEE FORECAST

CLOUDS AT FLIGHT LEVEL ____ ☐ YES ☐ NO ☑ IN AND OUT

VISIBILITY AT FLIGHT LEVEL 2 ☐ HAZE ☐ DUST ☐ SMOKE ☑ PRECIPITATION

MINIMUM CEILING ENROUTE	MAXIMUM CLOUD TOPS	MINIMUM FREEZING LEVEL
900	15M	11M

THUNDERSTORMS	TURBULENCE	PRECIPITATION	ICING
☐ NONE	☐ NONE	☐ NONE	☐ NONE
☐ FEW	☐ CAT ☐ LGT	☑ RAIN ☑ DRZL	☑ CLEAR ☐ LGT
☑ SCATTERED	☐ TSTM ☐ MOD	☑ SHOWERS ☐ SNOW	☑ RIME ☐ MOD
☐ NUMEROUS	☐ ☑ SVR	☐ FREEZING	☐ MIXED ☐ SVR
☐ HAIL	IN TSTM'S.		☑ IN CLOUDS
			IN TSTMS.

III. TERMINAL DATA

DESTINATION [redacted]

FORECAST: MSY 6@2RK 2212/990 (1900 Z TO 2400 Z)

ALTERNATE [redacted]

FORECAST: MOB 20@5 2210/985 (2000 Z TO 0200 Z)

IV. COMMENTS/REMARKS

NOTAMS:

BIX: QOMULH

NUN: QOREN JPA CONTAMINATED UFN

VOID TIME	EXTENDED TO	FORECASTER
1900		W.E.H.

V. TELEVISION/TELEPHONE BRIEFING RECORD

WEATHER FACILITY

TAPE NO.	START	STOP	PHONE CHARGE

DD FORM 1 NOV 54 175-1

65 - 99 NPH   030°   ETE 3:55   2020/420

90
68
72
20
10
230
216

MILITARY FLIGHT PLAN		AIRCRAFT UNIT OF ASSIGNMENT/HOME STATION: REESE AFB LUBBOCK TEXAS		AIRCRAFT SERIAL NO.: 59-1660
TYPE OF FLIGHT PLAN: ☑ IFR ☐ DVFR ☐ VFR ☐ FVFR	RADIO CALL/TD CODE: R 9-1660	AIRCRAFT DESIGNATION: UH-1B T3C6A	ESTIMATED TRUE AIRSPEED: 75K	DEPARTURE TIME (Z): PROPOSED 1200Z / ACTUAL
INITIAL CRUISING ALTITUDE: 5,000	POINT OF DEPARTURE: ~~LBB~~ ~~REESE~~ REE.	STANDARD INSTRUMENT DEPARTURE — NAME AND NUMBER:	TO:	

IFR	VFR	ROUTE OF FLIGHT	TO	ETE/EET
✓		~~V-14, OKC VOR, DIRECT TINKER~~	~~TINKER AFB~~ OKC	~~3:55~~ 2:40
		VOR.		
		LUB, V14, OKC, TIK	TIK	

REMARKS: radio ARC-55 / T 3C6A   PLAN VOR APPROACH
nav ARN-55 / ARN-30A   TINKER AFB
alternate route, V-272

SAMPLE

RANK/HONOR CODE	PSGR/CARGO CODE			
HOURS FUEL ON BOARD: 4+55	DIST TO DESTN: 260	ALTERNATE AIR FIELD: MLC	ETE TO ALTN:	REQUEST CLEARANCE AFTER:
INST RATING: STANDARD 2	SIGNATURE OF PILOT IN COMMAND: [signature]	SIGNATURE OF APPROVING AUTHORITY:		DATE:

CREW/PASSENGER LIST

DUTY	NAME AND INITIALS	GRADE	SERVICE NO.	ORGANIZATION AND LOCATION
PILOT IN COMMAND				

PILOTS PREFLIGHT CHECKLIST

☐ NOTAMS	☐ AIRSPACE RESTRICTIONS	☐ AIRCRAFT/DESTINATION NAV AIDS
☐ WEATHER AND WINDS	☐ CHARTS, PUBLICATIONS, MAPS	☐ DD FORM 365F (*Weight and Balance Clearance Form F*)

DD FORM 1 NOV 64 175   PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

MILITARY FLIGHT PLAN

AIRCRAFT UNIT OF ASSIGNMENT/HOME STATION	AIRCRAFT SERIAL NO.

TYPE OF FLIGHT PLAN ☐ IFR ☐ DVFR ☐ VFR ☐ FVFR	RADIO CALL/TD CODE	AIRCRAFT DESIGNATION	ESTIMATED TRUE AIRSPEED	DEPARTURE TIME (Z) PROPOSED	DEPARTURE TIME (Z) ACTUAL

INITIAL CRUISING ALTITUDE	POINT OF DEPARTURE	STANDARD INSTRUMENT DEPARTURE NAME AND NUMBER	STANDARD INSTRUMENT DEPARTURE TO

IFR	VFR	ROUTE OF FLIGHT	TO	ETE/EET

REMARKS

SAMPLE

RANK/HONOR CODE	PSGR/CARGO CODE

HOURS FUEL ON BOARD	DIST TO DESTN	ALTERNATE AIR FIELD	ETE TO ALTN	REQUEST CLEARANCE AFTER

INST RATING	SIGNATURE OF PILOT IN COMMAND	SIGNATURE OF APPROVING AUTHORITY	DATE

CREW/PASSENGER LIST

DUTY	NAME AND INITIALS	GRADE	SERVICE NO.	ORGANIZATION AND LOCATION
PILOT IN COMMAND				

PILOTS PREFLIGHT CHECKLIST

	NOTAMS		AIRSPACE RESTRICTIONS		AIRCRAFT/DESTINATION NAV AIDS
	WEATHER AND WINDS		CHARTS, PUBLICATIONS, MAPS		DD FORM 365F *(Weight and Balance Clearance Form F)*

DD FORM 1 NOV 64 175 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

MILITARY FLIGHT PLAN

AIRCRAFT UNIT OF ASSIGNMENT/HOME STATION	AIRCRAFT SERIAL NO.

TYPE OF FLIGHT PLAN ☐ IFR ☐ DVFR ☐ VFR ☐ FVFR	RADIO CALL/TD CODE	AIRCRAFT DESIGNATION	ESTIMATED TRUE AIRSPEED	DEPARTURE TIME (Z) PROPOSED	DEPARTURE TIME (Z) ACTUAL

INITIAL CRUISING ALTITUDE	POINT OF DEPARTURE	STANDARD INSTRUMENT DEPARTURE NAME AND NUMBER	STANDARD INSTRUMENT DEPARTURE TO

IFR	VFR	ROUTE OF FLIGHT	TO	ETE/EET

REMARKS

SAMPLE

RANK/HONOR CODE	PSGR/CARGO CODE

HOURS FUEL ON BOARD	DIST TO DESTN	ALTERNATE AIR FIELD	ETE TO ALTN	REQUEST CLEARANCE AFTER

INST RATING	SIGNATURE OF PILOT IN COMMAND	SIGNATURE OF APPROVING AUTHORITY	DATE

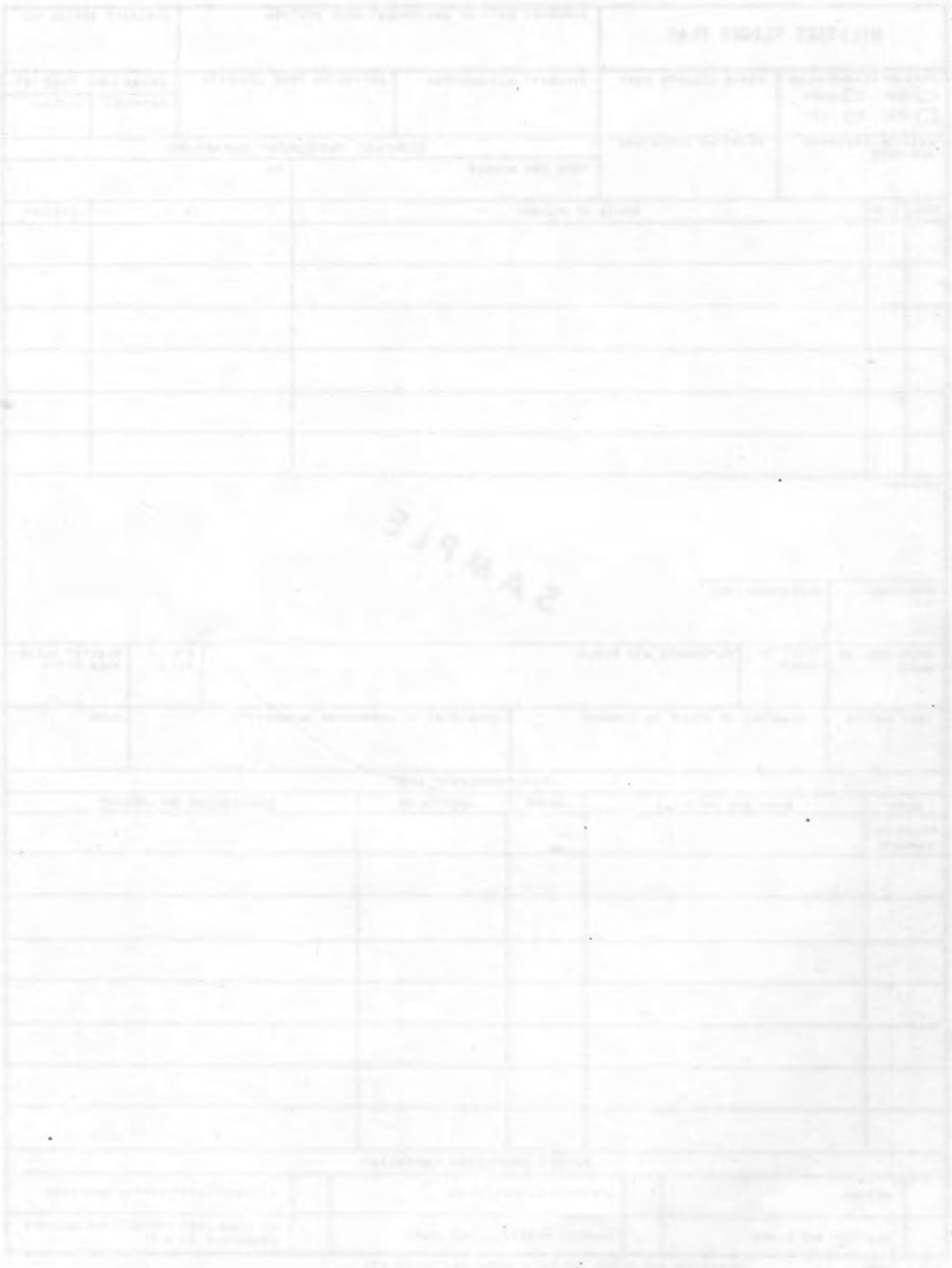
CREW/PASSENGER LIST

DUTY	NAME AND INITIALS	GRADE	SERVICE NO.	ORGANIZATION AND LOCATION
PILOT IN COMMAND				

PILOTS PREFLIGHT CHECKLIST

	NOTAMS		AIRSPACE RESTRICTIONS		AIRCRAFT/DESTINATION NAV AIDS
	WEATHER AND WINDS		CHARTS, PUBLICATIONS, MAPS		DD FORM 365F *(Weight and Balance Clearance Form F)*

DD FORM 1 NOV 64 175 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.



ARMY AVIATION INSTRUMENT FLIGHT LOG
(AR 95-63)

ATC CLEARS UH-1D TO LOC HAVANA INT, V7 HINSON, V-22 HAROLD, PENSACOLA BEACON.

TIME		DISTANCE	FUEL	
TAKE OFF	LANDING	TOTAL	REQUIRED	AVAILABLE
15:00Z		169		2020

ROUTE (Check Point)	IDENT / FREQ	MAG CRSE	LEG / REMAINING	ETE / ATE	ETA / ATA	ALTITUDE / GND SPD	REMARKS
TLH			15				
HAVANA INT.		304°	154				
HAVANA			9				
HINSON		309°	145				
HINSON	[illegible]		33				
MAI	114.0	274°	112				
MAI	[illegible]		80				
CEW	115.9	270°	32				
CEW			15				
HAROLD		29[illegible]	[illegible]				
HAROLD	[illegible]		19				
PNS	326	200°					

SAMPLE

POSITION REPORT

IDENT	POSITION	TIME	ALT	IFR (VFR)	EST NEXT FIX	NAME OF SUCCEEDING REPORTING POINT

DA FORM 1 MAY 60 2283 PREVIOUS EDITION OF THIS FORM IS OBSOLETE.

WIND 27° 15K.

ROUTE (Check Point)	IDENT / FREQ	MAG CRSE	LEG / REMAINING	ETE / ATE	ETA / ATA	ALTITUDE / GND SPD	REMARKS

EN ROUTE CHANGE OF FLIGHT PLAN (VFR to IFR)

AIRCRAFT NUMBER	TYPE	PILOT'S NAME	PILOT'S RATING
PRESENT PSN	CRUISING ALTITUDE	ROUTE	
DESTINATION	TAS	RADIO FREQUENCIES	ETE
ALTERNATE AIRPORT	FUEL REMAINING	NAME, RANK AND VIP CODE	*REQUEST MILITARY FLIGHT SERVICE BE INFORMED.*
MISCELLANEOUS DATA:			

SAMPLE

ARMY AVIATION INSTRUMENT FLIGHT LOG
(AR 95-63)

ATC CLEARS ______________ TO ______________________________

____

____

TIME		DISTANCE	FUEL	
TAKE OFF	LANDING	TOTAL	REQUIRED	AVAILABLE

ROUTE (Check Point)	IDENT / FREQ	MAG CRSE	LEG / REMAINING	ETE / ATE	ETA / ATA	ALTITUDE / GND SPD	REMARKS

POSITION REPORT

IDENT	POSITION	TIME	ALT	IFR (VFR)	EST NEXT FIX	NAME OF SUCCEEDING REPORTING POINT

DA FORM 1 MAY 65 2283 PREVIOUS EDITION OF THIS FORM IS OBSOLETE.

ROUTE (Check Point)	IDENT / FREQ	MAG CRSE	LEG / REMAINING	ETE / ATE	ETA / ATA	ALTITUDE / GND SPD	REMARKS

EN ROUTE CHANGE OF FLIGHT PLAN *(VFR to IFR)*

AIRCRAFT NUMBER	TYPE	PILOT'S NAME	PILOT'S RATING
PRESENT PSN	CRUISING ALTITUDE	ROUTE	
DESTINATION	TAS	RADIO FREQUENCY	ETE
ALTERNATE AIRPORT	FUEL REMAINING	NAME [illegible] AND VIP CODE	*REQUEST MILITARY FLIGHT SERVICE BE INFORMED.*

MISCELLANEOUS DATA:


SAMPLE


SAMPLE

216
150
366

99
6
3

45
13
32

169

ARMY AVIATION INSTRUMENT FLIGHT LOG
(AR 95-63)

ATC CLEARS REE TO LUB, V14, OKC, TKE

TIME		DISTANCE	FUEL		
TAKE OFF	LANDING	TOTAL	REQUIRED	AVAILABLE	
12:00Z		260	1,880	2020	

ROUTE (Check Point)	IDENT / FREQ	MAG CRSE	LEG / REMAINING	ETE / ATE	ETA / ATA	ALTITUDE / GND SPD	REMARKS
REE			10	:07	12:07	5000	
LUB	110.8	036	250			85K	
LUB			90	:57	13:04	5,000	
CDS	117.6	052°	160			95K	
CDS			68	:43	13:47	5,000	
HBR	111.8	054°	92			95K	
HBR			72		14:32	5,000	
OKC	115.0	051°	20			95K	
OKC		090	20	:12	14:44	5,000	
TIK	116.8					105K	
TIK			85	149	15:33	5,000	
HLC	112.0					105K	

SAMPLE

POSITION REPORT

IDENT	POSITION	TIME	ALT	IFR (VFR)	EST NEXT FIX	NAME OF SUCCEEDING REPORTING POINT

DA FORM 1 MAY 60 2283 PREVIOUS EDITION OF THIS FORM IS OBSOLETE.

105

ROUTE (Check Point)	IDENT / FREQ	MAG CRSE	LEG / REMAINING	ETE / ATE	ETA / ATA	ALTITUDE / GND SPD	REMARKS

EN ROUTE CHANGE OF FLIGHT PLAN (VFR to IFR)

AIRCRAFT NUMBER	TYPE	PILOT'S NAME	PILOT'S RATING
PRESENT PSN	CRUISING ALTITUDE	ROUTE	
DESTINATION	TAS	RADIO FREQUENCIES	ETE
ALTERNATE AIRPORT	FUEL REMAINING	NAME, RANK AND VIP CODE	REQUEST MILITARY FLIGHT SERVICE BE INFORMED.
MISCELLANEOUS DATA:			

SAMPLE

1500
315
1815

14.33
27
1888

ARMY AVIATION INSTRUMENT FLIGHT LOG
(AR 95-63)

ATC CLEARS _____ TO _____

TIME		DISTANCE	FUEL	
TAKE OFF	LANDING	TOTAL	REQUIRED	AVAILABLE

ROUTE (Check Point)	IDENT / FREQ	MAG CRSE	LEG / REMAINING	ETE / ATE	ETA / ATA	ALTITUDE / GND SPD	REMARKS

POSITION REPORT

IDENT	POSITION	TIME	ALT	IFR (VFR)	EST NEXT FIX	NAME OF SUCCEEDING REPORTING POINT

DA FORM 1 MAY 50 2283 PREVIOUS EDITION OF THIS FORM IS OBSOLETE.

ROUTE (Check Point)	IDENT / FREQ	MAG CRSE	LEG / REMAINING	ETE / ATE	ETA / ATA	ALTITUDE / GND SPD	REMARKS

EN ROUTE CHANGE OF FLIGHT PLAN *(VFR to IFR)*

AIRCRAFT NUMBER	TYPE	PILOT'S NAME	PILOT'S RATING
PRESENT PSN	CRUISING ALTITUDE	ROUTE	
DESTINATION	TAS	RADIO FREQUENCY	ETE
ALTERNATE AIRPORT	FUEL REMAINING	NAVAID AND VIP CODE	*REQUEST MILITARY FLIGHT SERVICE BE INFORMED.*
MISCELLANEOUS DATA:			

SAMPLE

SAMPLE

en-route Charts.

must use current Chart.
Have never done area charts.