IFR FLIGHTS

EQUIPMENT SUFFIXES

Equipment code to put in block 3 of your IFR flight plan AIM 5−1−8. Flight Plan (FAA Form 7233−1)− Domestic IFR Flights.

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

2. Calibrated airspeed (CAS) to maintain true airspeed (TAS) indicated in the flight plan

a. On your flight computer, put air temperature (given in question) over the flight altitude (given in the IFR flight plan). On the outer scale, find TAS; CAS is on the inner scale.

3. Time to complete the flight (time en route for block 10 of the IFR flight plan)

    a. This question requires you to complete the flight log, which involves wind triangle computations (on your manual or electronic flight computer).

        1) Note: If filing a composite flight plan, check both VFR and IFR boxes in block 11.

        2) Note: Fuel quantities listed in block 12 of your flight plan should include total usable fuel, measured in hours.

4. Composite flights (IFR and VFR) should be entered in block 1 of the flight plan.

    a. When planning to fly in both IFR and VFR conditions, both VFR and IFR blocks should be selected in block 1 of the flight plan.

5. Fuel quantity should.be entered in block 12 of the flight plan.
    a. Total usable fuel should always be entered in block 12 of the flight plan.

6. Interpretation of VOR, RMI, HSI, and GS/LOC indicators to determine position relative to a position specified on a particular approach, DP, STAR, or en route chart

    a. These interpretations are covered in Study Unit 3, "Navigation Systems."

7. Interpretation of appropriate procedures, minimum altitude, and other restrictions on instrument approach charts

    a. Please see the instrument approach chart legends (on pages 189 through 201) in Study Unit 6, "Holding and Instrument Approaches."

    b. The formula for converting feet per nautical mile to feet per minute is *GS* x *6~T/NM* = *FPM*

8. Interpretation of appropriate procedures, minimum altitude, and other restrictions on low altitude en route charts

    a. See the IFR en route chart legends. Legend 25 appears on page 396 in Study Unit 10, "IFR En Route." Legends 23 and 24 are provided in color on pages 380 and 381.

9. Interpretation of DPs and STARs

    a. A careful reading of the DP or STAR usually provides the correct answer, especially in conjunction with the DP/STAR Legend 17 reproduced on page 186 in Study Unit 6.

10. Calculating climbs and descents

    a. When calculating rates of climb or descent, specifically be aware of whether you are seeking feet per minute or feet per nautical mile.

    b. If a climb or descent is specified in feet per nautical miles, calculate the required feet per minute as follows:

1) Find ground speed.

2) Find distance.

3) 120 knot groundspeed equates to 2 NM per minute. A 90 knot groundspeed equates to 1.5 NM per minute.

4) To achieve a climb or descent of 435 feet per NM at 120 knots groundspeed (2 NM per minute), 435 feet per NM x 2 NM per minute = 870 feet per minute.

5) To achieve a climb or descent of 435 feet per NM at 90 knots groundspeed (1.5 NM per minute), 435 feet per NM x 1.5 NM per minute = 652.5 feet per minute.

c. If the rate of descent is given in feet per NM but must be solved in feet per minute, calculate the required rate as follows:

1) Find your groundspeed.

2) Find the altitude to be lost or gained.

3) Find the distance between two points where the climb or descent must occur.

4) Divide distance by altitude to find feet per NM. For example, 750 feet + 3NM = 250 feet per nautical mile.

5) Divide groundspeed by 60 (minutes per hour) to find NM per minute. 120 knots + 60 minutes = 2 NM per minute. 90 knots + 60 minutes = 1.5 NM per minute.

6) Multiply speed per minute x rate per NM to arrive at feet per minute. 1.5 NM per minute x 250 feet per NM = 375 feet per minute. 2 NM per minute x 250 feet per NM = 500 feet per minute.

Calculating a DME arc

a. Find the degrees from the beginning waypoint or intersection to start the arc, then go to the radial to start the final approach course. For example, if we start on R-251 and go to R-333 (333 - 251 = 82), on a 15 DME arc, it would look like this:

$$\textit{Distance of arc} = \frac{\textit{\# of degrees} \times \textit{DMEarc}}{60}$$

$$\textit{Distance of arc} = \frac{82 \times 15}{60} = 20.5 \text{ NM}$$