Area of Operation **V** - Task **A**

Air Traffic Control Clearances

Content

Key References:

- Instrument Flying Handbook
- Instrument Procedures Handbook
- AIM

1. Introduction

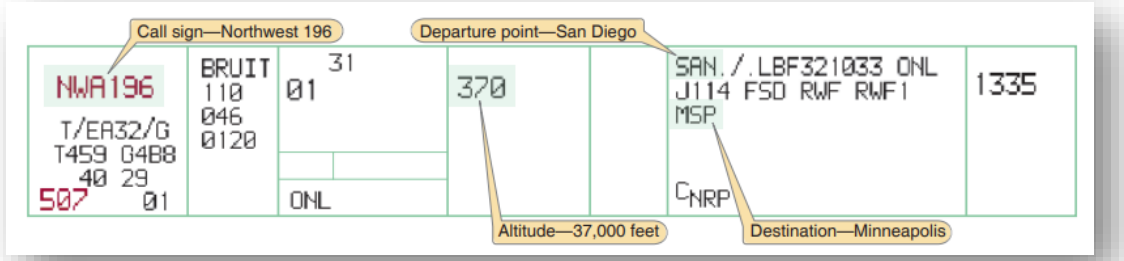
- **What**: This lesson covers responsibilities of the controller and pilot regarding IFR communication, IFR clearances and how to efficiently setup communication and navigation equipment
- **Why**: Flying IFR can be task-saturating, so efficiently managing and preparing for clearances help stay ahead of the airplane. Understanding the role of ATC and the Pilot on clearances create a smooth flying experience.

- **About Air Traffic Clearance**:
  - It is an authorization by ATC for an aircraft to proceed under specified traffic conditions within controlled airspace
  - Detailed in Section 4 of the AIM [AIM 4-4]
  - It is NOT an authorization to deviate from rules/regulations
    - ✓ *Pilots must request an amended clearance if the ATC clearance would impact safety, regulation or if the pilot would like to do something different than instructed*
  - To operate in controlled airspace under IFR [91.173]:
    - ✓ *File a flight plan*
    - ✓ *Receive ATC clearance*

2. Air Traffic IFR Clearance

- **Where to Start?**
  - File a Flight Plan via FSS, Foreflight, etc
  - Flight Plan is sent to ARTCC for processing
  - Once processed, Flight Strip is sent to the Tower, Departure Control and 1st Center Controller
    - ✓ *Foreflight also update the flight with "Expected Clearance"*

- **How to Pickup a Clearance**
  - Follow chart supplement instructions
  - Towered Airport
    - Clearance delivery or Ground
  - Non-Towered Airport
    - Clearance delivery or FSS
  - From the air
    - In VFR, contact ATC or FSS
  - State:
    - ✓ *Who you are calling*
    - ✓ *Who you are (callsign)*
    - ✓ *Ready to Copy IFR to <destination>*



KPAE

WEATHER DATA SOURCES: **ASOS** (425) 355–6192 LAWRS.
COMMUNICATIONS: **CTAF** 132.95 **ATIS** 128.65 425–355–9797 **UNICOM** 122.95
PAINE RCO 122.2 (SEATTLE RADIO)
Ⓡ **SEATTLE APP/DEP CON** 128.5
PAINE TOWER 132.95 (Rwy 16R–34L) 120.2 (Rwy 16L–34R) (1500–0500Z‡) **GND CON** 121.8 **CLNC DEL** 127.175
CLEARANCE DELIVERY PHONE: For CD when ATCT is clsd ctc Seattle Apch at 206-214-4722.

KRNT

WEATHER DATA SOURCES: **ASOS** 126.95 (425) 255–6080. LAWRS.
COMMUNICATIONS: **CTAF** 124.7 **ATIS** 126.95 **UNICOM** 122.95
Ⓡ **SEATTLE APP/DEP CON** 119.2 (028°–160° SEA Rwy 16) (017°–079° SEA Rwy 34) 120.1 (223°–289° SEA, Rwy 16) (223°–301° SEA, Rwy 34) 120.4 (301°–340° SEA, Rwy 34) 125.9 (290°–315° SEA, Rwy 16) (080°–125° SEA, Rwy 34) 126.5 (161°–222° SEA, Rwy 16) (126°–222° SEA, Rwy 34) 128.5 (316°–027° SEA, Rwy 16) (302°–016° SEA, Rwy 34)
TOWER 124.7 (Oct 1–Apr 30 1500–0400Z‡, May 1–Sept 30 1500–0500Z‡) **GND CON** 121.6
CLEARANCE DELIVERY PHONE: For CD when ATCT is clsd ctc Seattle Apch at 206-214-4722.

2. Air Traffic IFR Clearance

- **Clearance Availability**
  - 30 minutes prior to filed departure time
  - 2 hours after filed departure time
  - If delayed, you can request ATC hold the clearance longer

Restrictions

- **Clearance Void Time** [AIM 5-2-7 (a)(1)]
  - Time by which the pilot must depart
  - Usually given at non-towered airports
  - Clearance is automatically cancelled if takeoff is not made by the CVT
    - ✓ If the void time passes, contact ATC and advise them of your intentions **no more than 30min later**

Failure to communicate will ignite search & rescue

- **Hold for Release** [AIM 5-2-7 (a)(2)]
  - Usually issued when there is a delay (weather, separation, etc)
  - The pilot may not depart on that IFR clearance until a release time or additional instructions are issued by ATC
- **Release Time** [AIM 5-2-7 (a)(3)] ➔ Earliest time given to the pilot for when he/she can depart
- **Expect Departure Clearance Time** [AIM 5-2-7 (a)(4)] ➔ Time the aircraft is expected to depart (max ±5min)

2. Air Traffic IFR Clearance

- **Receiving an IFR Clearance (CRAFT)**
  - **C** – Clearance Limit
  - **R** – Route
  - **A** – Altitude
  - **F** – Frequency
  - **T** – Transponder Code

Abbreviated clearance

Example:

- C *"Clear to Skagit Airport"*
- R *"via RENTN3 Departure, then as filed"*
- A *"Climb via the SID, Expect 4,000 5min after"*
- F *"Seattle Departure frequency 119.2"*
- T *"Squawk 4016"*

- **Readback the Clearance:**
  - Follow the same order with all the information
  - If something is unclear or there is confusion ➔ Clarify
  - Wait for "Read back correct" after the readback, if everything is alright

- **When in flight and receive clearance for an approach:**
  - ATC will call you stating your location, then give you heading, altitude, and the "Cleared" approach name
    - ✓ Example: "Skyhawk 611EK, thirteen miles NW of Paine Field Airport, turn right heading 140, maintain 3000 until established on the localizer, cleared ILS Y Runway 16R approach" **(PTAC)**
  - ATC will eventually ask you to contact Tower, who will clear you to land

3. Pilot Responsibilities

- **Even before filing a flight plan**

Pilot's Responsibilities prior to departing IFR [AIM 5-2-9(h1)]

- Consider the type of terrain and other obstacles on or in the vicinity of the airport
- Determine whether an ODP is available
- Determine if can maintain obstacle avoidance visually or if needs to fly the ODP
- Consider the effect of degraded climb performance or engine loss
- Determine if DVA is published and whether the aircraft can meet climb gradient (advise ATC if not when requesting IFR clearance)
- Check for takeoff obstacle notes published in the TPP for the takeoff runway

- **When it comes to IFR Clearances:**
  - File an IFR Flight plan and obtain an ATC clearance [91.173]
  - Acknowledge receipt & understanding of clearance
  - Reads back any hold short of runway instructions issued by ATC.
  - Request clarification or amendment as appropriate
  - Promptly comply with ATC clearances upon receipt [AIM 4-4-10]
    - ✓ *Exception: Emergency (advice ATC asap and obtain an amended clearance)*
    - ✓ *In an emergency, PIC may deviate from the clearance to the extent necessary to maintain safety* [91.3]
  - See and avoid when operating in VMC

Full responsibilities on AIM Section 5

4. Controller Responsibilities

- Issues appropriate clearances in accordance with established criteria.
- Assigns altitudes in IFR clearances that are at or above the minimum IFR altitudes
- Ensures acknowledgement by the pilot for issued clearances/instructions
- Ensures readbacks by the pilot are correct.
    - If incorrect, distorted, or incomplete, makes corrections as appropriate.
- Issues an approach clearance based on known traffic.
    - Issues an IFR approach clearance only after the aircraft is established on a segment of published route or IAP, or assigns an appropriate altitude for the aircraft to maintain until so established.

Full responsibilities on AIM Section 5

5. Setting COM/NAV Frequencies | G1000

- **Communication Setup**
  - COM1: Tower (Active), Departure (Standby)
    - ✓ *Keep using Com1 for each frequency change*
  - COM2: Destination Weather (Active), Destination Tower/CTAF (Standby)
    - ✓ *This allows for ATIS/ASOS/AWOS monitoring, and easy switch between Tower (Com2) and Approach (Com1)*
- **Navigation Setup**
  - NAV1: First station (VOR, ILS, etc, set the OBS) (Active), Second station (Standby)
    - ✓ *Keep using Nav1 for navigation and change over*
  - NAV2: Lost comms on departure (set the OBS) for emergency return (Active)
    - ✓ Use Nav2 for monitoring, identifying fixes, improve situational awareness
- **PFD/MFD Setup**
  - Enter flight plan and procedures
  - Bug HDG w/ departure, ALT with climb altitude
  - Inset windows (Traffic, FLT Plan)
  - CDI & Bearings (if needed)
  - Transponder (STBY → ALT)

6. Tower Enroute Control (TEC) - Clearance

- **Facilitate IFR flights in busy areas with pre-planned routes**
  - Uses overlapping approach control services to provide IFR clearances
  - Usually for flights less than 10,000' and 2 hours, ARTCC not involved
  - Mostly in the East Coast and California
- **Can be found in the chart supplement**
  - Also listed in Foreflight
- **Advantages**
  - Expedites traffic
  - Reduces communication requirements
  - Abbreviated filing procedures

SAN DIEGO AREA

FROM: CRQ MYF NFG NKX NRS NZY SAN SDM SEE RNM OKB L18 TIJ

TO:	ROUTE	ROUTE	ALTITUDE
AVX	SANP1	MZB V23 OCN V208 SXC	PQ60
AVX	SANP2	MZB293 V27 SXC	J100M80
AVX	SANP2R	CWARD (RNAV)-DP CWARD AVOLS SXC	J100M80
FUL LGB SNA SLI TOA	SANP3	OCN V23 SLI	PQ60

SW, 21 MAR 2024 to 16 MAY 2024

AIRCRAFT CLASSIFICATION

(J) =Jet powered
(M) =Turbo Props/Special (cruise speed 190 knots or greater)
(P) =Non-jet (cruise speed 190 knots or greater)
(Q) =Non-jet (cruise speed 189 knots or less)

Questions?