

COMMUNICATIONS, LIGHT SIGNALS, AND RUNWAY LIGHTING SYSTEMS

FULFILLS PA.III.A, CA.III.A, AI.VI.A

Objective	
The student shall understand how to enter and operate within an airport's traffic pattern. The student shall become familiar with the airplane's configuration and proper radio calls within the traffic pattern.	
Instructor Actions	Student Actions
<ul style="list-style-type: none">- Discuss the components and configuration at different segments of the traffic pattern- Overview traffic pattern entry methods- Present methods for determining pattern direction and altitude- Highlight differences between traffic patterns at controlled and non-controlled airports	<ul style="list-style-type: none">- Take notes and participate in instructor's discussion- Explain traffic pattern process to instructor- Perform the traffic pattern in-flight- Chair fly the traffic pattern at home
Case Studies	Equipment
<ul style="list-style-type: none">- AOPA Accident Case Study – <u>Traffic Pattern Tragedy</u>- AOPA Accident Case Study – <u>Communication Breakdown</u>	<ul style="list-style-type: none">- Computer- FAR/AIM- PHAK- White Board
Completion Standards	
The student shall repeatedly perform traffic patterns within ACS standards and understand the risks associated with operating in the pattern. The student shall become familiar with visualizing a stable approach and adjusting the pattern to facilitate different airports and conditions.	

ELEMENTS

1. Obtaining Proper Radio Frequencies	3
2. Proper Radio Calls and Phraseology.....	4
3. ATC Light Gun Signals	4
4. Appropriate Use of Transponders.....	4
5. Lost Communication Procedures.....	5
6. When to Declare an Emergency.....	5

RESOURCES

FAA-S-ACS-6C Private Pilot ACS - Area III Task A

FAA-S-ACS-7B Commercial Pilot ACS - Area III Task A

FAA-S-ACS-25 CFI ACS - Area VI Task A

FAA-H-8083-2 Risk Management Handbook

FAA-H-8083-3C Airplane Flying Handbook Chapter 8: Airport Traffic Pattern

FAA-H-8083-25C PHAK Chapter 14: Airport Operations

AC 90-66C Non-Towered Airport Flight Operations

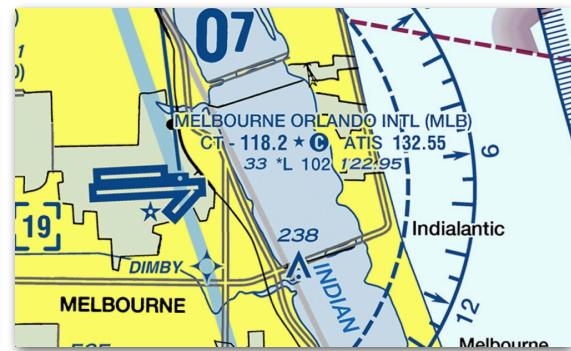
AIM Chapter 2

1. OBTAINING PROPER RADIO FREQUENCIES

During preflight planning, the pilot should become familiar with the appropriate weather, ground, and tower frequencies at their departure and destination airports. If non-controlled, then CTAF should be used.

The left image shows an airports communication information as seen in the chart supplement. All relevant frequencies are listed, including an indicator that the approach and departure control includes radar coverage with the 'R'. The right image shows a snippet from the VFR sectional, which also includes the control tower frequency, an indication that this frequency also supports CTAF, the ATIS frequency, and an additional UNICOM frequency. Note that VOR information is included in a separate box.

AIRPORT MANAGER: 321-723-6227
WEATHER DATA SOURCES: ASOS 132.55 (321) 951-7575. LAWRS.
COMMUNICATIONS: CTAF 118.2 ATIS 132.55 UNICOM 122.95
RCO 122.1R 115.85T (SAINT PETERSBURG RADIO)
② ORLANDO APP/DEP CON 132.65
TOWER 118.2 124.05 (1100-0500Z)
GND CON 121.9 CLNC DEL 121.9 132.65 (when twr clsd)
AIRSPACE: CLASS D svc 1100-0500Z; other times CLASS G.
RADIO AIDS TO NAVIGATION: NOTAM FILE MLB.
(VL) (DH) VOR/DME 115.85 MLB Chan 105(Y) N28°06.32' W80°38.12' at fld. 30/7W.
VOR unusable:
010°-020°
021°-065° byd 40 NM
235°-240° byd 40 NM
ILS 108.3 I-MLB Rwy 09R. Unmonitored when ATCT clsd.



A snippet of the aeronautical chart users guide is shown below as a reminder for common VFR chart symbols. An EFB can also provide relevant frequencies

Flight Service Station on field	FSS	285
Airports where fixed wing special VFR operations are prohibited (shown above airport name) FAR 91	NO SVFR	
Indicates FAR 93 Special Air Traffic Rules and Airport Traffic Pattern		
Location Identifier	(NAME)	L
ICAO Location Identifier	(PNAME)	L
Control Tower (CT) - primary frequency	CT-118.3	
Star indicates operation part-time. See tower frequencies tabulation for hours of operation	*	122.95
Follows the Common Traffic Advisory Frequency (CTAF)	CTAF	RP 23.04
Automatic Terminal Information Services	ATIS 123.8	RP
Automatic Flight Information Service	AFIS 135.2	VFR Advise 125.0
Automated Surface Weather Observing Systems; shown when full-time ATIS is not available.	ASOS/AWOS 135.42	WX CAM
		AOE
		When information is lacking, the respective character is replaced by a dash. Lighting codes refer to runway edge lights and may not represent the longest runway or full length lighting.

2. PROPER RADIO CALLS AND PHRASEOLOGY

See AIM 4-4-7 or [this](#) thread for information on what radio calls need to be read back. However, the following list includes some items that do NOT need to be read back:

1. Wake turbulence advisories
2. Wind speed advisories before takeoff or landing
3. Standby

Examples of proper phraseology is included below

Traffic callouts: “Negative contact” or “Traffic in sight”

Numbers and Headings: Individually, such as “Runway two four”

Altitudes: Split into thousands and hundreds, such as “four thousand five hundred” or “one one thousand five hundred”

3. ATC LIGHT GUN SIGNALS

[AIM 4-2-3](#) includes specific guidance on transmitter/receiver failures, and AIM 4-3-13 defines the light gun signals expected if the pilot enters a towered airport’s traffic pattern without communicating.

Color and Type of Signal	Aircraft on the Ground	Aircraft in Flight
Steady green	Cleared for takeoff	Cleared to land
Flashing green	Cleared for taxi	Return for landing (to be followed by steady green at the proper time)
Steady red	STOP	Give way to other aircraft and continue circling
Flashing red	Taxi clear of the runway in use	Airport unsafe, do not land
Flashing white	Return to starting point on airport	Not applicable
Alternating red and green	Exercise extreme caution	Exercise extreme caution

4. APPROPRIATE USE OF TRANSPONDERS

According to [91.215](#), if your aircraft has a transponder AND you are operating in any controlled airspace (A, B, C, D, E), you must use your transponder. If it has an ‘ALT’ function, that must be on as well. Squawk whatever number ATC has directed.

The following codes are reserved for emergencies:

7700 – General Emergency

7600 – Radio Failure

7500 – Hijacking

5. LOST COMMUNICATION PROCEDURES

Radio failures do not automatically constitute an emergency. In fact, many cross flights are possible without talking to ATC or communication on CTAF (though not a good idea). Pilots should consider the following:

- Attempt to troubleshoot (turn off/on, try other side and push to talk (PTT), try overhead speaker)
- Try other radio (if equipped)
- Use handheld radio (if available)
- Call ATC on phone
 - MHV Tower: 661-824-4324
 - Joshua Approach:

5.1. Equipment Issues Inducing Loss of Comms

- Push to talk button connectors worn
- Radio on switch not fully seated
- Incorrect frequency set (not as dumb as it sounds)

6. WHEN TO DECLARE AN EMERGENCY