AIR TRAFFIC BULLETIN PROCEDURES

A communication from the Director of Policy, Mission Support Services
Federal Aviation Administration, U.S. Department of Transportation.

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"Guard" Frequencies and Emergency Locator Transmitters (ELT) VHF 121.5 and UHF 243.0~ Missed Approach Procedure, Alternate Missed Approach Procedure and Climb-out instructions

*E,*R,*T,*F: "Guard" Frequencies and Emergency Locator Transmitters (ELT) VHF 121.5 and UHF 243.0

Very high frequency (VHF) 121.5 and ultra high frequency (UHF) 243.0 are "guarded" frequencies reserved in the aircraft operations band exclusively for emergency communications and notifications. Generally, civil aircraft are VHF radio equipped, and military are UHF radio equipped. However, both emergency frequencies are available to any aircraft properly equipped.

Air traffic control facilities in the United States are required (with some exceptions) to have both transmit and receive capability on the emergency frequencies and must monitor them continuously. FAA Order JO 7210.3, *Facility Operation and Administration*, Chapter 3, contains guidance for ensuring that there is effective, nationwide, geographical coverage of these frequencies. Facilities that monitor "guard" frequencies must conduct two-way, ground-to-air checks at least weekly.

For ATC to communicate with a VHF radio-equipped aircraft on 121.5, the pilot must have already selected 121.5 and be actively monitoring the frequency. For a VHF radio-equipped aircraft to alert ATC (or another aircraft) that they need assistance, ATC or another aircraft must be monitoring 121.5.

UHF 243.0 is slightly different. When either ATC or an aircraft transmits on 243.0, it "overrides" UHF frequencies so that all UHF radios in the vicinity of the transmission will hear it.

FDC NOTAM 4/4386, Special Notice, requires all aircraft operating in United States National Airspace to maintain, if capable, a listening watch on VHF Guard 121.5 or UHF 243.0.

Emergency Locator Transmitters (ELT)

Emergency Locator Transmitters (ELTs) are small, self-contained radio transmitters installed in most general aviation aircraft. They can be triggered by a substantial impact along the aircraft's longitudinal axis.

ELTs were mandated by Congress in 1973 after the loss of U.S. Representative Hale Boggs and Nick Begich in Alaska; their small chartered aircraft was never found. An activated 121.5 ELT could have alerted ATC and other aircraft of their distress situation.

In 1982, a satellite constellation (COSPAS-SARSAT) began to receive 121.5 and 243.0 distress signals. Newer, more reliable ELTs utilizing a third distress frequency - 406 MHz - were introduced after 1985. In 2009, the satellite constellation stopped monitoring 121.5/243 MHz, and now only monitors 406 MHz ELTs. The National Oceanic and Atmospheric Administration (NOAA) operates the United States' portion of the COSPAS-SARSAT satellite distress alerting system.

The 406 MHz ELTs have a digital transmitter that can be encoded with the owner's contact information or aircraft data. They can also be encoded with the aircraft's position data which can help search and rescue (SAR) forces locate the aircraft quickly after a crash. The 406 MHz ELTs also transmit a stronger signal when activated than the older 121.5 MHz ELTs. The 406 MHz units also have a low-power 121.5 MHz homing transmitter to aid searchers in finding aircraft.

General aviation aircraft with older 121.5 ELTs are not required to upgrade or retrofit.

When an ELT is activated on 406 MHz, the Air Force Rescue Coordination Center (AFRCC) coordinates search and rescue activities in the 48 contiguous United States. Rescue activities may include support of search and rescue operations for American citizens in Mexico and Canada. Coordination can also include the Civil Air Patrol, the United States Coast Guard, and other first responders where appropriate.

Older ELTs not transmitting on 406MHz can only alert ground-based 121.5/243.0 receivers. Controllers should be aware that the 121.5/243.0 ELT transmissions may be less accurate and have less range than the 406 MHZ ELTs.

Controllers, and supervisors/CICs, should check routinely to ensure they are monitoring 121.5/243.0 (when/where required). If an ELT is heard on either emergency frequency, alert facility management immediately.

***E,*R,*T: What is the difference between a Missed Approach Procedure, an Alternate Missed Approach Procedure and Climb-out Instructions?**

Missed Approach Procedure:

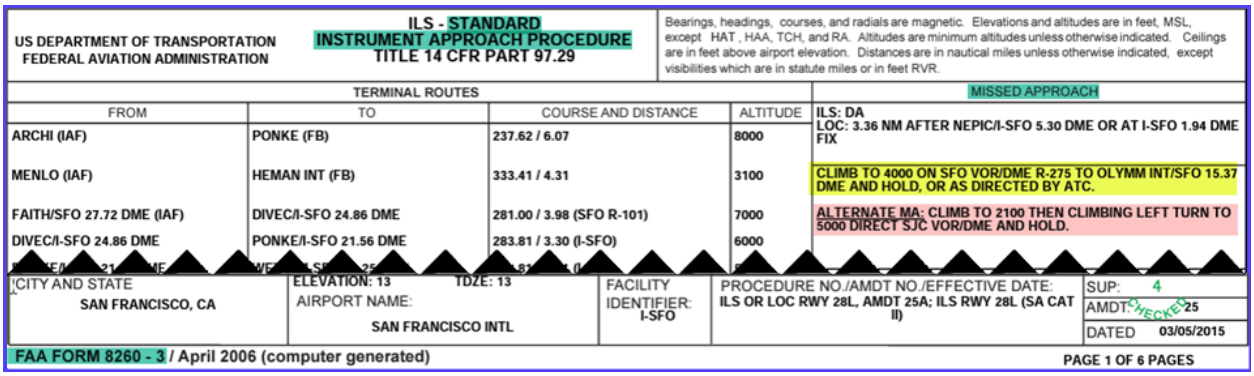
A missed approach procedure is a maneuver conducted by a pilot when an instrument approach cannot be completed to a landing. The route of flight and altitude are shown on instrument approach procedure charts. A pilot executing a missed approach prior to the Missed Approach Point (MAP) must continue along the final approach to the MAP.

A clearance for an instrument approach procedure includes a clearance to fly the published missed approach procedure unless otherwise instructed by ATC. The published missed approach procedure provides obstacle clearance only when the missed approach is conducted on the missed approach segment at or above the missed approach point, and assumes a climb rate of 200 feet/NM or higher, as published. Suppose the aircraft initiates a missed approach at a point other than the missed approach point, from below Minimum Descent Altitude (MDA) or Decision Altitude/Decision Height, or on a circling approach. In that case, **obstacle clearance is not ensured during this period of non-compliance.** During missed approach events, controllers should be observant of pilot compliance with procedures.

Alternate Missed Approach Procedure:

An alternate missed approach procedure is a very special thing and is not what controllers commonly think it is. It is NOT an alternative to a missed approach procedure published on an approach chart, as is often concluded. Alternate missed approach procedures are, in fact, published. To find one, you must read the FAA form that established (or most recently amended) a published instrument approach, FAA Form 8260-3, Standard Instrument Approach Procedure.

Alternate missed approach procedures are designed in anticipation of a ground-based navigational aid becoming unavailable during an unscheduled outage or for scheduled maintenance. A portion of FAA Form 8260-3, Standard Instrument Approach Procedure establishing the ILS OR LOC RWY 28L, at San Francisco is shown below. The missed approach procedure published on the approach chart is highlighted in yellow. The text highlighted in red is the alternate missed approach procedure. This is the only place this procedure can be found, except for special situations where an alternate missed approach procedure is implemented by NOTAM (covered below).



US DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

ILS - STANDARD
INSTRUMENT APPROACH PROCEDURE
TITLE 14 CFR PART 97.29

Bearings, headings, courses, and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT , HAA, TCH, and RA. Altitudes are minimum altitudes unless otherwise indicated. Ceilings are in feet above airport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or in feet RVR.

TERMINAL ROUTES

FROM	TO	COURSE AND DISTANCE	ALTITUDE
ARCHI (IAF)	PONKE (FB)	237.62 / 6.07	8000
MENLO (IAF)	HEMAN INT (FB)	333.41 / 4.31	3100
FAITH/SFO 27.72 DME (IAF)	DIVEC/I-SFO 24.86 DME	281.00 / 3.98 (SFO R-101)	7000
DIVEC/I-SFO 24.86 DME	PONKE/I-SFO 21.56 DME	283.81 / 3.30 (I-SFO)	6000

MISSED APPROACH

ILS: DA
LOC: 3.36 NM AFTER NEPIC/I-SFO 5.30 DME OR AT I-SFO 1.94 DME FIX

CLIMB TO 4000 ON SFO VOR/DME R-275 TO OLYMM INT/SFO 15.37 DME AND HOLD, OR AS DIRECTED BY ATC.

ALTERNATE MA: CLIMB TO 2100 THEN CLIMBING LEFT TURN TO 5000 DIRECT SJC VOR/DME AND HOLD.

CITY AND STATE	AIRPORT NAME	ELEVATION: 13 TDZE: 13	FACILITY IDENTIFIER:	PROCEDURE NO./AMDT NO./EFFECTIVE DATE:	
SAN FRANCISCO, CA	SAN FRANCISCO INTL		I-SFO	ILS OR LOC RWY 28L, AMDT 25A; ILS RWY 28L (SA CAT II)	SUP: 4 AMDT: 25 CHECKED DATED 03/05/2015

FAA FORM 8260 - 3 / April 2006 (computer generated)

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As mentioned, alternate missed approach procedures are used in the event the primary NAVAID used for the missed approach procedure is unavailable. To avoid confusion, the alternate missed approach instructions are not published on the chart. However, the alternate missed approach holding pattern will be depicted on the instrument approach chart for pilot situational awareness and to assist ATC by not having to issue detailed holding instructions. The alternate missed approach may be based on NAVAIDs not used in the approach procedure or the primary missed approach. When a NOTAM implements the alternative missed approach procedure, it becomes a mandatory part of the procedure. The NOTAM will specify both the textual instructions and any additional equipment requirements necessary to complete the procedure. Air traffic may also issue instructions for the alternate missed approach when necessary, such as when the primary missed approach NAVAID fails during the approach.

Climb-Out instructions:

Climb-out instructions are the most common departure instructions issued to an aircraft conducting an instrument approach, radar approach, or when the tower issues instructions for an aircraft to “Go-Around”. Instead of an aircraft flying the published or alternate missed approach, climb-out instructions are issued by the controller to the pilot, at the time of the go-around or, prior to the pilot commencing the approach. These instructions may be issued for aircraft conducting practice approaches as well as aircraft conducting an approach to a full-stop landing. Typically, climb-out instructions vs. missed approaches are instructions issued by the controller that will allow the controller to better manage their traffic flow in the event of an unplanned (or planned) missed approach. Climb-out instructions will include a heading and an altitude. As with published missed approach instructions and alternate missed approach instructions, **climb-out instructions must be formulated to ensure obstacle clearance protection.** At locations where ATC radar service is provided, the pilot should comply with radar vectors when provided by ATC in place of the published/alternate missed approach procedure. After an aircraft commences a missed approach, it may be vectored at or above the MVA/MIA, or follow the provisions of FAA Order JO 7110.65, paragraph 5-6-3, Vectors Below Minimum Altitude.

Finally, remember, **when a controller issues climb-out instructions that remove the aircraft from a published flight procedure, the controller becomes responsible for terrain and obstacle clearance, except after conducting a visual approach.**

References: FAA Order JO 7110.65, Para 4-8-12 Low Approach and Touch-And-Go, Para 5-5-9 Separation from Obstructions, Para 5-6-3 Vectors Below Minimum Altitude, Para 5-8-2, Initial Heading AIM Para 5-4-2, P/CG

The Air Traffic Procedures Bulletin (ATPB) is a means for headquarters to remind field facilities of the proper application of procedures and other instructions. It is published and distributed on an as-needed basis.

Articles must be submitted electronically in Microsoft® Word by the office of primary responsibility with approval at the group level or above. Articles may be submitted throughout the year.

*In this publication, the option(s) for which a briefing is required, is indicated by an asterisk followed by one or more letter designators, i. e., *T-Tower, *E-ARTCC, *R-TRACON, or *F-FSS.*

For additional information concerning the ATPB, reference FAA Order JO 7210.3, FacilityOperation and Administration, paragraph 2-2-9.

Archived ATPB issues are available online: https://www.faa.gov/air_traffic/publications/