FlightSafety international

Falcon Series (DA-50)

Flight Training Maneuvers and Procedures Manual

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FlightSafety International, Inc.
www.flightsafety.com

FOR TRAINING PURPOSES ONLY

NOTICE

The purpose of this manual is to provide the pilot with some recommended techniques for execution of required maneuvers during simulator training. These techniques are observed best practices and serve as a starting point for the initial pilot, and should prove useful in preparation for simulator sessions. They are NOT intended to supplement or supersede the procedures outlined in the approved Flight Manual or the approved Aircraft Specific Curriculum.

FOR TRAINING PURPOSES ONLY

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REVISION SUMMARY/ERRATA SHEET

Revision Level	Page Number	Description
1.0	All 16, 17 52, 53 85, 86	New Template; all pages affected. Figs. 4,5,6: Updated Stall Profiles. Figs. 4,5,6: Updated Stall Profiles. Figs. 4,5,6: Updated Stall Profiles.
0.0	All	Original Submission

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GENERAL

OBJECTIVE OF TRAINING

The following flight profiles show some normal and emergency operating procedures. They are designed as a general guide for ground training purposes. Actual in-flight procedures may differ due to aircraft configuration, weight, weather, traffic, Air Traffic Control (ATC) instructions, specific company directives, etc. Procedures outlined are consistent with the *Aircraft Flight Manual* (*AFM*). If a conflict should develop between these procedures and the *AFM* or any other national approval authority (NAA)-mandated procedures, the *AFM* procedures and/or NAA-mandated procedures must be followed during training. If conflicts do arise, this curriculum will be updated to reflect current *AFM* and/or NAA-mandated procedures as soon as practical.

STALL RECOGNITION AND RECOVERY PROCEDURES

Stall recognition and recovery training will include an introduction to essential concepts and academic understanding prior to applying that knowledge to skill-related activities in the Flight Simulation Training Device (FSTD). The objective of this training is to provide pilots with the knowledge and skills necessary to prevent, recognize, and recover from unexpected stall events.

The primary key to all stall recoveries is to reduce the angle of attack (AOA). Of equal importance is the ability to recognize the first indications of an impending stall with the autopilot on or off, such as decaying airspeed or stall protection system activation, in sufficient time to prevent a full aerodynamic stall, and to understand the negative effects that bank angle and G-loading have on being able to recover from stall conditions. Another key is to determine that the pilot recovers in accordance with procedures set forth in the *AFM* and to the desired flightpath. During this training, pilots will become familiar with all stall protection systems installed on the aircraft. This includes stall warning horns, stick shakers, stick pushers, etc. as applicable to the actual aircraft model being trained.

Training will include three main types of approach-to-stall configurations: Partial Flap (Maneuvering), Clean, and Landing. The maneuvers may be accomplished with the autopilot on or off; in wings level flight conditions and in turns using bank angles of 15 to 30 degrees; and during level flight, climbs, and descents. When training is conducted in a flight simulator, the instructor will use realistic scenarios and altitudes to better simulate the operational conditions where each of these stall conditions is likely to occur, this includes high altitude stalls for clean configurations. In each case, pilots must accept that reducing the airplane AOA may result in altitude loss. The amount of altitude loss will be affected by the operational environment (entry altitude, aircraft weight, bank angle, configuration, etc.). Stall recovery training will emphasize the immediate reduction of the AOA, management of thrust, and returning the airplane to a safe flying condition.

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Power Off Stall Recovery Demonstration

The power off stall demonstration will be conducted to help the pilot recognize the stall warning and immediately perform the stall recovery by reducing the angle of attack. The aim of the demonstration is to familiarize pilots with power off stall characteristics and recovery. Since this training is a demonstration of aircraft response rather than of flight proficiency, this event may be graded as "X" indicating completed.

WINDSHEAR PROCEDURES

A Windshear training event is included in this training program; however, all simulators may not be fully certified to accomplish this event. If a simulator is not fully certified for Windshear training, FlightSafety will still train to the aircraft manufacturer's recommended procedure for recognition and recovery from windshear, using the caveat that simulator responses could be different from actual aircraft responses in some conditions.

REDUCED VISIBILITY (INSTRUMENT) TAKEOFF AND LANDING MINIMUMS

Reduced visibility takeoff and precision instrument approach training will be incorporated in an appropriate FSTD module. For takeoff, this event would normally be accomplished during the Instrument Takeoff task in accordance with regulatory certification standards. For landing, this event would normally be accomplished using the lowest permissible landing visibility for the approach being flown.

SPECIAL EMPHASIS TRAINING

Training elements are from the following:

Aircraft Specific Flight Standardization Board Required Items

Operational Suitability Data

Operational Evaluation Board Required Items

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MANEUVERS AND PROCEDURES

INTRODUCTION

This section describes the standard operating procedures (SOPs) and flight profiles for the aircraft series identified in this curriculum. These SOPs enhance safety by providing a standard methodology to flying the airplane. The procedures in this manual originate with the manufacturer. Deviations may be permitted in case of emergency. In the event of a conflict with any provision of this manual, applicable federal regulations take precedence.

CHECKLIST USAGE

Checklists will be conducted in accordance with original equipment manufacturer (OEM) manuals and, if approved, an operator normal procedures checklist. If a checklist is interrupted prior to completion, the entire checklist should be started over again unless the aircraft is utilizing an electronic checklist that depicts when an item is completed.

Checklists will primarily be initiated by the Pilot Flying (PF) and accomplished by the Pilot Monitoring (PM) for multipilot operations. The pilot conducting the checklist will start by stating the title of the checklist.

Once completed, the pilot conducting the checklist will call out:

[Title] CHECKLIST COMPLETE

MANEUVERS AND PROCEDURES TABLES FOR MULTIPILOT OPERATION

The example table below describes how to read the maneuver and callout tables within this manual.

- Actions and callouts are depicted in the order they are performed, left-to-right, top-to-bottom.
- Some actions are identified as bulleted items.
- Callouts are depicted in all capital letters.
- Words enclosed by brackets ([ ]) in a callout indicate the callout must be the words pertinent to the situation.

Example:

TASK ALLOCATION			CALL-OUT
PIC/PF/ LH	**SIC/PNF/RH/ PM**	Initiates/Transfer Controls/Performs task.	[CAS or PROCEDURE NAME] Message

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BRIEFINGS

Briefings are an essential tool that lead to safe operations of an aircraft. Briefings should be accomplished as per any approved Flight Manual procedures, but at a minimum will include a Takeoff/Departure briefing and an Arrival/Landing briefing. All briefings should be accomplished verbally. The briefings should cover at a minimum the following items.

Takeoff/Departure Briefing

- Departure runway
- Departure procedure
- Power settings
- Speeds
- Abnormal or emergency procedures prior to or after reaching decision speed
- Emergency return intentions
- What is expected of the other crewmember during the takeoff/departure

Arrival/Landing Briefing

- Landing runway
- Arrival procedure
- Instrument approach procedure
- Power settings
- Speeds
- Missed approach procedures
- Final approach fix
- Altitude at final approach fix
- Initial rate of descent
- DA/DH/MDA
- Time to missed approach
- What is expected of the other crewmember during the approach/landing

AIRCRAFT CONTROL TRANSFER

The following standard callouts are used when there is a need to transfer aircraft control from one pilot to the other. Transferring aircraft control should take place in a three-step sequence:

1. Pilot transferring control states: ***YOU HAVE THE FLIGHT CONTROLS***.
2. Pilot accepting control states: ***I HAVE THE FLIGHT CONTROLS***.
3. Pilot transferring states second time: ***YOU HAVE THE FLIGHT CONTROLS*** and visually confirms the other pilot has the controls.

AUTOMATION

Pilots must always be aware of the automation status. In multipilot operations with the autopilot engaged, the PF is responsible for all inputs to the flight guidance and management systems except for the altitude preselector. With the autopilot disengaged, the PM is responsible for all inputs to the flight guidance and management systems as directed by the PF. Any automation change should be verified by both pilots prior to executing the change. For single-pilot operations, automation mode awareness is critical to safety; all flight guidance inputs must be verified prior to execution.

ALTITUDE CHANGES

Prior to any altitude change, ensure the altitude preselector is set to the correct altitude. When passing one thousand feet (1000') to the selected altitude, the crew shall state the following:

LEAVING [xxxx] THOUSAND FOR [xxxx] THOUSAND

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HEADING CHANGES

When a heading change is required, the PF will set the new heading with the heading selector or direct the PM to set the heading if applicable.

ALTIMETER CHANGES

When a new altimeter setting is required (either ATC provided or by passing through the Transition Attitude/Level) the crew will set their respective altimeters and the left seat pilot will set the standby altimeter. The altimeters will be crosschecked for accuracy by the crew and verbally verified by stating:

[altimeter setting] SET AND CROSSCHECKED

MANIPULATION OF CONTROLS

In the event that a switch, button, or lever needs to be moved that may adversely affect the normal operation of the aircraft (e.g., engine shutdown, aircraft control), both pilots must verify and confirm the movement of the switch, button, or lever prior to it being moved.

ENGINE START

The first engine started is normally the engine opposite the main entry door side of the aircraft unless operational procedures require otherwise.

Engine Start—Accomplish the following sequence for each engine

TASK ALLOCATION			CALL-OUT
When cleared to start			
PIC		Engine start decision	
PF	**PNF**	Check that area is clear	CLEAR LEFT/RIGHT/FRONT
PF		Starts engines	

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TAXI

Training in the use of SOPs for taxiing and runway operations reduces potential for runway incursions by emphasizing situational awareness during low visibility surface operations. The following procedures will be used as applicable to the operation.

1. Conduct a pre-taxi/departure briefing that includes the expected taxi route and restrictions. Study the airport layout and identify critical areas.
2. Monitor the frequency when initial taxi clearance is called for to ensure that the taxi clearance is heard.
3. After taxi clearance has been received, determine the runway assigned, any restrictions, and the taxi route. If in doubt or not in agreement, seek clarification from ATC.
4. Observe sterile cockpit, especially while taxiing.
5. Have the airport diagram(s) out, available, and in use, to include any low visibility taxi routes depicted. As appropriate, cross check the horizontal situation indicator (HSI), airport diagram, and airport signage to confirm aircraft position while taxiing.
6. Fixed navigation lights (red, green, and white) must be on during night operations.
7. Pilots will monitor the appropriate tower frequency when anticipating a clearance to cross or taxi onto an active runway.
8. When approaching an entrance to an active runway, pilot will ensure compliance with hold short or crossing clearance by discontinuing non-monitoring tasks (e.g., Flight Management System (FMS) programming, Airborne Communications Addressing and Reporting System (ACARS), company radio calls, etc.).
9. Prior to crossing or taxiing onto any runway, verbally confirm ATC clearance with other crewmembers and visually scan the runway and approach area. The crew will confirm, per ATC clearance, that they are taxiing onto the correct takeoff runway.

   Note: FAA ATC procedures no longer allow for clearance to a runway without specific hold short instructions for any runways to be crossed en route. It is recommended that crews write down complex taxi clearances, as they do for IFR clearances, to ensure accuracy and avoid a potential mishap.
10. Read back all clearances/instructions to enter a specific runway, hold short of a runway, and taxi into the “line up and wait” position, including the runway designator.

    Note: Do not merely acknowledge the foregoing instructions/clearances by using your call sign and saying “Roger” or “Wilco.” Instead, read back the entire instruction/clearance including the runway designator.
11. When entering a runway after being cleared for takeoff or when taxiing into the “line up and wait” position, make your aircraft more conspicuous to aircraft on final behind you and to ATC by turning on lights (except landing lights) that highlight your aircraft’s silhouette.
12. Be especially vigilant when instructed to taxi into the “line up and wait” position, particularly at night or during periods of reduced visibility. Scan the full length of the runway and scan for aircraft on final approach when taxiing onto a runway either at the end of the runway or at an intersection. Contact ATC anytime you have a concern about a potential conflict.

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a. In instances where you have been instructed to taxi into the "line up and wait" position, and have been advised of a reason/condition (wake turbulence, traffic on an intersecting runway, etc.) or the reason/condition is clearly visible (another aircraft that has landed on or is taking off on the same runway), and the reason/condition is satisfied, you should expect an imminent takeoff clearance unless advised of a delay.

b. If landing traffic is a factor, the tower is required to inform you of the closest traffic that is cleared to land, touch-and-go, stop-and-go, or unrestricted low approach on the same runway when clearing you to taxi into the "line up and wait" position. Take care to note the position of that traffic and be especially aware of the elapsed time from the "line up and wait" clearance while waiting for the takeoff clearance.

c. ATC should advise of any delay in receiving takeoff clearance (e.g., "expect delay for wake turbulence") while lined up in position. If a takeoff clearance is not received within a reasonable time after clearance to "line up and wait," contact ATC. Suggested phraseology: ***[call sign] HOLDING IN POSITION [runway designator or intersection]***. For example, "Aircraft N4234 holding in position runway 24L," or "Aircraft N4234 holding in position runway 24L at Bravo."

Note: Analysis of accidents/incidents involving aircraft holding in position indicate that TWO MINUTES or more elapsed between the time instruction was issued to "line up and wait" and the resulting event (e.g., landover or go-around). Pilots should consider the length of time they have been holding in position whenever they HAVE NOT been advised of any expected delay to determine when it's appropriate to query the controller.

13. To signal intent to aircraft down field, turn on landing lights when cleared for takeoff.

14. As part of the approach briefing/checklist, review the airport diagram and anticipated taxi route.

CAUTION: A potential pitfall of pre-taxi and pre-landing planning is setting expectations and then receiving different instructions from ATC. Pilots need to follow the clearance or instructions that are actually received, and not the ones they expected to receive.

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Taxi Procedures—Action and Callout Table

TASK ALLOCATION			CALL-OUT
Passengers / crew informed and with clearance for taxi			
PIC		Taxi decision	TAXI
LH		Taxies out	
PF		Gives take-off safety briefing (workload permitting). Updates departure briefing if necessary.	
LH		Requests TAXI check-list	TAXI CHECK-LIST
LH	**RH**	Complete TAXI check-list	
	RH	Announces end of check-list	TAXI CHECK-LIST COMPLETED

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ILLUSTRATIONS

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MANEUVERS AND PROCEDURES

TAKEOFF—NORMAL

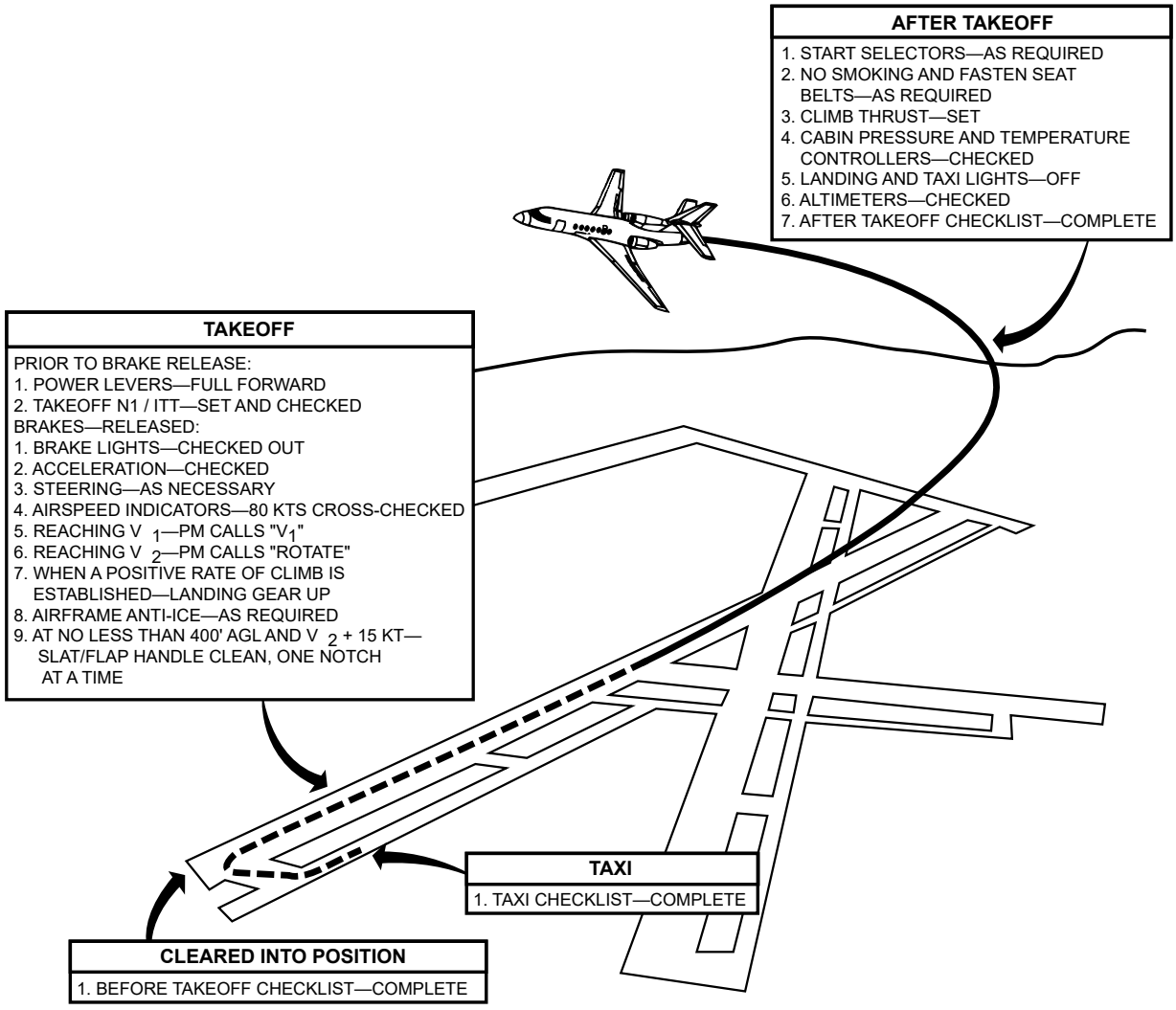

Figure 1. Takeoff—Normal and Climb

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Takeoff—Normal—Action and Callout Table

TASK ALLOCATION			CALL-OUT
LH		Left hand on Nose Wheel Steering Right hand on power levers.	
	RH	Hands on control column.	
LH		Sets take-off power. Releases brakes.	POWER SET
	RH	Starts timer. Checks acceleration. Checks engine parameters.	TIME ACCELERATION NORMAL or ACCELERATION FAULT
	RH	Announces "80 kt"	80 KT
LH		Check IAS. Removes hand from Nose Wheel Steering. Keeps right hand on power levers.	CHECKED
PF		Takes control (control column and rudder)	I HAVE CONTROLS
	PNF	Announces V1	V1
LH		Removes right hand from power levers.	
	PNF	Announces V2	ROTATE
PF		Rotates and sets ROS on horizon.	

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TAKEOFF—REJECTED

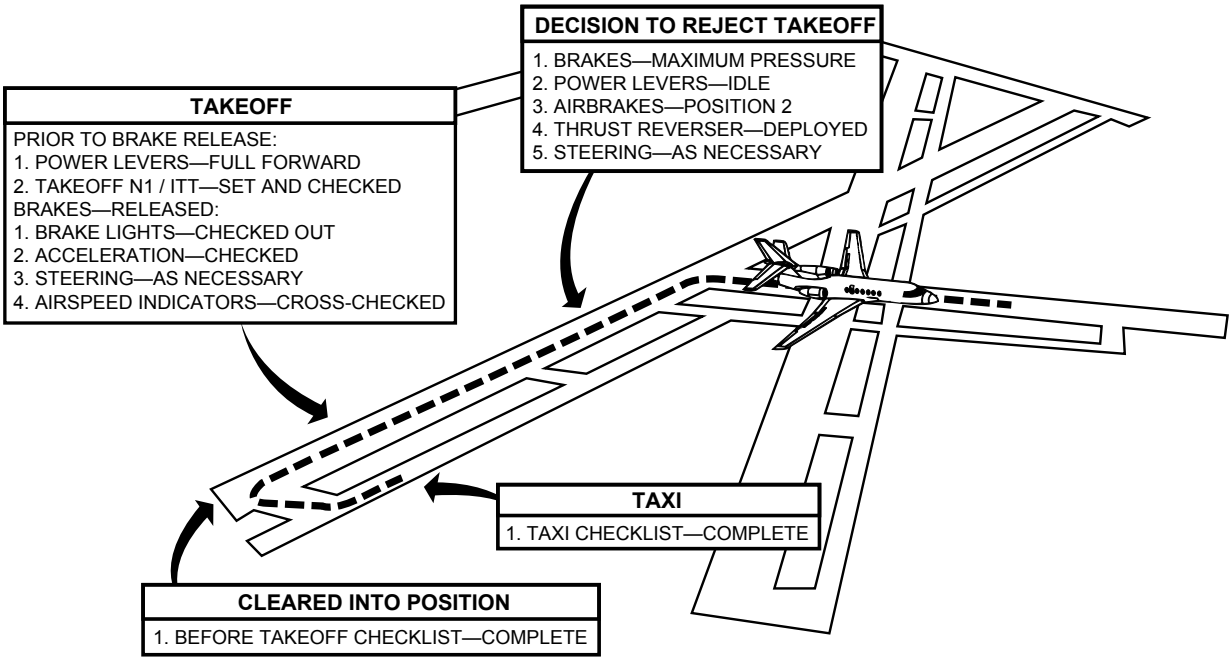

Figure 2. Takeoff—Rejected

Takeoff—Rejected—Action and Callout Table

TASK ALLOCATION			CALL-OUT
PF	**PNF**	Monitor and announce any failures	FAILURE/FIRE/ENGINE/DANGER
PIC		Announces his/her decision	STOP
LH		Applies full braking. Retards throttles to idle.	
	RH	Extends airbrakes.	AIRBRAKES 2
LH		Deploys thrust reverser (if appropriate).	
	RH	Checks thrust reverser.	DEPLOYED
LH		Reverses thrust (if appropriate)	
	RH	Checks 80 kt.	80 KT
LH		Takes over using nose wheel steering.	I HAVE CONTROLS
	RH	Hands on control column.	
LH		Vacates the runway if possible (except in case of fire).	
LH	**RH**	Advise ATC when A/C stops.	ABORTING
	RH	Switches NORMAL and ST-BY PITOT OFF.	

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TAKEOFF—ENGINE FAILURE AT OR ABOVE V1

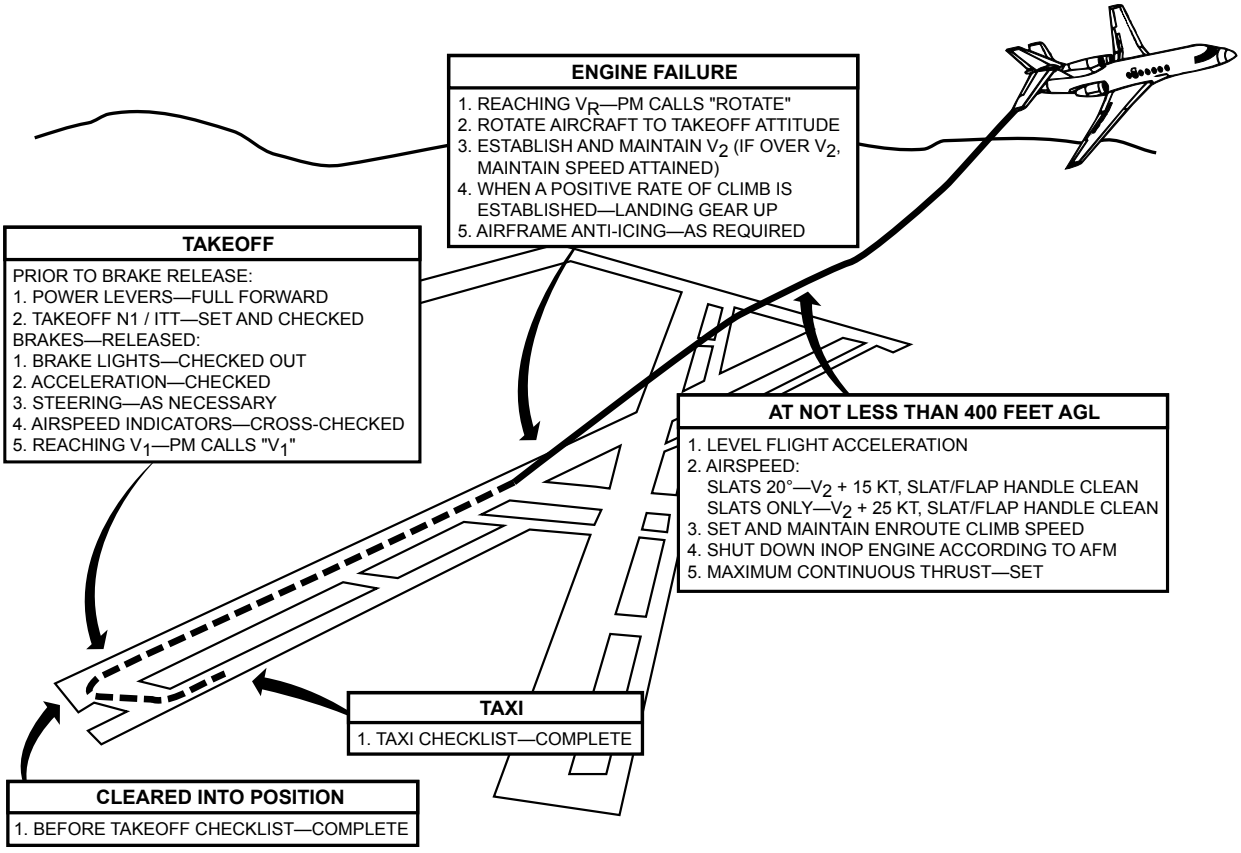

Figure 3. Takeoff—Engine Failure At or Above V1

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INFLIGHT MANEUVERS

STEEP TURNS

Perform 180° or 360° turns in either direction. Reverse or recover from the turn at a pre-briefed heading.

STALL PREVENTION

Stall Prevention is trained in the following configurations:

- Clean
- Partial flap (Takeoff configuration)
- Landing
- High altitude
- Recovery with idle thrust

Stall Prevention tasks will be accomplished in the appropriate phase of flight. Stall Recovery should be initiated at the first indication of an impending stall (e.g. stall warning, initial buffet, transit light). One (1) stall must be induced while in a turn with a bank angle of 15-30 degrees; and, one (1) should be induced by commands to the autopilot. Recovery from an impending stall will not mandate predetermined altitude loss or a predetermined recovery altitude.

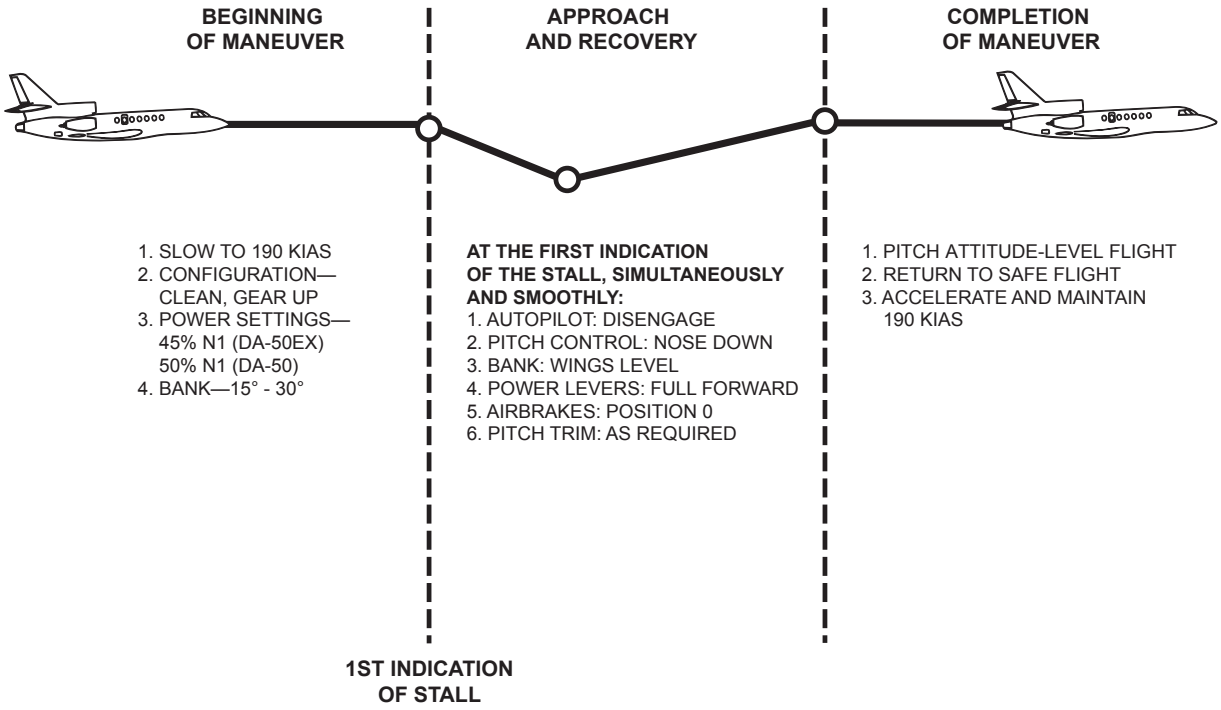

Figure 4. Stall Prevention—Clean Configuration

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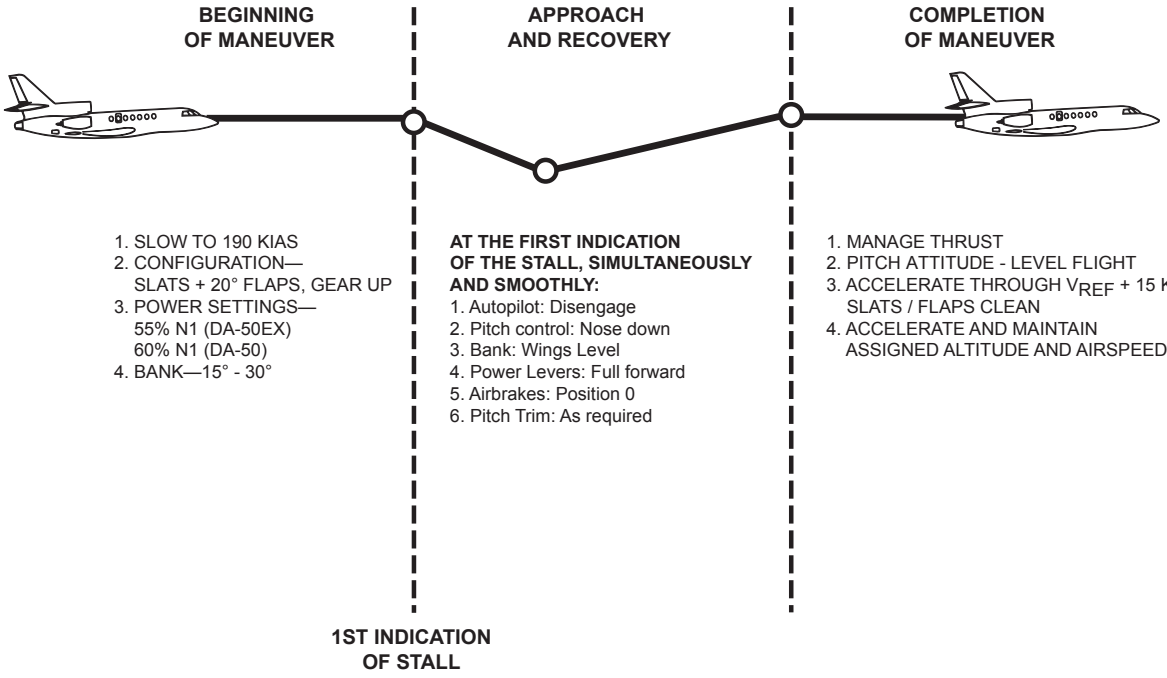

Figure 5. Stall Prevention—Partial Flap Configuration

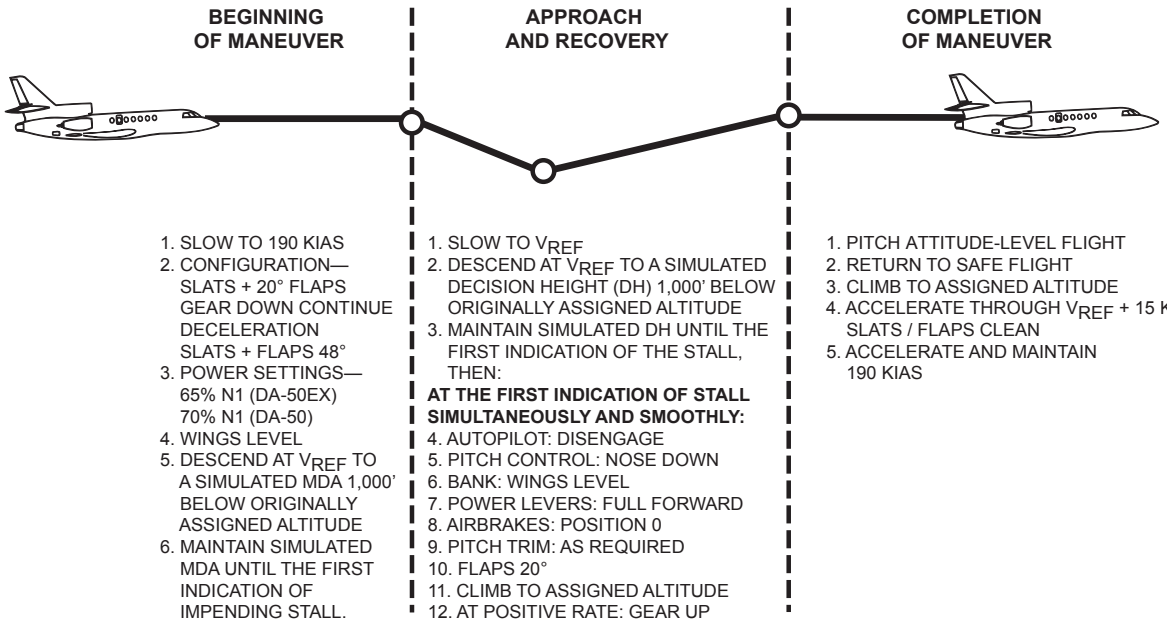

Figure 6. Stall Prevention—Landing Configuration

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RECOVERY FROM UNUSUAL FLIGHT ATTITUDES

- This section provides recovery procedures from Nose-High or Nose-Low unusual attitudes. Undesired bank angle may be associated with these attitudes.
- Excessive use of pitch trim or rudder may aggravate an unusual attitude. Use rudder carefully to aid roll control only if ailerons are ineffective and the aircraft is not stalled.

UNUSUAL ATTITUDE RECOVERY - NOSE UP

- Autopilot ..... Disconnect
- Power levers ..... FULL FORWARD
- Bank the airplane by the shortest way ..... 80° to 90° Bank
- AIRBRAKES handle ..... Position 0

- When airplane nose is close to horizon:
  - Bank ..... Wings level
  - Power levers ..... Adjust

▶ PHASE 2

- Speed and FD modes ..... As required
- Autopilot ..... As required

UNUSUAL ATTITUDE RECOVERY - NOSE DOWN

- Autopilot ..... Disconnect
- Power levers ..... Idle
- Bank ..... Wings level
- AIRBRAKES handle ..... As required
- Nose up pitch control ..... Smoothly apply

- When airplane nose is close to horizon:
  - AIRBRAKES handle ..... Position 0
  - Power levers ..... Adjust

▶ PHASE 2

- Speed and FD modes ..... As required
- Autopilot ..... As required

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TCAS RA - RESOLUTION ADVISORY

TASK ALLOCATION			CALL-OUT
PF	**PNF**	Identify and announce the Emergency situation	TCAS
PF		Disconnects AP Follows RA guidance	I HAVE CONTROLS
	PNF	Monitors PF actions. Looks out for conflicting airplane in VMC. Switches LDG lights ON Advises ATC.	ATC center, Call sign, TCAS RA
WHEN CLEAR OF CONFLICT			
	PNF	Advises ATC.	ATC center Call sign CLEAR OF CONFLICT RETURNING TO <ASSIGNED CLEARANCE> Or CLEAR OF CONFLICT, <ASSIGNED CLEARANCE> RESUMED
IN CASE OF CONTRADICTORY CLEARANCE INSTRUCTION			
	PNF	Advises ATC.	UNABLE, TCAS RA

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TERRAIN AWARENESS WARNING (FAA REGISTERED AIRPLANE)

PULL UP annunciation in PDUs.
TERRAIN TERRAIN – PULL UP or OBSTACLE OBSTACLE – PULL UP voice warning (continuous).

- Autopilot ..... Disconnect
- Level the wings.
- Execute a positive pull up.
- Power levers ..... FULL FORWARD
- AIRBRAKES handle ..... Position 0
- Slats-flaps handle ..... S+F20 maximum
- Landing gear ..... Up
- Maintain best path of climb until terrain clearance is ensured.

Note

Only vertical maneuvers are recommended, unless operating in visual meteorological conditions (VMC), and/or the pilot determines, based on all available information, that turning, in addition to the vertical escape maneuver, is the safest course of action.

WINDSHEAR ESCAPE

Windshear

The best windshear procedure is avoidance. Recognize the indications of potential windshear and then: **AVOID**

Microbursts

Microbursts are small scale intense downdrafts that spread outward in all directions from the downdraft center as it nears the surface. This can result in both vertical and horizontal wind shears that can be extremely hazardous, especially at low altitudes. The aircraft may encounter a headwind with increasing performance (climb/increased airspeed), followed by a downdraft and tailwind, which decreases performance (descent and low airspeeds) to the point that terrain impact can occur.

Acceptable Performance Guidelines:

- Understand that avoidance is primary
- Ability to recognize potential windshear situations
- Ability to fly the aircraft to obtain optimum performance

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Windshear Procedures—Action and Callout Table

TASK ALLOCATION			CALL-OUT
PIC		Announces windshear recovery	WINDSHEAR RECOVERY
PF		Disengages AP. Sets TO thrust.	GO AROUND SF 2
	PNF	Retracts Slats-flaps from SF 3 to SF 2 or maintains current Slats-flaps setting. Checks airbrakes 0.	SF X SET
WHEN POSITIVE RATE OF CLIMB			
	PNF	Announces positive rate clearly established.	POSITIVE RATE
PIC		Requests landing gear retraction only when clear of danger ➔ **(1)**	GEAR UP
	PNF	Retracts gear upon PIC command. Checks appropriate indication. Announces landing gear position.	GEAR IS UP
PF	**PNF**	Perform the AFTER TAKE-OFF do list and check-list when convenient.	

➔ **(1) AT TOSA**

Airplane is considered clear of danger (risk of collision with ground) when following conditions are met:

- **RA above 500 ft,**
- **Indicated airspeed above low Speed Cues,**
- **Positive flight path set and maintained.**

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APPROACH PROCEDURES

Unless cleared for a visual approach, continue to comply with the below profiles until passing the FAF. After passing the FAF, if visual contact with the runway is made and will be able to be maintained until landing, the PM will call ***RUNWAY ____ O'CLOCK***. If the PF responds ***LANDING***, revert to the visual approach profile. For visual approaches, use all available resources to ensure the aircraft stays on a safe glidepath to the runway.

APPROACH PROCEDURES WITH ONE ENGINE INOPERATIVE (OEI)

In airplanes with three powerplants, the applicant must follow a procedure (if approved by the manufacturer and the training program) that approximates the loss of two powerplants: the center and one outboard powerplant. In other multiengine airplanes, the applicant must follow a procedure that simulates the loss of 50% of available powerplants, the loss being simulated on one side of the airplane.

STABILIZED APPROACH

A stabilized approach is the safest profile to a landing. It is composed of the following elements:

- Landing configuration
- Descent rate
- Flight path
- Indicated airspeed
- Engines spooled up appropriately

Minimum Stabilized Approach Altitudes	
IMC	1000 ft above TDZE
VMC	500 ft above TDZE

If any of the indications below are exceeded after passing the stabilized approach height above, a missed approach should be accomplished.

Indication	Tolerance
Airspeed	Target Airspeed ± 10 knots
Rate of Descent	Not greater than 1000 fpm unless previously briefed
Bank Angle (Circling Approach)	Not to exceed 30°

The safety advantage of adhering to stabilized approach criteria may also be applied to nonprecision approach procedures without vertical guidance through a technique called Continuous Descent Final Approach (CDFA). This technique requires the approach to have a published vertical descent angle (VDA) permitting a continuous descent to the threshold crossing height without a level-off. Unless authorized by OpSpec/MSpec and the procedure chart, pilots may not descend below the minimum descent altitude (MDA) until required visual references are met. In the event of a missed approach from a continuous descent, it is recommended that pilots use a Derived Decision Altitude (DDA), increasing the published MDA by 50 feet or a value equivalent to the published altitude loss after autopilot disconnect. Actions and callouts for CDFA procedures are incorporated within the Precision/3D Approach maneuvers in this manual.

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Slats-flaps setting	Minimum maneuvering speed
CLEAN	VREF + 55 KT
SF1	VREF + 30 KT
SF2	VREF + 25 KT
SF3	VREF

FLIGHT PHASES—APPROACH

TASK ALLOCATION			CALL-OUT
PRIOR TO THE FAP / FAF			
	PNF	Monitors and announces approaching final approach course and final approach descent point.	Examples: "LOCALIZER ALIVE" "GLIDE ALIVE" Or "FINAL COURSE ALIVE" "VGP POINTER"
PF		Intercepts and follows final approach course. Checks appropriate approach annunciator and announces it. Intercepts and follows final descent path.	Examples: "VGP GREEN" "APPROACH GREEN"
	PNF	Checks actual altitude-distance (and WPT name if applicable) of the final descent point vs chart. Starts timer.	"FINAL DESCENT POINT" "TIMING STARTED"
DURING FINAL APPROACH			
PF		Flies approach and corrects deviations.	
PF	**PNF**	Monitor approach annunciator and announce any approach integrity malfunctions as appropriate for the procedure.	Example: "VGP AMBER" "LOC AMBER" "UNABLE FMS/GPS" "MONITOR", ...
	PNF	Monitors and announces any malfunction.	Example "ADS 1 FAIL", or "ATTITUDE FLAG", ...
DURING FINAL APPROACH (CONTINUED)			
	PNF	When applicable, monitors the descent profile with the chart. Checks time-altitude or distancealtitude. Announces altitude gaps.	Example: "ONE MINUTE" "1,500 ft or 4NM", "1,500 ft" "PLUS 50 FEET" or "MINUS 50 FEET" or "ON SCHEDULE"

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	PNF	Monitors and announces other excessive deviations (as defined above).	Example: "LOCALIZER", "GLIDE" Or "LATERAL DEVIATION" "VERTICAL DEVIATION" Or "SPEED", "ATTITUDE", …
APPROACHING DA OR MDA			
	PNF	Looks for visual contact. Announces visual cues.	"GROUND CONTACT" "APPROACH LIGHTS" "RUNWAY"
	PNF	Announces 300ft above minimums Monitors EGPWS radio-altitude call-out.	"THREE HUNDRED ABOVE"
At DA or MDA			
PIC		Decides whether or not to continue the descent.	"CONTINUE" Or "GO-AROUND SF2" "AIRBRAKES 0"
LANDING			
PF		Disconnects autopilot above AP limits	"CONTINUE"
GO-AROUND			
PF		Executes a go around maneuver.	"GO AROUND SF2"

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VISUAL APPROACH—NORMAL

Standard Pattern 1,500 FT AAL

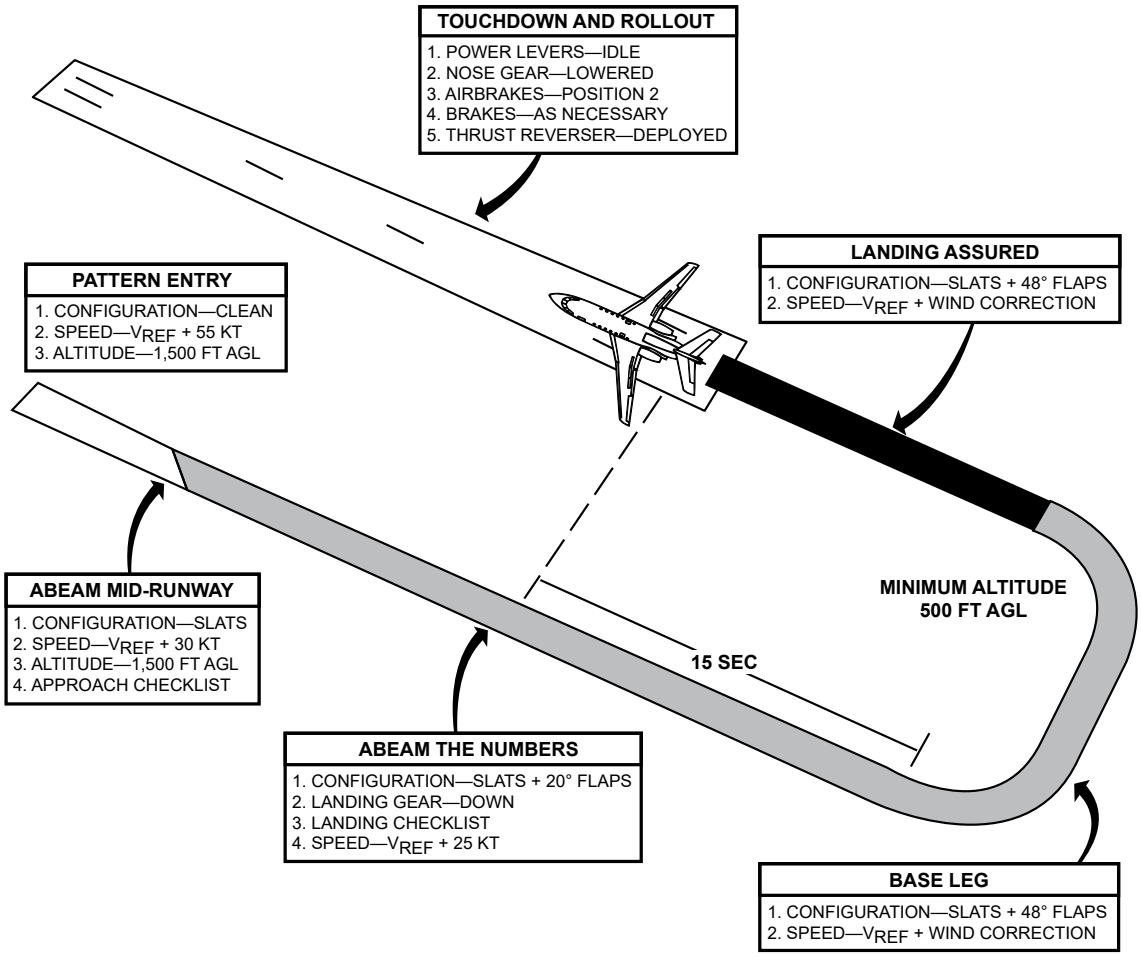

Figure 7. Visual Approach—Normal

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VISUAL APPROACH—ONE ENGINE INOPERATIVE (OEI)

Pattern (One Engine Inoperative) 1,500 FT AAL

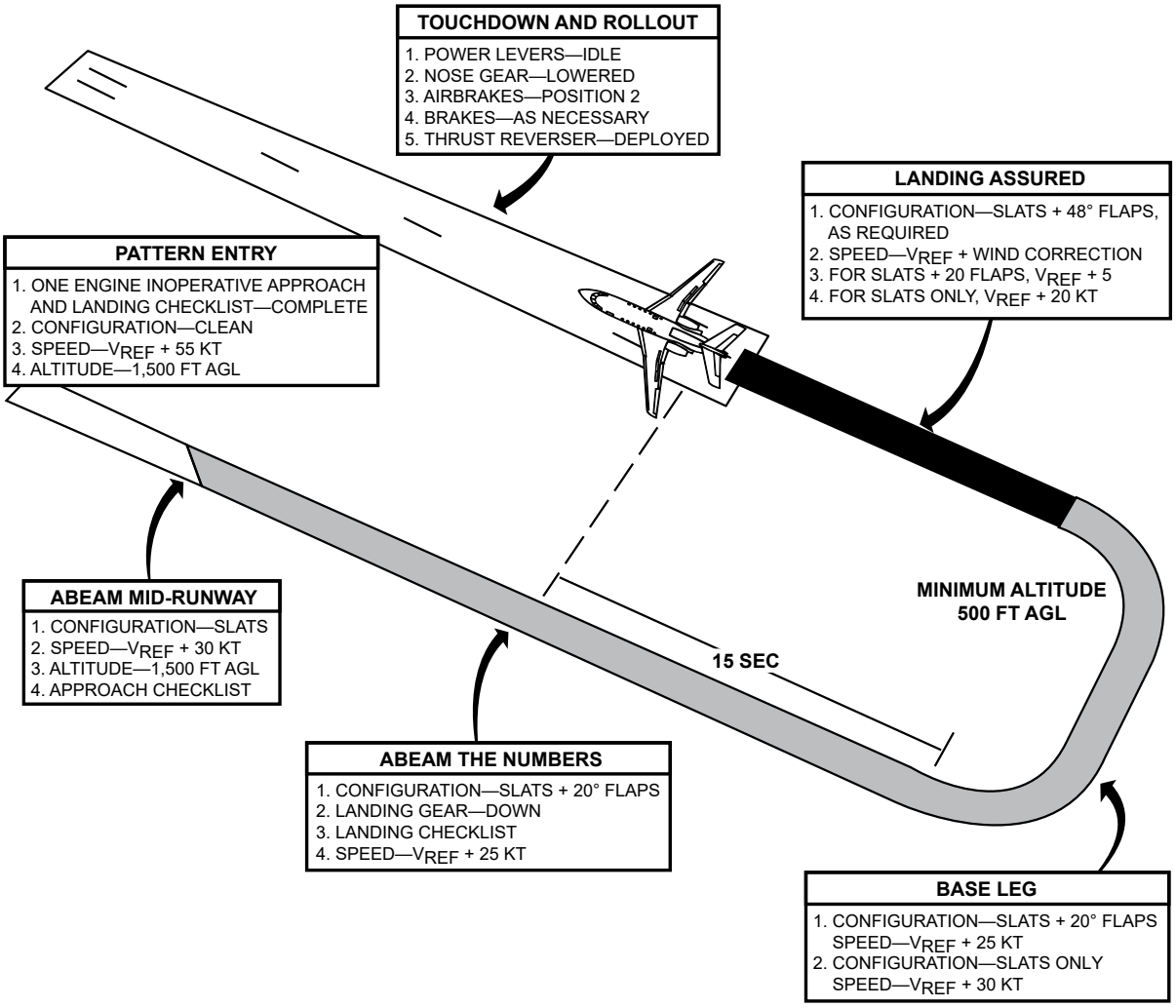

Figure 8. Visual Approach—One Engine Inoperative (OEI) Slats

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APPROACH—FLAP MALFUNCTION

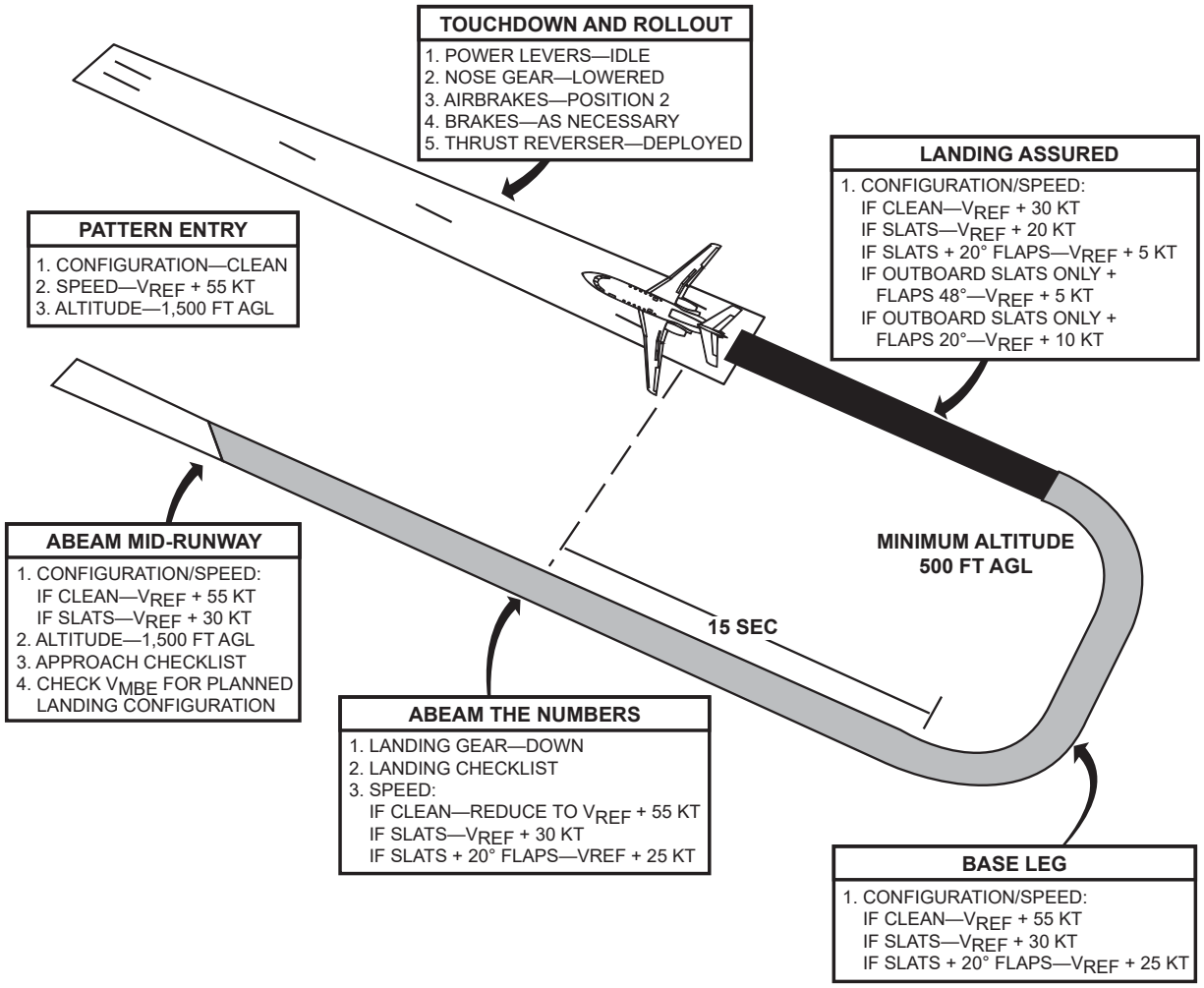

Figure 9. Approach—Flap Malfunction

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PRECISION/3D APPROACH

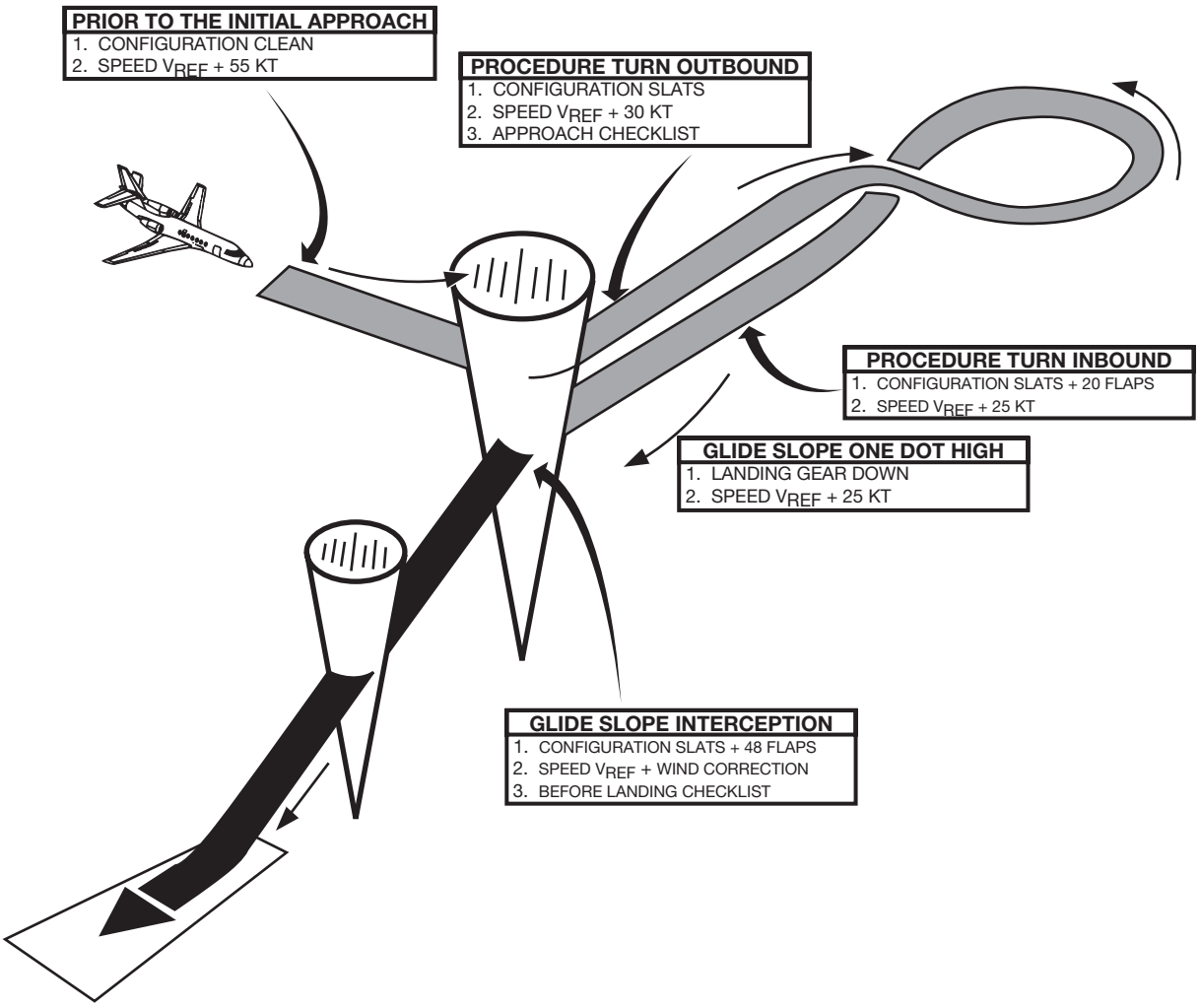

Figure 10. Precision/3D Approach

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PRECISION/3D APPROACH—ONE ENGINE INOPERATIVE (OEI) SLATS + 20° FLAPS

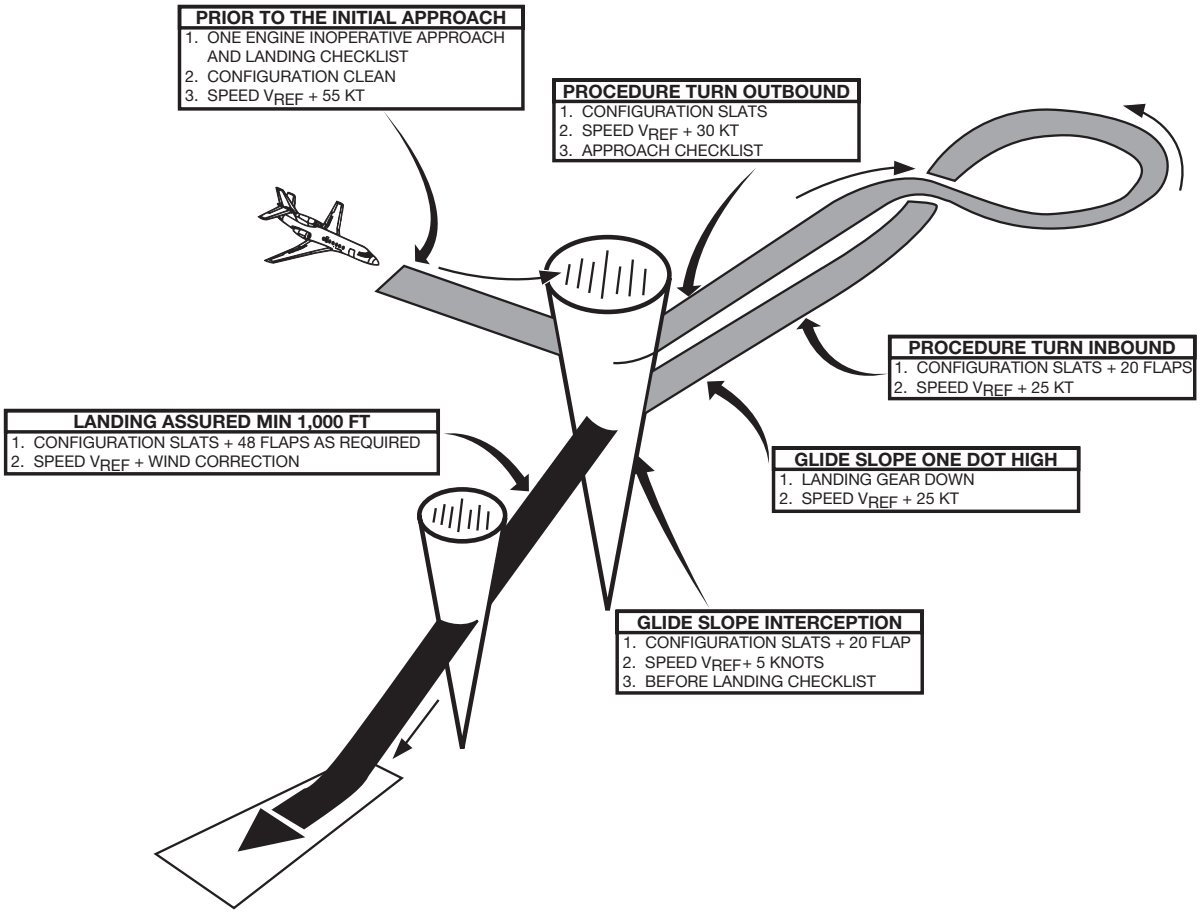

Figure 11. Precision/3D Approach—One Engine Inoperative (OEI) Slats + 20° Flaps

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PRECISION/3D APPROACH—ONE ENGINE INOPERATIVE (OEI) SLATS ONLY

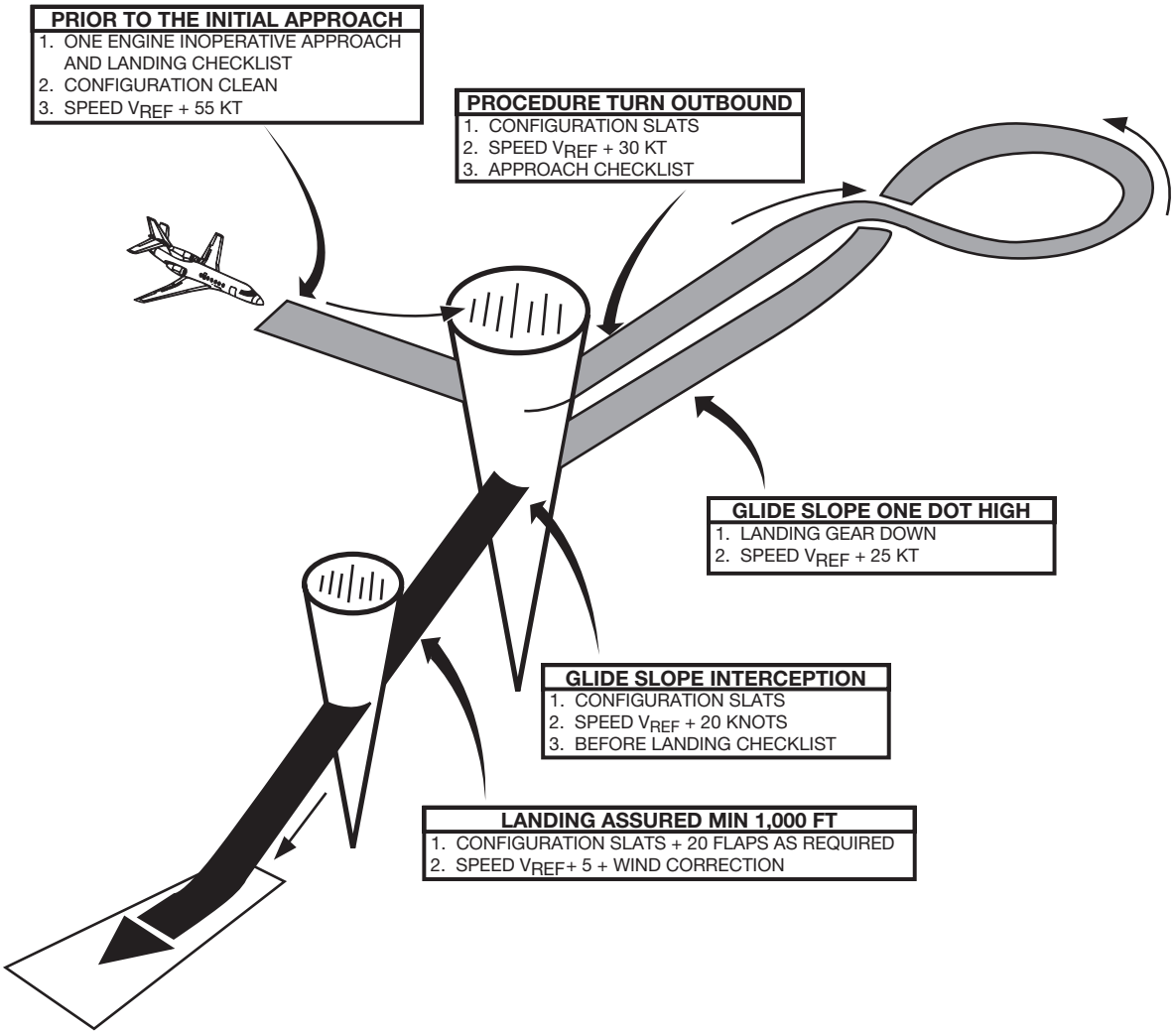

Figure 12. Precision/3D Approach—One Engine Inoperative (OEI) Slats Only

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NON-PRECISION/2D

Straight-In Approach

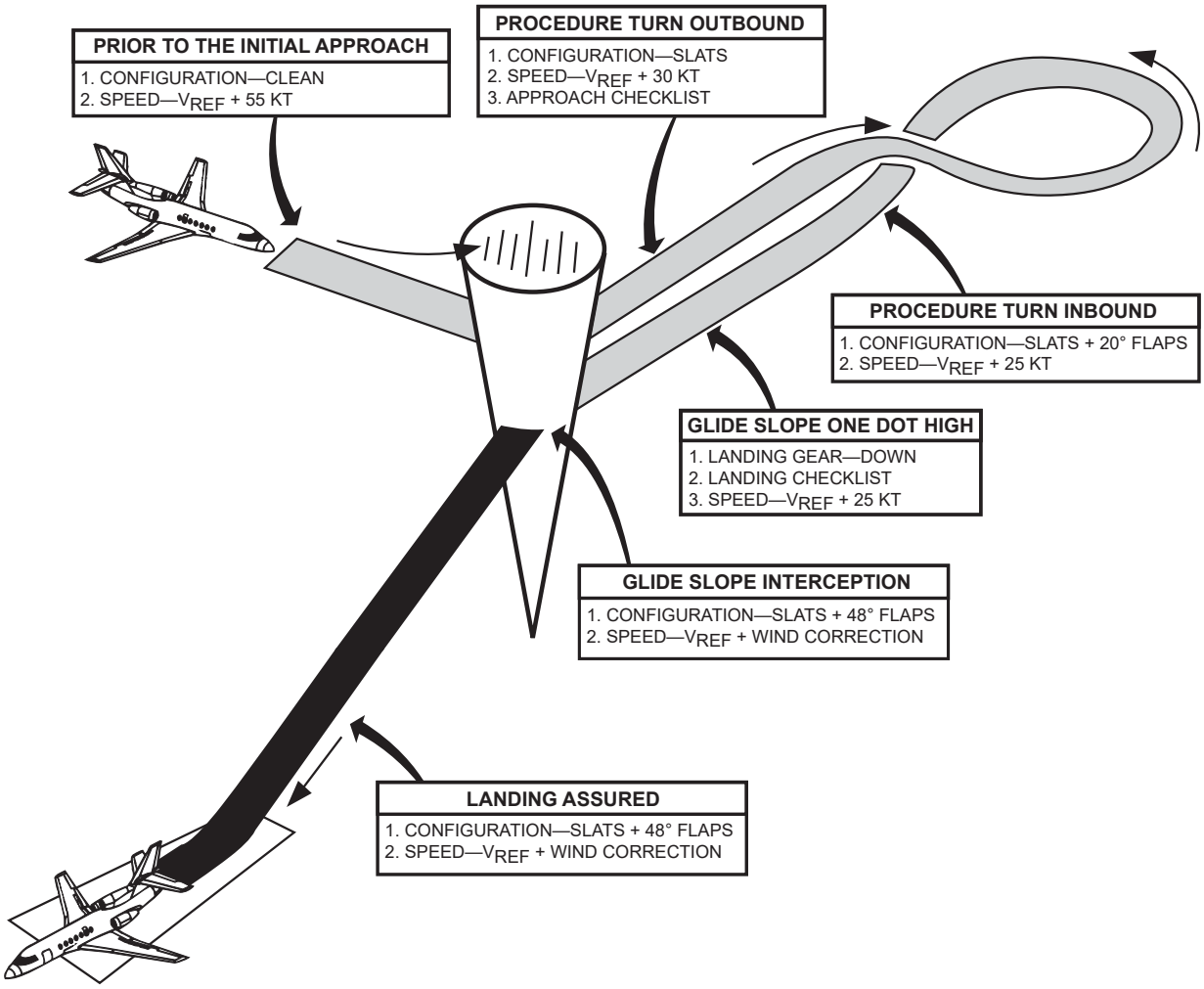

Figure 13. Non-Precision/2D

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MISSED APPROACH—ONE ENGINE INOPERATIVE SLATS (OEI) + 20° FLAPS

Straight-In Approach with one engine inoperative. Landing configuration set to SF 3 only when committed to land.

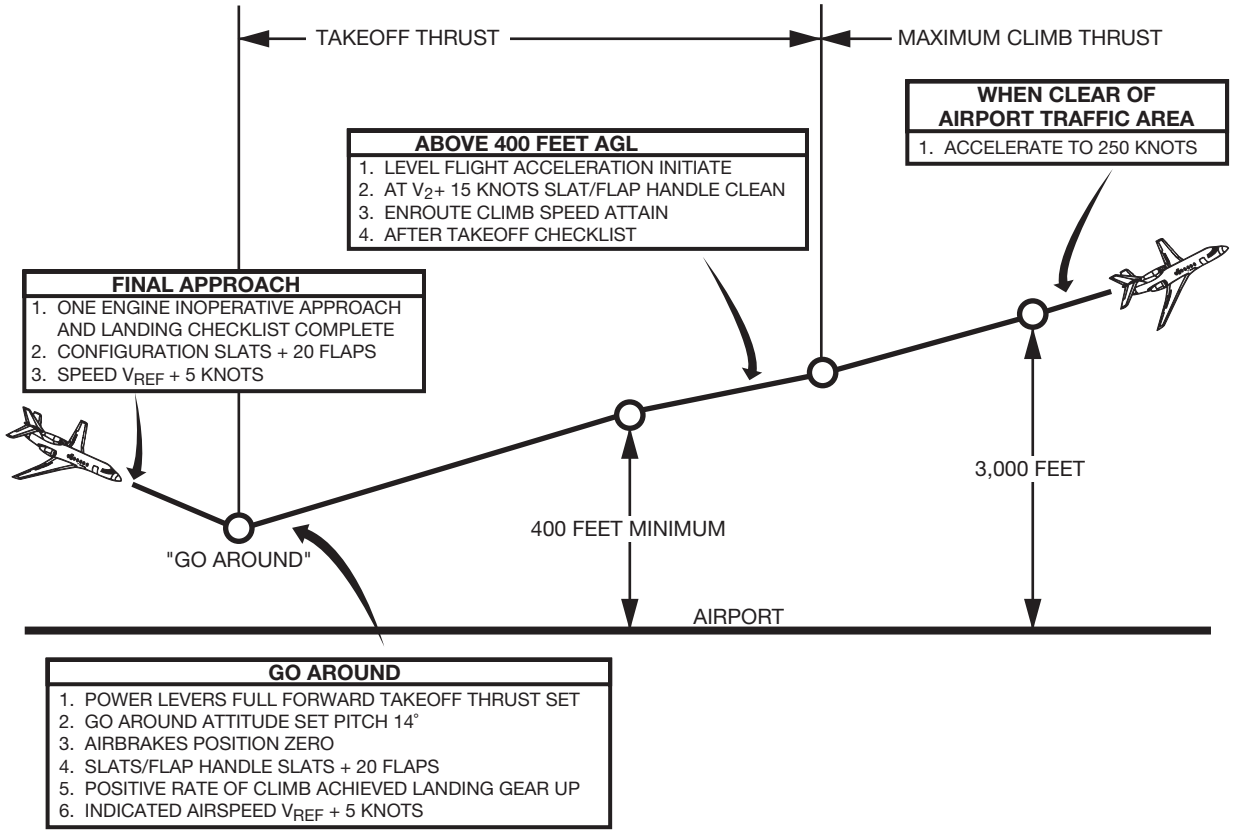

Figure 14. Missed Approach—One Engine Inoperative Slats (OEI) + 20° Flaps

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CIRCLING APPROACH

Initiate circling maneuver when:

- Visual contact with the airport is established, and
- The aircraft is within the category-specific protected airspace

Remain within protected airspace at MDA until leaving minima.

Conduct the approach with the autopilot engaged, unless inoperative, until descent is initiated below MDA.

While circling, use HDG/TRK mode to control lateral path, and maintain visual contact with the airport at all times.

If visual contact with the airport is lost at any time during the maneuver, or the flight path exits protected airspace, execute missed approach. If a turn is required to the prescribed missed approach course, make the initial turn toward the landing runway and continue the turn until established on the prescribed course

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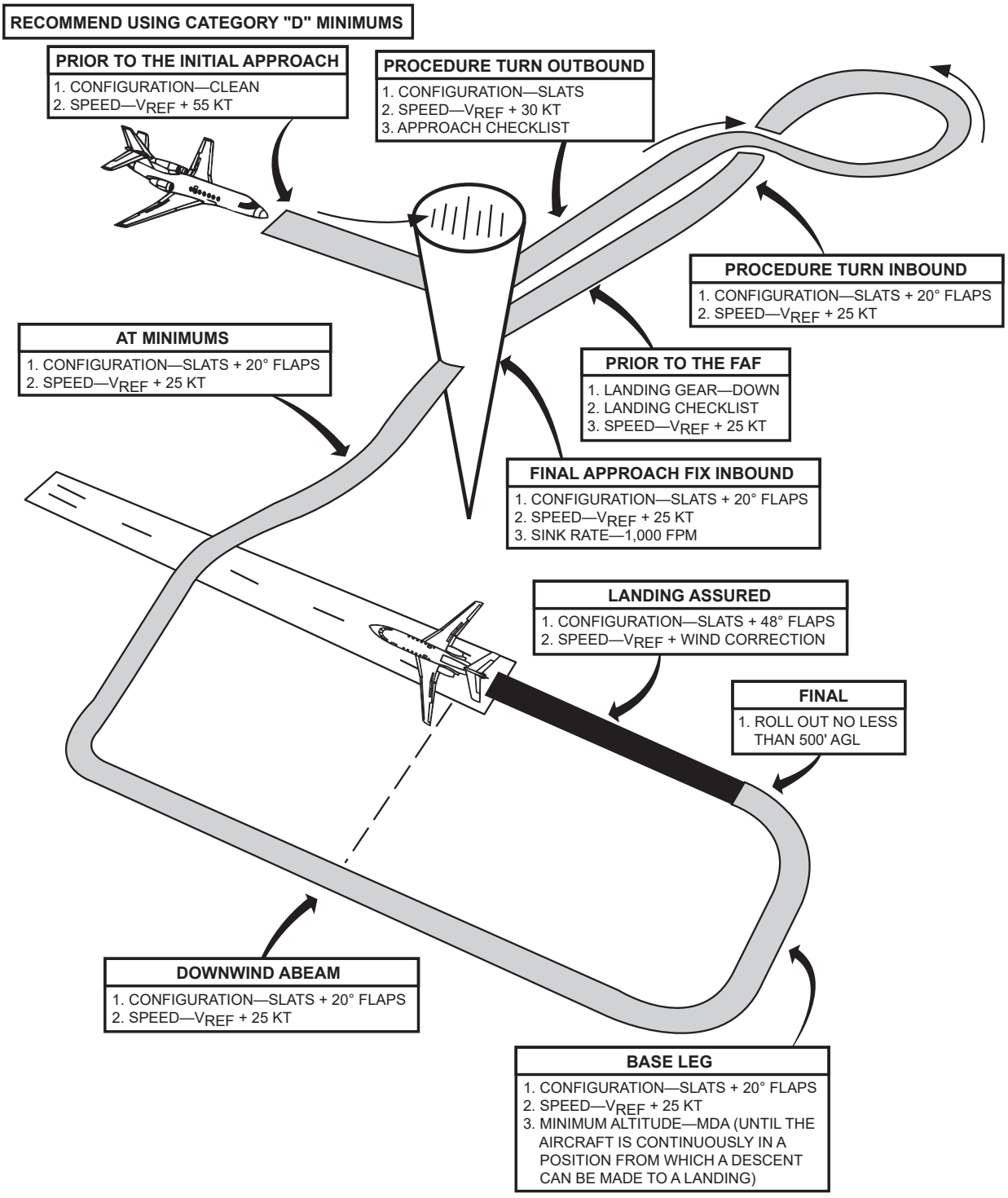

Figure 15. Circling Approach

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MISSED APPROACH

The PF or PM may initiate a missed approach by calling go-around. Comply with the actions and callouts prescribed in the Missed Approach Actions and Callouts table.

In addition to the conditions prescribed by FAR, initiate missed approach if operating in IMC and any of the following occur:

- Unable to get established on approach prior to FAF
- Any degradation of navigation signal
- Any deterioration of situational awareness
- Disagreement between the pilots on flight path, position, procedures, or configuration
- Exceedance of stabilized approach requirements
- The following indications are displayed on PFD during the respective approach:

Approach	PFD Indication

ILS	• CDI two dots deflection, or
	• Glidepath more than
	  • One dot low, or
	  • Two dots high

LPV	
RNAV-GPS (LNAV-VNAV [WAAS])	
RNAV-GPS (LNAV-VNAV [Baro])	• CDI two dots deflection, or • Glidepath indicator changes from magenta to yellow
ILS without Glideslope (LOC)	• CDI two dots deflection
RNAV-GPS (LNAV-only)	• CDI more than one dot deflection
VOR	

If a missed approach is initiated, continue the procedure even if the runway environment comes in sight. If the missed approach is initiated prior to MAP, proceed to MAP before making any turns.

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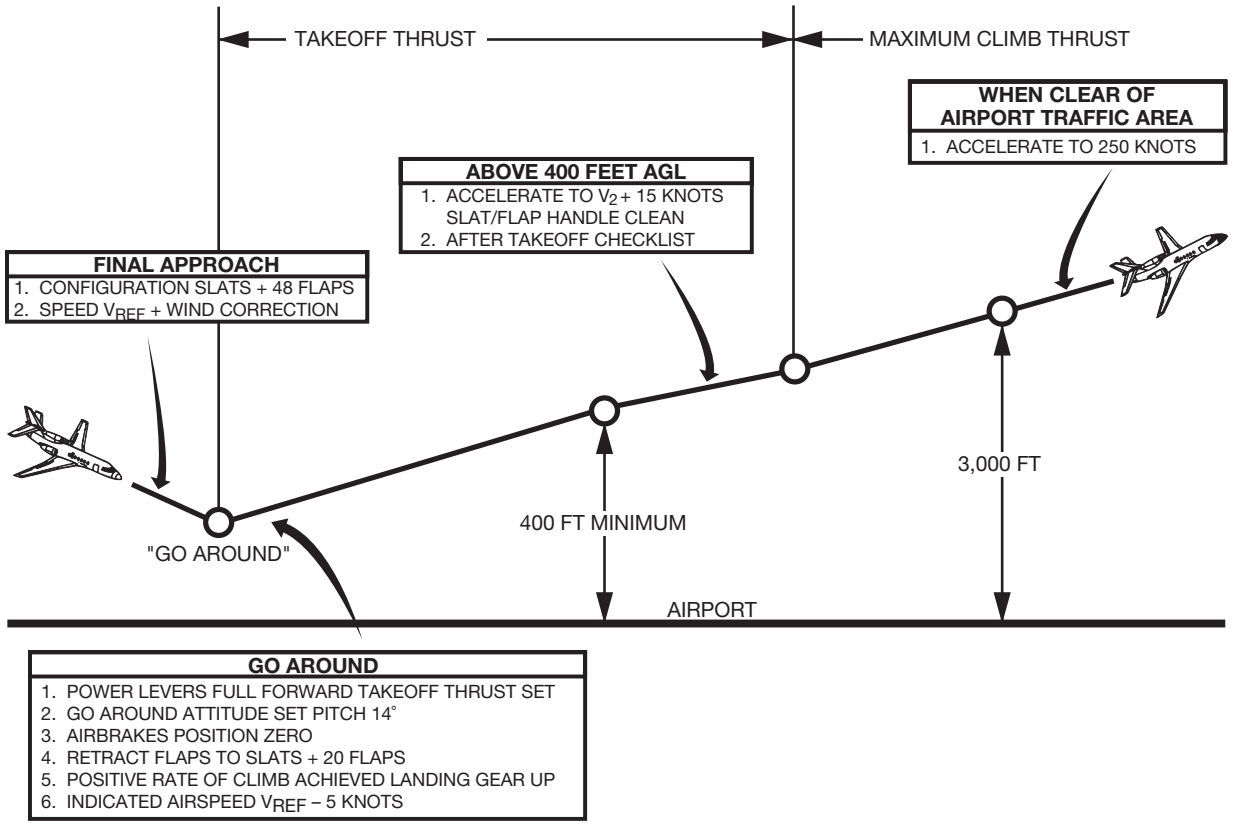

Figure 16. Missed Approach

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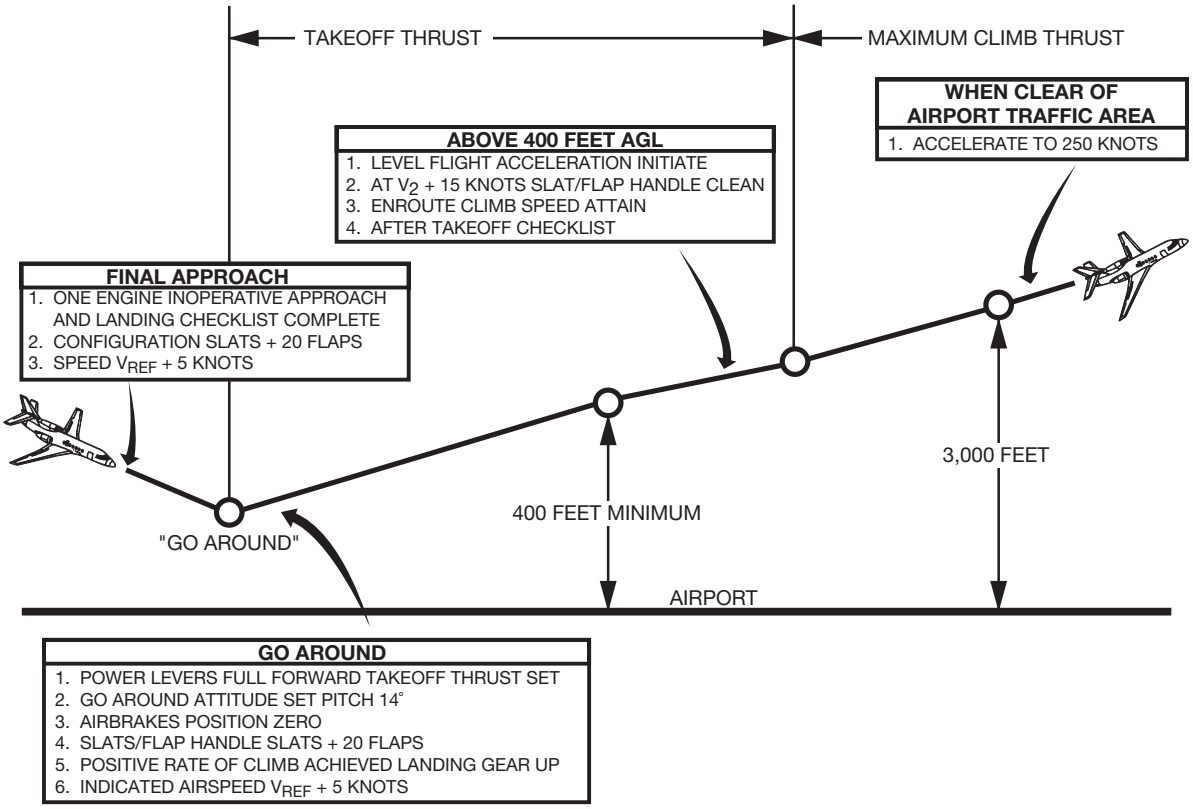

Figure 17. Missed Approach—One Engine Inoperative (OEI) Slats + 20° Flaps

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MISSED APPROACH—TWO ENGINE INOPERATIVE (2EI)

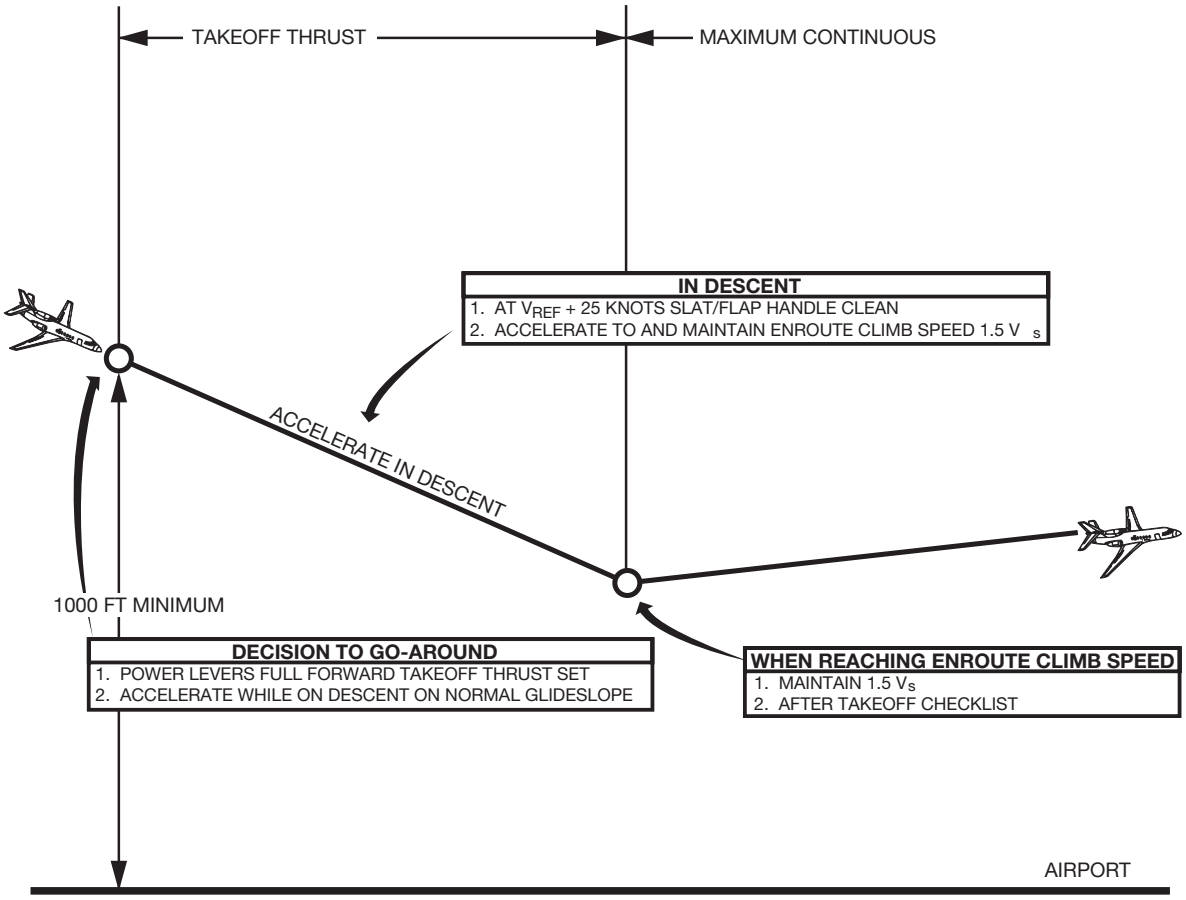

Figure 18. Missed Approach—Two Engine Inoperative (2EI)

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Missed Approach (Two Engines or One Engine Inoperative)—Action and Callout Table

PF flies the airplane. PNF reconfigures the airplane and informs ATC.

TASK ALLOCATION			CALL-OUT
APPROACHING MINIMUMS			
PF	**PNF**	Decides to go-around.	GO-AROUND SF 2
PF		Pushes GA pushbutton. Follows FD (ROL-GA modes). Sets TO thrust.	
	PNF	Retracts slats flaps to SF 2. Checks appropriate indication. Announces slats flaps position. Checks airbrakes 0.	SF 2 SET
WHEN POSITIVE RATE OF CLIMB			
	PNF	Announces positive rate of climb.	POSITIVE RATE
PF		Flie VREF+5 (20° max pitch). Requests landing gear retraction.	GEAR UP
	PNF	Retracts gear. Checks appropriate indication. Announces landing gear position.	GEAR IS UP
PF		Requests VREF + 5 Requests appropriate lateral mode and CLB mode.	SPEED MAN / VREF + 5 e.g. LNAV AND CLIMB MODES
	PNF	Sets SPEED to VREF + 5 Selects appropriate lateral mode and CLB mode. Reads FD lateral and vertical modes, and speed on FMA. Sets TAXI light off and LANDING lights on PULSE. Sets ENG and WINGS anti-ice as required. Checks ASEL. Advises ATC.	e.g. LNAV AND CLIMB MODES, SPEED MAN / VREF + 5 SET
AT GASA			
	PNF	Announces when speed is greater than VFR.	ABOVE VFR
PF		Requests slats / flaps retraction	SF CLEAN
	PNF	Retracts (one notch at a time). Checks appropriate indication. Announces SF position.	SF CLEAN SET
AT VFT			
PF		Sets SPEED MAN / XXX or FMS. Sets MAX CLB thrust.	e.g. SPEED 250 SET

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WHEN CLEARED TO A FLIGHT LEVEL			
PF		Requests standard setting	SET STANDARD
PF	**PNF**	Set their altimeters to standard	STANDARD SET
PF		Requests altimeter cross-check	CROSSING FL100 ... NOW
	PNF	Reads his/her altimeter and announces the difference.	PLUS (MINUS) xx FEET
AFTER SLATS/FLAPS RETRACTION OR ALTIMETERS SET TO STD AND CROSS-CHECKED (SEE NOTE)			
PF		Request AFTER TAKE-OFF check-list.	AFTER TAKE-OFF CHECK-LIST
PF	**PNF**	Complete AFTER TAKE-OFF checklist.	
	PNF	Announces end of check-list.	AFTER TAKE-OFF CHECK-LIST COMPLETED

NOTE

Where the transition altitude is low, the PF usually calls the after take-off check-list when the altimeters are set and crosschecked.

Where the transition altitude is high, the PF usually calls the after take-off check-list when the slats/flaps are retracted. The checklist is then completed after having set and crosscheck the altimeters.

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APPROACH AND LANDING—TWO ENGINE INOPERATIVE (2EI)

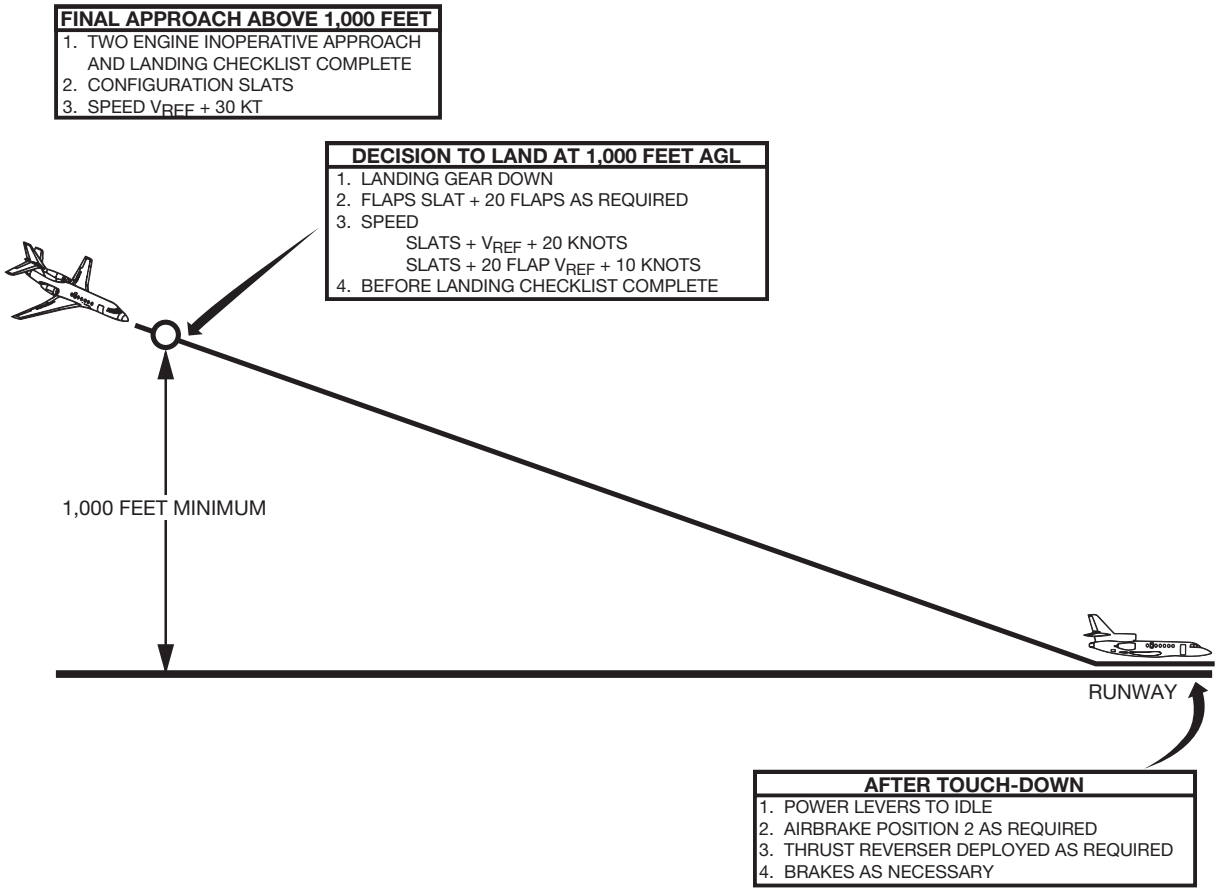

Figure 19. Approach and Landing—Two Engine Inoperative (2EI)

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APPROACH AND MISSED APPROACH—TWO ENGINES INOPERATIVE (2EI)

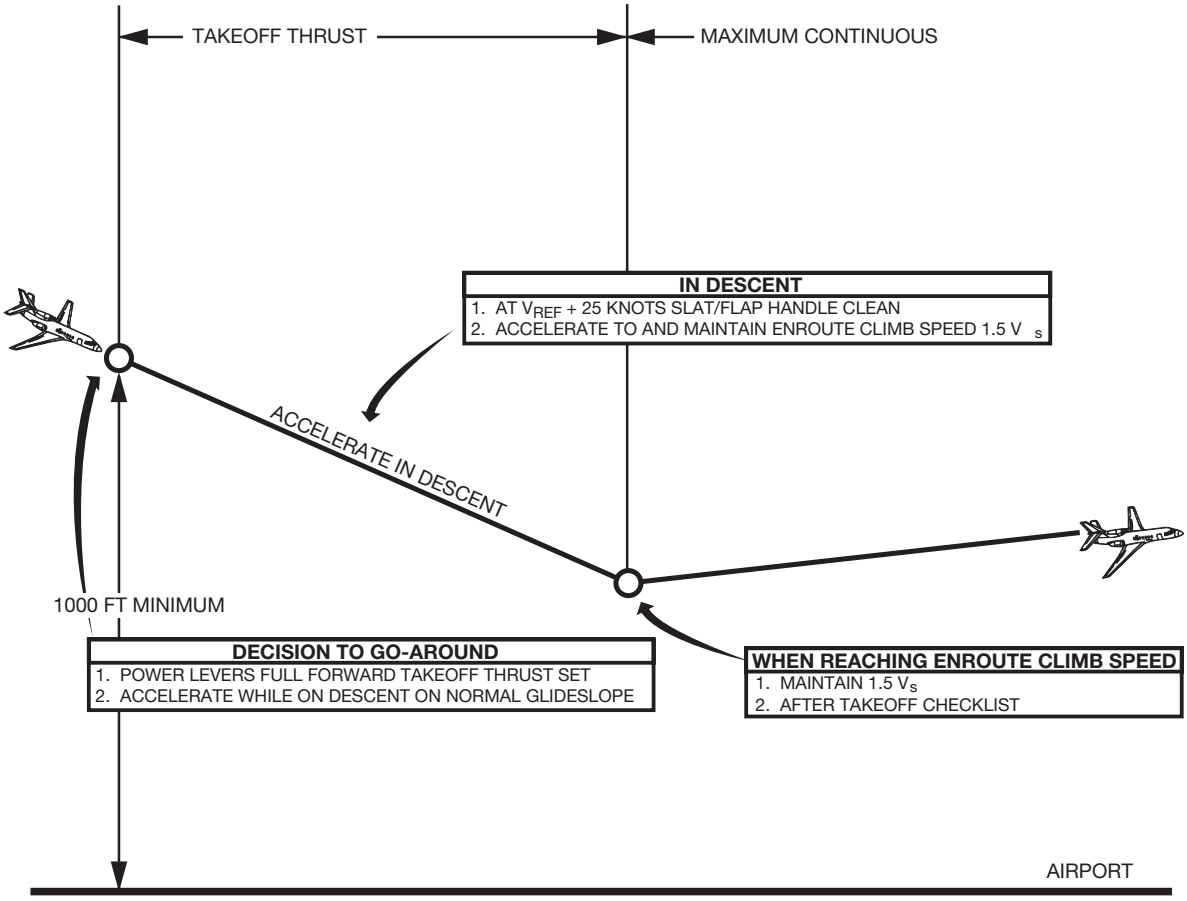

Figure 20. Approach and Missed Approach—Two Engines Inoperative (2EI)

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LANDING

NOTE
Avoid unnecessary tire wear by releasing heavy brake pressure below 50 kt.

TASK ALLOCATION			CALL-OUT
PF		Lands	
	PNF	When landed, verifies airbrake deployment.	AIRBRAKES 2
PF		Applies brakes and extends thrust reversers (IDLE).	
	PNF	Verifies and announces reverse thrust availability.	DEPLOYED
PF		As soon as practical transfers to nose wheel steering. Applies reverse thrust.	
	PNF	Announces 80 kt	80 kt
LH		Maintains directional control using nose wheel steering.	I HAVE CONTROL
PF		Stows thrust reversers.	

LANDING AND ROLLOUT

During landing rollout, move only those switches or levers necessary to ensure safe rollout. Delay additional switch or lever movement until after the aircraft has cleared the active runway. Decelerate to taxi speed prior to exiting the runway unless a high-speed taxiway is utilized.

TASK ALLOCATION			CALL-OUT
LH		Requests AFTER LANDING check-list.	AFTER LANDING CHECKLIST
LH	**RH**	Complete AFTER LANDING check-list.	
	RH	Announces end of check-list.	AFTER LANDING CHECKLIST COMPLETED

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FALCON 900 (A/B/C)

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ILLUSTRATIONS

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MANEUVERS AND PROCEDURES

TAKEOFF—NORMAL

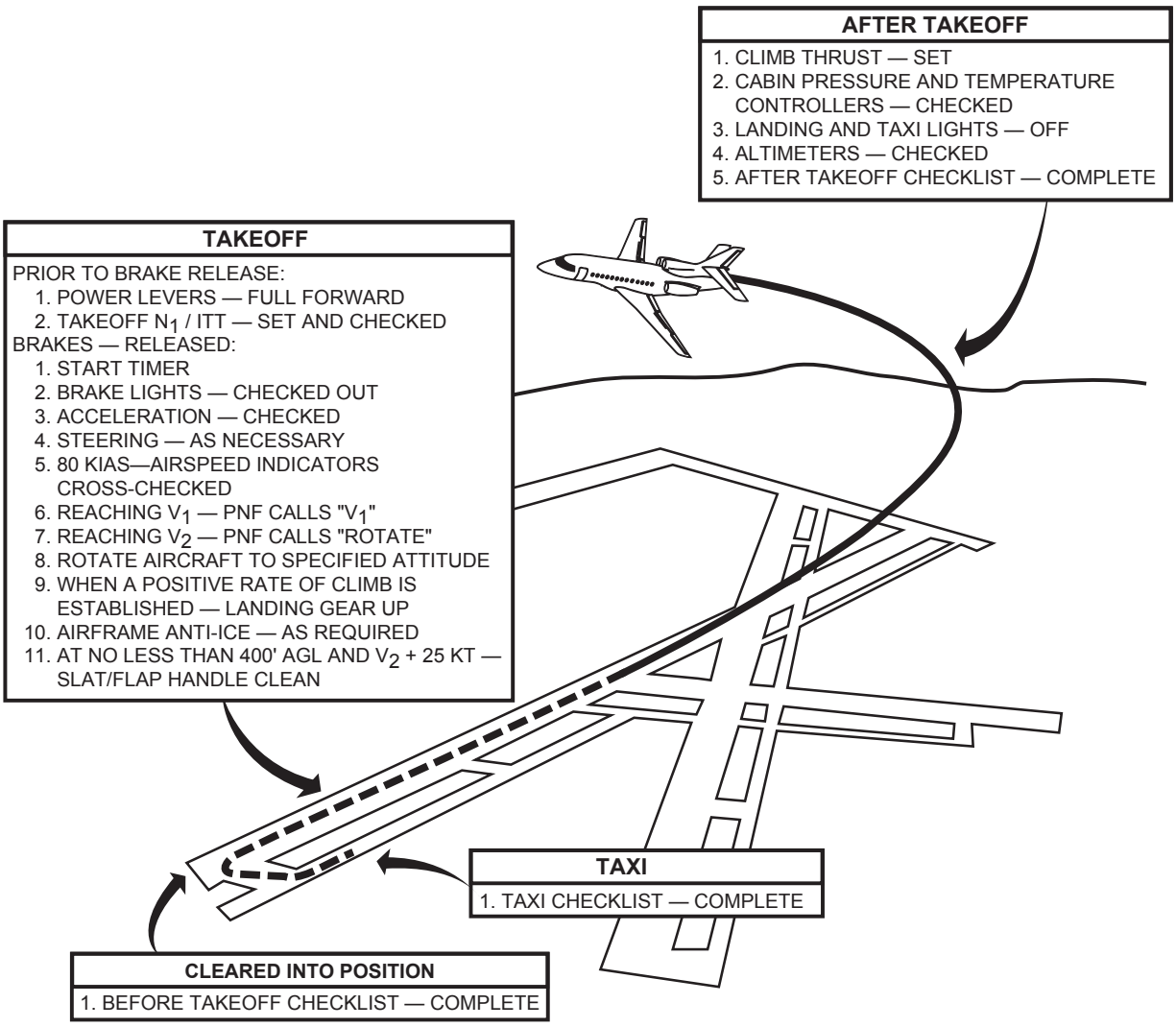

Figure 1. Takeoff—Normal

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Takeoff—Normal—Action and Callout Table

TASK ALLOCATION			CALL-OUT
LH		Left hand on Nose Wheel Steering Right hand on power levers.	
	RH	Hands on control column.	
LH		Sets take-off power. Releases brakes.	POWER SET
	RH	Starts timer. Checks acceleration. Checks engine parameters.	TIME ACCELERATION NORMAL or ACCELERATION FAULT
	RH	Announces "80 kt"	80 KT
LH		Check IAS. Removes hand from Nose Wheel Steering. Keeps right hand on power levers.	CHECKED
PF		Takes control (control column and rudder)	I HAVE CONTROLS
	PNF	Announces V1	V1
LH		Removes right hand from power levers.	
	PNF	Announces V2	ROTATE
PF		Rotates and sets ROS on horizon.	

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TAKEOFF—REJECTED

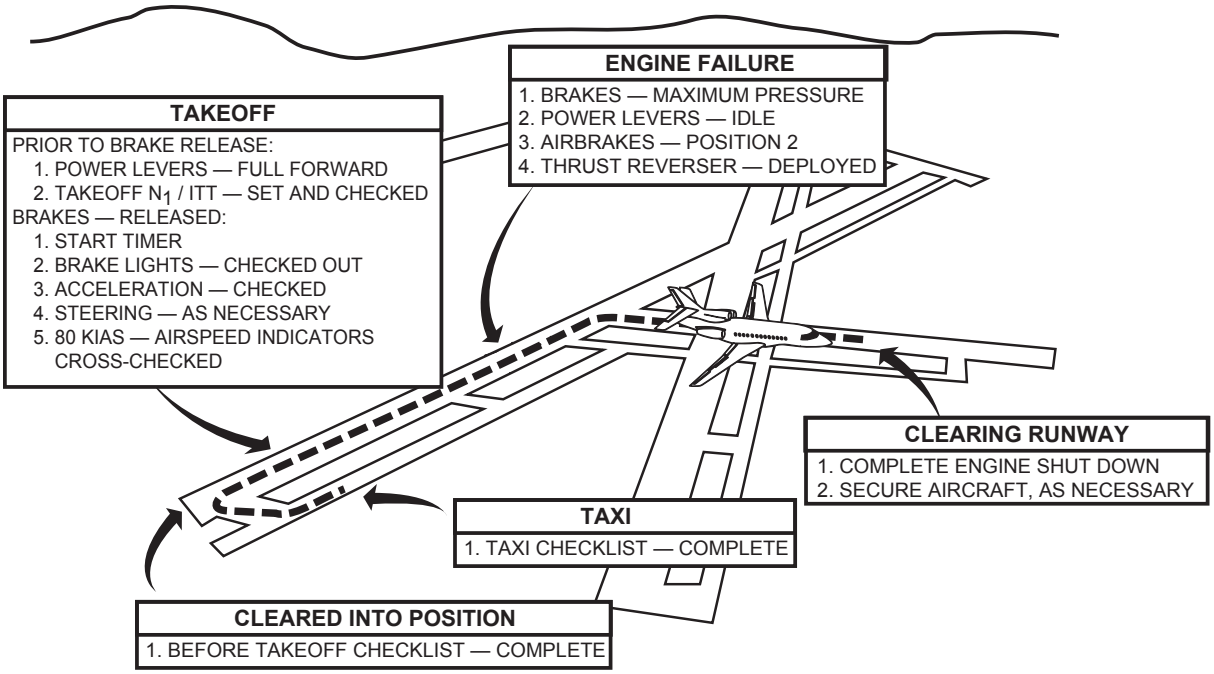

Figure 2. Takeoff—Rejected

Takeoff—Rejected—Action and Callout Table

TASK ALLOCATION			CALL-OUT
PF	**PNF**	Monitor and announce any failures	FAILURE/FIRE/ENGINE/DANGER
PIC		Announces his/her decision	STOP
LH		Applies full braking. Retards throttles to idle.	
	RH	Extends airbrakes.	AIRBRAKES 2
LH		Deploys thrust reverser (if appropriate).	
	RH	Checks thrust reverser.	DEPLOYED
LH		Reverses thrust (if appropriate)	
	RH	Checks 80 kt.	80 KT
LH		Takes over using nose wheel steering.	I HAVE CONTROLS
	RH	Hands on control column.	
LH		Vacates the runway if possible (except in case of fire).	
LH	**RH**	Advise ATC when A/C stops.	ABORTING
	RH	Switches NORMAL and ST-BY PITOT OFF.	

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TAKEOFF—POWERPLANT FAILURE AT OR ABOVE V1

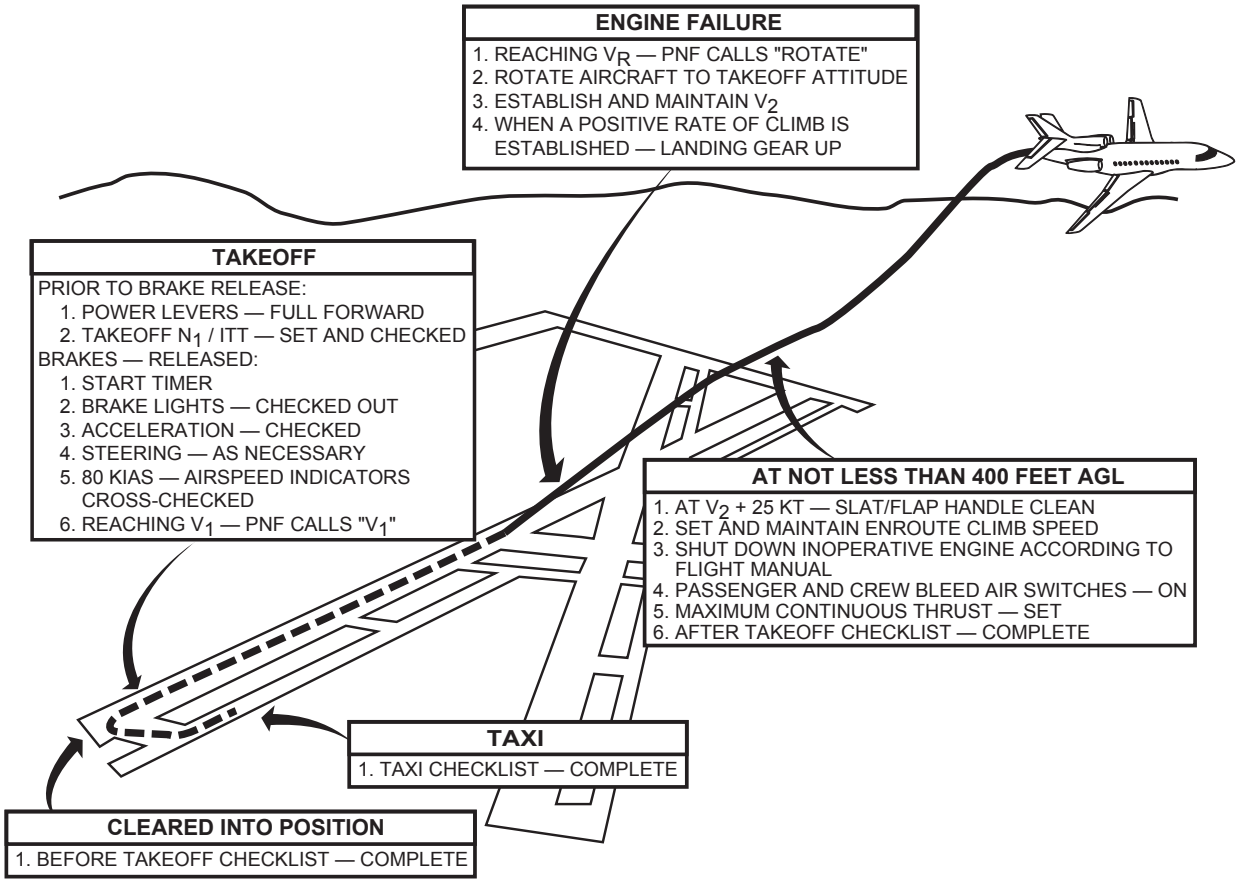

Figure 3. Takeoff—Powerplant Failure At or Above V1

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INFLIGHT MANEUVERS

STEEP TURNS

Perform 180° or 360° turns in either direction. Reverse or recover from the turn at a pre-briefed heading.

STALL PREVENTION

Stall Prevention is trained in the following configurations:

- Clean
- Partial flap (Takeoff configuration)
- Landing
- High altitude
- Recovery with idle thrust

Stall Prevention tasks will be accomplished in the appropriate phase of flight. Stall Recovery should be initiated at the first indication of an impending stall (e.g. stall warning, initial buffet, transit light). One (1) stall must be induced while in a turn with a bank angle of 15-30 degrees; and, one (1) should be induced by commands to the autopilot. Recovery from an impending stall will not mandate predetermined altitude loss or a predetermined recovery altitude.

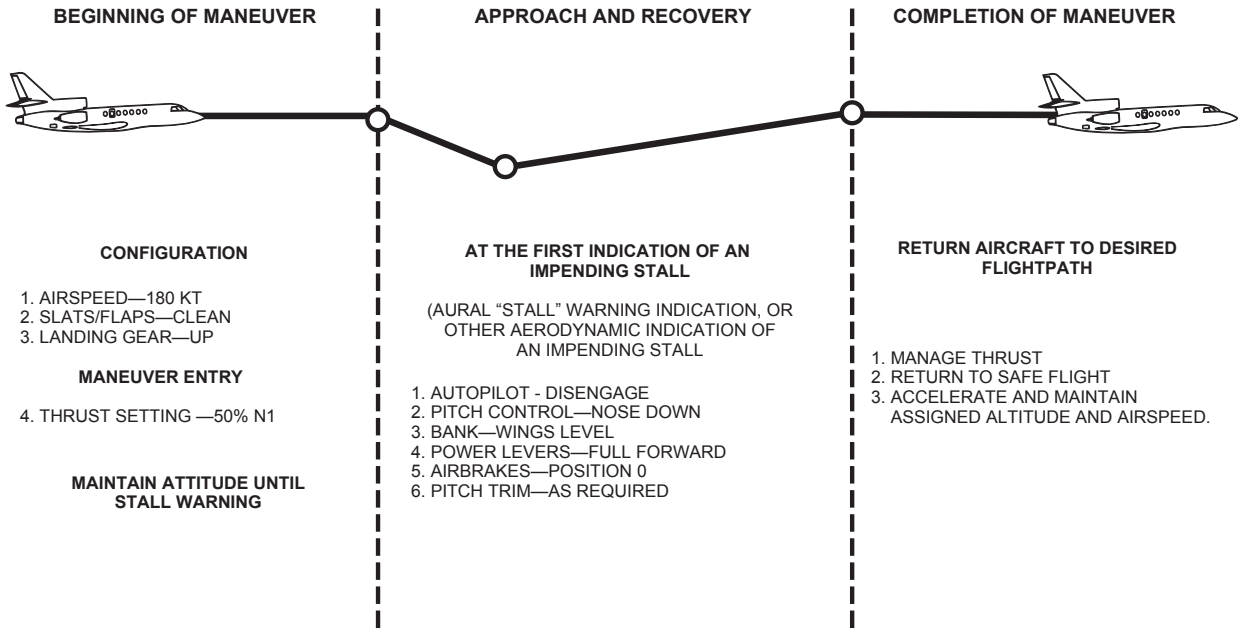

Figure 4. Stall Prevention—Clean Configuration

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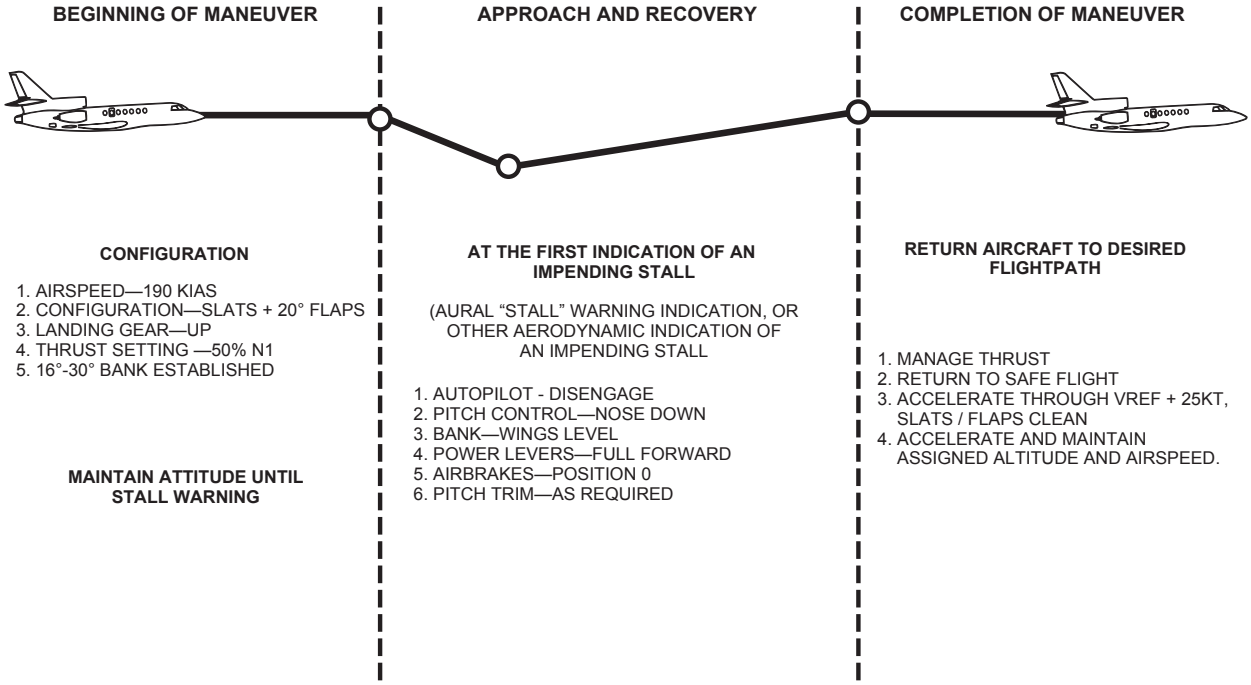

Figure 5. Stall Prevention—Partial Flap Configuration

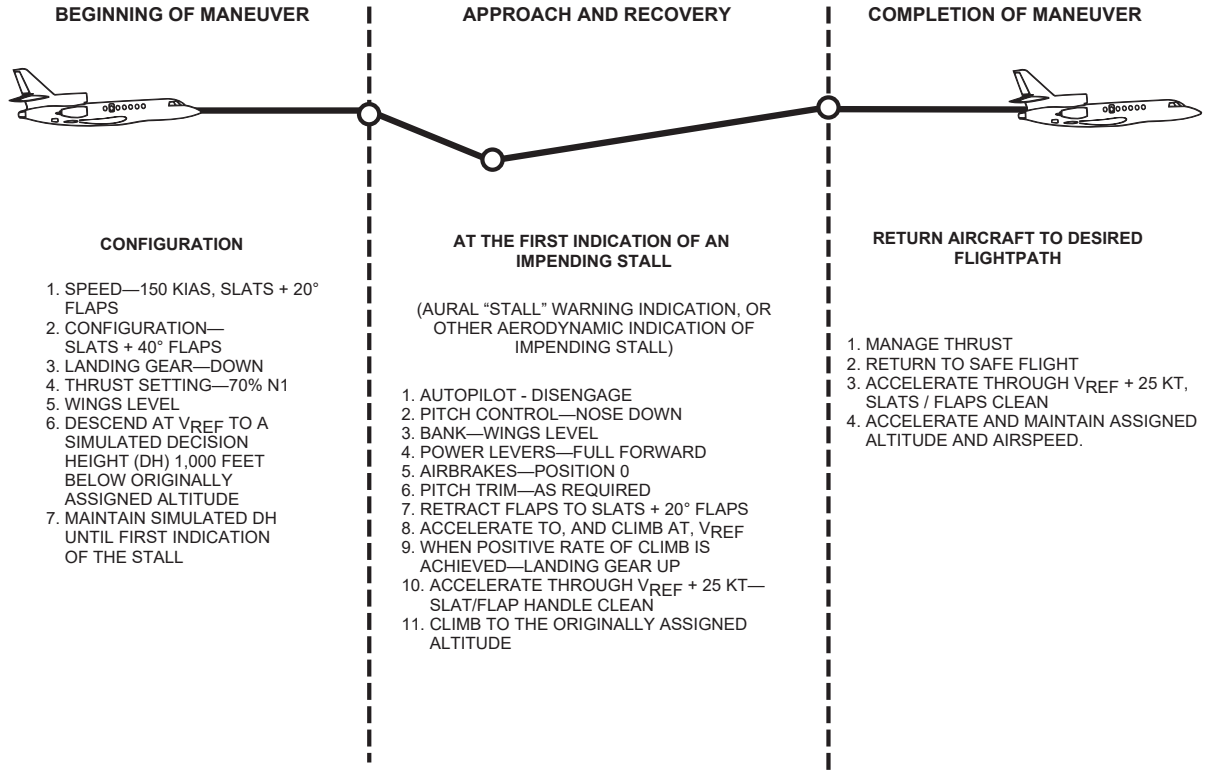

Figure 6. Stall Prevention—Landing Configuration

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RECOVERY FROM UNUSUAL FLIGHT ATTITUDES

- This section provides recovery procedures from Nose-High or Nose-Low unusual attitudes. Undesired bank angle may be associated with these attitudes.
- Excessive use of pitch trim or rudder may aggravate an unusual attitude. Use rudder carefully to aid roll control only if ailerons are ineffective and the aircraft is not stalled.

UNUSUAL ATTITUDE RECOVERY - NOSE UP

- Autopilot ..... Disconnect
- Power levers ..... FULL FORWARD
- Bank the airplane by the shortest way ..... 80° to 90° Bank
- AIRBRAKES handle ..... Position 0

- When airplane nose is close to horizon:
  - Bank ..... Wings level
  - Power levers ..... Adjust

▶ PHASE 2

- Speed and FD modes ..... As required
- Autopilot ..... As required

UNUSUAL ATTITUDE RECOVERY - NOSE DOWN

- Autopilot ..... Disconnect
- Power levers ..... Idle detent
- Bank ..... Wings level
- AIRBRAKES handle ..... As required
- Nose up pitch control ..... Smoothly apply

- When airplane nose is close to horizon:
  - AIRBRAKES handle ..... Position 0
  - Power levers ..... Adjust

▶ PHASE 2

- Speed and FD modes ..... As required
- Autopilot ..... As required

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TCAS RA—RESOLUTION ADVISORY

TASK ALLOCATION			CALL-OUT
PF	**PNF**	Identify and announce the Emergency situation	TCAS
PF		Disconnects AP Follows RA guidance	I HAVE CONTROLS
	PNF	Monitors PF actions. Looks out for conflicting airplane in VMC. Switches LDG lights ON Advises ATC.	ATC center, Call sign, TCAS RA
WHEN CLEAR OF CONFLICT			
	PNF	Advises ATC.	ATC center Call sign CLEAR OF CONFLICT RETURNING TO <ASSIGNED CLEARANCE> Or CLEAR OF CONFLICT, <ASSIGNED CLEARANCE> RESUMED
IN CASE OF CONTRADICTORY CLEARANCE INSTRUCTION			
	PNF	Advises ATC.	UNABLE, TCAS RA

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TERRAIN AWARENESS WARNING (FAA REGISTERED AIRPLANE)

PULL UP annunciation in PDUs.
TERRAIN TERRAIN – PULL UP or OBSTACLE OBSTACLE – PULL UP voice warning (continuous).

- Autopilot ..... Disconnect
- Level the wings.
- Execute a positive pull up.
- Power levers ..... FULL FORWARD
- AIRBRAKES handle ..... Position 0
- Slats-flaps handle ..... S+F20 maximum
- Landing gear ..... Up
- Maintain best path of climb until terrain clearance is ensured.

Note

Only vertical maneuvers are recommended, unless operating in visual meteorological conditions (VMC), and/or the pilot determines, based on all available information, that turning, in addition to the vertical escape maneuver, is the safest course of action.

WINDSHEAR ESCAPE

Windshear

The best windshear procedure is avoidance. Recognize the indications of potential windshear and then: **AVOID**

Microbursts

Microbursts are small scale intense downdrafts that spread outward in all directions from the downdraft center as it nears the surface. This can result in both vertical and horizontal wind shears that can be extremely hazardous, especially at low altitudes. The aircraft may encounter a headwind with increasing performance (climb/increased airspeed), followed by a downdraft and tailwind, which decreases performance (descent and low airspeeds) to the point that terrain impact can occur.

Acceptable Performance Guidelines:

- Understand that avoidance is primary
- Ability to recognize potential windshear situations
- Ability to fly the aircraft to obtain optimum performance

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Windshear Procedures—Action and Callout Table

TASK ALLOCATION			CALL-OUT
PIC		Announces windshear recovery	WINDSHEAR RECOVERY
PF		Disengages AP. Sets TO thrust.	GO AROUND SF 2
	PNF	Retracts Slats-flaps from SF 3 to SF 2 or maintains current Slats-flaps setting. Checks airbrakes 0.	SF X SET
WHEN POSITIVE RATE OF CLIMB			
	PNF	Announces positive rate clearly established.	POSITIVE RATE
PIC		Requests landing gear retraction only when clear of danger ➔ **(1)**	GEAR UP
	PNF	Retracts gear upon PIC command. Checks appropriate indication. Announces landing gear position.	GEAR IS UP
PF	**PNF**	Perform the AFTER TAKE-OFF do list and check-list when convenient.	

➔ **(1) AT TOSA**

Airplane is considered clear of danger (risk of collision with ground) when following conditions are met:

- **RA above 500 ft,**
- **Indicated airspeed above low Speed Cues,**
- **Positive flight path set and maintained.**

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APPROACH PROCEDURES

Unless cleared for a visual approach, continue to comply with the below profiles until passing the FAF. After passing the FAF, if visual contact with the runway is made and will be able to be maintained until landing, the PM will call ***RUNWAY ____ O'CLOCK***. If the PF responds ***LANDING***, revert to the visual approach profile. For visual approaches, use all available resources to ensure the aircraft stays on a safe glidepath to the runway.

APPROACH PROCEDURES WITH ONE ENGINE INOPERATIVE (OEI)

In airplanes with three powerplants, the applicant must follow a procedure (if approved by the manufacturer and the training program) that approximates the loss of two powerplants: the center and one outboard powerplant. In other multiengine airplanes, the applicant must follow a procedure that simulates the loss of 50% of available powerplants, the loss being simulated on one side of the airplane.

STABILIZED APPROACH

A stabilized approach is the safest profile to a landing. It is composed of the following elements:

- Landing configuration
- Descent rate
- Flight path
- Indicated airspeed
- Engines spooled up appropriately

Minimum Stabilized Approach Altitudes	
IMC	1000 ft above TDZE
VMC	500 ft above TDZE

If any of the indications below are exceeded after passing the stabilized approach height above, a missed approach should be accomplished.

Indication	Tolerance
Airspeed	Target Airspeed ± 10 knots
Rate of Descent	Not greater than 1000 fpm unless previously briefed
Bank Angle (Circling Approach)	Not to exceed 30°

The safety advantage of adhering to stabilized approach criteria may also be applied to nonprecision approach procedures without vertical guidance through a technique called Continuous Descent Final Approach (CDFA). This technique requires the approach to have a published vertical descent angle (VDA) permitting a continuous descent to the threshold crossing height without a level-off. Unless authorized by OpSpec/MSpec and the procedure chart, pilots may not descend below the minimum descent altitude (MDA) until required visual references are met. In the event of a missed approach from a continuous descent, it is recommended that pilots use a Derived Decision Altitude (DDA), increasing the published MDA by 50 feet or a value equivalent to the published altitude loss after autopilot disconnect. Actions and callouts for CDFA procedures are incorporated within the Precision/3D Approach maneuvers in this manual.

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Slats-flaps setting	Minimum maneuvering speed
CLEAN	VREF + 55 KT
SF1	VREF + 30 KT
SF2	VREF + 25 KT
SF3	VREF

FLIGHT PHASES—APPROACH

TASK ALLOCATION			CALL-OUT
PRIOR TO THE FAP / FAF			
	PNF	Monitors and announces approaching final approach course and final approach descent point.	Examples: "LOCALIZER ALIVE" "GLIDE ALIVE" Or "FINAL COURSE ALIVE" "VGP POINTER"
PF		Intercepts and follows final approach course. Checks appropriate approach annunciator and announces it. Intercepts and follows final descent path.	Examples: "VGP GREEN" "APPROACH GREEN"
	PNF	Checks actual altitude-distance (and WPT name if applicable) of the final descent point vs chart. Starts timer.	"FINAL DESCENT POINT" "TIMING STARTED"
DURING FINAL APPROACH			
PF		Flies approach and corrects deviations.	
PF	**PNF**	Monitor approach annunciator and announce any approach integrity malfunctions as appropriate for the procedure.	Example: "VGP AMBER" "LOC AMBER" "UNABLE FMS/GPS" "MONITOR", ...
	PNF	Monitors and announces any malfunction.	Example "ADS 1 FAIL", or "ATTITUDE FLAG", ...
DURING FINAL APPROACH (CONTINUED)			
	PNF	When applicable, monitors the descent profile with the chart. Checks time-altitude or distancealtitude. Announces altitude gaps.	Example: "ONE MINUTE" "1,500 ft or 4NM", "1,500 ft" "PLUS 50 FEET" or "MINUS 50 FEET" or "ON SCHEDULE"

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	PNF	Monitors and announces other excessive deviations (as defined above).	Example: "LOCALIZER", "GLIDE" Or "LATERAL DEVIATION" "VERTICAL DEVIATION" Or "SPEED", "ATTITUDE", …
APPROACHING DA OR MDA			
	PNF	Looks for visual contact. Announces visual cues.	"GROUND CONTACT" "APPROACH LIGHTS" "RUNWAY"
	PNF	Announces 300ft above minimums Monitors EGPWS radio-altitude call-out.	"THREE HUNDRED ABOVE"
At DA or MDA			
PIC		Decides whether or not to continue the descent.	"CONTINUE" Or "GO-AROUND SF2" "AIRBRAKES 0"
LANDING			
PF		Disconnects autopilot above AP limits	"CONTINUE"
GO-AROUND			
PF		Executes a go around maneuver.	"GO AROUND SF2"

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VISUAL APPROACH—NORMAL

Standard Pattern 1,500 FT AAL

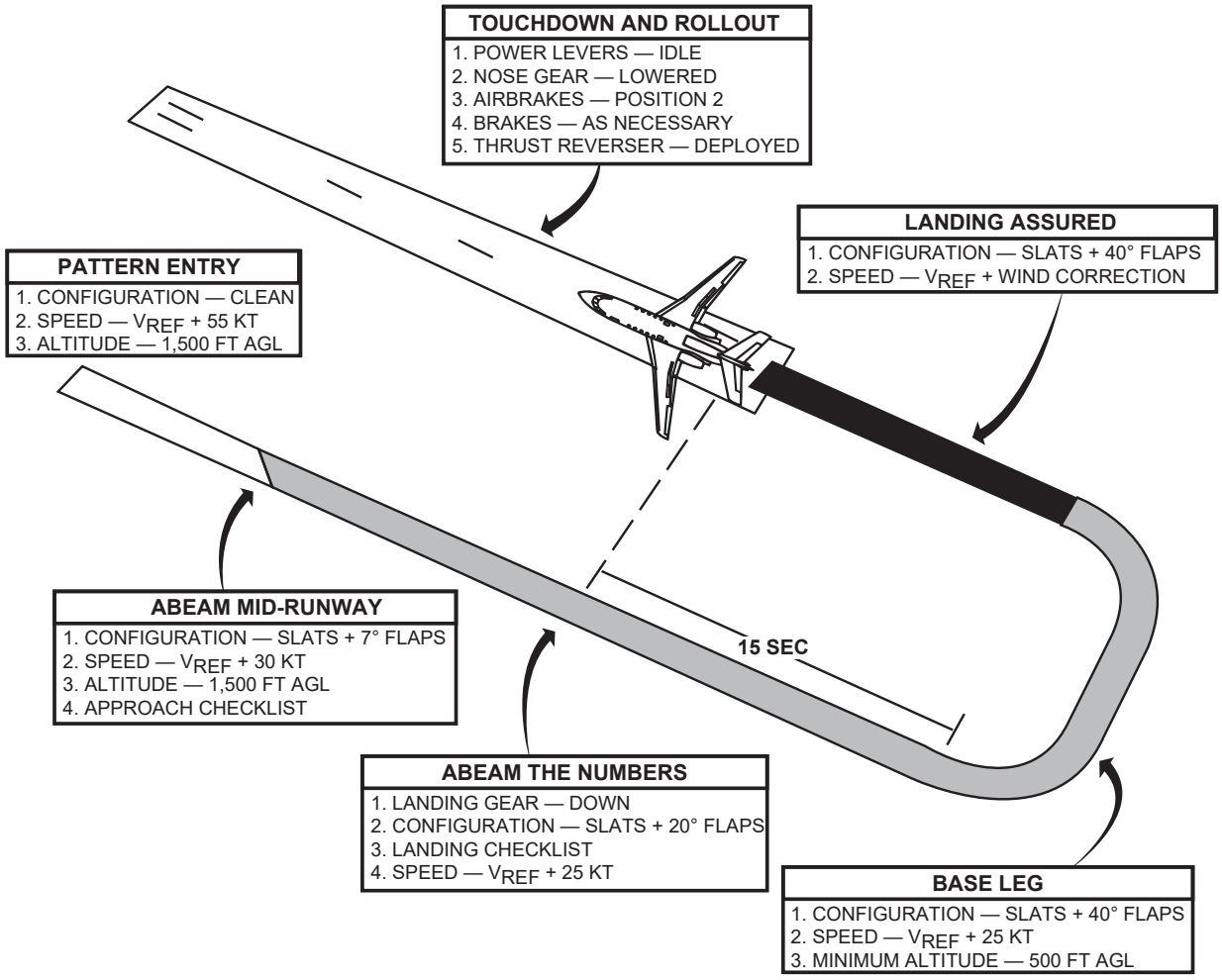

Figure 7. Visual Approach—Normal

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VISUAL APPROACH—ONE ENGINE INOPERATIVE (OEI)

Pattern (One Engine Inoperative) 1,500 FT AAL

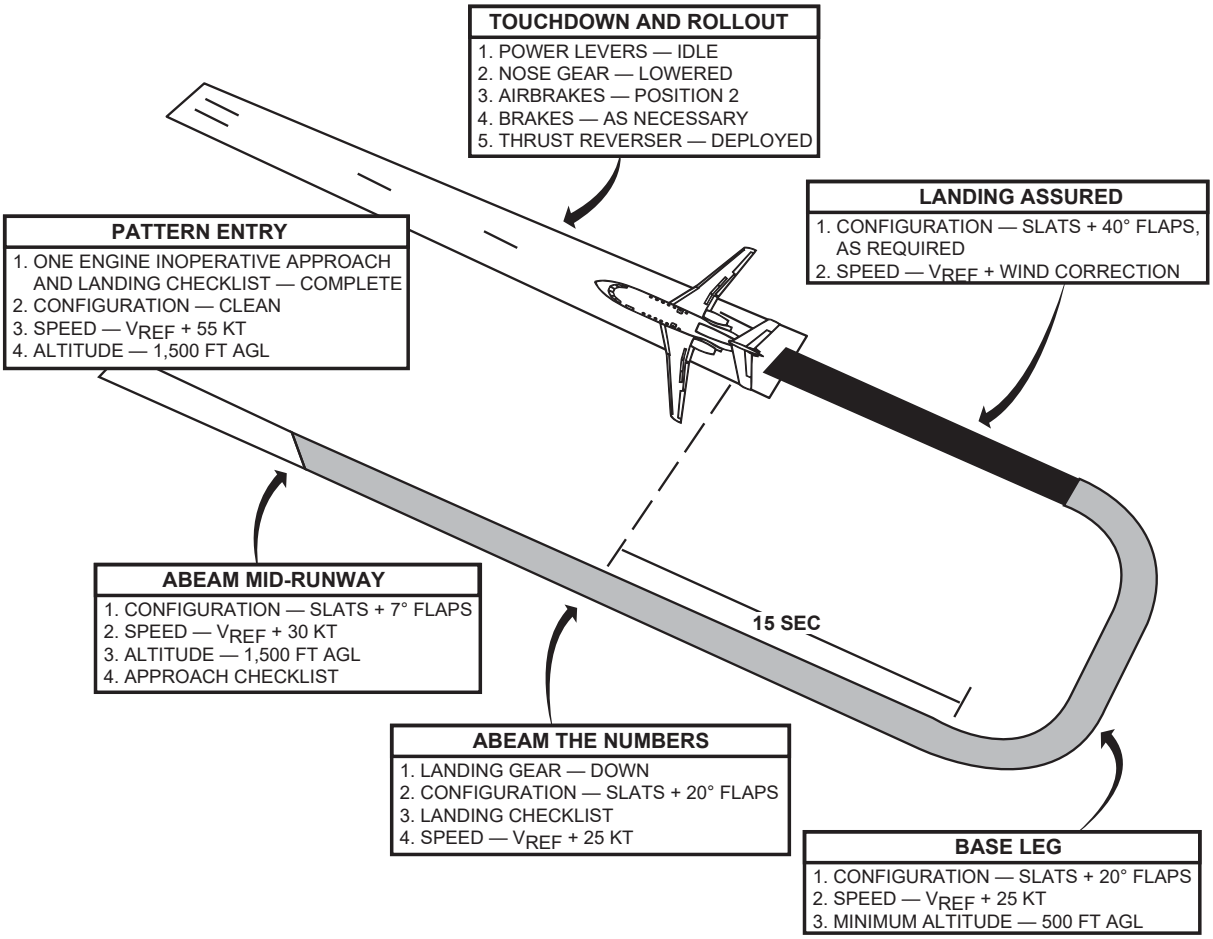

Figure 8. Visual Approach—One Engine Inoperative (OEI)

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APPROACH—FLAP MALFUNCTION

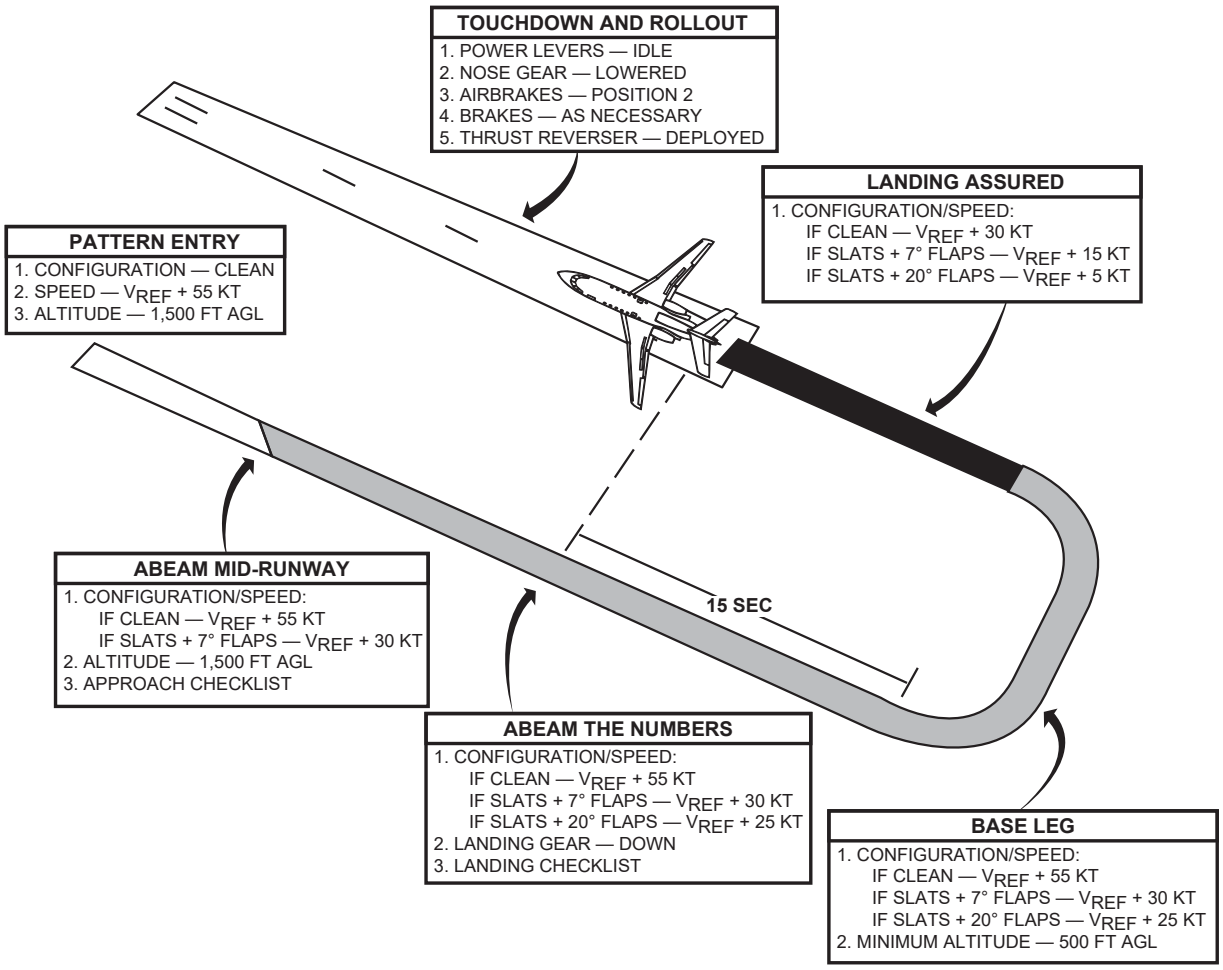

Figure 9. Approach—Flap Malfunction

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PRECISION/3D APPROACH

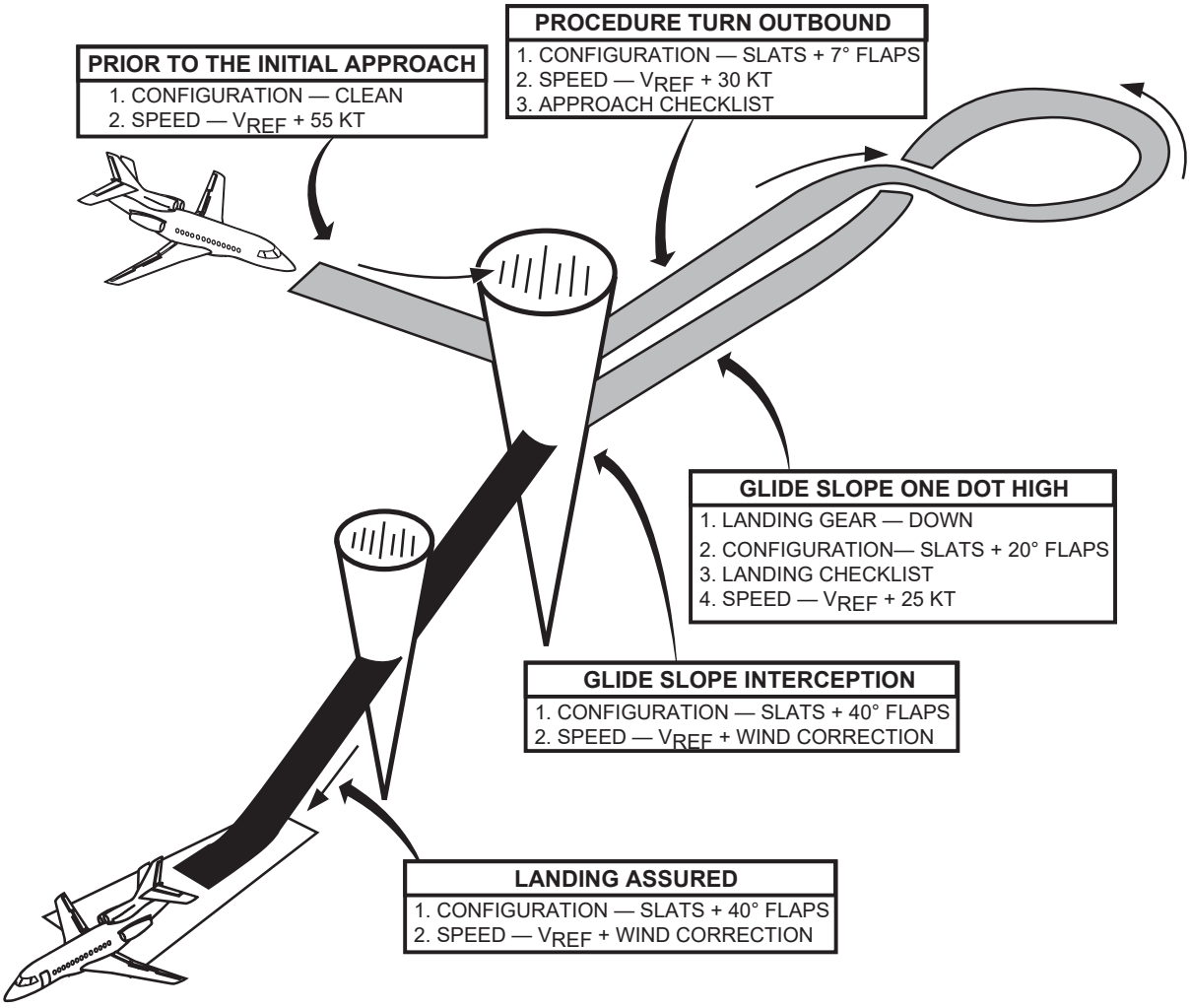

Figure 10. Precision/3D Approach

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NON-PRECISION/2D

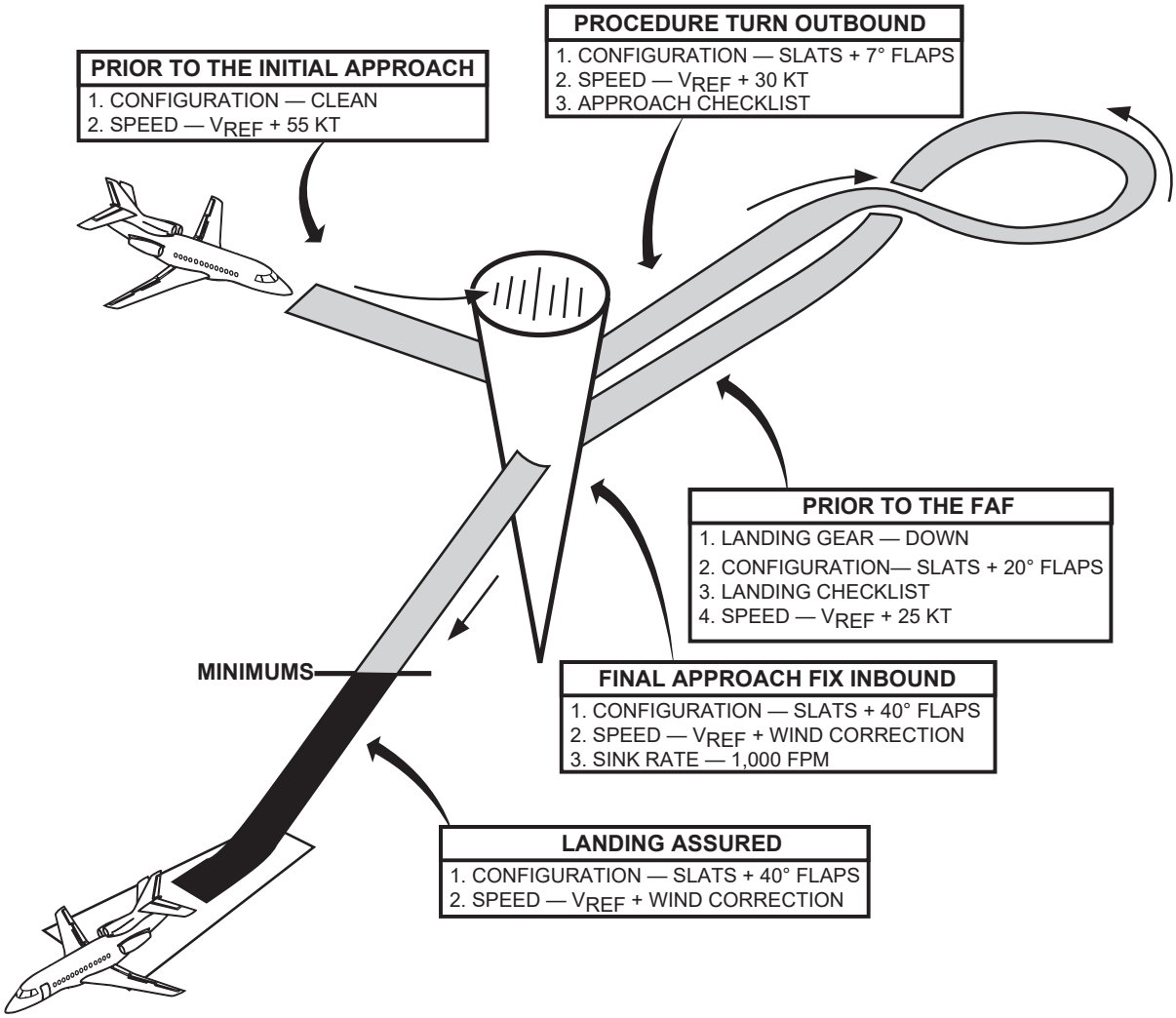

Figure 11. Non-Precision/2D

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MISSED APPROACH—FROM PRECISION APPROACH "GO-AROUND"

Straight-In Approach with one engine inoperative. Landing configuration set to SF 3 only when committed to land.

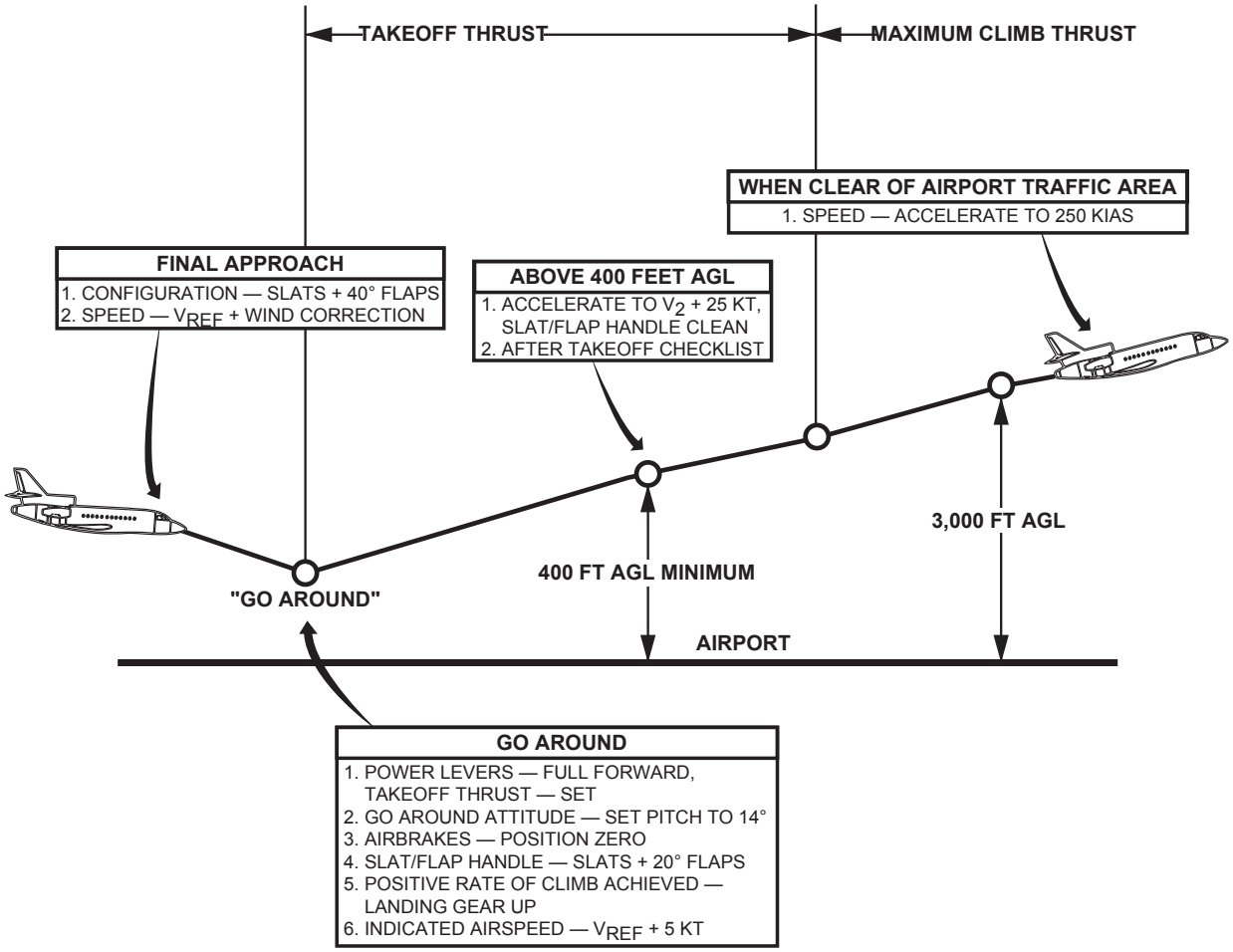

Figure 12. Missed Approach—From Precision Approach "Go-Around"

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CIRCLING APPROACH

Initiate circling maneuver when:

- Visual contact with the airport is established, and
- The aircraft is within the category-specific protected airspace

Remain within protected airspace at MDA until leaving minima.

Conduct the approach with the autopilot engaged, unless inoperative, until descent is initiated below MDA.

While circling, use HDG/TRK mode to control lateral path, and maintain visual contact with the airport at all times.

If visual contact with the airport is lost at any time during the maneuver, or the flight path exits protected airspace, execute missed approach. If a turn is required to the prescribed missed approach course, make the initial turn toward the landing runway and continue the turn until established on the prescribed course

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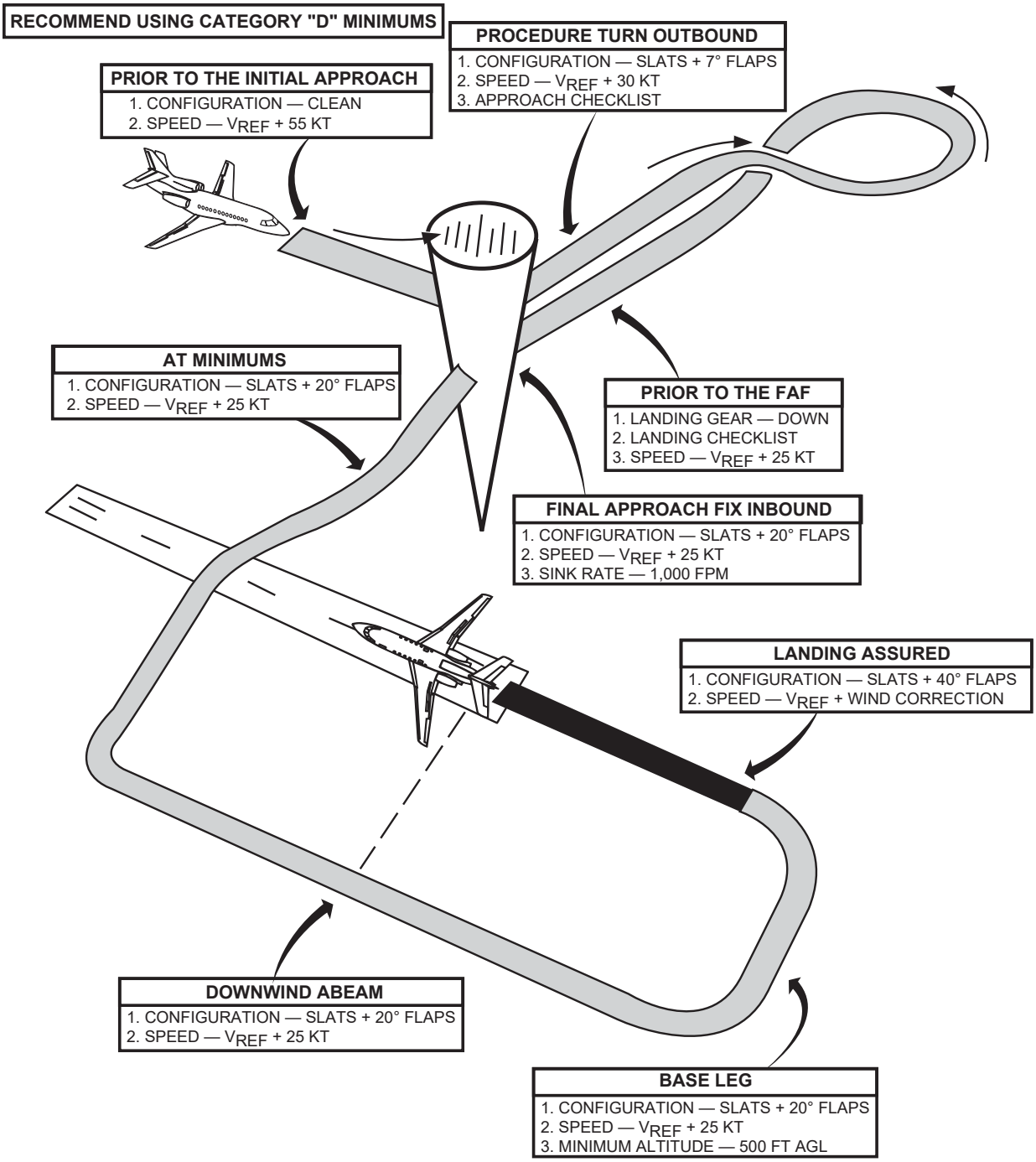

Figure 13. Circling Approach

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MISSED APPROACH

The PF or PM may initiate a missed approach by calling go-around. Comply with the actions and callouts prescribed in the Missed Approach Actions and Callouts table.

In addition to the conditions prescribed by FAR, initiate missed approach if operating in IMC and any of the following occur:

- Unable to get established on approach prior to FAF
- Any degradation of navigation signal
- Any deterioration of situational awareness
- Disagreement between the pilots on flight path, position, procedures, or configuration
- Exceedance of stabilized approach requirements
- The following indications are displayed on PFD during the respective approach:

Approach	PFD Indication

ILS	• CDI two dots deflection, or
	• Glidepath more than
	  • One dot low, or
	  • Two dots high

LPV	
RNAV-GPS (LNAV-VNAV [WAAS])	
RNAV-GPS (LNAV-VNAV [Baro])	• CDI two dots deflection, or • Glidepath indicator changes from magenta to yellow
ILS without Glideslope (LOC)	• CDI two dots deflection
RNAV-GPS (LNAV-only)	• CDI more than one dot deflection
VOR	

If a missed approach is initiated, continue the procedure even if the runway environment comes in sight. If the missed approach is initiated prior to MAP, proceed to MAP before making any turns.

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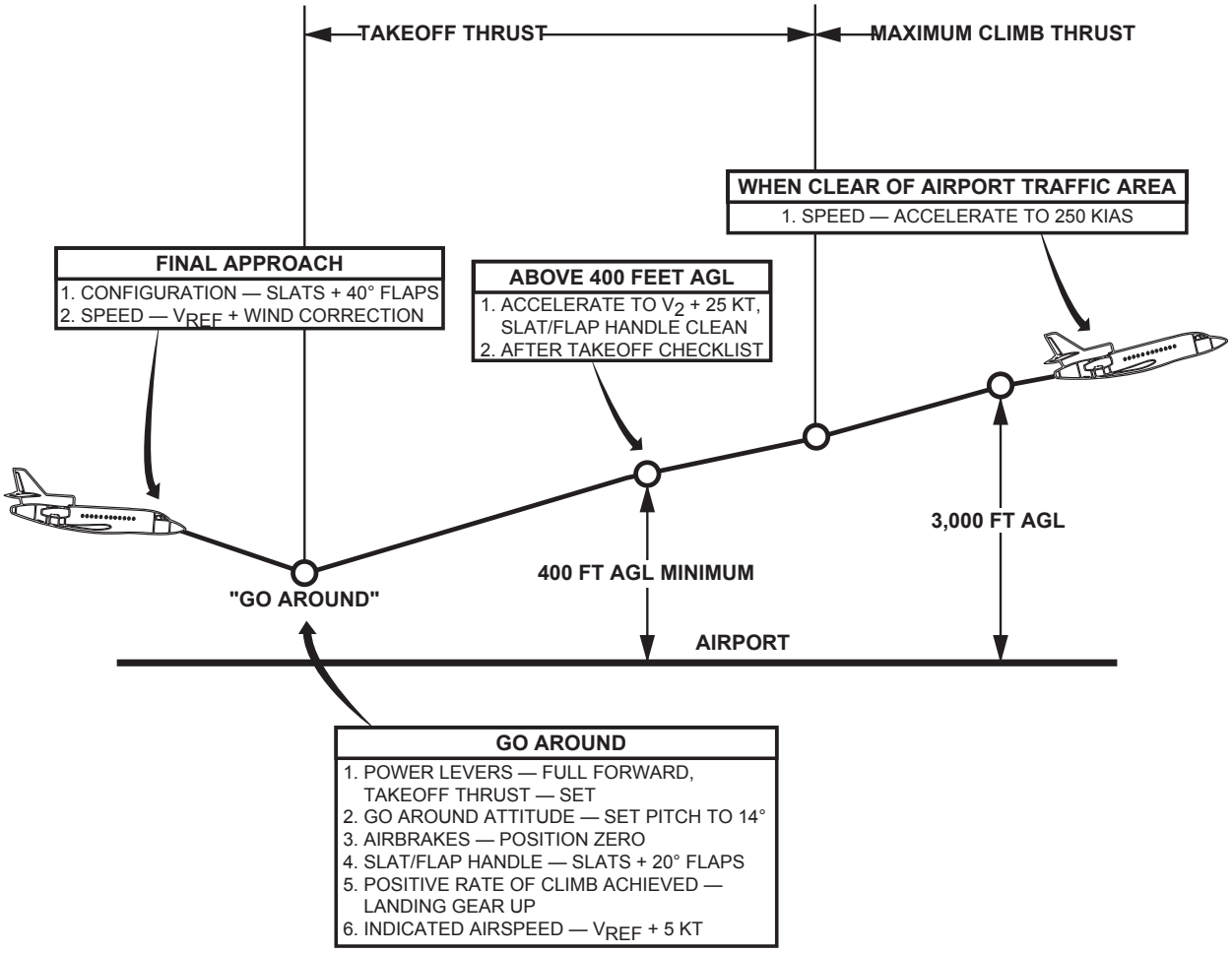

Figure 14. Missed Approach—From Precision Approach "Go-Around"

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Go-Around (Two Engines or One Engine Inoperative)—Action and Callout Table

PF flies the airplane. PNF reconfigures the airplane and informs ATC.

TASK ALLOCATION			CALL-OUT
APPROACHING MINIMUMS			
PF	**PNF**	Decides to go-around.	GO-AROUND SF 2
PF		Pushes GA pushbutton. Follows FD (ROL-GA modes). Sets TO thrust.	
	PNF	Retracts slats flaps to SF 2. Checks appropriate indication. Announces slats flaps position. Checks airbrakes 0.	SF 2 SET
WHEN POSITIVE RATE OF CLIMB			
	PNF	Announces positive rate of climb.	POSITIVE RATE
PF		Flie VREF+5 (20° max pitch). Requests landing gear retraction.	GEAR UP
	PNF	Retracts gear. Checks appropriate indication. Announces landing gear position.	GEAR IS UP
PF		Requests VREF + 5 Requests appropriate lateral mode and CLB mode.	SPEED MAN / VREF + 5 e.g. LNAV AND CLIMB MODES
	PNF	Sets SPEED to VREF + 5 Selects appropriate lateral mode and CLB mode. Reads FD lateral and vertical modes, and speed on FMA. Sets TAXI light off and LANDING lights on PULSE. Sets ENG and WINGS anti-ice as required. Checks ASEL. Advises ATC.	e.g. LNAV AND CLIMB MODES, SPEED MAN / VREF + 5 SET
AT GASA			
	PNF	Announces when speed is greater than VFR.	ABOVE VFR
PF		Requests slats / flaps retraction	SF CLEAN
	PNF	Retracts (one notch at a time). Checks appropriate indication. Announces SF position.	SF CLEAN SET
AT VFT			
PF		Sets SPEED MAN / XXX or FMS. Sets MAX CLB thrust.	e.g. SPEED 250 SET

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WHEN CLEARED TO A FLIGHT LEVEL			
PF		Requests standard setting	SET STANDARD
PF	**PNF**	Set their altimeters to standard	STANDARD SET
PF		Requests altimeter cross-check	CROSSING FL100 ... NOW
	PNF	Reads his/her altimeter and announces the difference.	PLUS (MINUS) xx FEET
AFTER SLATS/FLAPS RETRACTION OR ALTIMETERS SET TO STD AND CROSS-CHECKED (SEE NOTE)			
PF		Request AFTER TAKE-OFF check-list.	AFTER TAKE-OFF CHECK-LIST
PF	**PNF**	Complete AFTER TAKE-OFF checklist.	
	PNF	Announces end of check-list.	AFTER TAKE-OFF CHECK-LIST COMPLETED

NOTE

Where the transition altitude is low, the PF usually calls the after take-off check-list when the altimeters are set and crosschecked.

Where the transition altitude is high, the PF usually calls the after take-off check-list when the slats/flaps are retracted. The checklist is then completed after having set and crosscheck the altimeters.

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APPROACH AND LANDING—TWO ENGINE INOPERATIVE (2EI)

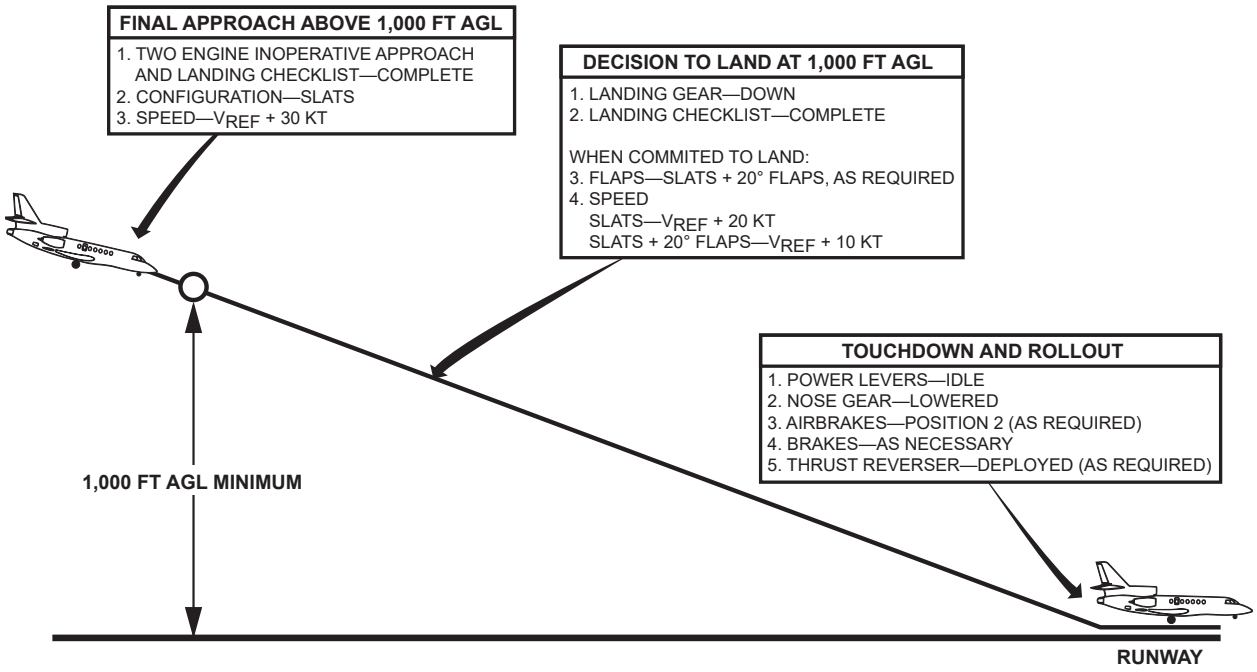

Figure 15. Approach and Landing—Two Engine Inoperative (2EI)

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APPROACH AND MISSED APPROACH—TWO ENGINES INOPERATIVE (2EI)

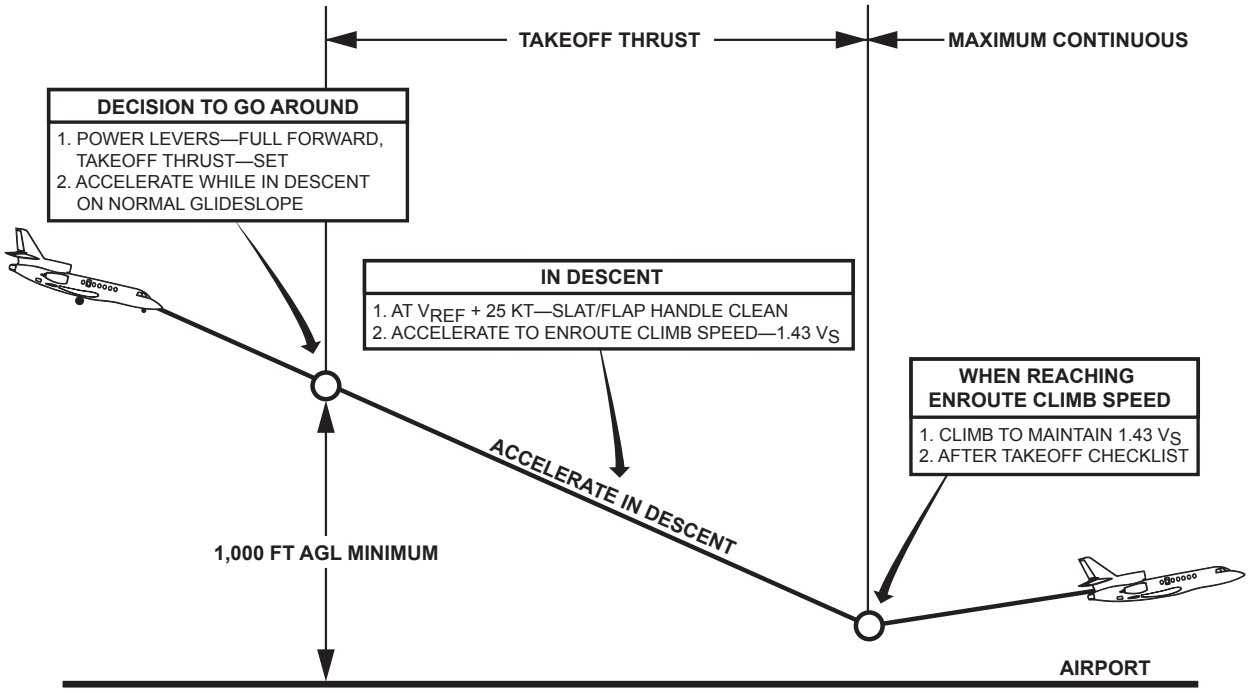

Figure 16. Approach and Missed Approach—Two Engines Inoperative (2EI)

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LANDING

NOTE
Avoid unnecessary tire wear by releasing heavy brake pressure below 50 kt.

TASK ALLOCATION			CALL-OUT
PF		Lands	
	PNF	When landed, verifies airbrake deployment.	AIRBRAKES 2
PF		Applies brakes and extends thrust reversers (IDLE).	
	PNF	Verifies and announces reverse thrust availability.	DEPLOYED
PF		As soon as practical transfers to nose wheel steering. Applies reverse thrust.	
	PNF	Announces 80 kt	80 kt
LH		Maintains directional control using nose wheel steering.	I HAVE CONTROL
PF		Stows thrust reversers.	

LANDING AND ROLLOUT

During landing rollout, move only those switches or levers necessary to ensure safe rollout. Delay additional switch or lever movement until after the aircraft has cleared the active runway. Decelerate to taxi speed prior to exiting the runway unless a high-speed taxiway is utilized.

TASK ALLOCATION			CALL-OUT
LH		Requests AFTER LANDING check-list.	AFTER LANDING CHECKLIST
LH	**RH**	Complete AFTER LANDING check-list.	
	RH	Announces end of check-list.	AFTER LANDING CHECKLIST COMPLETED

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ILLUSTRATIONS

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MANEUVERS AND PROCEDURES

TAKEOFF—NORMAL

TAKEOFF		
LH		LEFT HAND ON NOSE WHEEL STEERING. RIGHT HAND ON POWER LEVERS
	RH	HANDS ON CONTROL COLUMN
LH		SETS TAKE-OFF POWER — "POWER SET" RELEASES BRAKES
	RH	STARTS TIMER — "TIME" CHECKS ACCELERATION — "ACCELERATION NORMAL OR ACCELERATION FAULT" CHECKS ENGINES PARAMETERS
	RH	ANNOUNCES "80 KT" (See CODDE) — "80 KT"
LH		CHECKS IAS. — "CHECKED" REMOVES LEFT HAND FROM NOSE WHEEL STEERING KEEPS RIGHT HAND ON POWER LEVERS
PF		TAKES CONTROLS (CONTROL COLUMN AND RUDDER) — "I HAVE CONTROLS"
	PNF	ANNOUNCES V1 — "V1"
LH		REMOVES RIGHT HAND FROM POWER LEVERS
	PNF	ANNOUNCES VR — "ROTATE"
PF		ROTATES (3° / SEC) AND SETS RECOMMENDED ONE ENGINE OUT PITCH ATTITUDE

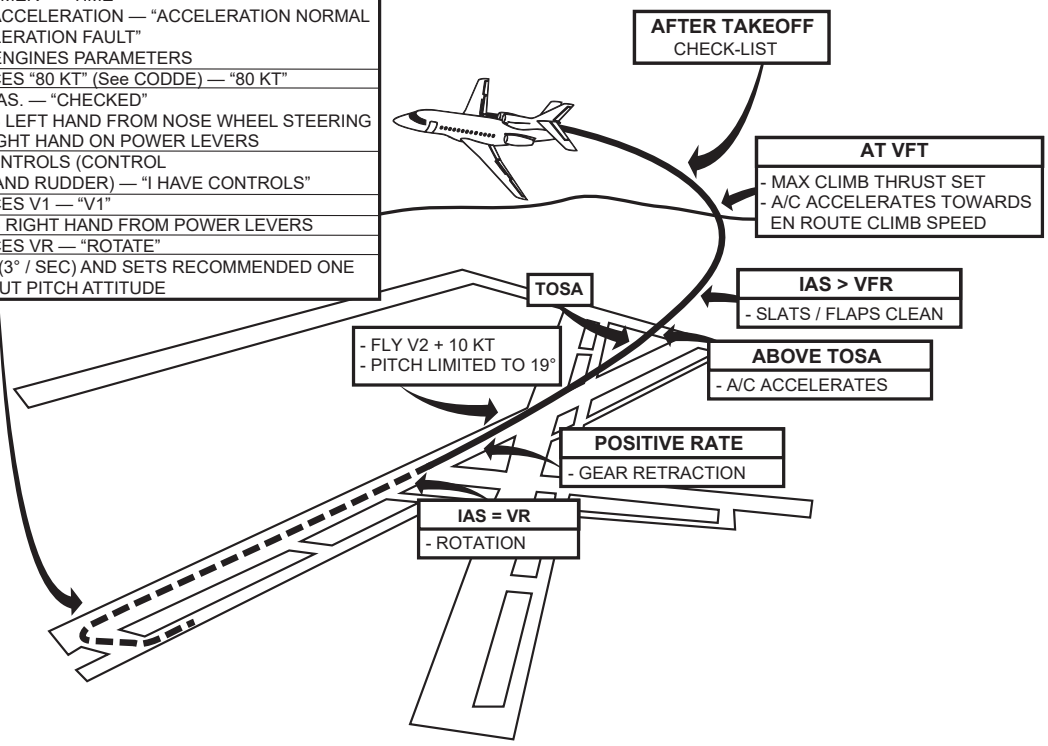

Figure 1. Takeoff—Normal

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Takeoff—Normal—Action and Callout Table

TASK ALLOCATION			CALL-OUT
LH		Left hand on Nose Wheel Steering Right hand on power levers.	
	RH	Hands on control column.	
LH		Sets take-off power. Releases brakes.	POWER SET
	RH	Starts timer. Checks acceleration. Checks engine parameters.	TIME ACCELERATION NORMAL or ACCELERATION FAULT
	RH	Announces "80 kt"	80 KT
LH		Check IAS. Removes hand from Nose Wheel Steering. Keeps right hand on power levers.	CHECKED
PF		Takes control (control column and rudder)	I HAVE CONTROLS
	PNF	Announces V1	V1
LH		Removes right hand from power levers.	
	PNF	Announces V2	ROTATE
PF		Rotates and sets ROS on horizon.	

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TAKEOFF—REJECTED

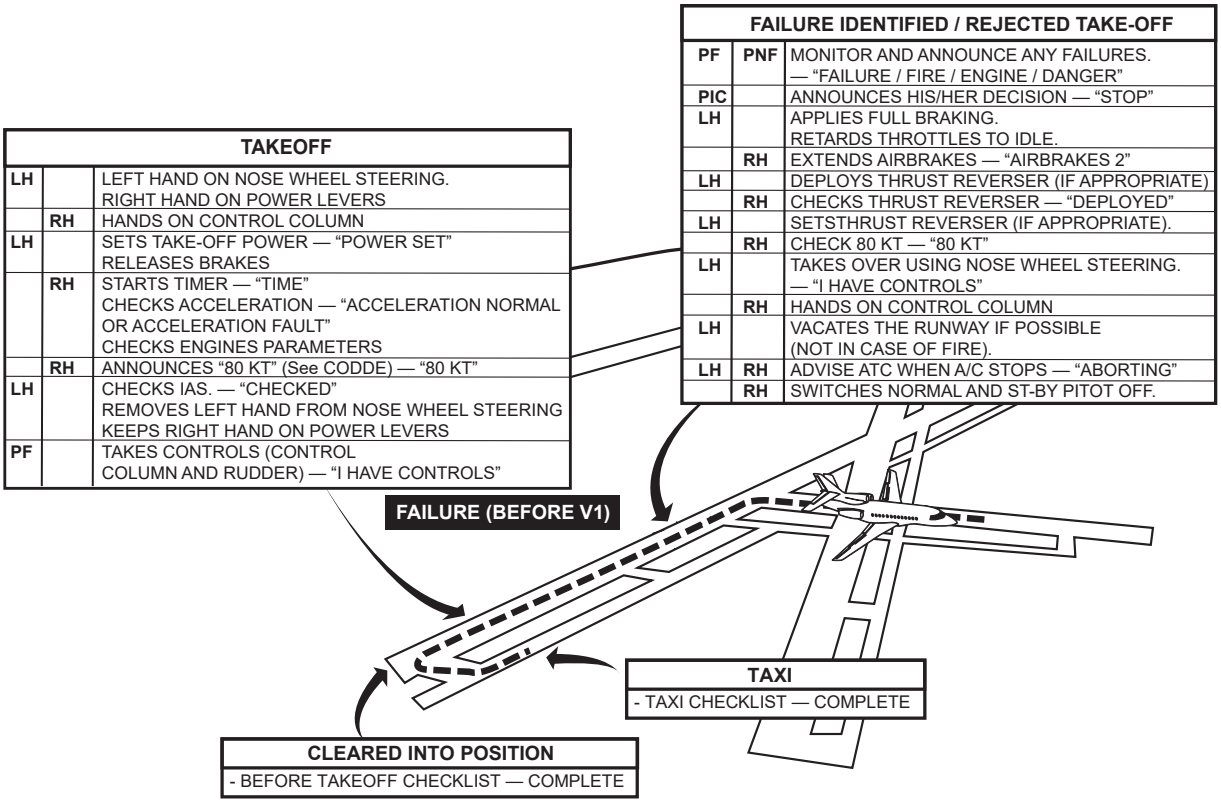

Figure 2. Takeoff—Rejected

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Takeoff—Rejected—Action and Callout Table

TASK ALLOCATION			CALL-OUT
PF	**PNF**	Monitor and announce any failures	FAILURE/FIRE/ENGINE/DANGER
PIC		Announces his/her decision	STOP
LH		Applies full braking. Retards throttles to idle.	
	RH	Extends airbrakes.	AIRBRAKES 2
LH		Deploys thrust reverser (if appropriate).	
	RH	Checks thrust reverser.	DEPLOYED
LH		Reverses thrust (if appropriate)	
	RH	Checks 80 kt.	80 KT
LH		Takes over using nose wheel steering.	I HAVE CONTROLS
	RH	Hands on control column.	
LH		Vacates the runway if possible (except in case of fire).	
LH	**RH**	Advise ATC when A/C stops.	ABORTING
	RH	Switches NORMAL and ST-BY PITOT OFF.	

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TAKEOFF—POWERPLANT FAILURE AT OR ABOVE V1

TAKEOFF		
PIC		ANNOUNCES TAKE-OFF CONTINUATION. — “GO”
	PNF	ANNOUNCES VR. — “ROTATE”
PF		ROTATES AND SETS RECOMMENDED ONE ENGINE OUT PITCH ATTITUDE.
	PNF	ANNOUNCES POSITIVE RATE OF CLIMB. — “POSITIVE RATE”
PF		REQUESTS LANDING GEAR RETRATION. — “GEAR UP”
	PNF	RETRACTS LANDING GEAR. CHECKS APPROPRIATE INDICATION. ANNOUNCES LANDING GEAR POSITION. — “GEAR IS UP”
PF		FLIES V2 / V2 +10 KT (19° MAX PITCH). ANNOUNCES WHEN CONTROLLING THE AIRPLANE — “UNDER CONTROL”
		AT TOSA
	PNF	ANNOUNCES TAKE-OFF SAFETY ALTITUDE — “TOSA”
PF		LEVELS OFF
		AT VFR
	PNF	ANNOUNCES WHEN SPEED IS GREATER THAN VFR — “ABOVE VFR”
PF		REQUESTS SLATS / FLAPS RETRACTION. — “SLATS/FLAPS CLEAN”
	PNF	RETRACTS (ONE NOTCH AT ONCE) CHECKS APPROPRIATE INDICATION. ANNOUNCES SF POSITION — “SLATS/FLAPS CLEAN SET”
		AT VFT
	PNF	CHECKS AND ANNOUNCES VFT. — “VFT”
PF		RESUMES CLIMB AT VFT. 5 MINUTES MAXIMUM AFTER BRAKE RELEASE, SETS MAX CLIMB ON LIVE ENGINES. WHEN OBSTACLES ARE CLEARED, RESUMES CLIMB AT OTHER CLIMB SPEED (E.G. 250 KT). — “e.g. SPEED BUG 250 KT”

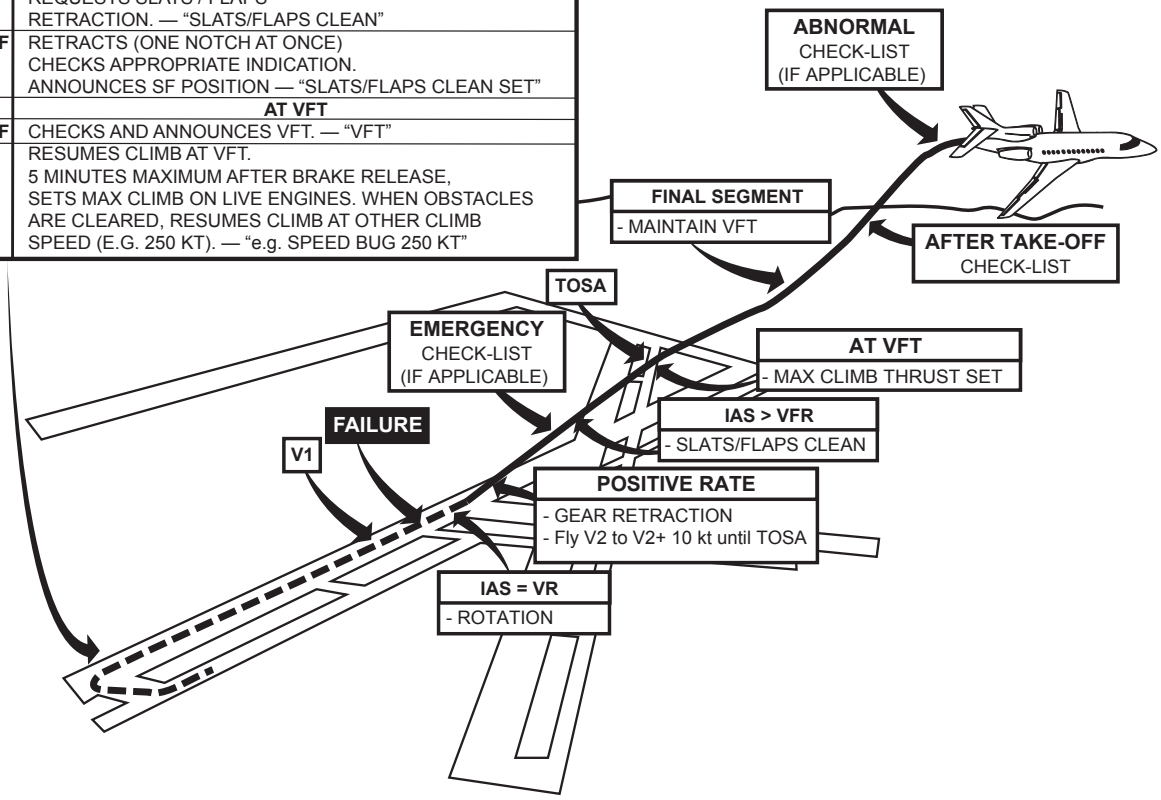

Figure 3. Takeoff—Powerplant Failure At or Above V1

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INFLIGHT MANEUVERS

STEEP TURNS

Perform 180° or 360° turns in either direction. Reverse or recover from the turn at a pre-briefed heading.

STALL PREVENTION

Stall Prevention is trained in the following configurations:

- Clean
- Partial flap (Takeoff configuration)
- Landing
- High altitude
- Recovery with idle thrust

Stall Prevention tasks will be accomplished in the appropriate phase of flight. Stall Recovery should be initiated at the first indication of an impending stall (e.g. stall warning, initial buffet, transit light). One (1) stall must be induced while in a turn with a bank angle of 15-30 degrees; and, one (1) should be induced by commands to the autopilot. Recovery from an impending stall will not mandate predetermined altitude loss or a predetermined recovery altitude.

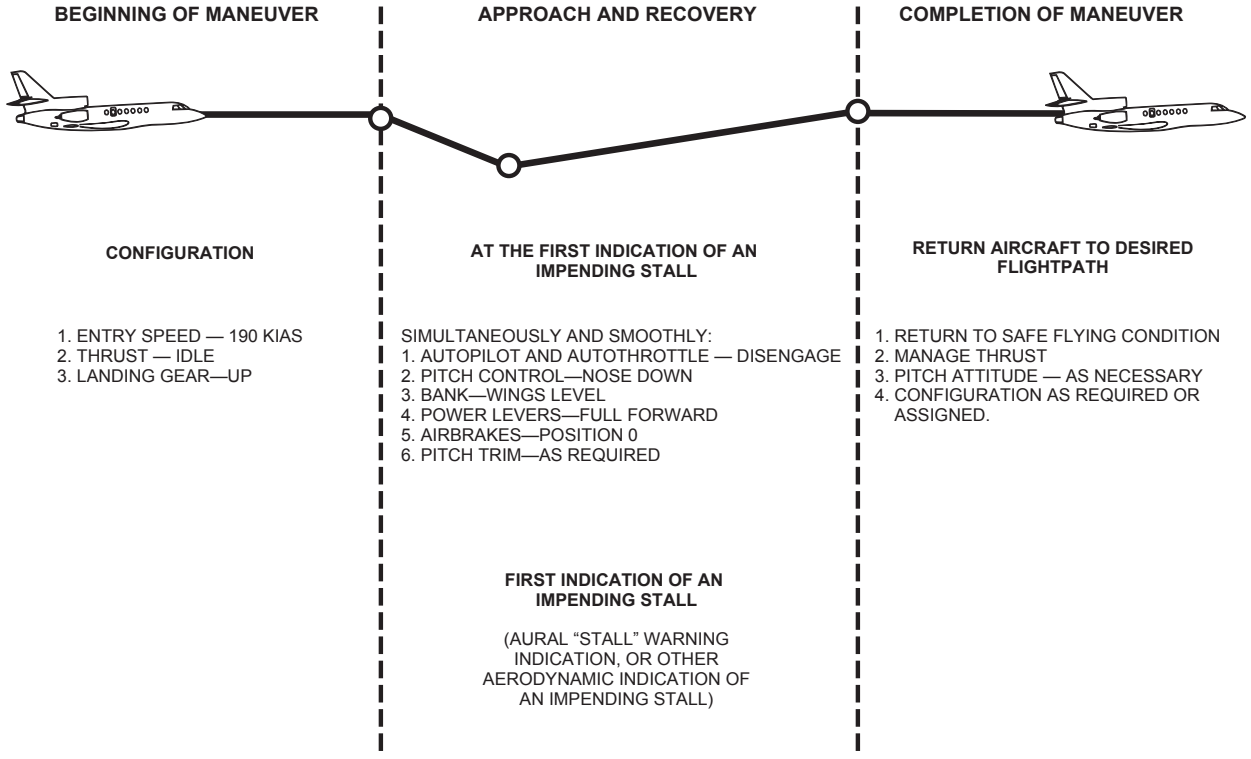

Figure 4. Stall Prevention—Clean Configuration

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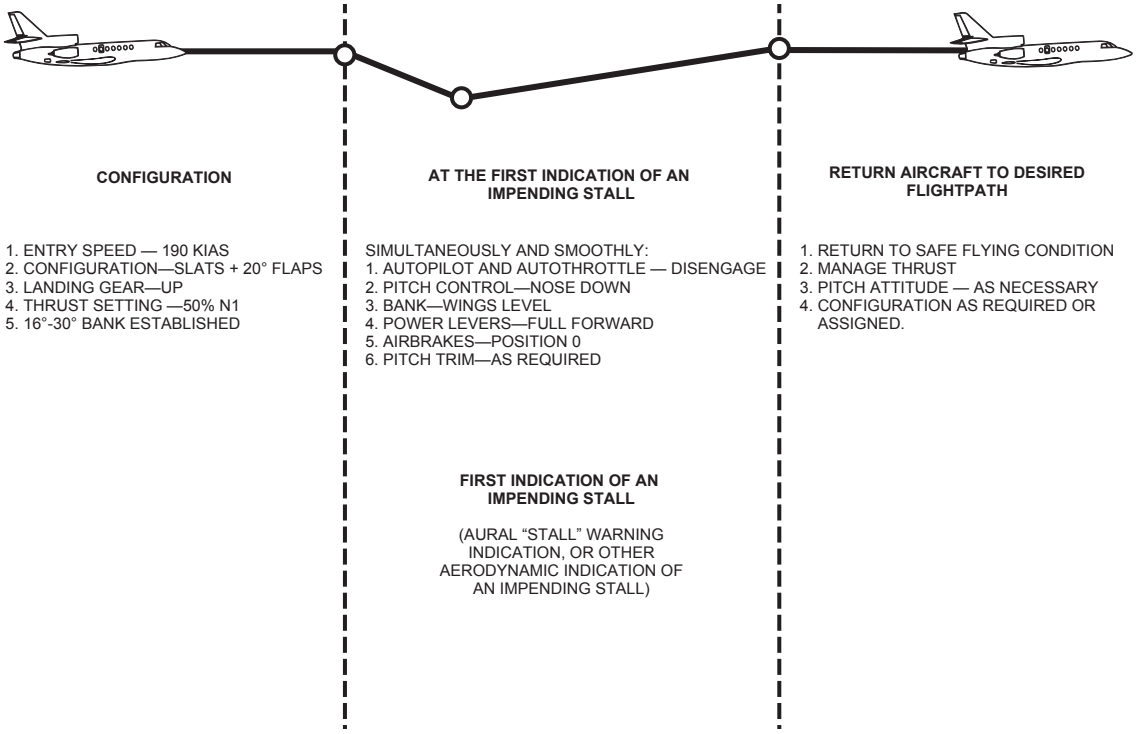

Figure 5. Stall Prevention—Partial Flap Configuration

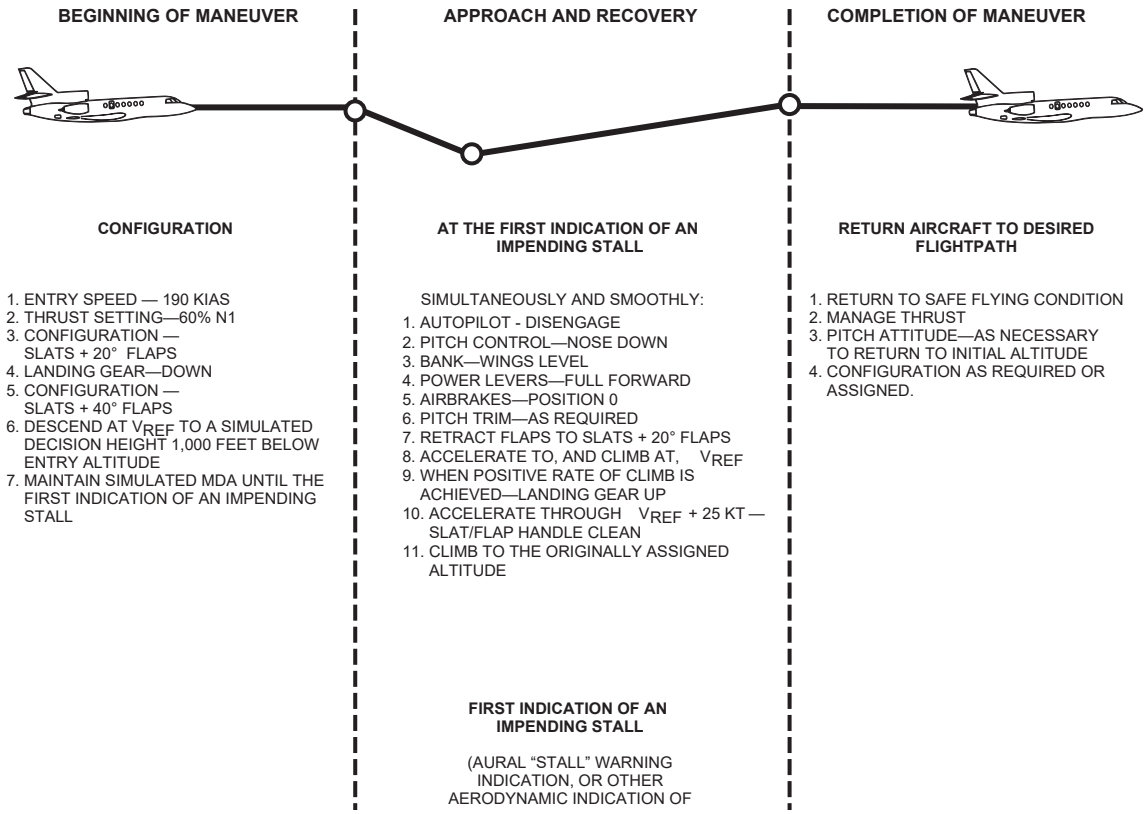

Figure 6. Stall Prevention—Landing Configuration

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RECOVERY FROM UNUSUAL FLIGHT ATTITUDES

- This section provides recovery procedures from Nose-High or Nose-Low unusual attitudes. Undesired bank angle may be associated with these attitudes.
- Excessive use of pitch trim or rudder may aggravate an unusual attitude. Use rudder carefully to aid roll control only if ailerons are ineffective and the aircraft is not stalled.

UNUSUAL ATTITUDE RECOVERY - NOSE UP

- Autopilot and Autothrottle ..... Disconnect
- Power levers ..... FULL FORWARD
- Bank the airplane by the shortest way ..... 80° to 90° Bank
- AIRBRAKES handle ..... Position 0

- When airplane nose is close to horizon:
  - Bank ..... Wings level
  - Power levers ..... Adjust

▶ PHASE 2

- Speed and FD modes ..... As required
- Autopilot ..... As required

UNUSUAL ATTITUDE RECOVERY - NOSE DOWN

- Autopilot and Autothrottle ..... Disconnect
- Power levers ..... Idle detent
- Bank ..... Wings level
- AIRBRAKES handle ..... As required
- Nose up pitch control ..... Smoothly apply

- When airplane nose is close to horizon:
  - AIRBRAKES handle ..... Position 0
  - Power levers ..... Adjust

▶ PHASE 2

- Speed and FD modes ..... As required
- Autopilot and Autothrottle ..... As required

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TCAS RA—RESOLUTION ADVISORY

TASK ALLOCATION			CALL-OUT
PF	**PNF**	Identify and announce the Emergency situation	TCAS
PF		Disconnects AP Follows RA guidance	I HAVE CONTROLS
	PNF	Monitors PF actions. Looks out for conflicting airplane in VMC. Switches LDG lights ON Advises ATC.	ATC center, Call sign, TCAS RA
WHEN CLEAR OF CONFLICT			
	PNF	Advises ATC.	ATC center Call sign CLEAR OF CONFLICT RETURNING TO <ASSIGNED CLEARANCE> Or CLEAR OF CONFLICT, <ASSIGNED CLEARANCE> RESUMED
IN CASE OF CONTRADICTORY CLEARANCE INSTRUCTION			
	PNF	Advises ATC.	UNABLE, TCAS RA

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TERRAIN AWARENESS WARNING (FAA REGISTERED AIRPLANE)

PULL UP annunciation in PDUs.
TERRAIN TERRAIN – PULL UP or OBSTACLE OBSTACLE – PULL UP voice warning (continuous).

- Autopilot ..... Disconnect
- Level the wings.
- Execute a positive pull up.
- Power levers ..... FULL FORWARD
- AIRBRAKES handle ..... Position 0
- Slats-flaps handle ..... S+F20 maximum
- Landing gear ..... Up
- Maintain best path of climb until terrain clearance is ensured.

Note

Only vertical maneuvers are recommended, unless operating in visual meteorological conditions (VMC), and/or the pilot determines, based on all available information, that turning, in addition to the vertical escape maneuver, is the safest course of action.

WINDSHEAR ESCAPE

Windshear

The best windshear procedure is avoidance. Recognize the indications of potential windshear and then: **AVOID**

Microbursts

Microbursts are small scale intense downdrafts that spread outward in all directions from the downdraft center as it nears the surface. This can result in both vertical and horizontal wind shears that can be extremely hazardous, especially at low altitudes. The aircraft may encounter a headwind with increasing performance (climb/increased airspeed), followed by a downdraft and tailwind, which decreases performance (descent and low airspeeds) to the point that terrain impact can occur.

Acceptable Performance Guidelines:

- Understand that avoidance is primary
- Ability to recognize potential windshear situations
- Ability to fly the aircraft to obtain optimum performance

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Windshear Procedures—Action and Callout Table

TASK ALLOCATION			CALL-OUT
PIC		Announces windshear recovery	WINDSHEAR RECOVERY
PF		Disengages AP. Sets TO thrust.	GO AROUND SF 2
	PNF	Retracts Slats-flaps from SF 3 to SF 2 or maintains current Slats-flaps setting. Checks airbrakes 0.	SF X SET
WHEN POSITIVE RATE OF CLIMB			
	PNF	Announces positive rate clearly established.	POSITIVE RATE
PIC		Requests landing gear retraction only when clear of danger ➔ **(1)**	GEAR UP
	PNF	Retracts gear upon PIC command. Checks appropriate indication. Announces landing gear position.	GEAR IS UP
PF	**PNF**	Perform the AFTER TAKE-OFF do list and check-list when convenient.	

➔ **(1) AT TOSA**

Airplane is considered clear of danger (risk of collision with ground) when following conditions are met:

- **RA above 500 ft,**
- **Indicated airspeed above low Speed Cues,**
- **Positive flight path set and maintained.**

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APPROACH PROCEDURES

Unless cleared for a visual approach, continue to comply with the below profiles until passing the FAF. After passing the FAF, if visual contact with the runway is made and will be able to be maintained until landing, the PM will call ***RUNWAY ____ O'CLOCK***. If the PF responds ***LANDING***, revert to the visual approach profile. For visual approaches, use all available resources to ensure the aircraft stays on a safe glidepath to the runway.

APPROACH PROCEDURES WITH ONE ENGINE INOPERATIVE (OEI)

In airplanes with three powerplants, the applicant must follow a procedure (if approved by the manufacturer and the training program) that approximates the loss of two powerplants: the center and one outboard powerplant. In other multiengine airplanes, the applicant must follow a procedure that simulates the loss of 50% of available powerplants, the loss being simulated on one side of the airplane..

STABILIZED APPROACH

A stabilized approach is the safest profile to a landing. It is composed of the following elements:

- Landing configuration
- Descent rate
- Flight path
- Indicated airspeed
- Engines spooled up appropriately

Minimum Stabilized Approach Altitudes	
IMC	1000 ft above TDZE
VMC	500 ft above TDZE

If any of the indications below are exceeded after passing the stabilized approach height above, a missed approach should be accomplished.

Indication	Tolerance
Airspeed	Target Airspeed ± 10 knots
Rate of Descent	Not greater than 1000 fpm unless previously briefed
Bank Angle (Circling Approach)	Not to exceed 30°

The safety advantage of adhering to stabilized approach criteria may also be applied to nonprecision approach procedures without vertical guidance through a technique called Continuous Descent Final Approach (CDFA). This technique requires the approach to have a published vertical descent angle (VDA) permitting a continuous descent to the threshold crossing height without a level-off. Unless authorized by OpSpec/MSpec and the procedure chart, pilots may not descend below the minimum descent altitude (MDA) until required visual references are met. In the event of a missed approach from a continuous descent, it is recommended that pilots use a Derived Decision Altitude (DDA), increasing the published MDA by 50 feet or a value equivalent to the published altitude loss after autopilot disconnect. Actions and callouts for CDFA procedures are incorporated within the Precision/3D Approach maneuvers in this manual.

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Slats-flaps setting	Minimum maneuvering speed
CLEAN	VREF + 55 KT
SF1	VREF + 30 KT
SF2	VREF + 25 KT
SF3	VREF

FLIGHT PHASES—APPROACH

TASK ALLOCATION			CALL-OUT
PRIOR TO THE FAP / FAF			
	PNF	Monitors and announces approaching final approach course and final approach descent point.	Examples: "LOCALIZER ALIVE" "GLIDE ALIVE" Or "FINAL COURSE ALIVE" "VGP POINTER"
PF		Intercepts and follows final approach course. Checks appropriate approach annunciator and announces it. Intercepts and follows final descent path.	Examples: "VGP GREEN" "APPROACH GREEN"
	PNF	Checks actual altitude-distance (and WPT name if applicable) of the final descent point vs chart. Starts timer.	"FINAL DESCENT POINT" "TIMING STARTED"
DURING FINAL APPROACH			
PF		Flies approach and corrects deviations.	
PF	**PNF**	Monitor approach annunciator and announce any approach integrity malfunctions as appropriate for the procedure.	Example: "VGP AMBER" "LOC AMBER" "UNABLE FMS/GPS" "MONITOR", ...
	PNF	Monitors and announces any malfunction.	Example "ADS 1 FAIL", or "ATTITUDE FLAG", ...
DURING FINAL APPROACH (CONTINUED)			
	PNF	When applicable, monitors the descent profile with the chart. Checks time-altitude or distancealtitude. Announces altitude gaps.	Example: "ONE MINUTE" "1,500 ft or 4NM", "1,500 ft" "PLUS 50 FEET" or "MINUS 50 FEET" or "ON SCHEDULE"

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	PNF	Monitors and announces other excessive deviations (as defined above).	Example: "LOCALIZER", "GLIDE" Or "LATERAL DEVIATION" "VERTICAL DEVIATION" Or "SPEED", "ATTITUDE", …
APPROACHING DA OR MDA			
	PNF	Looks for visual contact. Announces visual cues.	"GROUND CONTACT" "APPROACH LIGHTS" "RUNWAY"
	PNF	Announces 300ft above minimums Monitors EGPWS radio-altitude call-out.	"THREE HUNDRED ABOVE"
At DA or MDA			
PIC		Decides whether or not to continue the descent.	"CONTINUE" Or "GO-AROUND SF2" "AIRBRAKES 0"
LANDING			
PF		Disconnects autopilot above AP limits	"CONTINUE"
GO-AROUND			
PF		Executes a go around maneuver.	"GO AROUND SF2"

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VISUAL APPROACH—NORMAL

Standard Pattern 1,500 FT AAL

TOUCHDOWN AND ROLLOUT		
PF		LANDS
	PNF	WHEN LANDED, DEPLOYS THE AIRBRAKES — “AIRBRAKES DEPLOYED”
PF		APPLIES BRAKES AND EXTENDS THRUST REVERSERS (IDLE).
	PNF	CHECKS ANTI SKID LIGHTS. ANNOUNCES ANY FAILURE (L OR R LIGHT NOT GREEN) — “ANTI SKID FAILURE” CHECKS AND AND ANNOUNCES THRUST REVERSERS AVAILABILITY. — “DEPLOYED”
PF		APPLIES REVERSE THRUST
	PNF	ANNOUNCES 80 KT (FOR CROSSWIND OPERATIONS, REFER TO NOTE[1]) — “80 KT”
LH		TAKES OVER USNING THE NOSE WHEEL STEERING — “I HAVE CONTROL”S
		WHEN SPEED IS CONTROLLED
PF		STOWS THRUST REVERSERS
	RH	COMPLETES DO-LIST: A. WINGS ANTI-ICE OFF B. SETS EXTERNAL LIGHTS FOR GROUND POSITION C. WX RADAR SBY D. RETRACTS THE SLATS / FLAPS AND AIRBRAKES E. SETS TRIMS TO “TAKEOFF” POSITION
LH		REQUESTS AFTER LANDING CHECKLIST — “AFTER LANDING CHECKLIST”
LH	RH	COMPLETE AFTER LANDING CHECKLIST
	RH	ANNOUNCES END OF CHECKLIST — “AFTER LANDING CHECKLIST COMPLETED”

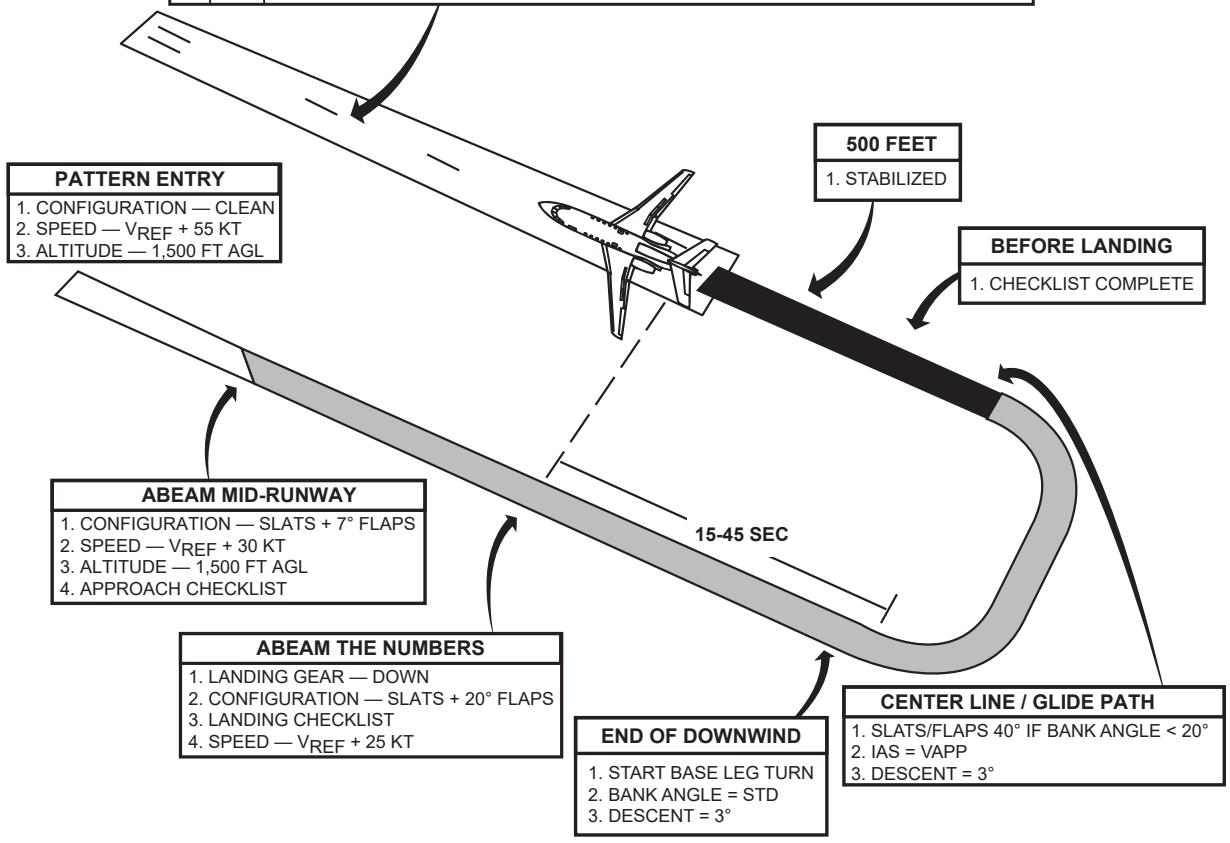

Figure 7. Visual Approach—Normal

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VISUAL APPROACH—ONE ENGINE INOPERATIVE (OEI)

Pattern (One Engine Inoperative) 1,500 FT AAL

TOUCHDOWN AND ROLLOUT		
PF		LANDS
	PNF	WHEN LANDED, DEPLOYS THE AIRBRAKES — “AIRBRAKES DEPLOYED”
PF		APPLIES BRAKES AND EXTENDS THRUST REVERSERS (IDLE).
	PNF	CHECKS ANTI SKID LIGHTS. ANNOUNCES ANY FAILURE (L OR R LIGHT NOT GREEN) — “ANTI SKID FAILURE” CHECKS AND AND ANNOUNCES THRUST REVERSERS AVAILABILITY. — “DEPLOYED”
PF		APPLIES REVERSE THRUST
	PNF	ANNOUNCES 80 KT (FOR CROSSWIND OPERATIONS, REFER TO NOTE[1]) — “80 KT”
LH		TAKES OVER USNING THE NOSE WHEEL STEERING — “I HAVE CONTROL”S
		WHEN SPEED IS CONTROLLED
PF		STOWS THRUST REVERSERS
	RH	COMPLETES DO-LIST: A. WINGS ANTI-ICE OFF B. SETS EXTERNAL LIGHTS FOR GROUND POSITION C. WX RADAR SBY D. RETRACTS THE SLATS / FLAPS AND AIRBRAKES E. SETS TRIMS TO “TAKEOFF” POSITION
LH		REQUESTS AFTER LANDING CHECKLIST — “AFTER LANDING CHECKLIST”
LH	RH	COMPLETE AFTER LANDING CHECKLIST
	RH	ANNOUNCES END OF CHECKLIST — “AFTER LANDING CHECKLIST COMPLETED”

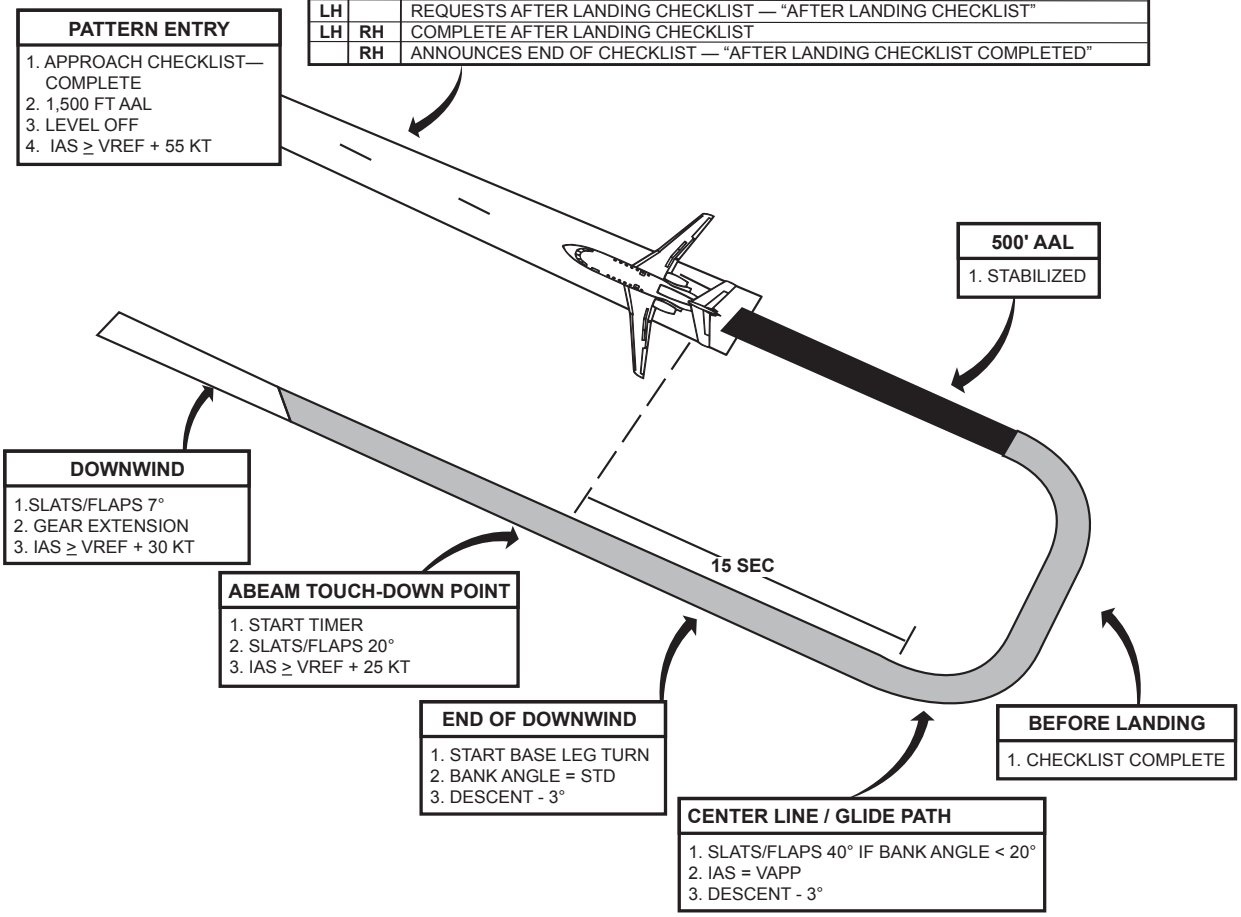

Figure 8. Visual Approach—One Engine Inoperative (OEI)

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APPROACH—FLAP MALFUNCTION

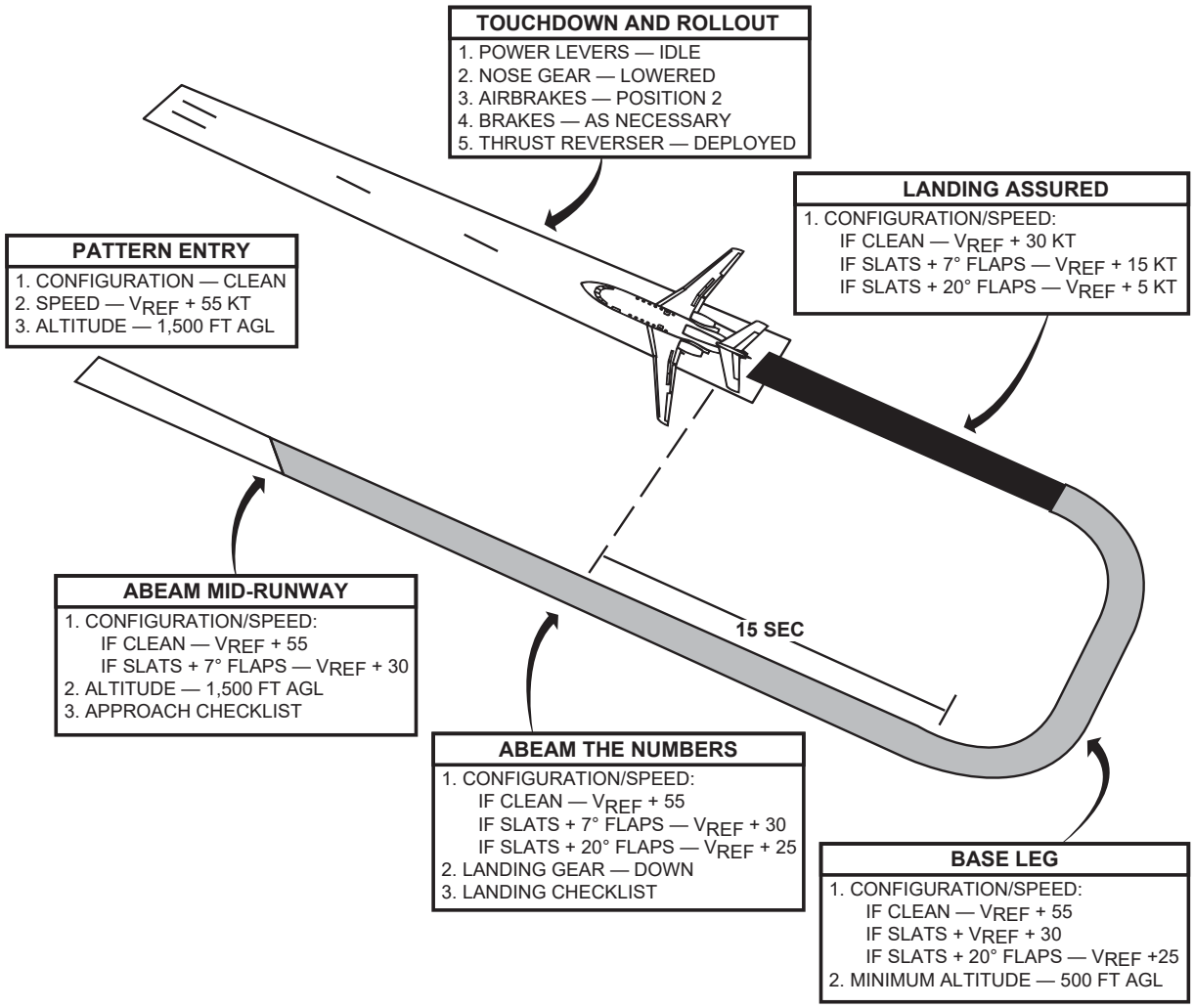

Figure 9. Approach—Flap Malfunction

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PRECISION/3D APPROACH

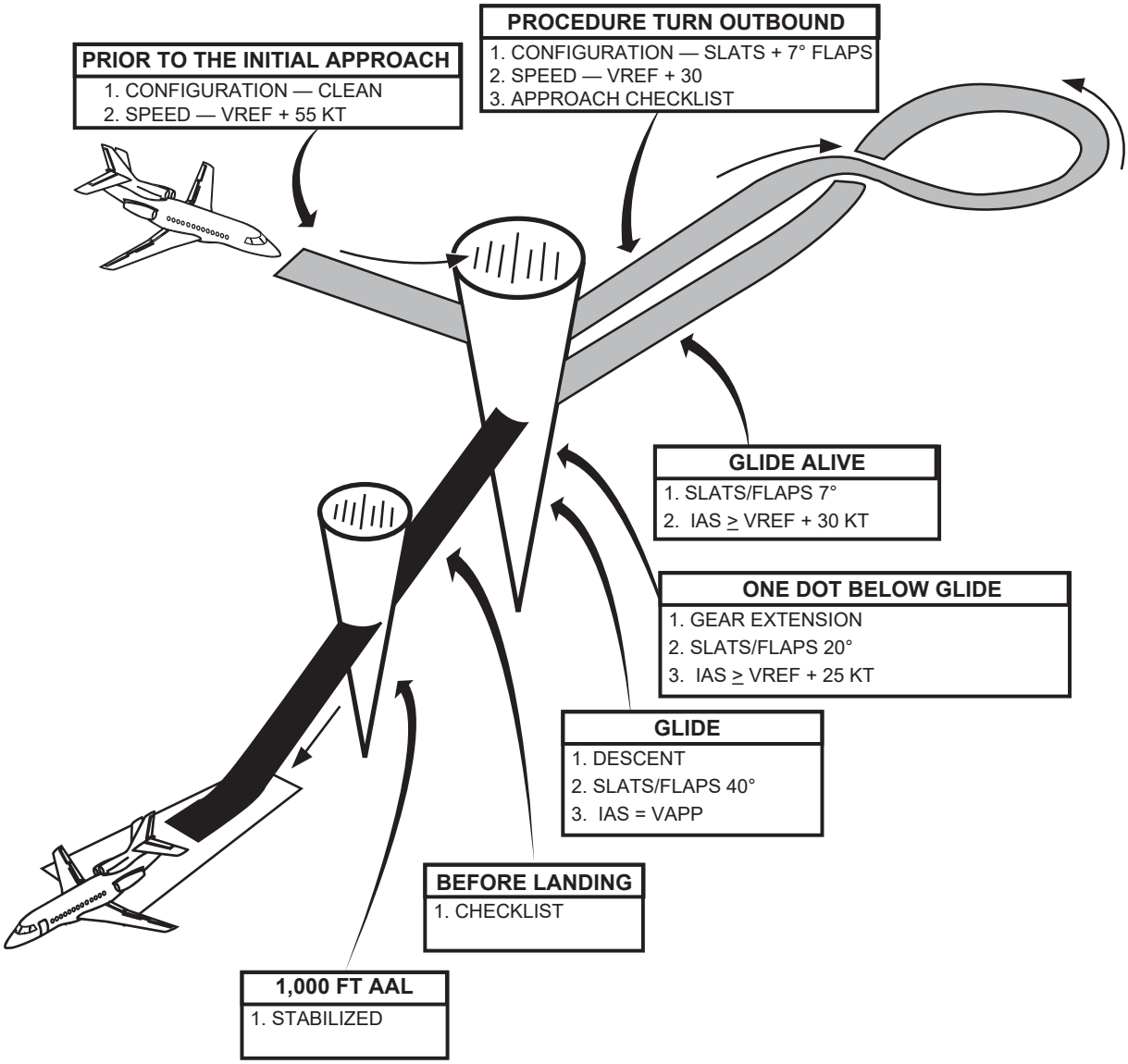

Figure 10. Precision/3D Approach

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NON-PRECISION/2D

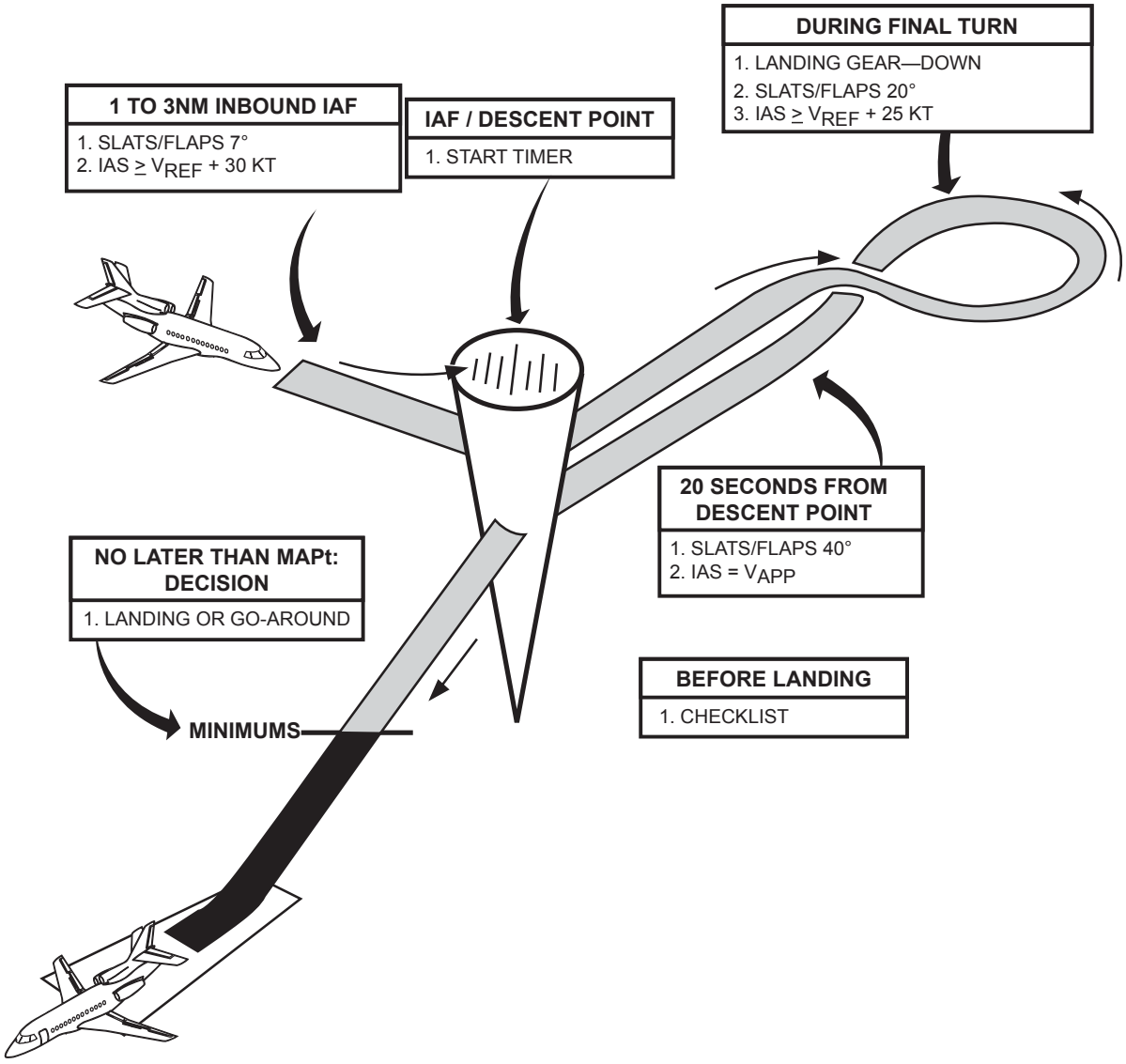

Figure 11. Non-Precision/2D

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MISSED APPROACH—FROM PRECISION APPROACH "GO-AROUND"

Straight-In Approach with one engine inoperative. Landing configuration set to SF 3 only when committed to land.

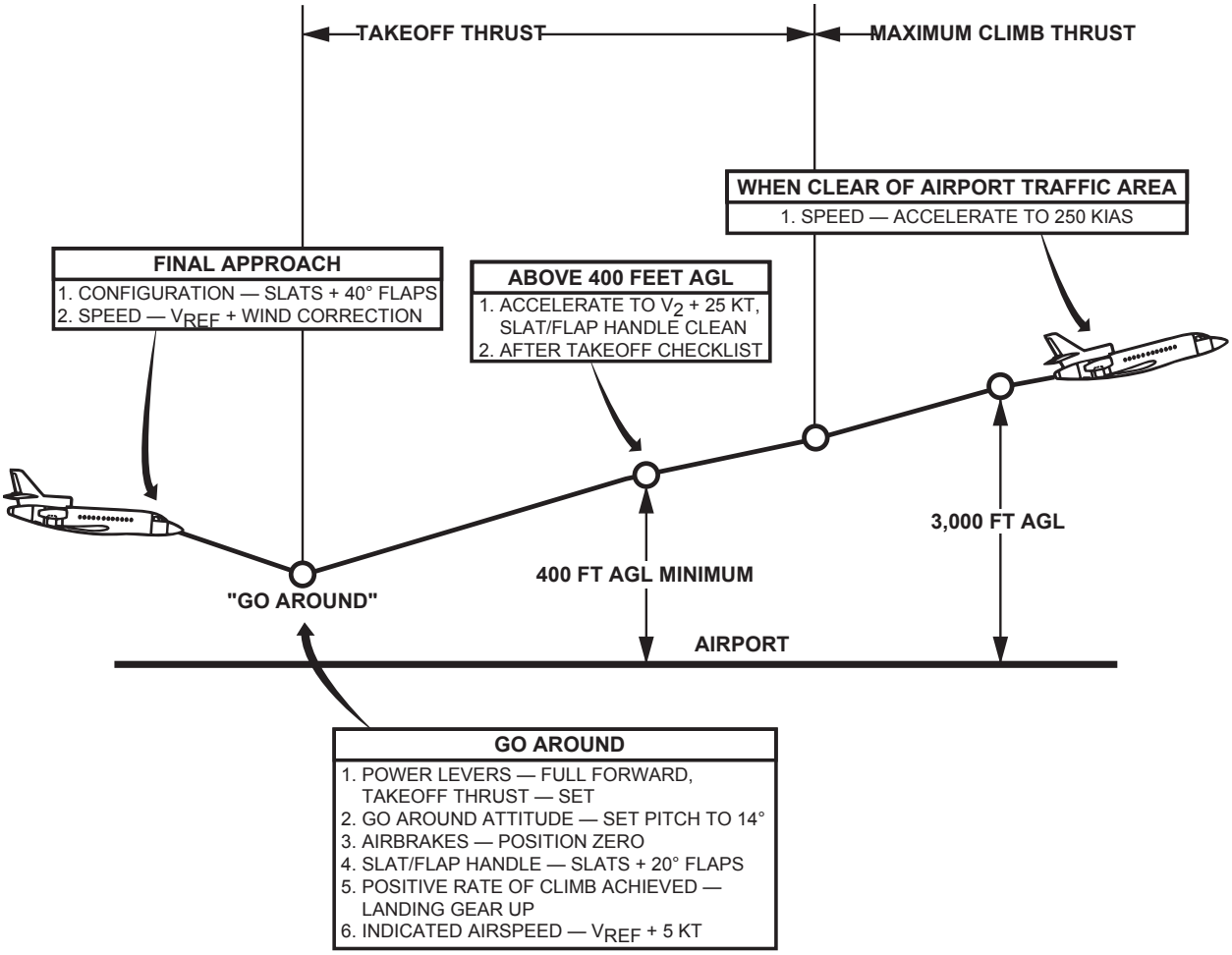

Figure 12. Missed Approach—From Precision Approach "Go-Around"

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CIRCLING APPROACH

Initiate circling maneuver when:

- Visual contact with the airport is established, and
- The aircraft is within the category-specific protected airspace

Remain within protected airspace at MDA until leaving minima.

Conduct the approach with the autopilot engaged, unless inoperative, until descent is initiated below MDA.

While circling, use HDG/TRK mode to control lateral path, and maintain visual contact with the airport at all times.

If visual contact with the airport is lost at any time during the maneuver, or the flight path exits protected airspace, execute missed approach. If a turn is required to the prescribed missed approach course, make the initial turn toward the landing runway and continue the turn until established on the prescribed course

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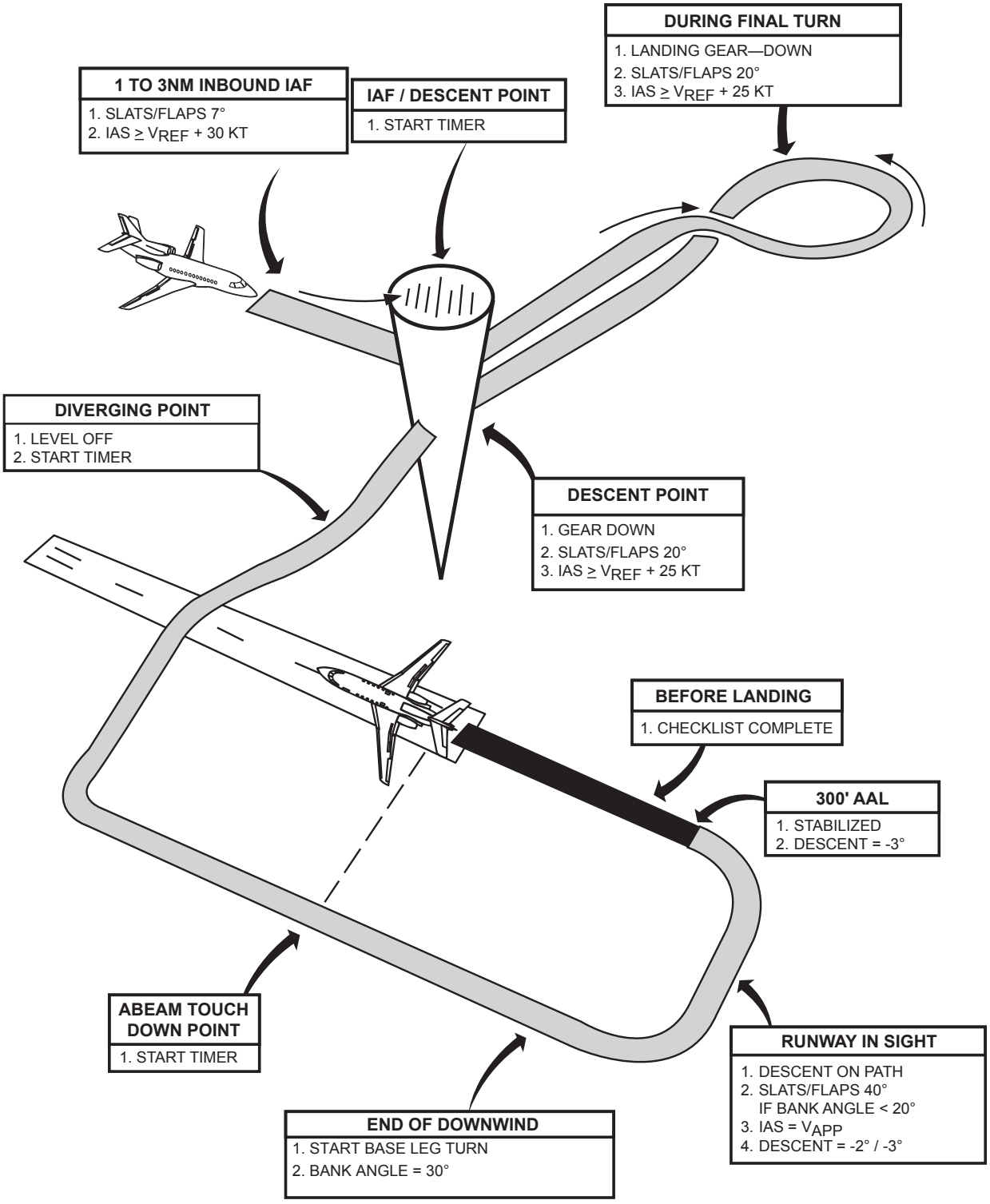

Figure 13. Circling Approach

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MISSED APPROACH

The PF or PM may initiate a missed approach by calling go-around. Comply with the actions and callouts prescribed in the Missed Approach Actions and Callouts table.

In addition to the conditions prescribed by FAR, initiate missed approach if operating in IMC and any of the following occur:

- Unable to get established on approach prior to FAF
- Any degradation of navigation signal
- Any deterioration of situational awareness
- Disagreement between the pilots on flight path, position, procedures, or configuration
- Exceedance of stabilized approach requirements
- The following indications are displayed on PFD during the respective approach:

Approach	PFD Indication

ILS	• CDI two dots deflection, or
	• Glidepath more than
	  • One dot low, or
	  • Two dots high

LPV	
RNAV-GPS (LNAV-VNAV [WAAS])	
RNAV-GPS (LNAV-VNAV [Baro])	• CDI two dots deflection, or • Glidepath indicator changes from magenta to yellow
ILS without Glideslope (LOC)	• CDI two dots deflection
RNAV-GPS (LNAV-only)	• CDI more than one dot deflection
VOR	

If a missed approach is initiated, continue the procedure even if the runway environment comes in sight. If the missed approach is initiated prior to MAP, proceed to MAP before making any turns.

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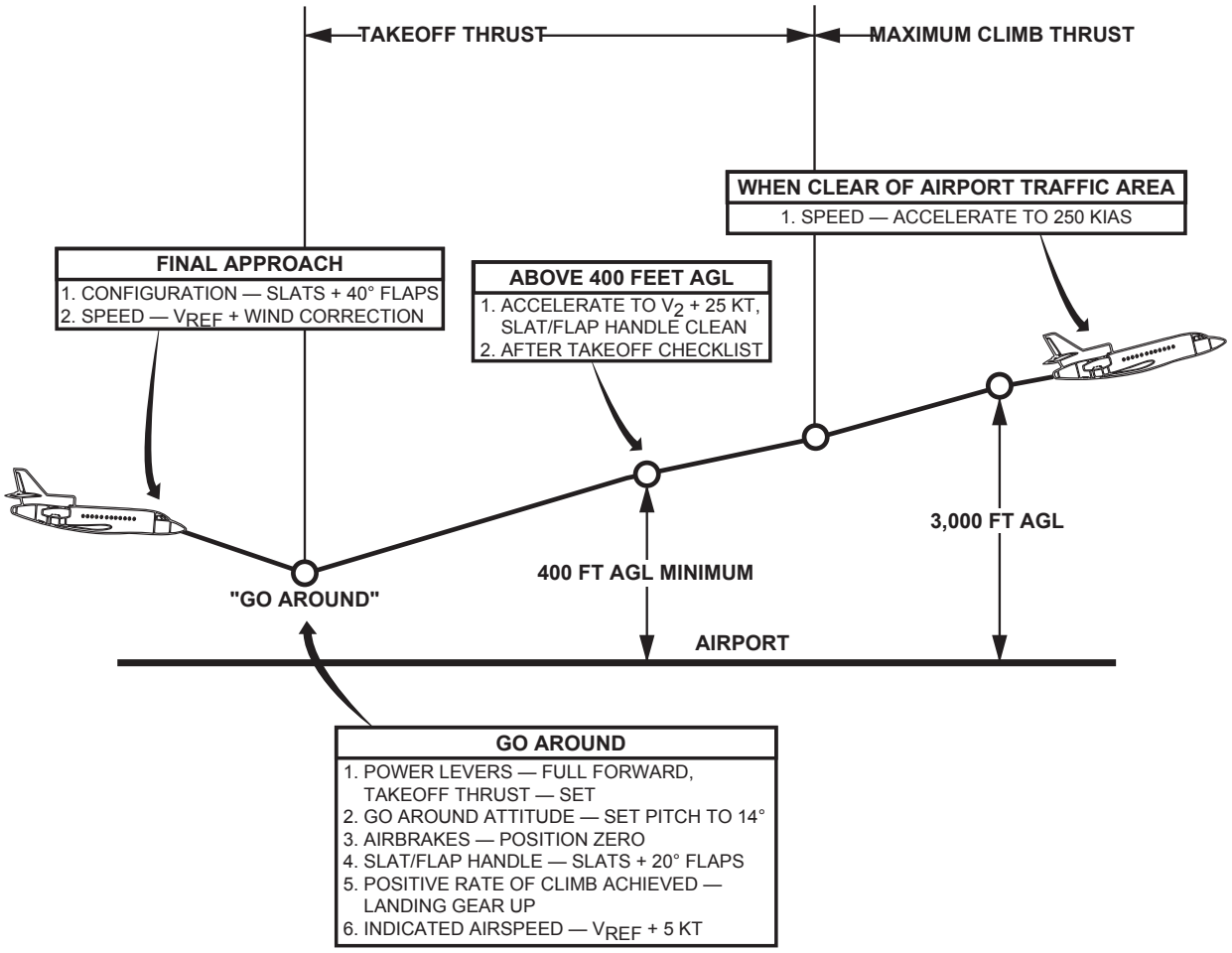

Figure 14. Missed Approach—From Precision Approach "Go-Around"

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Go-Around (Two Engines or One Engine Inoperative)—Action and Callout Table

PF flies the airplane. PNF reconfigures the airplane and informs ATC.

TASK ALLOCATION			CALL-OUT
APPROACHING MINIMUMS			
PF	**PNF**	Decides to go-around.	GO-AROUND SF 2
PF		Pushes GA pushbutton. Follows FD (ROL-GA modes). Sets TO thrust.	
	PNF	Retracts slats flaps to SF 2. Checks appropriate indication. Announces slats flaps position. Checks airbrakes 0.	SF 2 SET
WHEN POSITIVE RATE OF CLIMB			
	PNF	Announces positive rate of climb.	POSITIVE RATE
PF		Flie VREF+5 (20° max pitch). Requests landing gear retraction.	GEAR UP
	PNF	Retracts gear. Checks appropriate indication. Announces landing gear position.	GEAR IS UP
PF		Requests VREF + 5 Requests appropriate lateral mode and CLB mode.	SPEED MAN / VREF + 5 e.g. LNAV AND CLIMB MODES
	PNF	Sets SPEED to VREF + 5 Selects appropriate lateral mode and CLB mode. Reads FD lateral and vertical modes, and speed on FMA. Sets TAXI light off and LANDING lights on PULSE. Sets ENG and WINGS anti-ice as required. Checks ASEL. Advises ATC.	e.g. LNAV AND CLIMB MODES, SPEED MAN / VREF + 5 SET
AT GASA			
	PNF	Announces when speed is greater than VFR.	ABOVE VFR
PF		Requests slats / flaps retraction	SF CLEAN
	PNF	Retracts (one notch at a time). Checks appropriate indication. Announces SF position.	SF CLEAN SET
AT VFT			
PF		Sets SPEED MAN / XXX or FMS. Sets MAX CLB thrust.	e.g. SPEED 250 SET

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WHEN CLEARED TO A FLIGHT LEVEL			
PF		Requests standard setting	SET STANDARD
PF	**PNF**	Set their altimeters to standard	STANDARD SET
PF		Requests altimeter cross-check	CROSSING FL100 ... NOW
	PNF	Reads his/her altimeter and announces the difference.	PLUS (MINUS) xx FEET
AFTER SLATS/FLAPS RETRACTION OR ALTIMETERS SET TO STD AND CROSS-CHECKED (SEE NOTE)			
PF		Request AFTER TAKE-OFF check-list.	AFTER TAKE-OFF CHECK-LIST
PF	**PNF**	Complete AFTER TAKE-OFF checklist.	
	PNF	Announces end of check-list.	AFTER TAKE-OFF CHECK-LIST COMPLETED

NOTE

Where the transition altitude is low, the PF usually calls the after take-off check-list when the altimeters are set and crosschecked.

Where the transition altitude is high, the PF usually calls the after take-off check-list when the slats/flaps are retracted. The checklist is then completed after having set and crosscheck the altimeters.

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APPROACH AND LANDING—TWO ENGINE INOPERATIVE (2EI)

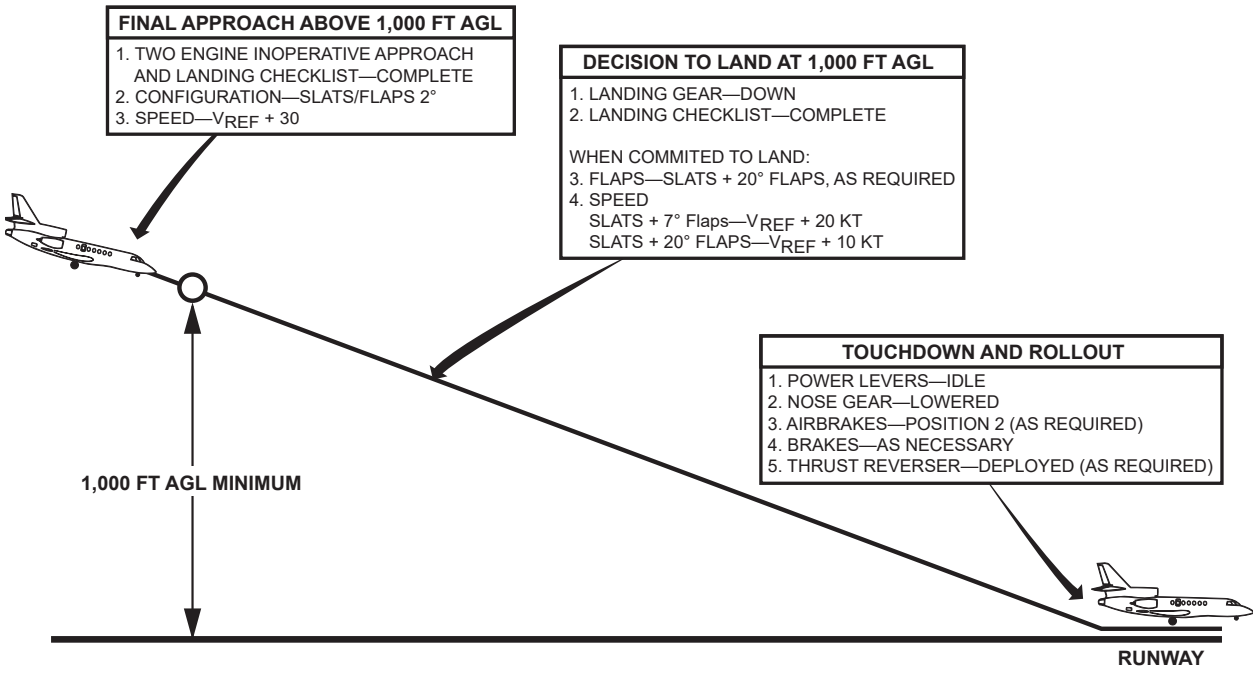

Figure 15. Approach and Landing—Two Engine Inoperative (2EI)

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MISSED APPROACH—TWO ENGINES INOPERATIVE (2EI)

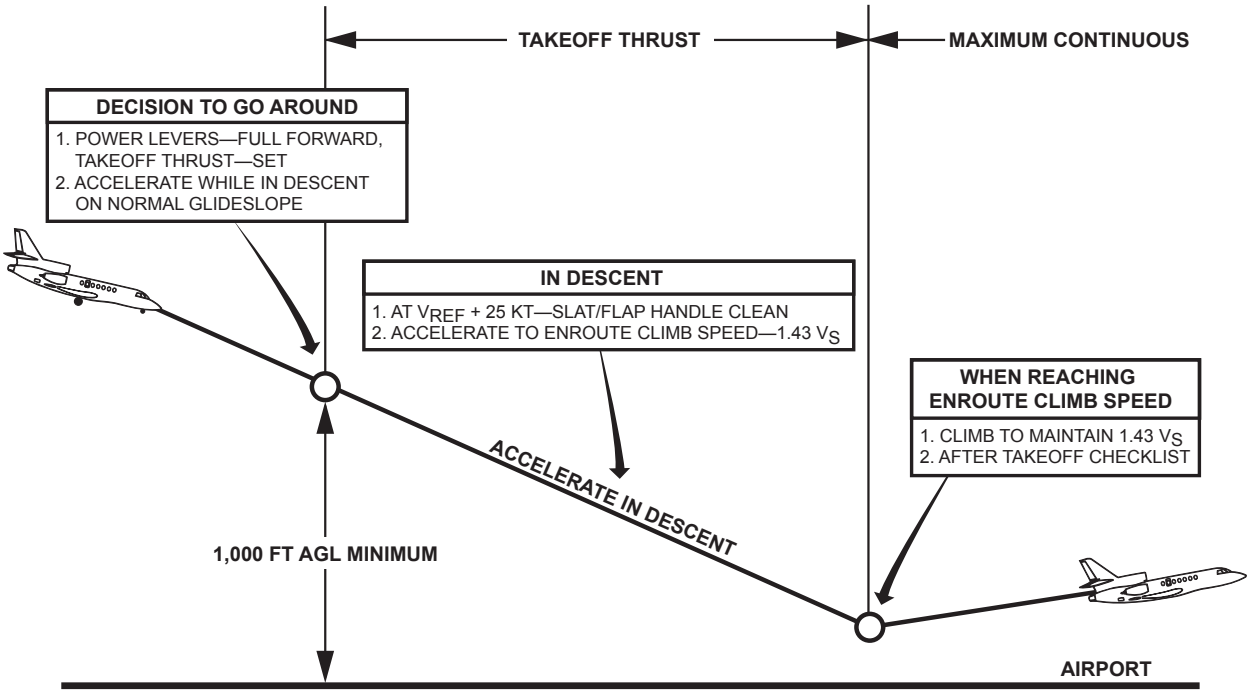

Figure 16. Approach and Missed Approach—Two Engines Inoperative (2EI)

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LANDING

NOTE
Avoid unnecessary tire wear by releasing heavy brake pressure below 50 kt.

TASK ALLOCATION			CALL-OUT
PF		Lands	
	PNF	When landed, verifies airbrake deployment.	AIRBRAKES 2
PF		Applies brakes and extends thrust reversers (IDLE).	
	PNF	Verifies and announces reverse thrust availability.	DEPLOYED
PF		As soon as practical transfers to nose wheel steering. Applies reverse thrust.	
	PNF	Announces 80 kt (See CODDE for crosswind operation).	80 kt
LH		Maintains directional control using nose wheel steering.	I HAVE CONTROL
PF		Stows thrust reversers.	

LANDING AND ROLLOUT

During landing rollout, move only those switches or levers necessary to ensure safe rollout. Delay additional switch or lever movement until after the aircraft has cleared the active runway. Decelerate to taxi speed prior to exiting the runway unless a high-speed taxiway is utilized.

TASK ALLOCATION			CALL-OUT
LH		Requests AFTER LANDING check-list.	AFTER LANDING CHECKLIST
LH	**RH**	Complete AFTER LANDING check-list.	
	RH	Announces end of check-list.	AFTER LANDING CHECKLIST COMPLETED

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