

using stands or ramps allowed by item (3) above are considered to be on the ground when they are on the stand or ramp: *Provided*, That the acceptance rate of the stand or ramp is no greater than the acceptance rate of the means available on the airplane for descent from the wing during an actual crash situation.

(b) *Ditching demonstration.* The demonstration must assume that daylight hours exist outside the airplane, and that all required crewmembers are available for the demonstration.

(1) If the certificate holder's manual requires the use of passengers to assist in the launching of liferafts, the needed passengers must be aboard the airplane and participate in the demonstration according to the manual.

(2) A stand must be placed at each emergency exit and wing, with the top of the platform at a height simulating the water level of the airplane following a ditching.

(3) After the ditching signal has been received, each evacuee must don a life vest according to the certificate holder's manual.

(4) Each liferaft must be launched and inflated, according to the certificate holder's manual, and all other required emergency equipment must be placed in rafts.

(5) Each evacuee must enter a liferaft, and the crewmembers assigned to each liferaft must indicate the location of emergency equipment aboard the raft and describe its use.

(6) Either the airplane, a mockup of the airplane or a floating device simulating a passenger compartment must be used.

(i) If a mockup of the airplane is used, it must be a life-size mockup of the interior and representative of the airplane currently used by or proposed to be used by the certificate holder, and must contain adequate seats for use of the evacuees. Operation of the emergency exits and the doors must closely simulate those on the airplane. Sufficient wing area must be installed outside the over-the-wing exits to demonstrate the evacuation.

(ii) If a floating device simulating a passenger compartment is used, it must be representative, to the extent possible, of the passenger compartment of the airplane used in operations. Operation of the emergency exits and the doors must closely simulate operation on that airplane. Sufficient wing area must be installed outside the over-the-wing exits to demonstrate the evacuation. The device must be equipped with the same survival equipment as is installed on the air-

plane, to accommodate all persons participating in the demonstration.

[Doc. No. 2033, 30 FR 3206, Mar. 9, 1965, as amended by Amdt. 121-30, 32 FR 13268, Sept. 20, 1967; Amdt. 121-41, 33 FR 9067, June 20, 1968; Amdt. 121-46, 34 FR 5545, Mar. 22, 1969; Amdt. 121-47, 34 FR 11489, July 11, 1969; Amdt. 121-233, 58 FR 45230, Aug. 26, 1993]

APPENDIX E TO PART 121—FLIGHT TRAINING REQUIREMENTS

The maneuvers and procedures required by §121.424 of this part for pilot initial, transition, and upgrade flight training are set forth in the certificate holder's approved low-altitude windshear flight training program and in this appendix and must be performed inflight except that windshear maneuvers and procedures must be performed in an airplane simulator in which the maneuvers and procedures are specifically authorized to be accomplished and except to the extent that certain other maneuvers and procedures may be performed in an airplane simulator with a visual system (visual simulator), an airplane simulator without a visual system (nonvisual simulator), a training device, or a static airplane as indicated by the appropriate symbol in the respective column opposite the maneuver or procedure.

Whenever a maneuver or procedure is authorized to be performed in a nonvisual simulator, it may be performed in a visual simulator; when authorized in a training device, it may be performed in a visual or nonvisual simulator, and in some cases, a static airplane. Whenever the requirement may be performed in either a training device or a static airplane, the appropriate symbols are entered in the respective columns.

For the purpose of this appendix, the following symbols mean—

P=Pilot in Command (PIC).
 S=Second in Command (SIC).
 B=PIC and SIC.
 F=Flight Engineer.
 PJ=PIC transition Jet to Jet.
 PP=PIC transition Prop. to Prop.
 SJ=SIC transition Jet to Jet.
 SP=SIC transition Prop. to Prop.
 AT=All transition categories (PJ, PP, SJ, SP).
 PS=SIC upgrading to PIC (same airplane).
 SF=Flight Engineer upgrading to SIC (same airplane).
 BU=Both SIC and Flight Engineer upgrading (same airplane).

FLIGHT TRAINING REQUIREMENTS

	Initial training				Transition training				Upgrade training						
	A/P		Simulator		A/P		Simulator		A/P		Simulator				
	Inflight	Static	Visual simulator	Non-visual simulator	Training device	Inflight	Static	Visual simulator	Non-visual simulator	Training device	Inflight	Static	Visual simulator	Non-visual simulator	Training device
Maneuvers/Procedures															
As appropriate to the airplane and the operation involved, flight training for pilots must include the following maneuvers and procedures..															
I. Preflight															
(a) Visual inspection of the exterior and interior of the airplane, the location of each item to be inspected, and the purpose for inspecting it. If a flight engineer is a required crewmember for the particular type of airplane, the visual inspection may be replaced by using an approved pictorial means that realistically portrays the location and detain of preflight inspection items..															
(b) Use of the prestart check list, appropriate control system checks, starting procedures, radio, and electronic equipment checks, and the selection of proper navigation and communications radio facilities and frequencies prior to flight.															
(c) Taxiing, sailing, and docking procedures in compliance with instructions issued by the appropriate Traffic Control Authority or by the person conducting the training.	B														
(d) Pretakeoff checks that include powerplant checks.															
II. Takeoffs:															
(a) Normal takeoffs which, for the purpose of this maneuver, begin when the airplane is taxied into position on the runway to be used.	B														
(b) Takeoffs with instrument conditions simulated at or before reaching an altitude of 100' above the airport elevation.		B						AT					BU		
(c) Crosswind takeoffs	B														
(d) Takeoffs with a simulated failure of the most critical powerplant—		B						AT					BU		

FLIGHT TRAINING REQUIREMENTS—Continued

	Initial training				Transition training				Upgrade training							
	A/P		Simulator		A/P		Simulator		A/P		Simulator					
	Inflight	Static	Visual simulator	Non-visual simulator	Train-ing de-vice	Inflight	Static	Visual simulator	Non-visual simulator	Train-ing de-vice	Inflight	Static	Visual simulator	Non-visual simulator	Train-ing de-vice	
Maneuvers/Procedures																
(1) At a point after V_1 and before V_2 that in the judgment of the person conducting the training is appropriate to the airplane type under the prevailing conditions; or
(2) At a point as close as possible after V_1 when V_1 and V_2 or V_1 and V_k are identical; or
(3) At the appropriate speed for non-transport category airplanes.
For transition training in an airplane group with engines mounted in similar positions, or from wing-mounted engines to aft fuselage-mounted engines, the maneuver may be performed in a nonvisual simulator.
(e) Rejected takeoffs accomplished during a normal takeoff run after reaching a reasonable speed determined by giving due consideration to aircraft characteristics, runway length, surface conditions, wind direction and velocity, brake heat energy, and any other pertinent factors that may adversely affect safety or the airplane. Training in at least one of the above takeoffs must be accomplished at night. For transitioning pilots this requirement may be met during the operating experience required under § 121.434 of this part by performing a normal takeoff at night when a check airman serving as pilot-in-command is occupying a pilot station.	B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
III. Flight Maneuvers and Procedures:																
(a) Turns with and without spoilers	B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
(b) Tuck and Mach buffet	B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
(c) Maximum endurance and maximum range procedures.	B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
(d) Operation of systems and controls at the flight engineer station.	B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
(e) Runway and jammed stabilizer	B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

FLIGHT TRAINING REQUIREMENTS—Continued

	Initial training				Transition training				Upgrade training							
	A/P		Simulator		A/P		Simulator		A/P		Simulator					
	Inflight	Static	Visual simulator	Non-visual simulator	Train-ing de-vice	Inflight	Static	Visual simulator	Non-visual simulator	Train-ing de-vice	Inflight	Static	Visual simulator	Non-visual simulator	Train-ing de-vice	
Maneuvers/Procedures																
(i) Recovery from specific flight characteristics that are peculiar to the airplane type.																
(k) Instrument procedures that include the following:																
(1) Area departure and arrival																
(2) Use of navigation systems, including adherence to assigned radials.																
(3) Holding																
(l) ILS instrument approaches that include the following:																
(1) Normal ILS approaches	B															
(2) Manually controlled ILS approaches with a simulated failure of one powerplane which occurs before initiating the final approach course and continues to touchdown or through the missed approach procedure.	B															
(m) Instrument approaches and missed approaches other than ILS which include the following:																
(1) Nonprecision approaches that the trainee is likely to use.																
(2) In addition to subparagraph (1) of this paragraph, at least one other nonprecision approach and missed approach procedure that the trainee is likely to use.																
In connection with paragraphs III(k) and III(l), each instrument approach must be performed according to any procedures and limitations approved for the approach facility used. The instrument approach begins when the airplane is over the initial approach fix for the approach procedure being used (or turned over to the final approach controller in the case of GCA approach) and ends when the airplane touches down on the runway or when transition to a missed approach configuration is completed.																

<p>(n) Circling approaches which include the following: (1) That portion of the circling approach to the authorized minimum altitude for the procedure being used must be made under simulated instrument conditions. (2) The circling approach must be made to the authorized minimum circling approach altitude followed by a change in heading and the necessary maneuvering (by visual reference) to maintain a flight path that permits a normal landing on a runway at least 90° from the final approach course of the simulated instrument portion of the approach. (3) The circling approach must be performed without excessive maneuvering, and without exceeding the normal operating limits of the airplane. The angle of bank should not exceed 30°.</p>	<p>B</p>	<p>AT</p>	<p>PP PJ</p>	<p>PS</p>	<p>BU</p>	<p>BU</p>	<p>AT</p>	<p>AT</p>	<p>B</p>	<p>B</p>	<p>B</p>	<p>B</p>	<p>B</p>	<p>B</p>	<p>B</p>	<p>B</p>	<p>B</p>	<p>B</p>	<p>B</p>	<p>B</p>
--	----------	-----------	------------------	-----------	-----------	-----------	-----------	-----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------

FLIGHT TRAINING REQUIREMENTS—Continued

Maneuvers/Procedures	Initial training				Transition training				Upgrade training						
	A/P		Simulator		A/P		Simulator		A/P		Simulator				
	Inflight	Static	Visual simulator	Non-visual simulator	Training device	Inflight	Static	Visual simulator	Non-visual simulator	Training device	Inflight	Static	Visual simulator	Non-visual simulator	Training device
(4) Missed approaches that include a powerplant failure.	.....	.....	B	.....	.....	.....	.....	AT	.....	.....	.....	.....	.....	.....	.....
IV. Landings and Approaches to Landings:															
(a) Normal landings	B	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
(b) Landing and go around with the horizontal stabilizer out of trim.	P	.....	.....	.....	.....	.....	.....	PJ, PP	.....	.....	.....	.....	.....	.....	PS
(c) Landing in sequence from an ILS instrument approach.	B	.....	.....	.....	.....	.....	.....	AT	.....	.....	.....	.....	.....	.....	.....
(d) Cross wind landing	B	.....	.....	.....	.....	.....	.....	AT	.....	.....	.....	.....	.....	.....	.....
(e) Maneuvering to a landing with simulated powerplant failure, as follows:															
(1) Except as provided in subparagraph (3) of this paragraph in the case of 3-engine airplanes, maneuvering to a landing with an approved procedure that approximates the loss of two powerplants (center and one outboard engine).	P	.....	.....	.....	.....	.....	.....	PJ, PP	.....	.....	.....	.....	.....	.....	.....
(2) Except as provided in subparagraph (3) of this paragraph, in the case of other multiengine airplanes, maneuvering to a landing with a simulated failure of 50 percent of available powerplants with the simulated loss of power on one side of the airplane.	P	.....	.....	.....	.....	.....	.....	PJ, PP	.....	.....	.....	.....	.....	.....	.....
(3) Notwithstanding the requirements of subparagraphs (1) and (2) of this paragraph, flight crewmembers who satisfy those requirements in a visual simulator must also:															
(i) Take inflight training in one-engine inoperative landings; and	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

