RBAC 23 Emenda 61	Proposta de RBAC 23 Emenda 62	Motivação
23.3 Airplane categories.	23.3 Airplane categories.	A revisão da seção 23.3 codifica a
		prática atual já adotada pela
(a) The normal category is limited to airplanes that	(a) The normal category is limited to airplanes that	ANAC e pela FAA de certificar
have a seating configuration, excluding pilot seats,	have a seating configuration, excluding pilot seats,	jatos multimotores com peso de
of nine or less, a maximum certificated takeoff	of nine or less, a maximum certificated takeoff	até 19.000 libras (8.618 kg) sob o
weight of 12,500 pounds or less, and intended for	weight of 12.500 pounds (5.670 kg) or less, and	RBAC 23 na categoria transporte
nonacrobatic operation. Nonacrobatic operation	intended for nonacrobatic operation. Nonacrobatic	regional. As emendas anteriores
includes:	operation includes:	do RBAC 23 limitavam a
		categoria transporte regional para
(1) Any maneuver incident to normal flying;	(1) Any maneuver incident to normal flying;	aviões multimotores à hélice
		pesando não mais que 19.000
(2) Stalls (except whip stalls); and	(2) Stalls (except whip stalls); and	libras (8.618 kg). No entanto, a
		ANAC e a FAA emitiram isenções
(3) Lazy eights, chandelles, and steep turns, in which	(3) Lazy eights, chandelles, and steep turns, in which	para permitir que jatos pesando
the angle of bank is not more than 60 degrees.	the angle of bank is not more than 60 degrees.	mais que $12.500$ libras $(5.670 \text{ kg})$
		tossem certificados sob o RBAC
(b) The utility category is limited to airplanes that	(b) The utility category is limited to airplanes that	23 na categoria transporte
have a seating configuration, excluding pilot seats,	have a seating configuration, excluding pilot seats,	regional.
of nine or less, a maximum certificated takeoff	of nine or less, a maximum certificated takeoff	
weight of 12,500 pounds or less, and intended for	weight of 12.500 pounds (5.670 kg) or less, and	
limited acrobatic operation. Airplanes certificated in	intended for limited acrobatic operation. Airplanes	
the utility category may be used in any of the	of the operations accured under personal (a) of this	
operations covered under paragraph (a) of this	of the operations covered under paragraph (a) of this	
section and in finited acrobatic operations. Limited	section and in finited acrobatic operations. Limited	
acrobate operation menudes.		
(1) Spins (if approved for the particular type of	(1) Spins (if approved for the particular type of	
airplane); and	airplane); and	

(2) Lazy eights, chandelles, and steep turns, or	(2) Lazy eights, chandelles, and steep turns, or	
similar maneuvers, in which the angle of bank is	similar maneuvers, in which the angle of bank is	
more than 60 degrees but not more than 90 degrees.	more than 60 degrees but not more than 90 degrees.	
(c) The acrobatic category is limited to airplanes that	(c) The acrobatic category is limited to airplanes that	
have a seating configuration, excluding pilot seats,	have a seating configuration, excluding pilot seats,	
of nine or less, a maximum certificated takeoff	of nine or less, a maximum certificated takeoff	
weight of 12,500 pounds or less, and intended for use	weight of 12.500 pounds (5.670 kg) or less, and	
without restrictions, other than those shown to be	intended for use without restrictions, other than those	
necessary as a result of required flight tests.	shown to be necessary as a result of required flight	
	tests.	
(d) The commuter category is limited to propeller-		
driven, multiengine airplanes that have a seating	(d) The commuter category is limited to multiengine	
configuration, excluding pilot seats, of 19 or less,	airplanes that have a seating configuration,	
and a maximum certificated takeoff weight of 19,000	excluding pilot seats, of 19 or less, and a maximum	
pounds or less. The commuter category operation is	certificated takeoff weight of 19.000 pounds (8.618	
limited to any maneuver incident to normal flying,	kg) or less. The commuter category operation is	
stalls (except whip stalls), and steep turns, in which	limited to any maneuver incident to normal flying,	
the angle of bank is not more than 60 degrees.	stalls (except whip stalls), and steep turns, in which	
	the angle of bank is not more than 60 degrees.	
(e) Except for commuter category, airplanes may be		
type certificated in more than one category if the	(e) Except for commuter category, airplanes may be	
requirements of each requested category are met.	type certificated in more than one category if the	
	requirements of each requested category are met.	
23.45 General.	23.45 General.	A proposta incorpora no RBAC 23
		a atual abordagem já adotada em
(a) Unless otherwise prescribed, the performance	(a) Unless otherwise prescribed, the performance	condições especiais de aplicar a
requirements of this part must be met for-	requirements of this part must be met for:	maioria dos critérios da categoria
		transporte regional para jatos
		pesando mais que 6.000 libras

(1) Still air and standard atmosphere; and	(1) Still air and standard atmosphere; and	(2.722 kg). As revisões propostas
		para a seção 23.45 aplicam os
(2) Ambient atmospheric conditions, for commuter	(2) Ambient atmospheric conditions, for commuter	requisitos de desempenho da
category airplanes, for reciprocating engine-	category airplanes, for reciprocating engine-powered	categoria transporte regional para
powered airplanes of more than 6,000 pounds	airplanes of more than 6.000 pounds (2.722 kg)	jatos multimotores pesando mais
maximum weight, and for turbine engine-powered	maximum weight, and for turbine engine-powered	que 6.000 libras (2.722 kg) das
airplanes.	airplanes.	categorias normal, utilitária e
		acrobática.
(b) Performance data must be determined over not	(b) Performance data must be determined over not	
less than the following ranges of conditions—	less than the following ranges of conditions:	
(1) Airport altitudes from sea level to 10,000 feet;	(1) Airport altitudes from sea level to 10.000 feet;	
and	and	
(2) For reciprocating engine-powered airplanes of	(2) For reciprocating engine-powered airplanes of	
6,000 pounds, or less, maximum weight, temperature	6.000 pounds (2.722 kg), or less, maximum weight,	
from standard to 30 °C above standard; or	temperature from standard to 30 °C above standard;	
	or	
(3) For reciprocating engine-powered airplanes of		
more than 6,000 pounds maximum weight and	(3) For reciprocating engine-powered airplanes of	
turbine engine-powered airplanes, temperature from	more than 6.000 pounds (2.722 kg) maximum weight	
standard to 30°C above standard, or the maximum	and turbine engine-powered airplanes, temperature	
ambient atmospheric temperature at which	from standard to 50°C above standard, or the	
to \$22,1047 is shown if lower	maximum amolent atmospheric temperature at	
$10\ g25.1047$ is shown, if lower.	which compliance with the cooling provisions of	
(a) Denformance data must be determined with the	sections 25.1041 to 25.1047 is shown, if lower.	
(c) renormance data must be determined with the	(a) Parformance data must be determined with the	
cowr maps of other means for controlling the engine	(c) renormance data must be determined with the could flaps or other means for controlling the orginal	
	cowr maps of other means for controlling the englie	

cooling air supply in the position used in the cooling tests required by \$23.1041 to \$23.1047.	cooling air supply in the position used in the cooling tests required by sections 23.1041 to 23.1047.	
(d) The available propulsive thrust must correspond to engine power, not exceeding the approved power, less—	(d) The available propulsive thrust must correspond to engine power, not exceeding the approved power, less:	
(1) Installation losses; and	(1) Installation losses; and	
(2) The power absorbed by the accessories and services appropriate to the particular ambient atmospheric conditions and the particular flight condition.	(2) The power absorbed by the accessories and services appropriate to the particular ambient atmospheric conditions and the particular flight condition.	
(e) The performance, as affected by engine power or thrust, must be based on a relative humidity:	(e) The performance, as affected by engine power or thrust, must be based on a relative humidity:	
(1) Of 80 percent at and below standard temperature; and	(1) Of 80 percent at and below standard temperature; and	
(2) From 80 percent, at the standard temperature, varying linearly down to 34 percent at the standard temperature plus 50 °F.	(2) From 80 percent, at the standard temperature, varying linearly down to 34 percent at the standard temperature plus 50 °F (10 °C).	
(f) Unless otherwise prescribed, in determining the takeoff and landing distances, changes in the airplane's configuration, speed, and power must be made in accordance with procedures established by the applicant for operation in service. These procedures must be able to be executed consistently	(f) Unless otherwise prescribed, in determining the takeoff and landing distances, changes in the airplane's configuration, speed, and power must be made in accordance with procedures established by the applicant for operation in service. These procedures must be able to be executed consistently	

by pilots of average skill in atmospheric conditions reasonably expected to be encountered in service.	by pilots of average skill in atmospheric conditions reasonably expected to be encountered in service.	
(g) The following, as applicable, must be determined on a smooth, dry, hard-surfaced runway—	(g) The following, as applicable, must be determined on a smooth, dry, hard-surfaced runway—	
(1) Takeoff distance of §23.53(b);	(1) Takeoff distance of paragraph 23.53(b);	
(2) Accelerate-stop distance of §23.55;	(2) Accelerate-stop distance of section 23.55;	
(3) Takeoff distance and takeoff run of §23.59; and	(3) Takeoff distance and takeoff run of section 23.59; and	
(4) Landing distance of §23.75.	(4) Landing distance of section 23 75	
Note: The effect on these distances of operation on	(1) Euroning distance of section 25.75.	
other types of surfaces (for example, grass, gravel) when dry, may be determined or derived and these surfaces listed in the Airplane Flight Manual in accordance with §23.1583(p).	Note: The effect on these distances of operation on other types of surfaces (for example, grass, gravel) when dry, may be determined or derived and these surfaces listed in the Airplane Flight Manual in accordance with paragraph 23.1583(p).	
(h) For commuter category airplanes, the following		
also apply:	(n) For multiengine jets weigning over 6.000 pounds (2.722 kg) in the normal, utility, and acrobatic	
(1) Unless otherwise prescribed, the applicant must select the takeoff, enroute, approach, and landing configurations for the airplane.	category and commuter category airplanes, the following also apply:	
<ul><li>(2) The airplane configuration may vary with weight, altitude, and temperature, to the extent that they are</li></ul>	(1) Unless otherwise prescribed, the applicant must select the takeoff, enroute, approach, and landing configurations for the airplane.	

compatible with the operating procedures required	(2) The airplane configuration may vary with weight,	
by paragraph $(h)(3)$ of this section.	altitude, and temperature, to the extent that they are	
	compatible with the operating procedures required	
(3) Unless otherwise prescribed, in determining the	by paragraph (h)(3) of this section.	
critical-engine-inoperative takeoff performance,		
takeoff flight path, and accelerate-stop distance,	(3) Unless otherwise prescribed, in determining the	
changes in the airplane's configuration, speed, and	critical-engine-inoperative takeoff performance,	
power must be made in accordance with procedures	takeoff flight path, and accelerate-stop distance,	
established by the applicant for operation in service.	changes in the airplane's configuration, speed, and	
	power must be made in accordance with procedures	
(4) Procedures for the execution of discontinued	established by the applicant for operation in service.	
approaches and balked landings associated with the		
conditions prescribed in §23.67(c)(4) and §23.77(c)	(4) Procedures for the execution of discontinued	
must be established.	approaches and balked landings associated with the	
	conditions prescribed in paragraphs $23.67(d)(4)$ and	
(5) The procedures established under paragraphs	23.77(c) must be established.	
(h)(3) and $(h)(4)$ of this section must—		
	(5) The procedures established under paragraphs $(1)(2) = 1(1)(4) + 5(1)(4)$	
(1) Be able to be consistently executed by a crew of	(h)(3) and (h)(4) of this section must:	
average skill in atmospheric conditions reasonably		
expected to be encountered in service;	(1) Be able to be consistently executed by a crew of	
	average skill in atmospheric conditions reasonably	
(11) Use methods or devices that are safe and reliable;	expected to be encountered in service;	
and	(ii) Use methods on devices that are seferend reliable.	
(:::) In aluda allowan as fan anu naasanahlu annaatad	(II) Use methods of devices that are safe and renable;	
(iii) Include allowance for any reasonably expected	anu	
time delays in the execution of the procedures.	(iii) Include allowance for any reasonably expected	
	(iii) include anowance for any reasonably expected	
	time delays in the execution of the procedules.	

23.49 Stalling period.	23.49 Stalling speed.	A proposta apenas esclarece o
(a) $V_{SO}$ and $V_{S1}$ are the stalling speeds or the minimum steady flight speeds, in knots (CAS), at which the airplane is controllable with—	(a) VSO (maximum landing flap configuration) and VS1 are the stalling speeds or the minimum steady flight speeds, in knots (CAS), at which the airplane is controllable with:	significado de VSO e revisa a aplicabilidade do parágrafo 23.49(c) para maior clareza.
(1) For reciprocating engine-powered airplanes, the engine(s) idling, the throttle(s) closed or at not more than the power necessary for zero thrust at a speed not more than 110 percent of the stalling speed;	(1) For reciprocating engine-powered airplanes, the engine(s) idling, the throttle(s) closed or at not more than the power necessary for zero thrust at a speed not more than 110 percent of the stalling speed;	
(2) For turbine engine-powered airplanes, the propulsive thrust not greater than zero at the stalling speed, or, if the resultant thrust has no appreciable effect on the stalling speed, with engine(s) idling and throttle(s) closed;	(2) For turbine engine-powered airplanes, the propulsive thrust not greater than zero at the stalling speed, or, if the resultant thrust has no appreciable effect on the stalling speed, with engine(s) idling and throttle(s) closed;	
(3) The propeller(s) in the takeoff position;	(3) The propeller(s) in the takeoff position;	
(4) The airplane in the condition existing in the test, in which $V_{SO}$ and $V_{S1}$ are being used;	(4) The airplane in the condition existing in the test, in which VSO and VS1 are being used;	
(5) The center of gravity in the position that results in the highest value of $V_{SO}$ and $V_{S1}$ ; and	(5) The center of gravity in the position that results in the highest value of VSO and VS1; and	
(6) The weight used when $V_{SO}$ and $V_{S1}$ are being used as a factor to determine compliance with a required performance standard.	(6) The weight used when VSO and VS1 are being used as a factor to determine compliance with a required performance standard.	

(b) VSO and VSI must be determined by flight tests,	
using the procedure and meeting the flight	
characteristics specified in section 23.201.	
(c) Except as provided in paragraph (d) of this	
section VSO at maximum weight may not exceed 61	
knots $(31.4 \text{ m/s})$ for:	
(1) Single engine simleness and	
(1) Single-engine arpianes, and	
(2) Multiengine airplanes of 6.000 pounds (2.722 kg)	
or less maximum weight that cannot meet the	
minimum rate of climb specified in paragraph	
23.67(a) (1) with the critical engine inoperative.	
(d) All single-engine airplanes, and those	
multiengine airplanes of 6.000 pounds (2.722 kg) or	
less maximum weight with a VSO of more than 61	
knots that do not meet the requirements of paragraph	
23.67(a)(1) must comply with paragraph $23.562(d)$	
23.57(a)(1), must comply with paragraph $23.502(a)$ .	A anliashilidada dag nagujaitag dag
25.51 Takeon speeds.	A aplicabilidade dos requisitos das
	seções 23.51, 23.53, 23.55, 23.57,
(a) For normal, utility, and acrobatic category	23.59 e 23.61 referentes ao
airplanes, rotation speed, VR, is the speed at which	desempenho de decolagem foi
the pilot makes a control input, with the intention of	revista para tornar aplicável os
lifting the airplane out of contact with the runway or	critérios da categoria transporte
water surface.	regional para todos os jatos
	multimotores pesando mais que
	6.000 libras (2.722 kg) das
	categorias normal, utilitária e
	<ul> <li>(b) VSO and VS1 must be determined by flight tests, using the procedure and meeting the flight characteristics specified in section 23.201.</li> <li>(c) Except as provided in paragraph (d) of this section, VSO at maximum weight may not exceed 61 knots (31,4 m/s) for: <ul> <li>(1) Single-engine airplanes; and</li> <li>(2) Multiengine airplanes of 6.000 pounds (2.722 kg) or less maximum weight that cannot meet the minimum rate of climb specified in paragraph 23.67(a) (1) with the critical engine inoperative.</li> <li>(d) All single-engine airplanes, and those multiengine airplanes of 6.000 pounds (2.722 kg) or less maximum weight with a VSO of more than 61 knots that do not meet the requirements of paragraph 23.67(a)(1), must comply with paragraph 23.562(d).</li> </ul> </li> <li><b>23.51 Takeoff speeds.</b> <ul> <li>(a) For normal, utility, and acrobatic category airplanes, rotation speed, VR, is the speed at which the pilot makes a control input, with the intention of lifting the airplane out of contact with the runway or water surface.</li> </ul> </li> </ul>

(1) For multiengine landplanes, $V_R$ , must not be less	(1) For multiengine landplanes, VR, must not be less	acrobática. Esta abordagem é
than the greater of 1.05 $V_{MC}$ ; or 1.10 $V_{S1}$ ;	than the greater of 1,05 VMC; or 1,10 VS1;	adotada há algumas décadas pela
		ANAC e pela FAA através das
(2) For single-engine landplanes, $V_R$ , must not be	(2) For single-engine landplanes, VR, must not be	condições especiais. A adoção dos
less than $V_{S1}$ ; and	less than VS1; and	requisitos de desempenho para
		estes jatos se provou bem sucedida
(3) For seaplanes and amphibians taking off from	(3) For seaplanes and amphibians taking off from	em operações conduzidas de
water, $V_R$ , may be any speed that is shown to be safe	water, VR, may be any speed that is shown to be safe	acordo com o RBHA 91 e e
under all reasonably expected conditions, including	under all reasonably expected conditions, including	necessaria para manter o nivel de
angine	angine	segurança existente.
engine.	engine.	
(b) For normal, utility, and acrobatic category	(b) For normal, utility, and acrobatic category	
airplanes, the speed at 50 feet above the takeoff	airplanes, the speed at 50 feet (15,24 m) above the	
surface level must not be less than:	takeoff surface level must not be less than:	
(1) or multiengine airplanes, the highest of—	(1) For multiengine airplanes, the highest of:	
(1) A speed that is shown to be safe for continued	(1) A speed that is shown to be safe for continued	
flight (or emergency landing, if applicable) under all	flight (or emergency landing, if applicable) under all	
turbulance and complete failure of the critical	turbulance and complete failure of the critical	
engine:	engine.	
engine,	engine,	
(ii) 1.10 V <sub>MC</sub> ; or	(ii) 1,10 VMC; or	
(iii) 1.20 V <sub>S1</sub> .	(iii) 1,20 VS1.	
(2) For single-engine airplanes, the higher of—	(2) For single-engine airplanes, the higher of:	

(i) A speed that is shown to be safe under all reasonably expected conditions, including turbulence and complete engine failure; or	(i) A speed that is shown to be safe under all reasonably expected conditions, including turbulence and complete engine failure; or	
(ii) 1.20 V <sub>S1</sub> .	(ii) 1,20 VS1.	
(c) For commuter category airplanes, the following apply:	(c) For normal, utility, and acrobatic category multiengine jets of more than 6.000 pounds (2.722 kg) maximum weight and commuter category	
(1) $V_1$ must be established in relation to $V_{EF}$ as follows:	airplanes, the following apply:	
(i) $V_{\text{EF}}$ is the calibrated airspeed at which the critical	(1) V1 must be established in relation to VEF as follows:	
engine is assumed to fail. $V_{EF}$ must be selected by the applicant but must not be less than 1.05 $V_{MC}$	(i) VEF is the calibrated airspeed at which the critical	
determined under $$23.149(b)$ or, at the option of the applicant, not less than $V_{MCG}$ determined under	engine is assumed to fail. VEF must be selected by the applicant but must not be less than 1,05 VMC	
§23.149(f).	determined under paragraph 23.149(b) or, at the option of the applicant, not less than VMCG	
(ii) The takeoff decision speed, $V_1$ , is the calibrated airspeed on the ground at which, as a result of engine	determined under paragraph 23.149(f).	
failure or other reasons, the pilot is assumed to have	(ii) The takeoff decision speed, V1, is the calibrated	
made a decision to continue or discontinue the takeoff. The takeoff decision speed, $V_1$ , must be	failure or other reasons, the pilot is assumed to have	
selected by the applicant but must not be less than	made a decision to continue or discontinue the	
inoperative during the time interval between the	selected by the applicant but must not be less than	
instant at which the critical engine is failed and the	VEF plus the speed gained with the critical engine	
instant at which the pilot recognizes and reacts to the engine failure, as indicated by the pilot's application	inoperative during the time interval between the instant at which the critical engine is failed and the	

of the first retarding means during the accelerate-	instant at which the pilot recognizes and reacts to the	
stop determination of §23.55.	engine failure, as indicated by the pilot's application	
	of the first retarding means during the accelerate-	
(2) The rotation speed, $V_R$ , in terms of calibrated	stop determination of paragraph 23.55.	
airspeed, must be selected by the applicant and must		
not be less than the greatest of the following:	(2) The rotation speed, VR, in terms of calibrated	
	airspeed, must be selected by the applicant and must	
(i) $V_1$ ;	not be less than the greatest of the following:	
(11) 1.05 $V_{MC}$ determined under §23.149(b);	(1) V1;	
$(:::)$ 1.10 M $\rightarrow$ or	(ii) 1.05 VMC determined under nerversch	
(11) 1.10 $v_{S1}$ ; or	(11) 1,05 VINC determined under paragraph	
(iv) The speed that allows attaining the initial climb	23.149(0),	
(iv) The speed that anows attaining the initial climb-	(iii) 1 10 VS1: or	
but speed, $v_2$ , before reaching a height of 55 rect above the takeoff surface in accordance with	(11) 1,10 1,51,01	
823.57(c)(2)	(iv) The speed that allows attaining the initial climb-	
<i>§23.37(0)(2)</i> .	out speed V2, before reaching a height of 35 feet	
(3) For any given set of conditions, such as weight.	(10.67 m) above the takeoff surface in accordance	
altitude, temperature, and configuration, a single	with paragraph $23.57(c)(2)$ .	
value of $V_R$ must be used to show compliance with		
both the one-engine-inoperative takeoff and all-	(3) For any given set of conditions, such as weight,	
engines-operating takeoff requirements.	altitude, temperature, and configuration, a single	
	value of VR must be used to show compliance with	
(4) The takeoff safety speed, $V_2$ , in terms of	both the one-engine-inoperative takeoff and all-	
calibrated airspeed, must be selected by the applicant	engines-operating takeoff requirements.	
so as to allow the gradient of climb required in		
\$23.67 (c)(1) and (c)(2) but mut not be less than 1.10	(4) The takeoff safety speed, V2, in terms of	
$V_{MC}$ or less than 1.20 $V_{S1}$ .	calibrated airspeed, must be selected by the applicant	
	so as to allow the gradient of climb required in	

(5) The one-engine-inoperative takeoff distance,	paragraphs 23.67 (d)(1) and (d)(2) but must not be	
using a normal rotation rate at a speed 5 knots less	less than 1,10 VMC or less than 1,20 VS1.	
than $V_R$ , established in accordance with paragraph		
(c)(2) of this section, must be shown not to exceed	(5) The one-engine-inoperative takeoff distance,	
the corresponding one-engine-inoperative takeoff	using a normal rotation rate at a speed 5 knots (2,6	
distance, determined in accordance with §23.57 and	m/s) less than VR, established in accordance with	
\$23.59(a)(1), using the established V <sub>R</sub> . The takeoff,	paragraph (c)(2) of this section, must be shown not	
otherwise performed in accordance with §23.57,	to exceed the corresponding one-engine-inoperative	
must be continued safely from the point at which the	takeoff distance, determined in accordance with	
airplane is 35 feet above the takeoff surface and at a	section 23.57 and paragraph 23.59(a)(1), using the	
speed not less than the established $V_2$ minus 5 knots.	established VR. The takeoff, otherwise performed in	
	accordance with section 23.57, must be continued	
(6) The applicant must show, with all engines	safely from the point at which the airplane is 35 feet	
operating, that marked increases in the scheduled	(10,67 m) above the takeoff surface and at a speed	
takeoff distances, determined in accordance with	not less than the established V2 minus 5 knots (2,6	
\$23.59(a)(2), do not result from over-rotation of the	m/s).	
airplane or out-of-trim conditions.		
	(6) The applicant must show, with all engines	
	operating, that marked increases in the scheduled	
	takeoff distances, determined in accordance with	
	paragraph 23.59(a)(2), do not result from over-	
	rotation of the airplane or out-of-trim conditions.	
23.53 Takeoff performance.	23.53 Takeoff performance.	A aplicabilidade dos requisitos das
		seções 23.51, 23.53, 23.55, 23.57,
(a) For normal, utility, and acrobatic category	(a) For normal, utility, and acrobatic category	23.59 e 23.61 referentes ao
airplanes, the takeoff distance must be determined in	airplanes, the takeoff distance must be determined in	desempenho de decolagem foi
accordance with paragraph (b) of this section, using	accordance with paragraph (b) of this section, using	revista para tornar aplicável os
speeds determined in accordance with $\S23.51$ (a) and	speeds determined in accordance with paragraph	criterios da categoria transporte
(b).	23.51 (a) and (b).	regional para todos os jatos
		multimotores pesando mais que

(b) For normal, utility, and acrobatic category	(b) For normal, utility, and acrobatic category	6.000 libras (2.722 kg) das
to a beight of 50 feet above the takeoff surface must	to a height of 50 feet (15.24 m) shove the takeoff	acrobática Esta abordagam á
to a height of 50 feet above the takeon surface must	surface must be determined for each weight altitude	adotada bá algumas dásadas pala
temperature within the operational limits established	and temperature within the operational limits	ANAC e pelo EAA através das
for takeoff with	established for takeoff with:	condições especiais. A adoção dos
	established for takeon with.	requisitos de desempenho para
(1) Takeoff nower on each engine	(1) Takeoff power on each engine:	estes jatos se provou bem sucedida
(1) Takeon power on each engine,	(1) Takeon power on each engine,	em operações conduzidas de
(2) Wing flaps in the takeoff position(s): and	(2) Wing flans in the takeoff position(s): and	acordo com o RBHA 91 e é
(2) wing haps in the takeon position(s), and	(2) wing haps in the takeon position(s), and	necessária para manter o nível de
(3) Landing gear extended	(3) Landing gear extended	segurança existente
(3) Landing gear extended.	(3) Landing gear extended.	sogurunçu existence.
(c) For commuter category airplanes, takeoff	(c) For normal utility, and acrobatic category	
performance, as required by §§23.55 through 23.59.	multiengine jets of more than 6.000 pounds (2.722	
must be determined with the operating engine(s)	kg) maximum weight and commuter category	
within approved operating limitations.	airplanes, takeoff performance, as required by	
	sections 23.55 through 23.59, must be determined	
	with the operating engine(s) within approved	
	operating limitations.	
23.55 Accelerate-stop distance.	23.55 Accelerate-stop distance.	A aplicabilidade dos requisitos das
•	*	seções 23.51, 23.53, 23.55, 23.57,
For each commuter category airplane, the accelerate-	For normal, utility, and acrobatic category	23.59 e 23.61 referentes ao
stop distance must be determined as follows:	multiengine jets of more than 6.000 pounds (2.722	desempenho de decolagem foi
	kg) maximum weight and commuter category	revista para tornar aplicável os
(a) The accelerate-stop distance is the sum of the	airplanes, the accelerate-stop distance must be	critérios da categoria transporte
distances necessary to—	determined as follows:	regional para todos os jatos
		multimotores pesando mais que
		6.000 libras (2.722 kg) das
		categorias normal, utilitária e

(1) Accelerate the airplane from a standing start to	(a) The accelerate-stop distance is the sum of the	acrobática Esta abordagem é
V	distances necessary to:	adotada há algumas dácadas pala
v EF with an engines operating,	distances necessary to.	ANAC a rale EAA atractic day
		ANAC e pela FAA atraves das
(2) Accelerate the airplane from $V_{EF}$ to $V_1$ , assuming	(1) Accelerate the airplane from a standing start to	condições especiais. A adoção dos
the critical engine fails at $V_{EF}$ ; and	VEF with all engines operating;	requisitos de desempenho para
		estes jatos se provou bem sucedida
(3) Come to a full stop from the point at which $V_1$ is	(2) Accelerate the airplane from VEF to V1,	em operações conduzidas de
reached.	assuming the critical engine fails at VEF; and	acordo com o RBHA 91 e é
		necessária para manter o nível de
(b) Means other than wheel brakes may be used to	(3) Come to a full stop from the point at which V1 is	segurança existente.
determine the accelerate-stop distances if that	reached.	
means-		
	(b) Means other than wheel brakes may be used to	
(1) Is safe and reliable:	determine the accelerate-stop distances if that means:	
	determine the accelerate-stop distances if that means.	
(2) Is used so that consistent results can be expected	(1) Is sofe and reliable:	
(2) is used so that consistent results can be expected	(1) is sale and remaine,	
under normal operating conditions, and	(2) Is used as that consistent results can be expected	
	(2) Is used so that consistent results can be expected	
(3) Is such that exceptional skill is not required to	under normal operating conditions; and	
control the airplane.		
	(3) Is such that exceptional skill is not required to	
	control the airplane.	
23.57 Takeoff path.	23.57 Takeoff path.	A aplicabilidade dos requisitos das
		seções 23.51, 23.53, 23.55, 23.57,
For each commuter category airplane, the takeoff	For normal, utility, and acrobatic category	23.59 e 23.61 referentes ao
path is as follows:	multiengine jets of more than 6.000 pounds (2.722	desempenho de decolagem foi
	kg) maximum weight and commuter category	revista para tornar aplicável os
(a) The takeoff path extends from a standing start to	airplanes, the takeoff path is as follows:	critérios da categoria transporte
a point in the takeoff at which the airplane is 1500		regional para todos os jatos
feet above the takeoff surface at or below which		multimotores pesando mais que

height the transition from the takeoff to the enroute	(a) The takeoff path extends from a standing start to	6.000 libras (2.722 kg) das
configuration must be completed; and	a point in the takeoff at which the airplane is 1.500	categorias normal, utilitária e
	feet (457,20 m) above the takeoff surface at or below	acrobática. Esta abordagem é
(1) The takeoff path must be based on the procedures	which height the transition from the takeoff to the	adotada há algumas décadas pela
prescribed in §23.45;	enroute configuration must be completed; and	ANAC e pela FAA através das
		condições especiais. A adoção dos
(2) The airplane must be accelerated on the ground	(1) The takeoff path must be based on the procedures	requisitos de desempenho para
to VEFat which point the critical engine must be	prescribed in section 23.45;	estes jatos se provou bem sucedida
made inoperative and remain inoperative for the rest		em operações conduzidas de
of the takeoff; and	(2) The airplane must be accelerated on the ground	acordo com o RBHA 91 e é
	to VEF at which point the critical engine must be	necessária para manter o nível de
(3) After reaching $V_{EF}$ , the airplane must be	made inoperative and remain inoperative for the rest	segurança existente.
accelerated to $V_2$ .	of the takeoff; and	
(b) During the acceleration to speed $V_2$ , the nose gear	(3) After reaching VEF, the airplane must be	
may be raised off the ground at a speed not less than	accelerated to V2.	
V <sub>R</sub> . However, landing gear retraction must not be		
initiated until the airplane is airborne.	(b) During the acceleration to speed V2, the nose	
	gear may be raised off the ground at a speed not less	
(c) During the takeoff path determination, in	than VR. However, landing gear retraction must not	
accordance with paragraphs (a) and (b) of this	be initiated until the airplane is airborne.	
section—		
	(c) During the takeoff path determination, in	
(1) The slope of the airborne part of the takeoff path	accordance with paragraphs (a) and (b) of this	
must not be negative at any point;	section:	
(2) The airplane must reach $V_2$ before it is 35 feet	(1) The slope of the airborne part of the takeoff path	
above the takeoff surface, and must continue at a	must not be negative at any point;	

speed as close as practical to, but not less than $V_2$ ,	(2) The airplane must reach V2 before it is 35 feet	
until it is 400 feet above the takeoff surface;	(10,67 m) above the takeoff surface, and must	
	continue at a speed as close as practical to, but not	
(3) At each point along the takeoff path, starting at	less than V2, until it is 400 feet (121,92 m) above the	
the point at which the airplane reaches 400 feet	takeoff surface;	
above the takeoff surface, the available gradient of		
climb must not be less than—	(3) At each point along the takeoff path, starting at	
	the point at which the airplane reaches 400 feet	
(i) 1.2 percent for two-engine airplanes;	(121,92 m) above the takeoff surface, the available	
	gradient of climb must not be less than:	
(ii) 1.5 percent for three-engine airplanes;		
	(i) 1,2 percent for two-engine airplanes;	
(iii) 1.7 percent for four-engine airplanes; and		
	(ii) 1,5 percent for three-engine airplanes;	
(4) Except for gear retraction and automatic		
propeller feathering, the airplane configuration must	(iii) 1,7 percent for four-engine airplanes; and	
not be changed, and no change in power that requires		
action by the pilot may be made, until the airplane is	(4) Except for gear retraction and automatic	
400 feet above the takeoff surface.	propeller feathering, the airplane configuration must	
	not be changed, and no change in power that requires	
(d) The takeoff path to 35 feet above the takeoff	action by the pilot may be made, until the airplane is	
surface must be determined by a continuous	400 feet (121,92 m) above the takeoff surface.	
demonstrated takeoff.		
	(d) The takeoff path to 35 feet (10,67 m)above the	
(e) The takeoff path to 35 feet above the takeoff	takeoff surface must be determined by a continuous	
surface must be determined by synthesis from	demonstrated takeoff.	
segments; and		

(1) The segments must be clearly defined and must be related to distinct changes in configuration, power, and speed;	(e) The takeoff path to 35 feet (10,67 m) above the takeoff surface must be determined by synthesis from segments; and	
(2) The weight of the airplane, the configuration, and the power must be assumed constant throughout each segment and must correspond to the most critical condition prevailing in the segment; and	(1) The segments must be clearly defined and must be related to distinct changes in configuration, power, and speed;	
(3) The takeoff flight path must be based on the airplane's performance without utilizing ground effect.	(2) The weight of the airplane, the configuration, and the power must be assumed constant throughout each segment and must correspond to the most critical condition prevailing in the segment; and	
	(3) The takeoff flight path must be based on the airplane's performance without utilizing ground	
	effect.	
23.59 Takeoff distance and takeoff run.	<b>23.59</b> Takeoff distance and takeoff run.	A aplicabilidade dos requisitos das seções 23.51, 23.53, 23.55, 23.57,
<b>23.59 Takeoff distance and takeoff run.</b> For each commuter category airplane, the takeoff	effect. <b>23.59</b> Takeoff distance and takeoff run.For normal, utility, and acrobatic category	A aplicabilidade dos requisitos das seções 23.51, 23.53, 23.55, 23.57, 23.59 e 23.61 referentes ao
<b>23.59 Takeoff distance and takeoff run.</b> For each commuter category airplane, the takeoff distance and, at the option of the applicant, the	<ul> <li>23.59 Takeoff distance and takeoff run.</li> <li>For normal, utility, and acrobatic category multiengine jets of more than 6.000 pounds (2.722)</li> </ul>	A aplicabilidade dos requisitos das seções 23.51, 23.53, 23.55, 23.57, 23.59 e 23.61 referentes ao desempenho de decolagem foi
<b>23.59 Takeoff distance and takeoff run.</b> For each commuter category airplane, the takeoff distance and, at the option of the applicant, the takeoff run, must be determined.	effect. <b>23.59 Takeoff distance and takeoff run.</b> For normal, utility, and acrobatic category multiengine jets of more than 6.000 pounds (2.722 kg) maximum weight and commuter category	A aplicabilidade dos requisitos das seções 23.51, 23.53, 23.55, 23.57, 23.59 e 23.61 referentes ao desempenho de decolagem foi revista para tornar aplicável os
<b>23.59</b> Takeoff distance and takeoff run. For each commuter category airplane, the takeoff distance and, at the option of the applicant, the takeoff run, must be determined.	<ul> <li>23.59 Takeoff distance and takeoff run.</li> <li>For normal, utility, and acrobatic category multiengine jets of more than 6.000 pounds (2.722 kg) maximum weight and commuter category airplanes, the takeoff distance and, at the option of</li> </ul>	A aplicabilidade dos requisitos das seções 23.51, 23.53, 23.55, 23.57, 23.59 e 23.61 referentes ao desempenho de decolagem foi revista para tornar aplicável os critérios da categoria transporte
<ul> <li>23.59 Takeoff distance and takeoff run.</li> <li>For each commuter category airplane, the takeoff distance and, at the option of the applicant, the takeoff run, must be determined.</li> <li>(a) Takeoff distance is the greater of—</li> </ul>	<ul> <li>23.59 Takeoff distance and takeoff run.</li> <li>For normal, utility, and acrobatic category multiengine jets of more than 6.000 pounds (2.722 kg) maximum weight and commuter category airplanes, the takeoff distance and, at the option of the applicant, the takeoff run, must be determined.</li> </ul>	A aplicabilidade dos requisitos das seções 23.51, 23.53, 23.55, 23.57, 23.59 e 23.61 referentes ao desempenho de decolagem foi revista para tornar aplicável os critérios da categoria transporte regional para todos os jatos multimotores pesando mais que
<ul> <li>23.59 Takeoff distance and takeoff run.</li> <li>For each commuter category airplane, the takeoff distance and, at the option of the applicant, the takeoff run, must be determined.</li> <li>(a) Takeoff distance is the greater of—</li> <li>(1) The horizontal distance along the takeoff path</li> </ul>	<ul> <li>23.59 Takeoff distance and takeoff run.</li> <li>For normal, utility, and acrobatic category multiengine jets of more than 6.000 pounds (2.722 kg) maximum weight and commuter category airplanes, the takeoff distance and, at the option of the applicant, the takeoff run, must be determined.</li> <li>(a) Takeoff distance is the greater of:</li> </ul>	A aplicabilidade dos requisitos das seções 23.51, 23.53, 23.55, 23.57, 23.59 e 23.61 referentes ao desempenho de decolagem foi revista para tornar aplicável os critérios da categoria transporte regional para todos os jatos multimotores pesando mais que 6.000 libras (2.722 kg) das
<ul> <li>23.59 Takeoff distance and takeoff run.</li> <li>For each commuter category airplane, the takeoff distance and, at the option of the applicant, the takeoff run, must be determined.</li> <li>(a) Takeoff distance is the greater of—</li> <li>(1) The horizontal distance along the takeoff path from the start of the takeoff to the point at which the</li> </ul>	<ul> <li>23.59 Takeoff distance and takeoff run.</li> <li>For normal, utility, and acrobatic category multiengine jets of more than 6.000 pounds (2.722 kg) maximum weight and commuter category airplanes, the takeoff distance and, at the option of the applicant, the takeoff run, must be determined.</li> <li>(a) Takeoff distance is the greater of:</li> </ul>	A aplicabilidade dos requisitos das seções 23.51, 23.53, 23.55, 23.57, 23.59 e 23.61 referentes ao desempenho de decolagem foi revista para tornar aplicável os critérios da categoria transporte regional para todos os jatos multimotores pesando mais que 6.000 libras (2.722 kg) das categorias normal, utilitária e
<ul> <li>23.59 Takeoff distance and takeoff run.</li> <li>For each commuter category airplane, the takeoff distance and, at the option of the applicant, the takeoff run, must be determined.</li> <li>(a) Takeoff distance is the greater of—</li> <li>(1) The horizontal distance along the takeoff path from the start of the takeoff to the point at which the airplane is 35 feet above the takeoff surface as</li> </ul>	<ul> <li>23.59 Takeoff distance and takeoff run.</li> <li>For normal, utility, and acrobatic category multiengine jets of more than 6.000 pounds (2.722 kg) maximum weight and commuter category airplanes, the takeoff distance and, at the option of the applicant, the takeoff run, must be determined.</li> <li>(a) Takeoff distance is the greater of:</li> <li>(1) The horizontal distance along the takeoff path</li> </ul>	A aplicabilidade dos requisitos das seções 23.51, 23.53, 23.55, 23.57, 23.59 e 23.61 referentes ao desempenho de decolagem foi revista para tornar aplicável os critérios da categoria transporte regional para todos os jatos multimotores pesando mais que 6.000 libras (2.722 kg) das categorias normal, utilitária e acrobática. Esta abordagem é
<ul> <li>23.59 Takeoff distance and takeoff run.</li> <li>For each commuter category airplane, the takeoff distance and, at the option of the applicant, the takeoff run, must be determined.</li> <li>(a) Takeoff distance is the greater of—</li> <li>(1) The horizontal distance along the takeoff path from the start of the takeoff to the point at which the airplane is 35 feet above the takeoff surface as determined under §23.57; or</li> </ul>	<ul> <li>effect.</li> <li>23.59 Takeoff distance and takeoff run.</li> <li>For normal, utility, and acrobatic category multiengine jets of more than 6.000 pounds (2.722 kg) maximum weight and commuter category airplanes, the takeoff distance and, at the option of the applicant, the takeoff run, must be determined.</li> <li>(a) Takeoff distance is the greater of:</li> <li>(1) The horizontal distance along the takeoff path from the start of the takeoff to the point at which the</li> </ul>	A aplicabilidade dos requisitos das seções 23.51, 23.53, 23.55, 23.57, 23.59 e 23.61 referentes ao desempenho de decolagem foi revista para tornar aplicável os critérios da categoria transporte regional para todos os jatos multimotores pesando mais que 6.000 libras (2.722 kg) das categorias normal, utilitária e acrobática. Esta abordagem é adotada há algumas décadas pela
<ul> <li>23.59 Takeoff distance and takeoff run.</li> <li>For each commuter category airplane, the takeoff distance and, at the option of the applicant, the takeoff run, must be determined.</li> <li>(a) Takeoff distance is the greater of—</li> <li>(1) The horizontal distance along the takeoff path from the start of the takeoff to the point at which the airplane is 35 feet above the takeoff surface as determined under §23.57; or</li> </ul>	<ul> <li>effect.</li> <li>23.59 Takeoff distance and takeoff run.</li> <li>For normal, utility, and acrobatic category multiengine jets of more than 6.000 pounds (2.722 kg) maximum weight and commuter category airplanes, the takeoff distance and, at the option of the applicant, the takeoff run, must be determined.</li> <li>(a) Takeoff distance is the greater of:</li> <li>(1) The horizontal distance along the takeoff path from the start of the takeoff to the point at which the</li> </ul>	A aplicabilidade dos requisitos das seções 23.51, 23.53, 23.55, 23.57, 23.59 e 23.61 referentes ao desempenho de decolagem foi revista para tornar aplicável os critérios da categoria transporte regional para todos os jatos multimotores pesando mais que 6.000 libras (2.722 kg) das categorias normal, utilitária e acrobática. Esta abordagem é adotada há algumas décadas pela ANAC e pela FAA através das

(2) With all engines operating, 115 percent of the horizontal distance from the start of the takeoff to the point at which the airplane is 35 feet above the takeoff surface determined by a procedure	airplane is 35 feet (10,67 m) above the takeoff surface as determined under section 23.57; or (2) With all engines operating 115 percent of the	requisitos de desempenho para estes jatos se provou bem sucedida em operações conduzidas de acordo com o RBHA 91 e é
consistent with §23.57.	horizontal distance from the start of the takeoff to the point at which the airplane is 35 feet (10,67 m) above	necessária para manter o nível de segurança existente.
(b) If the takeoff distance includes a clearway, the takeoff run is the greater of—	the takeoff surface, determined by a procedure consistent with section 23.57.	
(1) The horizontal distance along the takeoff path from the start of the takeoff to a point equidistant between the liftoff point and the point at which the	(b) If the takeoff distance includes a clearway, the takeoff run is the greater of:	
airplane is 35 feet above the takeoff surface as determined under §23.57; or	(1) The horizontal distance along the takeoff path from the start of the takeoff to a point equidistant between the liftoff point and the point at which the	
(2) With all engines operating, 115 percent of the horizontal distance from the start of the takeoff to a point equidistant between the liftoff point and the	airplane is 35 feet (10,67 m) above the takeoff surface as determined under section 23.57; or	
point at which the airplane is 35 feet above the takeoff surface, determined by a procedure	(2) With all engines operating, 115 percent of the horizontal distance from the start of the takeoff to a	
consistent with §23.57.	point equidistant between the liftoff point and the point at which the similar is $25$ fact (10.67 m) shows	
	the takeoff surface, determined by a procedure consistent with section 23.57.	
23.61 Takeoff flight path.	23.61 Takeoff flight path.	A aplicabilidade dos requisitos das
For each commuter category airplane, the takeoff flight path must be determined as follows:	For normal, utility, and acrobatic category multiengine jets of more than 6,000 pounds	23.59 e 23.61 referentes ao desempenho de decolagem foi revista para tornar aplicável os
		critérios da categoria transporte

(a) The takeoff flight path begins 35 feet above the	maximum weight and commuter category airplanes,	regional para todos os jatos
takeoff surface at the end of the takeoff distance	the takeoff flight path must be determined as follows:	multimotores pesando mais que
determined in accordance with §23.59.		6.000 libras (2.722 kg) das
	(a) The takeoff flight path begins 35 feet (10,67 m)	categorias normal, utilitária e
(b) The net takeoff flight path data must be	above the takeoff surface at the end of the takeoff	acrobática. Esta abordagem é
determined so that they represent the actual takeoff	distance determined in accordance with section	adotada há algumas décadas pela
flight paths, as determined in accordance with	23.59.	ANAC e pela FAA através das
\$23.57 and with paragraph (a) of this section,		condições especiais. A adoção dos
reduced at each point by a gradient of climb equal	(b) The net takeoff flight path data must be	requisitos de desempenho para
to—	determined so that they represent the actual takeoff	estes jatos se provou bem sucedida
	flight paths, as determined in accordance with	em operações conduzidas de
(1) 0.8 percent for two-engine airplanes;	section 23.57 and with paragraph (a) of this section,	acordo com o RBHA 91 e é
	reduced at each point by a gradient of climb equal to:	necessária para manter o nível de
(2) 0.9 percent for three-engine airplanes; and		segurança existente.
	(1) 0,8 percent for two-engine airplanes;	
(3) 1.0 percent for four-engine airplanes.		
	(2) 0,9 percent for three-engine airplanes; and	
(c) The prescribed reduction in climb gradient may		
be applied as an equivalent reduction in acceleration	(3) 1,0 percent for four-engine airplanes.	
along that part of the takeoff flight path at which the		
airplane is accelerated in level flight.	(c) The prescribed reduction in climb gradient may	
	be applied as an equivalent reduction in acceleration	
	along that part of the takeoff flight path at which the	
	airplane is accelerated in level flight.	
23.63 Climb: General.	23.63 Climb: General.	As seções 23.63, 23.65 e 23.67
		foram revisadas para melhorar a
(a) Compliance with the requirements of §§23.65,	(a) Compliance with the requirements of sections	segurança através do aumento do
23.66, 23.67, 23.69, and 23.77 must be shown—	23.65, 23.66, 23.67, 23.69, and 23.77 must be	desempenho de subida OEI (um
	shown:	motor inoperante) para aviões
		mulimotores à pistão pesando

(1) Out of ground effect; and	(1) Out of ground effect; and	mais que 6.000 libras (2.722 kg) e
		todos os aviões multimotores à
(2) At speeds that are not less than those at which	(2) At speeds that are not less than those at which	turbina.
compliance with the powerplant cooling	compliance with the powerplant cooling	A proposta revisa os requisitos de
requirements of §§23.1041 to 23.1047 has been	requirements of sections 23.1041 to 23.1047 has	gradiente de subida OEI para
demonstrated; and	been demonstrated; and	requerer um gradiente de subida
		OEI de 1 porcento para todos os
(3) Unless otherwise specified, with one engine	(3) Unless otherwise specified, with one engine	multimotores turbohélice e para os
inoperative, at a bank angle not exceeding 5 degrees.	inoperative, at a bank angle not exceeding 5 degrees.	multimotores a pistão pesando
		mais que 6.000 libras (2.722 kg).
(b) For normal, utility, and acrobatic category	(b) For normal, utility, and acrobatic category	Esta alteração foi feita devido à
reciprocating engine-powered airplanes of 6,000	reciprocating engine-powered airplanes of 6.000	similaridade em como estes dois
pounds or less maximum weight, compliance must	pounds (2.722 kg) or less maximum weight,	tipos de aviões são usados. Para os
be shown with $$23.65(a)$ , $$23.67(a)$ , where	compliance must be shown with paragraphs	jatos multimotores pesando 6.000
appropriate, and §23.77(a) at maximum takeoff or	23.65(a), 23.67(a), where appropriate, and paragraph	libras (2.722 kg) ou menos será
landing weight, as appropriate, in a standard	23.77(a) at maximum takeoff or landing weight, as	requerido satisfazer um gradiente
atmosphere.	appropriate, in a standard atmosphere.	de subida OEI de 1,2 porcento.
		Também foram feitas pequenas
(c) For normal, utility, and acrobatic category	(c) For each of the following normal, utility, and	correções editorias para substituir
reciprocating engine-powered airplanes of more than	acrobatic category airplanes: (1) reciprocating	o termo " <i>turbojet engine</i> -
6,000 pounds maximum weight, and turbine engine-	engine-powered airplanes of more than 6.000 pounds	powered" por "jet" para
powered airplanes in the normal, utility, and	(2.722 kg) maximum weight, (2) single engine	simplificar o termo onde
acrobatic category, compliance must be shown at	turbines, and (3) multiengine turbine airplanes of	apropriado.
weights as a function of airport altitude and ambient	6.000 pounds (2.722 kg) or less maximum weight,	
temperature, within the operational limits	compliance must be shown at weights as a function	
established for takeoff and landing, respectively,	of airport altitude and ambient temperature within	
with—	the operational limits established for takeoff and	
	landing, respectively, with:	

(1) Sections 23.65(b) and 23.67(b) (1) and (2), where appropriate, for takeoff, and	(1) For reciprocating engine-power airplanes of more than 6.000 pounds (2.722 kg) maximum weight:	
(2) Section 23.67(b)(2), where appropriate, and §23.77(b), for landing.	(i) Paragraphs 23.65(b) and 23.67(b)(1) and (2), where appropriate, for takeoff and	
(d) For commuter category airplanes, compliance must be shown at weights as a function of airport altitude and ambiant temperature within the	(ii) Paragraphs 23.67(b)(2), where appropriate, and 23.77(b), for landing,	
operational limits established for takeoff and landing, respectively, with—	(2) For single-engine turbines:	
(1) Sections $23.67(c)(1)$ , $23.67(c)(2)$ , and	(i) Paragraph 23.65(b), for takeoff, and	
23.67(c)(3) for takeoff; and	(ii) Paragraph 23.77(b) for landing.	
(2) Sections 23.67(c)(3), 23.67(c)(4), and 23.77(c) for landing.	(3) For multiengine turbine airplanes of 6.000 pounds (2.722 kg) or less maximum weight:	
	(i) For takeoff, 23.65(b) and	
	(A) If a turbopropeller-power airplane, 23.67(b)(1), and (2), where appropriate.	
	(B) If a jet airplane, 23.67(c)(1), and (2), where appropriate.	
	(ii) For landing, 23.77(b) and	

(A) If a turbopropeller-powered airplane, 23.67(b)(2), where appropriate.	
(B) If a jet airplane, $23.67(c)(2)$ , where appropriate.	
(d) For multiengine turbine airplanes over 6.000 pounds (2.722 kg) maximum weight in the normal, utility, and acrobatic category and commuter category airplanes, compliance must be shown at weights as a function of airport altitude and ambient temperature within the operational limits established for takeoff and landing, respectively, with:	
(1) If a normal, utility, or acrobatic category, turbopropeller-powered airplane:	
(i) Paragraphs 23.67(b)(1), and (2), where appropriate, for takeoff, and	
(ii) Paragraph 23.67(b)(2), where appropriate, and 23.77(c), for landing	
(2) If a jet or commuter category airplane:	
(i) Paragraphs 23.67(d)(1), (2), and (3), where appropriate, for takeoff, and	
(ii) Paragraphs $23.67(d)(3)$ , and (4), where appropriate, and $23.77(c)$ for landing.	

23.65 Climb: All engines operating.	23.65 Climb: All engines operating.	As seções 23.63, 23.65 e 23.67
		foram revisadas para melhorar a
(a) Each normal, utility, and acrobatic category	(a) Each normal, utility, and acrobatic category	segurança através do aumento do
reciprocating engine-powered airplane of 6,000	reciprocating engine-powered airplane of 6.000	desempenho de subida OEI (um
pounds or less maximum weight must have a steady	pounds (2.722 kg) or less maximum weight must	motor inoperante) para aviões
climb gradient at sea level of at least 8.3 percent for	have a steady climb gradient at sea level of at least	mulimotores à pistão pesando
landplanes or 6.7 percet for seaplanes and	8.3 percent for landplanes or 6.7 percent for	mais que 6.000 libras (2.722 kg) e
amphibians with—	seaplanes and amphibians with:	todos os aviões multimotores à
		turbina.
(1) Not more than maximum continuous power on	(1) Not more than maximum continuous power on	A proposta revisa os requisitos de
each engine;	each engine;	gradiente de subida OEI para
		requerer um gradiente de subida
(2) The landing gear retracted;	(2) The landing gear retracted;	OEI de 1 porcento para todos os
		multimotores turbohélice e para os
(3) The wing flaps in the takeoff position(s); and	(3) The wing flaps in the takeoff position(s); and	multimotores a pistão pesando
		mais que 6.000 libras (2.722 kg).
(4) A climb speed not less than the greater of $1.1 V_{MC}$	(4) A climb speed not less than the greater of 1.1	Esta alteração foi feita devido à
and 1.2 $V_{S1}$ f or multiengine airplanes and not less	VMC and 1.2 VS1 for multiengine airplanes and not	similaridade em como estes dois
than 1.2 $V_{S1}$ for single—engine airplanes.	less than 1.2 VS1 for single—engine airplanes.	tipos de aviões são usados. Para os
		jatos multimotores pesando 6.000
(b) Each normal, utility, and acrobatic category	(b) Each normal, utility, and acrobatic category	libras (2.722 kg) ou menos será
reciprocating engine-powered airplane of more than	reciprocating engine-powered airplane of more than	requerido satisfazer um gradiente
6,000 pounds maximum weight and turbine engine-	6.000 pounds (2.722 kg) maximum weight, single-	de subida OEI de 1,2 porcento.
powered airplanes in the normal, utility, and	engine turbine, and multiengine turbine airplanes of	Também foram feitas pequenas
acrobatic category must have a steady gradient of	6.000 pounds (2.722 kg) or less maximum in the	correções editorias para substituir
climb after takeoff of at least 4 percent with	normal, utility, and acrobatic category must have a	o termo <i>"turbojet engine-</i>
	steady gradient of climb after takeoff of at least 4	powered por jet para
(1) Take off power on each engine;	percent with:	simplificar o termo onde
		аргорпадо.
		1

(2) The landing gear extended, except that if the	(1) Take off power on each engine;	
seconds, the test may be conducted with the gear	(2) The landing gear extended except that if the	
retracted	(2) The failung gear extended, except that if the	
Tetracted,	seconds the test may be conducted with the gear	
(3) The wing flaps in the takeoff position(s); and	retracted;	
(4) A climb speed as specified in §23.65(a)(4).	(3) The wing flaps in the takeoff position(s); and	
	(4) A climb speed as specified in pergraph	
	(4) A chino speed as specified in paragraph $23.65(a)(4)$ .	
23.66 Takeoff climb: One-engine inoperative.	23.67 Climb: One engine inoperative.	As seções 23.63, 23.65 e 23.67
		foram revisadas para melhorar a
For normal, utility, and acrobatic category	(a) For normal, utility, and acrobatic category	segurança através do aumento do
reciprocating engine-powered airplanes of more than	reciprocating multiengine-powered airplanes of	desempenho de subida OEI (um
6,000 pounds maximum weight, and turbine engine-	6.000 pounds (2.722 kg) or less maximum weight,	motor inoperante) para aviões
powered airplanes in the normal, utility, and	the following apply:	mulimotores à pistão pesando
acrobatic category, the steady gradient of climb or		mais que 6.000 libras (2.722 kg) e
descent must be determined at each weight, altitude,	(1) Except for those airplanes that meet the	todos os aviões multimotores à
and ambient temperature within the operational	requirements prescribed in paragraph 23.562(d),	turbina.
limits established by the applicant with—	each airplane with a VSO of more than 61 knots	A proposta revisa os requisitos de
	(31,4 m/s) must be able to maintain a steady climb	gradiente de subida OEI para
(a) The critical engine inoperative and its propeller	gradient of at least 1,5 percent at a pressure altitude	requerer um gradiente de subida
in the position it rapidly and automatically assumes;	of 5.000 feet (1.524 m) with the:	OEI de 1 porcento para todos os
		multimotores turbohélice e para os
(b) The remaining engine(s) at takeoff power;	(i) Critical engine inoperative and its propeller in the	multimotores a pistão pesando
	minimum drag position;	mais que 6.000 libras (2.722 kg).
(c) The landing gear extended, except that if the		Esta alteração foi feita devido à
landing gear can be retracted in not more than seven		similaridade em como estes dois
		tipos de aviões são usados. Para os

seconds, the test may be conducted with the gear	(ii) Remaining engine(s) at not more than maximum	jatos multimotores pesando 6.000
retracted;	continuous power;	libras (2.722 kg) ou menos será
		requerido satisfazer um gradiente
(d) The wing flaps in the takeoff position(s):	(iii) Landing gear retracted;	de subida OEI de 1,2 porcento.
		Também foram feitas pequenas
(e) The wings level; and	(iv) Wing flaps retracted; and	correções editorias para substituir
		o termo "turbojet engine-
(f) A climb speed equal to that achieved at 50 feet in	(v) Climb speed not less than 1,2 VS1.	powered" por "jet" para
the demonstration of §23.53.		simplificar o termo onde
	(2) For each airplane that meets the requirements	apropriado.
	prescribed in paragraph 23.562(d), or that has a VSO	
	of 61 knots or less, the steady gradient of climb or	
	descent at a pressure altitude of 5,000 feet (1.524 m)	
	must be determined with the:	
	(i) Critical engine inoperative and its propeller in the	
	minimum drag position;	
	(ii) Remaining engine(s) at not more than maximum	
	continuous power;	
	(iii) Landing gear retracted;	
	(iv) Wing flaps retracted; and	
	(v) Climb speed not less than 1.2VS1.	
	(b) For normal, utility, and acrobatic category	
	reciprocating multiengine-powered airplanes of	
	more than 6.000 pounds (2.722 kg) maximum	

weight, and multiengine turbopropeller-powered airplanes in the normal, utility, and acrobatic category:	
(1) The steady gradient of climb at an altitude of 400 feet above the takeoff must be no less than 1 percent with:	
(i) The critical engine inoperative and its propeller in the minimum drag position;	
(ii) Remaining engine(s) at takeoff power;	
(iii) Landing gear retracted;	
(iv) Wing flaps in the takeoff position(s); and	
(v) Climb speed equal to that achieved at 50 feet in the demonstration of section 23.53.	
(2) The steady gradient of climb must not be less than 0,75 percent at an altitude of 1.500 feet (457,2 m) above the takeoff surface, or landing surface, as appropriate, with the:	
(i) Critical engine inoperative and its propeller in the minimum drag position;	

(ii) Remaining engine(s) at not more than maximum continuous power;	
(iii) Landing gear retracted;	
(iv) Wing flaps retracted; and	
(v) Climb speed not less than 1,2 VS1.	
(c) For normal, utility, and acrobatic category multiengine jets of 6.000 pounds (2.722 kg) or less maximum weight:	
(1) The steady gradient of climb at an altitude of 400 feet (121,9 m) above the takeoff must be no less than 1,2 percent with the:	
(i) Critical engine inoperative;	
(ii) Remaining engine(s) at takeoff power;	
(iii) Landing gear retracted;	
(iv) Wing flaps in the takeoff position(s); and	
(v) Climb speed equal to that achieved at 50 feet (15,24 m) in the demonstration of section 23.53.	
(2) The steady gradient of climb may not be less than 0,75 percent at an altitude of 1.500 feet (457,2 m)	

above the takeoff surface, or landing surface, as appropriate, with the:	
(i) Critical engine inoperative;	
(ii) Remaining engine(s) at not more than maximum continuous power;	
(iii) Landing gear retracted;	
(iv) Wing flaps retracted; and	
(v) Climb speed not less than 1,2 VS1.	
(d) For multiengine jets over 6.000 pounds (2.722 kg) maximum weight in the normal, utility and acrobatic category and commuter category airplanes, the following apply:	
(1) Takeoff; landing gear extended. The steady gradient of climb at the altitude of the takeoff surface must be measurably positive for two-engine airplanes, not less than 0,3 percent for three-engine airplanes, or 0,5 percent for four-engine airplanes with:	
(i) The critical engine inoperative and its propeller, if applicable, in the position it rapidly and automatically assumes;	

(ii) The remaining engine(s) at takeoff power;	
(iii) The landing gear extended, and all landing gear doors open;	
(iv) The wing flaps in the takeoff position(s);	
(v) The wings level; and	
(vi) A climb speed equal to V2.	
(2) Takeoff; landing gear retracted. The steady gradient of climb at an altitude of 400 feet (121,92 m) above the takeoff surface must be not less than 2,0 percent of two-engine airplanes, 2,3 percent for three-engine airplanes, and 2,6 percent for four-engine airplanes with:	
(i) The critical engine inoperative and its propeller, if applicable, in the position it rapidly and automatically assumes;	
(ii) The remaining engine(s) at takeoff power;	
(iii) The landing gear retracted;	
(iv) The wing flaps in the takeoff position(s);	
(v) A climb speed equal to V2.	

(3) Enroute. The steady gradient of climb at an altitude of 1.500 feet (457,2 m) above the takeoff or landing surface, as appropriate, must be not less than 1,2 percent for two-engine airplanes, 1,5 percent for three-engine airplanes, and 1,7 percent for four-engine airplanes with:	
(i) The critical engine inoperative and its propeller, if applicable, in the minimum drag position;	
(ii) The remaining engine(s) at not more than maximum continuous power;	
(iii) The landing gear retracted;	
(iv) The wing flaps retracted; and	
(v) A climb speed not less than 1,2 VS1.	
(4) Discontinued approach. The steady gradient of climb at an altitude of 400 feet (121,9 m) above the landing surface must be not less than 2,1 percent for two-engine airplanes, 2,4 percent for three-engine airplanes, and 2,7 percent for four-engine airplanes, with:	
(i) The critical engine inoperative and its propeller, if applicable, in the minimum drag position;	

	(ii) The remaining engine(s) at takeoff power;	
	(iii) Landing gear retracted;	
	(iv) Wing flaps in the approach position(s) in which VS1 for these position(s) does not exceed 110 percent of the VS1 for the related all-engines-operated landing position(s); and	
	(v) A climb speed established in connection with normal landing procedures but not exceeding 1,5 VS1.	
<b>23.73</b> Reference landing approach speed.	23.73 Reference landing approach speed.	A alteração na seção 23.73 corrige
(a) For normal, utility, and acrobatic category reciprocating engine-powered airplanes of 6,000 pounds or less maximum weight, the reference landing approach speed, $V_{REF}$ , must not be less than the greater of $V_{MC}$ , determined in §23.149(b) with the wing flaps in the most extended takeoff position, and 1.3 V <sub>SO</sub> .	<ul> <li>(a) For normal, utility, and acrobatic category reciprocating engine-powered airplanes of 6.000 pounds (2.722 kg) or less maximum weight, the reference landing approach speed, VREF, may not be less than the greater of VMC, determined in 23.149(b) with the wing flaps in the most extended takeoff position, and 1,3 VS1.</li> <li>(b) Each of the following normal utility and</li> </ul>	um erro de referência a um termo de velocidade. A máxima velocidade de estol em configuração de pouso (VS0) foi alterada para a velocidade de estol na configuração específica de flap (VS1). VS0 não é aplicável para outras configurações de flap. A velocidade de referência de
(b) For normal, utility, and acrobatic category reciprocating engine-powered airplanes of more than 6,000 pounds maximum weight, and turbine engine-powered airplanes in the normal, utility, and acrobatic category, the reference landing approach speed, $V_{REF}$ , must not be less than the greater of $V_{MC}$ , determined in §23.149(c), and 1.3 $V_{SO}$ .	(b) Each of the following normal, utility, and acrobatic category airplanes: (1) reciprocating engine-powered airplane of more than 6.000 pounds (2.722 kg) maximum weight, (2) turbine powered airplane of 6.000 pounds (2.722 kg) or less maximum weight, and (3) single engine turbine powered airplane of more than 6.000 pounds (2.722 kg) maximum weight, the reference landing	aproximação para pouso (VREF) é baseada em 1,3 vezes a VS1. A alteração proposta permite tratar aviões certificados de acordo com o RBAC 23 que possam ter mais que uma posição de flap para pouso. Adicionalmente, a proposta torna aplicável os

(c) For commuter category airplanes, the reference landing approach speed, $V_{REF}$ , must not be less than the greater of 1.05 $V_{MC}$ , determined in §23.149(c), and 1.3 $V_{SO}$ .	approach speed, VREF, may not be less than the greater of VMC, determined in 23.149(c), and 1,3 VS1.	critérios da categoria transporte regional para jatos multimotores pesando mais que 6.000 libras (2.722 kg).
	(c) For normal, utility, and acrobatic category multiengine turbine powered airplanes over 6.000 pounds (2.722 kg) maximum weight and commuter category airplanes, the reference landing approach speed, VREF, may not be less than the greater of 1,05 VMC, determined in 23.149(c), and 1,3 VS1.	
23.77 Balked landing.	23.77 Balked landing.	A seção 23.77 foi revista para tornar aplicável os critérios da
<ul> <li>(a) Each normal, utility, and acrobatic category reciprocating engine-powered airplane at 6,000 pounds or less maximum weight must be able to maintain a steady gradient of climb at sea level of at least 3.3 percent with—</li> <li>(1) Takeoff power on each engine;</li> </ul>	<ul> <li>(a) Each normal, utility, and acrobatic category reciprocating engine-powered airplane at 6.000 pounds (2.722 kg) or less maximum weight must be able to maintain a steady gradient of climb at sea level of at least 3,3 percent with:</li> <li>(1) Takeoff power on each engine;</li> </ul>	categoria transporte regional para todos os aviões multimotores à turbina e para os aviões à turbina com mais de 6.000 libras de forma consistente às condições especiais que tem sido emitidas nestes casos.
(2) The landing gear extended;	(2) The landing gear extended;	
(3) The wing flaps in the landing position, except that if the flaps may safely be retracted in two seconds or less without loss of altitude and without sudden changes of angle of attack, they may be retracted; and	(3) The wing flaps in the landing position, except that if the flaps may safely be retracted in two seconds or less without loss of altitude and without sudden changes of angle of attack, they may be retracted; and	

(4) A climb speed equal to $V_{REF}$ , as defined in §23.73(a).	(4) A climb speed equal to VREF, as defined in paragraph 23.73(a).	
(b) Each normal, utility, and acrobatic category reciprocating engine-powered airplane of more than 6,000 pounds maximum weight and each normal, utility, and acrobatic category turbine engine-powered airplane must be able to maintain a steady gradient of climb of at least 2.5 percent with—	(b) Each of the following normal, utility, and acrobatic category airplanes: (1) reciprocating engine-powered airplane of more than 6.000 pounds (2.722 kg) maximum weight, (2) turbine powered airplane of 6.000 pounds (2.722 kg) or less maximum weight, and (3) single engine turbine powered airplane of more than 6.000 pounds (2.722 kg)	
(1) Not more than the power that is available on each engine eight seconds after initiation of movement of the power controls from minimum flight-idle	kg) maximum weight, must be able to maintain a steady gradient of climb of at least 2,5 percent with:	
position;	(1) Not more than the power that is available on each engine eight seconds after initiation of movement of	
(2) The landing gear extended;	the power controls from minimum flight-idle position:	
(3) The wing flaps in the landing position; and	(2) The landing gear extended	
(4) A climb speed equal to $V_{REF}$ , as defined in §23.73(b).	<ul><li>(3) The wing flaps in the landing position; and</li></ul>	
(c) Each commuter category airplane must be able to maintain a steady gradient of climb of at least 3.2 percent with—	(4) A climb speed equal to VREF, as defined in paragraph 23.73(b).	
	(c) Each normal, utility, and acrobatic multiengine	
(1) Not more than the power that is available on each	turbine powered airplane over 6.000 pounds (2.722	
engine eight seconds after initiation of movement of	kg) maximum weight and each commuter category	

the power controls from the minimum flight idle	airplane must be able to maintain a steady gradient				
position;	of climb of at least 3,2 percent with:				
(2) Landing gear extended;	(1) Not more than the power that is available on each				
(2) Wing flores in the londing positions and	engine eight seconds after initiation of movement of				
(5) wing haps in the landing position; and	ne power controls from the minimum fight fale				
$(4)$ A climb speed equal to $V_{\text{DEE}}$ as defined in	position,				
(4) A chino speed equal to $v_{REF}$ , as defined in $823.73(c)$	(2) Landing gear extended:				
<i>§25.15(c)</i> .	(2) Landing gear extended,				
	(3) Wing flaps in the landing position: and				
	(4) A climb speed equal to VREF, as defined in				
	paragraph 23.73(c).				
23.161 Trim.	23.161 Trim.	Correção	das	referê	ncias
		apresentadas	no	parágrafo	(d)
(a) General. Each airplane must meet the trim	(a) General. Each airplane must meet the trim	apresentadas desta seção.	no	parágrafo	(d)
(a) General. Each airplane must meet the trim requirements of this section after being trimmed and	(a) General. Each airplane must meet the trim requirements of this section after being trimmed and	apresentadas desta seção.	no	parágrafo	(d)
(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the	(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the	apresentadas desta seção.	no	parágrafo	(d)
(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the primary controls or their corresponding trim controls	(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the primary controls or their corresponding trim controls	apresentadas desta seção.	no	parágrafo	(d)
(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the primary controls or their corresponding trim controls by the pilot or the automatic pilot. In addition, it must	(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the primary controls or their corresponding trim controls by the pilot or the automatic pilot. In addition, it must	apresentadas desta seção.	no	parágrafo	(d)
(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the primary controls or their corresponding trim controls by the pilot or the automatic pilot. In addition, it must be possible, in other conditions of loading,	(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the primary controls or their corresponding trim controls by the pilot or the automatic pilot. In addition, it must be possible, in other conditions of loading,	apresentadas desta seção.	no	parágrafo	(d)
(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the primary controls or their corresponding trim controls by the pilot or the automatic pilot. In addition, it must be possible, in other conditions of loading, configuration, speed and power to ensure that the	(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the primary controls or their corresponding trim controls by the pilot or the automatic pilot. In addition, it must be possible, in other conditions of loading, configuration, speed and power to ensure that the	apresentadas desta seção.	no	parágrafo	(d)
(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the primary controls or their corresponding trim controls by the pilot or the automatic pilot. In addition, it must be possible, in other conditions of loading, configuration, speed and power to ensure that the pilot will not be unduly fatigued or distracted by the	(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the primary controls or their corresponding trim controls by the pilot or the automatic pilot. In addition, it must be possible, in other conditions of loading, configuration, speed and power to ensure that the pilot will not be unduly fatigued or distracted by the	apresentadas desta seção.	no	parágrafo	(d)
(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the primary controls or their corresponding trim controls by the pilot or the automatic pilot. In addition, it must be possible, in other conditions of loading, configuration, speed and power to ensure that the pilot will not be unduly fatigued or distracted by the need to apply residual control forces exceeding those	(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the primary controls or their corresponding trim controls by the pilot or the automatic pilot. In addition, it must be possible, in other conditions of loading, configuration, speed and power to ensure that the pilot will not be unduly fatigued or distracted by the need to apply residual control forces exceeding those	apresentadas desta seção.	no	parágrafo	(d)
(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the primary controls or their corresponding trim controls by the pilot or the automatic pilot. In addition, it must be possible, in other conditions of loading, configuration, speed and power to ensure that the pilot will not be unduly fatigued or distracted by the need to apply residual control forces exceeding those for prolonged application of §23.143(c). This applies	(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the primary controls or their corresponding trim controls by the pilot or the automatic pilot. In addition, it must be possible, in other conditions of loading, configuration, speed and power to ensure that the pilot will not be unduly fatigued or distracted by the need to apply residual control forces exceeding those for prolonged application of paragraph 23.143(c).	apresentadas desta seção.	no	parágrafo	(d)
(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the primary controls or their corresponding trim controls by the pilot or the automatic pilot. In addition, it must be possible, in other conditions of loading, configuration, speed and power to ensure that the pilot will not be unduly fatigued or distracted by the need to apply residual control forces exceeding those for prolonged application of §23.143(c). This applies in normal operation of the airplane and, if applicable,	(a) General. Each airplane must meet the trim requirements of this section after being trimmed and without further pressure upon, or movement of, the primary controls or their corresponding trim controls by the pilot or the automatic pilot. In addition, it must be possible, in other conditions of loading, configuration, speed and power to ensure that the pilot will not be unduly fatigued or distracted by the need to apply residual control forces exceeding those for prolonged application of paragraph 23.143(c). This applies in normal operation of the airplane and,	apresentadas desta seção.	no	parágrafo	(d)

engine for which performance characteristics are established.	failure of one engine for which performance characteristics are established.	
(b) Lateral and directional trim. The airplane must maintain lateral and directional trim in level flight with the landing gear and wing flaps retracted as follows:	(b) Lateral and directional trim. The airplane must maintain lateral and directional trim in level flight with the landing gear and wing flaps retracted as follows:	
(1) For normal, utility, and acrobatic category airplanes, at a speed of 0.9 $V_H$ , $V_C$ , or $V_{MO}/M_O$ , whichever is lowest; and	(1) For normal, utility, and acrobatic category airplanes, at a speed of 0,9 VH, VC, or VMO/MO, whichever is lowest; and	
(2) For commuter category airplanes, at all speeds from 1.4 $V_{S1}$ to the lesser of $V_{HO}$ $V_{MO}/M_{MO}$ .	(2) For commuter category airplanes, at all speeds from 1,4 VS1 to the lesser of VH or VMO/MMO.	
(c) Longitudinal trim. The airplane must maintain longitudinal trim under each of the following conditions:	(c) Longitudinal trim. The airplane must maintain longitudinal trim under each of the following conditions:	
(1) A climb with—	(1) A climb with:	
(i) Takeoff power, landing gear retracted, wing flaps in the takeoff position(s), at the speeds used in determining the climb performance required by §23.65; and	(i) Takeoff power, landing gear retracted, wing flaps in the takeoff position(s), at the speeds used in determining the climb performance required by section 23.65; and	
(ii) Maximum continuous power at the speeds and in the configuration used in determining the climb performance required by §23.69(a).	(ii) Maximum continuous power at the speeds and in the configuration used in determining the climb performance required by paragraph 23.69(a).	

(2) Level flight at all speeds from the lesser of $V_{H}$ and either $V_{NO}$ or $V_{MO}/M_{MO}$ (as appropriate), to 1.4 $V_{S1}$ , with the landing gear and flaps retracted.	(2) Level flight at all speeds from the lesser of VH and either VNO or VMO/MMO (as appropriate), to 1,4 VS1, with the landing gear and flaps retracted.	
(3) A descent at $V_{NO}$ or $V_{MO}/M_{MO}$ , whichever is applicable, with power off and with the landing gear and flaps retracted.	(3) A descent at VNO or VMO/MMO, whichever is applicable, with power off and with the landing gear and flaps retracted.	
(4) Approach with landing gear extended and with—	(4) Approach with landing gear extended and with:	
(i) A 3 degree angle of descent, with flaps retracted and at a speed of 1.4 $V_{S1}$ ;	(i) A 3 degree angle of descent, with flaps retracted and at a speed of 1,4 VS1;	
(ii) A 3 degree angle of descent, flaps in the landing position(s) at $V_{REF}$ ; and	(ii) A 3 degree angle of descent, flaps in the landing position(s) at VREF; and	
(iii) An approach gradient equal to the steepest used in the landing distance demonstrations of $23.75$ , flaps in the landing position(s) at V <sub>REF</sub> .	(iii) An approach gradient equal to the steepest used in the landing distance demonstrations of section 23.75, flaps in the landing position(s) at VREF.	
(d) In addition, each multiple airplane must maintain longitudinal and directional trim, and the lateral control force must not exceed 5 pounds at the speed used in complying with §23.67(a), (b)(2), or (c)(3), as appropriate, with—	(d) In addition, each multiengine airplane must maintain longitudinal and directional trim, and the lateral control force must not exceed 5 pounds at the speed used in complying with paragraphs 23.67(a), (b)(2), (c)(2), or (d)(3), as appropriate, with	
(1) The critical engine inoperative, and if applicable, its propeller in the minimum drag position;	(1) The critical engine inoperative, and if applicable, its propeller in the minimum drag position;	
(2) The remaining engines at maximum continuous	(2) The remaining engines at maximum continuous	
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power;	power;	
(3) The landing gear retracted;	(3) The landing gear retracted;	
(4) Wing flaps retracted; and	(4) Wing flaps retracted; and	
(5) An angle of bank of not more than five degrees.	(5) An angle of bank of not more than five degrees.	
(e) In addition, each commuter category airplane for which, in the determination of the takeoff path in accordance with $$23.57$ , the climb in the takeoff configuration at V <sub>2</sub> extends beyond 400 feet above the takeoff surface, it must be possible to reduce the longitudinal and lateral control forces to 10 pounds and 5 pounds, respectively, and the directional control force must not exceed 50 pounds at V <sub>2</sub> with—	(e) In addition, each commuter category airplane for which, in the determination of the takeoff path in accordance with section 23.57, the climb in the takeoff configuration at V2 extends beyond 400 feet above the takeoff surface, it must be possible to reduce the longitudinal and lateral control forces to 10 pounds and 5 pounds, respectively, and the directional control force must not exceed 50 pounds at V2 with:	
(1) The critical engine inoperative and its propeller in the minimum drag position;	(1) The critical engine inoperative and its propeller in the minimum drag position;	
(2) The remaining engine(s) at takeoff power;	(2) The remaining engine(s) at takeoff power:	
(3) Landing gear retracted;		
	(3) Landing gear retracted;	
(4) Wing flaps in the takeoff position(s); and		
	(4) Wing flaps in the takeoff position(s); and	
(5) An angle of bank not exceeding 5 degrees.		
	(5) An angle of bank not exceeding 5 degrees.	

23.177 Static directional and lateral stability.	23.177 Static directional and lateral stability.	A revisão da seção 23.177
		esclarece as limitações de
(a) The static directional stability, as shown by the	(a)(1) The static directional stability, as shown by the	velocidades específicas para
tendency to recover from a wings level sideslip with	tendency to recover from a wings level sideslip with	incluir os jatos. As limitações de
the rudder free, must be positive for any landing gear	the rudder free, must be positive for any landing gear	velocidade também incluem
and flap position appropriate to the takeoff, climb,	and flap position appropriate to the takeoff, climb,	critérios específicos ("VFE, VLE,
cruise, approach, and landing configurations. This	cruise, approach, and landing configurations. This	VNO ou VFC/MFC como
must be shown with symmetrical power up to	must be shown with symmetrical power up to	apropriado").
maximum continuous power, and at speeds from 1.2	maximum continuous power, and at speeds from 1,2	
$V_{S1}$ up to the maximum allowable speed for the	VS1 up to VFE, VLE, VNO, VFC/MFC, whichever	
condition being investigated. The angel of sideslip	is appropriate.	
for these tests must be appropriate to the type of		
airplane. At larger angles of sideslip, up to that at	(2) The angle of sideslip for these tests must be	
which full rudder is used or a control force limit in	appropriate to the type of airplane. The rudder pedal	
§23.143 is reached, whichever occurs first, and at	force must not reverse at larger angles of sideslip, up	
speeds from 1.2 $V_{S1}$ to $V_0$ , the rudder pedal force	to that at which full rudder is used or a control force	
must not reverse.	limit in section 23.143 is reached, whichever occurs	
	first, and at speeds from 1,2 VS1 to VO.	
(b) The static lateral stability, as shown by the		
tendency to raise the low wing in a sideslip, must be	(b)(1) The static lateral stability, as shown by the	
positive for all landing gear and flap positions. This	tendency to raise the low wing in a sideslip with the	
must be shown with symmetrical power up to 75	aileron controls free, may not be negative for any	
percent of maximum continuous power at speeds	landing gear and flap position appropriate to the	
above 1.2 $V_{S1}$ in the take off configuration(s) and at	takeoff, climb, cruise, approach, and landing	
speeds above 1.3 $V_{S1}$ in other configurations, up to	configurations. This must be shown with	
the maximum allowable speed for the configuration	symmetrical power from idle up to 75 percent of	
being investigated, in the takeoff, climb, cruise, and	maximum continuous power at speeds from 1,2 VS1	
approach configurations. For the landing	in the takeoff configuration(s) and at speeds from 1,3	
configuration, the power must be that necessary to	VS1 in other configurations, up to the maximum	
maintain a 3 degree angle of descent in coordinated	allowable airspeed for the configuration being	

flight. The static lateral stability must not be negative	investigated (VFE, VLE, VNO, VFC/MFC,
at 1.2 $V_{S1}\ensuremath{\text{in}}$ the takeoff configuration, or at 1.3 $V_{S1}\ensuremath{\text{in}}$	whichever is appropriate) in the takeoff, climb,
other configurations. The angle of sideslip for these	cruise, descent, and approach configurations. For the
tests must be appropriate to the type of airplane, but	landing configuration, the power must be that
in no case may the constant heading sideslip angle be	necessary to maintain a 3-degree angle of descent in
less than that obtainable with a 10 degree bank, or if	coordinated flight.
less, the maximum bank angle obtainable with full	
rudder deflection or 150 pound rudder force.	(2) The static lateral stability may not be negative at
	1,2 VS1 in the takeoff configuration, or at 1,3 VS1
(c) Paragraph (b) of this section does not apply to	in other configurations.
acrobatic category airplanes certificated for inverted	
flight.	(3) The angle of sideslip for these tests must be
	appropriate to the type of airplane, but in no case may
(d) In straight, steady slips at 1.2 $V_{S1}$ for any landing	the constant heading sideslip angle be less than that
gear and flap positions, and for any symmetrical	obtainable with a 10 degree bank or, if less, the
power conditions up to 50 percent of maximum	maximum bank angle obtainable with full rudder
continuous power, the aileron and rudder control	deflection or 150 pound rudder force.
movements and forces must increase steadily, but	
not necessarily in constant proportion, as the angle	(c) Paragraph (b) of this section does not apply to
of sideslip is increased up to the maximum	acrobatic category airplanes certificated for inverted
appropriate to the type of airplane. At larger slip	flight.
angles, up to the angle at which full rudder or aileron	
control is used or a control force limit contained in	(d)(1) In straight, steady slips at 1,2 VS1 for any
§23.143 is reached, the aileron and rudder control	landing gear and flap position appropriate to the
movements and forces must not reverse as the angle	takeoff, climb, cruise, approach, and landing
of sideslip is increased. Rapid entry into, and	configurations, and for any symmetrical power
recovery from, a maximum sideslip considered	conditions up to 50 percent of maximum continuous
appropriate for the airplane must not result in	power, the aileron and rudder control movements
uncontrollable flight characteristics.	and forces must increase steadily, but not necessarily
	in constant proportion, as the angle of sideslip is

	increased up to the maximum appropriate to the type of airplane.	
	(2) At larger slip angles, up to the angle at which the full rudder or aileron control is used or a control force limit contained in section 23.143 is reached, the aileron and rudder control movements and forces may not reverse as the angle of sideslip is increased.	
	(3) Rapid entry into, and recovery from, a maximum sideslip considered appropriate for the airplane may not result in uncontrollable flight characteristics.	
23.181 Dynamic stability.	23.181 Dynamic stability.	A seção 23.181 foi revisada para
		relaxar os requisitos de
(a) Any short period oscillation not including	(a) Any short period oscillation not including	estabilidade para aviões operando
combined lateral-directional oscillations occurring	combined lateral-directional oscillations occurring	acima de 18.000 pés. Os requisitos
between the stalling speed and the maximum	between the stalling speed and the maximum	originais foram desenvolvidos
allowable speed appropriate to the configuration of	allowable speed appropriate to the configuration of	para pequenos aviões que
the airplane must be heavily damped with the	the airplane must be heavily damped with the	tipicamente operavam abaixo de
primary controls—	primary controls:	18.000 pés e que não eram
		equipados com yaw dampers. O
(1) Free; and	(1) Free; and	requisito existente ainda é
		apropriado para operações em
(2) In a fixed position.	(2) In a fixed position.	baixas altitudes assim como para
		aproximações. No entanto, o
(b) Any combined lateral-directional oscillations	(b) Any combined lateral-directional oscillations	requisito existente não é
("Dutch roll") occurring between the stalling speed	(Dutch roll) occurring between the stalling speed and	apropriado para aviões de maior
and the maximum allowable speed appropriate to the	the maximum allowable speed (VFE, VLE, VN0,	porte que normalmente usam yaw
	VFC/MFC) appropriate to the configuration of the	dampers e que voam a altitudes
		acima dos 18.000 pés. De fato, a

configuration of the airplane must be damped to $1/10$	airplane with the primary controls in both free and	ANAC e a FAA emitiram diversos
amplitude in 7 cycles with the primary controls—	fixed position, must be damped to 1/10 amplitude in:	ELOS para a maioria dos jatos
		certificados de acordo com o
(1) Free; and	(1) Seven (7) cycles below 18.000 feet (5.486,4 m)	RBAC 23 porque estes ELOS são
	and	apropriados para operações em
(2) In a fixed position.		altitudes altas com altas
	(2) Thirteen (13) cycles from 18.000 feet (5.486,4 m)	velocidades.
(c) If it is determined that the function of a stability	to the certified maximum altitude.	
augmentation system, reference §23.672, is needed		
to meet the flight characteristic requirements of this	(c) If it is determined that the function of a stability	
part, the primary control requirements of paragraphs	augmentation system, reference section 23.672, is	
(a)(2) and (b)(2) of this section are not applicable to	needed to meet the flight characteristic requirements	
the tests needed to verify the acceptability of that	of this part, the primary control requirements of	
system.	paragraphs (a)(2) and the fixed position testing of (b)	
	of this section are not applicable to the tests needed	
(d) During the conditions as specified in §23.175,	to verify the acceptability of that system.	
when the longitudinal control force required to		
maintain speeds differing from the trim speed by at	(d) During the conditions as specified in section	
least plus and minus 15 percent is suddenly released,	23.175, when the longitudinal control force required	
the response of the airplane must not exhibit any	to maintain speeds differing from the trim speed by	
dangerous characteristics nor be excessive in relation	at least plus and minus 15 percent is suddenly	
to the magnitude of the control force released. Any	released, the response of the airplane must not	
long-period oscillation of flight path, phugoid	exhibit any dangerous characteristics nor be	
oscillation, that results must not be so unstable as to	excessive in relation to the magnitude of the control	
increase the pilot's workload or otherwise endanger	force released. Any long-period oscillation of flight	
the airplane.	path, phugoid oscillation, that results must not be so	
	unstable as to increase the pilot's workload or	
	otherwise endanger the airplane.	
23.201 Wings level stall.	23.201 Wings level stall.	As seções 23.201 e 23.203 foram
		revisadas para incluir jatos e uma

(a) It must be possible to produce and to correct roll	(a) It must be possible to produce and to correct roll	nova geração de aviões
by unreversed use of the rolling control and to	by unreversed use of the rolling control and to	certificados de acordo com RBAC
produce and to correct yaw by unreversed use of the	produce and to correct yaw by unreversed use of the	23 que tenham uma capacidade de
directional control, up to the time the airplane stalls.	directional control, up to the time the airplane stalls.	grande energia e grande altitude.
		As revisões propostas incluem a
(b) The wings level stall characteristics must be	(b) The wings level stall characteristics must be	incorporação de configurações
demonstrated in flight as follows. Starting from a	demonstrated in flight as follows. Starting from a	adicionais para todos os aviões
speed at least 10 knots above the stall speed, the	speed at least 10 knots above the stall speed, the	certificados de acordo com o
elevator control must be pulled back so that the rate	elevator control must be pulled back so that the rate	RBAC 23, o esclarecimento das
of speed reduction will not exceed one knot per	of speed reduction will not exceed one knot per	posições de flap e trem de pouso
second until a stall is produced, as shown by either:	second until a stall is produced, as shown by either:	como apropriadas para a altitude e
		fases de voo, relaxamento dos
(1) An uncontrollable downward pitching motion of	(1) An uncontrollable downward pitching motion of	requisitos de roll-off para estóis
the airplane;	the airplane;	em grande altitude e definição do
		significado de "extreme nose-high
(2) A downward pitching motion of the airplane that	(2) A downward pitching motion of the airplane that	atitudes".
results from the activation of a stall avoidance device	results from the activation of a stall avoidance device	
(for example, stick pusher); or	(for example, stick pusher); or	
(3) The control reaching the stop.	(3) The control reaching the stop.	
(c) Normal use of elevator control for recovery is	(c) Normal use of elevator control for recovery is	
allowed after the downward pitching motion of	allowed after the downward pitching motion of	
paragraphs (b)(1) or (b)(2) of this section has	paragraphs (b)(1) or (b)(2) of this section has	
unmistakably been produced, or after the control has	unmistakably been produced, or after the control has	
been held against the stop for not less than the longer	been held against the stop for not less than the longer	
of two seconds or the time employed in the minimum	of two seconds or the time employed in the minimum	
steady slight speed determination of §23.49.	steady slight speed determination of section 23.49.	

(d) During the entry into and the recovery from the	(d) During the entry into and the recovery from the	
maneuver, it must be possible to prevent more than	maneuver, it must be possible to prevent more than	
15 degrees of roll or yaw by the normal use of	15 degrees of roll or yaw by the normal use of	
controls.	controls except as provided for in paragraph (e) of	
	this section.	
(e) Compliance with the requirements of this section		
must be shown under the following conditions:	(e) For airplanes approved with a maximum	
	operating altitude at or above 25.000 feet (7.620	
(1) Wing flaps. Retracted, fully extended, and each	metros) during the entry into and the recovery from	
intermediate normal operating position.	stalls performed at or above 25.000 feet (7.620	
	metros), it must be possible to prevent more than 25	
(2) Landing gear. Retracted and extended.	degrees of roll or yaw by the normal use of controls.	
(3) Cowl flaps. Appropriate to configuration.	(f) Compliance with the requirements of this section	
	must be shown under the following conditions:	
(4) Power:	Č.	
	(1) Wing flaps. Retracted, fully extended, and each	
(i) Power off: and	intermediate normal operating position, as	
	appropriate for the phase of flight.	
(ii) 75 percent of maximum continuous power.		
However, if the power-to-weight ratio at 75 percent	(2) Landing gear. Retracted and extended as	
of maximum continuous power result in extreme	appropriate for the altitude.	
nose-up attitudes, the test may be carried out with the		
power required for level flight in the landing	(3) Cowl flaps. Appropriate to configuration.	
configuration at maximum landing weight and a		
speed of $1.4 V_{so}$ except that the power may not be	(4) Spoilers/speedbrakes: Retracted and extended	
less than 50 percent of maximum continuous power	unless they have no measureable effect at low	
ress than e o percent of maximum continuous power.	speeds	
	SPeres.	

(5) Trim. The airplane trimmed at a speed as near 1.5	(5) Power:				
v sius practicable.	(i) Power/Thrust off: and				
(6) Propeller. Full increase r.p.m. position for the	()				
power off condition.	(ii) For reciprocating engine powered airplanes: 75 percent of maximum continuous power. However, if the power-to-weight ratio at 75 percent of maximum continuous power results in nose-high attitudes exceeding 30 degrees, the test may be carried out with the power required for level flight in the landing configuration at maximum landing weight and a speed of 1,4 VSO, except that the power may not be less than 50 percent of maximum continuous power; or				
	<ul> <li>(iii) For turbine engine powered airplanes: The maximum engine thrust, except that it need not exceed the thrust necessary to maintain level flight at 1,5 VS1 (where VS1 corresponds to the stalling speed with flaps in the approach position, the landing gear retracted, and maximum landing weight).</li> <li>(6) Trim: At 1,5 VS1 or the minimum trim speed, here the state of the state of</li></ul>				
	<ul><li>(7) Propeller. Full increase r.p.m. position for the power off condition.</li></ul>				
23.203 Turning flight and accelerated turning	23.203 Turning flight and accelerated turning	As seçõ	es 23.201 e	23.20	3 foram
stalls.	stalls.	revisada	s para incl	uir jato	s e uma
		nova	geração	de	aviões

Turning flight and accelerated turning stalls must be	Turning flight and accelerated turning stalls must be	certificados de acordo com RBAC
demonstrated in tests as follows:	demonstrated in tests as follows:	23 que tenham uma capacidade de
		grande energia e grande altitude.
(a) Establish and maintain a coordinated turn in a 30	(a) Establish and maintain a coordinated turn in a 30	As revisões propostas incluem a
degree bank. Reduce speed by steadily and	degree bank. Reduce speed by steadily and	incorporação de configurações
progressively tightening the turn with the elevator	progressively tightening the turn with the elevator	adicionais para todos os aviões
until the airplane is stalled, as defined in §23.201(b).	until the airplane is stalled, as defined in paragraph	certificados de acordo com o
The rate of speed reduction must be constant, and—	23.201(b). The rate of speed reduction must be	RBAC 23, o esclarecimento das
	constant, and:	posições de flap e trem de pouso
(1) For a turning flight stall, may not exceed one knot		como apropriadas para a altitude e
per second; and	(1) For a turning flight stall, may not exceed one knot	fases de voo, relaxamento dos
	per second $(0,5 \text{ m/s})$ ; and	requisitos de <i>roll-off</i> para estóis
(2) For an accelerated turning stall, be 3 to 5 knots		em grande altitude e definição do
per second with steadily increasing normal	(2) For an accelerated turning stall, be 3 to 5 knots	significado de "extreme nose-high
acceleration.	(1,5  to  2,6  m/s) per second with steadily increasing	atitudes".
	normal acceleration.	
(b) After the airplane has stalled, as defined in		
§23.201(b), it must be possible to regain wings level	(b) After the airplane has stalled, as defined in	
flight by normal use of the flight controls, but	paragraph 23.201(b), it must be possible to regain	
without increasing power and without—	wings level flight by normal use of the flight	
	controls, but without increasing power and without:	
(1) Excessive loss of altitude;		
	(1) Excessive loss of altitude;	
(2) Undue pitchup;		
	(2) Undue pitchup;	
(3) Uncontrollable tendency to spin;		
	(3) Uncontrollable tendency to spin;	

(4) Exceeding a bank angle of 60 degrees in the original direction of the turn or 30 degrees in the opposite direction in the case of turning flight stalls;	
(5) Exceeding a bank angle of 90 degrees in the original direction of the turn or 60 degrees in the opposite direction in the case of accelerated turning stalls; and	
(6) Exceeding the maximum permissible speed or allowable limit load factor.	
(c) Compliance with the requirements of this section must be shown under the following conditions:	
(1) Wing flaps: Retracted, fully extended, and each intermediate normal operating position as appropriate for the phase of flight	
appropriate for the phase of might	
(2) Landing gear: Retracted and extended as appropriate for the altitude.	
(3) Cowl flaps: Appropriate to configuration.	
(4) Spoilers/speedbrakes: Retracted and extended unless they have no measureable effect at low	
speeds.	
(5) Demorr	
(5) rower:	
	<ul> <li>(4) Exceeding a bank angle of 60 degrees in the original direction of the turn or 30 degrees in the opposite direction in the case of turning flight stalls;</li> <li>(5) Exceeding a bank angle of 90 degrees in the original direction of the turn or 60 degrees in the opposite direction in the case of accelerated turning stalls; and</li> <li>(6) Exceeding the maximum permissible speed or allowable limit load factor.</li> <li>(c) Compliance with the requirements of this section must be shown under the following conditions:</li> <li>(1) Wing flaps: Retracted, fully extended, and each intermediate normal operating position as appropriate for the phase of flight.</li> <li>(2) Landing gear: Retracted and extended as appropriate for the altitude.</li> <li>(3) Cowl flaps: Appropriate to configuration.</li> <li>(4) Spoilers/speedbrakes: Retracted and extended unless they have no measureable effect at low speeds.</li> <li>(5) Power:</li> </ul>

power required for level flight in the landing	(i) Power/Thrust off; and	
configuration at maximum landing weight and a		
speed of 1.4 $V_{SO}$ , except that the power may not be	(ii) For reciprocating engine powered airplanes: 75	
less than 50 percent of maximum continuous power.	percent of maximum continuous power. However, if	
	the power-to-weight ratio at 75 percent of maximum	
(5) Trim: The airplane trimmed at a speed as near 1.5	continuous power results in nose-high attitudes	
$V_{S1}$ as practicable.	exceeding 30 degrees, the test may be carried out	
-	with the power required for level flight in the landing	
(6) Propeller. Full increase rpm position for the	configuration at maximum landing weight and a	
power off condition.	speed of 1,4 VSO, except that the power may not be	
	less than 50 percent of maximum continuous power;	
	or	
	(iii) For turbine engine powered airplanes: The	
	maximum engine thrust, except that it need not	
	exceed the thrust necessary to maintain level flight at	
	1,5 VS1 (where VS1 corresponds to the stalling	
	speed with flaps in the approach position, the landing	
	gear retracted, and maximum landing weight).	
	(6) Trim: The airplane trimmed at 1,5 VS1.	
	(7) Propeller. Full increase rpm position for the	
	power off condition.	
23.221 Spinning.	23.221 Spinning.	A alteração proposta apenas
		introduz correções de referências
(a) Normal category airplanes. A single-engine,	(a) Normal category airplanes. A single-engine,	que estavam incorretas na emenda
normal category airplane must be able to recover	normal category airplane must be able to recover	anterior.
from a one-turn spin or a three-second spin,	from a one-turn spin or a three-second spin,	
whichever takes longer, in not more than one	whichever takes longer, in not more than one	

additional turn after initiation of the first control action for recovery, or demonstrate compliance with the optional spin resistant requirements of this section.	additional turn after initiation of the first control action for recovery, or demonstrate compliance with the optional spin resistant requirements of this section.	
(1) The following apply to one turn or three second spins:	(1) The following apply to one turn or three second spins:	
(i) For both the flaps-retracted and flaps-extended conditions, the applicable airspeed limit and positive limit maneuvering load factor must not be exceeded;	(i) For both the flaps-retracted and flaps-extended conditions, the applicable airspeed limit and positive limit maneuvering load factor must not be exceeded;	
(ii) No control forces or characteristic encountered during the spin or recovery may adversely affect prompt recovery;	(ii) No control forces or characteristic encountered during the spin or recovery may adversely affect prompt recovery;	
(iii) It must be impossible to obtain unrecoverable spins with any use of the flight or engine power controls either at the entry into or during the spin; and	(iii) It must be impossible to obtain unrecoverable spins with any use of the flight or engine power controls either at the entry into or during the spin; and	
(iv) For the flaps-extended condition, the flaps may be retracted during the recovery but not before rotation has ceased.	(iv) For the flaps-extended condition, the flaps may be retracted during the recovery but not before rotation has ceased.	
(2) At the applicant's option, the airplane may be demonstrated to be spin resistant by the following:	(2) At the applicant's option, the airplane may be demonstrated to be spin resistant by the following:	
(i) During the stall maneuver contained in §23.201, the pitch control must be pulled back and held	(i) During the stall maneuver contained in section 23.201, the pitch control must be pulled back and	

against the stop. Then, using ailerons and rudders in	held against the stop. Then, using ailerons and	
the proper direction, it must be possible to maintain	rudders in the proper direction, it must be possible to	
wings-level flight within 15 degrees of bank and to	maintain wings-level flight within 15 degrees of	
roll the airplane from a 30 degree bank in one	bank and to roll the airplane from a 30 degree bank	
direction to a 30 degree bank in the other direction;	in one direction to a 30 degree bank in the other	
	direction;	
(ii) Reduce the airplane speed using pitch control at		
a rate of approximately one knot per second until the	(ii) Reduce the airplane speed using pitch control at	
pitch control reaches the stop; then, with the pitch	a rate of approximately one knot per second (0,5 m/s)	
control pulled back and held against the stop, apply	until the pitch control reaches the stop; then, with the	
full rudder control in a manner to promote spin entry	pitch control pulled back and held against the stop,	
for a period of seven seconds or through a 360 degree	apply full rudder control in a manner to promote spin	
heading change, whichever occurs first. If the 360	entry for a period of seven seconds or through a 360	
degree heading change is reached first, it must have	degree heading change, whichever occurs first. If the	
taken no fewer than four seconds. This maneuver	360 degree heading change is reached first, it must	
must be performed first with the ailerons in the	have taken no fewer than four seconds. This	
neutral position, and then with the ailerons deflected	maneuver must be performed first with the ailerons	
opposite the direction of turn in the most adverse	in the neutral position, and then with the ailerons	
manner. Power and airplane configuration must be	deflected opposite the direction of turn in the most	
set in accordance with §23.201(e) without change	adverse manner. Power and airplane configuration	
during the maneuver. At the end of seven seconds or	must be set in accordance with paragraph 23.201(f)	
a 360 degree heading change, the airplane must	without change during the maneuver. At the end of	
respond immediately and normally to primary flight	seven seconds or a 360 degree heading change, the	
controls applied to regain coordinated, unstalled	airplane must respond immediately and normally to	
flight without reversal of control effect and without	primary flight controls applied to regain coordinated,	
exceeding the temporary control forces specified by	unstalled flight without reversal of control effect and	
\$23.143(c); and	without exceeding the temporary control forces	
	specified by paragraph 23.143(c); and	
(iii) Compliance with §§23.201 and 23.203 must be		
demonstrated with the airplane in uncoordinated		

flight, corresponding to one ball width displacement	(iii) Compliance with sections 23.201 and 23.203	
on a slip-skid indicator, unless one ball width	must be demonstrated with the airplane in	
displacement cannot be obtained with full rudder, in	uncoordinated flight, corresponding to one ball	
which case the demonstration must be with full	width displacement on a slip-skid indicator, unless	
rudder applied.	one ball width displacement cannot be obtained with	
	full rudder, in which case the demonstration must be	
(b) Utility category airplanes. A utility category	with full rudder applied.	
airplane must meet the requirements of paragraph (a)		
of this section. In addition, the requirements of	(b) Utility category airplanes. A utility category	
paragraph (c) of this section and §23.807(b)(7) must	airplane must meet the requirements of paragraph (a)	
be met if approval for spinning is requested.	of this section. In addition, the requirements of	
	paragraph (c) of this section and paragraph	
(c) Acrobatic category airplanes. An acrobatic	23.807(b)(6) must be met if approval for spinning is	
category airplane must meet the spin requirements of	requested.	
paragraph (a) of this section and §23.807(b)(6). In		
addition, the following requirements must be met in	(c) Acrobatic category airplanes. An acrobatic	
each configuration for which approval for spinning	category airplane must meet the spin requirements of	
is requested:	paragraph (a) of this section and paragraph	
	23.807(b)(5). In addition, the following	
(1) The airplane must recover from any point in a	requirements must be met in each configuration for	
spin up to and including six turns, or any greater	which approval for spinning is requested:	
number of turns for which certification is requested,		
in not more than one and one-half additional turns	(1) The airplane must recover from any point in a	
after initiation of the first control action for recovery.	spin up to and including six turns, or any greater	
However, beyond three turns, the spin may be	number of turns for which certification is requested,	
discontinued if spiral characteristics appear.	in not more than one and one-half additional turns	
	after initiation of the first control action for recovery.	
(2) The applicable airspeed limits and limit	However, beyond three turns, the spin may be	
maneuvering load factors must not be exceeded. For	discontinued if spiral characteristics appear.	
flaps-extended configurations for which approval is		

requested, the flaps must not be retracted during the	(2) The applicable airspeed limits and limit	
recovery.	maneuvering load factors must not be exceeded. For	
	flaps-extended configurations for which approval is	
(3) It must be impossible to obtain unrecoverable	requested, the flaps must not be retracted during the	
spins with any use of the flight or engine power	recovery.	
controls either at the entry into or during the spin.		
	(3) It must be impossible to obtain unrecoverable	
(4) There must be no characteristics during the spin	spins with any use of the flight or engine power	
(such as excessive rates of rotation or extreme	controls either at the entry into or during the spin.	
oscillatory motion) that might prevent a successful		
recovery due to disorientation or incapacitation of	(4) There must be no characteristics during the spin	
the pilot.	(such as excessive rates of rotation or extreme	
	oscillatory motion) that might prevent a successful	
	recovery due to disorientation or incapacitation of	
	the pilot.	
23.251 Vibration and buffeting.	<b>23.251 Vibration and buffeting.</b>	A proposta incorpora provisões
23.251 Vibration and buffeting.	<b>23.251 Vibration and buffeting.</b>	A proposta incorpora provisões dos parágrafos 25.251(d) e (e) no
<ul><li>23.251 Vibration and buffeting.</li><li>There must be no vibration or buffeting severe</li></ul>	<ul> <li>(a) There must be no vibration or buffeting severe</li> </ul>	A proposta incorpora provisões dos parágrafos 25.251(d) e (e) no 23.251 para aviões que voam
<ul><li>23.251 Vibration and buffeting.</li><li>There must be no vibration or buffeting severe enough to result in structural damage, and each part</li></ul>	<ul> <li>(a) There must be no vibration or buffeting severe enough to result in structural damage, and each part</li> </ul>	A proposta incorpora provisões dos parágrafos 25.251(d) e (e) no 23.251 para aviões que voam acima de 25.000 pés ou que tem
<b>23.251 Vibration and buffeting.</b> There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration,	<ul> <li>(a) There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration,</li> </ul>	A proposta incorpora provisões dos parágrafos 25.251(d) e (e) no 23.251 para aviões que voam acima de 25.000 pés ou que tem uma velocidade de mergulho
<b>23.251 Vibration and buffeting.</b> There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions	<ul> <li>(a) There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions</li> </ul>	A proposta incorpora provisões dos parágrafos 25.251(d) e (e) no 23.251 para aviões que voam acima de 25.000 pés ou que tem uma velocidade de mergulho (MD) maior que Mach 0,6.
<b>23.251 Vibration and buffeting.</b> There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions up to $V_D/M_D$ . In addition, there must be no buffeting	<ul> <li>(a) There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions up to VD/MD, or VDF/MDF for jets. In addition,</li> </ul>	A proposta incorpora provisões dos parágrafos 25.251(d) e (e) no 23.251 para aviões que voam acima de 25.000 pés ou que tem uma velocidade de mergulho (MD) maior que Mach 0,6. Também incorpora o uso de
<b>23.251 Vibration and buffeting.</b> There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions up to $V_D/M_D$ . In addition, there must be no buffeting in any normal flight condition severe enough to	<ul> <li>(a) There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions up to VD/MD, or VDF/MDF for jets. In addition, there must be no buffeting in any normal flight</li> </ul>	A proposta incorpora provisões dos parágrafos 25.251(d) e (e) no 23.251 para aviões que voam acima de 25.000 pés ou que tem uma velocidade de mergulho (MD) maior que Mach 0,6. Também incorpora o uso de VDF/MDF como já adotado nas
<b>23.251 Vibration and buffeting.</b> There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions up to $V_D/M_D$ . In addition, there must be no buffeting in any normal flight condition severe enough to interfere with the satisfactory control of the airplane	<ul> <li>the pilot.</li> <li>23.251 Vibration and buffeting.</li> <li>(a) There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions up to VD/MD, or VDF/MDF for jets. In addition, there must be no buffeting in any normal flight condition, including configuration changes during</li> </ul>	A proposta incorpora provisões dos parágrafos 25.251(d) e (e) no 23.251 para aviões que voam acima de 25.000 pés ou que tem uma velocidade de mergulho (MD) maior que Mach 0,6. Também incorpora o uso de VDF/MDF como já adotado nas condições especiais emitidas para
<b>23.251 Vibration and buffeting.</b> There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions up to $V_D/M_D$ . In addition, there must be no buffeting in any normal flight condition severe enough to interfere with the satisfactory control of the airplane or cause excessive fatigue to the flight crew. Stall	<ul> <li>the pilot.</li> <li>23.251 Vibration and buffeting.</li> <li>(a) There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions up to VD/MD, or VDF/MDF for jets. In addition, there must be no buffeting in any normal flight condition, including configuration changes during cruise, severe enough to interfere with the</li> </ul>	A proposta incorpora provisões dos parágrafos 25.251(d) e (e) no 23.251 para aviões que voam acima de 25.000 pés ou que tem uma velocidade de mergulho (MD) maior que Mach 0,6. Também incorpora o uso de VDF/MDF como já adotado nas condições especiais emitidas para os jatos certificados de acordo
<b>23.251 Vibration and buffeting.</b> There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions up to $V_D/M_D$ . In addition, there must be no buffeting in any normal flight condition severe enough to interfere with the satisfactory control of the airplane or cause excessive fatigue to the flight crew. Stall warning buffeting within these limits is allowable.	<ul> <li>the pilot.</li> <li>23.251 Vibration and buffeting.</li> <li>(a) There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions up to VD/MD, or VDF/MDF for jets. In addition, there must be no buffeting in any normal flight condition, including configuration changes during cruise, severe enough to interfere with the satisfactory control of the airplane or cause excessive</li> </ul>	A proposta incorpora provisões dos parágrafos 25.251(d) e (e) no 23.251 para aviões que voam acima de 25.000 pés ou que tem uma velocidade de mergulho (MD) maior que Mach 0,6. Também incorpora o uso de VDF/MDF como já adotado nas condições especiais emitidas para os jatos certificados de acordo com o RBAC 23.
<b>23.251 Vibration and buffeting.</b> There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions up to $V_D/M_D$ . In addition, there must be no buffeting in any normal flight condition severe enough to interfere with the satisfactory control of the airplane or cause excessive fatigue to the flight crew. Stall warning buffeting within these limits is allowable.	<ul> <li>the pilot.</li> <li>23.251 Vibration and buffeting.</li> <li>(a) There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions up to VD/MD, or VDF/MDF for jets. In addition, there must be no buffeting in any normal flight condition, including configuration changes during cruise, severe enough to interfere with the satisfactory control of the airplane or cause excessive fatigue to the flight crew. Stall warning buffeting</li> </ul>	A proposta incorpora provisões dos parágrafos 25.251(d) e (e) no 23.251 para aviões que voam acima de 25.000 pés ou que tem uma velocidade de mergulho (MD) maior que Mach 0,6. Também incorpora o uso de VDF/MDF como já adotado nas condições especiais emitidas para os jatos certificados de acordo com o RBAC 23.
<b>23.251 Vibration and buffeting.</b> There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions up to $V_D/M_D$ . In addition, there must be no buffeting in any normal flight condition severe enough to interfere with the satisfactory control of the airplane or cause excessive fatigue to the flight crew. Stall warning buffeting within these limits is allowable.	<ul> <li>the pilot.</li> <li>23.251 Vibration and buffeting.</li> <li>(a) There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions up to VD/MD, or VDF/MDF for jets. In addition, there must be no buffeting in any normal flight condition, including configuration changes during cruise, severe enough to interfere with the satisfactory control of the airplane or cause excessive fatigue to the flight crew. Stall warning buffeting within these limits is allowable.</li> </ul>	A proposta incorpora provisões dos parágrafos 25.251(d) e (e) no 23.251 para aviões que voam acima de 25.000 pés ou que tem uma velocidade de mergulho (MD) maior que Mach 0,6. Também incorpora o uso de VDF/MDF como já adotado nas condições especiais emitidas para os jatos certificados de acordo com o RBAC 23.

	(b) There must be no perceptible buffeting condition in the cruise configuration in straight flight at any speed up to VMO/MMO, except stall buffeting, which is allowable.	
	(c) For airplanes with MD greater than M 0,6 or a maximum operating altitude greater than 25.000 feet (7.620 m), the positive maneuvering load factors at which the onset of perceptible buffeting occurs must be determined with the airplane in the cruise configuration for the ranges of airspeed or Mach number, weight, and altitude for which the airplane is to be certificated. The envelopes of load factor, speed, altitude, and weight must provide a sufficient range of speeds and load factors for normal operations. Probable inadvertent excursions beyond the boundaries of the buffet onset envelopes may not	
	result in unsafe conditions.	A
23.253 High speed characteristics. If a maximum operating speed $V_{MO}/M_{MO}$ is established under §23.1505(c), the following speed increase and recovery characteristics must be met:	23.253 High speed characteristics. If a maximum operating speed VMO/MMO is established under paragraph 23.1505(c), the following speed increase and recovery characteristics must be met:	As alterações propostas introduzem novos requisitos para tratar mais adequadamente a nova geração de aviões de alto desempenho certificados de acordo com o RBAC 23 que
(a) Operating conditions and characteristics likely to cause inadvertent speed increases (including upsets in pitch and roll) must be simulated with the airplane trimmed at any likely speed up to $V_{MO}/M_{MO}$ . These conditions and characteristics include gust upsets, inadvertent control movements, low stick force	(a) Operating conditions and characteristics likely to cause inadvertent speed increases (including upsets in pitch and roll) must be simulated with the airplane trimmed at any likely speed up to VMO/MMO. These conditions and characteristics include gust	possuem velocidades e altitudes de operação maiores.

gradients in relation to control friction, passenger	upsets, inadvertent control movements, low stick	
movement, leveling off from climb, and descent	force gradients in relation to control friction,	
from Mach to airspeed limit altitude.	passenger movement, leveling off from climb, and	
	descent from Mach to airspeed limit altitude.	
(b) Allowing for pilot reaction time after occurrence		
of the effective inherent or artificial speed warning	(b) Allowing for pilot reaction time after occurrence	
specified in §23.1303, it must be shown that the	of the effective inherent or artificial speed warning	
airplane can be recovered to a normal attitude and its	specified in section 23.1303, it must be shown that	
speed reduced to $V_{MO}/M_{MO}$ , without—	the airplane can be recovered to a normal attitude and	
	its speed reduced to VMO/MMO, without:	
(1) Exceeding $V_D/M_D$ , the maximum speed shown		
under §23.251, or the structural limitations; or	(1) Exceptional piloting strength or skill;	
(2) Buffeting that would impair the pilot's ability to	(2) Exceeding VD/MD, or VDF/MDF for jets, the	
read the instruments or to control the airplane for	maximum speed shown under section 23.251, or the	
recovery.	structural limitations; and	
(c) There may be no control reversal about any axis	(3) Buffeting that would impair the pilot's ability to	
at any speed up to the maximum speed shown under	read the instruments or to control the airplane for	
§23.251. Any reversal of elevator control force or	recovery.	
tendency of the airplane to pitch, roll, or yaw must		
be mild and readily controllable, using normal	(c) There may be no control reversal about any axis	
piloting techniques.	at any speed up to the maximum speed shown under	
	section 23.251. Any reversal of elevator control	
	force or tendency of the airplane to pitch, roll, or yaw	
	must be mild and readily controllable, using normal	
	piloting techniques.	
	(d) Maximum speed for stability characteristics,	
	VFC/MFC. VFC/MFC may not be less than a speed	

midway between VMO/MMO and VDF/MDF except that, for altitudes where Mach number is the	
limiting factor, MFC need not exceed the Mach	
number at which effective speed warning occurs.	
<b>23.255</b> Out of trim characteristics. For airplanes with an MD greater than M 0.6 and that incorporate a trimmable horizontal stabilizer, the	A seção 23.255 foi revisada para incluir novos requisites que consideram os potenciais efeitos de altas velocidades para aviões
following requirements for out-of-trim characteristics apply:	com uma MD maior que M 0,6. Estes requisitos, que são derivados do RBAC 25, visam aviões que
(a) From an initial condition with the airplane trimmed at cruise speeds up to VMO/MMO, the airplane must have satisfactory maneuvering stability and controllability with the degree of out- of-trim in both the airplane nose-up and nose-down directions, which results from the greater of the following:	incorporam um estabilizador horizontal ajustável. Esta decisão foi baseada no histórico de serviço positivo com a frota existente de jatos certificados de acordo com o RBAC 23 projetados com caudas horizontais convencionais e aqueles que usam profundores
(1) A three-second movement of the longitudinal trim system at its normal rate for the particular flight condition with no aerodynamic load (or an equivalent degree of trim for airplanes that do not have a power-operated trim system), except as limited by stops in the trim system, including those required by paragraph 23.655(b) for adjustable stabilizers; or	ajustáveis. Aviões que experimentaram incidentes de <i>upset</i> envolvendo condições <i>out-</i> <i>of-trim</i> eram aviões certificados de acordo com o RBAC 25 e projetados com um estabilizador horizontal ajustável.

(2) The maximum mistrim that can be sustained by the autopilot while maintaining level flight in the high speed cruising condition.	
(b) In the out-of-trim condition specified in paragraph (a) of this section, when the normal acceleration is varied from +l g to the positive and negative values specified in paragraph (c) of this section, the following apply:	
(1) The stick force versus g curve must have a positive slope at any speed up to and including VFC/MFC; and	
(2) At speeds between VFC/MFC and VDF/MDF, the direction of the primary longitudinal control force may not reverse.	
(c) Except as provided in paragraphs (d) and (e) of this section, compliance with the provisions of paragraph (a) of this section must be demonstrated in flight over the acceleration range as follows:	
(1) -1 g to +2.5 g; or	
(2) 0 g to 2.0 g, and extrapolating by an acceptable method to $-1$ g and $+2.5$ g.	
(d) If the procedure set forth in paragraph $(c)(2)$ of this section is used to demonstrate compliance and	

marginal conditions exist during flight test with regard to reversal of primary longitudinal control force, flight tests must be accomplished from the normal acceleration at which a marginal condition is found to exist to the applicable limit specified in paragraph (b)(1) of this section. (e) During flight tests required by paragraph (a) of this section, the limit maneuvering load factors, prescribed in paragraph 23.333(b) and section 23.337, need not be exceeded. In addition, the entry speeds for flight test demonstrations at normal acceleration values less than 1 g must be limited to the extent necessary to accomplish a recovery without exceeding VDF/MDF. (f) In the out-of-trim condition specified in paragraph (a) of this section, it must be possible from an overspeed condition at VDF/MDF to produce at least 1.5 g for recovery by applying not more than 125 pounds of longitudinal control force using either the primary longitudinal control alone or the primary longitudinal control and the longitudinal trim system. If the longitudinal trim is used to assist in producing the required load factor, it must be shown at VDF/MDF that the longitudinal trim can be actuated in the airplane nose-up direction with the primary surface loaded to correspond to the least of the following airplane nose-up control forces:

	(1) The maximum control forces expected in service,	
	as specified in sections 23.301 and 23.397.	
	(2) The control force required to produce 1.5 g.	
	(3) The control force corresponding to buffeting or	
	other phenomena of such intensity that it is a strong	
	deterrent to further application of primary	
	longitudinal control force.	
23.561 General.	23.561 General.	As alterações da seção 23.561
		tratam de requisitos estruturais
(a) The airplane, although it may be damaged in	(a) The airplane, although it may be damaged in	para motores incorporados na
emergency landing conditions, must be designed as	emergency landing conditions, must be designed as	fuselagem ou localizados atrás da
prescribed in this section to protect each occupant	prescribed in this section to protect each occupant	cabine de passageiros. Estas
under those conditions.	under those conditions.	mudanças foram propostas para:
		(1) adicionar requisitos estruturais
(b) The structure must be designed to give each	(b) The structure must be designed to give each	para jatos monomotor com motor
occupant every reasonable chance of escaping	occupant every reasonable chance of escaping	no eixo de voo incorporado na
serious injury when—	serious injury when:	fuselagem, e (2) minimizar a
		chance do motor adentrar o
(1) Proper use is made of the seats, safety belts, and	(1) Proper use is made of the seats, safety belts, and	compartimento de passageiros no
shoulder harnesses provided for in the design;	shoulder harnesses provided for in the design;	evento de um pouso de
		emergência. As mudanças
(2) The occupant experiences the static inertia loads	(2) The occupant experiences the static inertia loads	reduzem o potencial de um motor
corresponding to the following ultimate load	corresponding to the following ultimate load factors:	separar das suas fixações sob
factors—		cargas de ruptura atuando para a
	(i) Upward, 3,0g for normal, utility, and commuter	frente e, na sequência, invadir a
	category airplanes, or 4,5g for acrobatic category	cabine de passageiros.
	airplanes;	

(i) Upward, 3.0g for normal, utility, and commuter	(ii) Forward, 9,0g;	
category airplanes, or 4.5g for acrobatic category		
airplanes;	(iii) Sideward, 1,5g; and	
	(in) Demonstration of the section of the	
(11) Forward, 9.0g;	(iv) Downward, $6,0g$ when certification to the	
(iii) Sideward 1.5g; and	is requested: and	
(iii) Sideward, 1.5g, and	is requested, and	
(iv) Downward, 6.0g when certification to the	(3) The items of mass within the cabin, that could	
emergency exit provisions of §23.807(d)(4) is	injure an occupant, experience the static inertia loads	
requested; and	corresponding to the following ultimate load factors:	
(3) The items of mass within the cabin, that could	(i) Upward, 3,0g;	
injure an occupant, experience the static inertia loads		
factors	(11) Forward, 18,0g; and	
	(iii) Sideward 4 5g	
(i) Upward, 3.0g;	(11) 5100 (1110, 1,55)	
	(c) Each airplane with retractable landing gear must	
(ii) Forward, 18.0g; and	be designed to protect each occupant in a landing:	
(iii) Sideward, 4.5g.	(1) With the wheels retracted;	
(a) Each airmland with retractable landing according		
(c) Each airplane with retractable failing gear must	(2) with moderate descent velocity; and	
be designed to protect each occupant in a fanding—	(3) Assuming in the absence of a more rational	
(1) With the wheels retracted;	analysis:	
(2) With moderate descent velocity; and	(i) A downward ultimate inertia force of 3 g; and	

(3) Assuming, in the absence of a more rational	(ii) A coefficient of friction of 0,5 at the ground.	
analysis—		
	(d) If it is not established that a turnover is unlikely	
(i) A downward ultimate inertia force of 3 g; and	during an emergency landing, the structure must be	
	designed to protect the occupants in a complete	
(ii) A coefficient of friction of 0.5 at the ground.	turnover as follows:	
(d) If it is not astablished that a turnovar is unlikely.	(1) The likelihood of a turnover may be shown by an	
during an amorganey landing, the structure must be	(1) The likelihood of a turnover may be shown by an analysis assuming the following conditions:	
designed to protect the occupants in a complete	analysis assuming the following conditions.	
turnover as follows:	(i) The most adverse combination of weight and	
	center of gravity position;	
(1) The likelihood of a turnover may be shown by an		
analysis assuming the following conditions—	(ii) Longitudinal load factor of 9.0g;	
(i) The most adverse combination of weight and	(iii) Vertical load factor of 1,0g; and	
center of gravity position;		
	(iv) For airplanes with tricycle landing gear, the nose	
(11) Longitudinal load factor of 9.0g;	wheel strut failed with the nose contacting the	
(iii) Vertical load factor of 1 0g; and	ground.	
(iii) vertical load factor of 1.0g, and	(2) For determining the loads to be applied to the	
(iv) For airplanes with tricycle landing gear, the nose	inverted airplane after a turnover an unward ultimate	
wheel strut failed with the nose contacting the	inertia load factor of 3 0g and a coefficient of friction	
ground.	with the ground of 0.5 must be used.	
(2) For determining the loads to be applied to the	(e) Except as provided in paragraph 23.787(c), the	
inverted airplane after a turnover, an upward	supporting structure must be designed to restrain,	
	under loads up to those specified in paragraph (b)(3)	

ultimate inertia load factor of 3.0g and a coefficient of friction with the ground of 0.5 must be used.	of this section, each item of mass that could injure an occupant if it came loose in a minor crash landing.	
(e) Except as provided in §23.787(c), the supporting structure must be designed to restrain, under loads up to those specified in paragraph (b)(3) of this section, each item of mass that could injure an occupant if it came loose in a minor crash landing	(1) For engines mounted inside the fuselage, aft of the cabin, it must be shown by test or analysis that the engine and attached accessories, and the engine mounting structure:	
came loose in a minor crash fanding.	(i) Can withstand a forward acting static ultimate inertia load factor of 18,0 g plus the maximum takeoff engine thrust; or	
	(ii) The airplane structure is designed to preclude the engine and its attached accessories from entering or protruding into the cabin should the engine mounts fail.	
	(2) [Reserved]	
23.562 Emergency landing dynamic conditions.	23.562 Emergency landing dynamic conditions.	Foram propostas alterações para
<ul> <li>(a) Each seat/restraint system for use in a normal, utility, or acrobatic category airplane must be designed to protect each occupant during an emergency landing when—</li> <li>(1) Proper use is made of seats, safety belts, and shoulder harnesses provided for in the design; and</li> </ul>	<ul> <li>(a) Each seat/restraint system for use in a normal, utility, or acrobatic category airplane, or in a commuter category jet airplane, must be designed to protect each occupant during an emergency landing when:</li> <li>(1) Proper use is made of seats, safety belts, and shoulder harnesses provided for in the design; and</li> </ul>	requerer testes dinamicos de assentos para jatos categoria transporte regional. Também foram propostas alterações para o cálculo do Critério de Ferimentos na Cabeça ( <i>Head Injury Criteria</i> – HIC) para torná-lo consistente com os cálculos contidos na seção 25.562. A intenção da regra proposta é codificar um requisito
		que já se tornou prática da

(2) The occupant is exposed to the loads resulting	(2) The occupant is exposed to the loads resulting	indústria. Todos os fabricantes de
from the conditions prescribed in this section.	from the conditions prescribed in this section.	jatos recentemente certificados na
		categoria transporte regional
(b) Except for those seat/restraint systems that are	(b) Except for those seat/restraint systems that are	concordaram em cumprir com a
required to meet paragraph (d) of this section, each	required to meet paragraph (d) of this section, each	seção 23.562. Não é intenção
seat/restraint system for crew or passenger	seat/restraint system for crew or passenger	incluir aviões à hélice da categoria
occupancy in a normal, utility, or acrobatic category	occupancy in a normal, utility, or acrobatic category	transporte regional em vista do
airplane, must successfully complete dynamic tests	airplane, or in a commuter category jet airplane, must	histórico regulatório associado
or be demonstrated by rational analysis supported by	successfully complete dynamic tests or be	com a alteração.
dynamic tests, in accordance with each of the	demonstrated by rational analysis supported by	
following conditions. These tests must be conducted	dynamic tests, in accordance with each of the	
with an occupant simulated by an anthropomorphic	following conditions. These tests must be conducted	
test dummy (ATD) defined by 49 CFR Part 572,	with an occupant simulated by an anthropomorphic	
Subpart B, or an FAA-approved equivalent, with a	test dummy (ATD) defined by 49 CFR Part 572,	
nominal weight of 170 pounds and seated in the	Subpart B, or an ANAC-approved equivalent, with a	
normal upright position.	nominal weight of 170 pounds (77 kg) and seated in	
	the normal upright position.	
(1) For the first test, the change in velocity may not		
be less than 31 feet per second. The seat/restraint	(1) For the first test, the change in velocity may not	
system must be oriented in its nominal position with	be less than 31 feet per second (34 km/h). The	
respect to the airplane and with the horizontal plane	seat/restraint system must be oriented in its nominal	
of the airplane pitched up 60 degrees, with no yaw,	position with respect to the airplane and with the	
relative to the impact vector. For seat/restraint	horizontal plane of the airplane pitched up 60	
systems to be installed in the first row of the airplane,	degrees, with no yaw, relative to the impact vector.	
peak deceleration must occur in not more than 0.05	For seat/restraint systems to be installed in the first	
seconds after impact and must reach a minimum of	row of the airplane, peak deceleration must occur in	
19g. For all other seat/restraint systems, peak	not more than 0,05 seconds after impact and must	
deceleration must occur in not more than 0.06	reach a minimum of 19g. For all other seat/restraint	
	systems, peak deceleration must occur in not more	

seconds after impact and must reach a minimum of 15g.	than 0,06 seconds after impact and must reach a minimum of 15g.	
(2) For the second test, the change in velocity may not be less than 42 feet per second. The seat/restraint system must be oriented in its nominal position with respect to the airplane and with the vertical plane of the airplane yawed 10 degrees, with no pitch, relative to the impact vector in a direction that results in the greatest load on the shoulder harness. For seat/restraint systems to be installed in the first row of the airplane, peak deceleration must occur in not more than 0.05 seconds after impact and must reach a minimum of 26g. For all other seat/restraint systems, peak deceleration must occur in not more than 0.06 seconds after impact and must reach a minimum of 21g.	(2) For the second test, the change in velocity may not be less than 42 feet per second (45 km/h). The seat/restraint system must be oriented in its nominal position with respect to the airplane and with the vertical plane of the airplane yawed 10 degrees, with no pitch, relative to the impact vector in a direction that results in the greatest load on the shoulder harness. For seat/restraint systems to be installed in the first row of the airplane, peak deceleration must occur in not more than 0.05 seconds after impact and must reach a minimum of 26g. For all other seat/restraint systems, peak deceleration must occur in not more than 0,06 seconds after impact and must reach a minimum of 21g.	
(3) To account for floor warpage, the floor rails or attachment devices used to attach the seat/restraint system to the airframe structure must be preloaded to misalign with respect to each other by at least 10 degrees vertically (i.e., pitch out of parallel) and one of the rails or attachment devices must be preloaded to misalign by 10 degrees in roll prior to conducting the test defined by paragraph (b)(2) of this section.	(3) To account for floor warpage, the floor rails or attachment devices used to attach the seat/restraint system to the airframe structure must be preloaded to misalign with respect to each other by at least 10 degrees vertically (i.e., pitch out of parallel) and one of the rails or attachment devices must be preloaded to misalign by 10 degrees in roll prior to conducting the test defined by paragraph (b)(2) of this section.	

(c) Compliance with the following requirements must be shown during the dynamic tests conducted in accordance with paragraph (b) of this section:	(c) Compliance with the following requirements must be shown during the dynamic tests conducted in accordance with paragraph (b) of this section:	
(1) The seat/restraint system must restrain the ATD although seat/restraint system components may experience deformation, elongation, displacement, or crushing intended as part of the design.	(1) The seat/restraint system must restrain the ATD although seat/restraint system components may experience deformation, elongation, displacement, or crushing intended as part of the design.	
(2) The attachment between the seat/restraint system and the test fixture must remain intact, although the seat structure may have deformed.	(2) The attachment between the seat/restraint system and the test fixture must remain intact, although the seat structure may have deformed.	
(3) Each shoulder harness strap must remain on the ATD's shoulder during the impact.	(3) Each shoulder harness strap must remain on the ATD's shoulder during the impact.	
(4) The safety belt must remain on the ATD's pelvis during the impact.	(4) The safety belt must remain on the ATD's pelvis during the impact.	
(5) The results of the dynamic tests must show that the occupant is protected from serious head injury.	(5) The results of the dynamic tests must show that the occupant is protected from serious head injury.	
(i) When contact with adjacent seats, structure, or other items in the cabin can occur, protection must be provided so that the head impact does not exceed a head injury criteria (HIC) of 1,000.	(i) When contact with adjacent seats, structure, or other items in the cabin can occur, protection must be provided so that the head impact does not exceed a head injury criteria (HIC) of 1.000.	
(ii) The value of HIC is defined as—	(ii) The value of HIC is defined as:	

$$HIC = \left\{ \left(t_2 - t_1\right) \left[ \frac{1}{\left(t_2 - t_1\right)} \int_{t_1}^{t_2} a(t) dt \right]^{2.5} \right\}_{Max}$$

Where:

$$HIC = \left\{ \left(t_2 - t_1\right) \left\lfloor \frac{1}{\left(t_2 - t_1\right)} \int_{t_1}^{t_2} a(t) dt \right\rfloor^{23} \right\}_{Max}$$

## Where:

£

 $t_1$  is the initial integration time, expressed in seconds,  $t_2$  is the final integration time, expressed in seconds,  $(t_2-t_1)$  is the time duration of the major head impact, expressed in seconds, and a(t) is the resultant deceleration at the center of gravity of the head form expressed as a multiple of g (units of gravity).

(iii) Compliance with the HIC limit must be demonstrated by measuring the head impact during dynamic testing as prescribed in paragraphs (b)(1) and (b)(2) of this section or by a separate showing of compliance with the head injury criteria using test or analysis procedures.

(6) Loads in individual shoulder harness straps may not exceed 1,750 pounds. If dual straps are used for retaining the upper torso, the total strap loads may not exceed 2,000 pounds.

(7) The compression load measured between the pelvis and the lumbar spine of the ATD may not exceed 1,500 pounds.

t1 is the initial integration time, expressed in seconds, t2 is the final integration time, expressed in seconds, and a(t) is the total acceleration vs. time curve for the head strike expressed as a multiple of g (units of gravity).

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(iii) Compliance with the HIC limit must be demonstrated by measuring the head impact during dynamic testing as prescribed in paragraphs (b)(1) and (b)(2) of this section or by a separate showing of compliance with the head injury criteria using test or analysis procedures.

(6) Loads in individual shoulder harness straps may not exceed 1.750 pounds (7.784 N). If dual straps are used for retaining the upper torso, the total strap loads may not exceed 2.000 pounds (8.896 N).

(7) The compression load measured between the pelvis and the lumbar spine of the ATD may not exceed 1.500 pounds (6.672 N).

(d) For all single-engine airplanes with a VSO of more than 61 knots at maximum weight, and those

(d) For all single-engine airplanes with a $V_{SO}$ of more	multiengine airplanes of 6.000 pounds ( $\overline{2.722 \text{ kg}}$ ) or	
than 61 knots at maximum weight, and those	less maximum weight with a VSO of more than 61	
multiengine airplanes of 6,000 pounds or less	knots at maximum weight that do not comply with	
maximum weight with a V <sub>SO</sub> of more than 61 knots	paragraph 23.67(a)(1);	
at maximum weight that do not comply with		
§23.67(a)(1);	(1) The ultimate load factors of paragraph 23.561(b)	
	must be increased by multiplying the load factors by	
(1) The ultimate load factors of §23.561(b) must be	the square of the ratio of the increased stall speed to	
increased by multiplying the load factors by the	61 knots. The increased ultimate load factors need	
square of the ratio of the increased stall speed to 61	not exceed the values reached at a VS0of 79 knots.	
knots. The increased ultimate load factors need not	The upward ultimate load factor for acrobatic	
exceed the values reached at a $V_{s0}$ of 79 knots. The	category airplanes need not exceed 5.0g.	
upward ultimate load factor for acrobatic category		
airplanes need not exceed 5.0g.	(2) The seat/restraint system test required by	
	paragraph (b)(1) of this section must be conducted in	
(2) The seat/restraint system test required by	accordance with the following criteria:	
paragraph $(b)(1)$ of this section must be conducted in		
accordance with the following criteria:	(i) The change in velocity may not be less than 31	
	feet per second.	
(i) The change in velocity may not be less than 31		
feet per second.	(ii)(A) The peak deceleration (gp) of 19g and 15g	
	must be increased and multiplied by the square of the	
(ii)(A) The peak deceleration $(g_p)$ of 19g and 15g	ratio of the increased stall speed to 61 knots:	
must be increased and multiplied by the square of the		
ratio of the increased stall speed to 61 knots:	gp=19.0 (VS0/61)2 or gp=15.0 (VS0/61)2	
$g_p=19.0 (V_{S0}/61)^2 \text{ or } g_p=15.0 (V_{S0}/61)^2$	(B) The peak deceleration need not exceed the value	
	reached at a VS0of 79 knots.	

(B) The peak deceleration need not exceed the value $1 + 1 + 1 + 1 = 1 = 1 = 1 = 1 = 1 = 1 = $	(iii) The peak deceleration must occur in not more	
reached at a $V_{soof}$ /9 knots.	than time (tr), which must be computed as follows:	
(iii) The peak deceleration must occur in not more	+ _ 3196	
than time (t <sub>r</sub> ), which must be computed as follows:	$r_{\rm r} = \frac{1}{32.2(g_{\rm p})} = \frac{1}{g_{\rm p}}$	
$t_r = \frac{31}{22.2} = \frac{.96}{}$	where:	
$32.2(g_p) g_p$		
where	gp = The peak deceleration calculated in accordance with paragraph (d)(2)(ii) of this section	
where	with paragraph (u)(2)(ii) of this section	
$g_p$ =The peak deceleration calculated in accordance	tr = The rise time (in seconds) to the peak	
with paragraph (d)(2)(11) of this section	deceleration.	
$t_r$ =The rise time (in seconds) to the peak	(e) An alternate approach that achieves an	
deceleration.	equivalent, or greater, level of occupant protection to that required by this section may be used if	
(e) An alternate approach that achieves an	substantiated on a rational basis.	
equivalent, or greater, level of occupant protection to		
substantiated on a rational basis.		
23.571 Metallic pressurized cabin structures.	23.571 Metallic pressurized cabin structures.	O texto introdutório foi revisado
		para esclarecer a aplicabilidade de
For normal, utility, and acrobatic category airplanes,	For normal, utility, and acrobatic category airplanes,	cada parágrafo da seção.
the strength, detail design, and fabrication of the	the strength, detail design, and fabrication of the	Foi introduzido um novo
metallic structure of the pressure cabin must be	metallic structure of the pressure cabin must be	parágrafo para tratar das
evaluated under one of the following:	evaluated under paragraphs (a), (b), or (c). In	operações acima de 41.000 pés
		conforme discutido em diversas
		outras seções modificadas por esta

(a) A fatigue strength investigation in which the	addition, the requirements of paragraph (d) must be	emenda. Este parágrafo requer que
structure is shown by tests, or by analysis supported	met when applicable.	a tolerância a danos seja usada
by test evidence, to be able to withstand the repeated		para avaliar estruturas para
loads of variable magnitude expected in service; or	(a) A fatigue strength investigation in which the	operações acima de 41.000 pés em
	structure is shown by tests, or by analysis supported	qualquer avião, exceto aqueles da
(b) A fail safe strength investigation, in which it is	by test evidence, to be able to withstand the repeated	categoria transporte regional. Os
shown by analysis, tests, or both that catastrophic	loads of variable magnitude expected in service; or	aviões da categoria transporte
failure of the structure is not probable after fatigue		regional já são requeridos a usar
failure, or obvious partial failure, of a principal	(b) A fail safe strength investigation, in which it is	tolerância a danos de acordo com
structural element, and that the remaining structures	shown by analysis, tests, or both that catastrophic	a seção 23.574.
are able to withstand a static ultimate load factor of	failure of the structure is not probable after fatigue	
75 percent of the limit load factor at V C, considering	failure, or obvious partial failure, of a principal	
the combined effects of normal operating pressures,	structural element, and that the remaining structures	
expected external aerodynamic pressures, and flight	are able to withstand a static ultimate load factor of	
loads. These loads must be multiplied by a factor of	75 percent of the limit load factor at V C, considering	
1.15 unless the dynamic effects of failure under static	the combined effects of normal operating pressures,	
load are otherwise considered.	expected external aerodynamic pressures, and flight	
	loads. These loads must be multiplied by a factor of	
(c) The damage tolerance evaluation of §23.573(b).	1.15 unless the dynamic effects of failure under static	
	load are otherwise considered.	
	(c) The damage tolerance evaluation of paragraph	
	23.573(b).	
	(d) If certification for operation above 41.000 feet is	
	requested, a damage tolerance evaluation of the	
	fuselage pressure boundary per paragraph 23.573(b)	
	must be conducted.	
23.629 Flutter.	23.629 Flutter.	A proposta esclarece o uso de MD
		ou velocidade de mergulho (VD)

(a) It must be shown by the methods of paragraph (b)	(a) It must be shown by the methods of paragraph (b)	na seção 23.629 para jatos.
and either paragraph (c) or (d) of this section, that the	and either paragraph (c) or (d) of this section, that the	Conforme a velocidade de
airplane is free from flutter, control reversal, and	airplane is free from flutter, control reversal, and	mergulho aumenta em aviões de
divergence for any condition of operation within the	divergence for any condition of operation within the	alto desempenho, os efeitos da
limit V-n envelope and at all speeds up to the speed	limit V-n envelope and at all speeds up to the speed	compressibilidade do ar se tornam
specified for the selected method. In addition—	specified for the selected method. In addition:	mais significantes de forma que é
		mais apropriado nestes casos se
(1) Adequate tolerances must be established for	(1) Adequate tolerances must be established for	referir a MD em vez de VD. As
quantities which affect flutter, including speed,	quantities which affect flutter, including speed,	alterações propostas também
damping, mass balance, and control system stiffness;	damping, mass balance, and control system stiffness;	permitem o uso de velocidade de
and	and	mergulho em voo "demonstrada"
		(VDF/MDF) em vez das
(2) The natural frequencies of main structural	(2) The natural frequencies of main structural	velocidades teóricas (VD/MD)
components must be determined by vibration tests or	components must be determined by vibration tests or	nos testes em voo de <i>flutter</i> para
other approved methods.	other approved methods.	jatos. Usar uma velocidade
		demonstrada em vez de uma
(b) Flight flutter tests must be made to show that the	(b) Flight flutter tests must be made to show that the	teórica pode reduzir o ônus de
airplane is free from flutter, control reversal and	airplane is free from flutter, control reversal and	cumprimento quando o avião é
divergence and to show that—	divergence and to show that:	incapaz de atingir as velocidades
		de mergulho teóricas durante a
(1) Proper and adequate attempts to induce flutter	(1) Proper and adequate attempts to induce flutter	fase de ensaios do programa de
have been made within the speed range up to $V_D$ ;	have been made within the speed range up to	certificação de um avião.
	VD/MD, or VDF/MDF for jets;	
(2) The vibratory response of the structure during the		
test indicates freedom from flutter;	(2) The vibratory response of the structure during the	
	test indicates freedom from flutter;	
(3) A proper margin of damping exists at $V_D$ ; and		
	(3) A proper margin of damping exists at VD/MD, or	
	VDF/MDF for jets; and	

(4) There is no large and rapid reduction in damping (4) As VD/MD (or VDF/MDF for jets) is	
as V <sub>D</sub> is approached. approached, there is no large and rapid reduction in	
damping.	
(c) Any rational analysis used to predict freedom	
from flutter, control reversal and divergence must (c) Any rational analysis used to predict freedom	
cover all speeds up to 1.2 V <sub>D</sub> . from flutter, control reversal and divergence must	
cover all speeds up to 1,2 VD/1,2 MD, limited to	
(d) Compliance with the rigidity and mass balance Mach 1,0 for subsonic airplanes.	
criteria (pages 4-12), in Airframe and Equipment	
Engineering Report No. 45 (as corrected) (d) Compliance with the rigidity and mass balance	
"Simplified Flutter Prevention Criteria" (published   criteria (pages 4–12), in Airframe and Equipment	
by the Federal Aviation Administration) may be Engineering Report No. 45 (as corrected)	
accomplished to show that the airplane is free from "Simplified Flutter Prevention Criteria" (published	
tlutter, control reversal, or divergence if— by the Federal Aviation Administration) may be	
accomplished to show that the airplane is free from	
(1) $V_D/M_D$ for the airplane is less than 260 knots   flutter, control reversal, or divergence if:	
(EAS) and less than Mach U.S,	
(1) VD/MD for the airplane is less than 260 knots $(EAS)$ and less than Mack 0.5	
(2) The wing and alteron flutter prevention criteria, (EAS) and less than Mach 0,5,	
as represented by the wing torsional summers and ailoron balance criteria, are limited in use to (2) The wing and ailoron flutter prevention criteria.	
aircion balance cineria, are innited in use to (2) the wing and aneron flutter prevention cineria,	
angines floats or fuel tanks in outer wing panels) alleron balance criteria are limited in use to	
along the wing span and airplanets) and airplanets without large mass concentrations (such as	
engines floats or fuel tanks in outer wing nanels)	
(3) The airplane— along the wing span, and	
(i) Does not have a T-tail or other unconventional tail (3) The airplane:	
configurations:	

(ii) Does not have unusual mass distributions or	(i) Does not have a T-tail or other unconventional tail	
other unconventional design features that affect the	configurations;	
applicability of the criteria, and		
	(11) Does not have unusual mass distributions or other	
(111) Has fixed-fin and fixed-stabilizer surfaces.	unconventional design features that affect the	
(e) For turbonroneller-nowered airplanes the	applicability of the criteria, and	
dynamic evaluation must include—	(iii) Has fixed-fin and fixed-stabilizer surfaces	
(1) Whirl mode degree of freedom which takes into	(e) For turbopropeller-powered airplanes, the	
account the stability of the plane of rotation of the	dynamic evaluation must include:	
propeller and significant elastic, inertial, and		
aerodynamic forces, and	(1) Whirl mode degree of freedom which takes into	
(2) Depending anging mount and similars	account the stability of the plane of rotation of the	
(2) Propener, engine, engine mount, and amplane structure stiffness and damping variations	aerodynamic forces and	
appropriate to the particular configuration	actodynamic forces, and	
appropriate to the particular configuration.	(2) Propeller, engine, engine mount, and airplane	
(f) Freedom from flutter, control reversal, and	structure stiffness and damping variations	
divergence up to $V_D/M_D$ must be shown as follows:	appropriate to the particular configuration.	
(1) For airplanes that meet the criteria of paragraphs	(f) Freedom from flutter, control reversal, and	
(d)(1) through $(d)(3)$ of this section, after the failure,	divergence up to VD/MD must be shown as follows:	
in any tab control system	(1) For similars that must the criteria of personals	
	(d)(1) through $(d)(3)$ of this section after the failure	
(2) For airplanes other than those described in	malfunction, or disconnection of any single element	
paragraph $(f)(1)$ of this section, after the failure.	in any tab control system.	
malfunction, or disconnection of any single element		

in the primary flight control system, any tab control	(2) For airplanes other than those described in	
system, or any flutter damper.	paragraph (f)(1) of this section, after the failure,	
	malfunction, or disconnection of any single element	
(g) For airplanes showing compliance with the fail-	in the primary flight control system, any tab control	
safe criteria of §§23.571 and 23.572, the airplane	system, or any flutter damper.	
must be shown by analysis to be free from flutter up		
to V <sub>D</sub> /M <sub>D</sub> after fatigue failure, or obvious partial	(g) For airplanes showing compliance with the fail-	
failure, of a principal structural element.	safe criteria of sections 23.571 and 23.572, the	
	airplane must be shown by analysis to be free from	
(h) For airplanes showing compliance with the	flutter up to VD/MD after fatigue failure, or obvious	
damage tolerance criteria of §23.573, the airplane	partial failure, of a principal structural element.	
must be shown by analysis to be free from flutter up		
to $V_D/M_D$ with the extent of damage for which	(h) For airplanes showing compliance with the	
residual strength is demonstrated.	damage tolerance criteria of section 23.573, the	
	airplane must be shown by analysis to be free from	
(i) For modifications to the type design that could	flutter up to VD/MD with the extent of damage for	
affect the flutter characteristics, compliance with	which residual strength is demonstrated.	
paragraph (a) of this section must be shown, except		
that analysis based on previously approved data may	(i) For modifications to the type design that could	
be used alone to show freedom from flutter, control	affect the flutter characteristics, compliance with	
reversal and divergence, for all speeds up to the	paragraph (a) of this section must be shown, except	
speed specified for the selected method.	that analysis based on previously approved data may	
	be used alone to show freedom from flutter, control	
	reversal and divergence, for all speeds up to the	
	speed specified for the selected method.	
23.703 Takeoff warning system.	23.703 Takeoff warning system.	A proposta altera o texto
		introdutório para adicionar a
For commuter category airplanes, unless it can be	For all airplanes with a maximum weight more than	necessidade de sistemas de alerta
shown that a lift or longitudinal trim device that	6.000 pounds (2.722 kg) and all jets, unless it can be	de decolagem para todos os aviões
affects the takeoff performance of the aircraft would	shown that a lift or longitudinal trim device that	pesando mais que 6.000 libras

not give an unsafe takeoff configuration when	affects the takeoff performance of the airplane would	(2.722 kg) e para todos os jatos. O
selection out of an approved takeoff position, a	not give an unsafe takeoff configuration when	parágrafo (b) inclui a definição de
takeoff warning system must be installed and meet	selection out of an approved takeoff position, a	uma condição de decolagem
the following requirements:	takeoff warning system must be installed and meet	insegura.
	the following requirements:	
(a) The system must provide to the pilots an aural		
warning that is automatically activated during the	(a) The system must provide to the pilots an aural	
initial portion of the takeoff role if the airplane is in	warning that is automatically activated during the	
a configuration that would not allow a safe takeoff.	initial portion of the takeoff role if the airplane is in	
The warning must continue until—	a configuration that would not allow a safe takeoff.	
	The warning must continue until:	
(1) The configuration is changed to allow safe		
takeoff, or	(1) The configuration is changed to allow safe	
	takeoff, or	
(2) Action is taken by the pilot to abandon the takeoff		
roll.	(2) Action is taken by the pilot to abandon the takeoff	
	roll.	
(b) The means used to activate the system must		
function properly for all authorized takeoff power	(b) The means used to activate the system must	
settings and procedures and throughout the ranges of	function properly for all authorized takeoff power	
takeoff weights, altitudes, and temperatures for	settings and procedures and throughout the ranges of	
which certification is requested.	takeoff weights, altitudes, and temperatures for	
	which certification is requested.	
	(c) For the purpose of this section, an unsafe takeoff	
	configuration is the inability to rotate or the inability	
	to prevent an immediate stall after rotation.	
23.735 Brakes.	23.735 Brakes.	A aplicabilidade dos requisitos de
		decolagem abortada na seção
		23.735, que antes estava restrita
(a) Brakes must be provided. The landing brake	(a) Brakes must be provided. The landing brake	apenas para aviões categoria
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kinetic energy capacity rating of each main wheel	kinetic energy capacity rating of each main wheel	transporte regional, foi ampliada
brake assembly must not be less than the kinetic	brake assembly must not be less than the kinetic	para incluir todos os jatos pesando
energy absorption requirements determined under	energy absorption requirements determined under	mais que 6.000 libras (2.722 kg)
either of the following methods:	either of the following methods:	de forma consistente às alterações
		introduzidas na seção 23.55. As
(1) The brake kinetic energy absorption	(1) The brake kinetic energy absorption requirements	velocidades e distâncias de
requirements must be based on a conservative	must be based on a conservative rational analysis of	decolagem maiores necessárias
rational analysis of the sequence of events expected	the sequence of events expected during landing at the	para estes aviões tornam a
during landing at the design landing weight.	design landing weight.	habilidade de parar na distância
•		especificada um problema de
(2) Instead of a rational analysis, the kinetic energy	(2) Instead of a rational analysis, the kinetic energy	segurança de voo.
absorption requirements for each main wheel brake	absorption requirements for each main wheel brake	
assembly may be derived from the following	assembly may be derived from the following	
formula:	formula:	
KE=0.0443 WV <sup>2</sup> /N	KE=0.0443 WV2 /N	
where—	where:	
KE=Kinetic energy per wheel (ftlb.);	KE=Kinetic energy per wheel (ftlb.);	
W=Design landing weight (lb.);	W=Design landing weight (lb.);	
V=Airplane speed in knots. V must be not less than	V=Airplane speed in knots. V must be not less than	
$V_S $ , the poweroff stalling speed of the airplane at	VS $\vee$ , the poweroff stalling speed of the airplane at	
sea level, at the design landing weight, and in the	sea level, at the design landing weight, and in the	
landing configuration; and	landing configuration; and	

N=Number of main wheels with brakes.	N=Number of main wheels with brakes.	
(b) Brakes must be able to prevent the wheels from rolling on a paved runway with takeoff power on the critical engine, but need not prevent movement of the airplane with wheels locked.	(b) Brakes must be able to prevent the wheels from rolling on a paved runway with takeoff power on the critical engine, but need not prevent movement of the airplane with wheels locked.	
(c) During the landing distance determination required by §23.75, the pressure on the wheel braking system must not exceed the pressure specified by the brake manufacturer.	(c) During the landing distance determination required by section 23.75 of this RBAC, the pressure on the wheel braking system must not exceed the pressure specified by the brake manufacturer.	
(d) If antiskid devices are installed, the devices and associated systems must be designed so that no single probable malfunction or failure will result in a hazardous loss of braking ability or directional control of the airplane.	(d) If antiskid devices are installed, the devices and associated systems must be designed so that no single probable malfunction or failure will result in a hazardous loss of braking ability or directional control of the airplane.	
(e) In addition, for commuter category airplanes, the rejected takeoff brake kinetic energy capacity rating of each main wheel brake assembly must not be less than the kinetic energy absorption requirements determined under either of the following methods—	(e) For airplanes required to meet section 23.55 of this RBAC, the rejected takeoff brake kinetic energy capacity rating of each main wheel brake assembly may not be less than the kinetic energy absorption requirements determined under either of the following methods:	
(1) The brake kinetic energy absorption requirements must be based on a conservative rational analysis of the sequence of events expected during a rejected takeoff at the design takeoff weight.	(1) The brake kinetic energy absorption requirements must be based on a conservative rational analysis of the sequence of events expected during a rejected takeoff at the design takeoff weight.	

(2) Instead of a rational analysis, the kinetic energy absorption requirements for each main wheel brake	(2) Instead of a rational analysis, the kinetic energy absorption requirements for each main wheel brake	
assembly may be derived from the following formula—	assembly may be derived from the following formula:	
$KE=0.0443 WV^2 N$	KE=0.0443 WV2/N	
where,	where;	
KE=Kinetic energy per wheel (ftlbs.);	KE=Kinetic energy per wheel (ftlbs.);	
W=Design takeoff weight (lbs.);	W=Design takeoff weight (lbs.);	
V=Ground speed, in knots, associated with the maximum value of V <sub>1</sub> selected in accordance with $$23.51(c)(1)$ ;	V=Ground speed, in knots, associated with the maximum value of V1 selected in accordance with paragraph 23.51(c)(1) of this RBAC;	
N=Number of main wheels with brakes.	N=Number of main wheels with brakes.	
23.777 Cockpit controls.	23.777 Cockpit controls.	Alterações previamente introduzidas na seção 23.777
<ul><li>(a) Each cockpit control must be located and (except where its function is obvious) identified to provide convenient operation and to prevent confusion and inadvertent operation.</li></ul>	<ul> <li>(a) Each cockpit control must be located and (except where its function is obvious) identified to provide convenient operation and to prevent confusion and inadvertent operation.</li> </ul>	padronizaram a altura e localização dos controles do grupo motopropulsor porque os pilotos podiam confundir-se e usar os controles errados em aviões a
(b) The controls must be located and arranged so that the pilot, when seated, has full and unrestricted movement of each control without interference from either his clothing or the cockpit structure.	(b) The controls must be located and arranged so that the pilot, when seated, has full and unrestricted movement of each control without interference from either his clothing or the cockpit structure.	helice. No entanto, elas não incluíram seletores de potência simples que são normalmente usados em motores controlados eletronicamente. ANAC e FAA

(c) Powerplant controls must be located—	(c) Powerplant controls must be located:	emitiram ELOS para cada
		programa que incluía um sistema
(1) For multiengine airplanes, on the pedestal or	(1) For multiengine airplanes, on the pedestal or	deste tipo. A alteração no
overhead at or near the center of the cockpit;	overhead at or near the center of the cockpit;	parágrafo 23.777(d) incorpora a
		linguagem adotada nestes ELOS.
(2) For single and tandem seated single-engine	(2) For single and tandem seated single-engine	
airplanes, on the left side console or instrument	airplanes, on the left side console or instrument	
panel;	panel;	
(3) For other single-engine airplanes at or near the	(3) For other single-engine airplanes at or near the	
center of the cockpit, on the pedestal, instrument	center of the cockpit, on the pedestal, instrument	
panel, or overhead; and	panel, or overhead; and	
(4) For airplanes, with side-by-side pilot seats and	(4) For airplanes, with side-by-side pilot seats and	
with two sets of powerplant controls, on left and	with two sets of powerplant controls, on left and right	
right consoles.	consoles.	
(d) The control location order from left to right must	(d) When senarate and distinct control layers are co	
be power (thrust) lever, propeller (rpm control) and	(d) when separate and distinct control levels are co- located (such as located together on the pedestal) the	
mixture control (condition lever and fuel cutoff for	control location order from left to right must be	
turbine-nowered airplanes) Power (thrust) levers	nower (thrust) lever propeller (rpm control) and	
must be at least one inch higher or longer to make	mixture control (condition lever and fuel cut-off for	
them more prominent than propeller (rpm control) or	turbine-powered airplanes) Power (thrust) levers	
mixture controls. Carburetor heat or alternate air	must be easily distinguishable from other controls.	
control must be to the left of the throttle or at least	and provide for accurate, consistent operation.	
eight inches from the mixture control when located	Carburetor heat or alternate air control must be to the	
other than on a pedestal. Carburetor heat or alternate	left of the throttle or at least eight inches (20.32 cm)	
air control, when located on a pedestal must be aft or	from the mixture control when located other than on	
below the power (thrust) lever. Supercharger	a pedestal. Carburetor heat or alternate air control,	
controls must be located below or aft of the propeller	when located on a pedestal, must be aft or below the	

controls. Airplanes with tandem seating or single- place airplanes may utilize control locations on the	power (thrust) lever. Supercharger controls must be located below or aft of the propeller controls	
left side of the cabin compartment; however,	Airplanes with tandem seating or single-place	
location order from left to right must be power	airplanes may utilize control locations on the left side	
(thrust) lever, propeller (rpm control) and mixture	of the cabin compartment; however, location order	
control.	from left to right must be power (thrust) lever,	
	propeller (rpm control), and mixture control.	
(e) Identical powerplant controls for each engine		
must be located to prevent confusion as to the	(e) Identical powerplant controls for each engine	
engines they control.	must be located to prevent confusion as to the engines they control.	
(1) Conventional multiengine powerplant controls		
must be located so that the left control(s) operates the	(1) Conventional multiengine powerplant controls	
left engines(s) and the right control(s) operates the	must be located so that the left control(s) operates the $1_{1}$	
ngnt engine(s).	right engine(s).	
(2) On twin-engine airplanes with front and rear		
engine locations (tandem), the left powerplant	(2) On twin-engine airplanes with front and rear	
controls must operate the front engine and the right	engine locations (tandem), the left powerplant	
powerplant controls must operate the rear engine.	controls must operate the front engine and the right	
(f) Wing flop and avviliant lift device controls must	powerplant controls must operate the rear engine.	
(1) wing hap and auxiliary int device controls must	(f) Wing flap and auxiliary lift daviag controls must	
be located—	(1) whig hap and auxiliary int device controls must be located:	
(1) Centrally, or to the right of the pedestal or	be foculed.	
powerplant throttle control centerline; and	(1) Centrally, or to the right of the pedestal or	
	powerplant throttle control centerline; and	
(2) Far enough away from the landing gear control to		
avoid confusion.		

(g) The landing gear control must be located to the	(2) Far enough away from the landing gear control to	
left of the throttle centerline or pedestal centerline.	avoid confusion.	
(h) Each fuel feed selector control must comply with	(g) The landing gear control must be located to the	
§23.995 and be located and arranged so that the pilot	left of the throttle centerline or pedestal centerline.	
can see and reach it without moving any seat or		
primary flight control when his seat is at any position	(h) Each fuel feed selector control must comply with	
in which it can be placed.	section 23.995 and be located and arranged so that	
	the pilot can see and reach it without moving any seat	
(1) For a mechanical fuel selector:	or primary flight control when his seat is at any	
	position in which it can be placed.	
(i) The indication of the selected fuel valve position		
must be by means of a pointer and must provide	(1) For a mechanical fuel selector:	
positive identification and feel (detent, etc.) of the		
selected position.	(1) The indication of the selected fuel valve position	
	must be by means of a pointer and must provide	
(11) The position indicator pointer must be located at	positive identification and feel (detent, etc.) of the	
the part of the handle that is the maximum dimension	selected position.	
of the handle measured from the center of rotation.		
	(11) The position indicator pointer must be located at	
(2) For electrical or electronic fuel selector:	the part of the handle that is the maximum dimension	
(i) Divital controls on electrical arritation struct	of the nancie measured from the center of rotation.	
(1) Digital controls or electrical switches must be		
property labelled.	(2) For electrical of electronic fuel selector:	
(ii) Moons must be provided to indicate to the flight	(i) Digital controls or cleatrical switches must be	
(ii) Means must be provided to indicate to the high	(1) Digital controls of electrical switches must be	
position is not acceptable as a means of indication	property labelled.	
position is not acceptable as a means of mulcation.	(ii) Means must be provided to indicate to the flight	
	(ii) Means must be provided to indicate to the hight crew the tank or function selected Selector switch	
	ciew the tank of function science. Science switch	L

The "off" or "closed" position must be indicated in red. (3) If the fuel valve selector handle or electrical or digital selection is also a fuel shut-off selector, the	<ul><li>position is not acceptable as a means of indication.</li><li>The "off" or "closed" position must be indicated in red.</li><li>(3) If the fuel valve selector handle or electrical or</li></ul>	
off position marking must be colored red. If a	digital selection is also a fuel shut-off selector, the	
also must be colored red.	separate emergency shut-off means is provided, it also must be colored red.	
23.785 Seats, berths, litters, safety belts, and shoulder harnesses.	23.785 Seats, berths, litters, safety belts, and shoulder harnesses.	Esta alteração é considerada editorial por apenas esclarecer e
There must be a seat or berth for each occupant that meets the following:	There must be a seat or berth for each occupant that meets the following:	reforçar a aplicabilidade da seção 23.562 para jatos categoria transporte regional.
(a) Each seat/restraint system and the supporting structure must be designed to support occupants weighing at least 215 pounds when subjected to the maximum load factors corresponding to the specified flight and ground load conditions, as defined in the approved operating envelope of the airplane. In addition, these loads must be multiplied by a factor of 1.33 in determining the strength of all fittings and the attachment of—	(a) Each seat/restraint system and the supporting structure must be designed to support occupants weighing at least 215 pounds (98 kg) when subjected to the maximum load factors corresponding to the specified flight and ground load conditions, as defined in the approved operating envelope of the airplane. In addition, these loads must be multiplied by a factor of 1.33 in determining the strength of all fittings and the attachment of:	
(1) Each seat to the structure; and	(1) Each seat to the structure; and	
(2) Each safety belt and shoulder harness to the seat or structure.	(2) Each safety belt and shoulder harness to the seat or structure.	

(b) Each forward-facing or aft-facing seat/restraint	(b) Each forward-facing or aft-facing seat/restraint
system in normal, utility, or acrobatic category	system in normal, utility, or acrobatic category
airplanes must consist of a seat, a safety belt, and a	airplanes must consist of a seat, a safety belt, and a
shoulder harness, with a metal-to-metal latching	shoulder harness, with a metal-to-metal latching
device, that are designed to provide the occupant	device, that are designed to provide the occupant
protection provisions required in §23.562. Other seat	protection provisions required in section 23.562.
orientations must provide the same level of occupant	Other seat orientations must provide the same level
protection as a forward-facing or aft-facing seat with	of occupant protection as a forward-facing or aft-
a safety belt and a shoulder harness, and must	facing seat with a safety belt and a shoulder harness,
provide the protection provisions of §23.562.	and must provide the protection provisions of section
	23.562.
(c) For commuter category airplanes, each seat and	
the supporting structure must be designed for	(c) For commuter category airplanes, each seat and
occupants weighing at least 170 pounds when	the supporting structure must be designed for
subjected to the inertia loads resulting from the	occupants weighing at least 170 pounds (77 kg)
ultimate static load factors prescribed in	when subjected to the inertia loads resulting from the
§23.561(b)(2) of this part. Each occupant must be	ultimate static load factors prescribed in paragraph
protected from serious head injury when subjected to	23.561(b)(2) of this RBAC. Each occupant must be
the inertia loads resulting from these load factors by	protected from serious head injury when subjected to
a safety belt and shoulder harness, with a metal-to-	the inertia loads resulting from these load factors by
metal latching device, for the front seats and a safety	a safety belt and shoulder harness, with a metal-to-
belt, or a safety belt and shoulder harness, with a	metal latching device, for the front seats and a safety
metal-to-metal latching device, for each seat other	belt, or a safety belt and shoulder harness, with a
than the front seats.	metal-to-metal latching device, for each seat other
	than the front seats. Commuter category jet
(d) Each restraint system must have a single-point	airplanes, must also comply with the requirements of
release for occupant evacuation.	section 23.562.
(e) The restraint system for each crewmember must	
allow the crewmember, when seated with the safety	

belt and shoulder harness fastened, to perform all	(d) Each restraint system must have a single-point	
functions necessary for flight operations.	release for occupant evacuation.	
(f) Each pilot seat must be designed for the reactions	(e) The restraint system for each crewmember must	
resulting from the application of pilot forces to the	allow the crewmember, when seated with the safety	
primary flight controls as prescribed in §23.395 of	belt and shoulder harness fastened, to perform all	
this part.	functions necessary for flight operations.	
(9) There must be a means to secure each safety belt	(f) Each pilot seat must be designed for the reactions	
and shoulder harness, when not in use, to prevent	resulting from the application of pilot forces to the	
interference with the operation of the airplane and	primary flight controls as prescribed in section	
with rapid occupant egress in an emergency.	23.395 of this RBAC.	
(h) Unless otherwise placarded, each seat in a utility	(g) There must be a means to secure each safety belt	
or acrobatic category airplane must be designed to	and shoulder harness, when not in use, to prevent	
accommodate an occupant wearing a parachute.	interference with the operation of the airplane and	
	with rapid occupant egress in an emergency.	
(i) The cabin area surrounding each seat, including		
the structure, interior walls, instrument panel, control	(h) Unless otherwise placarded, each seat in a utility	
wheel, pedals, and seats within striking distance of	or acrobatic category airplane must be designed to	
the occupant's nead or torso (with the restraint	accommodate an occupant wearing a parachute.	
objects sharp edges protuberances and hard	(i) The cabin area surrounding each seat including	
surfaces. If energy absorbing designs or devices are	(1) The cabin area surrounding each seat, including the structure interior walls instrument panel control	
used to meet this requirement, they must protect the	wheel pedals and seats within striking distance of	
occupant from serious injury when the occupant is	the occupant's head or torso (with the restraint	
subjected to the inertia loads resulting from the	system fastened) must be free of potentially injurious	
ultimate static load factors prescribed in	objects, sharp edges, protuberances, and hard	
\$23.561(b)(2) of this part, or they must comply with	surfaces. If energy absorbing designs or devices are	
the occupant protection provisions of §23.562 of this	used to meet this requirement, they must protect the	

part, as required in paragraphs (b) and (c) of this	occupant from serious injury when the occupant is	
section.	subjected to the inertia loads resulting from the	
	ultimate static load factors prescribed in paragraph	
(j) Each seat track must be fitted with stops to	23.561(b)(2) of this RBAC, or they must comply	
prevent the seat from sliding off the track.	with the occupant protection provisions of section	
	23.562 of this RBAC, as required in paragraphs (b)	
(k) Each seat/restraint system may use design	and (c) of this section.	
features, such as crushing or separation of certain		
components, to reduce occupant loads when showing	(j) Each seat track must be fitted with stops to	
compliance with the requirements of §23.562 of this	prevent the seat from sliding off the track.	
part; otherwise, the system must remain intact.		
	(k) Each seat/restraint system may use design	
(1) For the purposes of this section, a front seat is a	features, such as crushing or separation of certain	
seat located at a flight crewmember station or any	components, to reduce occupant loads when showing	
seat located alongside such a seat.	compliance with the requirements of section 23.562	
	of this RBAC; otherwise, the system must remain	
(m) Each berth, or provisions for a litter, installed	intact.	
parallel to the longitudinal axis of the airplane, must		
be designed so that the forward part has a padded	(1) For the purposes of this section, a front seat is a	
end-board, canvas diaphragm, or equivalent means	seat located at a flight crewmember station or any	
that can withstand the load reactions from a 215-	seat located alongside such a seat.	
pound occupant when subjected to the inertia loads		
resulting from the ultimate static load factors of	(m) Each berth, or provisions for a litter, installed	
§23.561(b)(2) of this part. In addition—	parallel to the longitudinal axis of the airplane, must	
	be designed so that the forward part has a padded	
(1) Each berth or litter must have an occupant	end-board, canvas diaphragm, or equivalent means	
restraint system and may not have corners or other	that can withstand the load reactions from a 215-	
parts likely to cause serious injury to a person	pound (98 kg) occupant when subjected to the inertia	

occupying it during emergency landing conditions; and	loads resulting from the ultimate static load factors of paragraph 23.561(b)(2) of this RBAC. In addition:	
(2) Occupant restraint system attachments for the berth or litter must withstand the inertia loads resulting from the ultimate static load factors of \$23.561(b)(2) of this part.	(1) Each berth or litter must have an occupant restraint system and may not have corners or other parts likely to cause serious injury to a person occupying it during emergency landing conditions; and	
<ul> <li>(n) Proof of compliance with the static strength requirements of this section for seats and berths approved as part of the type design and for seat and berth installations may be shown by—</li> <li>(1) Structural analysis if the structure conforms to</li> </ul>	(2) Occupant restraint system attachments for the berth or litter must withstand the inertia loads resulting from the ultimate static load factors of paragraph 23.561(b)(2) of this RBAC.	
<ul> <li>(1) bit detail a unarysis, if the structure contorns to conventional airplane types for which existing methods of analysis are known to be reliable;</li> <li>(2) A combination of structural analysis and static load tests to limit load; or</li> </ul>	(n) Proof of compliance with the static strength requirements of this section for seats and berths approved as part of the type design and for seat and berth installations may be shown by:	
(3) Static load tests to ultimate loads.	(1) Structural analysis, if the structure conforms to conventional airplane types for which existing methods of analysis are known to be reliable;	
	<ul> <li>(2) A combination of structural analysis and static load tests to limit load; or</li> <li>(3) Static load tests to ultimate loads</li> </ul>	
23.807 Emergency exits.	23.807 Emergency exits.	A proposta fornece uma alternativa para satisfazer o requisito de uma saída de

(a) Number and location. Emergency exits must be	(a) Number and location. Emergency exits must be	emergência acima da linha d'água
located to allow escape without crowding in any	located to allow escape without crowding in any	em ambos os lados da cabine para
probable crash attitude. The airplane must have at	probable crash attitude. The airplane must have at	aviões multimotores. A alteração
least the following emergency exits:	least the following emergency exits:	proposta permite o
		posicionamento de uma barreira
(1) For all airplanes with a seating capacity of two or	(1) For all airplanes with a seating capacity of two or	de água na entrada da cabine
more, excluding airplanes with canopies, at least one	more, excluding airplanes with canopies, at least one	principal como um meio para
emergency exit on the opposite side of the cabin	emergency exit on the opposite side of the cabin	cumprir com o requisito de saída
from the main door specified in §23.783 of this part.	from the main door specified in section 23.783 of this	acima da linha d'água. Esta
	RBAC.	barreira está acima da linha d'água
(2) [Reserved]		e retarda a entrada da água assim
	(2) [Reserved]	permitindo a saída através da porta
(3) If the pilot compartment is separated from the		principal da cabine em um avião
cabin by a door that is likely to block the pilot's	(3) If the pilot compartment is separated from the	que pousou na água. ANAC e
escape in a minor crash, there must be an exit in the	cabin by a door that is likely to block the pilot's	FAA já aprovaram o uso desta
pilot's compartment. The number of exits required by	escape in a minor crash, there must be an exit in the	barreira como uma alternativa
paragraph (a)(1) of this section must then be	pilot's compartment. The number of exits required by	para a saída acima da linha d'água
separately determined for the passenger	paragraph (a)(1) of this section must then be	para diversos aviões através de
compartment, using the seating capacity of that	separately determined for the passenger	ELOS.
compartment.	compartment, using the seating capacity of that	
	compartment.	
(4) Emergency exits must not be located with respect		
to any propeller disk or any other potential hazard so	(4) Emergency exits must not be located with respect	
as to endanger persons using that exit.	to any propeller disk or any other potential hazard so	
	as to endanger persons using that exit.	
(b) Type and operation. Emergency exits must be		
movable windows, panels, canopies, or external	(b) Type and operation. Emergency exits must be	
doors, openable from both inside and outside the	movable windows, panels, canopies, or external	
airplane, that provide a clear and unobstructed	doors, openable from both inside and outside the	
opening large enough to admit a 19-by-26-inch	airplane, that provide a clear and unobstructed	

ellipse. Auxiliary locking devices used to secure the	opening large enough to admit a 19-by-26-inch	
airplane must be designed to be overridden by the	(0,48-by-0,66-meters) ellipse. Auxiliary locking	
normal internal opening means. The inside handles	devices used to secure the airplane must be designed	
of emergency exits that open outward must be	to be overridden by the normal internal opening	
adequately protected against inadvertent operation.	means. The inside handles of emergency exits that	
In addition, each emergency exit must—	open outward must be adequately protected against	
	inadvertent operation. In addition, each emergency	
(1) Be readily accessible, requiring no exceptional	exit must:	
agility to be used in emergencies;		
	(1) Be readily accessible, requiring no exceptional	
(2) Have a method of opening that is simple and	agility to be used in emergencies;	
obvious;		
	(2) Have a method of opening that is simple and	
(3) Be arranged and marked for easy location and	obvious;	
operation, even in darkness;		
	(3) Be arranged and marked for easy location and	
(4) Have reasonable provisions against jamming by	operation, even in darkness;	
fuselage deformation; and		
	(4) Have reasonable provisions against jamming by	
(5) In the case of acrobatic category airplanes, allow	fuselage deformation; and	
each occupant to abandon the airplane at any speed		
between $V_{SO}$ and $V_D$ ; and	(5) In the case of acrobatic category airplanes, allow	
	each occupant to abandon the airplane at any speed	
(6) In the case of utility category airplanes	between VSO and VD; and	
certificated for spinning, allow each occupant to		
abandon the airplane at the highest speed likely to be	(6) In the case of utility category airplanes	
achieved in the maneuver for which the airplane is	certificated for spinning, allow each occupant to	
certificated.	abandon the airplane at the highest speed likely to be	

(c) Tests. The proper functioning of each emergency	achieved in the maneuver for which the airplane is	
exit must be shown by tests.	certificated.	
(d) Doors and exits. In addition, for commuter	(c) Tests. The proper functioning of each emergency	
category airplanes, the following requirements	exit must be shown by tests.	
appry:	(d) Doors and axits. In addition for commuter	
(1) In addition to the passenger entry door	(d) Doors and exits. In addition, for commuter	
(1) In addition to the passenger entry door—	anply.	
(i) For an airplane with a total passenger seating	uppry.	
capacity of 15 or fewer, an emergency exit, as	(1) In addition to the passenger entry door:	
defined in paragraph (b) of this section, is required		
on each side of the cabin; and	(i) For an airplane with a total passenger seating	
	capacity of 15 or fewer, an emergency exit, as	
(ii) For an airplane with a total passenger seating	defined in paragraph (b) of this section, is required	
capacity of 16 through 19, three emergency exits, as	on each side of the cabin; and	
defined in paragraph (b) of this section, are required		
with one on the same side as the passenger entry door	(ii) For an airplane with a total passenger seating	
and two on the side opposite the door.	capacity of 16 through 19, three emergency exits, as $\frac{1}{2}$	
(2) A magne must be provided to look each	defined in paragraph (b) of this section, are required	
(2) A means must be provided to lock each emergency exit and to safeguard against its opening	and two on the side opposite the door	
in flight either inadvertently by persons or as a result	and two on the side opposite the door.	
of mechanical failure. In addition, a means for direct	(2) A means must be provided to lock each	
visual inspection of the locking mechanism must be	emergency exit and to safeguard against its opening	
provided to determine that each emergency exit for	in flight, either inadvertently by persons or as a result	
which the initial opening movement is outward is	of mechanical failure. In addition, a means for direct	
fully locked.	visual inspection of the locking mechanism must be	
	provided to determine that each emergency exit for	

(3) Each required emergency exit, except floor level	which the initial opening movement is outward is	
exits, must be located over the wing or, if not less	fully locked.	
than six feet from the ground, must be provided with		
an acceptable means to assist the occupants to	(3) Each required emergency exit, except floor level	
descend to the ground. Emergency exits must be	exits, must be located over the wing or, if not less	
distributed as uniformly as practical, taking into	than six feet (1,83 m) from the ground, must be	
account passenger seating configuration.	provided with an acceptable means to assist the	
	occupants to descend to the ground. Emergency exits	
(4) Unless the applicant has complied with paragraph	must be distributed as uniformly as practical, taking	
(d)(1) of this section, there must be an emergency	into account passenger seating configuration.	
exit on the side of the cabin opposite the passenger		
entry door, provided that—	(4) Unless the applicant has complied with paragraph	
	(d)(1) of this section, there must be an emergency	
(i) For an airplane having a passenger seating	exit on the side of the cabin opposite the passenger	
configuration of nine or fewer, the emergency exit	entry door, provided that:	
has a rectangular opening measuring not less than 19		
inches by 26 inches high with corner radii not greater	(i) For an airplane having a passenger seating	
than one-third the width of the exit, located over the	configuration of nine or fewer, the emergency exit	
wing, with a step up inside the airplane of not more	has a rectangular opening measuring not less than 19	
than 29 inches and a step down outside the airplane	inches by 26 inches (0,48m by 0,66m) high with	
of not more than 36 inches;	corner radii not greater than one-third the width of	
	the exit, located over the wing, with a step up inside	
(ii) For an airplane having a passenger seating	the airplane of not more than 29 inches (0,74 m) and	
configuration of 10 to 19 passengers, the emergency	a step down outside the airplane of not more than 36	
exit has a rectangular opening measuring not less	inches (0,91 m);	
than 20 inches wide by 36 inches high, with corner		
radii not greater than one-third the width of the exit,	(ii) For an airplane having a passenger seating	
and with a step up inside the airplane of not more	configuration of 10 to 19 passengers, the emergency	
than 20 inches. If the exit is located over the wing,	exit has a rectangular opening measuring not less	
	than 20 inches (0,51 m) wide by 36 inches (0,91 m)	

the step down outside the airplane may not exceed	high, with corner radii not greater than one-third the	
27 inches; and	width of the exit, and with a step up inside the	
	airplane of not more than 20 inches (0,51 m). If the	
(iii) The airplane complies with the additional	exit is located over the wing, the step down outside	
requirements of §§23.561(b)(2)(iv), 23.803(b),	the airplane may not exceed 27 inches; and	
23.811(c), 23.812, 23.813(b), and 23.815.		
	(iii) The airplane complies with the additional	
(e) For multiengine airplanes, ditching emergency	requirements of paragraphs 23.561(b)(2)(iv),	
exits must be provided in accordance with the	23.803(b), 23.811(c), 23.812, 23.813(b), and 23.815.	
following requirements, unless the emergency exits		
required by paragraph (a) or (d) of this section	(e) For multiengine airplanes, ditching emergency	
already comply with them:	exits must be provided in accordance with the	
	following requirements, unless the emergency exits	
(1) One exit above the waterline on each side of the	required by paragraph (a) or (d) of this section	
airplane having the dimensions specified in	already comply with them:	
paragraph (b) or (d) of this section, as applicable; and		
	(1) One exit above the waterline on each side of the	
(2) If side exits cannot be above the waterline, there	airplane having the dimensions specified in	
must be a readily accessible overhead hatch	paragraph (b) or (d) of this section, as applicable; and	
emergency exit that has a rectangular opening		
measuring not less than 20 inches wide by 36 inches	(2) If side exits cannot be above the waterline, there	
long, with corner radii not greater than one-third the	must be a readily accessible overhead hatch	
width of the exit.	emergency exit that has a rectangular opening	
	measuring not less than 20 inches (0,51 m) wide by	
	36 inches (0,91 m) long, with corner radii not greater	
	than one-third the width of the exit.	
	(3) In lieu of paragraph (e)(2) of this section, if any	
	side exit(s) cannot be above the waterline, a device	
	may be placed at each of such exit(s) prior to	

		1
	ditching. This device must slow the inflow of water	
	when such exit(s) is opened with the airplane	
	ditched. For commuter category airplanes, the clear	
	opening of such exit(s) must meet the requirements	
	defined in paragraph (d) of this section.	
23.831 Ventilation.	23.831 Ventilation.	As alterações propostas na seção
		23.831 adicionam dois novos
(a) Each passenger and crew compartment must be	(a) Each passenger and crew compartment must be	parágrafos que incluem padrões
suitably ventilated. Carbon monoxide concentration	suitably ventilated. Carbon monoxide concentration	apropriados para aviões operando
may not exceed one part in 20,000 parts of air.	may not exceed one part in 20.000 parts of air (50	em altas altitudes além daquelas
	ppm).	incluídas no RBAC 23. As
(b) For pressurized airplanes, the ventilating air in		mudanças visam garantir que os
the flightcrew and passenger compartments must be	(b) For pressurized airplanes, the ventilating air in	ambientes da cabine de voo e
free of harmful or hazardous concentrations of gases	the flightcrew and passenger compartments must be	passageiros não criem erros
and vapors in normal operations and in the event of	free of harmful or hazardous concentrations of gases	mentais ou exaustão física da
reasonably probable failures or malfunctioning of	and vapors in normal operations and in the event of	tripulação. Tais eventos
the ventilating, heating, pressurization, or other	reasonably probable failures or malfunctioning of the	preveniriam a tripulação de
systems and equipment. If accumulation of	ventilating, heating, pressurization, or other systems	completar suas tarefas para o voo
hazardous quantities of smoke in the cockpit area is	and equipment. If accumulation of hazardous	continuado e pouso seguro de um
reasonably probable, smoke evacuation must be	quantities of smoke in the cockpit area is reasonably	avião. Um requerente pode
readily accomplished starting with full	probable, smoke evacuation must be readily	demonstrar cumprimento com o
pressurization and without depressurizing beyond	accomplished starting with full pressurization and	parágrafo (d) desta seção se
safe limits.	without depressurizing beyond safe limits.	demonstrar que o desempenho da
		tripulação não é degradado.
	(c) For jet pressurized airplanes that operate at	Diversos novos programas de
	altitudes above 41.000 feet (12.497 meters), under	certificação de jatos de acordo
	normal operating conditions and in the event of any	com o RBAC 23 incluem
	probable failure conditions of any system which	aprovação para operação a
	would adversely affect the ventilating air, the	altitudes de até 41.000 pés.
	ventilation system must provide reasonable	Adicionalmente, foram alteradas

passenger comfort. The ventilation system must also provide a sufficient amount of uncontaminated air to enable the flight crew members to perform their duties without undue discomfort or fatigue. For normal operating conditions, the ventilation system must be designed to provide each occupant with at least 0,55 pounds (0,25 kg) of fresh air per minute. In the event of the loss of one source of fresh air, the supply of fresh airflow may not be less than 0,4 pounds (0,18 kg) per minute for any period exceeding five minutes.

(d) For jet pressurized airplanes that operate at altitudes above 41.000 feet (12.497 meters), other probable and improbable Environmental Control System failure conditions that adversely affect the passenger and flight crew compartment environmental conditions may not affect flight crew performance so as to result in a hazardous condition, and no occupant shall sustain permanent physiological harm. The cabin cooling system must be designed to meet the following conditions during flight above 15,000 feet mean sea level (MSL):

(1) After any probable failure, the cabin temperaturetime history may not exceed the values shown in Figure 1 of this paragraph.

as regras para operações até 49.000 pés e regras especiais para estruturas e o ambiente de cabine para garantir a integridade estrutural do avião em altitudes mais elevadas. Também foram feitas mudanças para prevenir a exposição dos ocupantes a altitudes de pressão de cabine que poderiam problemas causar fisiológicos prevenir a ou tripulação de voo de voar e pousar seguramente o avião. A intenção da sentença "not affect

crew performance so as to result in a hazardous condition" é que a tripulação possa realizar confiavelmente tarefas as publicadas para que foram treinados que permitam completar um voo e pouso seguros. No passado, a habilidade de uma pessoa para determinar e realizar tarefas medida era pelo desempenho da tripulação, no entanto, o desempenho aceitável da tripulação é limitado aos procedimentos pelo fabricante ou requeridos pelos regulamentos А existentes. sentença "No



in event of any probable failure or malfunction in the	failure condition in the pressurization system.	avião ou causar problemas
pressurization system.	During decompression, the cabin altitude may not	fisiológicos permanentes aos
	exceed 15.000 feet (4.572 meters) for more than 10	ocupantes. As mudanças fornecem
(b) Pressurized cabins must have at least the	seconds and 25.000 feet (7.620 meters) for any	padrões de aeronavegabilidade
following valves, controls, and indicators, for	duration.	que permitem jatos subsônicos
controlling cabin pressure:		pressurizados a operar nas
	(b) Pressurized cabins must have at least the	altitudes máximas que possam
(1) Two pressure relief valves to automatically limit	following valves, controls, and indicators, for	atingir – a altitude mais alta que
the positive pressure differential to a predetermined	controlling cabin pressure:	um requerente pode optar por
value at the maximum rate of flow delivered by the		demonstrar os efeitos para
pressure source. The combined capacity of the relief	(1) Two pressure relief valves to automatically limit	diversos itens relacionados aos
valves must be large enough so that the failure of any	the positive pressure differential to a predetermined	ocupantes após uma
one valve would not cause an appreciable rise in the	value at the maximum rate of flow delivered by the	descompressão.
pressure differential. The pressure differential is	pressure source. The combined capacity of the relief	Emendas anteriores requeriam um
positive when the internal pressure is greater than the	valves must be large enough so that the failure of any	sistema de controle da pressão de
external.	one valve would not cause an appreciable rise in the	cabine para manter a cabine a uma
	pressure differential. The pressure differential is	altitude de não mais que 15.000
(2) Two reverse pressure differential relief valves (or	positive when the internal pressure is greater than the	pés após qualquer falha ou mal
their equivalent) to automatically prevent a negative	external.	funcionamento provável no
pressure differential that would damage the		sistema de pressurização.
structure. However, one valve is enough if it is of a	(2) Two reverse pressure differential relief valves (or	Sistemas de controle de pressão de
design that reasonably precludes its malfunctioning.	their equivalent) to automatically prevent a negative	cabine em aviões certificados de
	pressure differential that would damage the	acordo com o RBAC 23
(3) A means by which the pressure differential can	structure. However, one valve is enough if it is of a	frequentemente ultrapassam
be rapidly equalized.	design that reasonably precludes its malfunctioning.	levemente o limite de 15.000 pés
		antes de estabilizar abaixo deste
(4) An automatic or manual regulator for controlling	(3) A means by which the pressure differential can	limite. A tecnologia existente para
the intake or exhaust airflow, or both, for	be rapidly equalized.	sistemas de controle de pressão de
		cabine em aviões RBAC 23 não é
		capaz de prevenir esta

maintaining the required internal pressures and	(4) An automatic or manual regulator for controlling	ultrapassagem momentânea o que
airflow rates.	the intake or exhaust airflow, or both, for	preveni o cumprimento estrito
	maintaining the required internal pressures and	desta regra. A ANAC e a FAA
(5) Instruments to indicate to the pilot the pressure	airflow rates.	emitiram ELOS para esta
differential, the cabin pressure altitude, and the rate		característica uma vez que dados
of change of cabin pressure altitude.	(5) Instruments to indicate to the pilot the pressure	fisiológicos demonstram que a
	differential, the cabin pressure altitude, and the rate	breve duração da ultrapassagem
(6) Warning indication at the pilot station to indicate	of change of cabin pressure altitude.	não produz qualquer efeito
when the safe or preset pressure differential is		significante nos ocupantes do
exceeded and when a cabin pressure altitude of	(6) Warning indication at the pilot station to indicate	avião.
10,000 feet is exceeded.	when the safe or preset pressure differential is	As condições especiais emitidas
	exceeded and when a cabin pressure altitude of	para jatos certificados de acordo
(7) A warning placard for the pilot if the structure is	10.000 feet (3.048 meters) is exceeded. The 10.000	com o RBAC 23 que operam em
not designed for pressure differentials up to the	feet (3.048 meters) cabin altitude warning may be	altitudes acima de 41.000 pés são
maximum relief valve setting in combination with	increased up to 15.000 feet (4.572 meters) for	equivalentes aos requisitos da
landing loads.	operations from high altitude airfields (10.000 to	seção 25.841 adotados em 1996.
	15.000 feet – 3.048 a 4.572 meters) provided:	As condições especiais requeriam
(8) A means to stop rotation of the compressor or to		considerações de falhas
divert airflow from the cabin if continued rotation of	(i) The landing or the take off modes (normal or high	específicas. O RBAC 25
an engine-driven cabin compressor or continued	altitude) are clearly indicated to the flight crew.	incorporava conceitos de
flow of any compressor bleed air will create a hazard		confiabilidade, probabilidade e
if a malfunction occurs.	(ii) Selection of normal or high altitude airfield mode	tolerância a danos. As seções
	requires no more than one flight crew action and	23.571, 23.573 e 23.574 tratam os
	goes to normal airfield mode at engine stop.	requisitos de tolerância a danos.
		Esta alteração requer o uso dos
	(iii) The pressurization system is designed to ensure	métodos de análise adicionais.
	cabin altitude does not exceed 10,000 feet when in	Esta proposta também modifica o
	flight above flight level (FL) 250.	requisito de um alerta de uma
		altitude de cabine excessiva a
		10.000 pés. A emenda atual do

(iv) The pressurization system and cabin altitude	RBAC 23 não trata
warning system is designed to ensure cabin altitude	adequadamente as operações em
warning at 10.000 feet (3.048 meters) when in flight	aeródromos acima de 10.000 pés.
above FL250.	Em vez de desabilitar o alerta para
	evitar alertas espúrios, a ANAC e
(7) A warning placard for the pilot if the structure is	a FAA emitiram ELOS para
not designed for pressure differentials up to the	permitir que a altitude de alerta
maximum relief valve setting in combination with	pode ser alterada acima da
landing loads.	máxima altitude de aeródromo
6	aprovada, não excedendo 15.000
(8) A means to stop rotation of the compressor or to	pés. Esta alteração incorpora a
divert airflow from the cabin if continued rotation of	linguagem destes ELOS no
an engine-driven cabin compressor or continued	regulamento.
flow of any compressor bleed air will create a hazard	
if a malfunction occurs.	
(c) If certification for operation above 41,000 feet	
(12,497 meters) and not more than 45,000 feet	
(13.716 meters) is requested:	
(19.716 meters) is requested.	
(1) The airplane must prevent cabin pressure altitude	
from exceeding the following after decompression	
from any probable pressurization system failure in	
conjunction with any undetected latent	
pressurization system failure condition:	
pressurization system failure condition.	
(i) If depressurization analysis shows that the cabin	
altitude does not exceed 25 000 feet (7.620 meters)	
the pressurization system must prevent the cobin	
the pressurization system must prevent the cabin	

altitude from exceeding the cabin altitude-time	
history shown in Figure 1 of this section.	
(ii) Maximum cabin altitude is limited to 30.000 feet (9.144 meters). If cabin altitude exceeds 25.000 feet (7.620 meters), the maximum time the cabin altitude may exceed 25.000 feet (7.620 meters) is 2 minutes; time starting when the cabin altitude exceeds 25.000 feet (7.620 meters) and ending when it returns to	
25.000 feet (7.620 meters).	
(2) The airplane must prevent cabin pressure altitude from exceeding the following after decompression from any single pressurization system failure in conjunction with any probable fuselage damage:	
(i) If depressurization analysis shows that the cabin altitude does not exceed 37.000 feet (11.278 meters), the pressurization system must prevent the cabin altitude from exceeding the optim altitude time	
altitude from exceeding the cabin altitude-time history shown in Figure 2 of this section	
history shown in Figure 2 of this section.	
(ii) Maximum cabin altitude is limited to 40.000 feet (12.192 meters). If cabin altitude exceeds 37.000 feet (11.278 meters), the maximum time the cabin altitude may exceed 25.000 feet (7.620 meters) is 2 minutes; time starting when the cabin altitude	
exceeds 25.000 feet (7.620 meters) and ending when it returns to 25.000 feet (7.620 meters).	





	(11) Forty thousand (40.000) feet ( $12.192$ meters) for	
	any duration.	
	(3) Fuselage structure, engine and system failures are	
	to be considered in evaluating the cabin	
	decompression	
	decompression.	
	(4) In addition to the aphin altitude indicating many	
	(4) In addition to the cabin attitude mulcating means $1 (1)(2) = 0$	
	in paragraph (b)(6) of this section, an aural or visual	
	signal must be provided to warn the flight crew when	
	the cabin pressure altitude exceeds 10.000 feet	
	(3.048 meters).	
	(5) The sensing system and pressure sensors	
	necessary to meet the requirements of paragraphs	
	(b)(5) $(b)(6)$ and $(d)(4)$ of this section and	
	(0)(0), $(0)(0)$ , and $(0)(1)$ of any section and naragraph 23 1447(e) of this RBAC must in the	
	event of low cabin pressure actuate the required	
	warning and automatic presentation devices without	
	waiting and automatic presentation devices without	
	any delay that would significantly increase the	
	hazards resulting from decompression.	
23.853 Passenger and crew compartment	23.853 Passenger and crew compartment	Foi removido o requisito sobre
interiors.	interiors.	tamanho das letras dos placares
		em aviões categoria transporte
For each compartment to be used by the crew or	For each compartment to be used by the crew or	regional pois isto não era
passengers:	passengers:	requerido nem de aviões categoria
		normal certificados pelo RBAC 23
(a) The materials must be at least flame-resistant:	(a) The materials must be at least flame-resistant:	ou de aviões categoria transporte
· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	certificados pelo RBAC 25

(b) [Reserved]	(b) [Reserved]	Também foi removido o requisito
		sobre cinzeiros desta seção uma
(c) If smoking is to be prohibited, there must be a	(c) If smoking is to be prohibited, there must be a	vez que fumar não é mais
placard so stating, and if smoking is to be allowed—	placard so stating, and if smoking is to be allowed:	permitido em operações de acordo
		com os RBAC 121 e 135.
(1) There must be an adequate number of self-	(1) There must be an adequate number of self-	O parágrafo 23.853(d)(2) foi
contained, removable ashtrays; and	contained, removable ashtrays; and	alterado para introduzir placares
		"Proibido fumar" ou "Proibido
(2) Where the crew compartment is separated from	(2) Where the crew compartment is separated from	fumar nos lavatórios" de maneira
the passenger compartment, there must be at least	the passenger compartment, there must be at least	conspícua em ambos os lados da
one illuminated sign (using either letters or symbols)	one illuminated sign (using either letters or symbols)	porta de entrada do lavatório.
notifying all passengers when smoking is prohibited.	notifying all passengers when smoking is prohibited.	
Signs which notify when smoking is prohibited	Signs which notify when smoking is prohibited	
must—	must—	
(1) When illuminated, be legible to each passenger	(1) When illuminated, be legible to each passenger	
seated in the passenger cabin under all probable	seated in the passenger cabin under all probable	
ingitting conditions; and	ingitting conditions; and	
(ii) Be so constructed that the crew can turn the	(ii) Be so constructed that the crew can turn the	
illumination on and off: and	illumination on and off: and	
(d) In addition, for commuter category airplanes the	(d) In addition, for commuter category airplanes the	
following requirements apply:	following requirements apply:	
(1) Each disposal receptacle for towels, paper, or	(1) Each disposal receptacle for towels, paper, or	
waste must be fully enclosed and constructed of at	waste must be fully enclosed and constructed of at	
least fire resistant materials and must contain fires	least fire resistant materials and must contain fires	
likely to occur in it under normal use. The ability of	likely to occur in it under normal use. The ability of	
the disposal receptacle to contain those fires under	the disposal receptacle to contain those fires under	

all probable conditions of wear, misalignment, and	all probable conditions of wear, misalignment, and
ventilation expected in service must be demonstrated	ventilation expected in service must be demonstrated
by test. A placard containing the legible words "No	by test. A placard containing the legible words "No
Cigarette Disposal" must be located on or near each	Cigarette Disposal" must be located on or near each
disposal receptacie door.	disposal receptacie door.
(2) Lavatories must have "No Smoking" or "No	(2) Lavatories must have "No Smoking" or "No
Smoking in Layatory" placards located	Smoking in Lavatory" placards located
conspicuously on each side of the entry door and	conspicuously on each side of the entry door
self-contained removable ashtrays located	conspications y on each side of the entry door.
conspicuously on or near the entry side of each	(3) Materials (including finishes or decorative
lavatory door, except that one ashtrav may serve	surfaces applied to the materials) used in each
more than one layatory door if it can be seen from	compartment occupied by the crew or passengers
the cabin side of each lavatory door served. The	must meet the following test criteria as applicable:
placards must have red letters at least 1/2 inch high	6 TI
on a white background at least 1 inch high (a "No	(i) Interior ceiling panels, interior wall panels,
Smoking" symbol may be included on the placard).	partitions, galley structure, large cabinet walls,
	structural flooring, and materials used in the
(3) Materials (including finishes or decorative	construction of stowage compartments (other than
surfaces applied to the materials) used in each	underseat stowage compartments and compartments
compartment occupied by the crew or passengers	for stowing small items such as magazines and maps)
must meet the following test criteria as applicable:	must be self-extinguishing when tested vertically in
	accordance with the applicable portions of appendix
(i) Interior ceiling panels, interior wall panels,	F of this RBAC or by other equivalent methods. The
partitions, galley structure, large cabinet walls,	average burn length may not exceed 6 inches (0,15
structural flooring, and materials used in the	m) and the average flame time after removal of the
construction of stowage compartments (other than	flame source may not exceed 15 seconds. Drippings
underseat stowage compartments and compartments	from the test specimen may not continue to flame for
for stowing small items such as magazines and	more than an average of 3 seconds after falling.
maps) must be self-extinguishing when tested	

vertically in accordance with the applicable portions of appendix F of this part or by other equivalent methods. The average burn length may not exceed 6 inches and the average flame time after removal of the flame source may not exceed 15 seconds. Drippings from the test specimen may not continue to flame for more than an average of 3 seconds after falling.

(ii) Floor covering, textiles (including draperies and upholstery), seat cushions, padding, decorative and nondecorative coated fabrics, leather, trays and galley furnishings, electrical conduit, thermal and acoustical insulation and insulation covering, air ducting, joint and edge covering, cargo compartment liners, insulation blankets, cargo covers and transparencies, molded and thermoformed parts, air ducting joints, and trim strips (decorative and chafing), that are constructed of materials not covered in paragraph (d)(3)(iv) of this section must be self extinguishing when tested vertically in accordance with the applicable portions of appendix F of this part or other approved equivalent methods. The average burn length may not exceed 8 inches and the average flame time after removal of the flame source may not exceed 15 seconds. Drippings from the test specimen may not continue to flame for more than an average of 5 seconds after falling.

(ii) Floor covering, textiles (including draperies and upholstery), seat cushions, padding, decorative and nondecorative coated fabrics, leather, travs and galley furnishings, electrical conduit, thermal and acoustical insulation and insulation covering, air ducting, joint and edge covering, cargo compartment liners, insulation blankets, cargo covers and transparencies, molded and thermoformed parts, air ducting joints, and trim strips (decorative and chafing), that are constructed of materials not covered in paragraph (d)(3)(iv) of this section must be self extinguishing when tested vertically in accordance with the applicable portions of appendix F of this RBAC or other approved equivalent methods. The average burn length may not exceed 8 inches (0,20 m) and the average flame time after removal of the flame source may not exceed 15 seconds. Drippings from the test specimen may not continue to flame for more than an average of 5 seconds after falling.

(iii) Motion picture film must be safety film meeting the Standard Specifications for Safety Photographic Film PH1.25 (available from the American National Standards Institute, 1430 Broadway, New York, N.Y. 10018, USA) or an ANAC approved equivalent. If the film travels through ducts, the ducts must meet the requirements of paragraph (d)(3)(ii) of this section.

(iii) Motion picture film must be safety film meeting	(iv) Acrylic windows and signs, parts constructed in	
the Standard Specifications for Safety Photographic	whole or in part of elastomeric materials, edge-	
Film PH1.25 (available from the American National	lighted instrument assemblies consisting of two or	
Standards Institute, 1430 Broadway, New York,	more instruments in a common housing, seatbelts,	
N.Y. 10018) or an FAA approved equivalent. If the	shoulder harnesses, and cargo and baggage tiedown	
film travels through ducts, the ducts must meet the	equipment, including containers, bins, pallets, etc.,	
requirements of paragraph (d)(3)(ii) of this section.	used in passenger or crew compartments, may not	
	have an average burn rate greater than 2,5 inches per	
(iv) Acrylic windows and signs, parts constructed in	minute (0,06 m/min) when tested horizontally in	
whole or in part of elastomeric materials, edge-	accordance with the applicable portions of appendix	
lighted instrument assemblies consisting of two or	F of this RBAC or by other approved equivalent	
more instruments in a common housing, seatbelts,	methods.	
shoulder harnesses, and cargo and baggage tiedown		
equipment, including containers, bins, pallets, etc.,	(v) Except for electrical wire cable insulation, and	
used in passenger or crew compartments, may not	for small parts (such as knobs, handles, rollers,	
have an average burn rate greater than 2.5 inches per	fasteners, clips, grommets, rub strips, pulleys, and	
minute when tested horizontally in accordance with	small electrical parts) that the Administrator finds	
the applicable portions of appendix F of this part or	would not contribute significantly to the propagation	
by other approved equivalent methods.	of a fire, materials in items not specified in	
	paragraphs (d)(3)(i), (ii), (iii), or (iv) of this section	
(v) Except for electrical wire cable insulation, and	may not have a burn rate greater than 4,0 inches per	
for small parts (such as knobs, handles, rollers,	minute (0,10 m/min) when tested horizontally in	
fasteners, clips, grommets, rub strips, pulleys, and	accordance with the applicable portions of appendix	
small electrical parts) that the Administrator finds	F of this RBAC or by other approved equivalent	
would not contribute significantly to the propagation	methods.	
of a fire, materials in items not specified in		
paragraphs (d)(3)(i), (ii), (iii), or (iv) of this section	(e) Lines, tanks, or equipment containing fuel, oil, or	
may not have a burn rate greater than 4.0 inches per	other flammable fluids may not be installed in such	
minute when tested horizontally in accordance with	compartments unless adequately shielded, isolated,	

the applicable portions of appendix F of this part or by other approved equivalent methods.	or otherwise protected so that any breakage or failure of such an item would not create a hazard.	
<ul> <li>(e) Lines, tanks, or equipment containing fuel, oil, or other flammable fluids may not be installed in such compartments unless adequately shielded, isolated, or otherwise protected so that any breakage or failure of such an item would not create a hazard.</li> <li>(f) Airplane materials located on the cabin side of the firewall must be self-extinguishing or be located at such a distance from the firewall, or otherwise protected, so that ignition will not occur if the firewall is subjected to a flame temperature of not less than 2,000 degrees F for 15 minutes. For self-extinguishing materials (except electrical wire and cable insulation and small parts that the Administrator finds would not contribute significantly to the propagation of a fire), a vertifical self-extinguishing test must be conducted in accordance with appendix F of this part or an equivalent method approved by the Administrator. The average burn length of the material may not exceed 6 inches and the average flame time after removal of the flame source may not exceed 15 seconds. Drippings from the material test specimen may not continue to flame for more than an average of 3 seconds after falling.</li> </ul>	(f) Airplane materials located on the cabin side of the firewall must be self-extinguishing or be located at such a distance from the firewall, or otherwise protected, so that ignition will not occur if the firewall is subjected to a flame temperature of not less than 2.000 °F (1.093,33 °C) for 15 minutes. For self-extinguishing materials (except electrical wire and cable insulation and small parts that the Administrator finds would not contribute significantly to the propagation of a fire), a vertifical self-extinguishing test must be conducted in accordance with appendix F of this RBAC or an equivalent method approved by the Administrator. The average burn length of the material may not exceed 6 inches (0,15 m) and the average flame time after removal of the flame source may not exceed 15 seconds. Drippings from the material test specimen may not continue to flame for more than an average of 3 seconds after falling.	
	23.856 Thermal/acoustic insulation materials.	A introdução desta seção foi
		proposta para atuanzar os pauroes

	Thermal/acoustic insulation material installed in the fuselage must meet the flame propagation test requirements of part II of Appendix F to this RBAC, or other approved equivalent test requirements. This requirement does not apply to "small parts," as defined in paragraph 23.853(d)(3)(v).	de inflamabilidade para os materiais de isolamento térmico e acústico. Os padrões anteriores não tratavam realisticamente situações onde materiais de isolamento térmico ou acústico poderiam contribuir para a produção de fogo. As mudanças foram baseadas nos requisitos do parágrafo 25.856(a) que foi adotado após acidentes envolvendo aviões certificados de acordo com o RBAC 25, como o MD-11 da Swissair. Os novos padrões propostos aumentam a segurança ao reduzir a incidência e severidade de incêndios na cabine, particularmente aqueles em áreas inacessíveis onde materiais de isolamento térmico e acústico são instalados. Os novos padrões propostos
		instalados. Os novos padrões propostos também incluem testes de inflamabilidade e critérios para tratar da propagação de chama.
23.903 Engines.	23.903 Engines.	As alterações desta seção visam proteger os passageiros e manter a habilidade um voo e pouso seguro

(a) Engine type certificate. (1) Each engine must	(a) Engine type certificate.	continuado após um evento de
have a type certificate and must meet the applicable		desconexão do fan em instalações
requirements of part 34 of this chapter.	(1) Each engine must have a type certificate and must	de motores a jato incorporadas na
	meet the applicable requirements of RBAC 34.	fuselagem.
(2) Each turbine engine and its installation must		Para cada avião com um motor
comply with one of the following:	(2) Each turbine engine and its installation must	incorporado, a ANAC fornecerá
	comply with one of the following:	orientações específicas ao projeto
(i) Sections 33.76, 33.77 and 33.78 of this chapter in		para estabelecer um meio de
effect on December 13, 2000, or as subsequently	(i) Sections 33.76, 33.77 and 33.78 of the RBHA 33	cumprimento aceitável
amended; or	in effect on December 13, 2000, or as subsequently	relacionado a preocupações de
	amended; or	desconexão do fan. Se o motor não
(ii) Sections 33.77 and 33.78 of this chapter in effect		possuir um modo de falha que
on April 30, 1998, or as subsequently amended	(ii) Sections 33.77 and 33.78 of the RBHA 33 in	resulta em um evento de
before December 13, 2000; or	effect on April 30, 1998, or as subsequently amended	desconexão do <i>fan</i> , então o
	before December 13, 2000; or	cumprimento básico precisaria
(iii) Section 33.77 of this chapter in effect on October		demonstrar que esta falha não
31, 1974, or as subsequently amended before April	(iii) Section 33.77 of the RBHA 33 in effect on	pode ocorrer. Neste caso,
30, 1998, unless that engine's foreign object	October 31, 1974, or as subsequently amended	nenhuma atividade adicional de
ingestion service history has resulted in an unsafe	before April 30, 1998, unless that engine's foreign	demonstração seria requerida.
condition; or	object ingestion service history has resulted in an	
	unsafe condition; or	
(iv) Be shown to have a foreign object ingestion		
service history in similar installation locations which	(iv) Be shown to have a foreign object ingestion	
has not resulted in any unsafe condition.	service history in similar installation locations which	
	has not resulted in any unsafe condition.	
Note: §33.77 of this chapter in effect on October 31,		
1974, was published in 14 CFR parts 1 to 59, Revised	(b) Turbine engine installations. For turbine engine	
as of January 1, 1975. See 39 FR 35467, October 1,	installations:	
1974.		

(b) Turbine engine installations. For turbine engine	(1) Design precautions must be taken to minimize the	
installations—	hazards to the airplane in the event of an engine rotor	
	failure or of a fire originating inside the engine which	
(1) Design precautions must be taken to minimize	burns through the engine case.	
the hazards to the airplane in the event of an engine		
rotor failure or of a fire originating inside the engine	(2) The powerplant systems associated with engine	
which burns through the engine case.	control devices, systems, and instrumentation must	
	be designed to give reasonable assurance that those	
(2) The powerplant systems associated with engine	operating limitations that adversely affect turbine	
control devices, systems, and instrumentation must	rotor structural integrity will not be exceeded in	
be designed to give reasonable assurance that those	service.	
operating limitations that adversely affect turbine		
rotor structural integrity will not be exceeded in	(3) For engines embedded in the fuselage behind the	
service.	cabin, the effects of a fan exiting forward of the inlet	
	case (fan disconnect) must be addressed, the	
(c) Engine isolation. The powerplants must be	passengers must be protected, and the airplane must	
arranged and isolated from each other to allow	be controllable to allow for continued safe flight and	
operation, in at least one configuration, so that the	landing.	
failure or malfunction of any engine, or the failure or		
malfunction (including destruction by fire in the	(c) Engine isolation. The powerplants must be	
engine compartment) of any system that can affect	arranged and isolated from each other to allow	
an engine (other than a fuel tank if only one fuel tank	operation, in at least one configuration, so that the	
is installed), will not:	failure or malfunction of any engine, or the failure or	
	malfunction (including destruction by fire in the	
(1) Prevent the continued safe operation of the	engine compartment) of any system that can affect	
remaining engines; or	an engine (other than a fuel tank if only one fuel tank	
	is installed), will not:	

(2) Require immediate action by any crewmember	(1) Prevent the continued safe operation of the	
for continued safe operation of the remaining	remaining engines; or	
engines.		
	(2) Require immediate action by any crewmember	
(d) Starting and stopping (piston engine). (1) The	for continued safe operation of the remaining	
design of the installation must be such that risk of	engines.	
fire or mechanical damage to the engine or airplane,		
as a result of starting the engine in any conditions in	(d) Starting and stopping (piston engine).	
which starting is to be permitted, is reduced to a		
minimum. Any techniques and associated limitations	(1) The design of the installation must be such that	
for engine starting must be established and included	risk of fire or mechanical damage to the engine or	
in the Airplane Flight Manual, approved manual	airplane, as a result of starting the engine in any	
material, or applicable operating placards. Means	conditions in which starting is to be permitted, is	
must be provided for—	reduced to a minimum. Any techniques and	
	associated limitations for engine starting must be	
(i) Restarting any engine of a multiengine airplane in	established and included in the Airplane Flight	
flight, and	Manual, approved manual material, or applicable	
	operating placards. Means must be provided for:	
(ii) Stopping any engine in flight, after engine		
failure, if continued engine rotation would cause a	(i) Restarting any engine of a multiengine airplane in	
hazard to the airplane.	flight, and	
(2) In addition, for commuter category airplanes, the	(ii) Stopping any engine in flight, after engine	
following apply:	failure, if continued engine rotation would cause a	
	hazard to the airplane.	
(1) Each component of the stopping system on the		
engine side of the firewall that might be exposed to	(2) In addition, for commuter category airplanes, the $(2)$	
fire must be at least fire resistant.	tollowing apply:	

(ii) If hydraulic propeller feathering systems are used	(i) Each component of the stopping system on the	
for this purpose, the feathering lines must be at least	engine side of the firewall that might be exposed to	
fire resistant under the operating conditions that may	fire must be at least fire resistant.	
be expected to exist during feathering.		
	(ii) If hydraulic propeller feathering systems are used	
(e) Starting and stopping (turbine engine). Turbine	for this purpose, the feathering lines must be at least	
engine installations must comply with the following:	fire resistant under the operating conditions that may	
	be expected to exist during feathering.	
(1) The design of the installation must be such that		
risk of fire or mechanical damage to the engine or the	(e) Starting and stopping (turbine engine). Turbine	
airplane, as a result of starting the engine in any	engine installations must comply with the following:	
conditions in which starting is to be permitted, is		
reduced to a minimum. Any techniques and	(1) The design of the installation must be such that	
associated limitations must be established and	risk of fire or mechanical damage to the engine or the	
included in the Airplane Flight Manual, approved	airplane, as a result of starting the engine in any	
manual material, or applicable operating placards.	conditions in which starting is to be permitted, is	
	reduced to a minimum. Any techniques and	
(2) There must be means for stopping combustion	associated limitations must be established and	
within any engine and for stopping the rotation of	included in the Airplane Flight Manual, approved	
any engine if continued rotation would cause a	manual material, or applicable operating placards.	
hazard to the airplane. Each component of the engine		
stopping system located in any fire zone must be fire	(2) There must be means for stopping combustion	
resistant. If hydraulic propeller feathering systems	within any engine and for stopping the rotation of	
are used for stopping the engine, the hydraulic	any engine if continued rotation would cause a	
feathering lines or hoses must be fire resistant.	hazard to the airplane. Each component of the engine	
	stopping system located in any fire zone must be fire	
(3) It must be possible to restart an engine in flight	resistant. If hydraulic propeller feathering systems	
Any techniques and associated limitations must be	are used for stopping the engine, the hydraulic	
established and included in the Airplane Flight	feathering lines or hoses must be fire resistant	
is a second and moradou in the rinplane ringht		
		I
Manual, approved manual material, or applicable	(3) It must be possible to restart an engine in flight.	
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operating placards.	Any techniques and associated limitations must be	
	established and included in the Airplane Flight	
(4) It must be demonstrated in flight that when	Manual, approved manual material, or applicable	
restarting engines following a false start, all fuel or	operating placards.	
vapor is discharged in such a way that it does not		
constitute a fire hazard.	(4) It must be demonstrated in flight that when	
	restarting engines following a false start, all fuel or	
(f) Restart envelope. An altitude and airspeed	vapor is discharged in such a way that it does not	
envelope must be established for the airplane for in-	constitute a fire hazard.	
flight engine restarting and each installed engine		
must have a restart capability within that envelope.	(f) Restart envelope. An altitude and airspeed	
	envelope must be established for the airplane for in-	
(g) Restart capability. For turbine engine powered	flight engine restarting and each installed engine	
airplanes, if the minimum windmilling speed of the	must have a restart capability within that envelope.	
engines, following the in-flight shutdown of all		
engines, is insufficient to provide the necessary	(g) Restart capability. For turbine engine powered	
electrical power for engine ignition, a power source	airplanes, if the minimum windmilling speed of the	
independent of the engine-driven electrical power	engines, following the in-flight shutdown of all	
generating system must be provided to permit in-	engines, is insufficient to provide the necessary	
flight engine ignition for restarting.	electrical power for engine ignition, a power source	
	independent of the engine-driven electrical power	
	generating system must be provided to permit in-	
	flight engine ignition for restarting.	
23.1165 Engine ignition systems.	23.1165 Engine ignition systems.	A revisão do parágrafo 23.1165(f)
		expande sua aplicabilidade para
(a) Each battery ignition system must be	(a) Each battery ignition system must be	todas as instalações de motor a
supplemented by a generator that is automatically	supplemented by a generator that is automatically	turbina em aviões categoria
available as an alternate source of electrical energy	available as an alternate source of electrical energy	transporte regional.

to allow continued engine operation if any battery	to allow continued engine operation if any battery	Ao longo dos anos, motores de
becomes depleted.	becomes depleted.	aviões, incluindo turbinas,
		geravam sua própria energia
(b) The capacity of batteries and generators must be	(b) The capacity of batteries and generators must be	elétrica requerida para o seu
large enough to meet the simultaneous demands of	large enough to meet the simultaneous demands of	sistema ignição de forma separada
the engine ignition system and the greatest demands	the engine ignition system and the greatest demands	do sistema de geração elétrica.
of any electrical system components that draw from	of any electrical system components that draw from	Mesmo após uma falha elétrica
the same source.	the same source.	completa do sistema elétrico
		primário, os motores ainda
(c) The design of the engine ignition system must	(c) The design of the engine ignition system must	continuariam rodando e
account for—	account for:	completamente funcionais. No
		entanto, novos motores não são
(1) The condition of an inoperative generator;	(1) The condition of an inoperative generator;	projetos com capacidade de
		geração elétrica própria. Alguns
(2) The condition of a completely depleted battery	(2) The condition of a completely depleted battery	novos modelos de motores
with the generator running at its normal operating	with the generator running at its normal operating	dependem do sistema elétrico do
speed; and	speed; and	avião. De acordo com a revisão
		proposta, o sistema de ignição do
(3) The condition of a completely depleted battery	(3) The condition of a completely depleted battery	motor é identificado como uma
with the generator operating at idling speed, if there	with the generator operating at idling speed, if there	carga essencial o que garante que
is only one battery.	is only one battery.	tais motores tenham energia
		durante emergências.
(d) There must be means to warn appropriate	(d) There must be means to warn appropriate	
crewmembers if malfunctioning of any part of the	crewmembers if malfunctioning of any part of the	
electrical system is causing the continuous discharge	electrical system is causing the continuous discharge	
of any battery used for engine ignition.	of any battery used for engine ignition.	
(e) Each turbine engine ignition system must be	(e) Each turbine engine ignition system must be	
independent of any electrical circuit that is not used	independent of any electrical circuit that is not used	

for assisting, controlling, or analyzing the operation	for assisting, controlling, or analyzing the operation	
of that system.	of that system.	
(f) In addition, for commuter category airplanes,	(f) In addition, for commuter category airplanes,	
each turbopropeller ignition system must be an	each turbine engine ignition system must be an	
essential electrical load.	essential electrical load.	
23.1193 Cowling and nacelle.	23.1193 Cowling and nacelle.	Para aviões equipados com
		motores incorporados na
(a) Each cowling must be constructed and supported	(a) Each cowling must be constructed and supported	fuselagem ou em pilones na
so that it can resist any vibration, inertia, and air	so that it can resist any vibration, inertia, and air	fuselagem traseira, as
loads to which it may be subjected in operation.	loads to which it may be subjected in operation.	consequências de um incêndio são
		mais variadas, adversas e difíceis
(b) There must be means for rapid and complete	(b) There must be means for rapid and complete	de serem previstas do que em um
drainage of each part of the cowling in the normal	drainage of each part of the cowling in the normal	avião convencional. Um motor
ground and flight attitudes. Drain operation may be	ground and flight attitudes. Drain operation may be	incorporado fuselagem ou em
shown by test, analysis, or both, to ensure that under	shown by test, analysis, or both, to ensure that under	pilones na fuselagem traseira
normal aerodynamic pressure distribution expected	normal aerodynamic pressure distribution expected	oferece uma oportunidade mínima
in service each drain will operate as designed. No	in service each drain will operate as designed. No	de se realmente ver o fogo. Desta
drain may discharge where it will cause a fire hazard.	drain may discharge where it will cause a fire hazard.	forma, a localização do motor é
		crítica para a habilidade de ver e
(c) Cowling must be at least fire resistant.	(c) Cowling must be at least fire resistant.	extinguir um incêndio no motor.
		Em motores incorporados na
(d) Each part behind an opening in the engine	(d) Each part behind an opening in the engine	fuselagem, um incêndio no motor
compartment cowling must be at least fire resistant	compartment cowling must be at least fire resistant	poderia afetar tanto a fuselagem
for a distance of at least 24 inches aft of the opening.	for a distance of at least 24 inches (61 cm) aft of the	do avião quanto a estrutura da
	opening.	cauda, que inclui os controles de
(e) Each part of the cowling subjected to high		arfagem e guinada. Um incêndio
temperatures due to its nearness to exhaust sytem		poderia ainda resultar na perda de
		controle antes que o piloto pudesse
		realizar um pouso de emergência.

ports or exhaust gas impingement, must be fire	(e) Each part of the cowling subjected to high	Desta forma, o parágrafo
proof.	temperatures due to its nearness to exhaust sytem	23.1193(g) foi revisto para
	ports or exhaust gas impingement, must be fire proof.	esclarecer a aplicabilidade da
(f) Each nacelle of a multiengine airplane with		preocupação para aviões com este
supercharged engines must be designed and	(f) Each nacelle of a multiengine airplane with	tipo de configuração de instalação
constructed so that with the landing gear retracted, a	supercharged engines must be designed and	de motor.
fire in the engine compartment will not burn through	constructed so that with the landing gear retracted, a	
a cowling or nacelle and enter a nacelle area other	fire in the engine compartment will not burn through	
than the engine compartment.	a cowling or nacelle and enter a nacelle area other	
	than the engine compartment.	
(g) In addition, for commuter category airplanes, the		
airplane must be designed so that no fire originating	(g) In addition, for all airplanes with engine(s)	
in any engine compartment can enter, either through	embedded in the fuselage or in pylons on the aft	
openings or by burn-through, any other region where	fuselage, the airplane must be designed so that no fire	
it would create additional hazards.	originating in any engine compartment can enter,	
	either through openings or by burn-through, any	
	other region where it would create additional	
	hazards.	
23.1195 Fire extinguishing systems.	23.1195 Fire extinguishing systems.	A aplicabilidade do parágrafo
		23.1195(a) foi revista para incluir
(a) For commuter category airplanes, fire	(a) For commuter category airplanes, and all	todos aviões com motores
extinguishing systems must be installed and	airplanes with engine(s) embedded in the fuselage or	incorporados na fuselagem ou em
compliance shown with the following:	in pylons on the aft fuselage, fire extinguishing	pilones na fuselagem traseira, uma
	systems must be installed and compliance shown	vez que o problema é mais
(1) Except for combustor, turbine, and tailpipe	with the following:	relacionado com a localização do
sections of turbine-engine installations that contain		motor do que com a categoria do
lines or components carrying flammable fluids or	(1) Except for combustor, turbine, and tailpipe	avião. Para instalações de motores
gases for which a fire originating in these sections is	sections of turbine-engine installations that contain	incorporados na fuselagem, um
	lines or components carrying flammable fluids or	sistema com dois disparos é
	gases for which a fire originating in these sections is	necessário devido a presença de

shown to be controllable, a fire extinguisher system	shown to be controllable, a fire extinguisher system	componentes metálicos na zona de
must serve each engine compartment;	must serve each engine compartment;	fogo que podem ficar quentes
		suficiente para reignitar vapores
(2) The fire extinguishing system, the quantity of the	(2) The fire extinguishing system, the quantity of the	inflamáveis após a extinção do
extinguishing agent, the rate of discharge, and the	extinguishing agent, the rate of discharge, and the	primeiro incêndio.
discharge distribution must be adequate to	discharge distribution must be adequate to extinguish	
extinguish fires. An individual "one shot" system	fires. An individual "one shot" system may be used,	
may be used.	except for engine(s) embedded in the fuselage, where	
	a "two shot" system is required.	
(3) The fire extinguishing system for a nacelle must		
be able to simultaneously protect each compartment	(3) The fire extinguishing system for a nacelle must	
of the nacelle for which protection is provided.	be able to simultaneously protect each compartment	
	of the nacelle for which protection is provided.	
(b) If an auxiliary power unit is installed in any		
airplane certificated to this part, that auxiliary power	(b) If an auxiliary power unit is installed in any	
unit compartment must be served by a fire	airplane certificated to this RBAC, that auxiliary	
extinguishing system meeting the requirements of	power unit compartment must be served by a fire	
paragraph (a)(2) of this section.	extinguishing system meeting the requirements of	
	paragraph (a)(2) of this section.	
23.1197 Fire extinguishing agents.	23.1197 Fire extinguishing agents.	Revisada aplicabilidade para
		incluir todos avioes com motores
For commuter category airplanes, the following	For commuter category airplanes, and all airplanes	incorporados na fuselagem ou em
applies:	with engine(s) embedded in the fuselage or in pylons	pilones na fuselagem traseira
	on the aft fuselage the following applies:	harmonizando a abordagem com
(a) Fire extinguishing agents must—		as alterações das seções 23.1165,
	(a) Fire extinguishing agents must:	23.1193 e 23.1195.
(1) Be capable of extinguishing flames emanating		
trom any burning of fluids or other combustible	(1) Be capable of extinguishing flames emanating	
	trom any burning of fluids or other combustible	

materials in the area protected by the fire extinguishing system; and	materials in the area protected by the fire extinguishing system; and	
(2) Have thermal stability over the temperature range likely to be experienced in the compartment in which they are stored.	(2) Have thermal stability over the temperature range likely to be experienced in the compartment in which they are stored.	
(b) If any toxic extinguishing agent is used, provisions must be made to prevent harmful concentrations of fluid or fluid vapors (from leakage during normal operation of the airplane or as a result of discharging the fire extinguisher on the ground or in flight) from entering any personnel compartment, even though a defect may exist in the extinguishing system. This must be shown by test except for built- in carbon dioxide fuselage compartment fire extinguishing systems for which—	(b) If any toxic extinguishing agent is used, provisions must be made to prevent harmful concentrations of fluid or fluid vapors (from leakage during normal operation of the airplane or as a result of discharging the fire extinguisher on the ground or in flight) from entering any personnel compartment, even though a defect may exist in the extinguishing system. This must be shown by test except for built- in carbon dioxide fuselage compartment fire extinguishing systems for which:	
(1) Five pounds or less of carbon dioxide will be discharged, under established fire control procedures, into any fuselage compartment; or	(1) Five pounds (2,3 kg) or less of carbon dioxide will be discharged, under established fire control procedures, into any fuselage compartment; or	
(2) Protective breathing equipment is available for each flight crewmember on flight deck duty.	(2) Protective breathing equipment is available for each flight crewmember on flight deck duty.	
<b>23.1199 Extinguishing agent containers.</b> For commuter category airplanes, the following applies:	<b>23.1199</b> Extinguishing agent containers. For commuter category airplanes, and all airplanes with engine(s) embedded in the fuselage or in pylons on the aft fuselage the following applies:	Revisada aplicabilidade para incluir todos aviões com motores incorporados na fuselagem ou em pilones na fuselagem traseira harmonizando a abordagem com

(a) Each extinguishing agent container must have a pressure relief to prevent bursting of the container by excessive internal pressures.	(a) Each extinguishing agent container must have a pressure relief to prevent bursting of the container by excessive internal pressures.	as alterações das seções 23.1165, 23.1193 e 23.1195.
(b) The discharge end of each discharge line from a pressure relief connection must be located so that discharge of the fire extinguishing agent would not damage the airplane. The line must also be located or protected to prevent clogging caused by ice or other foreign matter.	(b) The discharge end of each discharge line from a pressure relief connection must be located so that discharge of the fire extinguishing agent would not damage the airplane. The line must also be located or protected to prevent clogging caused by ice or other foreign matter.	
(c) A means must be provided for each fire extinguishing agent container to indicate that the container has discharged or that the charging pressure is below the established minimum necessary for proper functioning.	(c) A means must be provided for each fire extinguishing agent container to indicate that the container has discharged or that the charging pressure is below the established minimum necessary for proper functioning.	
(d) The temperature of each container must be maintained, under intended operating conditions, to prevent the pressure in the container from—	(d) The temperature of each container must be maintained, under intended operating conditions, to prevent the pressure in the container from:	
(1) Falling below that necessary to provide an adequate rate of discharge; or	(1) Falling below that necessary to provide an adequate rate of discharge; or	
(2) Rising high enough to cause premature discharge.	(2) Rising high enough to cause premature discharge.	
(e) If a pyrotechnic capsule is used to discharge the extinguishing agent, each container must be installed	(e) If a pyrotechnic capsule is used to discharge the extinguishing agent, each container must be installed so that temperature conditions will not cause hazardous deterioration of the pyrotechnic capsule.	

so that temperature conditions will not cause		
hazardous deterioration of the pyrotechnic capsule.		
<b>23.1201</b> Fire extinguishing systems materials.	<b>23.1201</b> Fire extinguishing systems materials.	Revisada aplicabilidade para incluir todos aviões com motores
For commuter category airplanes, the following	For commuter category airplanes, and all airplanes	incorporados na fuselagem ou em
appry.	on the aft fuselage the following applies:	harmonizando a abordagem com
(a) No material in any fire extinguishing system may		as alterações das seções 23.1165,
react chemically with any extinguishing agent so as to create a hazard	(a) No material in any fire extinguishing system may react chemically with any extinguishing agent so as	23.1193 e 23.1195.
	to create a hazard.	
(b) Each system component in an engine		
compartment must be fireproof.	(b) Each system component in an engine	
	compartment must be fireproof.	
<b>23.1301</b> Function and installation.	<b>23.1301</b> Function and installation.	Foi removido o parágrafo
		23.1301(d) para aumentar a
Each item of installed equipment must—	Each item of installed equipment must:	padronização para certificação de
(a) Be of a kind and design appropriate to its intended	(a) Be of a kind and design appropriate to its intended	sistemas e equipamentos, em
function	(a) Be of a kind and design appropriate to its intended	requeridos e funções não-
		essenciais incorporadas em
(b) Be labeled as to its identification, function, or	(b) Be labeled as to its identification, function, or	sistemas aviônicos complexos. Os
operating limitations, or any applicable combination	operating limitations, or any applicable combination	requisitos do parágrafo 23.1309(a)
of these factors;	of these factors; and	substituem o $23.1301(d)$ , e se o
(c) Be installed according to limitations specified for	(c) Be installed according to limitations specified for	23.1301(d) fosse mantido, naveria
that equipment: and	that equipment.	una duplicação de requisitos.
······································		
(d) Function properly when installed.		

23.1303 Flight and navigation instruments.	<b>23.1303</b> Flight and navigation instruments.	As alterações introduzidas têm o
		objetivo de acomodar novas
The following are the minimum required flight and	The following are the minimum required flight and	tecnologias e eliminar a
navigation instruments:	navigation instruments:	necessidade de emitir ELOS para
		programas de certificação do
(a) An airspeed indicator.	(a) An airspeed indicator.	RBAC 23. O parágrafo 23.1303(c)
		foi revisado pois a versão atual
(b) An altimeter.	(b) An altimeter.	não permite um indicador de
		direção que não uma bússola não-
(c) A direction indicator (nonstabilized magnetic	(c) A magnetic direction indicator.	estabilizada. Conforme novas
compass).		tecnologias se tornam mais
	(d) For reciprocating engine-powered airplanes of	acessíveis para aviões mais leves,
(d) For reciprocating engine-powered airplanes of	more than 6.000 pounds (2.722 kg) maximum weight	muitos sistemas de instrumentos
more than 6,000 pounds maximum weight and	and turbine engine powered airplanes, a free air	de voo eletrônicos usarão
turbine engine powered airplanes, a free air	temperature indicator or an air-temperature indicator	indicadores de direção
temperature indicator or an air-temperature indicator	which provides indications that are convertible to	estabilizados (ou sistemas de
which provides indications that are convertible to	free-air.	bússola elétricos) para medir e
free-air.		indicar a direção do avião para
	(e) A speed warning device for:	fornecer um desempenho melhor
(e) A speed warning device for—		como já é verificado hoje em
	(1) Turbine engine powered airplanes; and	aviões categoria transporte.
(1) Turbine engine powered airplanes; and		
	(2) Other airplanes for which VMO/MMO and	
(2) Other airplanes for	Vd/Md are established under paragraphs	
whichVmo/MmoandVd/Mdare established under	23.335(b)(4) and 23.1505(c) if VMO/MMO is	
§§23.335(b)(4) and 23.1505(c) ifVmo/Mmois	greater than 0,8 Vd/Md.	
greater than 0.8Vd/Md.		
	The speed warning device must give effective aural	
The speed warning device must give effective aural	warning (differing distinctively from aural warnings	
warning (differing distinctively from aural warnings	used for other purposes) to the pilots whenever the	

used for other purposes) to the pilots whenever the	speed exceeds VMO plus 6 knots or MMO+0.01.	
speed exceedsVmoplus 6 knots orMmo+0.01. The	The upper limit of the production tolerance for the	
upper limit of the production tolerance for the	warning device may not exceed the prescribed	
warning device may not exceed the prescribed	warning speed. The lower limit of the warning	
warning speed. The lower limit of the warning	device must be set to minimize nuisance warning;	
device must be set to minimize nuisance warning;		
	(f) When an attitude display is installed, the	
(f) When an attitude display is installed, the	instrument design must not provide any means,	
instrument design must not provide any means,	accessible to the flightcrew, of adjusting the relative	
accessible to the flightcrew, of adjusting the relative	positions of the attitude reference symbol and the	
positions of the attitude reference symbol and the	horizon line beyond that necessary for parallax	
horizon line beyond that necessary for parallax	correction.	
correction.		
	(g) In addition, for commuter category airplanes:	
(g) In addition, for commuter category airplanes:		
	(1) If airspeed limitations vary with altitude, the	
(1) If airspeed limitations vary with altitude, the	airspeed indicator must have a maximum allowable	
airspeed indicator must have a maximum allowable	airspeed indicator showing the variation of VMO	
airspeed indicator showing the variation of $V_{MO}$ with	with altitude.	
altitude.		
	(2) The altimeter must be a sensitive type.	
(2) The altimeter must be a sensitive type.		
	(3) Having a passenger seating configuration of 10	
(3) Having a passenger seating configuration of 10	or more, excluding the pilot's seats and that are	
or more, excluding the pilot's seats and that are	approved for IFR operations, a third attitude	
approved for IFR operations, a third attitude	instrument must be provided that:	
instrument must be provided that:		
	(i) Is powered from a source independent of the	
	electrical generating system;	

(i) Is powered from a source independent of the electrical generating system:	(ii) Continues reliable operation for a minimum of 30 minutes after total failure of the electrical generating	
cheenten genorating system,	system;	
(ii) Continues reliable operation for a minimum of 30		
system;	(iii) Operates independently of any other attitude indicating system;	
(iii) Operates independently of any other attitude indicating system;	(iv) Is operative without selection after total failure of the electrical generating system;	
(iv) Is operative without selection after total failure of the electrical generating system;	(v) Is located on the instrument panel in a position acceptable to the Administrator that will make it plainly visible to and usable by any pilot at the pilot's	
(v) Is located on the instrument panel in a position	station; and	
plainly visible to and usable by any pilot at the pilot's station; and	(vi) Is appropriately lighted during all phases of operation.	
(vi) Is appropriately lighted during all phases of operation.		
23.1309 Equipment, systems, and installations.	23.1309 Equipment, systems, and installations.	A proposta altera os requisitos
		para dois tipos diferentes de
(a) Each item of equipment, each system, and each installation	The requirements of this section, except as identified in paragraphs (a) through (d) are applicable in	equipamentos e sistemas instalados no avião A secão
	addition to specific design requirements of RBAC	também descreve duas ações para
(1) When performing its intended function, may not	23, to any equipment or system as installed in the	os requerentes. Primeiro, o
adversely affect the response, operation, or accuracy	airplane. This section is a regulation of general	requerente deve considerar o
of any—	requirements and does not supersede any	envelope completo de operação
		normal do avião, como definido
		pelo Manual de Voo do Avião,

(i) Equipment essential to safe operation; or	requirements contained in another section of RBAC	com qualquer modificação para
	23.	aquele envelope associada com
(ii) Other equipment unless there is a means to		procedimentos anormais ou de
inform the pilot of the effect.	(a) The airplane equipment and systems must be	emergência e qualquer ação
	designed and installed so that:	antecipada da tripulação. Depois,
(2) In a single-engine airplane, must be designed to		o requerente deve considerar as
minimize hazards to the airplane in the event of a	(1) Those required for type certification or by	condições ambientais externas e
probable malfunction or failure.	operating rules perform as intended under the	internas antecipadas, assim como
	airplane operating and environmental conditions,	qualquer condição adicional onde
(3) In a multiengine airplane, must be designed to	including the indirect effects of lightning strikes.	possa se assumir que os
prevent hazards to the airplane in the event of a		equipamentos e sistemas
probable malfunction or failure.	(2) Any equipment and system does not adversely	"desempenham como
	affect the safety of the airplane or its occupants, or	pretendido".
(4) In a commuter category airplane, must be	the proper functioning of those covered by paragraph	O parágrafo 23.1309(a)(2) requer
designed to safeguard against hazards to the airplane	(a)(1) of this section.	uma análise de qualquer
in the event of their malfunction or failure.		equipamento ou sistema instalado
	(b) Minor, major, hazardous, or catastrophic failure	com uma condição de falha que
(b) The design of each item of equipment, each	condition(s), which occur during Type Inspection	seja potencialmente catastrófica,
system, and each installation must be examined	Authorization or ANAC flight-certification testing,	hazardous, major ou minor para
separately and in relationship to other airplane	must have root cause analysis and corrective action.	determinar seu impacto na
systems and installations to determine if the airplane		operação segura do avião. O
is dependent upon its function for continued safe	(c) The airplane systems and associated components	requerente deve demonstrar que
flight and landing and, for airplanes not limited to	considered separately and in relation to other	eles não afetam adversamente o
VFR conditions, if failure of a system would	systems, must be designed and installed so that:	funcionamento adequado dos
significantly reduce the capability of the airplane or		equipamentos, sistemas ou
the ability of the crew to cope with adverse operating	(1) Each catastrophic failure condition is extremely	instalações cobertas pela seção
conditions. Each item of equipment, each system,	improbable and does not result from a single failure;	23.1309 e não influenciam
and each installation identified by this examination		adversamente a segurança do
as one upon which the airplane is dependent for		avião ou dos seus ocupantes. O
proper functioning to ensure continued safe flight		parágrafo 23.1309(a)(2) não

and landing, or whose failure would significantly	(2) Each hazardous failure condition is extremely	requer que equipamentos e
reduce the capability of the airplane or the ability of	remote; and	sistemas não-requeridos
the crew to cope with adverse operating conditions,		funcionem apropriadamente
must be designed to comply with the following	(3) Each major failure condition is remote.	durante todas as operações uma
additional requirements:		vez em serviço desde que todos as
	(d) Information concerning an unsafe system	condições de falha em potencial
(1) It must perform its intended function under any	operating condition must be provided in a timely	não tenham qualquer efeito na
foreseeable operating condition.	manner to the crew to enable them to take	operação segura do avião. O
	appropriate corrective action. An appropriate alert	equipamento ou sistema deve
(2) When systems and associated components are	must be provided if immediate pilot awareness and	funcionar da maneira especificada
considered separately and in relation to other	immediate or subsequent corrective action is	pelo manual de operação do
systems—	required. Systems and controls, including indications	fabricante para aquele
	and annunciations, must be designed to minimize	equipamento ou sistema. A
(i) The occurrence of any failure condition that	crew errors which could create additional hazards.	declaração do requerente da
would prevent the continued safe flight and landing		função pretendida deve ser
of the airplane must be extremely improbable; and		suficientemente específica e
		detalhada para que a ANAC possa
(ii) The occurrence of any other failure condition that		avaliar se aquele sistema é
would significantly reduce the capability of the		apropriado para sua(s)
airplane or the ability of the crew to cope with		função(ões) pretendida(s).
adverse operating conditions must be improbable.		O parágrafo 23.1309(b) foi
		introduzido e é aplicável à
(3) Warning information must be provided to alert		Autorização de Inspeção de Tipo
the crew to unsafe system operating conditions and		(AIT) e ensaios em voo de
to enable them to take appropriate corrective action.		certificação. A ANAC espera que
Systems, controls, and associated monitoring and		o requerente demonstre que o
warning means must be designed to minimize crew		sistema não exibe condições de
errors that could create additional hazards.		falha indesejáveis que sejam
		classificadas como minor, major,
		hazardous ou catastróficas.

(4) Compliance with the requirements of paragraph	Os requisitos relacionados a fontes
(b)(2) of this section may be shown by analysis and,	de energia foram movidos para a
where necessary, by appropriate ground, flight, or	nova seção 23.1310.
simulator tests. The analysis must consider—	O antigo parágrafo 23.1309(a)(3)
	foi alterado – e designado
(i) Possible modes of failure, including malfunctions	23.1309(d) devido às alterações
and damage from external sources;	em outros parágrafos – para
	compatibilizá-lo com a seção
(ii) The probability of multiple failures, and the	23.1322 que distingue entre alertas
probability of undetected faults.;	caution, warning e aavisory. Em
(iii) The resulting offects on the similare and	vez de apenas requerer um aierta
(iii) The resulting effects on the anpiane and	parágrafo 23.1309(d) requer que
operating conditions: and	informações sobre condições
oporating conditions, and	operacionais inseguras de
(iv) The crew warning cues, corrective action	sistemas seja fornecida para a
required, and the crew's capability of determining	tripulação de voo. O parágrafo
faults.	23.1309(d) também especifica que
	o projeto de sistemas e controles,
(c) Each item of equipment, each system, and each	incluindo indicações e anúncios,
installation whose functioning is required by this	devem reduzir erros da tripulação
chapter and that requires a power supply is an	que poderiam criar novos perigos.
"essential load" on the power supply. The power	
sources and the system must be able to supply the following neuron loads in probable operating	
combinations and for probable durations:	
comonations and for probable durations.	
(1) Loads connected to the power distribution system	
with the system functioning normally.	

(2) Essential loads after failure of—	
(i) Any one engine on two-engine airplanes; or	
(ii) Any two engines on an airplane with three or more engines; or	
(iii) Any power converter or energy storage device.	
(3) Essential loads for which an alternate source of power is required, as applicable, by the operating rules of this chapter, after any failure or malfunction in any one power supply system, distribution system, or other utilization system.	
(d) In determining compliance with paragraph (c)(2) of this section, the power loads may be assumed to be reduced under a monitoring procedure consistent with safety in the kinds of operations authorized. Loads not required in controlled flight need not be considered for the two-engine-inoperative condition on airplanes with three or more engines.	
(e) In showing compliance with this section with regard to the electrical power system and to equipment design and installation, critical environmental and atmospheric conditions, including radio frequency energy and the effects (both direct and indirect) of lightning strikes, must be considered. For electrical generation, distribution,	

and utilization equipment required by or used in complying with this chapter, the ability to provide continuous, safe service under forseeable environmental conditions may be shown by environmental tests, design analysis, or reference to previous comparable service experience on other airplanes.		
(f) As used in this section, "system" refers to all pneumatic systems, fluid systems, electrical systems, mechanical systems, and powerplant systems included in the airplane design, except for the following:		
(1) Powerplant systems provided as part of the certificated engine.		
(2) The flight structure (such a wing, empennage, control surfaces and their systems, the fuselage, engine mounting, and landing gear and their related primary attachments) whose requirements are specific in subparts C and D of this part.		
	<b>23.1310</b> Power source capacity and distribution.	A nova seção 23.1310 incorpora
	(a) Each installation whose functioning is required	conceitos que eram anteriormente parte da secão 23.109 Esta
	for type certification or under operating rules and	alteração não altera os requisitos
	that requires a power supply is an "essential load" on	técnicos, mas apenas a localização
	must be able to supply the following power loads in	no regulamento. No passado, as seções 23.1309 e 25.139 tinham os mesmos reguisitos de fonte de

probable operating combinations and for probable	energia, no entanto, a emenda 123
durations:	do RBAC 25 moveu estes
	requisitos da seção 25.1309 para a
(1) Loads connected to the system with the system	25.1310 sem alteração do
functioning normally.	conteudo. Esta alteração fornece
	consistencia entre ambos os
(2) Essential loads, after failure of any one prime	padroes.
mover, power converter, or energy storage device.	
(3) Essential loads after failure of	
(1) Any one engine on two-engine airplanes; and	
(ii) A mu true on since on simplement with three on more	
(II) Any two engines on airplanes with three or more	
engines.	
(A) Essential loads for which an alternate source of	
nower is required after any failure or malfunction in	
any one power supply system distribution system or	
other utilization system	
other utilization system.	
(b) In determining compliance with paragraphs	
(a)(2) and $(3)$ of this section, the power loads may be	
assumed to be reduced under a monitoring procedure	
consistent with safety in the kinds of operation	
authorized. Loads not required in controlled flight	
need not be considered for the two-engine-	
inoperative condition on airplanes with three or more	
engines.	

23.1311 Electronic display instrument systems.	23.1311 Electronic display instrument systems.	Os requisitos de redundância para
		alguns instrumentos ou
(a) Electronic display indicators, including those	(a) Electronic display indicators, including those	indicadores de voo podiam ser
with features that make isolation and independence	with features that make isolation and independence	muito restritivos para operações
between powerplant instrument systems impractical,	between powerplant instrument systems impractical,	apenas VFR. Isto levou vários
must:	must:	requerentes a solicitar um ELOS
		para o 23.1311(a)(5) para
(1) Meet the arrangement and visibility requirements	(1) Meet the arrangement and visibility requirements	aprovações de instalações de
of §23.1321.	of section 23.1321 of this RBAC.	displays eletrônicos em aviões
		certificados pelo RBAC 23. Isto
(2) Be easily legible under all lighting conditions	(2) Be easily legible under all lighting conditions	levou a proposta de alterar o
encountered in the cockpit, including direct sunlight,	encountered in the cockpit, including direct sunlight,	parágrafo 23.1311(a)(5) para
considering the expected electronic display	considering the expected electronic display	esclarecer que os instrumentos de
brightness level at the end of an electronic display	brightness level at the end of an electronic display	atitude são requeridos apenas para
indictor's useful life. Specific limitations on display	indictor's useful life. Specific limitations on display	operações IFR.
system useful life must be contained in the	system useful life must be contained in the	O parágrafo 23.1311(a)(6) foi
Instructions for Continued Airworthiness required	Instructions for Continued Airworthiness required	alterado para esclarecer os
by §23.1529.	by section 23.1529 of this RBAC.	requisitos para "sensory cues".
		Também foi alterado o
(3) Not inhibit the primary display of attitude,	(3) Not inhibit the primary display of attitude,	23.1311(a)(7) para tornar
airspeed, altitude, or powerplant parameters needed	airspeed, altitude, or powerplant parameters needed	aceitável a marcação de
by any pilot to set power within established	by any pilot to set power within established	instrumentos em displays
limitations, in any normal mode of operation.	limitations, in any normal mode of operation.	eletrônicos equivalentes aquelas
		em instrumentos convencionais
(4) Not inhibit the primary display of engine	(4) Not inhibit the primary display of engine	mecânicos e eletromecânicos.
parameters needed by any pilot to properly set or	parameters needed by any pilot to properly set or	O parágrafo 23.1311(b) foi
monitor powerplant limitations during the engine	monitor powerplant limitations during the engine	alterado para substituir a frase
starting mode of operation.	starting mode of operation.	"remain available to the crew,
		without need for immediate
		action" por "be available within

(5) Have an independent magnetic direction	(5) For certification for Instrument Flight Rules	one second to the crew by a single
indicator and either an independent secondary	(IFR) operations, have an independent magnetic	pilot action or by automatic
mechanical altimeter, airspeed indicator, and attitude	direction indicator and either an independent	<i>means</i> ". Esta proposta permite um
instrument or individual electronic display indicators	secondary mechanical altimeter, airspeed indicator,	requerente tomar crédito de
for the altitude, airspeed, and attitude that are	and attitude instrument or an electronic display	displays de voo reversionários ou
independent from the airplane's primary electrical	parameters for the altitude, airspeed, and attitude that	secundários que fornece um meio
power system. These secondary instruments may be	are independent from the airplane's primary	secundário de informações
installed in panel positions that are displaced from	electrical power system. These secondary	primários de voo.
the primary positions specified by §23.1321(d), but	instruments may be installed in panel positions that	
must be located where they meet the pilot's visibility	are displaced from the primary positions specified by	
requirements of §23.1321(a).	paragraph 23.1321(d) of this RBAC, but must be	
	located where they meet the pilot's visibility	
(6) Incorporate sensory cues for the pilot that are	requirements of paragraph 23.1321(a) of this RBAC.	
equivalent to those in the instrument being replaced		
by the electronic display indicators.	(6) Incorporate sensory cues that provide a quick	
	glance sense of rate and, where appropriate, trend	
(7) Incorporate visual displays of instrument	information to the parameter being displayed to the	
markings, required by §§23.1541 through 23.1553,	pilot.	
or visual displays that alert the pilot to abnormal		
operational values or approaches to established	(7) Incorporate equivalent visual displays of the	
limitation values, for each parameter required to be	instrument markings required by section 23.1541	
displayed by this part.	through 23.1553 of this RBAC, or visual displays	
	that alert the pilot to abnormal operational values or	
(b) The electronic display indicators, including their	approaches to established limitation values, for each	
systems and installations, and considering other	parameter required to be displayed by this part.	
airplane systems, must be designed so that one		
display of information essential for continued safe	(b) The electronic display indicators, including their	
flight and landing will remain available to the crew,	systems and installations, and considering other	
without need for immediate action by any pilot for	airplane systems, must be designed so that one	
	display of information essential for continued safe	

continued safe operation, after any single failure or	flight and landing will be available within one	
probable combination of failures.	second to the crew by a single pilot action or by	
	automatic means for continued safe operation, after	
(c) As used in this section, "instrument" includes	any single failure or probable combination of	
devices that are physically contained in one unit, and	failures.	
devices that are composed of two or more physically		
separate units or components connected together	(c) As used in this section, "instrument" includes	
(such as a remote indicating gyroscopic direction	devices that are physically contained in one unit, and	
indicator that includes a magnetic sensing element, a	devices that are composed of two or more physically	
gyroscopic unit, an amplifier, and an indicator	separate units or components connected together	
connected together). As used in this section,	(such as a remote indicating gyroscopic direction	
"primary" display refers to the display of a parameter	indicator that includes a magnetic sensing element, a	
that is located in the instrument panel such that the	gyroscopic unit, an amplifier, and an indicator	
pilot looks at it first when wanting to view that	connected together). As used in this section,	
parameter.	"primary" display refers to the display of a parameter	
	that is located in the instrument panel such that the	
	pilot looks at it first when wanting to view that	
	parameter.	
23.1323 Airspeed indicating system.	23.1323 Airspeed indicating system.	Para satisfazer os requisitos de
		desempenho de jatos da Subparte
(a) Each airspeed indicating instrument must be	(a) Each airspeed indicating instrument must be	B, o piloto precisa de indicadores
calibrated to indicate true airspeed (at sea level with	calibrated to indicate true airspeed (at sea level with	precisos de velocidade enquanto
a standard atmosphere) with a minimum practicable	a standard atmosphere) with a minimum practicable	acelera na pista. A revisão
instrument calibration error when the corresponding	instrument calibration error when the corresponding	proposta adiciona requisitos para
pitot and static pressures are applied.	pitot and static pressures are applied.	calibrar o sistema de velocidade
		do ar em a partir de 0,8 vezes o
(b) Each airspeed system must be calibrated in flight	(b) Each airspeed system must be calibrated in flight	valor mínimo da V1. Também foi
to determine the system error. The system error,	to determine the system error. The system error,	proposta a adoção da linguagem
including position error, but excluding the airspeed	including position error, but excluding the airspeed	adotada no RBAC 25 para este
indicator instrument calibration error, may not	indicator instrument calibration error, may not	mesmo requisito uma vez que ele

knots, whichever is greater, throughout the following speed ranges:knots (9,25 km/h), whichever is greater, throughout the following speed ranges:características dos novos jat certificados de acordo com RBAC 23.(1) 1.3 V <sub>S1</sub> to V <sub>MO</sub> /M <sub>MO</sub> or V <sub>NE</sub> , whichever is appropriate with flaps retracted.(1) 1,3 VS1 to VMO/MMO or VNE, whichever is appropriate with flaps retracted.(1) 1,3 VS1 to VMO/MMO or VNE, whichever is appropriate with flaps retracted.Características dos novos jat certificados de acordo com RBAC 23.
speed ranges:the following speed ranges:certificados de acordo com RBAC 23.(1) 1.3 V <sub>S1</sub> to V <sub>MO</sub> /M <sub>MO</sub> or V <sub>NE</sub> , whichever is appropriate with flaps retracted.(1) 1,3 VS1 to VMO/MMO or VNE, whichever is appropriate with flaps retracted.Certificados de acordo com RBAC 23.
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
(1) 1.3 $V_{S1}$ to $V_{MO}/M_{MOO}$ $V_{NE}$ , whichever is appropriate with flaps retracted. (1) 1,3 VS1 to VMO/MMO or VNE, whichever is appropriate with flaps retracted. (1) 1,3 VS1 to VMO/MMO or VNE, whichever is appropriate with flaps retracted. (2) $V_{MO}/M_{MOO}$ $V_{NE}$ $V$
appropriate with flaps retracted. appropriate with flaps retracted. anterior era aplicável apenas pa
·~ · ·
avioes categoria transpor
(2) $1.3 \text{ Vs} 1$ to $V_{\text{FE}}$ with flaps extended. (2) $1.3 \text{ VS} 1$ to VFE with flaps extended. regional porque apenas para estimates of the second s
aviões eram requeridos ensaios o
(c) The design and installation of each airspeed (c) The design and installation of each airspeed aceleração e parada. A proposta o
indicating system must provide positive drainage of indicating system must provide positive drainage of alteração do 23.55, com
moisture from the pitot static plumbing. moisture from the pitot static plumbing. discutido naquela seção, ampl
sua aplicabilidade para todos jato
(d) If certification for instrument flight rules or flight (d) If certification for instrument flight rules or flight multimotores pesando mais qu
in icing conditions is requested, each airspeed in icing conditions is requested, each airspeed system 6.000 libras (2.722 kg). De form
system must have a heated pitot tube or an equivalent must have a heated pitot tube or an equivalent means analoga, esta proposta requer
means of preventing malfunction due to icing. of preventing malfunction due to icing. calibração do sistema o
velocidade do ar a partir de 0
(e) In addition, for commuter category airplanes, the (e) In addition, for normal, utility, and acrobatic vezes a VI para estes avioes.
airspeed indicating system must be calibrated to category multiengine jets of more than 6.000 pounds
determine the system error during the accelerate- (2.722 kg) maximum weight and commuter category
takeoff ground run. The ground run calibration must airplanes, each system must be calibrated to
be obtained between 0.8 of the minimum value of determine the system error during the accelerate-
V1, and 1.2 times the maximum value of takeon ground run. The ground run calibration must
viconsidering the approved ranges of altitude and be determined:
determined accuming on orgina failure at the (1) From 0.8 of the minimum value of V1 to the
determined assuming an engine familie at the $(1)$ From 0.8 of the minimum value of V1 to the minimum value of V1
ranges of altitude and weight: and
ranges of antitude and weight, and

(f) For commuter category airplanes, where	(2) The ground run calibration must be determined	
duplicate airspeed indicators are required, their	assuming an engine failure at the minimum value of	
respective pitot tubes must be far enough apart to	V1.	
avoid damage to both tubes in a collision with a bird.		
	(f) For commuter category airplanes, where	
	duplicate airspeed indicators are required, their	
	respective pitot tubes must be far enough apart to	
	avoid damage to both tubes in a collision with a bird.	
23.1331 Instruments using a power source.	23.1331 Instruments using a power source.	A proposta de alteração do
		23.1311 estabelece que
For each instrument that uses a power source, the	For each instrument that uses a power source, the	instrumentos que precisam de uma
following apply:	following apply:	fonte de energia para fornecer
		informações de voo requeridas
(a) Each instrument must have an integral visual	(a) Each instrument must have an integral visual	para operações IFR devem contar
power annunciator or separate power indicator to	power annunciator or separate power indicator to	com duas fontes independentes de
indicate when power is not adequate to sustain	indicate when power is not adequate to sustain	energia ou um display separado
proper instrument performance. If a separate	proper instrument performance. If a separate	que tenha uma fonte de energia
indicator is used, it must be located so that the pilot	indicator is used, it must be located so that the pilot	independente do sistema primário
using the instruments can monitor the indicator with	using the instruments can monitor the indicator with	de energia do avião.
minimum head and eye movement. The power must	minimum head and eye movement. The power must	
be sensed at or near the point where it enters the	be sensed at or near the point where it enters the	
instrument. For electric and vacuum/pressure	instrument. For electric and vacuum/pressure	
instruments, the power is considered to be adequate	instruments, the power is considered to be adequate	
when the voltage or the vacuum/pressure,	when the voltage or the vacuum/pressure,	
respectively, is within approved limits.	respectively, is within approved limits.	
(b) The installation and power supply systems must	(b) The installation and power supply systems must	
be designed so that—	be designed so that:	

(1) The failure of one instrument will not interfere with the proper supply of energy to the remaining instrument; and	(1) The failure of one instrument will not interfere with the proper supply of energy to the remaining instrument; and	
(2) The failure of the energy supply from one source will not interfere with the proper supply of energy from any other source.	(2) The failure of the energy supply from one source will not interfere with the proper supply of energy from any other source.	
(c) There must be at least two independent sources of power (not driven by the same engine on multiengine airplanes), and a manual or an automatic means to select each power source.	(c) For certification for Instrument Flight Rules (IFR) operations and for the heading, altitude, airspeed, and attitude, there must be at least:	
	(1) Two independent sources of power (not driven by the same engine on multiengine airplanes), and a manual or an automatic means to select each power source; or	
	(2) A separate display of parameters for heading, altitude, airspeed, and attitude that has a power source independent from the airplane's primary electrical power system.	
23.1353 Storage battery design and installation.	23.1353 Storage battery design and installation.	As propostas de alteração do 23.1353 acrescentam requisitos
(a) Each storage battery must be designed and	(a) Each storage battery must be designed and	adicionais de duração de bateria
installed as prescribed in this section.	installed as prescribed in this section.	para aumentar a segurança baseado no desempenho de
(b) Safe cell temperatures and pressures must be	(b) Safe cell temperatures and pressures must be	altitude do avião. A proposta
maintained during any probable charging and	maintained during any probable charging and	tratou das necessidades de energia
discharging condition. No uncontrolled increase in	discharging condition. No uncontrolled increase in	de novos instrumentos, equipamentos de comunicação e

cell temperature may result when the battery is	cell temperature may result when the battery is	navegação e controles de motor
recharged (after previous complete discharge)—	recharged (after previous complete discharge):	que requerem energia elétrica para
		seu funcionamento.
(1) At maximum regulated voltage or power;	(1) At maximum regulated voltage or power;	Quando estes requisitos foram
		inicialmente adotados, os aviões
(2) During a flight of maximum duration; and	(2) During a flight of maximum duration; and	que eram certificados de acordo
		com o RBAC 23 usavam
(3) Under the most adverse cooling condition likely	(3) Under the most adverse cooling condition likely	basicamente sistemas mecânicos.
to occur in service.	to occur in service.	Aviões com grande dependência
		de sistemas elétricos não eram
(c) Compliance with paragraph (b) of this section	(c) Compliance with paragraph (b) of this section	vislumbrados.
must be shown by tests unless experience with	must be shown by tests unless experience with	Anteriormente, ANAC e FAA
similar batteries and installations has shown that	similar batteries and installations has shown that	requeriam 30 minutos de energia
maintaining safe cell temperatures and pressures	maintaining safe cell temperatures and pressures	elétrica suficiente para um grupo
presents no problem.	presents no problem.	reduzido de equipamentos e
		instrumentos. Os 30 minutos eram
(d) No explosive or toxic gases emitted by any	(d) No explosive or toxic gases emitted by any	considerados adequados para
battery in normal operation, or as the result of any	battery in normal operation, or as the result of any	alcançar condições VFR para
probable malfunction in the charging system or	probable malfunction in the charging system or	continuar o voo para um aeroporto
battery installation, may accumulate in hazardous	battery installation, may accumulate in hazardous	adequado e completar um pouso
quantities within the airplane.	quantities within the airplane.	seguro em aviões
		tradicionalmente certificados de
(e) No corrosive fluids or gases that may escape from	(e) No corrosive fluids or gases that may escape from	acordo com o RBAC 23.
the battery may damage surrounding structures or	the battery may damage surrounding structures or	Cockpits eletrônicos integrados
adjacent essential equipment.	adjacent essential equipment.	não eram vislumbrados durante o
		desenvolvimento inicial destes
(f) Each nickel cadmium battery installation capable	(f) Each nickel cadmium battery installation capable	requisitos. Atualmente, novos
of being used to start an engine or auxiliary power	of being used to start an engine or auxiliary power	aviões são certificados de acordo
unit must have provisions to prevent any hazardous	unit must have provisions to prevent any hazardous	com o RBAC 23 com
effect on structure or essential systems that may be	effect on structure or essential systems that may be	instrumentos totalmente elétricos,

caused by the maximum amount of heat the battery	caused by the maximum amount of heat the battery	incluindo os instrumentos stand-		
can generate during a short circuit of the battery or	can generate during a short circuit of the battery or	by. A dependência da energia		
of its individual cells.	of its individual cells.	elétrica aumentou a importância		
		de garantir energia de bateria		
(g) Nickel cadmium battery installations capable of	(g) Nickel cadmium battery installations capable of	adequada até que o piloto possa		
being used to start an engine or auxiliary power unit	being used to start an engine or auxiliary power unit	descer e pousar em segurança.		
must have—	must have:	A maioria dos novos aviões a		
		turbina, e alguns turbohélice e a		
(1) A system to control the charging rate of the	(1) A system to control the charging rate of the	pistão, opera em altas altitudes sob		
battery automatically so as to prevent battery	battery automatically so as to prevent battery	regras IFR. Nestas condições, 30		
overheating;	overheating;	minutos podem não ser adequados		
		uma vez que pode ser necessário		
(2) A battery temperature sensing and over-	(2) A battery temperature sensing and over-	mais tempo para descer da		
temperature warning system with a means for	temperature warning system with a means for	máxima altitude até encontrar		
disconnecting the battery from its charging source in	disconnecting the battery from its charging source in	condições meteorológicas visuais		
the event of an over-temperature condition; or	the event of an over-temperature condition; or	(VMC) e pousar, ou realizar uma		
		aproximação por instrumentos.		
(3) A battery failure sensing and warning system	(3) A battery failure sensing and warning system	Por estas razões, a proposta de		
with a means for disconnecting the battery from its	with a means for disconnecting the battery from its	alteração estende o requisito de		
charging source in the event of battery failure.	charging source in the event of battery failure.	tempo de bateria de 60 minutos		
		para aviões aprovados com uma		
(h) In the event of a complete loss of the primary	(h)(1) In the event of a complete loss of the primary $(h)(1)$	altitude operacional máxima		
electrical power generating system, the battery must	electrical power generating system, the battery must	acima de 25.000 pés. Os 30		
be capable of providing at least 30 minutes of	be capable of providing electrical power to those	minutos foram mantidos para		
electrical power to those loads that are essential to	loads that are essential to continued safe flight and	aviões com altitude operacional		
continued safe flight and landing. The 30 minute	landing for:	máxima de 25.000 pés ou menos.		
time period includes the time needed for the pilots to				
recognize the loss of generated power and take				
appropriate load shedding action.				

	(i) At least 30 minutes for airplanes that are certificated with a maximum altitude of 25.000 feet or less; and	
	(ii) At least 60 minutes for airplanes that are certificated with a maximum altitude over 25.000 feet.	
	(2) The time period includes the time to recognize the loss of generated power and to take appropriate load shedding action.	
23.1431 Electronic equipment.	23.1431 Electronic equipment.	As alterações da seção 23.1431
(a) In showing compliance with §23.1309(b)(1) and (2) with respect to radio and electronic equipment and their installations, critical environmental conditions must be considered.	(a) In showing compliance with paragraphs 23.1309(a), (b), and (c) of this RBAC with respect to radio and electronic equipment and their installations, critical environmental conditions must be considered.	são apenas editorias referentes às alterações dos parágrafos da seção 23.1309.
(b) Radio and electronic equipment, controls, and wiring must be installed so that operation of any unit or system of units will not adversely affect the simultaneous operation of any other radio or electronic unit, or system of units, required by this chapter.	(b) Radio and electronic equipment, controls, and wiring must be installed so that operation of any unit or system of units will not adversely affect the simultaneous operation of any other radio or electronic unit, or system of units, required by this RBAC.	
(c) For those airplanes required to have more than one flightcrew member, or whose operation will require more than one flightcrew member, the cockpit must be evaluated to determine if the flightcrew members, when seated at their duty	(c) For those airplanes required to have more than one flightcrew member, or whose operation will require more than one flightcrew member, the cockpit must be evaluated to determine if the	

station can converse without difficulty under the	flightcrew members when seated at their duty	
actual cocknit noise conditions when the airplane is	station can converse without difficulty under the	
being operated If the airplane design includes	actual cocknit noise conditions when the airplane is	
provision for the use of communication headsets the	being operated. If the airplane design includes	
evaluation must also consider conditions where	provision for the use of communication headsets the	
headsate are being used. If the evaluation shows	provision for the use of confinding and the assets, the	
neadsets are being used. If the evaluation shows	evaluation must also consider conditions where	
conditions under which it will be difficult to	neadsets are being used. If the evaluation shows	
converse, an intercommunication system must be	conditions under which it will be difficult to	
provided.	converse, an intercommunication system must be	
	provided.	
(d) If installed communication equipment includes		
transmitter "off-on" switching, that switching means	(d) If installed communication equipment includes	
must be designed to return from the "transmit" to the	transmitter "off-on" switching, that switching means	
"off" position when it is released and ensure that the	must be designed to return from the "transmit" to the	
transmitter will return to the off (non transmitting)	"off" position when it is released and ensure that the	
state.	transmitter will return to the off (non transmitting)	
	state.	
(e) If provisions for the use of communication		
headsets are provided, it must be demonstrated that	(e) If provisions for the use of communication	
the flightcrew members will receive all aural	headsets are provided, it must be demonstrated that	
warnings under the actual cockpit noise conditions	the flightcrew members will receive all aural	
when the airplane is being operated when any	warnings under the actual cockpit noise conditions	
headset is being used.	when the airplane is being operated when any	
	headset is being used	
23 1443 Minimum mass flow of supplemental	23 1443 Minimum mass flow of supplemental	As alterações feitas nesta seção
25.1445 Willingth mass now of suppremental	25.1445 Winning mass now of suppremental	abordam os sistemas de ovigênio
vaygen.	VAJECII.	para aviões que operam asima de
(a) If continuous flow, owncon actinement is		41 000 pás usando condiçãos
(a) It continuous now oxygen equipment is		anaginia derivadas de DRAC 25
instaned, an applicant must snow compliance with		Especials derivadas do KBAC 25.
		Foram certificados recentemente

the requirements of either paragraphs (a)(1) and	(a) If the airplane is to be certified above 41.000 feet	diversos modelos de aviões de alto
(a)(2) or paragraph (a)(3) of this section:	(12.497 meters), a continuous flow oxygen system	desempenho de acordo com o
	must be provided for each passenger.	RBAC 23 que operam a altitudes
(1) For each passenger, the minimum mass flow of		mais altas que aquelas
supplemental oxygen required at various cabin	(b) If continuous flow oxygen equipment is installed,	anteriormente vislumbradas para
pressure altitudes may not be less than the flow	an applicant must show compliance with the	aviões desta categoria. As
required to maintain, during inspiration and while	requirements of either paragraphs (b)(1) and (b)(2)	alterações propostas estabelecem
using the oxygen equipment (including masks)	or paragraph (b)(3) of this section:	requisitos para tais sistemas de
provided, the following mean tracheal oxygen partial		oxigênio. Estas alterações
pressures:	(1) For each passenger, the minimum mass flow of	eliminam a necessidade de
	supplemental oxygen required at various cabin	emissão de condições especiais
(i) At cabin pressure altitudes above 10,000 feet up	pressure altitudes may not be less than the flow	para aviões com altitudes
to and including 18,500 feet, a mean tracheal oxygen	required to maintain, during inspiration and while	operacionais máximas maiores
partial pressure of 100 mm. Hg when breathing 15	using the oxygen equipment (including masks)	que 41.000 pés.
liters per minute, Body Temperature, Pressure,	provided, the following mean tracheal oxygen partial	
Saturated (BTPS) and with a tidal volume of 700 cc.	pressures:	
with a constant time interval between respirations.		
	(i) At cabin pressure altitudes above 10.000 feet	
(ii) At cabin pressure altitudes above 18,500 feet up	(3.048 meters) up to and including 18.500 feet (5.639	
to and including 40,000 feet, a mean tracheal oxygen	meters), a mean tracheal oxygen partial pressure of	
partial pressure of 83.8 mm. Hg when breathing 30	100 mm Hg when breathing 15 liters per minute,	
liters per minute, BTPS, and with a tidal volume of	Body Temperature, Pressure, Saturated (BTPS) and	
1,100 cc. with a constant time interval between	with a tidal volume of 700 cc with a constant time	
respirations.	interval between respirations;	
(2) For each flight crewmember, the minimum mass	(ii) At cabin pressure altitudes above 18.500 feet	
flow may not be less than the flow required to	(5.639 meters) up to and including 40.000 feet	
maintain, during inspiration, a mean tracheal oxygen	(12.192 meters), a mean tracheal oxygen partial	
partial pressure of 149 mm. Hg when breathing 15	pressure of 83,8 mm Hg when breathing 30 liters per	
liters per minute, BTPS, and with a maximum tidal		

volume of 700 cc. with a constant time interval between respirations.	minute, BTPS, and with a tidal volume of 1.100 cc with a constant time interval between respirations.	
(3) The minimum mass flow of supplemental oxygen	(2) For each flight crewmember, the minimum mass flow may not be less than the flow required to	
that shown in the following figure for each altitude	maintain, during inspiration, a mean tracheal oxygen	
up to and including the maximum operating altitude	partial pressure of 149 mm Hg when breathing 15	
of the airplane.	liters per minute, BTPS, and with a maximum tidal	
·	between respirations:	
	······	
	(3) The minimum mass flow of supplemental oxygen	
	that shown in the following figure for each altitude	
	up to and including the maximum operating altitude	
	of the airplane.	
Carbo Handalah A ini da Rulanda at ba		
(b) If demand equipment is installed for use by flight		
crewmembers, the minimum mass flow of		
supplemental oxygen required for each flight		
to maintain during inspiration a mean tracheal		
oxygen partial pressure of 122 mm. Hg up to and		
including a cabin pressure altitude of 35,000 feet,		
and 95 percent oxygen between cabin pressure		
20 liters per minute BTPS. In addition, there must be		

means to allow the crew to use undiluted oxygen at their discretion.

(c) If first-aid oxygen equipment is installed, the minimum mass flow of oxygen to each user may not be less than 4 liters per minute, STPD. However, there may be a means to decrease this flow to not less than 2 liters per minute, STPD, at any cabin altitude. The quantity of oxygen required is based upon an average flow rate of 3 liters per minute per person for whom first-aid oxygen is required.

(d) As used in this section:

(1) BTPS means Body Temperature, and Pressure, Saturated (which is, 37 °C, and the ambient pressure to which the body is exposed, minus 47 mm. Hg, which is the tracheal pressure displaced by water vapor pressure when the breathed air becomes saturated with water vapor at 37 °C).

(2) STPD means Standard, Temperature, and Pressure, Dry (which is,  $0 \degree C$  at 760 mm. Hg with no water vapor).





(c) If demand equipment is installed for use by flight crewmembers, the minimum mass flow of supplemental oxygen required for each flight crewmember may not be less than the flow required to maintain, during inspiration, a mean tracheal oxygen partial pressure of 122 mm Hg up to and including a cabin pressure altitude of 35.000 feet (10.668 meters), and 95 percent oxygen between cabin pressure altitudes of 35.000 and 40.000 feet

	(10.668 and 12.192 meters), when breathing 20 liters per minute BTPS. In addition, there must be means to allow the flight crew to use undiluted oxygen at their discretion.	
	(d) If first-aid oxygen equipment is installed, the minimum mass flow of oxygen to each user may not be less than 4 liters per minute, STPD. However, there may be a means to decrease this flow to not less than 2 liters per minute, STPD, at any cabin altitude. The quantity of oxygen required is based upon an average flow rate of 3 liters per minute per person for whom first-aid oxygen is required	
	(e) As used in this section:	
	(1) BTPS means Body Temperature, and Pressure, Saturated (which is 37 °C, and the ambient pressure to which the body is exposed, minus 47 mm Hg, which is the tracheal pressure displaced by water vapor pressure when the breathed air becomes saturated with water vapor at 37 °C);	
	(2) STPD means Standard, Temperature, and Pressure, Dry (which is 0 °C at 760 mm Hg with no water vapor).	
23.1445 Oxygen distribution system.	23.1445 Oxygen distribution system.	A alteração visa compatibilizar esta seção com mudanças feitas
(a) Except for flexible lines from oxygen outlets to	(a) Except for flexible lines from oxygen outlets to	em outras seções, como a 23.1443,
the dispensing units, or where shown to be otherwise	the dispensing units, or where shown to be otherwise	para permitir um tratamento

<ul><li>suitable to the installation, nonmetallic tubing must not be used for any oxygen line that is normally pressurized during flight.</li><li>(b) Nonmetallic oxygen distribution lines must not be routed where they may be subjected to elevated</li></ul>	<ul><li>suitable to the installation, nonmetallic tubing must not be used for any oxygen line that is normally pressurized during flight.</li><li>(b) Nonmetallic oxygen distribution lines must not be routed where they may be subjected to elevated</li></ul>	adequado de aviões que operam acima de 40.000 pés sem necessidade de emissão de condições especiais.
temperatures, electrical arcing, and released flammable fluids that might result from any probable failure.	temperatures, electrical arcing, and released flammable fluids that might result from any probable failure.	
	(c) If the flight crew and passengers share a common source of oxygen, a means to separately reserve the minimum supply required by the flight crew must be provided.	
23.1447 Equipment standards for oxygen dispensing units.	23.1447 Equipment standards for oxygen dispensing units.	A alteração visa compatibilizar esta seção com mudanças feitas em outras seções, como a 23.1443,
If oxygen dispensing units are installed, the following apply:	If oxygen dispensing units are installed, the following apply:	para permitir um tratamento adequado de aviões que operam acima de 40.000 pés sem
(a) There must be an individual dispensing unit for each occupant for whom supplemental oxygen is to be supplied. Each dispensing unit must:	(a) There must be an individual dispensing unit for each occupant for whom supplemental oxygen is to be supplied. Each dispensing unit must:	necessidade de emissão de condições especiais.
(1) Provide for effective utilization of the oxygen being delivered to the unit.	(1) Provide for effective utilization of the oxygen being delivered to the unit;	
(2) Be capable of being readily placed into position	(2) Do conchine of being modily placed into position	

(3) Be equipped with a suitable means to retain the unit in position on the face.	(3) Be equipped with a suitable means to retain the unit in position on the face;	
(4) If radio equipment is installed, the flightcrew oxygen dispensing units must be designed to allow the use of that equipment and to allow communication with any other required crew member while at their assigned duty station.	(4) If radio equipment is installed, the flightcrew oxygen dispensing units must be designed to allow the use of that equipment and to allow communication with any other required crew member while at their assigned duty station.	
(b) If certification for operation up to and including 18,000 feet (MSL) is requested, each oxygen dispensing unit must:	(b) If certification for operation up to and including 18,000 feet (5.486 meters) (MSL) is requested, each oxygen dispensing unit must:	
(1) Cover the nose and mouth of the user; or	(1) Cover the nose and mouth of the user; or	
(2) Be a nasal cannula, in which case one oxygen dispensing unit covering both the nose and mouth of the user must be available. In addition, each nasal cannula or its connecting tubing must have permanently affixed—	(2) Be a nasal cannula, in which case one oxygen dispensing unit covering both the nose and mouth of the user must be available. In addition, each nasal cannula or its connecting tubing must have permanently affixed:	
(i) A visible warning against smoking while in use;	(i) A visible warning against smoking while in use;	
(ii) An illustration of the correct method of donning; and	(ii) An illustration of the correct method of donning; and	
(iii) A visible warning against use with nasal obstructions or head colds with resultant nasal congestion.	(iii) A visible warning against use with nasal obstructions or head colds with resultant nasal congestion.	

(c) If certification for operation above 18,000 feet	(c) If certification for operation above 18.000 feet	
(MSL) is requested, each oxygen dispensing unit	(5.486 meters) (MSL) is requested, each oxygen	
must cover the nose and mouth of the user.	dispensing unit must cover the nose and mouth of the	
	user.	
(d) For a pressurized airplane designed to operate at		
flight altitudes above 25,000 feet (MSL), the	(d) For a pressurized airplane designed to operate at	
dispensing units must meet the following:	flight altitudes above 25.000 feet (7.620 meters)	
	(MSL), the dispensing units must meet the	
(1) The dispensing units for passengers must be	following:	
connected to an oxygen supply terminal and be		
immediately available to each occupant wherever	(1) The dispensing units for passengers must be	
seated.	connected to an oxygen supply terminal and be	
	immediately available to each occupant wherever	
(2) The dispensing units for crewmembers must be	seated;	
automatically presented to each crewmember before		
the cabin pressure altitude exceeds 15,000 feet, or	(2) The dispensing units for crewmembers must be	
the units must be of the quick-donning type,	automatically presented to each crewmember before	
connected to an oxygen supply terminal that is	the cabin pressure altitude exceeds 15.000 feet	
immediately available to crewmembers at their	(4.572 meters), or the units must be of the quick-	
station.	donning type, connected to an oxygen supply	
	terminal that is immediately available to	
(e) If certification for operation above 30,000 feet is	crewmembers at their duty station.	
requested, the dispensing units for passengers must		
be automatically presented to each occupant before	(e) If certification for operation above 30.000 feet	
the cabin pressure altitude exceeds 15,000 feet.	(9.144 meters) is requested, the dispensing units for	
	passengers must be automatically presented to each	
(f) If an automatic dispensing unit (hose and mask,	occupant before the cabin pressure altitude exceeds	
or other unit) system is installed, the crew must be	15.000 feet (4.572 meters).	
provided with a manual means to make the		

dispensing units immediately available in the event of failure of the automatic system.	(f) If an automatic dispensing unit (hose and mask, or other unit) system is installed, the crew must be provided with a manual means to make the	
	dispensing units immediately available in the event	
	of failure of the automatic system.	
	(g) If the airplane is to be certified for operation above 41.000 feet (12.497 meters), a quickdonning oxygen mask system, with a pressure demand, mask mounted regulator must be provided for the flight crew. This dispensing unit must be immediately available to the flight crew when seated at their station and installed so that it:	
	(1) Can be placed on the face from its ready position, properly secured, sealed, and supplying oxygen upon demand, with one hand, within five seconds and without disturbing eyeglasses or causing delay in proceeding with emergency duties; and	
	(2) Allows, while in place, the performance of	
	normal communication functions.	
23.1505 Airspeed limitations.	23.1505 Airspeed limitations.	Foram propostas alterações para
(a) The never-exceed speed VNE must be established so that it is—	(a) The never-exceed speed VNE must be established so that it is:	no parágrafo 23.1505(v) que incluem V-speeds específicas para jatos. Esta proposta também
(1) Not less than 0.9 times the minimum value of VD allowed under §23.335; and	(1) Not less than 0,9 times the minimum value of VD allowed under section 23.335; and	baseia limites de velocidade do ar em uma combinação de velocidades de mergulhos

(2) Not more than the lesser of—	(2) Not more than the lesser of:	analíticas	(VD/MD)	e
(i) 0.9 VD established under §23.335; or	(i) 0,9 VD established under section 23.335; or	demonstradas jatos.	(VDF/MDF)	para
(ii) 0.9 times the maximum speed shown under §23.251.	(ii) 0,9 times the maximum speed shown under section 23.251.			
(b) The maximum structural cruising speed VNO must be established so that it is—	(b) The maximum structural cruising speed VNO must be established so that it is:			
(1) Not less than the minimum value of VC allowed under §23.335; and	(1) Not less than the minimum value of VC allowed under section 23.335; and			
(2) Not more than the lesser of—	(2) Not more than the lesser of:			
(i) VC established under §23.335; or	(i) VC established under section 23.335; or			
(ii) 0.89 VNE established under paragraph (a) of this section.	(ii) 0,89 VNE established under paragraph (a) of this section.			
(c) Paragraphs (a) and (b) of this section do not apply to turbine airplanes or to airplanes for which a design diving speed VD/MD is established under §23.335(b)(4). For those airplanes, a maximum operating limit speed (VMO/MMO-airspeed or Mach number, whichever is critical at a particular altitude) must be established as a speed that may not be deliberately exceeded in any regime of flight (climb, cruise, or descent) unless a higher speed is	(c)(1) Paragraphs (a) and (b) of this section do not apply to turbine airplanes or to airplanes for which a design diving speed VD/MD is established under paragraph 23.335(b)(4). For those airplanes, a maximum operating limit speed (VMO/MMO airspeed or Mach number, whichever is critical at a particular altitude) must be established as a speed that may not be deliberately exceeded in any regime of flight (climb, cruise, or descent) unless a higher			
authorized for flight test or pilot training operations.				
VMO/MMO must be established so that it is not greater than the design cruising speed VC/MC and so that it is sufficiently below VD/MD and the maximum speed shown under §23.251 to make it highly improbable that the latter speeds will be inadvertently exceeded in operations. The speed margin between VMO/MMO and VD/MD or the maximum speed shown under §23.251 may not be less than the speed margin established between VC /MC and VD/MD under §23.35(b), or the speed margin found necessary in the flight test conducted under §23.253.speed is authorized for flight test or pilot training operations.(3) The speed margin found necessary in the flight test conducted under §23.253.(3) The speed margin between VMO/MMO and VD/MD, or VDF/MDF for jets, may not be less than that determined under paragraph 23.335(b), or the speed margin found necessary in the flight test conducted under §23.253.A alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).23.1527 Maximum operating altitude.(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must beA alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).				
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greater than the design cruising speed VC/MC and so that it is sufficiently below VD/MD and the maximum speed shown under \$23.251 to make it highly improbable that the latter speeds will be inadvertently exceeded in operations. The speed margin between VMO/MMO and VD/MD or the maximum speed shown under \$23.251 may not be less than the speed margin established between VC /MC and VD/MD under \$23.35(b), or the speed margin found necessary in the flight test conducted under \$23.253.operations.operations.3.1527Maximum operating altitude.(3) The speed margin found necessary in the flight tests conducted under section 23.253.(3) The speed margin found necessary in the flight tests conducted under section 23.253.A alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).a. The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must beA alteração é 3.775(d).	VMO/MMO must be established so that it is not	speed is authorized for flight test or pilot training		
<ul> <li>so that it is sufficiently below VD/MD and the maximum speed shown under §23.251 to make it highly improbable that the latter speeds will be indvertently exceeded in operations. The speed margin between VMO/MMO and VD/MD or the maximum speed shown under §23.251 may not be less than the speed margin established between VC /MC and VD/MD under §23.251 may not be less than the speed margin found necessary in the flight test conducted under §23.253.</li> <li>23.1527 Maximum operating altitude.</li> <li>(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must be</li> </ul>	greater than the design cruising speed VC/MC and	operations.		
maximum speed shown under §23.251 to make it highly improbable that the latter speeds will be inadvertently exceeded in operations. The speed margin between VMO/MMO and VD/MD or the maximum speed shown under §23.251 may not be less than the speed margin established between VC /MC and VD/MD under §23.335(b), or the speed margin found necessary in the flight test conducted under §23.253.(2) VMO/MMO must be established so that it is not greater than the design cruising speed VC/MC and so that it is sufficiently below VD/MD, or VDF/MDF for jets, and the maximum speed shown under section 23.251 to make it highly improbable that the latter speeds will be inadvertently exceeded in operations.(3) The speed margin found necessary in the flight test conducted under §23.257(3) The speed margin found necessary in the flight test speed margin found necessary in the flight test conducted under section 23.253.A alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).23.1527 Maximum operating altitude. (a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must beA alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).	so that it is sufficiently below VD/MD and the			
highly improbable that the latter speeds will be inadvertently exceeded in operations. The speed margin between VMO/MMO and VD/MD or the maximum speed shown under §23.251 may not be less than the speed margin established between VC /MC and VD/MD under §23.335(b), or the speed margin found necessary in the flight test conducted under §23.253.greater than the design cruising speed VC/MC and so that it is sufficiently below VD/MD, or VDF/MDF for jets, and the maximum speed shown under section 23.251 to make it highly improbable that the latter speeds will be inadvertently exceeded in operations./MC and VD/MD under §23.335(b), or the speed margin found necessary in the flight test conducted under §23.253.(3) The speed margin between VMO/MMO and VD/MD, or VDF/MDF for jets, may not be less than that determined under paragraph 23.335(b), or the speed margin found necessary in the flight tests conducted under section 23.253.A alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).23.1527 Maximum operating altitude. (a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must beA alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).	maximum speed shown under §23.251 to make it	(2) VMO/MMO must be established so that it is not		
<ul> <li>inadvertently exceeded in operations. The speed margin between VMO/MMO and VD/MD or the maximum speed shown under §23.251 may not be less than the speed margin established between VC /MC and VD/MD under §23.335(b), or the speed margin found necessary in the flight test conducted under §23.253.</li> <li>(3) The speed margin between VMO/MMO and VD/MD, or VDF/MDF for jets, may not be less than that determined under paragraph 23.335(b), or the speed margin found necessary in the flight tests conducted under section 23.253.</li> <li>23.1527 Maximum operating altitude.</li> <li>(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must be</li> </ul>	highly improbable that the latter speeds will be	greater than the design cruising speed VC/MC and		
margin between VMO/MMO and VD/MD or the maximum speed shown under §23.251 may not be less than the speed margin established between VC /MC and VD/MD under §23.335(b), or the speed margin found necessary in the flight test conducted under §23.253.VDF/MDF for jets, and the maximum speed shown under section 23.251 to make it highly improbable that the latter speeds will be inadvertently exceeded in operations.23.1527 Maximum operating altitude.(3) The speed margin found necessary in the flight tests conducted under section 23.253.(3) The speed margin found necessary in the flight tests conducted under paragraph 23.335(b), or the speed margin found necessary in the flight tests conducted under section 23.253.A alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must be(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must beA alteração é 3.775(d).	inadvertently exceeded in operations. The speed	so that it is sufficiently below VD/MD, or		
maximum speed shown under §23.251 may not be less than the speed margin established between VC /MC and VD/MD under §23.335(b), or the speed margin found necessary in the flight test conducted under §23.253.under section 23.251 to make it highly improbable that the latter speeds will be inadvertently exceeded in operations.(3) The speed margin between VMO/MMO and VD/MD, or VDF/MDF for jets, may not be less than that determined under paragraph 23.335(b), or the speed margin found necessary in the flight tests conducted under section 23.253.A alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).23.1527 Maximum operating altitude. (a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must be23.1527 Maximum operating altitude. (a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must beA alteração é 3.775(d).	margin between VMO/MMO and VD/MD or the	VDF/MDF for jets, and the maximum speed shown		
less than the speed margin established between VC /MC and VD/MD under §23.335(b), or the speed margin found necessary in the flight test conducted under §23.253.that the latter speeds will be inadvertently exceeded in operations.(3) The speed margin between VMO/MMO and VD/MD, or VDF/MDF for jets, may not be less than that determined under paragraph 23.335(b), or the speed margin found necessary in the flight tests conducted under section 23.253.(3) The speed margin found necessary in the flight tests conducted under section 23.253.23.1527 Maximum operating altitude.(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must beA alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).	maximum speed shown under §23.251 may not be	under section 23.251 to make it highly improbable		
/MC and VD/MD under §23.335(b), or the speed margin found necessary in the flight test conducted under §23.253.       in operations.         (3) The speed margin between VMO/MMO and VD/MD, or VDF/MDF for jets, may not be less than that determined under paragraph 23.335(b), or the speed margin found necessary in the flight tests conducted under section 23.253.       A alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).         23.1527 Maximum operating altitude.       (a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must be       A alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).	less than the speed margin established between VC	that the latter speeds will be inadvertently exceeded		
margin found necessary in the flight test conducted under §23.253.(3) The speed margin between VMO/MMO and VD/MD, or VDF/MDF for jets, may not be less than that determined under paragraph 23.335(b), or the speed margin found necessary in the flight tests conducted under section 23.253.(3) The speed margin found necessary in the flight tests conducted under section 23.253.23.1527 Maximum operating altitude. (a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must be(3) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must beA alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).	/MC and VD/MD under §23.335(b), or the speed	in operations.		
under §23.253.(3) The speed margin between VMO/MMO and VD/MD, or VDF/MDF for jets, may not be less than that determined under paragraph 23.335(b), or the speed margin found necessary in the flight tests conducted under section 23.253.A alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).23.1527 Maximum operating altitude.(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must beA alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).	margin found necessary in the flight test conducted			
VD/MD, or VDF/MDF for jets, may not be less than that determined under paragraph 23.335(b), or the speed margin found necessary in the flight tests conducted under section 23.253.A alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).23.1527 Maximum operating altitude.(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must beA alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).	under §23.253.	(3) The speed margin between VMO/MMO and		
that determined under paragraph 23.335(b), or the speed margin found necessary in the flight tests conducted under section 23.253.A alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).23.1527 Maximum operating altitude.(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must beA alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).	0	VD/MD, or VDF/MDF for jets, may not be less than		
speed margin found necessary in the flight tests conducted under section 23.253.A alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).23.1527 Maximum operating altitude.(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must be(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must be(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must be(b) Flight, structural, powerplant, functional or equipment characteristics, must be		that determined under paragraph 23.335(b), or the		
conducted under section 23.253.23.1527 Maximum operating altitude.23.1527 Maximum operating altitude.A alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must be(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must beA alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).		speed margin found necessary in the flight tests		
23.1527 Maximum operating altitude.23.1527 Maximum operating altitude.A alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must be(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must beA alteração é meramente editorial e corrige uma referência ao parágrafo 23.775(d).		conducted under section 23.253.		
(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must be	23.1527 Maximum operating altitude.	23.1527 Maximum operating altitude.	A alteração é meramente editorial	
(a) The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must be			e corrige uma referência ao	
allowed, as limited by flight, structural, powerplant, functional or equipment characteristics, must be	(a) The maximum altitude up to which operation is	(a) The maximum altitude up to which operation is	parágrafo 23.775(d).	
functional or equipment characteristics, must be functional or equipment characteristics, must be	allowed, as limited by flight, structural, powerplant.	allowed, as limited by flight, structural, powerplant,	<b>I</b>	
	functional or equipment characteristics, must be	functional or equipment characteristics, must be		
established.	established.	established.		
(b) A maximum operating altitude limitation of not (b) A maximum operating altitude limitation of not	(b) A maximum operating altitude limitation of not	(b) A maximum operating altitude limitation of not		
more than 25,000 feet must be established for more than 25,000 feet (7.620 m) must be established	more than 25,000 feet must be established for	more than 25.000 feet (7.620 m) must be established		
pressurized airplanes unless compliance with for pressurized airplanes unless compliance with	pressurized airplanes unless compliance with	for pressurized airplanes unless compliance with		
§23.775(e) is shown. paragraph 23.775(d) is shown.	proportized an planes anos compliance with			
<b>23.1545</b> Airspeed indicator. <b>23.1545</b> Airspeed indicator. Alteração editorial para substituir	§23.775(e) is shown.	paragraph 23. / $(3(d))$ is shown.		
<i>"aircraft</i> " por <i>"airplanes</i> ". Além	<ul><li>§23.775(e) is shown.</li><li>23.1545 Airspeed indicator.</li></ul>	<b>23.1545</b> Airspeed indicator.	Alteração editorial para substituir	
disso, a aplicabilidade foi alterada	<ul><li>§23.775(e) is shown.</li><li>23.1545 Airspeed indicator.</li></ul>	23.1545   Airspeed indicator.	Alteração editorial para substituir "aircraft" por "airplanes". Além	

(a) Each airspeed indicator must be marked as specified in paragraph (b) of this section, with the marks located at the corresponding indicated airspeeds.	(a) Each airspeed indicator must be marked as specified in paragraph (b) of this section, with the marks located at the corresponding indicated airspeeds.	devido a alteração parágrafo 23.1505(c).	feita	no
(b) The following markings must be made:	(b) The following markings must be made:			
(1) For the never-exceed speed V NE,a radial red line.	(1) For the never-exceed speed VNE, a radial red line.			
(2) For the caution range, a yellow arc extending from the red line specified in paragraph $(b)(1)$ of this section to the upper limit of the green arc specified in paragraph $(b)(3)$ of this section.	(2) For the caution range, a yellow arc extending from the red line specified in paragraph $(b)(1)$ of this section to the upper limit of the green arc specified in paragraph $(b)(3)$ of this section.			
(3) For the normal operating range, a green arc with the lower limit at V S1with maximum weight and with landing gear and wing flaps retracted, and the upper limit at the maximum structural cruising speed VNO established under §23.1505(b).	(3) For the normal operating range, a green arc with the lower limit at VS1 with maximum weight and with landing gear and wing flaps retracted, and the upper limit at the maximum structural cruising speed VNO established under paragraph 23.1505(b).			
(4) For the flap operating range, a white arc with the lower limit at VSO at the maximum weight, and the upper limit at the flaps-extended speed VFE established under §23.1511.	(4) For the flap operating range, a white arc with the lower limit at VS0 at the maximum weight, and the upper limit at the flaps-extended speed VFE established under section 23.1511.			
(5) For reciprocating multiengine-powered airplanes of 6,000 pounds or less maximum weight, for the speed at which compliance has been shown with	(5) For reciprocating multiengine-powered airplanes of 6.000 pounds (2.722 kg) or less maximum weight, for the speed at which compliance has been shown			

\$23.69(b) relating to rate of climb at maximum weight and at sea level a blue radial line	with paragraph 23.69(b) relating to rate of climb at maximum weight and at sea level, a blue radial line	
weight and at sea level, a blue fadiat file.	maximum worgint and at sea level, a blue radiar inte.	
(6) For reciprocating multiengine-powered airplanes	(6) For reciprocating multiengine-powered airplanes	
of 6,000 pounds or less maximum weight, for the	of 6.000 pounds (2.722 kg) or less maximum weight,	
maximum value of minimum control speed, V <sub>MC</sub> ,	for the maximum value of minimum control speed,	
(one-engine-inoperative) determined under	VMC, (one-engine-inoperative) determined under	
\$23.149(b), a red radial line.	paragraph 23.149(b), a red radial line.	
(c) If VNE or VNO vary with altitude, there must be	(c) If VNE or VNO vary with altitude, there must be	
means to indicate to the pilot the appropriate	means to indicate to the pilot the appropriate	
limitations throughout the operating altitude range.	limitations throughout the operating altitude range.	
(d) Paragraphs (b)(1) through (b)(3) and paragraph	(d) Paragraphs (b)(1) through (b)(3) and paragraph	
(c) of this section do not apply to aircraft for which	(c) of this section do not apply to airplanes for which	
a maximum operating speed VMO/MMO is	a maximum operating speed VMO/MMO is	
established under §23.1505(c). For those aircraft	established under paragraph 23.1505(c). For those	
there must either be a maximum allowable airspeed	airplanes, there must either be a maximum allowable	
indication showing the variation of VMO/MMO	airspeed indication showing the variation of	
with altitude or compressibility limitations (as	VMO/MMO with altitude or compressibility	
appropriate), or a radial red line marking for VMO/	limitations (as appropriate), or a radial red line	
MMO must be made at lowest value of VMO/MMO	marking for VMO/MMO must be made at lowest	
established for any altitude up to the maximum	value of VMO/MMO established for any altitude up	
operating altitude for the airplane.	to the maximum operating altitude for the airplane.	
23.1555 Control markings.	23.1555 Control markings.	O parágrafo 23.1555(d)(3) foi
		modificado para requerer que
(a) Each cockpit control, other than primary flight	(a) Each cockpit control, other than primary flight	sistemas de combustível com um
controls and simple push button type starter	controls and simple push button type starter	sistema de indicação de
		quantidade de combustível
		calibrada cumpram o parágrafo

switches, must be plainly marked as to its function	switches, must be plainly marked as to its function	23.1337(b)(1) ao mesmo tempo
and method of operation.	and method of operation.	que remove os requisitos de
		placares atuais. A maioria dos
(b) Each secondary control must be suitably marked.	(b) Each secondary control must be suitably marked.	aviões modernos à turbina tem um
		sistema de indicação de
(c) For powerplant fuel controls—	(c) For powerplant fuel controls:	quantidade de combustível
		calibrada que é compensado pela
(1) Each fuel tank selector control must be marked to	(1) Each fuel tank selector control must be marked to	densidade e indica com acurácia a
indicate the position corresponding to each tank and	indicate the position corresponding to each tank and	quantidade real de combustível
to each existing cross feed position;	to each existing cross feed position;	utilizável disponível em cada
		tanque. Quando usando estes tipos
(2) If safe operation requires the use of any tanks in	(2) If safe operation requires the use of any tanks in	de sistemas de indicação de
a specific sequence, that sequence must be marked	a specific sequence, that sequence must be marked	condição, consideram-se
on or near the selector for those tanks;	on or near the selector for those tanks;	redundantes os placares antes
		requeridos pelos parágrafos
(3) The conditions under which the full amount of	(3) The conditions under which the full amount of	23.1555(d)(1) e(2). Estes placares
usable fuel in any restricted usage fuel tank can	usable fuel in any restricted usage fuel tank can	ou marcações indicam a maxima
safely be used must be stated on a placard adjacent	safely be used must be stated on a placard adjacent	capacidade do tanque. Por estas
to the selector valve for that tank; and	to the selector valve for that tank; and	razoes, foi proposta a remoção do
		requisito de placares para estes
(4) Each valve control for any engine of a	(4) Each valve control for any engine of a	sistemas de indicação de
multiengine airplane must be marked to indicate the	multiengine airplane must be marked to indicate the	quantidade de combustivei.
position corresponding to each engine controlled.	position corresponding to each engine controlled.	
(d) Usehle fuel consoity must be method as follows:	(d) Usehle fuel consoity must be merized as follows:	
(d) Usable fuel capacity must be marked as follows.	(u) Usable fuel capacity must be marked as follows.	
(1) For fuel systems having no selector controls, the	(1) For fuel systems having no selector controls, the	
(1) For fuel systems having no selector controls, the	(1) For fuel systems having no selector controls, the	
at the fuel quantity indicator	at the fuel quantity indicator	
at the fuel quality indicator.	at the fuel quality indicator.	
(1) For fuel systems having no selector controls, the usable fuel capacity of the system must be indicated at the fuel quantity indicator.	(1) For fuel systems having no selector controls, the usable fuel capacity of the system must be indicated at the fuel quantity indicator.	

<ul> <li>(2) For fuel systems having selector controls, the usable fuel capacity available at each selector control position must be indicated near the selector control.</li> <li>(e) For accessory auxiliary and emergency</li> </ul>	<ul> <li>(2) For fuel systems having selector controls, the usable fuel capacity available at each selector control position must be indicated near the selector control.</li> <li>(3) For fuel systems having a calibrated fuel quantity.</li> </ul>	
controls—	indication system complying with paragraph 23.1337(b)(1) and accurately displaying the actual	
(1) If retractable landing gear is used, the indicator required by \$23.729 must be marked so that the pilot	quantity of usable fuel in each selectable tank, no fuel capacity placards outside of the fuel quantity	
can, at any time, ascertain that the wheels are secured in the extreme positions; and	indicator are required.	
(2) Each emergency control must be red and must be	(e) For accessory, auxiliary, and emergency controls:	
than an emergency control, or a control that serves an emergency function in addition to its other	required by section 23.729 of this RBAC must be marked so that the pilot cap, at any time, ascertain	
functions, shall be this color.	that the wheels are secured in the extreme positions; and	
	(2) Each emergency control must be red and must be marked as to method of operation. No control other	
	than an emergency control, or a control that serves an emergency function in addition to its other	
	functions, shall be this color.	
<b>23.1559</b> Operating limitations placard.	<b>23.1559</b> Operating limitations placard.	Os requisitos contidos na seção 23.1559 são referentes a placares
(a) There must be a placard in clear view of the pilot	(a) There must be a placard in clear view of the pilot	para planejamento pré-voo e este
stating—	stating:	placar não é normalmente
		verificado durante o voo. Estando
		o placar na visão direta do piloto e

(1) That the airplane must be operated in accordance	(1) That the airplane must be operated in accordance	o piloto sendo capaz de vê-lo a
with the Airplane Flight Manual; and	with the Airplane Flight Manual; and	noite usando uma lanterna ou
		outros meios, a intenção da regra
(2) The certification category of the airplane to	(2) The certification category of the airplane to	está satisfeita. Este requisito tem
which the placards apply.	which the placards apply.	sido objeto de dúvidas e confusão
		e esta proposta esclarece, através
(b) For airplanes certificated in more than one	(b) For airplanes certificated in more than one	da introdução do novo parágrafo
category, there must be a placard in clear view of the	category, there must be a placard in clear view of the	23.1559(d) que estes placares não
pilot stating that other limitations are contained in	pilot stating that other limitations are contained in the	precisam ser iluminados.
the Airplane Flight Manual.	Airplane Flight Manual.	
(c) There must be a placard in clear view of the pilot	(c) There must be a placard in clear view of the pilot	
that specifies the kind of operations to which the	that specifies the kind of operations to which the	
operation of the airplane is limited or from which it	operation of the airplane is limited or from which it	
is prohibited under §23.1525.	is prohibited under section 23.1525.	
	(d) The placard(s) required by this section need not	
	be lighted.	
23.1563 Airspeed placards.	23.1563 Airspeed placard.	A proposta esclarece os requisitos
		da seção 23.1563 para iluminação
There must be an airspeed placard in clear view of	There must be an airspeed placard in clear view of	noturna de placares. A velocidade
the pilot and as close as practicable to the airspeed	the pilot and as close as practicable to the airspeed	de manobra é aplicável para
indicator. This placard must list—	indicator. This placard must list:	operações que possam envolver
		grandes <i>inputs</i> intencionais de
(a) The operating maneuvering speed, $V_0$ ; and	(a) The operating maneuvering speed, VO; and	controle e não é portanto aplicável
		para operações noturnas normais.
(b) The maximum landing gear operating speed V	(b) The maximum landing gear operating speed	A maioria dos aviões modernos
LO.	VLO.	tem meios para apresentar a
		velocidade de extensão do trem de
		pouso no indicador de velocidade

(c) For reciprocating multiengine-powered airplanes	(c) For reciprocating multiengine-powered airplanes	do ar ou em uma porção iluminada
of more than 6,000 pounds maximum weight, and	of more than 6.000 pounds (2.722 kg) maximum	do controle do trem de pouso. Eles
turbine engine-powered airplanes, the maximum	weight, and turbine engine-powered airplanes, the	possuem os meios para que o
value of the minimum control speed, V <sub>MC</sub> (one-	maximum value of the minimum control speed,	indicador de velocidade de ar
engine-inoperative) determined under §23.149(b).	VMC (one-engine-inoperative) determined under	indique um alerta de baixa
	paragraph 23.149(b).	velocidade ou outra informação de
		referência de velocidade do ar para
	(d) The airspeed placard(s) required by this section	garantir a segurança acima de
	need not be lighted if the landing gear operating	VMC. A iluminação deste placar é
	speed is indicated on the airspeed indicator or other	desnecessária para a segurança de
	lighted area such as the landing gear control and the	voo e fornece outra fonte de
	airspeed indicator has features such as low speed	reflexos luminosos indesejáveis
	awareness that provide ample warning prior to VMC.	no cockpit.
23.1567 Flight maneuver placard.	23.1567 Flight maneuver placard.	Os requisitos contidos na seção
		23.1567 são relacionados com
(a) For normal category airplanes, there must be a	(a) For normal category airplanes, there must be a	informações de manobras e giros
placard in front of and in clear view of the pilot	placard in front of and in clear view of the pilot	acrobáticos relacionados com o
stating: "No acrobatic maneuvers, including spins,	stating: "No acrobatic maneuvers, including spins,	planejamento pré-voo. Uma vez
approved."	approved."	que estas manobras não são
		normalmente conduzidas em
(b) For utility category airplanes, there must be—	(b) For utility category airplanes, there must be:	operações noturnas, a informação
		do placar não é requerida para
(1) A placard in clear view of the pilot stating:	(1) A placard in clear view of the pilot stating:	voos noturnos. Estando o placar na
"Acrobatic maneuvers are limited to the following	"Acrobatic maneuvers are limited to the following	visão direta do piloto e o piloto
;" (list approved maneuvers and the	;" (list approved maneuvers and the	sendo capaz de vê-lo a noite
recommended entry speed for each); and	recommended entry speed for each); and	usando uma lanterna ou outros
		meios, a intenção da regra está
(2) For those airplanes that do not meet the spin	(2) For those airplanes that do not meet the spin	satisfeita. A introdução do novo
requirements for acrobatic category airplanes, an	requirements for acrobatic category airplanes, an	parágrafo 23.1567(e) esclarece

additional placard in clear view of the pilot stating: "Spins Prohibited."	additional placard in clear view of the pilot stating: "Spins Prohibited."	que estes placares não precisam ser iluminados.
(c) For acrobatic category airplanes, there must be a placard in clear view of the pilot listing the approved acrobatic maneuvers and the recommended entry airspeed for each. If inverted flight maneuvers are not approved, the placard must bear a notation to this effect.	(c) For acrobatic category airplanes, there must be a placard in clear view of the pilot listing the approved acrobatic maneuvers and the recommended entry airspeed for each. If inverted flight maneuvers are not approved, the placard must bear a notation to this effect.	
(d) For acrobatic category airplanes and utility category airplanes approved for spinning, there must be a placard in clear view of the pilot—	(d) For acrobatic category airplanes and utility category airplanes approved for spinning, there must be a placard in clear view of the pilot:	
(1) Listing the control actions for recovery from spinning maneuvers; and	(1) Listing the control actions for recovery from spinning maneuvers; and	
(2) Stating that recovery must be initiated when spiral characteristics appear, or after not more than six turns or not more than any greater number of turns for which the airplane has been certificated.	(2) Stating that recovery must be initiated when spiral characteristics appear, or after not more than six turns or not more than any greater number of turns for which the airplane has been certificated.	
	(e) The placard(s) required by this section need not be lighted.	
23.1583 Operating limitations.	23.1583 Operating limitations.	As alterações introduzidas tornam anlicáveis os critérios da categoria
The Airplane Flight Manual must contain operating limitations determined under this part 23, including the following—	The Airplane Flight Manual must contain operating limitations determined under this RBAC 23, including the following:	transporte regional para todos os jatos pesando mais que 6.000 libras. Estas alterações garantem consistência com os requisitos de

(a) Airspeed limitations. The following information must be furnished:	(a) Airspeed limitations. The following information must be furnished:	desempenho Subparte B.	propostos	na
(1) Information necessary for the marking of the airspeed limits on the indicator as required in §23.1545, and the significance of each of those limits and of the color coding used on the indicator.	(1) Information necessary for the marking of the airspeed limits on the indicator as required in section 23.1545, and the significance of each of those limits and of the color coding used on the indicator.			
(2) The speeds $V_{MC}$ , $V_O$ , $V_{LE}$ , and $V_{LO}$ , if established, and their significance.	(2) The speeds VMC, VO, VLE, and VLO, if established, and their significance.			
(3) In addition, for turbine powered commuter category airplanes—	(3) In addition, for turbine powered commuter category airplanes:			
(i) The maximum operating limit speed, $V_{MO}/M_{MO}$ and a statement that this speed must not be deliberately exceeded in any regime of flight (climb, cruise or descent) unless a higher speed is authorized for flight test or pilot training;	(i) The maximum operating limit speed, VMO/MMO and a statement that this speed must not be deliberately exceeded in any regime of flight (climb, cruise or descent) unless a higher speed is authorized for flight test or pilot training;			
(ii) If an airspeed limitation is based upon compressibility effects, a statement to this effect and information as to any symptoms, the probable behavior of the airplane, and the recommended recovery procedures; and	(ii) If an airspeed limitation is based upon compressibility effects, a statement to this effect and information as to any symptoms, the probable behavior of the airplane, and the recommended recovery procedures; and			
(iii) The airspeed limits must be shown in terms of $V_{MO}/M_{MO}$ instead of $V_{NO}$ and $V_{NE}$ .	(iii) The airspeed limits must be shown in terms of VMO/MMO instead of VNO and VNE.			

(b) Powerplant limitations. The following information must be furnished:	(b) Powerplant limitations. The following information must be furnished:	
(1) Limitations required by §23.1521.	(1) Limitations required by section 23.1521.	
(2) Explanation of the limitations, when appropriate.	(2) Explanation of the limitations, when appropriate.	
(3) Information necessary for marking the instruments required by §23.1549 through §23.1553.	(3) Information necessary for marking the instruments required by sections 23.1549 through 23.1553.	
(c) Weight. The airplane flight manual must include—	(c) Weight. The airplane flight manual must include:	
(1) The maximum weight; and	(1) The maximum weight; and	
(2) The maximum landing weight, if the design landing weight selected by the applicant is less than the maximum weight.	(2) The maximum landing weight, if the design landing weight selected by the applicant is less than the maximum weight.	
(3) For normal, utility, and acrobatic category reciprocating engine-powered airplanes of more than 6,000 pounds maximum weight and for turbine engine-powered airplanes in the normal, utility, and acrobatic category, performance operating limitations as follows—	(3) For each of the following normal, utility, and acrobatic category airplanes: (1) reciprocating engine-powered airplanes of more than 6.000 pounds (2.722 kg) maximum weight, (2) single-engine turbines, and (3) multiengine turbines of 6.000 pounds (2.722 kg) or less maximum weight, performance operating limitations as follows:	
(i) The maximum takeoff weight for each airport altitude and ambient temperature within the range selected by the applicant at which the airplane	(i) The maximum takeoff weight for each airport altitude and ambient temperature within the range selected by the applicant at which the airplane	

complies with the climb requirements of $\$23.63(c)(1)$ .	complies with the climb requirements of paragraphs $23.63(c)(1)(i)$ , $(c)(2)(i)$ , or $(c)(3)(i)$ , as appropriate.	
(ii) The maximum landing weight for each airport altitude and ambient temperature within the range selected by the applicant at which the airplane complies with the climb requirements of $\$23.63(c)(2)$ .	(ii) The maximum landing weight for each airport altitude and ambient temperature within the range selected by the applicant at which the airplane complies with the climb requirements of paragraphs $23.63(c)(1)(ii)$ , $(c)(2)(ii)$ , or $(c)(3)(ii)$ , as appropriate.	
<ul> <li>(4) For commuter category airplanes, the maximum takeoff weight for each airport altitude and ambient temperature within the range selected by the applicant at which—</li> <li>(i) The aimlance compliant with the alimb</li> </ul>	(4) For normal, utility, and acrobatic category multiengine turbines over 6.000 pounds (2.722 kg) and commuter category airplanes, the maximum takeoff weight for each airport altitude and ambient temperature within the range selected by the explicant at which:	
requirements of §23.63(d)(1); and	applicant at which:	
(ii) The accelerate-stop distance determined under §23.55 is equal to the available runway length plus the length of any stopway, if utilized; and either:	(i) The airplane complies with the climb requirements of paragraphs $23.63(d)(1)(i)$ , or (d)(2)(i), as appropriate; and	
(iii) The takeoff distance determined under §23.59(a) is equal to the available runway length; or	(ii) The accelerate-stop distance determined under section 23.55 is equal to the available runway length plus the length of any stopway, if utilized; and either:	
(iv) At the option of the applicant, the takeoff distance determined under §23.59(a) is equal to the available runway length plus the length of any clearway and the takeoff run determined under	(iii) The takeoff distance determined under paragraph 23.59(a) is equal to the available runway length; or	
§23.59(b) is equal to the available runway length.	(iv) At the option of the applicant, the takeoff distance determined under paragraph 23.59(a) is	

(5) For commuter category airplanes, the maximum	equal to the available runway length plus the length	
landing weight for each airport altitude within the	of any clearway and the takeoff run determined	
range selected by the applicant at which—	under paragraph 23.59(b) is equal to the available	
	runway length.	
(i) The airplane complies with the climb		
requirements of §23.63(d)(2) for ambient	(5) For normal, utility, and acrobatic category	
temperatures within the range selected by the	multiengine turbines over 6.000 pounds (2.722 kg)	
applicant; and	and commuter category airplanes, the maximum	
	landing weight for each airport altitude within the	
(ii) The landing distance determined under §23.75	range selected by the applicant at which:	
for standard temperatures is equal to the available		
runway length.	(i) The airplane complies with the climb	
	requirements of paragraphs 23.63(d)(1)(ii) or	
(6) The maximum zero wing fuel weight, where	(d)(2)(ii), as appropriate for ambient temperatures	
relevant, as established in accordance with §23.343.	within the range selected by the applicant; and	
(d) Center of gravity. The established center of	(11) The landing distance determined under section	
gravity limits.	23.75 for standard temperatures is equal to the	
	available runway length.	
(e) Maneuvers. The following authorized	(c) The manimum range wing first weight where	
maneuvers, appropriate airspeed initiations, and	(6) The maximum zero wing fuel weight, where	
unauthorized maneuvers, as prescribed in this	relevant, as established in accordance with section	
section.	23.343.	
(1) Normal category airplanes No acrobatic	(d) Center of gravity. The established center of	
maneuvers including spins are authorized	oravity limits	
	Stavity minus.	
(2) Utility category airplanes A list of authorized	(e) Maneuvers The following authorized	
maneuvers demonstrated in the type flight tests	maneuvers appropriate airspeed limitations and	
together with recommended entry speeds and any	manor en appropriate anopeea miniations, and	
generation of the second of th		

other associated limitations. No other maneuver is	unauthorized maneuvers, as prescribed in this	
authorized.	section.	
(3) Acrobatic category airplanes. A list of approved flight maneuvers demonstrated in the type flight tests, together with recommended entry speeds and	(1) Normal category airplanes. No acrobatic maneuvers, including spins, are authorized.	
any other associated limitations.	(2) Utility category airplanes. A list of authorized	
(4) Acrobatic category airplanes and utility category airplanes approved for spinning. Spin recovery procedure established to show compliance with \$23.221(c).	together with recommended entry speeds and any other associated limitations. No other maneuver is authorized.	
(5) Commuter category airplanes. Maneuvers are limited to any maneuver incident to normal flying, stalls, (except whip stalls) and steep turns in which the angle of bank is not more than 60 degrees.	(3) Acrobatic category airplanes. A list of approved flight maneuvers demonstrated in the type flight tests, together with recommended entry speeds and any other associated limitations.	
(f) Maneuver load factor. The positive limit load factors in g's, and, in addition, the negative limit load factor for acrobatic category airplanes.	(4) Acrobatic category airplanes and utility category airplanes approved for spinning. Spin recovery procedure established to show compliance with paragraph 23.221(c).	
(g) Minimum flight crew. The number and functions of the minimum flight crew determined under §23.1523.	(5) Commuter category airplanes. Maneuvers are limited to any maneuver incident to normal flying, stalls, (except whip stalls) and steep turns in which the angle of bank is not more than 60 degrees.	
(h) Kinds of operation. A list of the kinds of operation to which the airplane is limited or from		
which it is prohibited under §23.1525, and also a list		
of installed equipment that affects any operating		

limitation and identification as to the equipment's	(f) Maneuver load factor. The positive limit load	
for which approval has been given.	factor for acrobatic category airplanes.	
(i) Maximum operating altitude. The maximum	(g) Minimum flight crew. The number and functions	
altitude established under §23.1527.	of the minimum flight crew determined under section 23.1523.	
(j) Maximum passenger seating configuration. The		
maximum passenger seating configuration.	(h) Kinds of operation. A list of the kinds of	
	operation to which the airplane is limited or from	
(k) Allowable lateral fuel loading. The maximum	which it is prohibited under section 23.1525, and also	
allowable lateral fuel loading differential, if less than	a list of installed equipment that affects any	
the maximum possible.	equipment's required operational status for the kinds	
(1) Baggage and cargo loading. The following	of operation for which approval has been given.	
information for each baggage and cargo		
compartment or zone—	(i) Maximum operating altitude. The maximum	
	altitude established under section 23.1527.	
(1) The maximum allowable load; and		
	(j) Maximum passenger seating configuration. The	
(2) The maximum intensity of loading.	maximum passenger seating configuration.	
(m) Systems Any limitations on the use of airplane	(k) Allowable lateral fuel loading. The maximum	
systems and equipment	allowable lateral fuel loading differential if less than	
systems and equipment.	the maximum possible.	
(n) Ambient temperatures. Where appropriate,	r	
maximum and minimum ambient air temperatures	(l) Baggage and cargo loading. The following	
for operation.	information for each baggage and cargo	
	compartment or zone:	

(o) Smoking. Any restrictions on smoking in the airplane.	(1) The maximum allowable load; and	
	(2) The maximum intensity of loading.	
(p) Types of surface. A statement of the types of		
surface on which operations may be conducted. (See	(m) Systems. Any limitations on the use of airplane	
23.45(g) and $23.1587(a)(4)$ , (c)(2), and (d)(4)).	systems and equipment.	
	(n) Ambient temperatures. Where enprepriete	
	(ii) Anotent temperatures. where appropriate,	
	for operation.	
	(o) Smoking. Any restrictions on smoking in the	
	airplane.	
	(p) Types of surface. A statement of the types of	
	surface on which operations may be conducted. (See paragraphs 23.45(g) and 23.1587 (a)(4) (c)(2) and	
	(d)(4)	
23.1585 Operating procedures.	23.1585 Operating procedures.	As alterações introduzidas tornam
		aplicáveis os critérios da categoria
(a) For all airplanes, information concerning	(a) For all airplanes, information concerning normal,	transporte regional para todos os
normal, abnormal (if applicable), and emergency	abnormal (if applicable), and emergency procedures	jatos pesando mais que 6.000
procedures and other pertinent information	and other pertinent information necessary for safe	libras. Estas alterações garantem
necessary for safe operation and the achievement of	operation and the achievement of the scheduled	consistencia com os requisitos de
including	performance must be furnished, including:	Subparte B
Including	(1) An explanation of significant or unusual flight or	Subparte D.
(1) An explanation of significant or unusual flight or	ground handling characteristics:	
ground handling characteristics;	<i>c c c c c c c c c c</i>	

(2) The maximum demonstrated values of crosswind for takeoff and landing, and procedures and information pertinent to operations in crosswinds;	(2) The maximum demonstrated values of crosswind for takeoff and landing, and procedures and information pertinent to operations in crosswinds;	
(3) A recommended speed for flight in rough air. This speed must be chosen to protect against the occurrence, as a result of gusts, of structural damage to the airplane and loss of control (for example, stalling);	(3) A recommended speed for flight in rough air. This speed must be chosen to protect against the occurrence, as a result of gusts, of structural damage to the airplane and loss of control (for example, stalling);	
(4) Procedures for restarting any turbine engine in flight, including the effects of altitude; and	(4) Procedures for restarting any turbine engine in flight, including the effects of altitude; and	
(5) Procedures, speeds, and configuration(s) for making a normal approach and landing, in accordance with §§23.73 and 23.75, and a transition to the balked landing condition.	(5) Procedures, speeds, and configuration(s) for making a normal approach and landing, in accordance with sections 23.73 and 23.75, and a transition to the balked landing condition.	
(6) For seaplanes and amphibians, water handling procedures and the demonstrated wave height.	(6) For seaplanes and amphibians, water handling procedures and the demonstrated wave height.	
(b) In addition to paragraph (a) of this section, for all single-engine airplanes, the procedures, speeds, and configuration(s) for a glide following engine failure, in accordance with §23.71 and the subsequent forced landing, must be furnished.	(b) In addition to paragraph (a) of this section, for all single-engine airplanes, the procedures, speeds, and configuration(s) for a glide following engine failure, in accordance with section 23.71 and the subsequent forced landing, must be furnished.	

(c) In addition to paragraph (a) of this section, for all multiengine airplanes, the following information must be furnished:	(c) In addition to paragraph (a) of this section, for all multiengine airplanes, the following information must be furnished:	
(1) Procedures, speeds, and configuration(s) for making an approach and landing with one engine inoperative;	(1) Procedures, speeds, and configuration(s) for making an approach and landing with one engine inoperative;	
(2) Procedures, speeds, and configuration(s) for making a balked landing with one engine inoperative and the conditions under which a balked landing can be performed safely, or a warning against attempting a balked landing;	(2) Procedures, speeds, and configuration(s) for making a balked landing with one engine inoperative and the conditions under which a balked landing can be performed safely, or a warning against attempting a balked landing;	
(3) The $V_{SSE}$ determined in §23.149; and	(3) The VSSE determined in section 23.149; and	
(4) Procedures for restarting any engine in flight including the effects of altitude.	(4) Procedures for restarting any engine in flight including the effects of altitude.	
(d) In addition to paragraphs (a) and either (b) or (c) of this section, as appropriate, for all normal, utility, and acrobatic category airplanes, the following information must be furnished:	(d) In addition to paragraphs (a) and either (b) or (c) of this section, as appropriate, for all normal, utility, and acrobatic category airplanes, the following information must be furnished:	
<ul> <li>(1) Procedures, speeds, and configuration(s) for making a normal takeoff, in accordance with §23.51</li> <li>(a) and (b), and §23.53 (a) and (b), and the subsequent climb, in accordance with §23.65 and §23.69(a).</li> </ul>	(1) Procedures, speeds, and configuration(s) for making a normal takeoff, in accordance with paragraphs 23.51 (a) and (b), and 23.53 (a) and (b), and the subsequent climb, in accordance with section 23.65 and paragraph 23.69(a).	

(2) Procedures for abandoning a takeoff due to engine failure or other cause	(2) Procedures for abandoning a takeoff due to engine failure or other cause	
(e) In addition to paragraphs (a), (c), and (d) of this section, for all normal, utility, and acrobatic category	(e) In addition to paragraphs (a), (c), and (d) of this section, for all normal, utility, and acrobatic category	
multiengine airplanes, the information must include	multiengine airplanes, the information must include	
the following.	the following:	
(1) Procedures and speeds for continuing a takeoff following engine failure and the conditions under	(1) Procedures and speeds for continuing a takeoff following engine failure and the conditions under	
which takeoff can safely be continued, or a warning	which takeoff can safely be continued, or a warning	
against attempting to continue the takeoff.	against attempting to continue the takeoff.	
(2) Procedures, speeds, and configurations for	(2) Procedures, speeds, and configurations for	
takeoff, in accordance with §23.67, or enroute, in	takeoff, in accordance with section 23.67, or enroute,	
accordance with §23.69(b).	in accordance with paragraph 23.69(b).	
(f) In addition to paragraphs (a) and (c) of this	(f) In addition to paragraphs (a) and (c) of this	
section, for commuter category airplanes, the information must include the following:	section, for normal, utility, and acrobatic category multiengine jets weighing over 6,000 pounds (2.722	
	kg), and commuter category airplanes, the	
(1) Procedures, speeds, and configuration(s) for making a normal takeoff.	information must include the following:	
	(1) Procedures, speeds, and configuration(s) for	
(2) Procedures and speeds for carrying out an accelerate-stop in accordance with \$23.55	making a normal takeoff.	
accordance with 325.55.	(2) Procedures and speeds for carrying out an	
(3) Procedures and speeds for continuing a takeoff	accelerate-stop in accordance with section 23.55.	
ionowing engine failure in accordance with		

§23.59(a)(1) and for following the flight path	(3) Procedures and speeds for continuing a takeoff	
determined under §23.57 and §23.61(a).	following engine failure in accordance with	
	paragraph 23.59(a)(1) and for following the flight	
(g) For multiengine airplanes, information	path determined under section 23.57 and paragraph	
identifying each operating condition in which the	23.61(a).	
fuel system independence prescribed in §23.953 is		
necessary for safety must be furnished, together with	(g) For multiengine airplanes, information	
instructions for placing the fuel system in a	identifying each operating condition in which the	
configuration used to show compliance with that	fuel system independence prescribed in section	
section.	23.953 is necessary for safety must be furnished,	
	together with instructions for placing the fuel system	
(h) For each airplane showing compliance with	in a configuration used to show compliance with that	
23.1353 (g)(2) or (g)(3), the operating procedures	section.	
for disconnecting the battery from its charging		
source must be furnished.	(h) For each airplane showing compliance with	
	paragraphs $23.1353(g)(2)$ or $(g)(3)$ , the operating	
(i) Information on the total quantity of usable fuel for	procedures for disconnecting the battery from its	
each fuel tank, and the effect on the usable fuel	charging source must be furnished.	
quantity, as a result of a failure of any pump, must be		
furnished.	(i) Information on the total quantity of usable fuel for	
	each fuel tank, and the effect on the usable fuel	
(j) Procedures for the safe operation of the airplane's	quantity, as a result of a failure of any pump, must be	
systems and equipment, both in normal use and in	furnished.	
the event of malfunction, must be furnished.		
	(j) Procedures for the safe operation of the airplane's	
	systems and equipment, both in normal use and in	
	the event of malfunction, must be furnished.	
23.1587 Performance information.	23.1587 Performance information.	As alterações introduzidas tornam
		aplicáveis os critérios da categoria
		transporte regional para todos os

Unless otherwise prescribed, performance	Unless otherwise prescribed, performance	jatos pesando mais que 6.000
information must be provided over the altitude and	information must be provided over the altitude and	libras. Estas alterações garantem
temperature ranges required by §23.45(b).	temperature ranges required by paragraph 23.45(b).	consistência com os requisitos de
		desempenho propostos na
(a) For all airplanes, the following information must	(a) For all airplanes, the following information must	Subparte B.
be furnished—	be furnished:	
(1) The stalling speeds $V_{SO}$ and $V_{S1}$ with the landing	(1) The stalling speeds VSO and VS1 with the	
gear and wing flaps retracted, determined at	landing gear and wing flaps retracted, determined at	
maximum weight under §23.49, and the effect on	maximum weight under section 23.49, and the effect	
these stalling speeds of angles of bank up to 60	on these stalling speeds of angles of bank up to 60	
degrees;	degrees;	
(2) The steady rate and gradient of alight with all	(2) The steady rate and gradient of alight with all	
(2) The steady fate and gradient of child with an	(2) The steady fate and gradient of child with an	
engines operating, determined under §25.09(a),	engines operating, determined under paragraph $23.60(a)$ .	
(3) The landing distance determined under \$23.75	23.09(a),	
for each airport altitude and standard temperature	(3) The landing distance determined under section	
and the type of surface for which it is valid:	23.75 for each airport altitude and standard	
and the type of surface for which it is valid,	temperature and the type of surface for which it is	
(4) The effect on landing distances of operation on	valid:	
other than smooth hard surfaces, when dry,		
determined under §23.45(g); and	(4) The effect on landing distances of operation on	
	other than smooth hard surfaces, when dry,	
(5) The effect on landing distances of runway slope	determined under paragraph 23.45(g); and	
and 50 percent of the headwind component and 150		
percent of the tailwind component.	(5) The effect on landing distances of runway slope	
	and 50 percent of the headwind component and 150	
(b) In addition to paragraph (a) of this section, for all	percent of the tailwind component.	
normal, utility, and acrobatic category reciprocating		

engine-powered airplanes of 6,000 pounds or less maximum weight, the steady angle of climb/descent, determined under §23.77(a), must be furnished.	(b) In addition to paragraph (a) of this section, for all normal, utility, and acrobatic category reciprocating engine-powered airplanes of 6.000 pounds (2.722 kg) or less maximum weight, the steady angle of climb/descent_determined under personer 22.77(c)	
(c) In addition to paragraphs (a) and (b) of this section, if appropriate, for normal, utility, and acrobatic category airplanes, the following information must be furnished—	<ul><li>(c) In addition to paragraphs (a) and (b) of this</li></ul>	
(1) The takeoff distance, determined under §23.53 and the type of surface for which it is valid.	acrobatic category airplanes, the following information must be furnished:	
(2) The effect on takeoff distance of operation on other than smooth hard surfaces, when dry, determined under §23.45(g);	<ul><li>(1) The takeoff distance, determined under section 23.53 and the type of surface for which it is valid.</li><li>(2) The effect on takeoff distance of operation on</li></ul>	
(3) The effect on takeoff distance of runway slope and 50 percent of the headwind component and 150 percent of the tailwind component;	other than smooth hard surfaces, when dry, determined under paragraph 23.45(g);	
(4) For multiengine reciprocating engine-powered airplanes of more than 6,000 pounds maximum weight and multiengine turbine powered airplanes,	(3) The effect on takeoff distance of runway slope and 50 percent of the headwind component and 150 percent of the tailwind component;	
<ul> <li>the one-engine-inoperative takeoff climb/descent gradient, determined under §23.66;</li> <li>(5) For multionging airplanes, the aproute rate and</li> </ul>	(4) For multiengine reciprocating engine-powered airplanes of more than 6.000 pounds (2.722 kg) maximum weight and multiengine turbine powered airplanes the one engine inoperative takeoff	
gradient of climb/descent with one engine inoperative, determined under §23.69(b); and	climb/descent gradient, determined under section 23.66;	

(6) For single-engine airplanes, the glide performance determined under §23.71.	(5) For multiengine airplanes, the enroute rate and gradient of climb/descent with one engine	
(d) In addition to paragraph (a) of this section, for commuter category airplanes, the following	and	
information must be furnished—	(6) For single-engine airplanes, the glide performance determined under section 23.71.	
(1) The accelerate-stop distance determined under §23.55;	(d) In addition to paragraph (a) of this section, for normal utility and acrobatic category multiengine	
(2) The takeoff distance determined under §23.59(a);	jets weighing over 6.000 pounds (2.722 kg), and commuter category airplanes, the following	
(3) At the option of the applicant, the takeoff run determined under §23.59(b);	information must be furnished:	
(4) The effect on accelerate-stop distance, takeoff distance and, if determined, takeoff run, of operation	(1) The accelerate-stop distance determined under section 23.55;	
on other than smooth hard surfaces, when dry, determined under §23.45(g);	(2) The takeoff distance determined under paragraph 23.59(a);	
(5) The effect on accelerate-stop distance, takeoff distance, and if determined, takeoff run, of runway slope and 50 percent of the headwind component and	(3) At the option of the applicant, the takeoff run determined under paragraph 23.59(b);	
150 percent of the tailwind component;	(4) The effect on accelerate-stop distance, takeoff distance and, if determined, takeoff run, of operation	
(6) The net takeoff flight path determined under §23.61(b);	on other than smooth hard surfaces, when dry, determined under paragraph 23.45(g);	
	(5) The effect on accelerate-stop distance, takeoff distance, and if determined, takeoff run, of runway	

(7) The enroute gradient of climb/descent with one	slope and 50 percent of the headwind component and	
engine inoperative, determined under §23.69(b);	150 percent of the tailwind component;	
(8) The effect, on the net takeoff flight path and on	(6) The net takeoff flight path determined under	
the enroute gradient of climb/descent with one	paragraph 23.61(b);	
engine inoperative, of 50 percent of the headwind		
component and 150 percent of the tailwind	(7) The enroute gradient of climb/descent with one	
component;	engine inoperative, determined under paragraph 23.69(b);	
(9) Overweight landing performance information		
(determined by extrapolation and computed for the	(8) The effect, on the net takeoff flight path and on	
range of weights between the maximum landing and	the enroute gradient of climb/descent with one	
maximum takeoff weights) as follows—	engine inoperative, of 50 percent of the headwind	
	component and 150 percent of the tailwind	
(i) The maximum weight for each airport altitude and	component;	
ambient temperature at which the airplane complies		
with the climb requirements of $23.63(d)(2)$ ; and	(9) Overweight landing performance information	
	(determined by extrapolation and computed for the	
(ii) The landing distance determined under §23.75	range of weights between the maximum landing and	
for each airport altitude and standard temperature.	maximum takeoff weights) as follows:	
(10) The relationship between IAS and CAS	(1) The maximum weight for each airport altitude and	
determined in accordance with §23.1323 (b) and (c).	ambient temperature at which the airplane complies	
(11) The altimator system calibration required by	with the child requirements of paragraph $23.63(d)(2)$ ; and	
(11) The animeter system canoration required by	23.03(0)(2), and	
<i>\$23.1323(c)</i> .	(ii) The landing distance determined under section	
	23.75 for each airport altitude and standard	
	temperature	
	iomporature.	

lationship between IAS and CAS accordance with paragraphs 23 1323	
accordance with paragraphs 25.1525	
neter system calibration required by	
1325(e).	
o RBAC 23 — Test Procedure	A proposta introduz uma nova
	parte no Apêndice F para incluir
Test Method To Determine the	novos ensaios e critérios de
and Flame Propagation	inflamabilidade que tratam de
cs of Thermal/Acoustic Insulation	propagação de chama e que são
	aplicáveis para materiais de
	isolamento térmico e acústico
	instalados na fuselagem de aviões
	certificados de acordo com o
	RBAC 23.
	Os ensaios de certificação
	consistem em amostras de
	isolamento térmico e acústico que
	são expostos a uma fonte radiante
	de calor e uma chama de queima
	de propano por 15 segundos. O
	isolamento não deve propagar a
	chama mais que 2 polegadas além
	do queimador. O tempo de chama
	após remoção do queimador não
	deve exceder 3 segundos em
	qualquer amostra.
	lationship between IAS and CAS accordance with paragraphs 23.1323 meter system calibration required by 1325(e). o RBAC 23 — Test Procedure Test Method To Determine the and Flame Propagation cs of Thermal/Acoustic Insulation