

FAA & TCCA

FAA Paragraph	Content	TCCA Paragraph	Content	FAA Interpretation	TCCA Interpretation
	Subpart A—General		SUBCHAPTER A GENERAL		
27.1	§27.1 Applicability.	527.1	527.1 Applicability		
27.1(b)	(b) Each person who applies under Part 21 for such a certificate or change must show compliance with the applicable requirements of this part.	527.1(b)	(b) <i>Reserved.</i>		TCCA does not have this regulatory requirement.
	Subpart B—Flight		SUBCHAPTER B FLIGHT- GENERAL		
27.143	§27.143 Controllability and maneuverability.	527.143	527.143 Controllability and Manoeuvrability		
		527.143(c)(3)	(3) <i>Critical rotor r.p.m.; and</i>	FAA does not have this regulatory requirement.	
		527.143(c)(4)	(4) <i>Altitude, from standard sea level conditions to the maximum altitude capability of the rotorcraft or 7,000 feet, whichever is less.</i>	FAA does not have this regulatory requirement.	
27.173	§27.173 Static longitudinal stability.	527.173	527.173 Static longitudinal stability.		
		527.173(c)	(c) <i>During the manoeuvres specified in 527.175 (d), the longitudinal control position versus speed curve may have a negative slope within the specified speed range if the negative motion is not greater than 10 percent of total control travel.</i>	FAA does not have this regulatory requirement.	
	Subpart C—Strength Requirements		SUBCHAPTER C STRENGTH REQUIREMENTS -		
27.561	§27.561 General.	527.561	527.561 General		
27.561(b)(3)	(3) Each occupant and each item of mass inside the cabin that could injure an occupant is restrained when subjected to the following ultimate inertial load factors relative to the surrounding structure:	527.561(b)(3)	(3) Each occupant and each item of mass inside the cabin that could injure an occupant is restrained when subjected to the following ultimate inertial load factors relative to the surrounding structure:		TCCA has accepted summation of vectors, i.e. forward plus downward, instead of as separate design conditions. On Bell 429.
27.563	§27.563 Structural ditching provisions.	527.563	527.563 Structural Ditching Provisions		
27.563	If certification with ditching provisions is requested, structural strength for ditching must meet the requirements of this section and §27.801(e).	527.563	If certification with ditching provisions is requested, structural strength for ditching must meet the requirements of this section and 527.801(e).		TCCA, according to Bell Canada, does not require test.
27.801	§27.801 Ditching.	527.801	527.801 Ditching		
27.801(c)	(c) The probable behavior of the rotorcraft in a water landing must be investigated by model tests or by comparison with rotorcraft of similar configuration for which the ditching characteristics are known. Scoops, flaps, projections, and any other factor likely to affect the hydrodynamic characteristics of the rotorcraft must be considered.	527.801(c)	(c) The probable <i>behaviour</i> of the rotorcraft in a water landing must be investigated by model tests or by comparison with rotorcraft of similar configuration for which the ditching characteristics are known. Scoops, flaps, projections, and any other factor likely to affect the hydrodynamic characteristics of the rotorcraft must be considered.		Does TCCA require model test or comparative analysis to existing test data?
	Subpart E—Powerplant		SUBCHAPTER E POWERPLANT - GENERAL		
27.1093	§27.1093 Induction system icing protection.	527.1093	527.1093 Induction System Icing Protection		
27.1093(b)	(b) <i>Turbine engine.</i>	527.1093(b)	(b) <i>Turbine engine s.</i>	FAA and TCCA need to agree on inlet icing accretion stabilization for full icing approval. Recommend support through SAE AC9C committee.	

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27.1093(b)(1)	(1) It must be shown that each turbine engine and its air inlet system can operate throughout the flight power range of the engine (including idling)—	527.1093(b)(1)	(1) It must be shown that each turbine engine and its air inlet system can operate throughout the flight power range of the engine (including idling):	FAA and TCCA need to agree on inlet icing accretion stabilization for full icing approval. Recommend support through SAE AC9C committee.	
27.1093(b)(1)(i)	(i) Without accumulating ice on engine or inlet system components that would adversely affect engine operation or cause a serious loss of power under the icing conditions specified in appendix C of Part 29 of this chapter; and	527.1093(b)(1)(i)	(i) Without accumulating ice on engine or inlet system components that would adversely affect engine operation or cause a serious loss of power under the icing conditions specified in Appendix C of Chapter 529 of this Manual ; and	FAA and TCCA need to agree on inlet icing accretion stabilization for full icing approval. Recommend support through SAE AC9C committee.	
27.1093(b)(1)(ii)	(ii) In snow, both falling and blowing, without adverse effect on engine operation, within the limitations established for the rotorcraft.	527.1093(b)(1)(ii)	(ii) In falling, blowing, and recirculating snow without adverse effect on engine operation; or	FAA and TCCA need to agree on inlet icing accretion stabilization for full icing approval. Recommend support through SAE AC9C committee.	TCCA includes recirculating snow
		527.1093(b)(1)(iii)	(iii) If certification for flight in snow has not been requested, the engine tolerance to snow shall be demonstrated.	FAA does not have this regulatory requirement.	
27.1093(b)(2)	(2) Each turbine engine must idle for 30 minutes on the ground, with the air bleed available for engine icing protection at its critical condition, without adverse effect, in an atmosphere that is at a temperature between 15° and 30 °F (between -9° and -1 °C) and has a liquid water content not less than 0.3 gram per cubic meter in the form of drops having a mean effective diameter not less than 20 microns, followed by momentary operation at takeoff power or thrust. During the 30 minutes of idle operation, the engine may be run up periodically to a moderate power or thrust setting in a manner acceptable to the Administrator.	527.1093(b)(2)	(2) Each turbine engine must idle for 30 minutes on the ground, with the air bleed available for engine icing protection at its critical condition, without adverse effect, in an atmosphere that is at a temperature between 15° and 30°F (between -9° and -1°C) and has a liquid water content not less than 0.3 grams per cubic meter in the form of drops having a mean effective diameter of not less than 20 microns, followed by momentary operation at takeoff power or thrust. During the 30 minutes of idle operation, the engine may run up periodically to a moderate power or thrust setting in a manner acceptable to the Minister .	FAA and TCCA need to agree on inlet icing accretion stabilization for full icing approval. Recommend support through SAE AC9C committee.	
27.1093(c)	(c) <i>Supercharged reciprocating engines</i> . For each engine having superchargers to pressurize the air before it enters the carburetor, the heat rise in the air caused by that supercharging at any altitude may be utilized in determining compliance with paragraph (a) of this section if the heat rise utilized is that which will be available, automatically, for the applicable altitude and operating condition because of supercharging.	527.1093(c)	(c) Supercharged reciprocating engines. For each engine having superchargers to pressurize the air before it enters the carburetor, the heat rise in the air caused by that supercharging at any altitude may be utilized in determining compliance with paragraph (a) of this section if the heat rise utilized is that which will be available, automatically, for the applicable altitude and operating condition because of supercharging.	FAA and TCCA need to agree on inlet icing accretion stabilization for full icing approval. Recommend support through SAE AC9C committee.	
	Subpart F—Equipment		SUBCHAPTER F EQUIPMENT - GENERAL		
		527.1301-1	527.1301-1 Rotorcraft Operations After Ground Cold Soak	FAA does not have this regulatory requirement.	

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		527.1301-1	Substantiation of satisfactory operation of the rotorcraft as a total system, by cold weather testing or by documented evidence of satisfactory operation at low temperature is required after the rotorcraft has experienced a prolonged exposure to ground ambient temperatures equal to or less than -35°C unless an alternative minimum ground ambient temperature has been proposed by the applicant and accepted by the Minister.	FAA does not have this regulatory requirement.	
27.1419	§27.1419 Ice protection.	527.1419	527.1419 Ice Protection	Revised AC 29.1419 is in work. After AC material AC29.1419 is published, ASE AC Committee will revise AC 27.1419 to mirror new AC29.1419.	TBD if TCCA will interpret materal the same.
	Appendix B to Part 27—Airworthiness Criteria for Helicopter Instrument Flight		Appendix B Airworthiness Criteria for Helicopter Instrument Flight		
I	I. <i>General</i> . A normal category helicopter may not be type certificated for operation under the instrument flight rules (IFR) of this chapter unless it meets the design and installation requirements contained in this appendix.	I	I. <i>General</i>	Administrative paragraph format difference.	Administrative paragraph format difference.
		I	A normal category helicopter may not be type certificated for operation under the instrument flight rules (IFR) of this manual unless it meets the design and installation requirements contained in this Appendix.	Administrative paragraph format difference.	Administrative paragraph format difference.
III	III. <i>Trim</i> . It must be possible to trim the cyclic, collective, and directional control forces to zero at all approved IFR airspeeds, power settings, and configurations appropriate to the type.	III	III. <i>Trim</i>	Administrative paragraph format difference.	Administrative paragraph format difference.
		III	It must be possible to trim the cyclic, collective, and directional control forces to zero at all approved IFR airspeeds, power settings, and configurations appropriate to the type.	Administrative paragraph format difference.	Administrative paragraph format difference.
VIII	VIII. <i>Equipment, systems, and installation</i> . The basic equipment and installation must comply with §§29.1303, 29.1431, and 29.1433 through Amendment 29-14, with the following exceptions and additions:	VIII	VIII. <i>Equipment, Systems, and Installation</i> .	FAA requires literal compliance, ELOS, or exemption.	Literal non-compliances of rules are mitigated by operational limitations and procedures in RFM or temporary deviations.
VIII(b)(5)(iii)	(iii) The equipment, systems, and installations must be designed so that one display of the information essential to the safety of flight which is provided by the instruments will remain available to a pilot, without additional crewmember action, after any single failure or combination of failures that is not shown to be extremely improbable; and	VIII(b)(5)(iii)	(iii) The equipment, systems, and installations must be designed so that one display of the information essential to the safety of flight which is provided by the instruments will remain available to a pilot, without additional crew member action, after any single failure or combination of failures that is not shown to be extremely improbable; and	FAA requires literal compliance, ELOS, or exemption.	Literal non-compliances of rules are mitigated by operational limitations and procedures in RFM that requires crewmember action.
	Appendix C to Part 27—Criteria for Category A		Appendix C Criteria for Category A		
C27.1	C27.1 General. A small multiengine rotorcraft may not be type certificated for Category A operation unless it meets the design installation and performance requirements contained in this appendix in addition to the requirements of this part.	C527.1	C527.1 General.	Administrative paragraph numbering/format difference.	Administrative paragraph numbering/format difference.

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		C527.1	A small multi-engine rotorcraft may not be type certificated for Category A operation unless it meets the design installation and performance requirements contained in this appendix in addition to the requirements of this chapter .	Administrative paragraph numbering/format difference.	Administrative paragraph numbering/format difference.
C27.2	C27.2 Applicable part 29 sections. The following sections of part 29 of this chapter must be met in addition to the requirements of this part: 29.45(a) and (b)(2)—General. 29.49(a)—Performance at minimum operating speed. 29.51—Takeoff data: General. 29.53—Takeoff: Category A. 29.55—Takeoff decision point: Category A. 29.59—Takeoff Path: Category A. 29.60—Elevated heliport takeoff path: Category A. 29.61—Takeoff distance: Category A. 29.62—Rejected takeoff: Category A. 29.64—Climb: General. 29.65(a)—Climb: AEO. 29.67(a)—Climb: OEI. 29.75—Landing: General. 29.77—Landing decision point: Category A. 29.79—Landing: Category A. 29.81—Landing distance (Ground level sites): Category A. 29.85—Balked landing: Category A. 29.87(a)—Height-velocity envelope. 29.547(a) and (b)—Main and tail rotor structure.	C527.2	C527.2 Applicable Chapter 529 Sections	Administrative paragraph numbering/format difference.	Administrative paragraph numbering/format difference.

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		C527.2	<p>The following sections of Chapter 529 of this Manual must be met in addition to the requirements of this chapter:</p> <p>29.45(a) and (b)(2)—General 29.49(a)—Performance at Minimum Operating Speed 29.51—Take-off Data: General 29.53—Takeoff: Category A 29.55—Take-off Decision Point: Category A 29.59—Take-off Path: Category A 29.60—Elevated Heliport Take-off Path: Category A 29.61—Take-off Distance: Category A 29.62—Rejected Takeoff: Category A 29.64—Climb: General 29.65(a)—Climb: AEO 29.67(a)—Climb: OEI 29.75—Landing: General 29.77—Landing Decision Point: Category A 29.79—Landing: Category A 29.81—Landing Distance (Ground Level Sites): Category A 29.85—Balked Landing: Category A 29.87(a)—Height-Velocity Envelope 29.547(a) and (b)—Main and Tail Rotor Structure</p>	<p>Administrative paragraph numbering/format difference.</p>	<p>Administrative paragraph numbering/format difference.</p>
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<p>C27.2</p>	<p>29.861(a)—Fire protection of structure, controls, and other parts. 29.901(c)—Powerplant: Installation. 29.903(b) (c) and (e)—Engines. 29.908(a)—Cooling fans. 29.917(b) and (c)(1)—Rotor drive system: Design. 29.927(c)(1)—Additional tests. 29.953(a)—Fuel system independence. 29.1027(a)—Transmission and gearboxes: General. 29.1045(a)(1), (b), (c), (d), and (f)—Climb cooling test procedures. 29.1047(a)—Takeoff cooling test procedures. 29.1181(a)—Designated fire zones: Regions included. 29.1187(e)—Drainage and ventilation of fire zones. 29.1189(c)—Shutoff means. 29.1191(a)(1)—Firewalls. 29.1193(e)—Cowling and engine compartment covering. 29.1195(a) and (d)—Fire extinguishing systems (one shot). 29.1197—Fire extinguishing agents. 29.1199—Extinguishing agent containers. 29.1201—Fire extinguishing system materials. 29.1305(a) (6) and (b)—Powerplant instruments. 29.1309(b)(2) (i) and (d)—Equipment, systems, and installations. 29.1323(c)(1)—Airspeed indicating system. 29.1331(b)—Instruments using a power supply. 29.1351(d)(2)—Electrical systems and equipment: General (operation without normal electrical power). 29.1587(a)—Performance information. Note: In complying with the paragraphs listed in paragraph C27.2 above, relevant material in the AC "Certification of Transport Category Rotorcraft" should be used.</p>	<p>C527.2</p>	<p>29.861(a)—Fire Protection of Structure, Controls, and Other Parts 29.901(c)—Powerplant: Installation 29.903(b) (c) and (e)—Engines 29.908(a)—Cooling Fans 29.917(b) and (c)(1)—Rotor Drive System: Design 29.927(c)(1)—Additional Tests 29.953(a)—Fuel System Independence 29.1027(a)—Transmission and Gearboxes: General 29.1045(a)(1), (b), (c), (d), and (f)—Climb Cooling Test Procedures 29.1047(a)—Takeoff Cooling Test Procedures 29.1181(a)—Designated Fire Zones: Regions Included 29.1187(e)—Drainage and Ventilation of Fire Zones 29.1189(c)—Shutoff Means 29.1191(a)(1)—Firewalls 29.1193(e)—Cowling and Engine Compartment Covering 29.1195(a) and (d)—Fire Extinguishing Systems (one shot) 29.1197—Fire Extinguishing Agents 29.1199—Extinguishing Agent Containers 29.1201—Fire Extinguishing System Materials 29.1305(a) (6) and (b)—Powerplant Instruments 29.1309(b)(2) (i) and (d)—Equipment, Systems, and Installations 29.1323(c)(1)—Airspeed Indicating System 29.1331(b)—Instruments Using a Power Supply 29.1351(d)(2)—Electrical Systems and Equipment: General (Operation Without Normal Electrical Power) 29.1587(a)—Performance Information</p>	<p>FAA requires literal compliance, ELOS, or exemption.</p>	<p>Previous approvals have required pilot action for recovery of power, source or display for critical information.</p>
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