lowest point of the takeoff profile for elevated heliports);

(ii) In the flight conditions required in §29.67(a)(2) between the points at which the rotorcraft is 200 and 1000 feet above the takeoff surface (or 200 and 1000 feet above the lowest point of the takeoff profile for elevated heliports); and

(7) Out-of-ground effect hover performance determined under §29.49 and the maximum safe wind demonstrated under the ambient conditions for data presented.

(b) *Category B.* For each category B rotorcraft, the Rotorcraft Flight Manual must contain—

(1) The takeoff distance and the climbout speed together with the pertinent information defining the flight path with respect to autorotative landing if an engine fails, including the calculated effects of altitude and temperature;

(2) The steady rates of climb and hovering ceiling, together with the corresponding airspeeds and other pertinent information, including the calculated effects of altitude and temperature;

(3) The landing distance, appropriate airspeed, and type of landing surface, together with all pertinent information that might affect this distance, including the effects of weight, altitude, and temperature;

(4) The maximum safe wind for operation near the ground;

(5) The airspeed calibrations;

(6) The height-speed envelope except for rotorcraft incorporating this as an operating limitation;

(7) Glide distance as a function of altitude when autorotating at the speeds and conditions for minimum rate of descent and best glide angle, as determined in §29.71;

(8) Out-of-ground effect hover performance determined under §29.49 and the maximum safe wind demonstrated under the ambient conditions for data presented; and

(9) Any additional performance data necessary for the application of any operating rule in this chapter.

[Doc. No. 5084, 29 FR 16150, Dec. 3, 1964, as amended by Amdt. 29–21, 48 FR 4392, Jan. 31, 1983; Amdt. 29–24, 49 FR 44440, Nov. 6, 1984; Amdt. 29–39, 61 FR 21901, May 10, 1996; Amdt. 29–40, 61 FR 21908, May 10, 1996; Amdt. 29–44, 64 FR 45338, Aug. 19, 1999]

§29.1589 Loading information.

There must be loading instructions for each possible loading condition between the maximum and minimum weights determined under §29.25 that can result in a center of gravity beyond any extreme prescribed in §29.27, assuming any probable occupant weights.

APPENDIX A TO PART 29—INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

a29.1 *General*

(a) This appendix specifies requirements for the preparation of Instructions for Continued Airworthiness as required by §29.1529.

(b) The Instructions for Continued Airworthiness for each rotorcraft must include the Instructions for Continued Airworthiness for each engine and rotor (hereinafter designated ''products''), for each applicance required by this chapter, and any required information relating to the interface of those appliances and products with the rotorcraft. If Instructions for Continued Airworthiness are not supplied by the manufacturer of an appliance or product installed in the rotorcraft, the Instructions for Continued Airworthiness for the rotorcraft must include the information essential to the continued airworthiness of the rotorcraft.

(c) The applicant must submit to the FAA a program to show how changes to the Instructions for Continued Airworthiness made by the applicant or by the manufacturers of products and appliances installed in the rotorcraft will be distributed.

a29.2 *Format*

(a) The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.

(b) The format of the manual or manuals must provide for a practical arrangement.

a29.3 *Content*

The contents of the manual or manuals must be prepared in the English language. The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:

(a) *Rotorcraft maintenance manual or section.* (1) Introduction information that includes an explanation of the rotorcraft's features and

data to the extent necessary for maintenance or preventive maintenance.

(2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.

(3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.

(4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, the lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and leveling information.

(b) *Maintenance Instructions.* (1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.

(2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.

(3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.

(4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.

(c) Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.

(d) Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.

(e) Information needed to apply protective treatments to the structure after inspection.

(f) All data relative to structural fasteners such as identification, discard recommendations, and torque values.

(g) A list of special tools needed.

a29.4 *Airworthiness Limitations Section*

The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under §29.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: ''The Airworthiness Limitations section is FAA approved and specifies maintenance required under §§43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.''

[Amdt. 29–20, 45 FR 60178, Sept 11, 1980, as amended by Amdt. 29–27, 54 FR 34330, Aug. 18, 1989]

APPENDIX B TO PART 29—AIRWORTHINESS CRITERIA FOR HELICOPTER INSTRUMENT FLIGHT

I. *General.* A transport 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.

II. *Definitions.* (a) V_{YI} means instrument climb speed, utilized instead of V_Y for compliance with the climb requirements for instrument flight.

(b) V_{NEI} means instrument flight never exceed speed, utilized instead of V_{NE} for compliance with maximum limit speed requirements for instrument flight.

(c) V_{MINI} means instrument flight minimum speed, utilized in complying with minimum limit speed requirements for instrument flight.

III. *Trim.* 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.

IV. *Static longitudinal stability.* (a) *General.* The helicopter must possess positive static longitudinal control force stability at critical combinations of weight and center of gravity at the conditions specified in paragraphs IV (b) through (f) of this appendix. The stick force must vary with speed so that any substantial speed change results in a stick force clearly perceptible to the pilot. The airspeed must return to within 10 percent of the trim speed when the control force

is slowly released for each trim condition specified in paragraphs IV (b) through (f) of this appendix.

(b) *Climb*. Stability must be shown in climb thoughout the speed range 20 knots either side of trim with—

(1) The helicopter trimmed at V_{YI};

(2) Landing gear retracted (if retractable); and

(3) Power required for limit climb rate (at least 1,000 fpm) at V_{YI} or maximum continuous power, whichever is less.

(c) *Cruise*. Stability must be shown throughout the speed range from 0.7 to 1.1 V_H or V_{NEI}, whichever is lower, not to exceed ±20 knots from trim with—

(1) The helicopter trimmed and power adjusted for level flight at 0.9 V_H or 0.9 V_{NEI}, whichever is lower; and

(2) Landing gear retracted (if retractable).

(d) *Slow cruise*. Stability must be shown throughout the speed range from 0.9 V_{MINI} to 1.3 V_{MINI} or 20 knots above trim speed, whichever is greater, with—

(1) The helicopter trimmed and power adjusted for level flight at 1.1 V_{MINI}; and

(2) Landing gear retracted (if retractable).

(e) *Descent*. Stability must be shown throughout the speed range 20 knots either side of trim with—

(1) The helicopter trimmed at 0.8 V_H or 0.8 V_{NEI} (or 0.8 V_{LE} for the landing gear extended case), whichever is lower;

(2) Power required for 1,000 fpm descent at trim speed; and

(3) Landing gear extended and retracted, if applicable.

(f) *Approach*. Stability must be shown throughout the speed range from 0.7 times the minimum recommended approach speed to 20 knots above the maximum recommended approach speed with—

(1) The helicopter trimmed at the recommended approach speed or speeds;

(2) Landing gear extended and retracted, if applicable; and

(3) Power required to maintain a 3° glide path and power required to maintain the steepest approach gradient for which approval is requested.

V. *Static lateral-directional stability*. (a) Static directional stability must be positive throughout the approved ranges of airspeed, power, and vertical speed. In straight, steady sideslips up to ±10° from trim, directional control position must increase in approximately constant proportion to angle of sideslip. At greater angles up to the maximum sideslip angle appropriate to the type, increased directional control position must produce increased angle of sideslip.

(b) During sideslips up to ±10° from trim throughout the approved ranges of airspeed, power, and vertical speed there must be no negative dihedral stability perceptible to the pilot through lateral control motion or force. Longitudinal cycle movement with sideslip must not be excessive.

VI. *Dynamic stability*. (a) Any oscillation having a period of less than 5 seconds must damp to 1/2 amplitude in not more than one cycle.

(b) Any oscillation having a period of 5 seconds or more but less than 10 seconds must damp to 1/2 amplitude in not more than two cycles.

(c) Any oscillation having a period of 10 seconds or more but less than 20 seconds must be damped.

(d) Any oscillation having a period of 20 seconds or more may not achieve double amplitude in less than 20 seconds.

(e) Any aperiodic response may not achieve double amplitude in less than 9 seconds.

VII. *Stability augmentation system (SAS)*. (a) If a SAS is used, the reliability of the SAS must be related to the effects of its failure. The occurrence of any failure condition which would prevent continued safe flight and landing must be extremely improbable. For any failure condition of the SAS which is not shown to be extremely improbable—

(1) The helicopter must be safely controllable and capable of prolonged instrument flight without undue pilot effort. Additional unrelated probable failures affecting the control system must be considered; and

(2) The flight characteristics requirements in Subpart B of Part 29 must be met throughout a practical flight envelope.

(b) The SAS must be designed so that it cannot create a hazardous deviation in flight path or produce hazardous loads on the helicopter during normal operation or in the event of malfunction or failure, assuming corrective action begins within an appropriate period of time. Where multiple systems are installed, subsequent malfunction conditions must be considered in sequence unless their occurrence is shown to be improbable.

VIII. *Equipment, systems, and installation*. The basic equipment and installation must comply with Subpart F of Part 29 through Amendment 29–14, with the following exceptions and additions:

(a) *Flight and navigation instruments*. (1) A magnetic gyro-stabilized direction indicator instead of the gyroscopic direction indicator required by §29.1303(h); and

(2) A standby attitude indicator which meets the requirements of §§29.1303(g)(1) through (7), instead of a rate-of-turn indicator required by §29.1303(g). If standby batteries are provided, they may be charged from the aircraft electrical system if adequate isolation is incorporated. The system must be designed so that the standby batteries may not be used for engine starting.

(b) *Miscellaneous requirements*. (1) Instrument systems and other systems essential

for IFR flight that could be adversely affected by icing must be provided with adequate ice protection whether or not the rotorcraft is certificated for operation in icing conditions.

(2) There must be means in the generating system to automatically de-energize and disconnect from the main bus any power source developing hazardous overvoltage.

(3) Each required flight instrument using a power supply (electric, vacuum, etc.) must have a visual means integral with the instrument to indicate the adequacy of the power being supplied.

(4) When multiple systems performing like functions are required, each system must be grouped, routed, and spaced so that physical separation between systems is provided to ensure that a single malfunction will not adversely affect more than one system.

(5) For systems that operate the required flight instruments at each pilot's station—

(i) Only the required flight instruments for the first pilot may be connected to that operating system;

(ii) Additional instruments, systems, or equipment may not be connected to an operating system for a second pilot unless provisions are made to ensure the continued normal functioning of the required instruments in the event of any malfunction of the additional instruments, systems, or equipment which is not shown to be extremely improbable;

(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

(iv) For single-pilot configurations, instruments which require a static source must be provided with a means of selecting an alternate source and that source must be calibrated.

(6) In determining compliance with the requirements of §29.1351(d)(2), the supply of electrical power to all systems necessary for flight under IFR must be included in the evaluation.

(c) *Thunderstorm lights*. In addition to the instrument lights required by §29.1381(a), thunderstorm lights which provide high intensity white flood lighting to the basic flight instruments must be provided. The thunderstorm lights must be installed to meet the requirements of §29.1381(b).

IX. *Rotorcraft Flight Manual*. A Rotorcraft Flight Manual or Rotorcraft Flight Manual IFR Supplement must be provided and must contain—

(a) *Limitations*. The approved IFR flight envelope, the IFR flightcrew composition, the revised kinds of operation, and the steepest IFR precision approach gradient for which the helicopter is approved;

(b) *Procedures*. Required information for proper operation of IFR systems and the recommended procedures in the event of stability augmentation or electrical system failures; and

(c) *Performance*. If V_{YI} differs from V_Y, climb performance at V_{YI} and with maximum continuous power throughout the ranges of weight, altitude, and temperature for which approval is requested.

[Amdt. 29–21, 48 FR 4392, Jan. 31, 1983, as amended by Amdt. 29–31, 55 FR 38967, Sept. 21, 1990; 55 FR 41309, Oct. 10, 1990; Amdt. 29–40, 61 FR 21908, May 10, 1996]

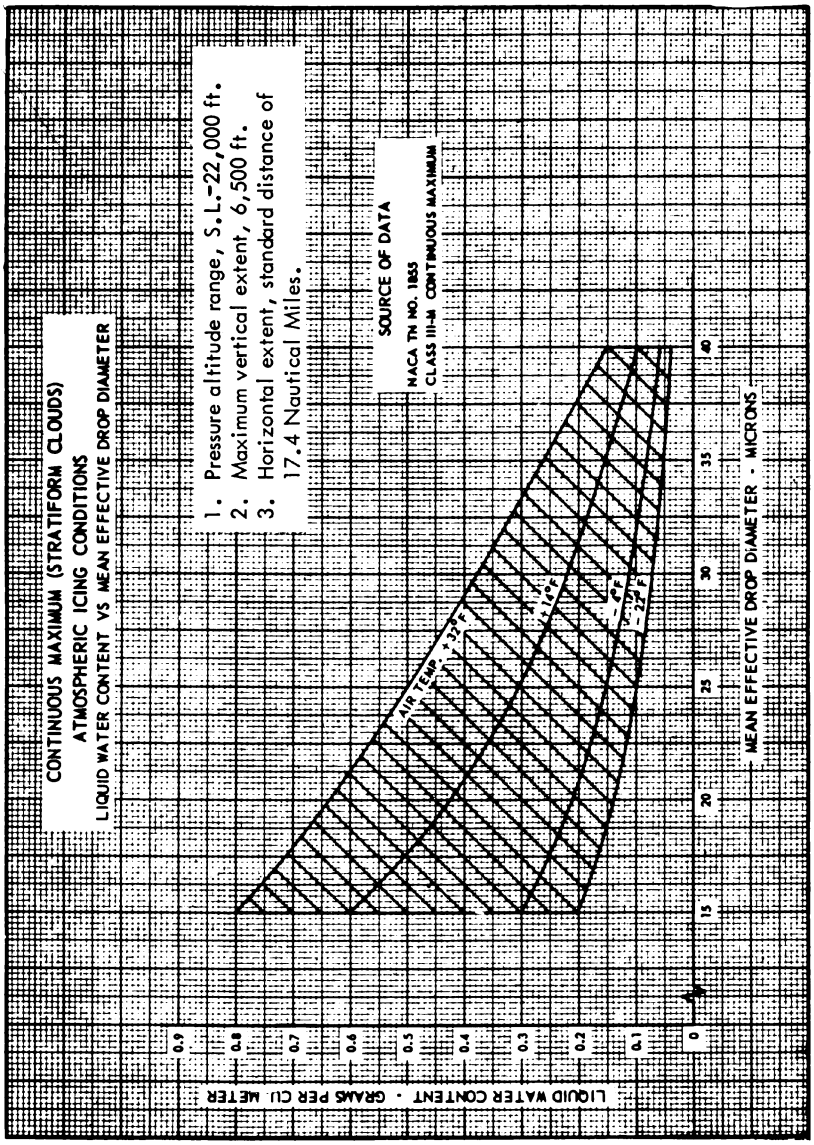
APPENDIX C TO PART 29—ICING CERTIFICATION

(a) *Continuous maximum icing*. The maximum continuous intensity of atmospheric icing conditions (continuous maximum icing) is defined by the variables of the cloud liquid water content, the mean effective diameter of the cloud droplets, the ambient air temperature, and the interrelationship of these three variables as shown in Figure 1 of this appendix. The limiting icing envelope in terms of altitude and temperature is given in Figure 2 of this appendix. The interrelationship of cloud liquid water content with drop diameter and altitude is determined from Figures 1 and 2. The cloud liquid water content for continuous maximum icing conditions of a horizontal extent, other than 17.4 nautical miles, is determined by the value of liquid water content of Figure 1, multiplied by the appropriate factor from Figure 3 of this appendix.

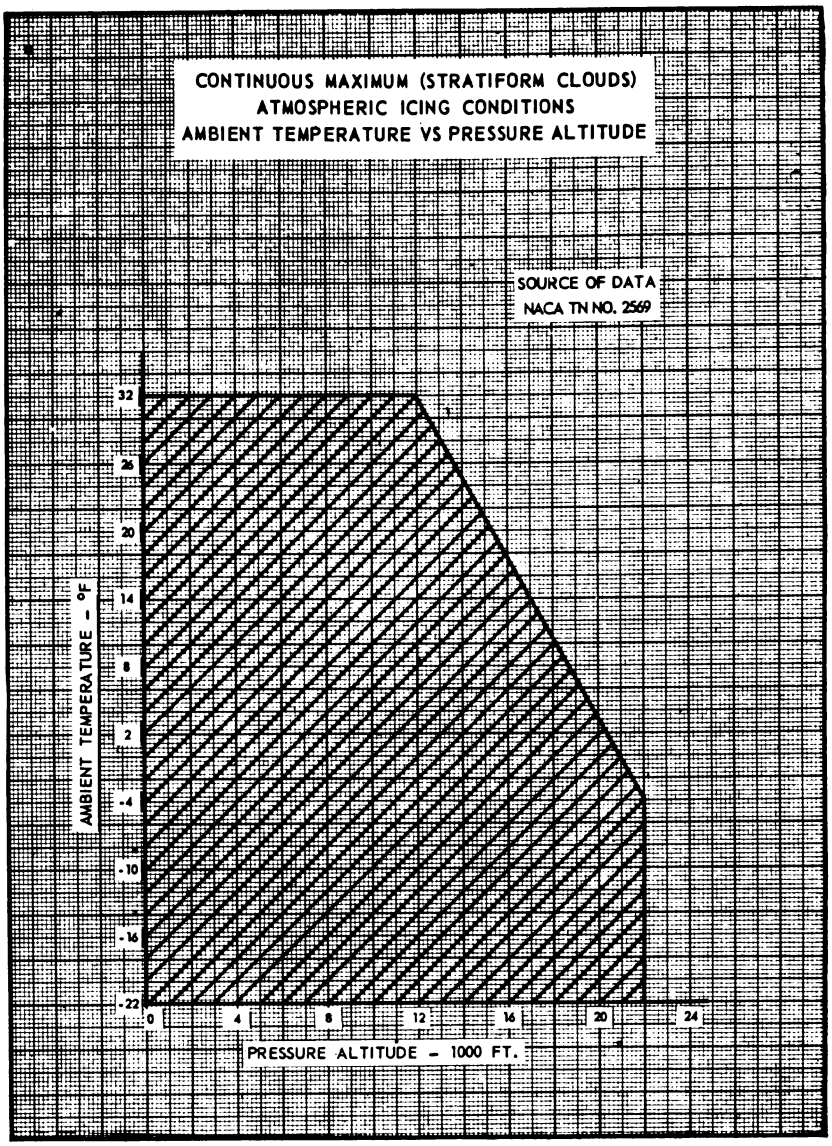
(b) *Intermittent maximum icing*. The intermittent maximum intensity of atmospheric icing conditions (intermittent maximum icing) is defined by the variables of the cloud liquid water content, the mean effective diameter of the cloud droplets, the ambient air temperature, and the interrelationship of these three variables as shown in Figure 4 of this appendix. The limiting icing envelope in terms of altitude and temperature is given in Figure 5 of this appendix. The interrelationship of cloud liquid water content with drop diameter and altitude is determined from Figures 4 and 5. The cloud liquid water content for intermittent maximum icing conditions of a horizontal extent, other than 2.6 nautical miles, is determined by the value of cloud liquid water content of Figure 4 multiplied by the appropriate factor in Figure 6 of this appendix.

APPENDIX C

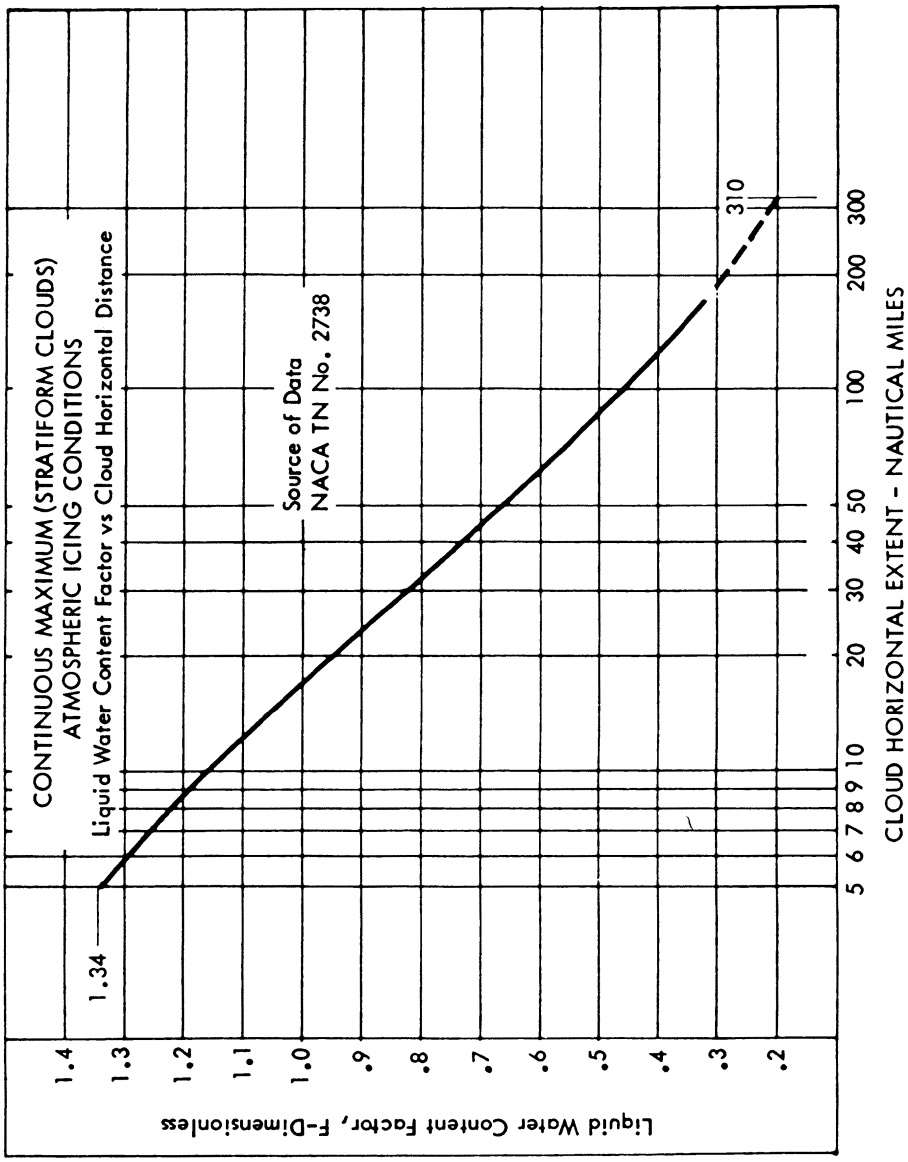
FIGURE 1



APPENDIX C
FIGURE 2

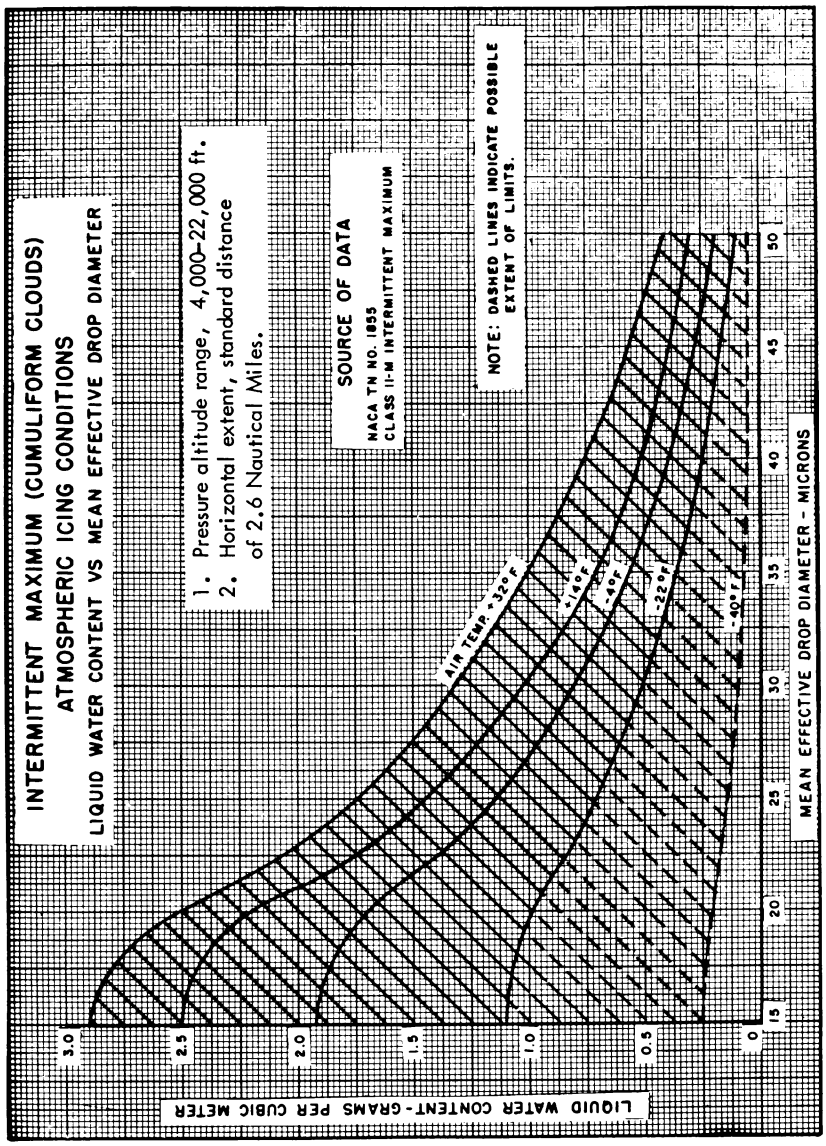


APPENDIX C
FIGURE 3

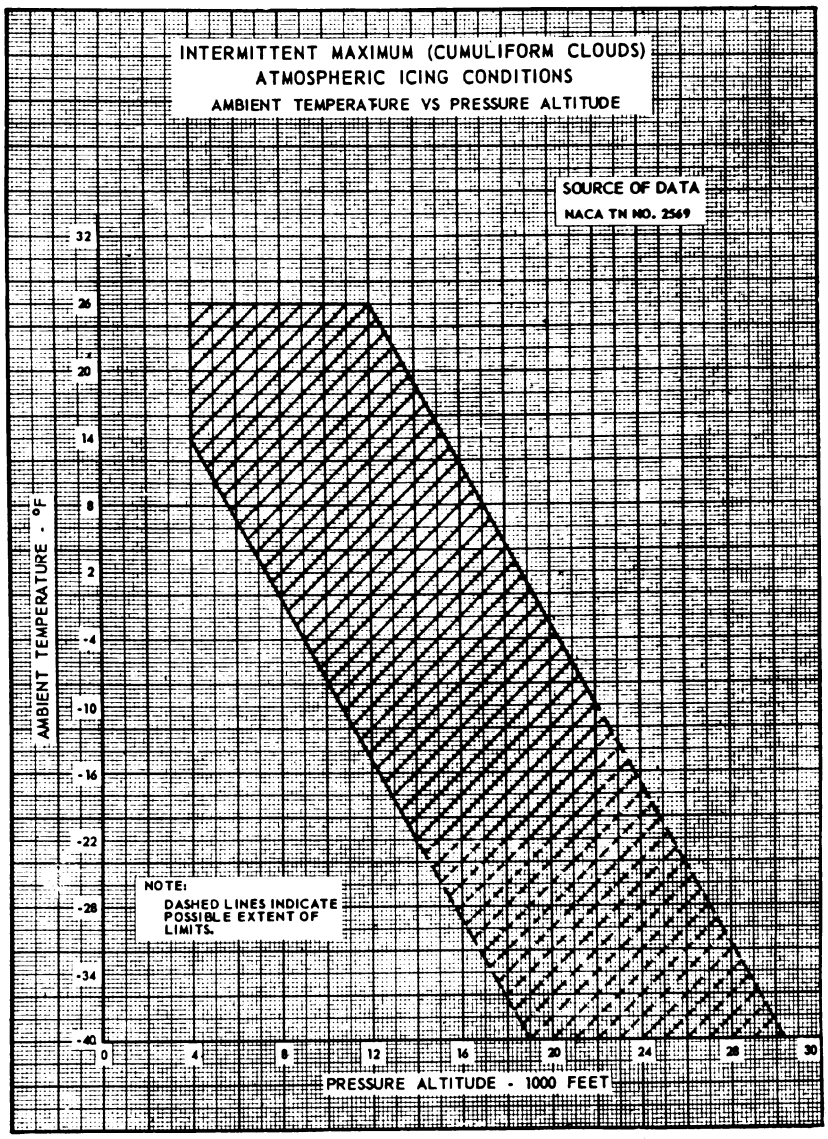


APPENDIX C

FIGURE 4

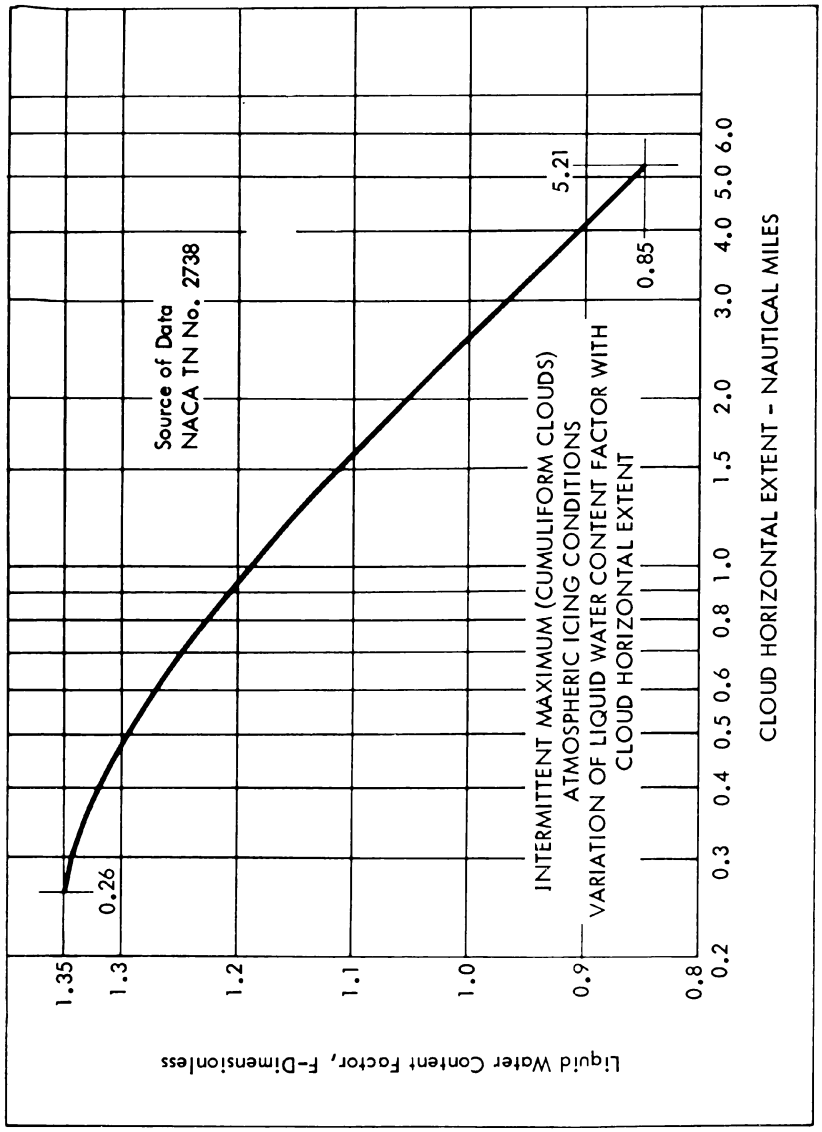


APPENDIX C
FIGURE 5



APPENDIX C

FIGURE 6



[Amdt. 29–21, 48 FR 4393, Jan. 31, 1983]

APPENDIX D TO PART 29—CRITERIA FOR DEMONSTRATION OF EMERGENCY EVACUATION PROCEDURES UNDER § 29.803

(a) The demonstration must be conducted either during the dark of the night or during daylight with the dark of night simulated. If the demonstration is conducted indoors during daylight hours, it must be conducted inside a darkened hangar having doors and windows covered. In addition, the doors and windows of the rotorcraft must be covered if the hangar illumination exceeds that of a moonless night. Illumination on the floor or ground may be used, but it must be kept low and shielded against shining into the rotorcraft's windows or doors.

(b) The rotorcraft must be in a normal attitude with landing gear extended.

(c) Safety equipment such as mats or inverted liferafts may be placed on the floor or ground to protect participants. No other equipment that is not part of the rotorcraft's emergency evacuation equipment may be used to aid the participants in reaching the ground.

(d) Except as provided in paragraph (a) of this appendix, only the rotorcraft's emergency lighting system may provide illumination.

(e) All emergency equipment required for the planned operation of the rotorcraft must be installed.

(f) Each external door and exit and each internal door or curtain must be in the takeoff configuration.

(g) Each crewmember must be seated in the normally assigned seat for takeoff and must remain in that seat until receiving the signal for commencement of the demonstration. For compliance with this section, each crewmember must be—

(1) A member of a regularly scheduled line crew; or

(2) A person having knowledge of the operation of exits and emergency equipment.

(h) A representative passenger load of persons in normal health must be used as follows:

(1) At least 25 percent must be over 50 years of age, with at least 40 percent of these being females.

(2) The remaining, 75 percent or less, must be 50 years of age or younger, with at least 30 percent of these being females.

(3) Three life-size dolls, not included as part of the total passenger load, must be carried by passengers to simulate live infants 2 years old or younger, except for a total passenger load of fewer than 44 but more than 19, one doll must be carried. A doll is not required for a 19 or fewer passenger load.

(4) Crewmembers, mechanics, and training personnel who maintain or operate the rotorcraft in the normal course of their duties may not be used as passengers.

(i) No passenger may be assigned a specific seat except as the Administrator may require. Except as required by paragraph (1) of this appendix, no employee of the applicant may be seated next to an emergency exit, except as allowed by the Administrator.

(j) Seat belts and shoulder harnesses (as required) must be fastened.

(k) Before the start of the demonstration, approximately one-half of the total average amount of carry-on baggage, blankets, pillows, and other similar articles must be distributed at several locations in the aisles and emergency exit access ways to create minor obstructions.

(l) No prior indication may be given to any crewmember or passenger of the particular exits to be used in the demonstration.

(m) The applicant may not practice, rehearse, or describe the demonstration for the participants nor may any participant have taken part in this type of demonstration within the preceding 6 months.

(n) A pretakeoff passenger briefing may be given. The passengers may also be advised to follow directions of crewmembers, but not be instructed on the procedures to be followed in the demonstration.

(o) If safety equipment, as allowed by paragraph (c) of this appendix, is provided, either all passenger and cockpit windows must be blacked out or all emergency exits must have safety equipment to prevent disclosure of the available emergency exits.

(p) Not more than 50 percent of the emergency exits in the sides of the fuselage of a rotorcraft that meet all of the requirements applicable to the required emergency exits for that rotorcraft may be used for demonstration. Exits that are not to be used for the demonstration must have the exit handle deactivated or must be indicated by red lights, red tape, or other acceptable means placed outside the exits to indicate fire or other reasons why they are unusable. The exits to be used must be representative of all the emergency exits on the rotorcraft and must be designated by the applicant, subject to approval by the Administrator. If installed, at least one floor level exit (Type I; § 29.807(a)(1)) must be used as required by § 29.807(c).

(q) All evacuees must leave the rotorcraft by a means provided as part of the rotorcraft's equipment.

(r) Approved procedures must be fully utilized during the demonstration.

(s) The evacuation time period is completed when the last occupant has evacuated the rotorcraft and is on the ground.

[Amdt. 27–26, 55 FR 8005, Mar. 6, 1990]

APPENDIX E TO PART 29–HIRF ENVIRONMENTS AND EQUIPMENT HIRF TEST LEVELS

This appendix specifies the HIRF environments and equipment HIRF test levels for electrical and electronic systems under §29.1317. The field strength values for the HIRF environments and laboratory equipment HIRF test levels are expressed in root-mean-square units measured during the peak of the modulation cycle.

(a) HIRF environment I is specified in the following table:

TABLE I.—HIRF ENVIRONMENT I

Frequency	Field strength (volts/meter)	
	Peak	Average
10 kHz–2 MHz	50	50
2 MHz–30 MHz	100	100
30 MHz–100 MHz	50	50
100 MHz–400 MHz	100	100
400 MHz–700 MHz	700	50
700 MHz–1 GHz	700	100
1 GHz–2 GHz	2,000	200
2 GHz–6 GHz	3,000	200
6 GHz–8 GHz	1,000	200
8 GHz–12 GHz	3,000	300
12 GHz–18 GHz	2,000	200
18 GHz–40 GHz	600	200

In this table, the higher field strength applies at the frequency band edges.

(b) HIRF environment II is specified in the following table:

TABLE II.—HIRF ENVIRONMENT II

Frequency	Field strength (volts/meter)	
	Peak	Average
10 kHz–500 kHz	20	20
500 kHz–2 MHz	30	30
2 MHz–30 MHz	100	100
30 MHz–100 MHz	10	10
100 MHz–200 MHz	30	10
200 MHz–400 MHz	10	10
400 MHz–1 GHz	700	40
1 GHz–2 GHz	1,300	160
2 GHz–4 GHz	3,000	120
4 GHz–6 GHz	3,000	160
6 GHz–8 GHz	400	170
8 GHz–12 GHz	1,230	230
12 GHz–18 GHz	730	190
18 GHz–40 GHz	600	150

In this table, the higher field strength applies at the frequency band edges.

(c) HIRF environment III is specified in the following table:

TABLE III.—HIRF ENVIRONMENT III

Frequency	Field strength (volts/meter)	
	Peak	Average
10 kHz–100 kHz	150	150
100 kHz–400 MHz	200	200
400 MHz–700 MHz	730	200
700 MHz–1 GHz	1,400	240
1 GHz–2 GHz	5,000	250
2 GHz–4 GHz	6,000	490
4 GHz–6 GHz	7,200	400
6 GHz–8 GHz	1,100	170
8 GHz–12 GHz	5,000	330
12 GHz–18 GHz	2,000	330
18 GHz–40 GHz	1,000	420

In this table, the higher field strength applies at the frequency band edges.

(d) *Equipment HIRF Test Level 1.*

(1) From 10 kilohertz (kHz) to 400 megahertz (MHz), use conducted susceptibility tests with continuous wave (CW) and 1 kHz square wave modulation with 90 percent depth or greater. The conducted susceptibility current must start at a minimum of 0.6 milliamperes (mA) at 10 kHz, increasing 20 decibel (dB) per frequency decade to a minimum of 30 mA at 500 kHz.

(2) From 500 kHz to 40 MHz, the conducted susceptibility current must be at least 30 mA.

(3) From 40 MHz to 400 MHz, use conducted susceptibility tests, starting at a minimum of 30 mA at 40 MHz, decreasing 20 dB per frequency decade to a minimum of 3 mA at 400 MHz.

(4) From 100 MHz to 400 MHz, use radiated susceptibility tests at a minimum of 20 volts per meter (V/m) peak with CW and 1 kHz square wave modulation with 90 percent depth or greater.

(5) From 400 MHz to 8 gigahertz (GHz), use radiated susceptibility tests at a minimum of 150 V/m peak with pulse modulation of 4 percent duty cycle with a 1 kHz pulse repetition frequency. This signal must be switched on and off at a rate of 1 Hz with a duty cycle of 50 percent.

(e) *Equipment HIRF Test Level 2.* Equipment HIRF test level 2 is HIRF environment II in table II of this appendix reduced by acceptable aircraft transfer function and attenuation curves. Testing must cover the frequency band of 10 kHz to 8 GHz.

(f) *Equipment HIRF Test Level 3.*

(1) From 10 kHz to 400 MHz, use conducted susceptibility tests, starting at a minimum of 0.15 mA at 10 kHz, increasing 20 dB per frequency decade to a minimum of 7.5 mA at 500 kHz.

(2) From 500 kHz to 40 MHz, use conducted susceptibility tests at a minimum of 7.5 mA.

(3) From 40 MHz to 400 MHz, use conducted susceptibility tests, starting at a minimum of 7.5 mA at 40 MHz, decreasing 20 dB per frequency decade to a minimum of 0.75 mA at 400 MHz.

(4) From 100 MHz to 8 GHz, use radiated susceptibility tests at a minimum of 5 V/m.

[Doc. No. FAA–2006–23657, 72 FR 44028, Aug. 6, 2007]

PART 31—AIRWORTHINESS STANDARDS: MANNED FREE BALLOONS

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31.83 Conspicuity.
31.85 Required basic equipment.
APPENDIX A TO PART 31—INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

AUTHORITY: 49 U.S.C. 106(g), 40113, 44701–44702, 44704.

SOURCE: Docket No. 1437, 29 FR 8258, July 1, 1964, as amended by Amdt. 31–1, 29 FR 14563, Oct. 24, 1964, unless otherwise noted.

Subpart A—General

§31.1 Applicability.

(a) This part prescribes airworthiness standards for the issue of type certificates and changes to those certificates, for manned free balloons.

(b) Each person who applies under Part 21 for such a certificate or change must show compliance with the applicable requirements of this part.

(c) For purposes of this part—

(1) A captive gas balloon is a balloon that derives its lift from a captive lighter-than-air gas;

(2) A hot air balloon is a balloon that derives its lift from heated air;

(3) The envelope is the enclosure in which the lifting means is contained;

(4) The basket is the container, suspended beneath the envelope, for the balloon occupants;

(5) The trapeze is a harness or is a seat consisting of a horizontal bar or platform suspended beneath the envelope for the balloon occupants; and

(6) The design maximum weight is the maximum total weight of the balloon, less the lifting gas or air.

[Doc. No. 1437, 29 FR 8258, July 1, 1964, as amended by Amdt. 31–3, 41 FR 55474, Dec. 20, 1976]

Subpart B—Flight Requirements

§31.12 Proof of compliance.

(a) Each requirement of this subpart must be met at each weight within the range of loading conditions for which certification is requested. This must be shown by—

(1) Tests upon a balloon of the type for which certification is requested or by calculations based on, and equal in accuracy to, the results of testing; and

(2) Systematic investigation of each weight if compliance cannot be reasonably inferred from the weights investigated.