normal operational practice for the configuration being tested. However, if the cooling provisions are sensitive to rotorcraft speed, the most critical airspeed must be used, but need not exceed the speeds established under § 29.67(a)(2) or § 29.67(b). The climb cooling test may be conducted in conjunction with the takeoff cooling test of § 29.1047.

[Doc. No. 5084, 29 FR 16150, Dec. 3, 1964, as amended by Amdt. 29–26, 53 FR 34218, Sept. 2, 1988]

§ 29.1047 Takeoff cooling test procedures.

(a) *Category A.* For each category A rotorcraft, cooling must be shown during takeoff and subsequent climb as follows:

(1) Each temperature must be stabilized while hovering in ground effect with—

(i) The power necessary for hovering;

(ii) The appropriate cowl flap and shutter settings; and

(iii) The maximum weight.

(2) After the temperatures have stabilized, a climb must be started at the lowest practicable altitude and must be conducted with one engine inoperative.

(3) The operating engines must be at the greatest power for which approval is sought (or at full throttle when above the critical altitude) for the same period as this power is used in determining the takeoff climbout path under § 29.59.

(4) At the end of the time interval prescribed in paragraph (b)(3) of this section, the power must be changed to that used in meeting § 29.67(a)(2) and the climb must be continued for—

(i) Thirty minutes, if 30-minute OEI power is used; or

(ii) At least 5 minutes after the occurrence of the highest temperature recorded, if continuous OEI power or maximum continuous power is used.

(5) The speeds must be those used in determining the takeoff flight path under § 29.59.

(b) *Category B.* For each category B rotorcraft, cooling must be shown during takeoff and subsequent climb as follows:

(1) Each temperature must be stabilized while hovering in ground effect with—

(i) The power necessary for hovering;

(ii) The appropriate cowl flap and shutter settings; and

(iii) The maximum weight.

(2) After the temperatures have stabilized, a climb must be started at the lowest practicable altitude with takeoff power.

(3) Takeoff power must be used for the same time interval as takeoff power is used in determining the takeoff flight path under § 29.63.

(4) At the end of the time interval prescribed in paragraph (a)(3) of this section, the power must be reduced to maximum continuous power and the climb must be continued for at least five minutes after the occurance of the highest temperature recorded.

(5) The cooling test must be conducted at an airspeed corresponding to normal operating practice for the configuration being tested. However, if the cooling provisions are sensitive to rotorcraft speed, the most critical airspeed must be used, but need not exceed the speed for best rate of climb with maximum continuous power.

[Doc. No. 5084, 29 FR 16150, Dec. 3, 1964, as amended by Amdt. 29–1, 30 FR 8778, July 13, 1965; Amdt. 29–26, 53 FR 34219, Sept. 2, 1988]

§ 29.1049 Hovering cooling test procedures.

The hovering cooling provisions must be shown—

(a) At maximum weight or at the greatest weight at which the rotorcraft can hover (if less), at sea level, with the power required to hover but not more than maximum continuous power, in the ground effect in still air, until at least five minutes after the occurrence of the highest temperature recorded; and

(b) With maximum continuous power, maximum weight, and at the altitude resulting in zero rate of climb for this configuration, until at least five minutes after the occurrence of the highest temperature recorded.

INDUCTION SYSTEM

§ 29.1091 Air induction.

(a) The air induction system for each engine and auxiliary power unit must supply the air required by that engine