(2) The ranges of these variables (or of the indications on instruments integrating more than one of these variables) are large enough to allow an operationally practical and safe variation of $V_{NE}$.

(c) For helicopters, a stabilized power-off $V_{NE}$ denoted as $V_{NE}$ (power-off) may be established at a speed less than $V_{NE}$ established pursuant to paragraph (a) of this section, if the following conditions are met:

(1) $V_{NE}$ (power-off) is not less than a speed midway between the power-on $V_{NE}$ and the speed used in meeting the requirements of—

(i) §27.65(b) for single engine helicopters; and

(ii) §27.67 for multiengine helicopters.

(2) $V_{NE}$ (power-off) is—

(i) A constant airspeed;

(ii) A constant amount less than power-on $V_{NE}$; or

(iii) A constant airspeed for a portion of the altitude range for which certification is requested, and a constant amount less than power-on $V_{NE}$ for the remainder of the altitude range.

(Sees. 313(a), 601, 603, 604, and 605 of the Federal Aviation Act of 1958 (49 U.S.C. 1354(a), 1421, 1423, 1424, and 1425); and sec. 6(c) of the Dept. of Transportation Act (49 U.S.C. 1655(c)))

[Amdt. 27–2, 33 FR 965, Jan. 26, 1968, as amended by Amdt. 27–21, 49 FR 44435, Nov. 6, 1984]

§27.1521 Powerplant limitations.

(a) General. The powerplant limitations prescribed in this section must be established so that they do not exceed the corresponding limits for which the engines are type certificated.

(b) Takeoff operation. The powerplant takeoff operation must be limited by—

(1) The maximum rotational speed, which may not be greater than—

(i) The maximum value determined by the rotor design; or

(ii) The maximum value shown during the type tests;

(2) The maximum allowable manifold pressure (for reciprocating engines);

(3) The time limit for the use of the power corresponding to the limitations established in paragraphs (b)(1) and (2) of this section;

(4) If the time limit in paragraph (b)(3) of this section exceeds two minutes, the maximum allowable cylinder head, coolant outlet, or oil temperatures;

(5) The gas temperature limits for turbine engines over the range of operating and atmospheric conditions for which certification is requested.

(c) Continuous operation. The continuous operation must be limited by—

(1) The maximum rotational speed which may not be greater than—

(i) The maximum value determined by the rotor design; or

(ii) The maximum value shown during the type tests;

(2) The minimum rotational speed shown under the rotor speed requirements in §27.1509(c); and

(3) The time limit for the use of the power corresponding to the limitations established in paragraphs (b)(1) and (2) of this section;