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Civil Air Regulations Amendment 15-2
Effective: July 1, 1942
Adopted: May 11, 1942

Part 15 of the Civil Air Regulations is amended as follows:

Strike section 15.104 and insert in lieu thereof the following:

"15.104 Brakes.

15.1040 Testing of brakes for certification. (a) A wheel-brake combination shall demonstrate satisfactory performance during 100 tests simulating the stopping of an airplane at an average deceleration of at least 10 feet per second per second, from a speed chosen by the applicant. The kinetic energy absorbed per stop shall be computed and the wheel-brake combination shall be certificated for a kinetic energy absorption not in excess of the amount so determined.

(b) To be eligible for use on airplanes certificated in accordance with the transport category requirements of Part 04, a wheel-brake combination shall further demonstrate satisfactory performance during three tests identical with those specified in paragraph (a) except that the speed shall be increased to obtain a kinetic energy absorption 125% of that determined under that paragraph.

15.1041-T Adaptation of brakes to airplanes - Transport category.

(a) An airplane certificated in accordance with the transport category requirements of Part 04 shall make use of wheel-brake combinations for which the summation of the kinetic energy ratings of the brakes used in the main landing gear is at least equal to:

$$K.\ E. = .0334\ W\ V_s^2$$

where: K. E. = kinetic energy in foot-pounds.

W = the maximum landing weight of the airplane.

$V_s$ = the power off stalling speed of the airplane in miles per hour at sea level in standard air at maximum landing weight.

(b) The wheel-brake combinations used in such airplane shall have been tested, in determining the kinetic energy absorption under § 15.1040, from a speed lying between 80% and 100% of $V_s$.

15.1042 Design. Brakes shall be free from any undue tendency to lock or jam, and shall be suitably shielded from water, mud, and oil.

15.1043 Static torque. The maximum available static torque in reverse shall be at least 40% of the forward static torque when both are measured at the same applied pedal force.

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15.1044 Adjustment. When necessary to insure satisfactory performance, the brake mechanism shall be equipped with suitable adjustment devices to compensate for disc or lining wear, heat, and other normal service effects.

15.1045 Strength. The brake and all of its attachments to the wheel shall be designed with an ultimate strength sufficient to withstand a torque which is 1.6WR/B, where R is the rolling radius of the tire and B is the number of brakes. A static test of the brake and wheel shall demonstrate that the assembly is capable of withstanding a torque which is 80% of the above without yielding to the point of impairing service operation.

15.1046 Test log. A log of the test runs shall be submitted together with other calculations which are necessary to indicate compliance with the above brake regulations.

15.1047 Identification data. Each certificated brake shall bear the following identification as prescribed in section 15.042(e): The foot-pounds of kinetic energy for which it is approved."

By the Civil Aeronautics Board:

/s/ *Darwin Charles Brown*

Darwin Charles Brown
Secretary

( S E A L )

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