UNITED STATES OF AMERICA
CIVIL AERONAUTICS BOARD
WASHINGTON, D. C.

Civil Air Regulations Amendment 29-2
Effective: March 20, 1951
Adopted: February 13, 1951

COLOR VISION, NEAR VISION, AND BLOOD PRESSURE REQUIREMENTS FOR AIRMEN

Part 29 currently establishes physical standards of the first, second, and third class. One of the first-class standards, which are currently required to be met only by applicants for airline transport pilot ratings, is that the individual shall have normal color vision. Applicants required to meet the second-class standards are required to have "normal fields of vision," which has been interpreted as requiring those applicants to have normal color vision. Commercial pilots, flight navigators, and flight engineers are currently required by Parts 20, 22, 34, and 35 to meet the second-class physical standards. The third-class physical standards, currently required by Parts 20, 22, and 33, respectively, to be met by student and private pilots, free balloon pilots, and flight radio operators, include no color vision requirements.

The amendments now being promulgated require individuals being examined in accordance with the second and third-class medical standards to recognize aviation signal red, aviation signal green, and white. They become applicable to current holders of airman certificates at the time they apply for renewal of their medical authorizations. In the event that such an individual is unable to distinguish those aviation colors, he is required to demonstrate to an authorized representative of the Administrator his ability to interpret such signals under conditions usually encountered by an airman. If the individual can pass such a practical examination, he will be issued a waiver and will then become eligible for the issuance of an airman certificate. It is anticipated that this color vision examination will be administered by the physician conducting the physical examination. However, if the physician does not have the equipment to conduct this test, it is also anticipated that the Administrator will provide a means whereby such individual can take the aviation signal color test. In these latter instances it is believed that the test can be administered without requiring the individual to incur the expense of accomplishing a flight test to determine his ability to distinguish aviation colors. Only where the individual cannot distinguish such colors should he be required to undergo a flight test. Then, if he can accomplish the flight test, he will be issued a waiver. In each case of the issuance of a waiver based upon the practical examination, the individual will not thereafter be required to retake that examination.

When the individual cannot meet the proposed color vision requirements, including the practical examination, he can be issued an airman certificate, but such certificate will be appropriately endorsed to prohibit the exercise of the privileges authorized by the airman certificate except under conditions, or with the use of equipment, such as two-way radio, which would not require the ability to distinguish aviation signal colors.

For example, a pilot who is unable to meet the color vision requirements in any way may be authorized to fly only with two-way radio communications available or under conditions where aviation lights would not be used for communication.

It will be noted that Annex 1 to the Convention on International Civil Aviation contains medical recommended practices which provide that the above-mentioned airmen be able to distinguish aviation signal red, aviation signal green, and white.

In addition, the near vision requirements of Part 29 are being amended to establish the use of correcting lenses as an alternate to meeting requirements by natural vision. This will permit an individual to meet the first-class physical standards without issuance of a formal waiver as is currently the case.

Part 29, § 29.2 (c) (2), prescribes that reclining blood pressure shall not exceed 135 mm. systolic, nor 90 mm. diastolic, for the first-class physical standard which at present applicants for airline transport pilot ratings are required to meet. The amendment hereby adopted eliminates this general restriction and establishes instead specific limitations based upon age, with limited adjustments where the results of a complete cardiovascular examination are shown to be normal.

The new limitations give recognition to the normal tendency of blood pressure to increase with age, and, in their operation, would allow the pressure readings of an applicant to be slightly above the limits set for his age if, in effect, examination shows no evidence of heart disease. It is believed that this change in the regulation would, consistent with safety, permit trained personnel to fly at advanced ages with more effective utilization of their experience, and would afford more meaningful data for research and statistical purposes.

Interested persons have been afforded an opportunity to participate in the making of this amendment, and due consideration has been given to all relevant matter presented.

In consideration of the foregoing the Civil Aeronautics Board hereby amends Part 29 of the Civil Air Regulations (14 CFR, Part 29, as amended), effective March 20, 1951:

1. By amending § 29.2 (a) (9) to read as follows:

29.2 First class. * * *

(a) Eye. * * *

(9) Near vision of at least v = 1.00 at 18 inches with each eye separately without the use of correcting lenses: Provided, That if near vision in either or both eyes is poorer than v = 1.00 at 18 inches the applicant shall possess the necessary correcting lenses.

2. By amending § 29.2 (c) (2) to read as follows:

29.2 First class. * * *

(c) General physical condition. * * *

(2) Unless the adjusted maximum readings apply, applicant's reclining blood pressure shall not exceed the maximum readings for his age group, as indicated in the table below. The adjusted maximum readings shall apply to any applicant, age 30 years or more, whose reclining blood pressure exceeds the maximum readings for his age group and whose cardiac and kidney conditions, after complete cardiovascular examination, are shown to be normal.

Age group	Maximum readings (reclining blood pressure in mm.)		Adjusted maximum readings (reclining blood pressure in mm.)	
	Systolic	Diastolic	Systolic	Diastolic
20-29 ----------	140	88	.....	.....
30-39 ----------	145	92	155	98
40-49 ----------	155	96	165	100
50 and over -----	160	98	170	100

3. By adding a new § 29.3 (a) (9) to read as follows:

29.3 Second class.

(a) Eye. * * *

(9) The ability to distinguish aviation signal red, aviation signal green, and white.

4. By adding a new § 29.4 (a) (3) to read as follows:

29.4 Third class.

(a) Eye. * * *

(3) The ability to distinguish aviation signal red, aviation signal green, and white.

5. By amending § 29.5 to read as follows:

29.5 Waiver of physical standards.

(a) An airman certificate shall be issued to an applicant who

does not meet the appropriate physical standards if the Administrator finds that the applicant's operational record, ability, and judgment as an airman compensate for his physical deficiency and he meets all other requirements for the issuance of said certificate. Such certificate may be limited as to type of operation, type of aircraft, or period of re-examination.

(b) Where the Administrator's finding regarding an individual's ability and judgment as an airman is based upon a practical test, that individual will not be required to retake such practical test during subsequent physical examinations unless, in the opinion of the Administrator, the individual's physical deficiency has become more pronounced.

(Sec. 205 (a), 52 Stat. 984; 49 U.S.C. 425 (a). Interpret or apply secs. 601, 602, 52 Stat. 1007, 1008, 62 Stat. 1216; 49 U.S.C. 551, 552, Act of July 1, 1948)

By the Civil Aeronautics Board:

/s/ M. C. Mulligan

M. C. Mulligan
Secretary

(SEAL)

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