SEPTEMBER 1992

They're different…but the same (Armstrong Laboratory, Brooks Air Force Base, TX): "Historically, women have demonstrated the capacity to be successful aviators. A review of the scientific literature between 1966 and 1991 pertinent to the role of women in military aviation revealed only minor differences of questionable operational significance between men and women. Women may be more susceptible to motion sickness, radiation, and decompression sickness than men, but may be more resistant to cold water immersion and altitude sickness. Although men are on the average, larger, stronger, and more aerobically fit than women, there are large variations within each sex and a large overlap between the sexes. Gender differences in work performance, G tolerance, heat stress, and injury rate disappear when allowance is made for size, strength, and fitness. Aeromedical selection criteria can, thus, address individual characteristics without reference to gender. The possibility of fetal damage in the early stages of pregnancy (before diagnosis) appears to be perhaps the biggest single medical concern in allowing women access to all aviation and space careers."[3]

SEPTEMBER 1967

The flight surgeon's role in aircraft maintenance (Life Sciences Division, Assistant for Medical Services, Deputy Inspector General for Inspection and Safety, USAF, Norton Air Force Base, CA): "While the aeromedical fraternity has been concerned with and has contributed measurably to the decline in pilot error accidents during the last decade, lesser concern has been directed toward another important source of human errors, namely those committed at all levels of maintenance and servicing. This study presents the historical trends of Air Force accidents for the past 15 years and documents the increasing importance of the maintenance/material area. Because of their higher performance and lesser degree of redundant reliability caused by fewer engines, fighter aircraft are particularly susceptible to maintenance and servicing errors. Evaluation of these errors indicates that they involve all echelons of maintenance and involve a great variety of specific omissions or faulty commissions. The flight surgeon and his associates must place additional emphasis on the problems of the maintenance man, to insure that his capabilities are brought fully to bear. An aircrew effectiveness program can never be totally effective if aircraft are not mechanically reliable and if pilots lack confidence in their aircraft."[1]

SEPTEMBER 1942

Color vision and testing in aviation (Chief, Physical Standards Section, Aviation Medical Division, Civil Aeronautics Administration, Washington, DC): "In any event, the testing of color vision by the use of pigmented objects is only as reliable as is the purity of the pigments used for the hue under consideration and the intelligent application of the fundamentals of color vision testing by the examiner. In the hands of a thoughtless examiner, color vision testing closely approaches a waste of time.

"In the Medical Division, we have come to regard the Holmgren yarns (Set No. 70) as the basic one of our color vision tests. If an examiner is planning to purchase one test only, this test is recommended notwithstanding the fact that some authors condemn it severely. If an additional test is desired, the Ishihara, if available, is a quick and fairly reliable one…

"Tests with the Stillings, The American Optical Plates, or the Jennings self-recording test are also acceptable. The Williams lantern test, we consider only as a supplementary one. In every case, the promptness or degree of hesitancy should be noted and recorded.

"In conclusion, I wish to say that in Civilian Pilot Training examinations we follow in general the policies delineated by the Armed forces, being conservative in our judgments, and making a minimum of allowances for color vision defects, for we have no way of knowing how subsequent examiners will regard these individuals.

"As for the Civil airman, since recognition of dominant colors only is required for the Commercial Class of airmen, the line of demarcation is not so very definite. I believe it safe to say that the persons who first proposed this requirement had never made a critical study of color and color vision.

"We consider as dominant colors, red, green, yellow, blue and brown. Inasmuch as yellow-blue blind persons are very rare and since further, these are also defective in their appreciation of other colors, yellow and blue may be generally disregarded. Brown, containing more or less red, may be considered when testing the sensitivity to that color. Confusion of tans with greens is of especial significance. Very pale tints and especially dark shades may be disregarded in evaluating the capabilities of Commercial and Airline Transport grades. Traffic Control-Tower Operators on the other hand have need of ocular functions that are practically unimpaired in any way."[2]

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