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## **THE CENTENNIAL ANNIVERSARY OF THE USAF SCHOOL OF AEROSPACE MEDICINE AND THE HISTORY OF 100 YEARS OF US ARMY/USAF AVIATION COLOR VISION TESTING**

*L'ANNIVERSAIRE DU CENTENAIRE DE L'ÉCOLE DE MÉDECINE AÉROSPATIALE DE L'USAF ET L'HISTOIRE DES 100 ANS DE L'ESSAI DE VISION DES COULEURS DE L'AVIATION DE L'ARMÉE AMÉRICAINE ET DE L'USAF*

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Introduction: One hundred years ago, the U.S. Army Air Service (USAAS) formally chartered the Medical Research Laboratory that became today's United States Air Force School of Aerospace Medicine. 100 years ago, the USAAS attempted to quantify vision standards. Dr. William H. Wilmer, Commander of Air Service Medical Research Laboratories at Issoudon, France wrote, "We consider that (color vision) is most important for the aviator to be able to recognize colors rapidly in (all light conditions) including reduced light and fog." Every US service has historically identified the requirement for "color normal" or "color safe," depending on the time frame, but the methods to test human color vision have changed dramatically over the past 100 years due to technology, wars, politics, the internet and the requirement for increased reliability of color testing.

Background: Testing for color vision in the USAAS in 1918 was by Holmgren wool test, perforated cardboard with red/green confusion colors, lanterns, colored lights and simple color plates. Over the next 100 years color vision testing by the US Military varied from the simple yarn tests, pseudochromatic "lines of confusion" plates (PIP-until they were declared "foreign" after the start of WWII), US Army threshold test, FALANT lights, back to PIP tests then to modern digital threshold testing.

Summary: The history of each of the color test used historically by the USAAS, US Army Air Corps and the US Air Force will be reviewed with their good and bad points, and why the tests were replaced or remained. Finally, the USAF Operational Vision Assessment Laboratory current color vision test, the CCT-HD, which is one of the most reliable color vision test on the market today, will be reviewed in testing 2000 USAF pilot candidate applicants at USAFSAM over the past two years and the USAF decision changing the color standard from color normal to color safe will be discussed.