



A CAP Aerospace Education Moment

Did you know?

If you walk into the World War II gallery at the Smithsonian's Air & Space museum, the first thing that impresses you is an awesome painting on the far wall of a B-17 heading toward you. It looks as though it might hit you or slice you to bits with its spinning props. The mural, 25 feet high by 75 feet wide, was painted by renowned aviation artist, Keith Ferris.

As a young child, Keith loved to draw airplanes. He had plenty of opportunity because his father, Lt Carlisle Ferris was a flight instructor at Kelly Field, Texas where he taught advanced fighter skills in Boeing P-12s (single-seat, open-cockpit biplanes). The "P" was for pursuit which was what fighter planes were called in the old days. The kids who were Keith's playmates lived on the same street, across from the flight line and their fathers were also flight instructors. It is easy to see why Keith expected to be like one of the flight students when he grew up. Meanwhile, he continued to draw airplanes and built models.

When Ferris grew up, he went to Texas A&M to study aeronautical engineering and hoped to get an Air Force commission through ROTC. At the end of his first year, he decided to speed up matters by joining the Flying Cadet Program, but learned he was allergic to albumin, an ingredient of the shots given to military personnel. He had a summer job at the Air Force Training Publications Unit, did one more semester of engineering school, and went back to the job. In the art department, met free-lance commercial artists, handled their illustrations and learned about all the highly skilled craftsmen who contribute to putting the writer's words and the artist's pictures onto the printed page. His supervisor encouraged him and gave him much useful advice. He went to art school to learn figure drawing and anatomy, took a pre-press job at an offset printing plant; then went to a commercial art studio. Determined to have a free-lance career, Ferris moved near New York because the magazines and advertising agencies were located there. He joined the Society of Illustrators where he could hang out with the best professional illustrators, but the biggest perk was the US Air Force Art Program. The Air Force made an arrangement with the Society to immerse selected artists in the Air Force mission. They make sketches, take photos and then return to their studios to make a painting which they donate to the USAF Art Collection. These pictures hang in the Pentagon and at Air Force bases around the country. Any artist one speaks with who has participated in the program was thrilled about it. Ferris, himself, has donated 62 paintings and had been the AF Art Chairman at the Society for 18 years. Keith Ferris was inducted into The National Aviation Hall of Fame in 2012.

Now back to the mural. Ferris decided that the nose of the B-17 should be exactly touching the wall. He made a drawing $1/12^{\text{th}}$ the size of the intended mural using descriptive geometry from available 3-view drawings. This is something like drawing a house in perspective from a ground plan and elevations, but much, much more complicated. He transferred the drawing to a piece of masonite that was 25" high by 75" wide and drew a grid of one inch squares up to, but not over the airplane drawing. He had 25 mm slides made of 6" x 9" sections of the masonite which would be carefully projected to the wall so the grid lines would exactly match up with a 12" x 12" grid chalked on the wall enabling the drawing to be drawn accurately on the wall in charcoal. He painted the masonite as a guide for the colors he would use on the wall. Another thing about Ferris' method of working; he uses only red, yellow, blue, and white paint and gets all the other colors, including black, by mixing combinations of these!