

Hand spliced and wrapped aircraft cable brace the American Eagle's wings - virtually a lost art today.

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the near blasphemy of comparing his American Eagle favorably with his Travel Air 2000 - which is generally considered to be the standard for pleasant flying qualities among the biplanes of the '20s. The extra power is a big plus, reflected largely in increased rate of climb. It gets off in about 150 feet, cruises at an as-yet-uncalibrated 110 mph indicated at 1650 rpm, has a very docile stall and lands with a ground roll of no more than 150 to 200 feet.

"So far, I love it," Dean told me at Lakeland in March . . . and there's little you can add to that.

Dean Tilton is a native of Sidney, Maine, living there until, at 21, he marched off to service in World War II. An Air Corps pilot, he progressed through the Stearman, AT-6 and was at a base at Waycross, GA awaiting transition into the P-51 when the war . . . and his military flying career . . . ended. After his discharge, Dean married and settled in his wife's home state of Nebraska. He became a general contractor and toughed out the Great Plains winters for 12 years before finally moving his family and business to Lakeland in 1952. Over the years he and his wife, who is also a licensed pilot, have owned a number of lightplanes, mostly Cessna 210s. Dean loves his antiques but his wife is partial to high performance retractables - "the faster the better," he says.

As soon as he gets the paperwork sorted out to get the American Eagle back in Standard Category, Dean will begin work on the Arrow Sport, a trim little side-by-side, taper winged, open cockpit biplane that will have a 100 horse Kinner on the nose. Maybe we'll have a Part Three of Dean Tilton's antique airplane adventures here one of these days.



Dean Tilton's

# Ant Eater Eagle

ARTICLE AND PHOTOS BY JACK COX

**I**N THE APRIL 1978 issue of *SPORT AVIATION* I had the pleasure of writing an article on Dean Tilton and his brand new Travel Air 2000 restoration. He had won the Antique Grand Champion award at Sun 'N Fun in January (remember when?) and my article would be but the first of many accolades and awards he would receive for his beautiful old OX-5 powered antique. Dean is a resident of Lakeland, FL and has a hangar just across the airport from the Sun 'N Fun site, so I get to renew my acquaintance every March during the fly-in . . . with both Dean and his "Wichita Fokker."

This year he had **two** Golden Oldies at Sun 'N Fun to quicken the pulses of us antique lovers - the Travel Air, which looks as good as ever, and a 1928 American Eagle so freshly out of his shop that you could still smell the paint solvents evaporating. In 1978, Dean had test flown his Travel Air just 13 days before the opening of that year's Sun 'N Fun fly-in, and this year he cut the margin even closer with the Eagle - just 10 days.

His "new" antique is a 1928 American Eagle A-1 (or 101) that he has converted to the A-129 configuration. For you history buffs, American Eagle was a Kansas City outfit headed by E. E. Porterfield, Jr. that jumped into the lightplane business in December of 1925. The first product it brought to the marketplace was a 3-place, open cockpit, OX-5 powered biplane, the prototype of which was test flown on April 9, 1926. Certified by the forerunner of the FAA on November 9 of the following year as the Model

A-1, it was available with the OX-5 as standard equipment, but other water cooled V-8 engines such as the dual ignition OXX-6 and the Hispano-Suiza (or "Hisso"), plus a number of small air cooled radials . . . the French Anzani, the German Siemens (imported at the time by T. Claude Ryan) and the obscure Quick . . . were optional-at-extra-cost choices. Most American Eagles rolled out of the factory door with OX-5s on their noses, however - not because it was the most reliable engine around, but because it was dirt cheap. World War I surplus, OX-5s were plentiful for about 10 years and often at salvage prices.

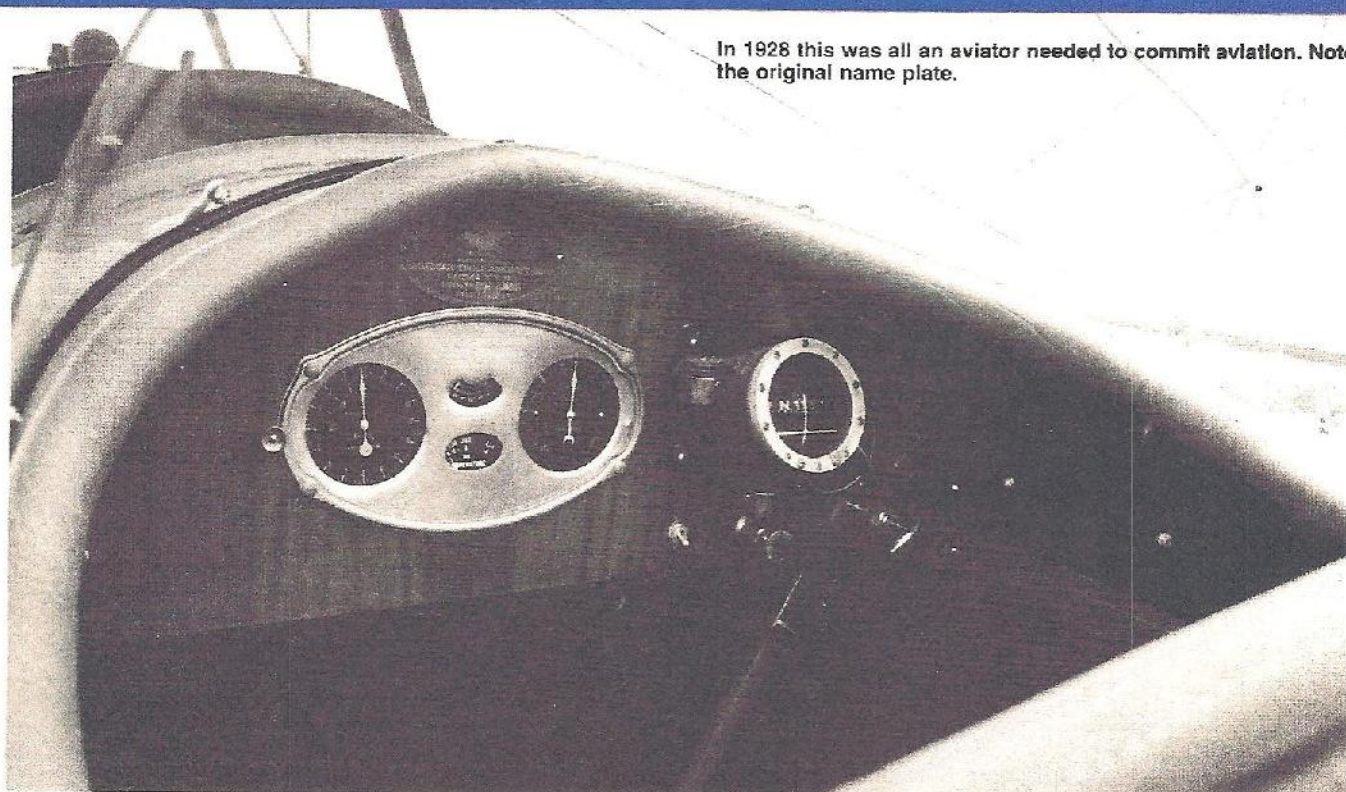
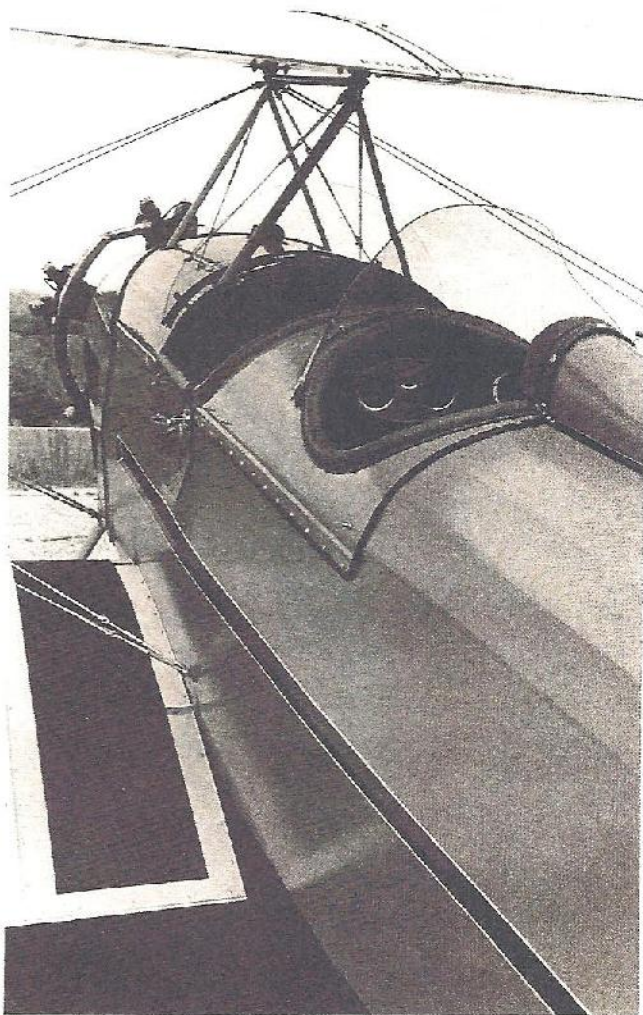
By the late 20s, however, the OX-5s began to be used up and the manufacturers were forced to begin shopping around for a replacement. The new engines, mostly radials, were quite expensive and thus hard to sell - a particularly bad situation after the stock market crash in 1929. The closest thing to a substitute for the already venerable OX-5 was a 5 cylinder radial built by W. Bert Kinner's engine works out in Glendale, CA. The Kinner K-5 could churn out 100 hp at 1810 rpm, which was fairly comparable to the OX-5's 90 hp at 1400 rpm (the OX swung a bigger, more efficient prop). The problem was that it has a dry weight of 280 pounds, as compared to the OX's 320 . . . and an even greater disparity when the latter's radiator, hoses and the coolant, itself, were factored into the weight and balance equation. The result was that American Eagle engineers had to cantilever the Kinner out an inordinate distance in front of where an OX-5

normally lurked. The change was great enough that the Department of Commerce made American Eagle recertify the airplane as the Model A-129, with ATC #124 being issued in March of 1929.

The Kinner Eagle got mixed reviews in the marketplace. It was no powerhouse and some thought that it was tail heavy, despite its long nose. Most, however, just looked at the airplane and smiled . . . or guffawed. The airplane was quickly tabbed the "Ant Eater Eagle" . . . and thus it will ever be as long as mankind remembers things that flew on wings of wood and wire.

The American Eagle A-1s and A-129s were built over a period of about 3½ years, 1927 to 1930, and evolved quite a bit in detail design over the years. Essentially the same airframe throughout the production run, even though it involved 2 type certificates and a number of different engine installations, the American Eagle went from an equal span biplane with "balanced horn" ailerons on the upper wings, a balanced rudder, cable controls and a spreader bar gear in 1926-27 to an outwardly similar variation in '27-'28 with push-pull tube actuated ailerons (without the "horns"), a split axle, shock cord gear, new cowl and rudder shape, streamline headrest and Spirit of St. Louis-like machine turned swirls on the sheet metal cowling. Late in 1928, the company introduced the 1929 American Eagle which featured four ailerons and, again, a slightly altered rudder profile. This airframe with the Kinner K-5 was certified as the A-129 in March of 1929. Include the fact that a lot of OX-5 American Eagles were brought back to the factory in Kansas City and upgraded to A-129 status with the retrofit of a Kinner engine and you begin to see the problem of separating the various Eagle mutations. The factory obviously expended little effort on nomenclature. They simply put ads in **Aero Digest** and the other magazines of the day introducing their "improved 1928 (or '29 or '30) Eagles" and got on with the **really** important task at hand - sales! They did well, too, rising to 3rd place for a time, behind Waco and Travel Air.

Dean's American Eagle is a 1928 4-aileron model that



In 1928 this was all an aviator needed to commit aviation. Note the original name plate.



apparently left the factory powered by an OX-5. The original bill of sale, a copy of which Dean has with the airplane's papers, shows the first owner to have been one O. L. Loughhead, Jr. of Kansas City. The date was June 28, 1928 and it was signed by E. E. Porterfield, himself. Mr. Loughhead (apparently no relation to the Loughheads of California who had been manufacturing airplanes since 1912 using the phonetic spelling of their Scotch-Irish name, "Lockheed") owned the Eagle for 3 years, selling it to Pete Scrayk of Emporia, KS on April 22, 1931.

It was sold the third time on June 29, 1934 to David M. Reid of Lebo, KS, who must have liked the ol' bird because he hung onto it for 21 years. The fourth owner was none other than Shelby Hagberg, then of Mapleton, IA. Shelby was one of the earliest collectors of antique airplanes . . . and after purchasing the Eagle on October 4, 1955 he, in turn, sold it the following December 7 to another pioneer of the vintage airplane hobby, Louis "Andy" Anderson of Mansfield, MO. Andy, who is a real lover of American Eagles and has owned a number of them, was involved with the Wings and Wheels museum in Santee, SC and later at Orlando, FL. Much of his tremendous collection of antiques was merged with those of the museum, with title to the Eagle being transferred to Wings and Wheels owner Dolph Overton on May 4, 1981.

The following year, when the big Wings and Wheels auction was held, Dean joined the bidding for the Eagle . . . which by this time was little more than a bare fuselage, some bent up tail feathers and very questionable wing panels. There was no engine or usable landing gear. During the auction, Dean noticed his chief competitor was a fellow antique restorer, Jim Kimball of nearby Tangerine, FL, so he promptly dropped out of the bidding in deference to his friend. Sometime later, Dean told Jim that if he ever decided to sell the American Eagle to give him a crack at it.

It didn't take long. Within weeks, Jim called and of-  
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fered to sell. Dean said he had a deal if he would throw in an Arrow Sport that had also been a part of the old Wings and Wheels collection. Jim was agreeable so, shortly, Dean was the proud owner of two rare antique basket cases.

He went to work on the American Eagle airframe immediately - right after Sun 'N Fun '82 - and really had his work cut out for him. The fuselage was sandblasted, repaired as necessary, the tubes were treated internally with linsseed oil and were given an external coat of epoxy paint. New landing gears were fabricated, as were new tail struts and wires (the American Eagle used braided cable rather than tie rods for most of its external bracing). A new turtle deck, baggage compartment, seats and sundry other parts and components were manufactured by Dean to bring the old bird up to snuff.

Then there was the matter of the engine. From our earlier recounting of American Eagle chronology, you know that Dean had a variety of ways to go in powering his American Eagle. The most logical (and readily available) choices were either the OX-5 or the Kinner. He decided upon a Kinner, but not the 100 hp K-5 certified for the A-129. Truman Miller, prominent in the OX-5 Club, was grateful for many favors Dean had accorded the group over the years, so he **donated** a 160 hp Kinner R-5 to the project. It had been on display in the Raleigh-Durham, NC airport terminal since being taken out of a Timm in 1946 . . . with only 26 hours TT!

The Kinner, a R-5, Series 2, is virtually identical in outside dimensions with the earlier K-5, but packs a greater punch due to a larger displacement, 540 cubic inches versus the K-5's 372. Unfortunately, it is also heavier at 325 pounds (dry) than the K-5's 280.

The R-5 cranks out its 160 horsepower at 1850 rpm. It has a 5.5 to 1 compression ratio and was certified to operate on 73 octane . . . which was largely lead free in 1935 when the Department of Commerce put its stamp of approval on the engine. (I mention these facts in passing to

prick the consciences of those in government and industry who still claim that it is O.K. to operate such an engine on 100 Low Lead.)

Ole Fahlin made the prop on special order, and Dean made up the stainless collector ring and had a friend heliarc it. He made up new cowlings (except for the louvered panels which were farmed out to a metal shop) and fabricated a new stainless fuel tank. The original tank had a filler neck and cap from Henry Ford's Model T parts bin, so Dean used both, plus the original fuel gage, in making up the new tank.

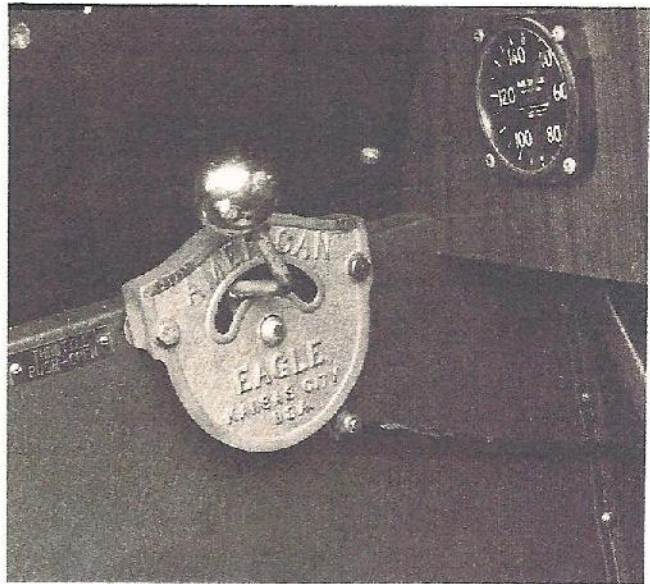
The original instrument panel for the rear cockpit came with the airplane but was in pretty rough shape. Dean reworked it and reinstalled the old Jones and Pioneer instruments and the original sticks and throttle quadrants were cleaned up and reinstalled. The compass came out of the front cockpit of Dean's Travel Air. It had been given to him by a friend and just had to go into the Eagle, he felt. He is not certain whether the airplane came equipped with a compass from the factory. The instrument panel did not have a hole for one.

The big project was the wings. Dean was able to salvage the fittings, the old hand spliced and wrapped flying and landing wires and the spars. The rest - ribs, leading and trailing edges and tips - had to be built from scratch.

The seemingly inevitable compromises demanded by today's flying environment included a Scott tailwheel and main gear wheels that mount 6:50 x 10 tires. A set of PT-22 expander tube brakes was adapted to the wheels. The airframe was also covered in Stits materials, but that is so common today that, in actual practice, it has little effect in judging. Almost all tube and rag showplanes use synthetic fibers, so all get the same penalty points and thus, in a sense, no one is penalized. Dean chose Bahama Blue for the fuselage and Insignia White for the wings and horizontal tail. The American Eagle logo on the vertical fin was hand painted by a friend who is a portrait painter - and who took out his pay in trade during Sun 'N Fun when Dean took him for a ride in the ol' Ant Eater.

Finished up early in March, Dean had only the FAA paperwork to complete before the first flight. He knew he would have to get approval on the non-standard engine installation, so it was going to be a tight squeeze to have

Front pit of the Eagle, showing the rudder bar and the original cast throttle assembly.



Antiquers love this kind of stuff - an original rear seat throttle quadrant.

the airplane at Sun 'N Fun a couple of weeks hence. The FAA inspector solved the problem by suggesting that the airplane be licensed "Experimental" until FAA's engineering office could go over the engine installation - which Dean readily agreed to.

The rest of the "problem" was in Dean's mind. A lot of old timers have unkind things to say about the flight characteristics of the Ant Eater Eagle . . . and he got an earful during the two years he spent restoring the airplane. It was, therefore, with no little trepidation that he approached the first flight. To his pleasant surprise, however, it flew beautifully. With the heavier engine, Dean compensated by moving the top wing  $1\frac{3}{4}$ " forward of its original position. He also rigged his ailerons in trail (rather than the  $\frac{1}{2}$  inch droop many old timers recommend) and rigged in a little extra "down" throw in his pitch trim. Whether it was one or a combination of all these things that made the difference, Dean can't say . . . all he knows is that he is extremely pleased with the handling of the airplane. He even goes as far as to commit

