LEGENDS OF FLIGHT

Stearman PT17: ***Seventy Years Later the Benefits of Wood and Thoughtful Design Keep the Stearman PT17 Kaydet Flying; Modern Designers Still Consider Lessons from the Past***

EL SEGUNDO, Calif. -- The Airbus A380 and Boeing 787 Dreamliner are technically advanced super transports. Both of these sophisticated aeronautical marvels makes broad use of technology, advanced materials and the latest in construction and manufacturing techniques to deliver superb passenger comfort and maximum performance. And not surprisingly, their designers have sought to emulate natural flight and lessons form the past whenever possible.

For example, the bone structure of the common sparrow or the magnificent wandering albatross is lightweight yet capable of sustaining load while flying or on the ground. Avian wings are flexible and accommodating of dynamic changes in the air, thermal influences and above all, speed. The newest passenger jets use carbon fiber, laminates, composites and advanced metals to achieve the same service and structural goals nature has designed. By doing so, contemporary aeronautical engineers and designers also consider lessons from history's flying manual.

Early designers and builders were limited in their choice of airframe and wing construction materials with wood serving as the fundamental resource. At the dawn of flight, wood was a well-understood material. By blending various wood types, as coachbuilders had for centuries before, the first aircraft constructors combined materials to achieve their goals of light, resilient structural designs. The success of early flight is a testament to their craftsmanship and the resiliency of wood.

Many early designs offered exceptional strength-to-weight ratios. Fitted with ground shaking radial engines and subject to the stress of landing on unimproved

runways; it is remarkable that models such as the Stearman PT17 had any service life at all. That many are still flying today – lovingly restored by collector enthusiasts belies the fact that many Stearman planes were still employed as commercial crop dusters and other utility use well into the 1990s.

Because of the distant sharing of aeronautical DNA between the wood and fabric planes of long ago and today's newest aircraft, *Legends of Flight* – the first ever 15/70 3D IMAX flight film – includes in its array of milestone aircraft the workhorse Stearman PT17…PT meaning *primary trainer*.

Introduced in 1934, over 8500 PT17s were built in Wichita, Kansas and saw service the world over. The two-seat bi-plane became most successful when used as a World War II trainer for the US Army Air Corps, Navy and even the Coast Guard. Despite an obsolete two wing tail dragger design, its rugged construction made an ideal trainer for beginning pilots – who often said that if they could fly a Stearman, they could fly anything.

The PT17 employed fabric covered wooden wings, single leg fixed landing gear all fitted to an overbuilt airframe of tubular chrome-moly steel. 220 horsepower, seven cylinder radial engines from Continental and other engine suppliers were used and over time horsepower increased. The Stearman's slow, low level flying ability and robust serviceability speak to the benefits of good design and makes the case for wood as a lightweight, durable construction material.

By comparison, a PT17 could park on the wing of a 787 with room to spare. Dismantled, several PTs could fit in the cargo hold. While the Stearman had a top speed of 124 MPH and a cruising speed of 90 MPH – the 787 needs about the same speed to rotate into flight. The 787 has intercontinental non-stop legs, while the Stearman pilot sought the ground every few hours and had a maximum range of 250 air miles. While the Stearman pilot and passenger had an enjoyable, open air view from its 11,000 foot service ceiling, the A380 and 787 passenger glides skyward at heights of over six miles.

Yet the old and newest designs do share some things in common beyond aviation's ongoing quest for the lightest, most durable materials. The adaptive wings used by the Boeing 787, while light-years different from the hand assembled wooden spars and stringers that served the Stearman so well, are but one notable relationship between these

aircraft. One has already earned its appellation as a legend and the other now sits ready for the runway and history. Both these planes are featured in this epic film.

Legends of Flight is directed by Stephen Low and produced by The Stephen Low Company (producer Pietro L. Serapiglia), executive produced by K2 Communications (executive producers Bob Kresser and Jan Baird), and is in association with the Smithsonian National Air and Space Museum.

The Stephen Low Company is a producer of leading 3D and IMAX entertainment and a distributor to IMAX theaters and other giant screen theatres worldwide. Award-winning filmmaker Stephen Low is the director of more than a dozen Giant Screen films including, *Across the Sea of Time*, *Mark Twain's America, Beavers*, *Titanica*, *Super Speedway*, *Fighter Pilot* and *The Ultimate Wave Tahiti* among many other classic titles.

Recognized as leaders in the Giant Screen industry, K2 Communications brings a wealth of success and experience in all aspects of production oversight, global distribution, and marketing. K2's distribution arm counts more than 65 large screen format films in its library for non-theatrical distribution, plus more than 25 films for digital theater distribution, and another five for Giant Screen theatrical distribution. The company has become one of the industry's leading resources for Giant Screen films and will be releasing its next 3D film, *Rescue*, in February 2011.

K2 Communications also operates the only comprehensive Giant Screen consumer/fan website, BigMovieZone.com. For more information, consult www.k2communications.com. For information on film, visit www.legendsofflightfilm.com.

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