



Why Wood?

Fisher Flying Products gives pilots the opportunity to return to the golden days of aviation with its fleet of classic styled light airplanes. This was done not just for the sake of nostalgia, but because of the proven aerodynamic stability and desirable flight characteristics of this type of aircraft.

By applying the proven structural design concepts of the past with new technology Fisher Flying Products has created a perfect combination of old and new. For example, wood has been used as a primary structural material in aircraft construction since the beginning of heavier-than-air flight. Most light aircraft prior to the 1930's were built of wood and the largest aircraft ever to fly, the "Spruce Goose" was constructed almost entirely of wood. Yet, wood had its problems: it was difficult to preserve internal members that were not easily accessible for long periods of time and the old style wood adhesives could become brittle and fracture at the bonds after a period of time. The new plastic sealants and preservatives such as polyurethane varnish and the high strength non-brittle epoxies have now resolved these problems.



loads associated with flight without developing fatigue, and it does not corrode. Composite



construction seems to be the popular method of light aircraft structural design today. However, it is important to remember that wood is a natural composite and is significantly less expensive than exotic synthetics. The following quote from the *FAA Aviation News* article entitled "Wood and Wings" discusses the relative strength of wood in an aircraft structure:

"On a weight-to-strength ratio, wood compares very favourably with steel, duraluminum, and magnesium, the metals most commonly used in aircraft construction...By itself, a piece of wood is no match for metal, but when assembled into a structure – stringers, longerons, formers, ribs, spars – to form a unit, the difference in strength diminishes and wood is almost identical to metal in strength."

Wood is a desirable aircraft material because of the ease with which it can be worked...simple carpenter hand tools, plus homemade jigs and fixtures, are all that are needed to turn out a fully certifiable aircraft. Field repairs present no serious problems.

Geodetic Structure

Fisher has combined the natural properties of wood with geodetic structural design. The principle of geodetic construction is to use inter-connected strips to form a diamond mesh pattern that distributes the stresses within the structure itself. One of the clearest explanations of geodetic structure was made by Lt. Rod Huggelman, an aeronautical engineer, in an article entitled "Geodetic Aircraft Structure" contained in the Experimental Aircraft Association's publication, *Building the Custom Aircraft with Wood Volume 2*.

"It (monocoupe structure) has probably the highest strength-to-weight ratio and is widely used today in aircraft and missiles...Often it is possible to compromise ultimate strength and rigidity in monocoupe structures by perforating the shell with holes. The flexibility thus provided will enable the structure to better handle shock and impact loads...The geodetic or

‘basket weave’ structure is simply an extension of perforated monocoque structure. However, it is much less expensive, simply constructed and unrestricted by compounded curves.”

Geodetic construction is well proven in aircraft applications. A number of factory built and experimental aircraft have used this structural method to provide a high strength-to-weight ratio primary structure. The most famous of the geodetic airplanes was the indestructible British “Wellington” bomber.

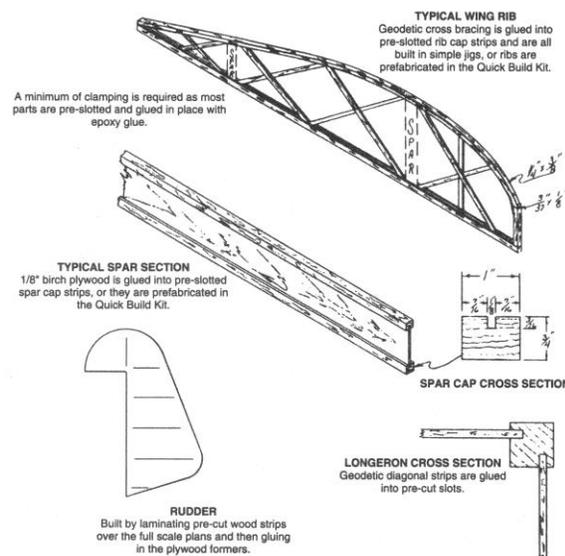
Fisher aircraft are designed so that, wherever practical, the geodetic strips fit into pre-cut slots thereby assuring a greater amount of glue surface area to create good joints. Although the structure may look complex, it follows a simple pattern which is easily duplicated by the builder.

Using a sophisticated computer program which was developed to analyze the load carrying capabilities of geodetic structures, Fisher has designed each of its aircraft around FAA Part 23 utility category load standards. The final prototypes are then static load tested and flight tested to ascertain that the theoretical values hold true in reality.

Proven Safety

Pilot protection and safety are other primary consideration in the design of a Fisher aircraft. A solid reinforced plywood box structure for crash protection surrounds the pilot in all of our aircraft. In addition, the landing gear is designed to collapse progressively in an extremely hard landing to absorb some of the shock that would otherwise be transmitted to the fuselage and pilot. The following unsolicited letter from Harold Rist of Lyndon Station, Wisconsin testifies to the crash worthiness of his standard FP-202 Koala:

“Well Folks, that is the best designed little plane in the world today! How do I know? Well I put it to the test accidentally by putting it into the ground at 40 miles per hour with little damage done to it or myself. This plane broke up in the right places at the right time. I cannot say



enough good about the strength and durability of this plane.”

All of Fisher’s airframe structures are covered with heat shrinkable aircraft quality Dacron fabric, which is then sealed and painted to provide a long lasting, durable finish.

Available as Plans or Kits

Fisher aircraft are available in construction kits or plans. By providing plans as well as complete and partial kits, you can determine how much money you want to save by building the assemblies yourself. Regardless of how you order your Fisher aircraft, the products supplied are of top quality: Sitka spruce and clear northern pine (both FAA – approved building materials); birch aircraft grade plywood; AN nuts and bolts; 6061 T-6 aluminum struts, fittings and hardware.

Full sized detailed plans, assembly instructions, and an FFP hat are provided with each kit.

Contact Us

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