

Three books worth owning



Reviewed by Bill Kuhlman, bsquared@rcsoaringdigest.com

I have been building RC sailplanes for more than a half century and so have seen many advancements in radio equipment and model aircraft aerodynamics.

I've also witnessed the tremendous changes in construction materials and methods which have come about because of the available technologies and the drive toward greater performance.

Being the eclectic enthusiast that I am, my aeromodeling interests range from F1A (outdoor free flight towline glider)

and F1D (indoor rubber free flight) through all of the AMA and FAI RC sailplane classes.

My building projects have included stick and tissue models, hand launched free flight gliders, small and large powered RC aircraft, and a large number of "wood wing" and composite - foam/fiberglass/carbon - RC sailplanes.

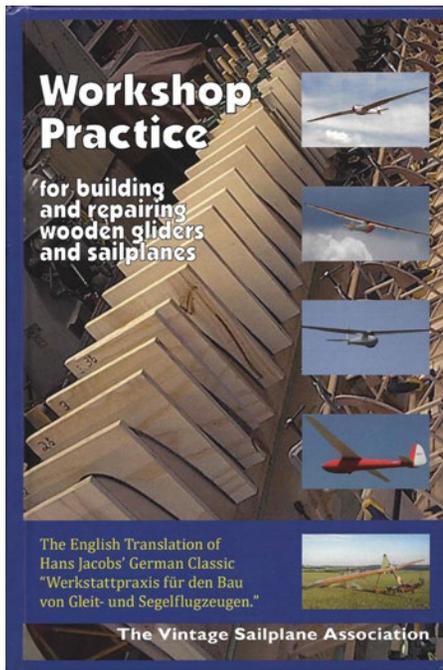
In looking back over this history, I have long realized that my first love has always been models built primarily of wood, although composite construction has its own benefits which I appreciate.

Workshop Practice

Neal Pfeiffer and Simine Short, Editors

When I was made aware of the availability of the classic "Werkstattpraxis fur den Bau von Gleit- und Segelflugzeugen" by Hans Jacobs and Herbert Luck in an English translation, I eagerly awaited its publication.

First made available at the Vintage Sailplane Meet in Elmira New York on July 11th of this year, "Workshop Practice for Building and Repairing



“Wooden Gliders and Sailplanes” is the culmination of a 25 year project by a large number of volunteers under the auspices of the Vintage Sailplane Association.

The first German edition of this book was published in 1932 and came about as a result of the huge and growing sport of soaring in this pre-war decade. Subsequent editions with updates were published as late as 1955, always in German. The author, Hans Jacobs, was a tremendously influential sailplane designer, having

created the Weihe, Meise, Kranich, Habicht and others, and the influence of his book was more than substantial.

While this book was originally (and still is) aimed at those who are restoring or building wood sailplanes, whether original vintage, replica, or new design, there is sufficient information here to augment the knowledge base of any designer and/or builder of wood models.

Divided into eleven chapters (one being an Appendix devoted to German glider types, the book is well organized and is easily searched despite not having a separate formatted index, only a well detailed Table of Contents.

As would be expected from a book like this, there is plenty of material devoted to wood itself. The composition and properties of wood is covered in detail. Starting with wood cell

structure, the reader is lead through compression and tension strength relative to grain direction, engineered wood and plywood. With this basis, various glue types are covered next. Steel sheet, steel tubing, cable splicing and fabrics are also covered.

Working with these various materials sometimes calls for specific working methods, including joining wood strips and plywood sheets, welding and riveting, forming aluminum and transparent plastics, etc.

Following this, Chapter 6 is devoted to actual construction methods: various types of wing ribs and the jigs which make this process go more quickly; solid, I-beam, box and block spar construction; control horns; tip bows and trailing edges; corner and curved fuselage frames and trusses.

The assembly of various parts into a cohesive whole is described relative to the individual components. Of particular interest is the construction of large jigs to assure accurate wings. The “vertical” method of wing assembly is highlighted as it makes installation of a plywood D-tube easier.

Various adjustable fuselage fixtures are also described.

For the scale modeler, the section on canopy construction will be of interest. Latch mechanisms and several methods of fastening the glazing to the frame are well illustrated. This section also has a very good description of the design and construction of steel tube fuselages.

The last part of this section covers instrumentation and describes in some detail how various components operate.

The Appendix is devoted to an overview of German gliders and sailplanes of the time. Thirteen models, from the SG-38 (1933) through the Kranich III (1950), are detailed in a table and there are 3-views, a photo, and a general description of each.

Rounding out this volume is a rather extensive update which is presented to inform restorers of the various changes in

technology which have come about in the years between the German publication of the book and this translation. Written by Neal Pfeiffer, this section describes updates to workshop safety, various wood species which are now more readily available, scarf joints for spar repair, modern adhesives, fiber-reinforced plastics, fabrics and paint.

I am very impressed by this book, not only for the informational materials it contains, but also by the tremendous amount of work put in by the VSA team in accurately translating the text into a tremendously readable form and publishing it for the benefit of all English speaking enthusiasts.

This is a hardbound book of 384 6" x 9.25" pages. The cover is full color, the interior includes easily read text, and there are 338 black and white figures and grayscale photographs. Price is \$47 (US) or €45 (Europe) plus shipping and handling. It's available from the Vintage Sailplane Association <<http://www.vintagesailplane.org>> and Cumulus Soaring <<http://www.cumulus-soaring.com>> in the United States, and EQIP <<http://www.eqip.de>> in Germany.

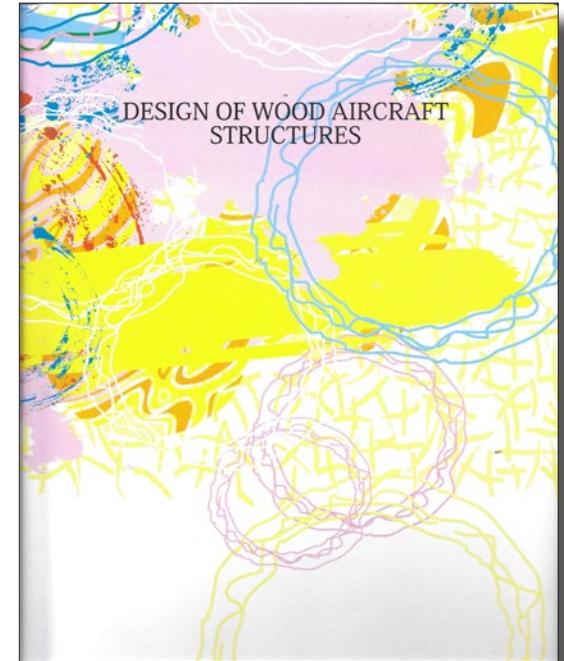
ANC-18 Design of Wood Aircraft Structures

United States government agencies

Originally published in 1944 and updated in 1955, this U.S. government publication is a wealth of information relevant to aircraft of wood construction.

Both editions are freely available in PDF form and have made the rounds of various internet forums, in addition to being available through a few aviation information portals. More recently, the original 1944 edition has been made available again in printed form through a "print on demand" service based in India.

Originally available through the United States Government Printing Office, this volume was the product of a number of departments, including the War Department, the Navy Department, and the Department of Commerce. It was issued by the Army-Navy-Civil Committee on Aircraft Design Criteria, under the supervision of the Aeronautical Board.



Written for use in the design of both military aircraft, it contains material which is acceptable to the Army Air Force, the Navy Bureau of Aeronautics, and the Civil Aeronautics Administration of the time. There are three chapters of information following the first chapter introduction with nomenclature and definitions of symbols.

Chapter 2 describes the strength of wood and plywood elements. This includes both basic strength and elastic properties, together with testing methods. Of special note is the treatment of compression, tension and torsion as applied to spar design.

Ninety pages are devoted to the characteristics of plywood, predominantly 3, 5 and 7-ply, although 9 and 11-ply are also mentioned. This portion of Chapter 2 includes a large number of illustrations and tables and details the characteristics of plywood (compression, tension and shear) with special