

# IT'S NO DOPE

by ELMER C. NILSSON

The modern high-performance sailplane has developed a long way since the early primary gliders in design and performance. Construction methods have changed from strut and wire bracing to sleek, clean, internally-braced structures. One feature has not changed very much, fabric covered sailplanes are still in use and because of the many advantages of this type construction they will be with us for a long time to come.

Since about 1910 when airplane dope was developed, this, used in conjunction with aircraft quality cotton or linen fabric, has resulted in a suitable covering material for these many years. Despite its advantages, it does possess certain drawbacks. Many hours of labor are required to apply and sand the multiple coats of dope needed to tauten and fill the fabric. Dope has the undesirable characteristic of continuing to tighten and embrittle under the influence of temperature and weather. This results in warping and structural damage to light sailplane structures. Dope dries out with age and fabric deteriorates from light, heat and moisture, making recovering necessary every few years.

After over five years of development, a new covering has been made available for all types of aircraft by Eonair, Inc., Shafter Airport, Minter Village, Bakersfield, Califor-

nia. Marketed under the trade name "Eonnex" these covering materials are approved under both STC and FAA-PMA. Eonnex 205 fabric is interchangeable with Grade A cotton or linen fabric conforming to TSO C-15. Of particular interest to sailplane owners is Eonnex 206 fabric. This is an intermediate weight synthetic fabric interchangeable with cotton or linen fabric conforming to TSO C-14. The Eonnex covering process replaces both the dope and the cotton or linen fabrics and overcomes the disadvantages associated with these materials.

Some of the many advantages of Eonnex are: longer life, greater strength, lower material cost, less installation labor, lower weight and no continued fabric shrinking to cause warping and structural damage.

Eonnex fabric is applied in much the same manner as regular fabric. Either the sewn envelope method or cementing to the structure with lacquer cement may be used. There the similarity with dope and fabric ends. Eonnex is then tightened with heat from an electric iron. The special Eonnex coatings have no effect on the tightening of the cover. After the tightening with heat, the first coat of Eonnex fabric coating is applied with an applicator pad designed for use with these coatings. This is a very fast method of coating application. Rib stitching is then done.

Screws or clips or cementing to the ribs may be used if they were used originally. The second coat of Eonnex coating is then applied with the applicator pad. A light sanding follows the second coat and the cover is ready for finish paint. Synthetic automotive enamel is recommended for durability, flexibility, light weight and smooth finish. However, other types of finishes may be used. Life expectancy is three to four times that of doped fabric.

A Schweizer 1-26 rudder was covered with Eonnex 206 and a 23% weight saving was realized over the intermediate grade cotton and dope removed from the rudder. The complete Eonnex 206 cover, including all tapes, stitching and finish paint on a Corben Baby Ace so covered, weighed only six pounds three ounces per wing panel, or 8.78 ounces per square yard. The finish is mirror-like with no distortion.

Because of the exceptionally long life of Eonnex covers, Eonite number 22 Clear Sealer is recommended for use on woodwork as an alternative to varnish. This sealer provides a superior seal to wood and glued joints against the affects of moisture and chemical attack.

Experience to date, on many types of aircraft, indicates that Eonnex provides a superior cover and eliminates most of the problems associated with dope and fabric.

Eonite and Eonnex materials are available, along with complete instruction manuals, from the manufacturer Eonair, Inc., or from aircraft parts distributors and dealers.

Bob Monson tightens an Eonnex 206 fabric covering on a Corbin Baby Ace wing with a hot iron.



Elmer Nilsson applies first coat (dark) of Eonnex coating with special applicator pad. Second coat is a light color.

