

INSTRUCTIONS

DOUBLE-TAPE KIT



## 1.0 GENERAL

- 1.1 The double taping technique described in this manual is recommended for all Lazair™ Ultralight Aircraft with Serial Numbers below A833, covered with Tedlar® polyvinyl flouride film. Aircraft with serial numbers A833 and subsequent which were covered following the instructions in the special notice supplied with the assembly manual should not require this additional tape.
- 1.2 It is recommended that the additional tape not be applied until the original tape and covering have been applied and allowed to "age" for one week minimum (one month preferred).
- 1.3 A copy of the special notice regarding the application of Tedlar® covering is included with these instructions. Please review this notice and follow the recommendations for the application of the tape. The notice should be filed in your Lazair Owners Manual for reference should you wish to recover your Lazair at some future time.
- 1.4 If the covering requires reshinking, this should be done, following the instructions in the notice, at least one week prior to the application of the double-tape.

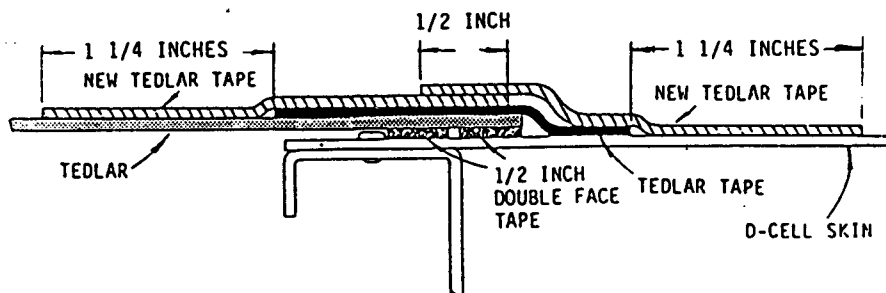
## 2.0 INSPECTION AND CLEANING

- 2.1 Inspect the entire covering and all the tape for signs of inadequate adhesion, improper application, or signs of tape slippage. Note the ~~areas where additional tape may be required and clean them thoroughly~~ as described in paragraph 2.3.
- 2.2 Also, clean the tape, Tedlar and the aluminum skin on the D-cell on both the top and the bottom of the D-cell, along the inboard four feet on each wing for application of tape as described in paragraph 3.1.

- 2.3 Clean the surfaces (both Tedlar® and aluminum) to which the double-tape is to be applied, using a rag moistened with lacquer thinner. Do not use a wet rag and do not flood the area with solvent. Allow the surfaces to dry for 6 to 12 hours before applying the double-tape.

### 3.0 APPLICATION OF TAPE

- 3.1 Apply two rows of 2.6 inch single surface Tedlar tape to both the top and the bottom of the D-cell, as shown in the figure, over the inboard four feet of each wing. When double-taping the D-cells, apply the rearmost strip of tape first, so that about 1 1/4 inches of tape is in contact with the virgin Tedlar®, and about 1 1/4 inches overlaps the original Tedlar tape. Apply the second strip so that about 1 1/4 inches is in contact with bare aluminum and at least 1/2 an inch over-laps the 2.6 inch tape applied first.



- 3.2 Use the same technique to double-tape any areas along the top or bottom of the D-cell where additional tape is necessary.
- 3.3 Use the same double-taping technique along the wing root (R8L/R) and along the outboard edge of the covering (on G25) if tape slippage is evident in these areas.
- 3.4 On any other locations where additional tape is required, apply a single strip of tape to straddle the area of any indicated slippage.

- 3.5 Use the tape paddle to make sure all the tape is firmly pressed down and air bubbles are eliminated as much as possible.

PACKING LIST

1 roll	Tedlar Tape, 2.6 inches wide, 90 feet long.
1	Tape Paddle
1	Instructions, 83016
1	Special Notice re Application of Tedlar® Covering

SPECIAL NOTICE REGARDING  
APPLICATION OF TEDLAR® COVERING

Tedlar® PVF film has been used as a covering material on the Lazair™ ultralight aircraft for over a year, and, when properly applied, its performance has been excellent. However, there have been a few reports of the Tedlar tending to slip slightly under the tape. In most cases this slippage is considerably less than 1/16 of an inch and does not represent a serious problem. However, it is an indication that the covering has not been applied properly, and if slippage persists, it could become a serious problem. After a lengthy investigation, it has been determined that this tape slippage has been caused by two factors:

1. The tape was not pressed down sufficiently when it was applied. Because the tapes use an acrylic adhesive, a significant dwell time is required to develop maximum bonding strength after the tape is applied. If the tape is not properly pressed down prior to this dwell time, a proper bond cannot be formed.
2. The Tedlar was overheated during the shrinking process. The Tedlar tends to shrink considerably after the heat source is removed. It also tends to shrink proportionally more along its length than along its width. Therefore, if the heat source is maintained after there is sufficient shrinkage in width, there may be excessive shrinkage in length, which will aggravate any problem with tape adhesion.

Although it is certainly possible to obtain a satisfactory covering job by following the procedure in the Assembly Manual, (most builders have done so) we now recommend some additional steps which should make it much easier to ensure a good tape bond.

1. To make sure the tape is properly pressed down, we now supply a "tape paddle" with each Lazair™ kit. After you have pressed the tape down with your thumb or finger, go over it carefully but firmly with the end of the paddle. This will ensure good contact and will push out any air bubbles and "fisheyes". Although this may seem tedious (it can take up to an hour to do a wing) it is well worth the time it takes.

The tape paddle should also be used to press down the double face tape before the backing paper is removed. This will ensure that the adhesive will adhere to the aluminum rather than try to lift off with the backing paper.

2. When heat shrinking the Tedlar, be sure to follow the procedure in the manual and apply the heat for a few seconds, then remove the heat and watch the Tedlar to see if it shrinks. If the heat is maintained after the Tedlar begins to shrink, there is a possibility that excessive shrinkage could occur.

3. You will find that it is often unnecessary to shrink the middle part of the wing or tail panels. If you shrink only about 4 to 5 inches around the perimeter of each panel, all the wrinkles will pull out of the middle of it and there will be much less stress on the tape than if you attempt to shrink the whole panel.

4. This fourth recommendation is a diversion from the procedure in the Assembly Manual. While it may not be necessary to use this new procedure if all the other recommendations are followed, the new procedure may be a bit easier and is probably more tolerant if you should happen to overshrink the covering. The change to the procedure is quite simple -- just do the heatshrinking before the single face Tedlar tape is applied rather than after.

#### Old Procedure

1. Apply double face tape
2. Apply Tedlar
3. Trim Tedlar
4. Apply single face tape
5. Heatshrink

#### New Procedure

1. Apply double face tape
2. Apply Tedlar
3. Trim Tedlar
4. Heatshrink
5. Apply single face tape

In addition a further change has been made that is now standard procedure. Formerly, the root ribs and G25's used double-sided tape. The change is to foam tape on both the root ribs and the G25's. This change has been incorporated in the latest edition of the Assembly Manual.