

CHAPTER 17 PITCH TRIM AND ROLL TRIM

STEP ONE- MOUNTING BLOCKS

Fabricate the PT1 and RT3 blocks from 1/4" 5-ply birch plywood. (Full size patterns pg. 17-3.)

Pitch- Locate PT1, Dremmel-away the skin to clear the AN3-bolts (section A-A). Install the bolts then bond PT1 to the fuselage side with flox. Cover with 1 ply BID that laps 1/2" onto fuselage side. Cure.

Roll- Notch the right console 1/4"x1" to accept RT3 (see view X-X pg. 17-3 and pg. A-8). Bond RT3 to console and fuselage side with flox. Cover with 1 ply BID, lapping 1/2" onto fuselage side and console. Cure.

STEP TWO- PARTS

Fabricate PTH, RT1, two RT2 and four PW, or purchase them prefab from a distributor. Refer to the spring specification. Cut the steel 0.35x.05 spring stock to the unstretched lengths shown.

STEP THREE- PITCH TRIM INSTALLATION

NOTE: Pitch trim is not shown on A7 or A8 drawings.

Cut two 20" length of 7x7 1/16" dia. aircraft cable. Using two AN100-3 and two 18-1-C, swage one end of each cable to PTH. Install PTH as shown using all the hardware shown in section A-A. Cut two 2" lengths of polyflow nylon conduit and flox to instrument panel holes. Thread the cable thru and swage the ends at the 5.6 and 6.2 dimensions with the PTH handle at the neutral trim position.

Install AN100-3 thimbles in the elevator bracket (PTB chap. 11). Sew the PTS springs on as shown with two loops of .041 stainless safety wire. Now, install the canard and hook up the springs. The elevator should sit at zero degrees with the handle at neutral trim. After left console installation, cut the required slot to allow full travel and mark the "takeoff" position. Leave a 1" hole in the console to allow adjustment of the lower bolt to change the friction. Adjust friction to just hold PTH at full aft trim with full forward stick. SPRINGS should never be slack

This rigging should give you a trim authority sufficient to fly hands-off at 60 knots at aft trim or hands-off at 170 knots at forward trim. If your trim is insufficient on either end of the range you can make a minor adjustment by shortening one of the PTS springs-up to 1 1/2 inches shorter. If this is insufficient, your elevator contour is incorrect. Further trim authority adjustment must be done either by correcting elevator contour or by adding a fixed trim tab to the elevator.

NOTE: The pitch trim system provides redundancy for the pitch control system. The airplane can be easily flown and safely landed using only the trim.

STEP FOUR- ROLL TRIM INSTALLATION

Using two loops of .041 safety wire and an AN100-3 thimble, sew the two RTS springs to the two RT2 brackets and the RT1 trim handle. Bolt the two RT2 brackets to the CS105 torque tube with two AN3-11A bolts (see view X-X and pg. A-8). Clear the console if required to allow full stick travel.

Pull RT1 down and bolt to RT3 using all the hardware shown (section B-B). Tighten the lower friction adjustment enough to just hold RT1 at full right trim with full left roll stick control. AT THIS CONDITION THE INBOARD SPRING IS JUST SLIGHTLY SLACK.

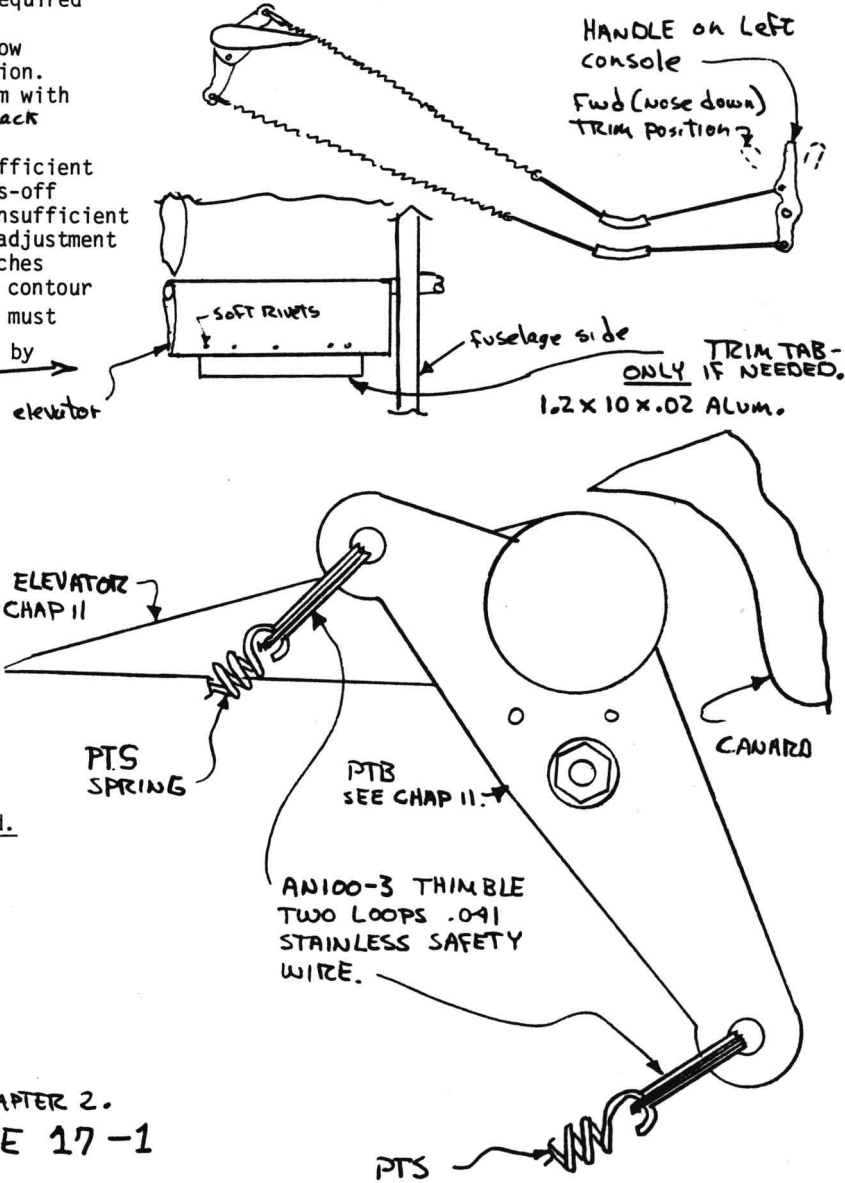
Roll trim authority is sufficient to handle normal asymmetrys (fuel/baggage, etc.) at all speeds, to allow "hands-off" cruising. If more trim is needed, it is because of a crooked aileron or wing and must be adjusted with a shim washer to change wing incidence.

The cosmetic cover for the stick area must be slotted to allow full travel of the roll trim tab. Mark the slot "Lt--Roll Trim--Rt".

PREFAB PARTS AVAILABLE.

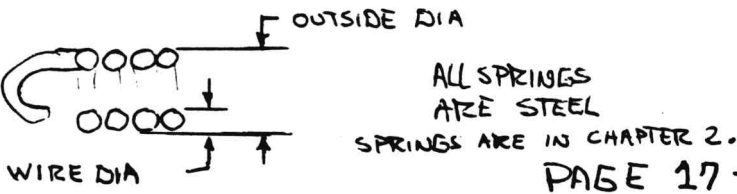
- (1) PTH
- (1) RT1
- (2) RT2

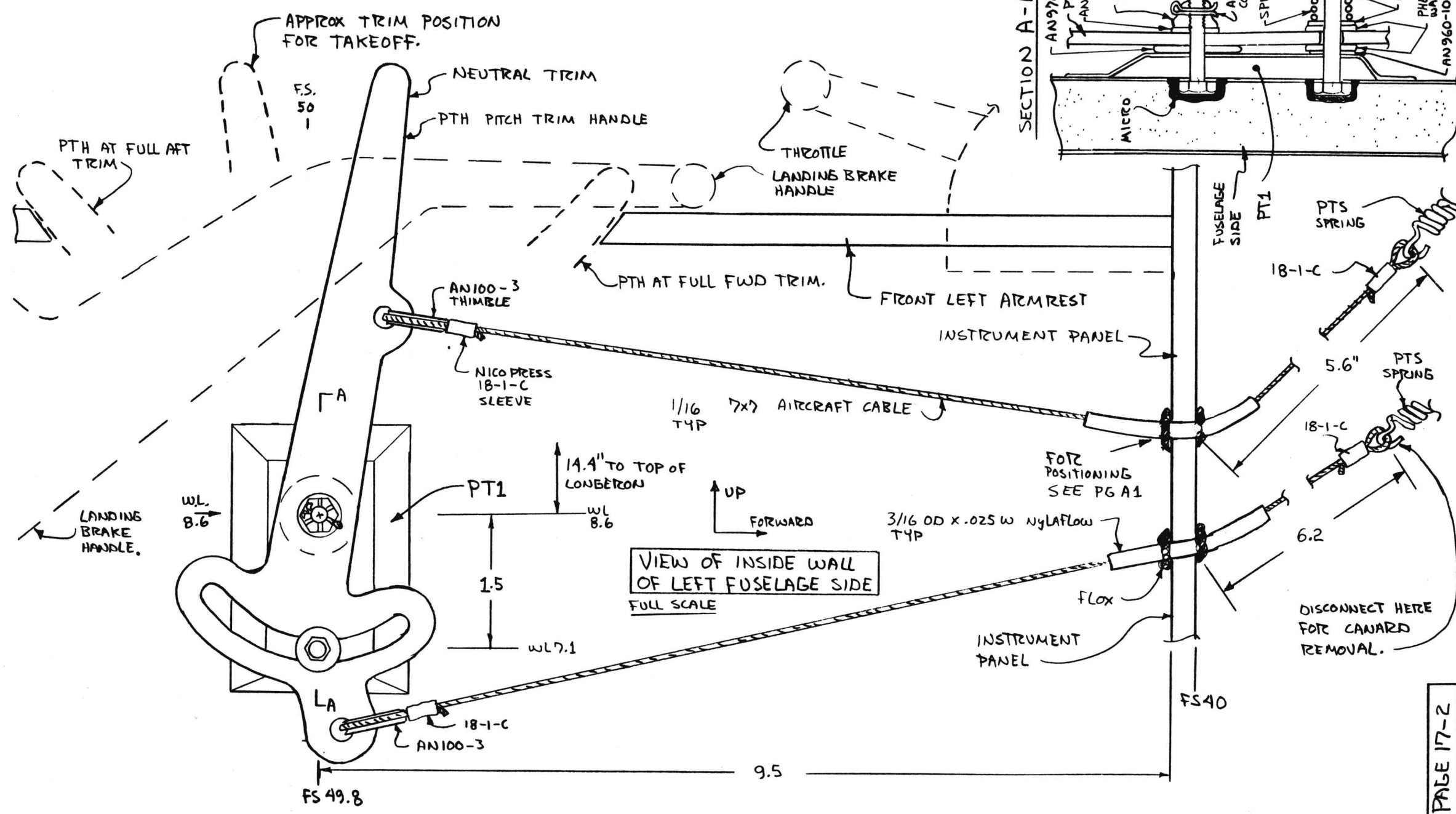
PITCH TRIM SCHEMATIC



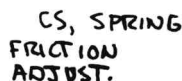
SPRINGS PITCH & ROLL TRIM

Part No.	Outside Dia.	Wire Dia.	Unstretched Length	Installed Length	No. Reqd.
PTS	.350	.05	6.0	9.0	2
RTS	.350	.05	2.0	3.0	2
CS	.350	.06	0.5	0.25	2





VIEW X-X
SEE PG A8



RT1

RT3

AN3-6

THREE AN960-10
AN310-3 NUT
AN380-2-2 PIN

AN3-11A

THREE AN960-10
MS21042-3

RING

PW, PHENOLIC
WASHERS.

