

PUBLICATION INDEX FOR SGS 1-35



K & L SOARING, LLC
5996 STATE ROUTE 224
CAYUTA, NY 14824

PUBLICATION INDEX

Page Description	Page #
Title.....	1
Publication Index.....	2
Revision Page.....	3
1-35 Publication List.....	4
1-35 Service Bulletin Index.....	5
1-35 Service Letter Index.....	6

REVISION PAGE

Change Description	Revision Date
Publication Issuance	15 Feb 2010
Revised to Change to SA-001.6 from SA-001.5	20 June 2010

1-35 Publication List

Publication No.	Title	Date Issued	Revised/ Reissued
SSP-PH-6	SGS 1-35 C Sailplane Flight Manual	25 Apr 1974	24 Jan 2002
SSP-PH-7	1-35 Supplement #1 to SSP-PH-6 Integrated Flap – Aileron Control System	04 Mar 1976	
SSP-PH-8	1-35 C Supplement #2 to SSP-PH-6	10 Jun 1976	03 Mar 1977
SSP-PH-9	1-35 A Supplement #3 to SSP-PH-6	17 Apr 1978	
SSP-PH-10	1-35 Supplement #4 to SSP-PH-6 Hinged Canopy	23 Apr 1979	

Note: The following list provides a complete catalog of publications available to support all models of the 1-35 Sailplane.

1-35 Service Bulletin Index

Number	Subject	Revision Date
SA-001.6	Inspection of Tow Release Assembly	29 Dec 2009
SA-002	Inspection of Aircraft Structure	25 Mar 1988
SA-003	Aerobatics in Schweizer Sailplane	25 Mar 1987
SA-005.1	Identification and Possible Replacement of Tow Release Arm	31 Jan 1988
SA-009	Inspection of Aileron Push Rod	12 Jan 1998

1-35 Service Letter Index

Number	Subject	Revision Date
SL-102-10	Flutter of Flaps at Approx. 60-70 mph	09 Jul 1975
SL-102-11	Canopy Latch Guard Installation	09 Dec 1976
SL-001	Annual Disassembly of Aircraft	01 Jun 1987

BULLETIN NO. SA-001.6*

DATE: Dec 29, 2009

PAGE: 1 of 13

* Supersedes Service Bulletin
No. SA-001.5, Dated Oct 16, 2009

SUBJECT: ONE-TIME INSPECTION OF TOW RELEASE ASSEMBLY; DAILY INSPECTION OF TOW RELEASE ASSEMBLY; PILOT'S PREFLIGHT INSPECTION OF TOW RELEASE ASSEMBLY; 100 HOUR/ANNUAL INSPECTION OF TOW RELEASE ASSEMBLY.

AIRCRAFT AFFECTED: All the following Schweizer Sailplane Models

- SGU 1-7
- SGS 2-8 (TG-2)
- SGS 2-12 (TG-3)
- SGU 1-19
- SGU 1-20
- SGU 1-21
- SGU 2-22, 2-22A, 2-22C, 2-22CK, 2-22E, 2-22EK
- SGS 1-23, 1-23B, 1-23C, 1-23D, 1-23E, 1-23F, 1-23G, 1-23H, 1-23H15
- SGS 1-24
- SGS 1-26, 1-26A, 1-26B, 1-26C, 1-26D, 1-26E
- SGS 2-32
- SGS 2-33, 2-33A, 2-33AK
- SGS 1-34, 1-34R
- SGS 1-35C
- SGS 1-36 (Sprite)

All Schweizer Sailplanes field retrofitted to incorporate a tow release assembly

TIME OF COMPLAINT:

PART I: Shall be accomplished on a one-time basis within 30 days of issue date of this bulletin or at next 100 hour inspection, whichever occurs first (unless already accomplished in accordance with Part III of SA-001.4 or prior revision)

PART II: Shall be accomplished prior to the first flight of each day

PART III: Shall be accomplished at each Preflight inspection

PART IV: Shall be accomplished at each 100 hour/Annual inspection

BULLETIN NO. SA-001.6*

DATE: Dec 29, 2009

PAGE: 2 of 13

REFERENCE: Schweizer Service Bulletin SA-005.1, 31 January 1988 AC 43.13-1A

OVERVIEW: The .5 revision is the same as the .4 revision except changes to Figures 1, 3, & 4. Figure 1 has changed to add View D to show improper engagement. Figure 3 has been changed to show proper release arm cutout. Figure 4 has been changed to show proper readings for the C.G. hook install.

PREFACE: Field reports indicate that it is possible for the tow hooks on the affected aircraft to release during towing operations without input from the sailplane pilot. Thorough analysis of this situation has allowed K & L Soaring, LLC (K & L) to attribute such incidents to (1) improper combinations of tow hooks and release arms, (2) improper installation of the tow hook into the release arm, or (3) excessive wear of the tow hook or release arm.

Parts I through IV of this Service Bulletin list instructions for a one-time inspection, a daily inspection, a Preflight inspection, and a 100 hour/Annual inspection of the tow release assemblies used on the affected aircraft. It should be noted that Part I of this bulletin need not be accomplished if Part III of Service Bulletin SA-001.() was previously accomplished. Any discrepancies observed while performing the inspection procedures listed in this bulletin requires the aircraft to be grounded until the situation is resolved.

In addition, since there is always the possibility of improper release of the tow hook, sailplane tow operations must always be performed where there is sufficient airfield available to accommodate such occurrences. Premature release of the tow hook from the release arm should not result in damage to the aircraft or injury of its occupants, if the recovery is executed properly.

PART I – ONE-TIME INSPECTION OF TOW RELEASE ASSEMBLY.

PROCEDURE

NOTE

Many different versions (Part Numbers) of tow hooks and release arms have been manufactured for Schweizer Sailplanes. However, as specified in Table 1 of this bulletin, only certain tow hooks/release arm combinations are compatible with each model sailplane. Unacceptable combinations must be replaced.

- a. Use Table 1 of this bulletin to determine if an acceptable tow hook and release arm are installed

TABLE 1 - ACCEPTABLE TOW HOOK / RELEASE ARM COMBINATIONS

Aircraft	Tow Hook	Standard Release Arm	Superseding/ Replacement Release Arm
SGU 1-7	R-200-9A or 1A218-1A or 1B-221-3	R-200-12A or 1B-217-1A	1D-217-9
SGS 2-8 (TG-2)	R-200-9A or 1A218-1A or 1B-221-3	R-200-12A or 1B-217-1A	1D-217-9
SGS 2-12 (TG-3)	R-200-9A or 1A218-1A or 1B-221-3	12B-141 or 1B-217-1A	1D-217-9
SGU 1-19	R-200-9A or 1A218-1A or 1B-221-3	R-200-12A or 1B-217-1A	1D-217-9
SGU 1-20	R-200-9A or 1A218-1A or 1B-221-3	R-200-12A or 1B-217-1A	1D-217-9
SGU 1-21	R-200-9A or 1A218-1A or 1B-221-3	R-200-12A or 1B-217-1A	1D-217-9
SGU 2-22 (All Models) (C.G. Hook)	R-200-9A or 1A218-1A or 1B-221-3	R-200-12A or 1B-217-1A	1D-217-9
SGS 1-23 (All Models)	R-200-9A or 1A218-1A or 1B-221-3	R-200-12A or 1B-217-1A	1D-217-9
SGS 1-24	R-200-9A or 1A218-1A or 1B-221-3	R-200-12A or 1B-217-1A	1D-217-9
SGS 1-26, A, B, C, & C.G. Hook	R-200-9A or 1A218-1A or 1B-221-3	R-200-12A or 1B-217-1A	1D-217-9
SGS 1-26 D, E	1A-218-1A or 1B-221-1	1D-222-7	1D-222-13
SGS 1-26 D & E (C.G. Hook)	1B-221-1	1D-222-1	1D-222-11
SGS 1-26E (opt.)	10232A-1	1B-217-5	1D-217-11
SGS 2-32	1B-221-1	1D-222-1	1D-222-11
SGS 2-33, 2-33A, 2-33AK (C.G. Hook)	1A-218-1A or 1B-221-3	1B-217-1A	1D-217-9
SGS 2-33, 2-33A, 2-33AK (opt.) (C.G. Hook)	10232A-1	1B-217-5	1D-217-11
SGS 1-34, 1-34R	1A-218-1A or 1B-221-1	34017D-1	34017D-11
SGS 1-35C	1A-218-1A or 1B-221-1	1D-222-7	1D-222-13
SGS 1-35C (opt.)	10232A-1	1B-217-5	1D-217-11
SGS 1-36	10232A-1	1B-217-5	1D-217-11

CAUTION

THE 10232A-1 TOW HOOK IS PHYSICALLY SMALLER THAN THE OTHER TOW HOOKS. FIELD RETROFIT TO THE 10232A-1 TOW HOOK REQUIRES INSTALLATION OF A 1B-217-11 ARM AT A LOCATION FURTHER FORWARD ON THE AIRCRAFT. BE SURE TO CONTACT K & L FOR INSTALLATION INSTRUCTIONS BEFORE FIELD RETROFITTING SAILPLANE TO INCORPORATE 10232A-1 TOW HOOK

- b. Replace tow hook and/or release arm as required to obtain an acceptable combination (as specified in Table 1) for sailplane in question.

NOTE

- Proper engagement of the tow hook into the release arm is shown in Figure 1, View A, and Figure 4. Excessive wear of the tow hook step could result in improper engagement. Figure 2 of this bulletin provides inspection data and wear limits for the tow hook. Tow hooks which do not meet the specified limits must either be reworked to obtain dimensions (as specified in Figure 2) or replaced.
 - If tow hooks is able to slide into the release arm, beyond the tow hook step, as shown by Figure 1, View C, the release arm must either be reworked with a slug as specified in Figure 3, or replaced.
- c. Inspect tow hook for wear in accordance with Figure 2 of this bulletin.

CAUTION

ALL AIRCRAFT REPAIRS AND REWORK MUST BE ACCOMPLISHED WITHIN THE GUIDELINES ESTABLISHED BY AC 43.13

- d. If tow hook dimensions are not within limits specified in Figure 2, either rework the tow hook to obtain dimensions (as specified in Figure 2) or replace it with a new or serviceable, used tow hook
- e. Engage tow hook into release arm. Ensure that the tow hook properly engages as shown in Figure 1, View A.
- f. If tow hook is unable to completely engage (shown by Figure 1, View B) shorten the rubber bumper stop between the release knob and the instrument panel to allow the release assembly to close further.

- g. If tow hook is able to travel too far inboard as shown in Figure 1, View C, disengage tow hook from release arm and measure the length of the release arm slot
- h. If dimension is less than 0.66 inch, rework release arm by welding on 1B-217-19 slug at location shown in Figure 3. (Release arm may be replaced as an alternate to welding on slug)
- i. If length of release arm slot is greater than 0.66 inch, replace release arm.
- j. Perform a thorough inspection of the tow hook installation in accordance with the 100 hour inspection requirements listed in Table 2 of this bulletin.
- k. Repair or replace unserviceable component(s), as required
- l. Record compliance with Part I of this Service Bulletin in Aircraft Log Book.

PART II – DAILY INSPECTION OF TOW RELEASE ASSEMBLY.

PROCEDURE

NOTE

The following inspection does not require any disassembly of the aircraft or release assembly. However, if any defects are noted during inspection, the problem(s) must be resolved prior to next flight.

- a. Perform a thorough visual inspection of the tow release assembly and associated components in accordance with the daily inspection requirements listed in Table 2 of this bulletin.

CAUTION

ALL AIRCRAFT REPAIR AND REWORK MUST BE ACCOMPLISHED WITHIN GUIDELINES SPECIFIED IN AC43.13.

- b. If any defects are noted, repair or replace faulty components prior to next flight.

TABLE 2 – DAILY, 100-HOUR, & ANNUAL INSPECTION

	Daily	100 Hour	Annual
Visually inspect release arm for damage, cracks, deformation, and freedom of movement on pivot bolt.	X	X	X
Visually and physically inspect release arm slot for excessive wear which would allow the tow hook to engage beyond hook step. (See Figure 1, Item C.)	X	X	X
Dimensionally measure the slot in the release arm to insure that it is within tolerance as shown on Figure 3.			X
Visually check tow hook for damage, cracks, deformation, and freedom of movement on pivot bolt.	X	X	X
Visually check tow hook to insure that surface "x" and "y" of step shown in Figure 2 are flat, smooth, and properly engages release arm.	X	X	X
Dimensionally check tow hook to insure all dimensions are within tolerances in accordance with Figure 2 and for elongation of attach holes in accordance with Figure 4.			X
Inspect release damper for general condition and proper engagement of tow hook.	X	X	X
Perform operational check per Part III.	X	X	X
Perform a release check for proper release tension in accordance with Figure 4.			X
Lubricate attach hardware for tow hook and release arm.		X	X
Lubricate guide-tubes in release control with dry stick type lubricant.		X	X
Insure that tow hook moves freely on pivot bolt.	X	X	X

PART III – PREFLIGHT INSPECTION OF TOW RELEASE ASSEMBLY.

PROCEDURE

NOTE

- Figure 1 shows the proper attachment of the tow hook into the release arm. Note that the step of the tow hook should seat against the release arm. The tow hook step must fully engage the release arm to allow the release assembly to function properly. The tow hook must not be allowed to extend through the release arm beyond the step on the hook as shown in Figure 1, View C.
 - The tow rope must not be allowed to wrap around the release arm or any part of the sailplane. It must extend, unobstructed, directly forward from the sailplane to the tow vehicle.
- a. Attach tow line to tow hook and apply tension on line in direction of tow.
 - b. With tension on tow line, pull the release control on the instrument panel and check for proper release of tow line.
 - c. If tow line does not release properly, troubleshoot tow release assembly and perform necessary repairs.
 - d. Reattach tow lines to tow hook and check for retention of tow line as follows.
 - 1) Apply a moderate tug on the tow line in the direction of tow.
 - 2) Inspect the release assembly to ensure that it has remained completely closed.
 - 3) If the release assembly has opened, even partially, ground aircraft and troubleshoot release assembly. Repair or replace faulty component (s) as required.

BULLETIN NO. SA-001.6*

DATE: Dec 29, 2009

PAGE: 8 of 13

PART IV – 100 HOUR/ANNUAL INSPECTION OF TOW RELEASE ASSEMBLY

PROCEDURE

- a. Perform a thorough inspection of tow release assembly in accordance with 100 hour/annual inspection requirements listed in Table 2.

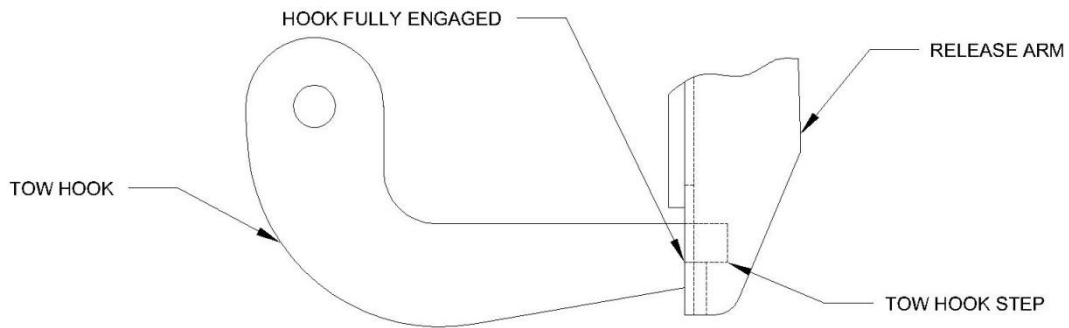
CAUTION

ALL AIRCRAFT REPAIRS MUST BE PERFORMED IN ACCORDANCE WITH AC43.13

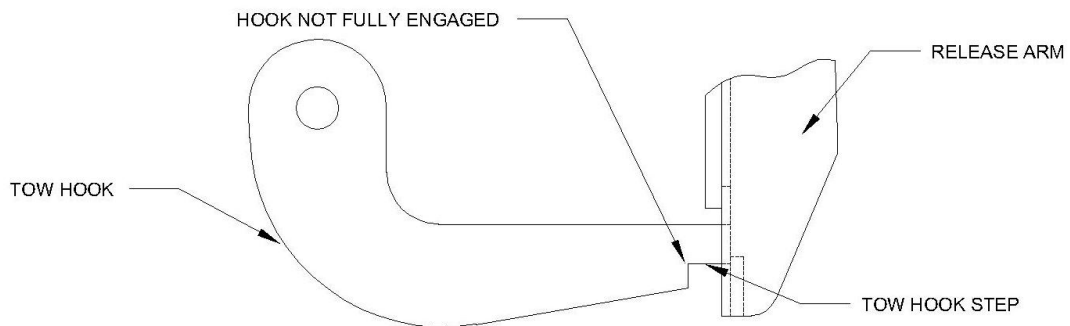
- b. If defects are noted, repair or replace faulty component (s).
- c. Record compliance with Part IV of this Service Bulletin in Aircraft Log Book

WEIGHT & BALANCE DATA

Weight & Balance not affected.



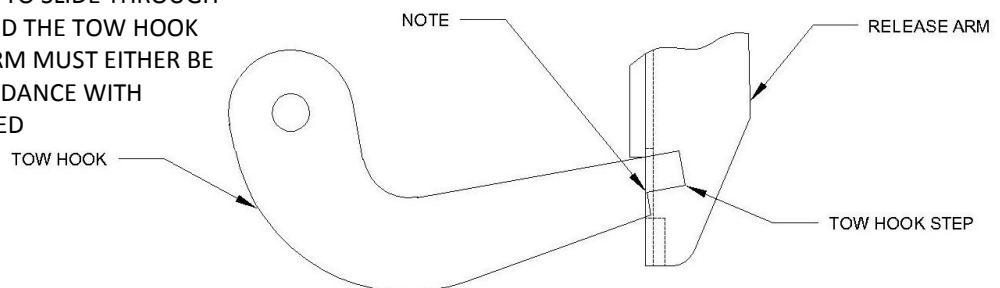
VIEW A – PROPER ENGAGEMENT



VIEW B – IMPROPER ENGAGEMENT

NOTE:

IF TOW HOOK IS ABLE TO SLIDE THROUGH RELEASE ARM, BEYOND THE TOW HOOK STEP, THE RELEASE ARM MUST EITHER BE REWORKED IN ACCORDANCE WITH FIGURE 3, OR REPLACED



VIEW C – IMPROPER ENGAGEMENT

FIGURE 1 – ENGAGEMENT OF TOW HOOK INTO RELEASE ARM

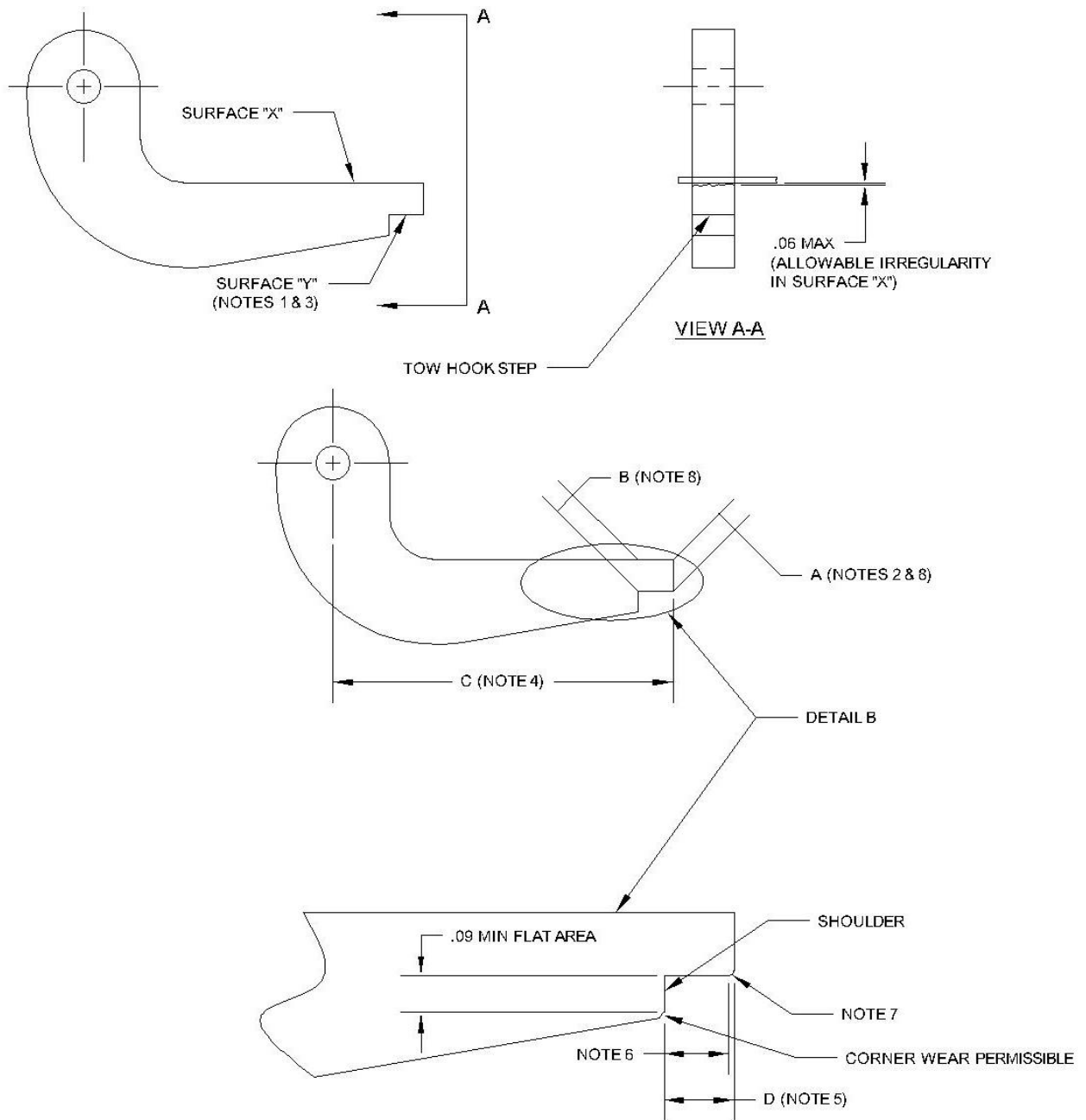


FIGURE 2 – TOW HOOK INSPECTION AND REWORK (SHEET 1 OF 2)

BULLETIN NO. SA-001.6*

DATE: Dec 29, 2009

PAGE: 11 of 13

NOTES:

1. IF WEAR OCCURS ON SURFACE "Y" IT MUST BE POLISHED FLAT WITHIN TOLERANCES PROVIDED IN FIGURE 2 (SHEET 1). IF THE HOOK CANNOT MEET THESE REQUIRED DIMENSIONS IT MUST BE REPLACED. UNDER NO CONDITIONS SHOULD SURFACE "X" BE POLISHED OR MACHINED TO CHANGE ITS ANGLE.
2. DIMENSION "A" ON STD 10232-001 HOOK SHALL BE .21 INCHES MIN. & .28 INCHES MAX. DIMENSION "A" ON STD 1A218-1A, STD 1B221-3, & R-200-9A HOOKS SHALL BE .25 INCHES MIN. & .31 INCHES MAX.
3. SURFACE "Y" MUST REMAIN FLAT, SMOOTH, AND WITHIN TOLERANCES SHOWN ON SHEET 1. (SEE ILLUSTRATION).
4. DIMENSION "C" ON STD 10232-001 HOOK SHALL BE $2.06 \pm .03$ INCHES. DIMENSION "C" ON STD 1A218-1A, STD 1B221-3, & R-200-9A SHALL BE $3.00 \pm .03$ INCHES.
5. DIMENSION "D" ON STD 10232-001 HOOK SHALL BE $.25 \pm .03$ INCHES. DIMENSION "D" ON STD 1A218-1A, STD 1B221-3, & R-200-9A SHALL BE $.31 \pm .03$ INCHES.
6. HOOK MUST REMAIN FLAT IN THIS AREA FOR A MIN. OF .21 INCHES FROM SHOULDER OF HOOK.
7. WEAR OUTSIDE OF THE .21 MIN. FLAT AREA IS PERMISSABLE.
8. DIMENSION "B" MUST BE EQUAL TO DIMENSION "A", OR LESS THAN DIMENSION "A" BY NO MORE THAN .015 INCHES AND CANNOT BE GREATER THAN DIMENSION "A".
9. ALL SURFACES EXCEPT SURFACE "X" MAY BE FILLED TO OBTAIN REQUIRED DIMENSIONS.

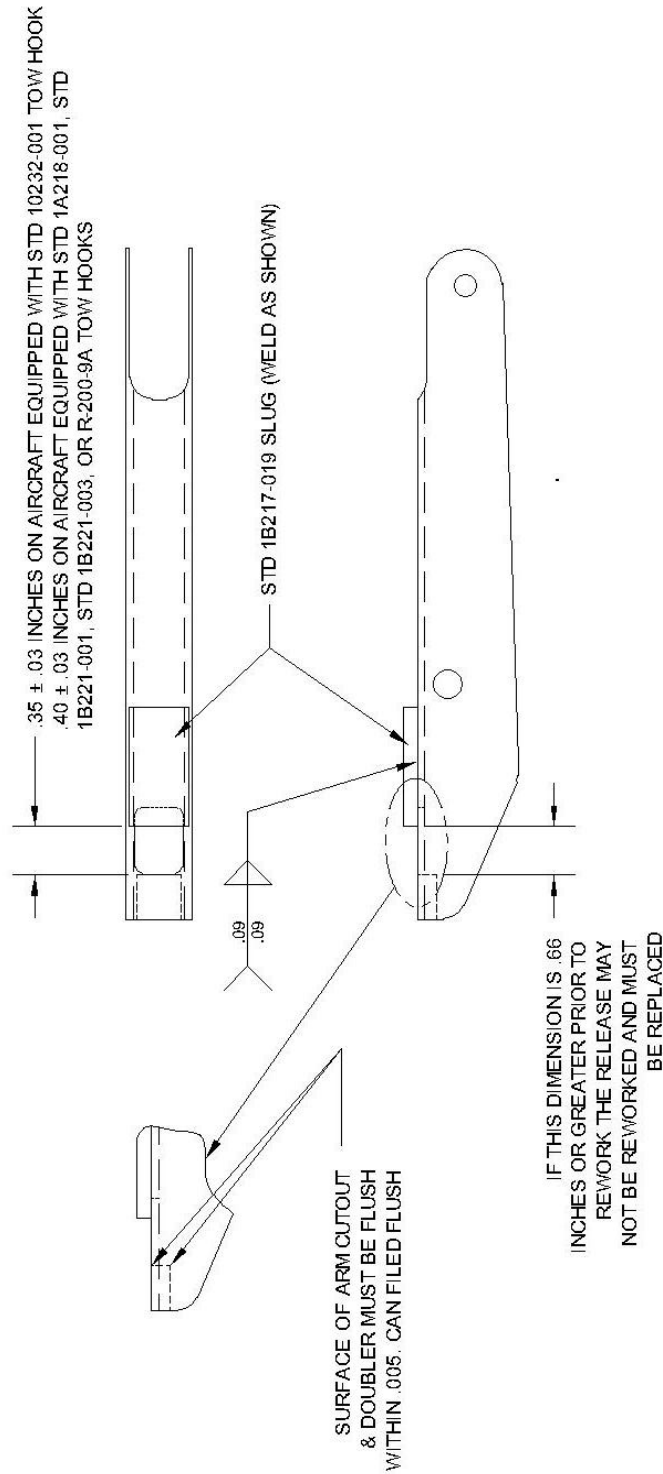
FIGURE 2 – TOW HOOK INSPECTION AND REWORK (SHEET 2 OF 2)

BULLETIN NO. SA-001.6*

DATE: Dec 29, 2009

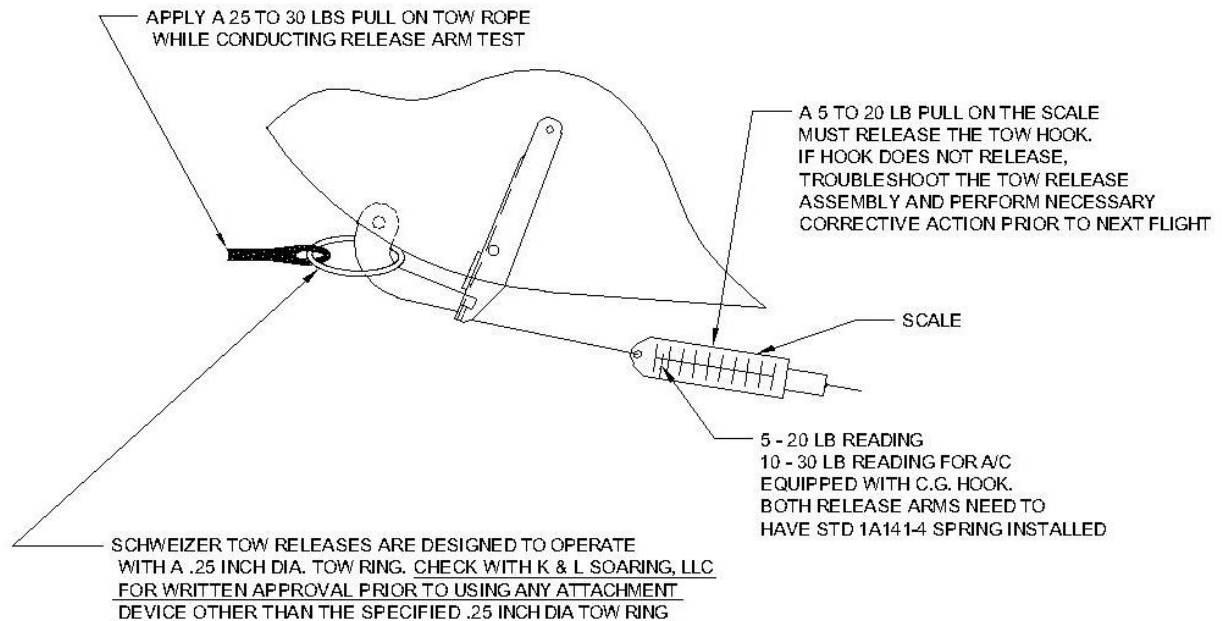
PAGE: 12 of 13

NOTE: STD 1B217-019 SLUG IS AVAILABLE FROM K & L SOARING, LLC
0.125 X 0.5 X 1.0 4130N STEEL



NOTE: ALL TOW RELEASE ARMS MUST BE REWORKED AS SHOWN ABOVE OR REPLACED WITH THE PROPER SUPERSEDING ARM AS SPECIFIED IN TABLE 1

FIGURE 3 - REWORK OF RELEASE ARM



NOTE: IF RELEASE LOADS ARE TOO HIGH WITH C.G. SYSTEM IT IS PERMISSIBLE TO ADD A LINK TO SHORTEN STD 1A141-2 SPRING. LINK SHOULD BE MADE AS SHOWN BELOW. IF REQUIRED THEY SHOULD BE ADDED TO BOTH RELEASE ARMS TO BALANCE BOTH RELEASE SPRINGS

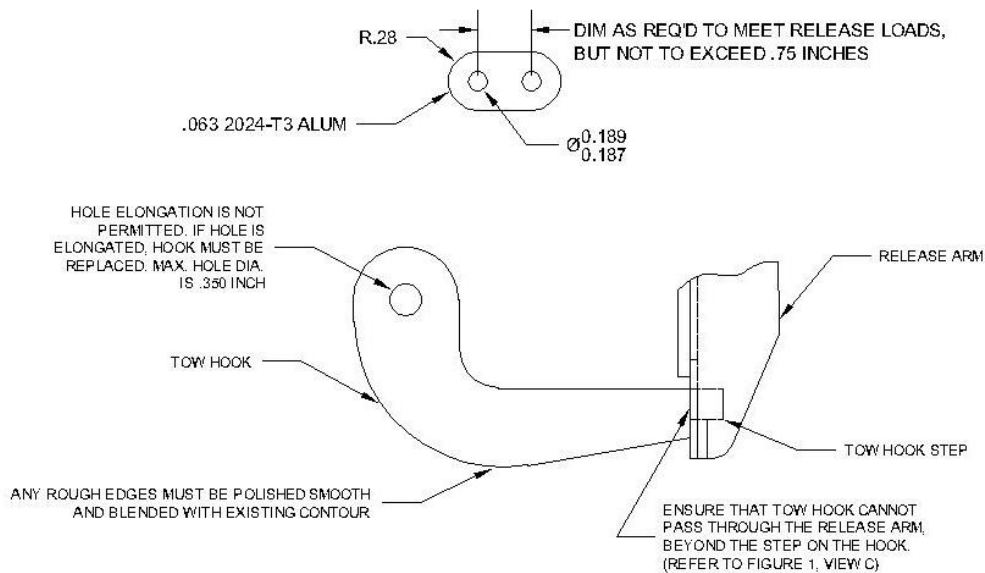


FIGURE 4 - PULL TEST OF TOW RELEASE ASSEMBLY

SERVICE BULLETIN SA-002

DATE: 25 March 1987

PAGE 1 of 12

SUBJECT: DAILY INSPECTION OF AIRCRAFT STRUCTURES; DETAILED VISUAL INSPECTION OF TAIL RUDDER, ELEVATORS, VERTICAL TAIL SURFACE (TAIL FIN), AND FUSELAGE.

MODELS AFFECTED: ALL SGS 1-35, SGS 1-35A, SGS 1-35C, and SGS 1-36 (Sprite) Schweizer Sailplanes.

TIME OF COMPLIANCE: PART I: Shall be accomplished prior to the first flight of each day.
PART II: Shall be accomplished within next 100 hours of aircraft operation, or next three months, whichever occurs first.

PREFACE: Field reports indicate that on the affected aircraft it is possible for small animals to enter the aircraft's tail structures and deposit nesting materials and other debris. Part I of this Service Bulletin provides instructions for a daily check of specific aircraft structures for accumulations of debris. Part II of this Service Bulletin lists instructions for thorough visual inspection of the interior of the aircraft's tail rudder, elevators, tail fin and aft fuselage structure for accumulations of debris. Installation of access hole(s) in tail rudder may be required for the purpose of removing debris when performing Part II of this Service Bulletin. Detailed instructions are provided for patching holes in fabric. Part II also lists instructions to install an inspection hole in the aircraft vertical fin. Failure to comply with this Service Bulletin could result in a loss of control of rudder and elevator and/or improper balance of tail surfaces.

DATE: 25 March 1987

PAGE 2 of 12

PART I: DAILY INSPECTION

PROCEDURE

- a. Inspect pitot and static ports for mud dobbers, insect nests or other obstructions. Clear obstructions as required.

CAUTION

DISCONNECT INSTRUMENTS AND ASSOCIATED EQUIPMENT FROM PITOT AND STATIC LINES, IF COMPRESSED AIR IS USED TO CLEAR OBSTRUCTIONS. SERIOUS DAMAGE MAY OCCUR TO THESE COMPONENTS IF INSTRUMENTS AND EQUIPMENT ARE LEFT CONNECTED. (ENSURE REATTACHMENT OF CABLES AT PROPER LOCATIONS.)

- b. Inspect all hinges, air vents, and aircraft openings for straw, weeds, sticks or any other obstructions. Pay particular attention to hinge and pushrod openings around the tail fin, tail rudder and elevators. Remove obstructions as required.
- c. Inspect for debris inside of tail rudder lower fairing (Figure 1) as follows:

CAUTION

EXERCISE CARE WHEN ADJUSTING RUDDER POSITION IN NEXT STEP. THE RUDDER IS CONSTRUCTED FROM A CECONITE FABRIC BONDED TO AN ALUMINUM FRAME STRUCTURE. ALWAYS EXERT FORCE ON A SECTION OF FRAME CHANNEL WHEN ADJUSTING RUDDER POSITION.

- (1) Carefully adjust rudder position to extreme left or right.
 - (2) Using a flashlight, inspect for debris inside lower fairing (Figure 1) by looking through lower hinge opening.
 - (3) If debris is found, use a vacuum cleaner with flexible extension hose to remove debris.
 - (4) Check two drain holes (Figure 1) at bottom of fairing for obstruction. Clear obstructions with 3/16-inch drill bit.
- d. Open access door on horizontal stabilizer stub (Figure 2) and use a flashlight to inspect upper fin and stabilizer stub area for debris. Use vacuum cleaner to remove debris.
- e. Inspect brake/wheel area for obstructions. Remove obstructions as required.

DATE: 25 March 1987

PAGE 3 of 12

PART II: DETAILED INSPECTION OF TAIL RUDDER, ELEVATORS, VERTICAL STABILIZER, AND FUSELAGE.

PARTS LIST

<u>NOMENCLATURE</u>	<u>PART NUMBER</u>	<u>QTY</u>	<u>SOURCE</u>
Snap Plug, 1 in., BPF-1	M 21626716	1	SAC
Fabric, Ceconite	101, 102, or 103	A/R	SAC
Doubler	10403-3	1 (A/R)	SAC
Patch (.020 skin)	10403-5020	1 (A/R)	SAC
Patch (.016 skin)	10403-5016	1 (A/R)	SAC
Rivets	AN426AD4, or AN470AD4	16 (A/R)	Commercial
Rivets	CR2248-4	10 (A/R)	Commercial

MATERIALS

<u>NOMENCLATURE</u>	<u>SPECIFICATION</u>	<u>SOURCE</u>
Lacquer Thinner	MIL-T-81772	SAC/Commercial
Wax Remover	---	SAC/Commercial
Clear nitrate dope	MIL-D-5553A	SAC/Commercial
Aluminized Dope - Butyrate (polyurethane paint)	MIL-D-5549	SAC/Commercial
Masking Tape	---	Commercial
Primer - Epoxy (polyurethane paint)	MIL-C-22750	SAC/Commercial
Paint - Polyurethane	MIL-C-83231A	SAC/Commercial
Fabric Cement, Superseam	---	Ceconite
Gap Tape	---	Reeves Fabric

TOOLS AND EQUIPMENT

Razor Knife
 Vacuum cleaner with flexible extension hose
 Source of compressed air, low pressure
 Drill
 3/16-inch drill bit
 1-inch drill bit or hole saw
 Pinking shears
 Emery cloth
 Flashlight
 Heat gun or Blow dryer

DATE: 25 March 1987

PAGE 4 of 12

PROCEDURE

NOTE

One of two types of tail rudders may be installed on the affected aircraft. The earlier type is an unsealed unit without a leading edge fairing (Figure 3, Detail B). The later type is sealed at the leading edge by a fairing (Detail A). Removal of an unsealed rudder is accomplished by performing step a(1) through a(3). A sealed rudder is removed by performing steps b(1) through b(3).

- a. If an unsealed rudder (Figure 3, Detail B) is installed, remove rudder as follows:
 - (1) Peel off gap tape between rudder and tail fin.
 - (2) Disconnect pushrods at lower end of rudder by removing a cotter pin, nut, washer and bolt from each push rod.
 - (3) Remove cotter pin, nut, and washer from upper, middle and lower hinge bolts at forward end of rudder. Remove hinge bolts.
 - (4) Remove rudder by sliding aft.
- b. If a sealed rudder (Figure 3, Detail A) is installed, remove rudder as follows:
 - (1) Remove cotter pin, nut, and washer from upper hinge bolt. (Do not remove bolt.)
 - (2) Remove four screws securing lower end of rudder.
 - (3) Remove rudder by pulling lower end aft and then sliding rudder upwards off hinge bolt.

NOTE

Rodents may gain access and deposit debris at four different locations within the tail rudder. Debris may be present between the leading edge fairing and the spar, inside the lower fairing, inside of the lower bay or inside the upper bay. (Refer to Figure 1.) Each of these areas should be thoroughly inspected with flashlight and inspection mirror.

- c. Using a flashlight and inspection mirror, inspect for debris inside of rudder by looking through hinge openings (Figure 3, Detail A or Detail B, as applicable).
- d. If debris is noted between leading edge fairing and spar, remove debris through upper hinge opening, using vacuum cleaner and flexible extension hose.

DATE: 25 March 1987

PAGE 5 of 12

- e. If debris is noted inside lower fairing, remove debris through lower hinge opening, using vacuum cleaner and flexible extension hose.
- f. If debris is noted inside upper or lower bay, remove debris as follows:

CAUTION

CECONITE FABRIC IS BONDED IN PLACE TO THE RUD-
DER'S ALUMINUM FRAME STRUCTURE. CARE SHOULD BE
EXERCISED WHEN CUTTING THE FABRIC AND REMOVING
DEBRIS IN FOLLOWING STEPS. IT IS POSSIBLE FOR
THE CECONITE FABRIC TO BECOME DEBONDED FROM THE
ALUMINUM FRAME STRUCTURE.

- (1) Determine approximate location of debris.

NOTE

Hole cut in next step should be just large enough
to gain access to debris with vacuum cleaner
flexible extension hose.

- (2) Use razor knife to cut ROUND hole in fabric (at location determined in previous step). Do not leave jagged edge on fabric.
- (3) Use vacuum cleaner and flexible extension hose to remove debris from bay.
- g. If hole was cut in fabric in previous step, proceed as follows:
 - (1) If rudder has been waxed, remove wax from surface by using wax remover.
 - (2) Clean surface around hole using clean rag dampened with lacquer thinner. Remove pigmented (colored) dope coats and aluminized coats.
 - (3) Ensure that hole is round. If not, cut fabric to make hole round.
 - (4) Roll edges of fabric around hole slightly inwards.
 - (5) Using pinking shears, cut a new, unwrinkled piece of ceconite fabric large enough to extend 2 inches beyond edge of hole in all directions.

NOTE

If pinking shears are not available, cut fabric
with regular shears and fray edges inwards an
1/8-inch (approx.).

- (6) Brush clear nitrate dope on surface to be patched, keeping 1/4-inch away from edges of hole.
- (7) Press patch in place; ensure that center does not sag.
- (8) Use a heat gun or blow dryer to shrink patch.
- (9) Brush more clear nitrate dope on bonding surfaces of patch.

DATE: 25 March 1987

PAGE 6 of 12

NOTE

Three layers of clear nitrate dope will be required to bond patch. Allow previous layer of dope to dry and abrade surface with emery cloth before applying next layer of dope.

- (10) Apply two more layers of clear nitrate dope.
- (11) Apply at least one coat of aluminized butyrate dope to patched portion of rudder.
- (12) Mask off rudder surface surrounding patch.
- (13) Mix epoxy primer and catalyst reducer in equal volumes.

NOTE

Catalyst mixture must stand for a minimum of one hour. The catalyzed mixture will remain workable for approximately eight hours.

- (14) Apply one coat of epoxy primer to patched areas on rudder. Allow adequate time for epoxy primer to dry before applying polyurethane top coat

CAUTION

CATALYST COMPONENTS ARE MOISTURE SENSITIVE AND WILL BE DEGRADED BY CONTACT WITH MOISTURE. TIGHTLY REPLACE THE CONTAINER LID IMMEDIATELY AFTER DISPENSING A PORTION OF THE CONTENTS. DISCARD THE CATALYST WHEN CLOUDY, TURBID, OR JELLED.

- (15) Mix polyurethane paint one part resin component to one part catalyst. Slowly add the catalyst to the resin component, never the reverse, while stirring and mixing thoroughly. Allow catalyzed mixture to stand one hour before applying. (The workable life of the mixed coating is four hours maximum.)

NOTE

Optimum atmospheric conditions for application of polyurethane topcoats are a temperature of 70 to 86°F (21.1 to 30°C) and a relative humidity of 35 to 50 percent. A relative humidity of 60 to 90 percent can cause bubbling/blistering to occur in polyurethane that exceeds the maximum of the specified thickness range 0.0014 to 0.0020 inch (0.0356 to 0.0508 mm).

- (16) Apply polyurethane top coat to patched portion of rudder.

DATE: 25 March 1987

PAGE 7 of 12

- h. Remove elevators from tail fin as follows:
 - (1) Open access door (Figure 2) on horizontal stabilizer stub.
 - (2) Remove pin securing elevators. (Refer to Figure 2.)
 - (3) Slide elevators outboard off trunnions.
- i. Inspect stabilizer, upper portion of tail fin and elevator attachment areas for debris and obstructions. Remove obstructions and debris as required.
- j. Remove oval shaped inspection holes at aft end of fuselage and inspect fuselage interior for debris. Remove debris as required.
- k. Using 1-inch drill bit and drill, install a 1-inch inspection hole in one side of tail fin at location shown in Figure 4.
- l. Using a flashlight and inspection mirror, inspect lower tail fin through inspection hole and through rudder pushrod opening.
- m. If debris is noted inside tail fin, proceed as follows:
 - (1) Use drill to puncture skin (of tail fin) and saber saw (or equivalent) to cut access hole at location shown (and size shown) in Figure 4. Deburr edges of access hole.
 - (2) Use vacuum cleaner with flexible extension hose to remove debris from lower portion of tail fin.
 - (3) Using doubler as a template, install appropriate number of rivet holes (of proper size) in tail fin skin at locations shown in Figure 5.
 - (4) Slide doubler through access hole, rotate it 90 degrees, and use appropriate rivets (Figure 5) to fasten doubler to fin skin.
 - (5) Secure patch to doubler with rivets. (Refer to Figure 5.)
- n. Use a 1-inch BPF snap plug to cover inspection hole installed in step k.
- o. Reinstall horizontal stabilizer and tail rudder in reverse order of removal.
- p. On sailplanes which incorporate an unsealed rudder, use fabric cement to install two new pieces of fabric gap tape (1 each side) between the tail rudder and the tail fin.
- q. Check installation for defects and flight controls for proper operation.
- r. Record compliance with Part II of this Service Bulletin in Aircraft Log Book.

DATE: 25 March 1987

PAGE 8 of 12

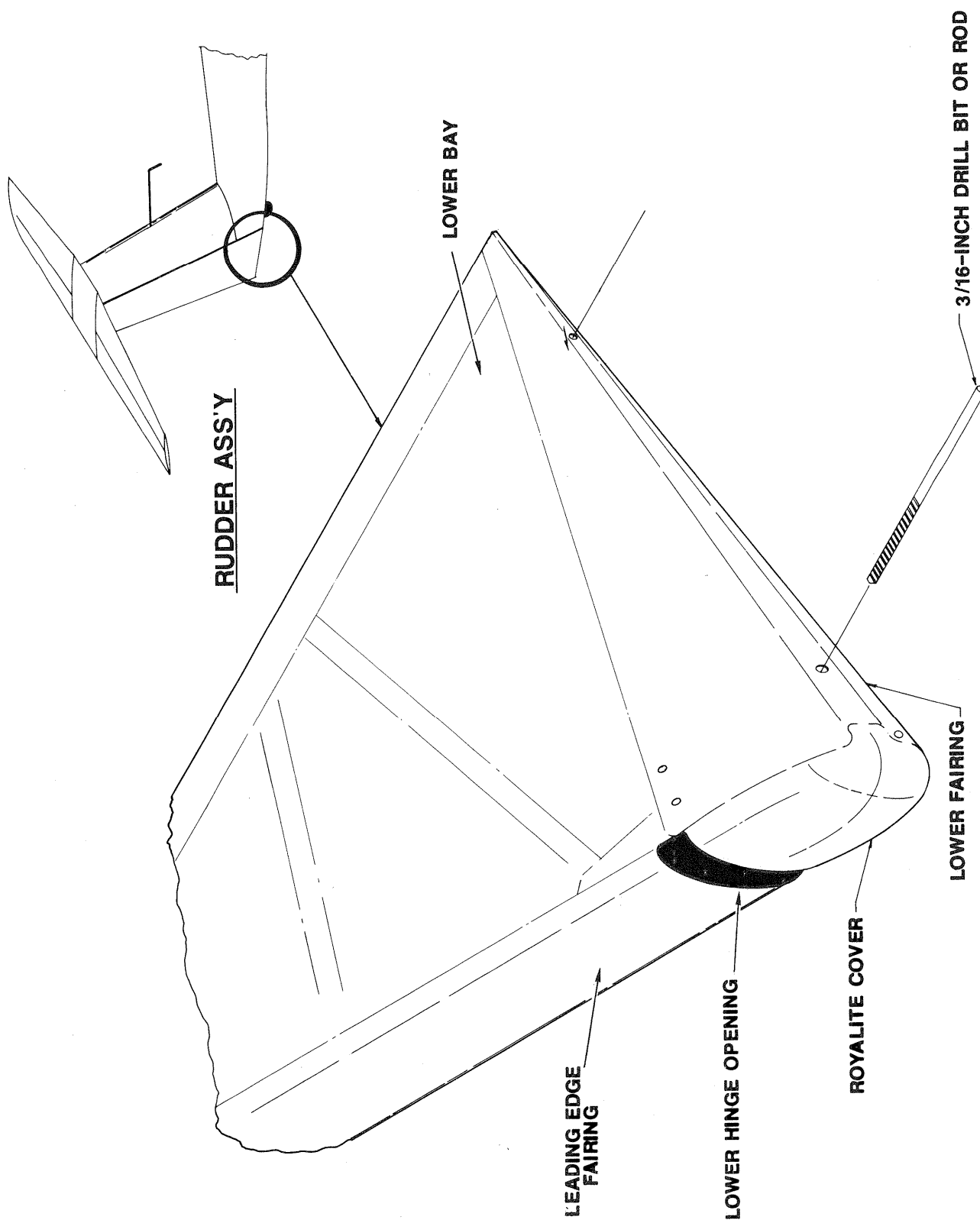


FIGURE 1

DATE: 25 March 1987

PAGE 9 of 12

ACCESS DOOR
PIP PIN LOCATION

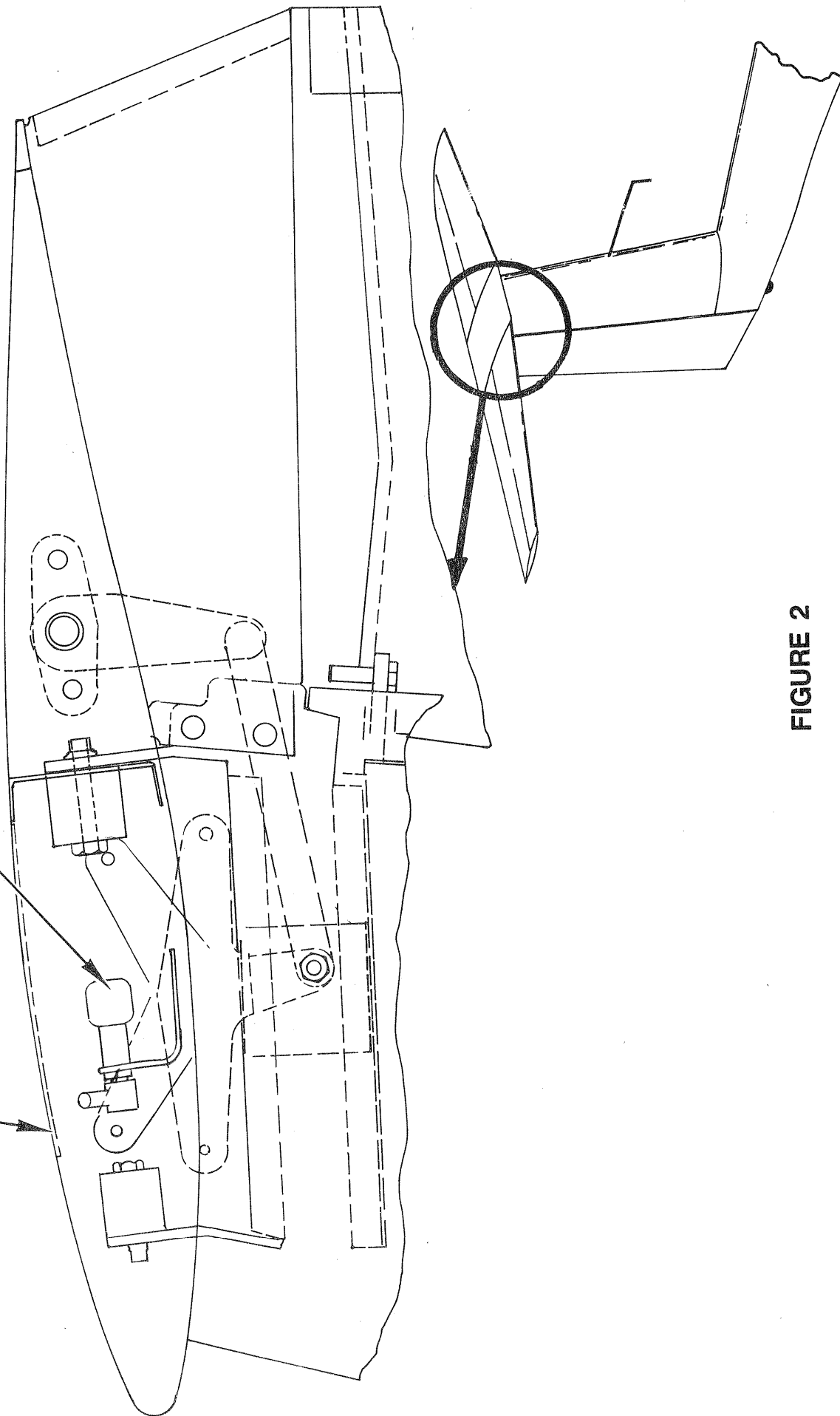
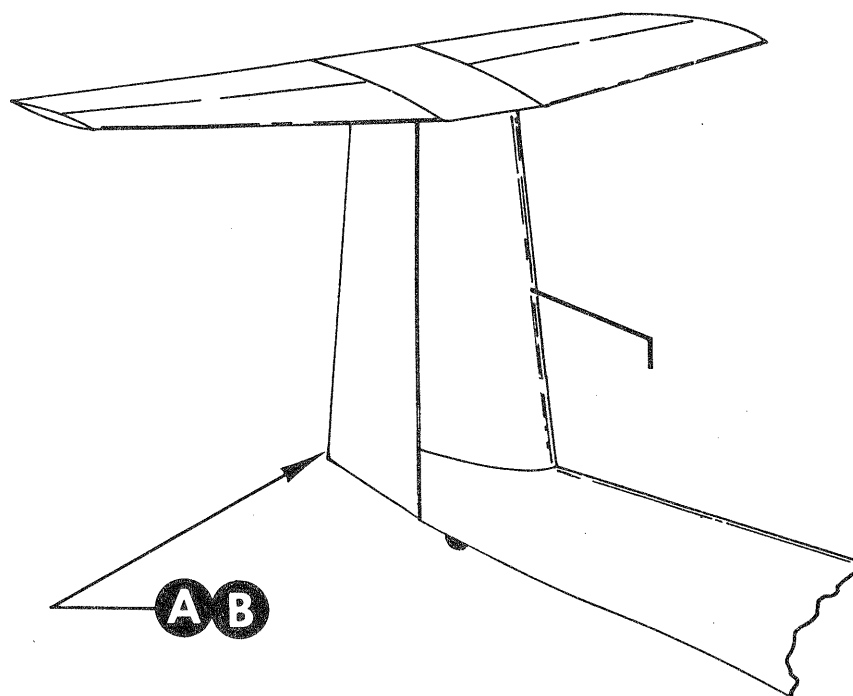


FIGURE 2

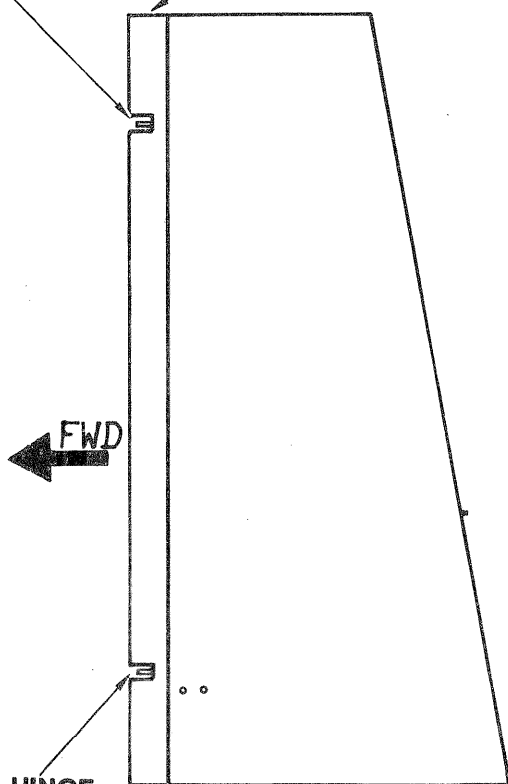
DATE: 25 March 1987

PAGE 10 of 12



UPPER HINGE
OPENING

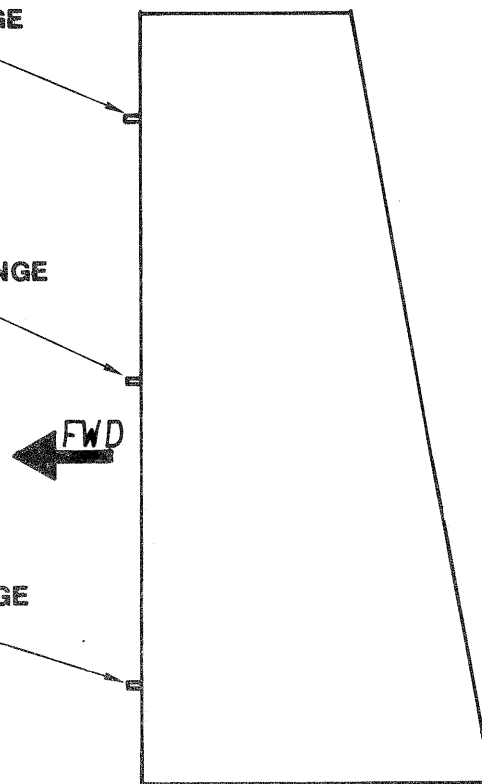
LEADING EDGE FAIRING



UPPER HINGE

MIDDLE HINGE

LOWER HINGE



LOWER HINGE
OPENING

A -SEALED RUDDER

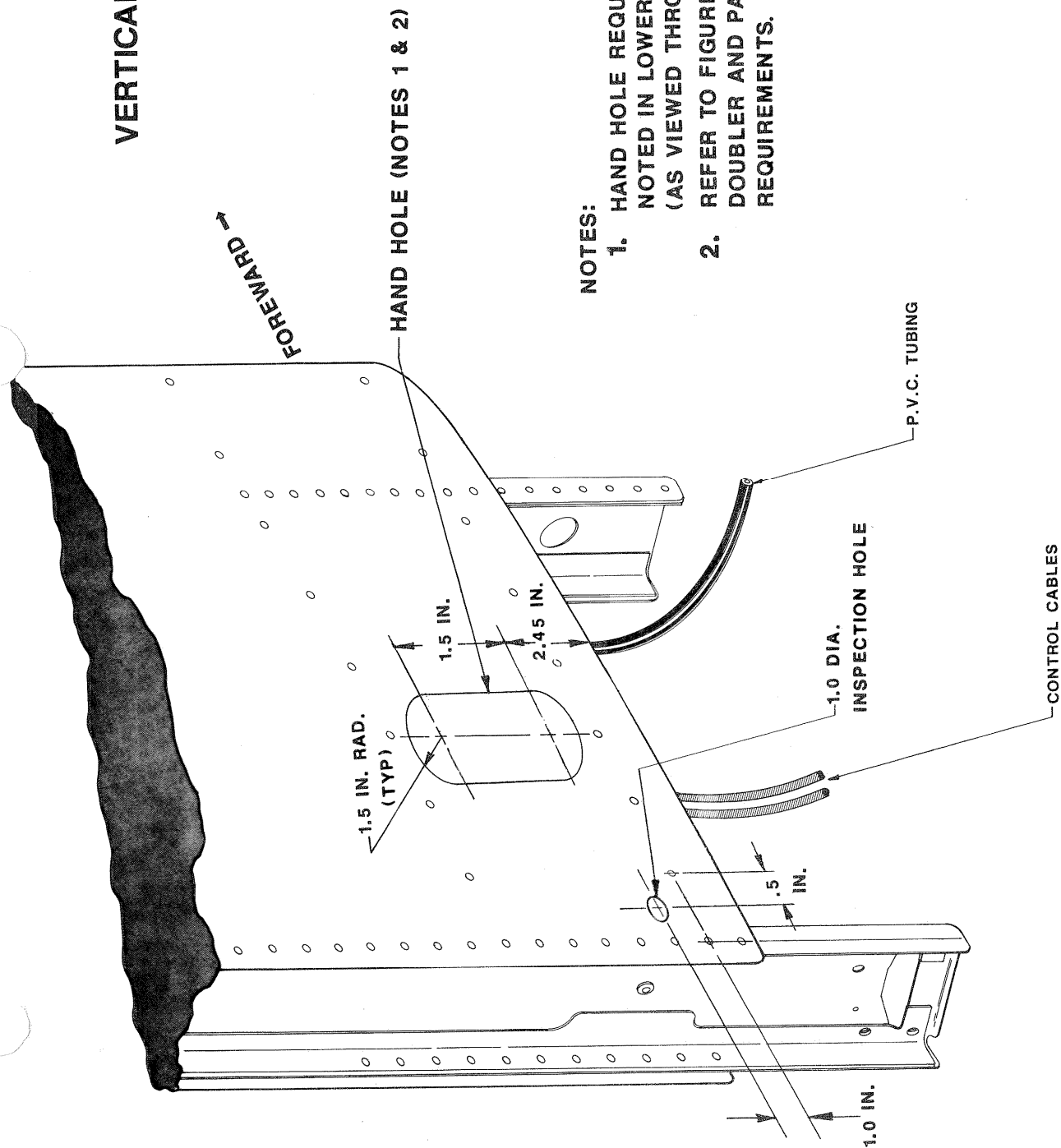
B -UNSEALED RUDDER

FIGURE 3

DATE: 25 March 1987

PAGE 11 of 12

VERTICAL TAIL SECTION



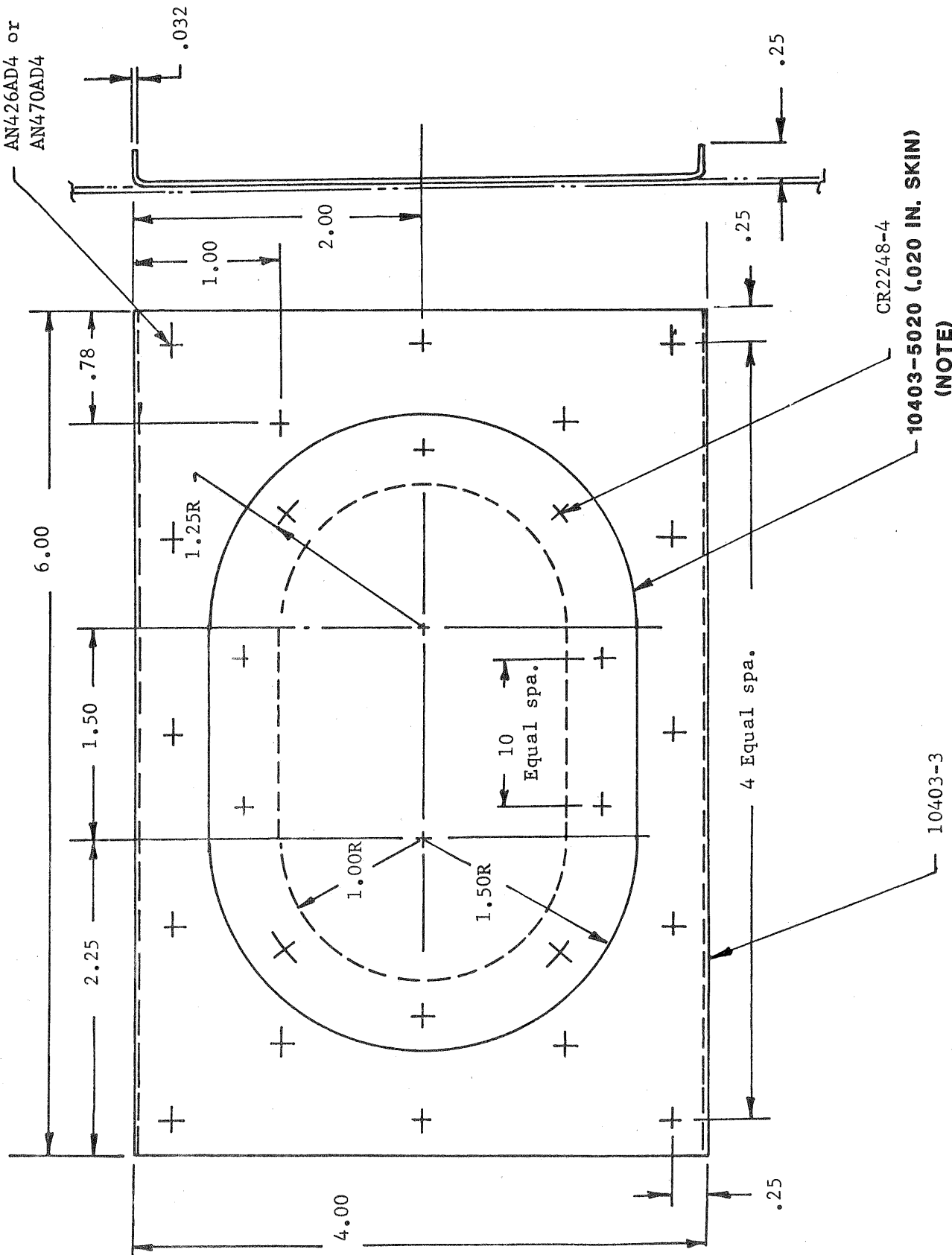
NOTES:

1. HAND HOLE REQUIRED ONLY IF DEBRIS IS NOTED IN LOWER PORTION OF TAIL FIN (AS VIEWED THROUGH INSPECTION HOLE).
2. REFER TO FIGURE 5 FOR STRUCTURAL DOUBLER AND PATCH INSTALLATION REQUIREMENTS.

FIGURE 4.

DATE: 25 March 1987

PAGE 12 of 12



Doubler
.032 2024-T3 Alc.
NOTE: EARLY SGS 1-35 SAIL PLANES WHICH INCORPORATE
A .016 IN. SKIN REQUIRE A 10403-5016 PATCH.

FIGURE 5. STRUCTURAL DOUBLER ID PATCH

SERVICE BULLETIN SA-003

DATE: 25 March 1987

PAGE 1 of 2

SUBJECT: AEROBATICS IN SCHWEIZER SAILPLANE MODELS LISTED BELOW.

MODELS AFFECTED: SGU 1-7
SGS 2-8 (TG2)
SGS 2-12 (TG3)
SGU 1-19
SGU 1-20
SGU 1-21
SGU 2-22, 2-22A, 2-22C, 2-22CK, 2-22E, 2-22EK
SGS 1-23, 1-23B, 1-23C, 1-23D, 1-23E, 1-23F, 1-23G, 1-23H,
1-23H15
SGS 1-24
SGS 1-26, 1-26A, 1-26B, 1-26C, 1-26D, 1-26E
SGS 2-32
SGS 2-33, 2-33A, 2-33AK
SGS 1-34, 1-34R
SGS 1-35, 1-35A, 1-35C
SGS 1-36 (Sprite)

NOTE

In the text of this writing, the terms "GLIDER"
and "SAILPLANE" are to be considered synonymous.

REFERENCE: 2-32 Flight-Erection-Maintenance Manual Page 1-10
2-22 Flight-Erection-Maintenance Manual Page 5
2-33 Flight-Erection-Maintenance Manual Pages 1-5
1-26 Flight-Erection-Maintenance Manual Page 5
1-34 Flight-Erection-Maintenance Manual Pages 1-7
1-36 "Sprite" Pilot's Operating Manual Page 23

DATE: 25 March 1987

PAGE 2 of 2

NOTE

For the purposes of this Service Bulletin, aerobatic flight means an intentional maneuver involving an abrupt change in an aircraft's attitude, an abnormal attitude, or abnormal acceleration, not necessary for normal flight. (Refer to FAR 91.71 for further information.)

PREFACE: Schweizer Aircraft Corporation DOES NOT APPROVE OR RECOMMEND that aerobatics of any kind be performed in any of the Schweizer sailplane models affected by this Service Bulletin, despite any language to the contrary in any of the Flight-Erection and Maintenance Manuals or Pilot's Operating Manual referenced herein.

Although there is language in the referenced publications that various levels of aerobatics are permitted, Schweizer Aircraft Corporation RECOMMENDS that NO TYPE of aerobatics be performed in these model sailplanes since in doing so, the structural design levels of the sailplane could be exceeded, which may result in serious personal injury to the occupants of the aircraft.

The only exception to this recommendation is spins when performed within the guidelines of, and as approved in, the Flight Manual or Pilot's Operating Handbook for the aircraft being operated. However, before performing spins in the aircraft, each pilot must receive complete instructions and training as to the proper execution of this maneuver, as well as the characteristics of the aircraft during the spin and recovery therefrom.

Schweizer Aircraft Corp.
Post Office Box 147
Elmira, New York 14902

SERVICE

BULLETIN

SERVICE BULLETIN SA-005.1*

DATE: 31 January 1988

PAGE 1 of 3

* Superseded Service Bulletin
NO. SA-005, Dated 1 June 1987

SUBJECT: IDENTIFICATION AND POSSIBLE REPLACEMENT OF TOW RELEASE ARM.

MODELS AFFECTED: • All the following Schweizer manufactured and kit built
Schweizer gliders and sailplane models.

SGU 1-7

SGS 2-8 (TG-2)

SGS 2-12 (TG-3)

SGU 1-19

SGU 1-20

SGU 1-21

SGU 2-22, 2-22A, 2-22C, 2-22CK, 2-22E, 2-22EK

SGS 1-23, 1-23B, 1-23C, 1-23D, 1-23E, 1-23F, 1-23G,
1-23H, 1-23H15

SGS 1-24

SGS 1-26, 1-26A, 1-26B, 1-26C, 1-26D, 1-26E

SGS 2-32

SGS 2-33

SGS 2-33, 2-33A, 2-33AK

SGS 1-34, 1-34R

SGS 1-35C

SGS 1-36 (Sprite)

- All Schweizer Sailplanes field retrofitted to incorporate
a tow hook installation

TIME OF COMPLIANCE: Shall be accomplished on affected aircraft prior to next
auto or winch tow, or within 60 days of issue date of
this bulletin, whichever occurs first.

PREFACE: Reports indicate that part number 1D217-13, 1D222-15, 1D222-17, and
34017D-15 tow release arms may fail to properly disengage the tow
hook from the sailplane during tow operations. The possibility of
this incident occurring greatly increases during auto and winch tow
operations or during an overrun of the tow line. This Service
Bulletin requires the replacement of the above mentioned release
arms with new or serviceable, used release arms (part numbers
specified within procedure).

DATE: 31 January 1988

PAGE 2 of 3

PROCEDURE

- a. Visually check release arms on the affected aircraft for the presence of a lug welded to the front of the arm, below tow hook slot. (Refer to Figure 1.)

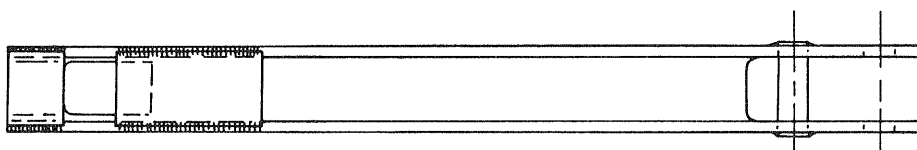
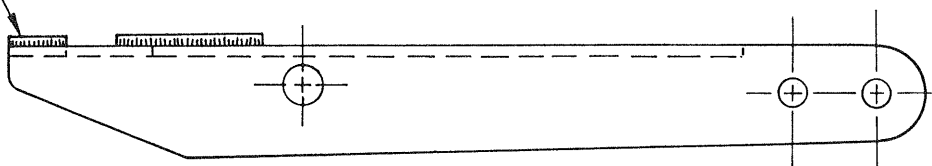
NOTE

- The suspect release arms (PN's 1D217-13, 1D222-15, 1D222-17, and 34017-15) may be identified by the presence of a lug welded on the front of the arm, below the tow hook slot. (Refer to Figure 1.)
 - Replace suspect release arms as follows:
 - (1) Replace 1D217-13 arm with 1D217-9 arm,
 - (2) Replace 1D222-15 arm with 1D222-11 arm,
 - (3) Replace 1D222-17 arm with 1D222-13 arm,
 - (4) Replace 34017D-15 arm with 34017D-11 arm.
- b. Remove and replace all suspect release arms (arms which incorporate lug welded to front, below tow hook slot) with acceptable replacement arm as specified in preceding NOTE.
 - c. Return suspect release arms to Schweizer Aircraft Corp. within 90 days of issue date of this bulletin for free warranty replacement. Contact Sailplane Product Support Department for exchange information.
 - d. Upon replacement of release arm, perform an operations check and maintain periodic and preflight inspections in accordance with the procedures outlined in Schweizer Bulletin SA-006.
 - e. Record Compliance with this Service Bulletin in aircraft log book.

DATE: 31 January 1988

PAGE 3 of 3

ANY RELEASE ARM WITH THIS LUG WELDED ON FRONT SURFACE AS SHOWN MUST BE REPLACED.



RELEASE ARMS WITH THIS LUG WELDED ON THE INSIDE AS SHOWN ARE NOT AFFECTED BY THIS BULLETIN.

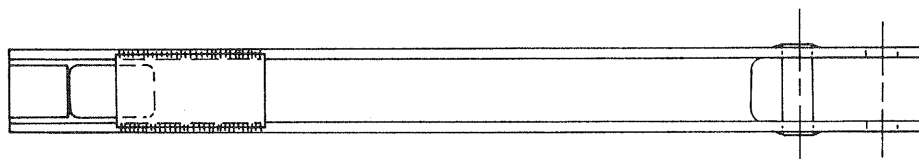
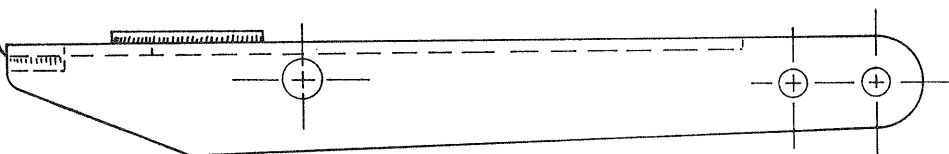


FIGURE 1. RELEASE ARM

Bulletin No. **SA-009**
Date: **12 Jan 1998**

SUBJECT: INSPECTION OF AILERON PUSH-ROD

MODELS AFFECTED: All Models SGS-135

TIME OF COMPLIANCE: ● Next Annual Inspection

REFERENCE: Schweizer SGS 1-35 Flight Manual, Erection & Maintenance Instructions

PREFACE: ● Field reports indicate that there may be looseness in the riveted joint of the long aileron push-rods in the wings. This could result in excessive play in the aileron control system leading to flutter and/or loss of aileron control.

PROCEDURE:

- a. Remove aileron push-rods from the wings by disassembly at the bellcrank (outboard) and removing through the wing root - the wings must be removed from the fuselage to do this.
- b. Inspect the joint in the push-rod, approximately 50 inches from outboard end for looseness (any relative motion between the rivets and/or component parts) or corrosion (rust emanating from the joint).
- c. If no corrosion or looseness is evident proceed to step i. If looseness or corrosion is evident, remove rivets. Disassemble push-rod and sleeve.
- d. Check for corrosion, especially internal steel surfaces. Clean component parts and reprime as necessary.
- e. Lightly abrade primed surfaces with 180 grit sandpaper.
- f. Clean faying surfaces with MEK. Allow 20 minutes for all of the solvent to flash off.
- g. Reassemble using Hysol EA9309.3 adhesive or equivalent on all faying surfaces. (Any epoxy structural adhesive suitable for metal that can be purchased at a hardware store is acceptable).
- h. While adhesive is still wet install CR2249-5-4 Cherry Bulbed or CR3243-5-4 Cherry Max blind rivets. These are 1st oversize rivets.

NOTE

Be sure the push-rod goes through the roller guide, located at wing STA. 111.4, with the push-rod rotated so as the rivet heads (subject rivet joint) miss the rollers.

- i. Re-install aileron push-rods in wings
- j. Report any condition that necessitates the re-riveting of this joint to the Schweizer Engineering Department along with the serial no. and time on aircraft.
- k. Record compliance with this Service Bulletin in the aircraft records.

WEIGHT AND BALANCE

Weight and balance are not affected.

Schweizer Aircraft Corporation
P. O. Box 147
Elmira, New York 14902

July 9, 1975

SERVICE LETTER

SERVICE LETTER NO. SL-102-10

SUBJECT: Flutter of Flaps at approx. 60 - 70 mph

MODEL AFFECTED: SGS 1-35, Serial No.'s 2 thru 35

There have been 2 cases of flap buzz or flutter at speeds of about 60 - 70 mph. In both cases it stopped by applying a small amount of flap, either positive or negative flap. It appears that at this speed range the flap is not subject to any damping airload at 0° flap position.

It appears from the owner's reports that the flap free play was .250 or more. This was free play with light hand pressure at trailing edge of the flap at the fuselage. More firm pressure will show more free play due to the tolerance in the fuselage flap control. To insure that the fuselage free play does not affect this, we are enclosing the attached rework Engineering Change Order No. 35-264.

Check your aircraft using the light pressure, about 2 - 3#, and if your free play exceeds .125 please advise us. If the free play approaches 3/16" do not fly until rework is accomplished per our instructions.

We have not as yet determined what is causing the free play. It may be unfavorable accumulation of tolerances or excessive wear in the system. Both aircraft mentioned above have accumulated some time but not a large amount of time.

The major sources of free play are probably the clearance in the torque tube drive at wing root, the bolt that attaches the outboard torque tube horn to the torque tube and the attachment of the push rod to the flap horn. If there is excessive play try to determine in what area it exists.

You will be advised of any mods if this proves necessary. The prototype has several hundred hours of severe use and has not shown this problem, though it shows about 3/16" free play in one wing.

Attachment: ECO 35-264

SCHWEIZER AIRCRAFT CORP.

ENGINEERING CHANGE ORDER

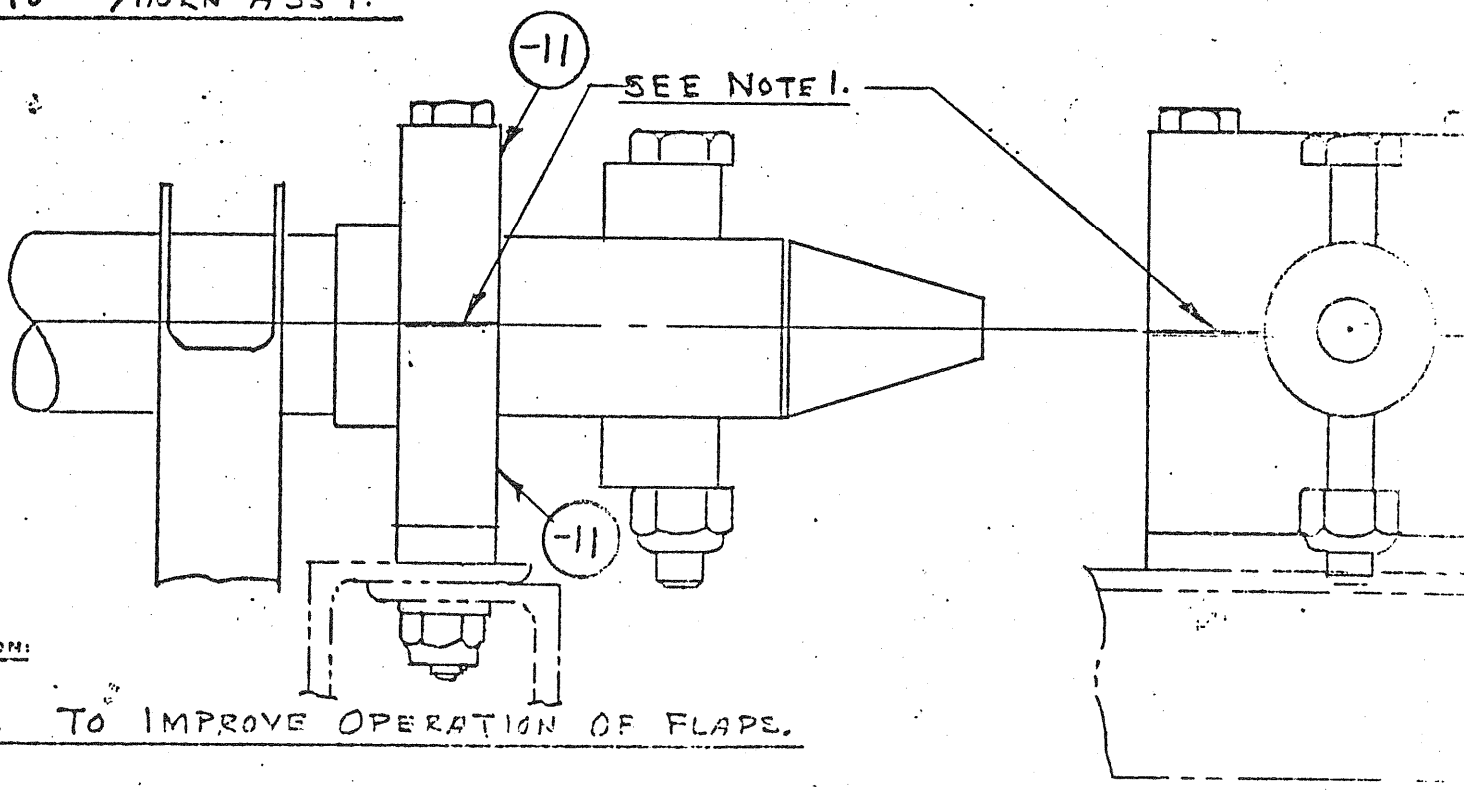
LE:	FLAP TORQUE TUBE - FUSE.						CHG. LET.
CHG. INC.		EFFECTIVITY	ALL A/C	PARTS AFFECTED	_____	ECO. SERIAL	35-264
BY	A. HAUCK	CARD POSTED	7-7-75	TOOLS AFFECTED	_____	D. C. R. SERIAL	_____
DATE	7-7-75	CHECKED	A. L. L.	STOCK DISPOSITION	REWORK	DWG. NO.	35-264

CHANGE:

1. F/D ADD: NOTE 1.

1. WITHOUT PUSH ROD ATTACHED ADJUST (1) PAIR OF -11 BEARING BLOCKS (L.H.) TO GIVE A FRICTION TORQUE ON TORQUE TUBE OF 5-8 IN. LBS. -11 BLOCK MAY BE FILED LIGHTLY TO ACHIEVE THE FINAL RESULT. WING PANELS SHALL BE REMOVED WHEN DOING THIS MOD.

2. F/D. ADD: SEE NOTE 1. TO CENTERLINE OF (2) -11 BLOCKS ADJACENT TO -7 HORN ASS'Y.



REASON:

1. - 2. TO IMPROVE OPERATION OF FLAPS.

Schweizer Aircraft Corporation
P.O. Box 147, Elmira, N.Y. 14902

December 9, 1976

Schweizer Aircraft Corp.

Service Letter No. SL-102-11
12/9/76

To: SGS 1-35 Owners

Subject: SERVICE LETTER NO. SL-102-11

Effectivity: SGS 1-35, Ser. No's 1 through 69

We are happy to report that, with over 70 1-35's flying, the operational experience with them has been very good.

We have, however, had two reported cases where, due to the use of heavy clothing, and/or accidentally striking the canopy latch, the 1-35's lost their canopies, although the ships landed without any other damage. In order to minimize this possibility, we have designed a simple guard which can be added to the two latches. We are sending a Kit, at no cost, to all owners who will be responsible to accomplish this. The details on installation of these guards follows:

CANOPY LATCH GUARD INSTALLATION

- 1) Center the dimple on face of 35249B-3 Guard with the center pivot bolt of L.H. Canopy Latch as shown on Engineering Change Order No. 35-322, against the 35245R Drawing. Be sure bottom edge of guard is parallel with edge of canopy frame.
- 2) Drill aft hole first, picking up *existing hole in canopy frame as shown in E.C.O. (Use drill bit sharpened for plastic materials). Drill new hole fwd. of latch where shown on print, being certain that fwd. latch rod will clear the spacer, when installed, through open-and-close operating range.

Notes: *a. Some early 1-35's will not have the existing screw holes in the canopy frame fwd. of the latches. In this case, simply position guard as instructed in (1), and drill holes where they are shown on the E.C.O. No. 35-322.

2) Notes Cont'd.

- b. Prior to installing the guards, it is recommended that the nut on each latch pivot-bolt be torqued at 10-15 inch-lbs. to provide a firm, but smooth-working, drag on the latch handle operation.
- 3) Carefully countersink newly-drilled hole(s) on outside of canopy frame to sufficient depth (.320 - .330 diameter) for flush fit of AN509-8-27 screws, provided in kit.
- 4) Remove the existing screw (if a later model) from fwd. hole and install AN509-8-27's provided in kit through fwd and aft holes.
- 5) Install 35249-5 spacer, -3 guard, AN960-8 washer and 22 NKTE -82 cap nut as shown on drawing.
- 6) Repeat above procedure with -4 guard and remaining hdw. in kit on right-hand latch.

If any problems, give us a call (607) 739-3821

KIT LIST OF PARTS AND HARDWARE

1	35249B-3	Guard
1	35249B-4	Guard
4	35249B-5	Spacer
4	AN509-8-27	Screw
4	AN960-8	Washer
4	22NKTE-82	Cap Nut-Red Nylon

DRAWING INFORMATION

1 (Attached) E.C.O. No. 35-322 Canopy Assembly

SCHWEIZER AIRCRAFT CORP.

ENGINEERING CHANGE ORDER							CHG.
TITLE	CANOPY ASSEMBLY						LET.
INC BY		EFFECTIVITY	2-70UP	PART AFFECTED	YES	ECO. SERIAL	35-322
ECO BY	A. HAUCK	CARD POSTED	11-17-76	TOOLS AFFECTED	YES	D.C.R. SERIAL	
DATE	11-17-76	CHECKED	11/17/76	STOCK DISPOSITION		DWG. NO.	35245R

1. B/M, ADD TO -1 COLUMN

CHANGE

(2) 22 NKT M - 82 CAP NUT - RED NYLON

(4) AN509-B-27 SCREW

(4) 35249B-5 SPACER

(1) 35249B-9 GUARD

(1) 35249B-3 GUARD

(4) #70 & UP

2. B/M, RE: AN509-B WASHER CHG QUAN. FROM (13) TO (15)

AN509-B-27 SCREW CHG QUAN (10) TO (8)

AN509-B-27 NUT (DELETE) (NEVER USED)

LOCATE GUARD, DRILL #17 (173) MTG HOLES

BY DRILLING THRU HOLES IN FRAME.

(2) AN509-B-27

(2) AN509-B

(2) 22 NKT M - 82 CAP NUT

3. F/D ADD:
VIEW "F-F"

(ON L.H. INST'L 35246A-1
KNCE IS ON O.B. SIDE OF
35249B-3 HANDLE)

35249B-3
GUARD

#17 (173)
HOLE

EXISTING
HOLE

REASON:

VIEW "F-F" (LATCH GUARD INST'L) (4) #70 & UP
(L.H. SIDE SH'N (SHOULD BE RETROFITTED
(R.H. SIDE OPP.) ON 4/8" THRU #GS)

1. & 2. BRING 2/M UP TO DATE.

3. GUARD REQ'D TO PREVENT ACCIDENTAL OPENING OF CANOPY.