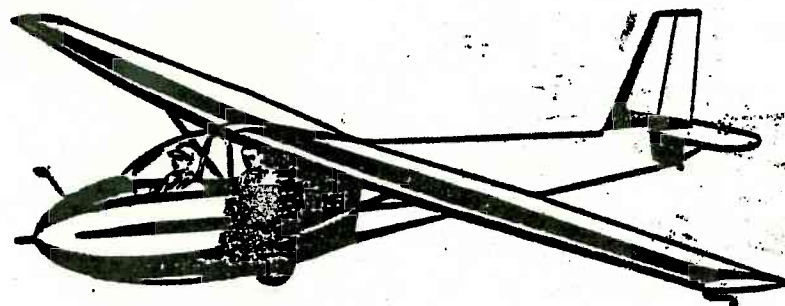


SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE



SCHWEIZER
SGS 2-33 AND 2-33A
PARTS
&
MAINTENANCE MANUAL

SCHWEIZER AIRCRAFT CORP.
P.O. Box 147
Elmira, NY 14902, USA
Phone: (607) 739-3821

*wood #
as of 4/1/79*



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

INTRODUCTION cont'd

Section A contains general aircraft information including principle dimensions, service materials, and aircraft handling. Parts and maintenance functions of the major aircraft systems are covered in the succeeding chapters.

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SCHWEIZER AIRCRAFT CORP.
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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

INTRODUCTION



This manual is intended for use by the operators and owners of the Schweizer SGS 2-33, SGS 2-33A, and 2-33AK Sailplanes as a guide for locating and identifying spare parts. It also contains recommended maintenance procedures and instructions for servicing and maintaining the sailplane along with Weight and Balance information, Service Letters, and Service Bulletins which are in force at the time of this issuance. The information contained in this manual is based on data available at the time of publication.

A study and use of the manual will enable experienced personnel as well as personnel with limited experience to perform general maintenance on the complete airframe including inspections, lubrication, disassembly of the aircraft, and removal and installation of components.

If you have questions or desire parts other than those listed herein, please contact your nearest Schweizer Dealer. If you require information or manufacturing blueprints in limited quantities, your dealer will refer you to the proper person at the Schweizer factory.

Most aircraft are repaired according to FAA Advisory Circular AC 43.1 and factory blueprints with final approval by an FAA Certified AI Inspector. You should consult with a properly certificated aircraft mechanic or the FAA before proceeding with any repairs. No liability on the part of Schweizer Aircraft Corp. or its employees for any repairs or maintenance is implied by the use of this manual. All maintenance must be conducted within the current Federal Aviation Regulations, with inspection and approval by that administration for any repairs requiring inspection or approval.



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

USE OF THIS MANUAL

Before embarking on any aircraft repair or maintenance, you are required to determine what jurisdiction the Federal Aviation Administration will have over your proposed procedure. Sources of information are the current pertinent FAR's and the FAA General Aviation District Office or Engineering and Maintenance District Office.

Part number identification can be obtained from this manual, from the parts themselves, or from Schweizer Aircraft Corporation drawings. The FAA approved Schweizer drawings are the final authority in cases of question. To order parts from this manual, please observe the following procedure:

- 1) Orders should be placed through the Schweizer Dealer Organization. Addresses and phone numbers of these are published in Soaring Magazine, or can be obtained from Schweizer Aircraft Corporation.
- 2) All orders should contain the serial number of the sailplane for which the parts are being ordered.
- 3) Orders should be stated as follows:

<u>Item,</u>	<u>Quantity Ordered,</u>	<u>Part Number,</u>	<u>General Description</u>
--------------	--------------------------	---------------------	----------------------------

The order should include desired method of shipping (truck, UPS, Parcel Post, Air Freight, etc.) and proper complete address.

Schweizer Aircraft does not normally sell hardware or general supplies to aid in the repair of aircraft. For this reason, the repairman or mechanic should be prepared to furnish his own rivets, AN hardware, fabric, dopes, lubricants, etc. In addition, most Cleveland aircraft products, wheel and brake parts, should be obtained from any of the standard aircraft supply houses. Parts and supplies unique to the 2-33 will be supplied by Schweizer.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

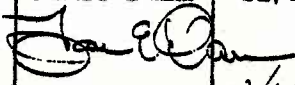
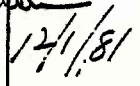
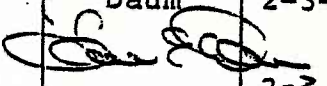
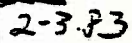
All parts are shipped FOB Elmira, New York or the Dealer's base of operation. This means that freight charges are for the account of the consignee, and liability becomes that of the consignee when the parts leave the Schweizer of Dealer's dock. Breakage or other claims must be negotiated exclusively between the consignee and the carrier. If damage is suspect, a shipment should be initially opened in the presence of the carrier's representative, and a claim submitted to the carrier on the spot, if necessary.

Questions concerning the order should be submitted to the firm which accepted the initial order. All correspondence or other contacts must reference the shipping order number and invoice number.

Parts to be returned can only be returned upon receipt of a return authorization number from the original shipper, and must be returned prepaid. Written justification, the shipping order number, and the return authorization number must be included with all returns. If returns are for other than for parts incorrectly shipped, a re-stocking fee will be assessed.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

LIST OF REVISIONS

Rev.	Pages Affected	Approved	Date
A	A4, B2, B19, B24, C2, C6, C11, C12, C15, C26, C30, D1, D2, D13, D14, D44, D45, D46, D47, D48, E8, E9, E14, E15, E17, E20, E21, E26, G9, G12, G13, H1, H2, H6, H7, H11, H13, H15, H22, J22, J50, J55, L1, L2, L3, L4, L5, M7	James Daum 	12/1/81 
B	B25, B26, C11, C18, C20, D6, D7, D26, D29, G9, H4, J4, J5, J50, J51, J52, J53, K10, SL-102-16, SL-102-17, SL-102-18, SB-102-33-3.	James Daum 	2-3-83 

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

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B	Fuselage Assy & Interior Furnishing
C	Fuselage Structure
D	Controls
E	Canopy, Door, Gap Covers, Window
F	Instruments
G	Empennage
H	Wheel, Tire, Brake, Skid
J	Wing, Dive Brake, Aileron, Strut
K	Misc./Optional Equipment
L	Available Kits
M	Repair Aids
N	Inspection Practices
P	Service Bulletins and Letters
R	Notes

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

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Tie Down	8,9
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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

AIRCRAFT GENERAL

PRINCIPLE DIMENSIONS

GENERAL

Wing Span	51 Ft. 0 In.
Horizontal Stabilizer Span	93.0 In.
Overall Length	25 Ft. 9 In.
Height	9 Ft. 3 1/2 In.
Chord (Max)	60.00 In.
Design Gross Weight	1040 Lbs.
Aspect Ratio	11.85-1

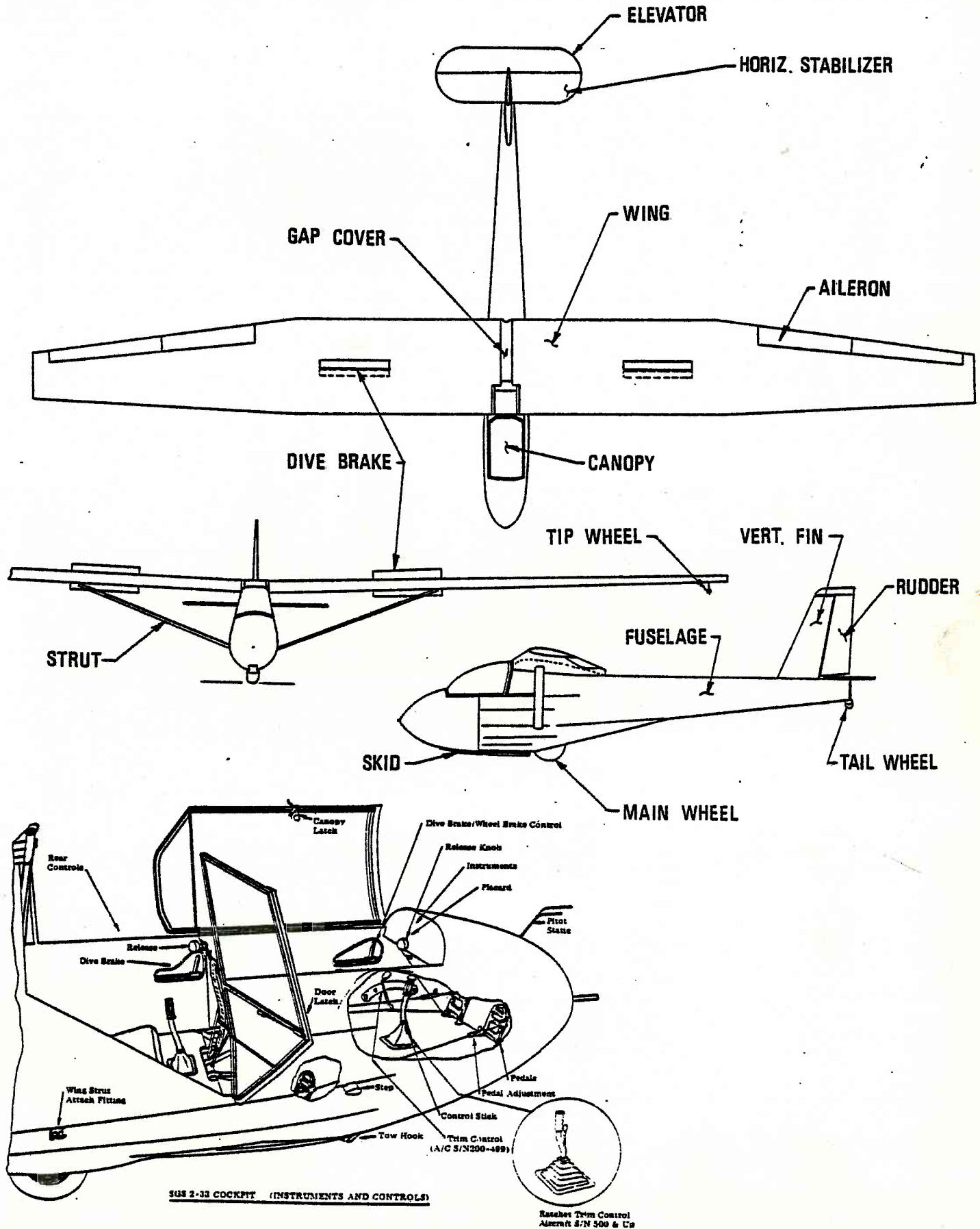
AREAS

Wing	219.48 Sq. Ft.
Ailerons	18.24 Sq. Ft.
Stabilizer	11.28 Sq. Ft.
Elevators	9.23 Sq. Ft.
Vertical Fin	7.38 Sq. Ft.
Rudder	5.84 Sq. Ft.
Dive Brake	5.88 Sq. Ft.

CONTROL MOVEMENTS

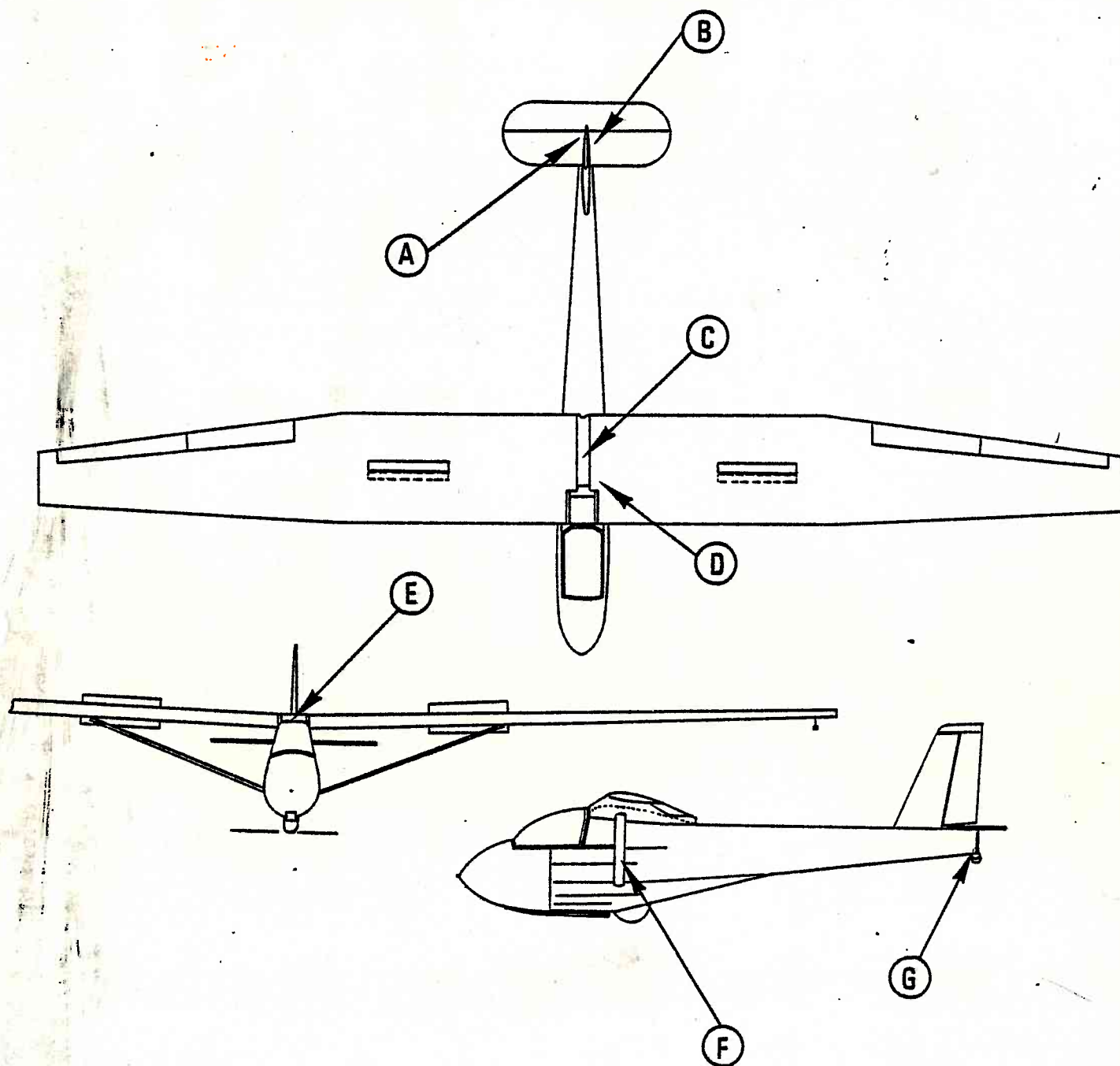
Ailerons	$38^{\circ} \pm 2^{\circ}$ Up, $18^{\circ} \pm 2^{\circ}$ Down
Elevators	$23^{\circ} \pm 2^{\circ}$ Up, $23^{\circ} \pm 2^{\circ}$ Down
Rudder	$30^{\circ} \pm 2^{\circ}$ Left, $30^{\circ} \pm 2^{\circ}$ Right
Dive Brake Upper	$85^{\circ} \pm 5^{\circ}$
Dive Brake Lower	$75^{\circ} \pm 5^{\circ}$

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE GENERAL ARRANGEMENT



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

ERECTION HARDWARE



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

FLIGHT ERECTION HARDWARE

ITEM	PART NO.	NAME	QTY.	MODEL
A		Horizontal Tail Surface Attach		
1	AN4-13A	Forward Attach Bolt	2	
2	AN4-33A	Aft Attach Bolt	1	
3	AN960-416	Washer	3	
4	AN365-428	Nut	3	
B		Elevator Pushrod Attach		
1	AN4-6	Bolt	1	
2	AN310-4	Nut	1	
3	AN960-416	Washer	2	
4	AN380-2-2	Cotter Pin	1	
C		Wing Attach		
1	33916A-5	Front Spar Attach	2	
2	33916A-3	Rear Spar Attach	2	
3	#2	Comm. Safety Pin	4	
D		Aileron Attach		
1	AN393-21	Pin	2	
2	#1	Safety Pins	2	
E		Dive Brake Attach		
1	AN393-21	Pin	1	
	#1	Safety Pin	1	
F		Main Strut Attach (Ea. Side)		
1	33916A-5	Bolt	2	
2	#2	Safety Pin	2	

Revised 12/1/81

A4

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

FLIGHT ERECTION HARDWARE

(Cont'd)

ITEM	PART NO.	NAME	QTY.	MODEL
		Optional Strut Attach (Ea., Side)		
1	33916A-5	Bolt	2	
2	AN960-716	Washer	2	
3	AN310-7	Nut	2	
4	AN380-3-5	Cotter Pin	2	
		Optional Strut Attach (Ea. Side) (Upper) Eff. S/N 315 & Up & Retrofit		
1	33428-1	Bolt	1	
2	33428-3	Collar	1	
3	AN310-5	Nut	1	
4	AN380-3-3	Cotter Pin	1	
G		Stabilizer Strut Attach		
	AN3-7	Bolt	4	
	AN310-3	Nut	4	
	AN380-2-2	Cotter Pin	4	
	AN960-10	Washer	4	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

A. ASSEMBLY OF THE AIRCRAFT

1. With the fuselage in an upright position, attach wing struts to fuselage with (2) AN7 (7/16") bolts and #2 Commercial safety pins.

NOTE: The wing and strut attach bolts must have a grip-length of 1-13/16" min., to avoid threads in bearing.
2. Lift and place L.H. wing in position and attach to fuselage with an AN7 (7/16") bolt in front fitting and an AN6 (3/8") bolt in rear fitting. Install #2 Commercial safety pins in bolts.
3. Raise L.H. strut and attach to wing strut-fitting with P/N 32428B-1 bolt (special, P/N 33428B-3 collar), AN310-5 castle nut. Safety with #2 Commercial safety pin.
4. Attach aileron push-rod to bellcrank on fuselage. This connection is made with (1) AN393-25 Clevis Pin and (1) Commercial safety pin.
5. Repeat above items 1 thru 4 for R.H. Wing. While sliding this wing in position, check to make sure that the dive-brake torque tube fittings are properly positioned to mesh (bolt into opposite slot), with dive-brakes on both wings closed.
6. Attach the dive-brake push tube (in fuselage) to the bellcrank on the torque tube of the L.H. Wing. Use an AN393-21 pin and secure with a #1 Commercial safety pin.
7. Check items 1 thru 6 on each wing for proper installation and safetying.
8. The wing tip wheel is intalled by inserting the ferrule on the spring assembly into a hole in the lower side of the wing. Secure in place using an AN3-6A bolt, with a washer under the head, screwed into a 10-32 nut plate which is fastened to the internal bracket assembly.
9. Install wing gap cover, the Plexiglass Assembly is put in place between the wing leading edges and secured with the "airloc" studs. The aft gap-cover assembly is then hooked over the wing trailing edges, the pierced-strap inserted in the takeup mechanism and tightened with a screwdriver. The padding assembly is then put in place between the wing roots and secured to the root rib on each side.

B. INSTALLATION OF STABILIZER AND ELEVATOR

1. It is seldom necessary to remove the elevator and stabilizer of this aircraft for normal purposes. However, if they have been removed, the following method should be used for re-assembly.
2. Place assembled elevator and stabilizer into position, with strut lugs on stabilizer on the bottom side. Secure with AN4 bolts, AN960-416L washers and AN365-428 nuts thru stabilizer front and rear spar fittings, and fuselage attach fittings.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

B. INSTALLATION OF STABILIZER AND ELEVATOR (Cont'd)

3. Place stabilizer struts in position and secure each with 3/16" bolts, AN960-10 washer, AN310 nut and cotter pin.
4. Connect elevator push-rod to elevator horn with AN4-6 bolt, AN310-4 nut, AN960-416 washer and cotter pin. Use caution not to overtighten nut and cause binding of the elevator control.

C. PERFORM LINE INSPECTION TO DETERMINE THAT:

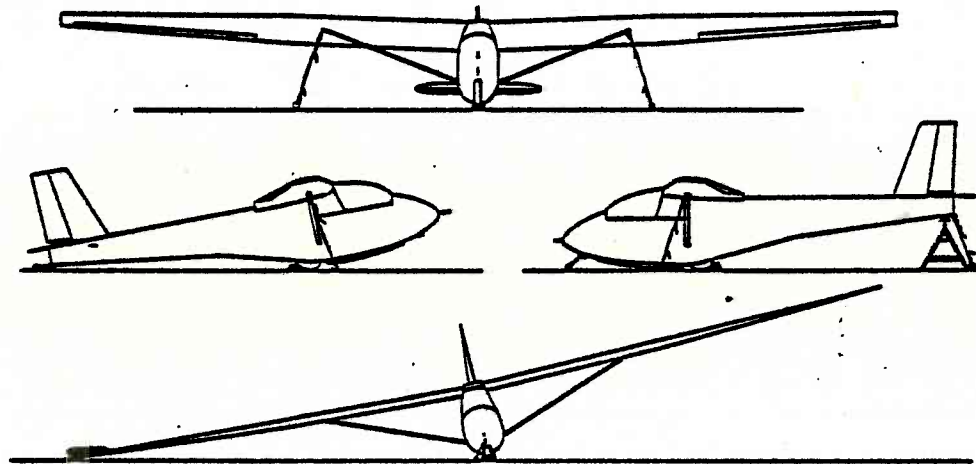
1. All controls move freely in the correct direction with no binding or lost motion.
2. All control components are properly saftied.
3. Both dive brakes open equally and that wheel brake is actuated at the end of the control travel.
4. That ailerons are in neutral, in conjunction with the stick position.

NOTES:

1. In view of the fact that the glider may have to be disassembled rather frequently in the field; the number of bolted attachments are kept to a minimum. However, should the owner or operator be so inclined, all of the attachment fittings may be made with appropriate AN bolts, nuts and cotter pins, replacing the clevis and safety pins specified. LSP-1 safety pin is an acceptable alternate for #1 and #2 commercial safety pin.
2. For trailering, the L.H. rear window should be removed and stored in the cockpit, as there is minimum clearance between window hinge and trailer. (L.H. Wing), window may be saftied shut if wing clearance is available.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SAILPLANE TIE DOWNS



Many more sailplanes are damaged on the ground by the wind than in flying accidents. It is usually due to leaving the ship unsecured or using inadequate tie downs.

In the normal, tail down, ground position, the wing has a high angle of attack. A 2-22 or 2-33 (empty wgt. 500#), facing into the wind will be subjected to lift forces as shown:

<u>WIND</u>	<u>LIFT</u>	<u>NET LIFT</u>	<u>WIND</u>	<u>LIFT</u>	<u>NET LIFT</u>
30 Mph	750	250#	60 Mph	2,900	2,400#
40 Mph	1,300	800#	70 Mph	3,950	3,450#
50 Mph	2,000	1,500#	80 Mph	5,200	4,700#

Therefore, it is very important that adequate tie downs are provided. The following procedures are recommended:

1. Sheltered Area: Tail down, ropes (*), at wings and tail (***).
2. Unsheltered Area: Facing into prevailing wind. Rope at wings and tail, and chain tie down to release hook.
3. Unsheltered - High Wind Hazard: Tail supported on padded stand. Rope to wings and two ropes to tail. Short chain (5/16" welded link), tie down to tow hook.
4. Flightline Tie Down: Short chain tie down to tow hook (tail in air). Water filled tire tube on end of one wing.

NOTE: *Minimum size of recommended ropes - 5/16" nylon, or 1/2" manila - renewed each season. (Knots can reduce rope strength by 50%).

**Size and style of ground anchor will depend on soil composition and type of sailplane. In light sandy soils, anchor arm or chain longer and set deeper. A ground anchor should be able to withstand a vertical pull of at least 2,000#. Should not be located directly under tie downs.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SAILPLANE TIE DOWNS (cont'd)

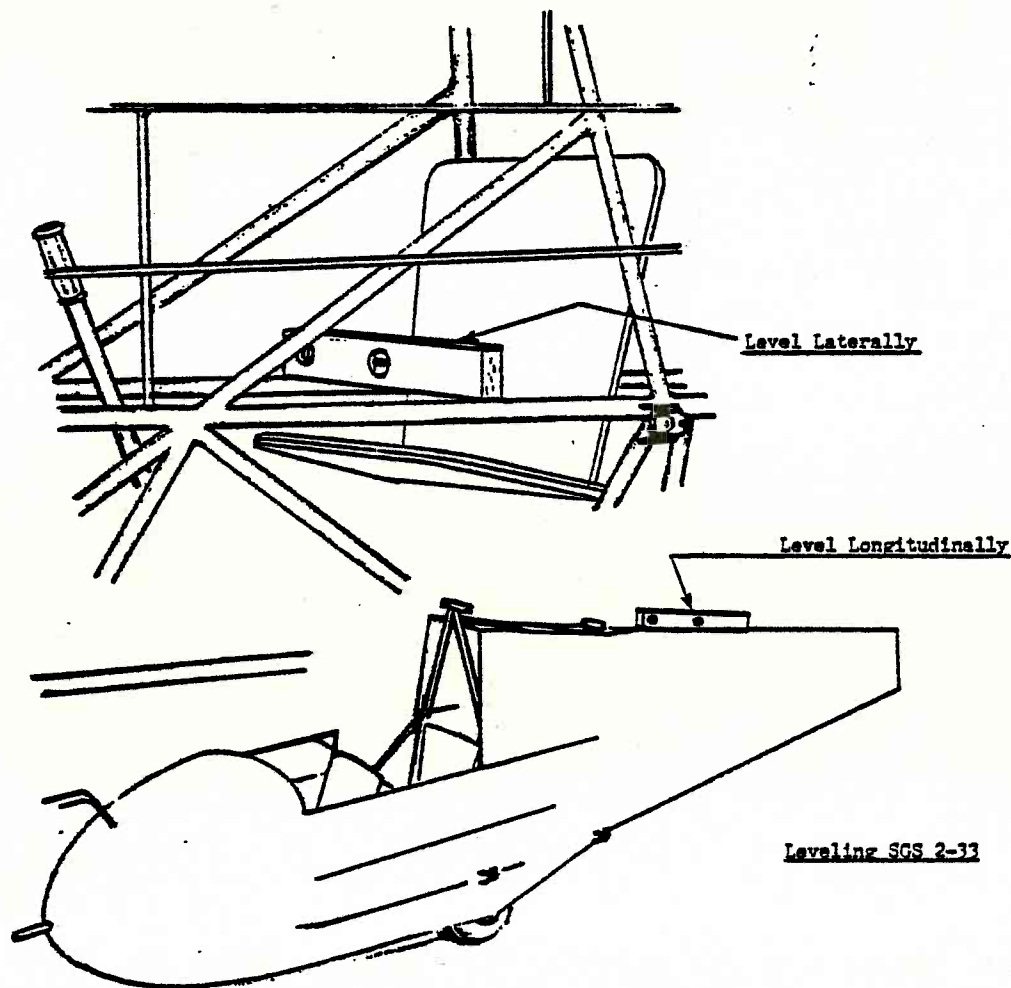
*** Rudderlock - recommended if control locks are not used. Ailerons and elevator should be secured with seat belt around control stick.

**** Securing the spoilers or dive brakes open will decrease lifting forces.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

LEVELING:

- a. To level fuselage laterally, prop up the wing tips and test for horizontal on fuselage members, see below.
- b. To level longitudinally, prop up the tail and test for horizontal on the top longeron of fuselage aft of wing, see below.



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

2-33A GROSS WEIGHT and BALANCE CALCULATIONS

When preparing for any particular flight the pilot must answer two questions:

1. Is my weight and my passenger's weight within the maximum limits of gross weight for this flight? and
2. Is the sailplane properly balanced for this flight?

The following procedure is designed to help the pilot determine the actual weight and balance of his 2-33A for any particular flight loading. To do this, we calculate the moments of the aircraft and each occupant using the equation weight X arm = moment ($WA = M$).

The sailplane must be balanced within forward and rearward C.G. limits when it is flown. These limits are defined at Sta. 78.20" for the forward limit, and Sta. 86.10" for the rear limit. This figure is constant for all 2-33's. The weight and empty center of gravity of each specific 2-33 is determined at manufacture, or on any subsequent reweighing, so this information is available to any pilot from Schweizer Form I-4427 to calculate his operational weight and balance. Also known are the arm (or distance aft of Station "0") for the optional ballast, the front pilot and the rear pilot. With this given information we can develop a form for calculating the actual arm (or C.G. location) for the sailplane for any particular loading.

Items Known:

Front Pilot Weight _____ Sta. 43.80

Rear Pilot Weight _____ Sta. 74.70

Sailplane Empty Weight _____ 2-33 S/N _____

Removable Ballast Weight - 0 or 26 lbs. (all 2-33's) Sta. 14.75

Baggage Capacity - None allowed

Sailplane Empty C.G. _____ 2-33 S/N _____

Limits: Forward: Sta. 78.20 (all 2-33's)

Rear: Sta. 86.10 (all 2-33's)

To Be Determined:

1. Whether the actual CG of the particular 2-33 to be flown will fall within the above limits.
2. Whether total gross weight is not greater than the maximum allowable 1,040 lbs. for any 2-33.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

WEIGHT AND BALANCE CALCULATIONS SGS 2-33 or 2-33A

Example Sailplane Serial No. 369 (See Form I-4427 below)

ITEM	WEIGHT	ARM	MOMENT
Sailplane empty weight & empty C.G.	612	96.12	58,825
Front Pilot Weight	170	43.80	7,446
Rear Pilot Weight	150	74.70	11,205
Ballast, if used	0	14.75	-0-
Total Moment			<u>77,476</u>
Total Weight	<u>932</u>		
$\frac{\text{Total Moment}}{\text{Total Weight}} =$	$\frac{77,476}{932} =$	83.12	Actual flying CG

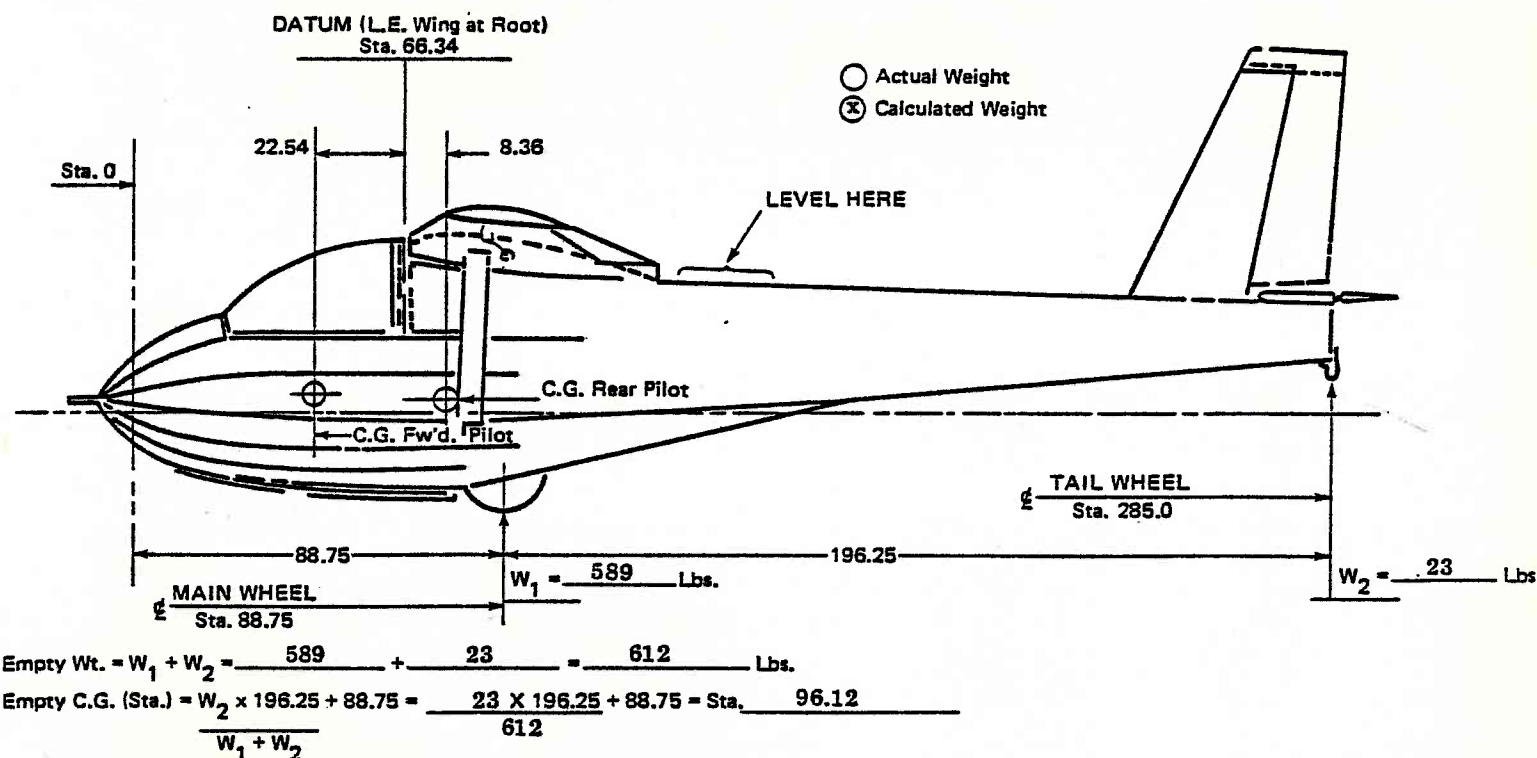
This CG is between the limits of Sta. 78.20 and 86.10, and gross weight is less than 1,040 lbs., so this sailplane has a proper flight weight and balance loading.

SCHWEIZER AIRCRAFT CORPORATION

Form I-4427-1

IRA, NEW YORK 14902

WEIGHT & BALANCE, MODEL NO. SGS 2-33A SER. NO. 369 REG. NO. N-33969 DATE February 27, 1975



AS WEIGHED INCLUDES EQUIPMENT LISTED ON I-4427-3

NOTES: See Glider Data Sheet No. G2EA - Fw'd Pilot C.G. at Sta. 43.80 - Rear Pilot C.G. at Sta. 74.70
CLASS II, UTILITY: C.G. Limits - Sta. 78.20 to Sta. 86.10, or, 11.86" to 19.76" Aft Datum.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

NOTES

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

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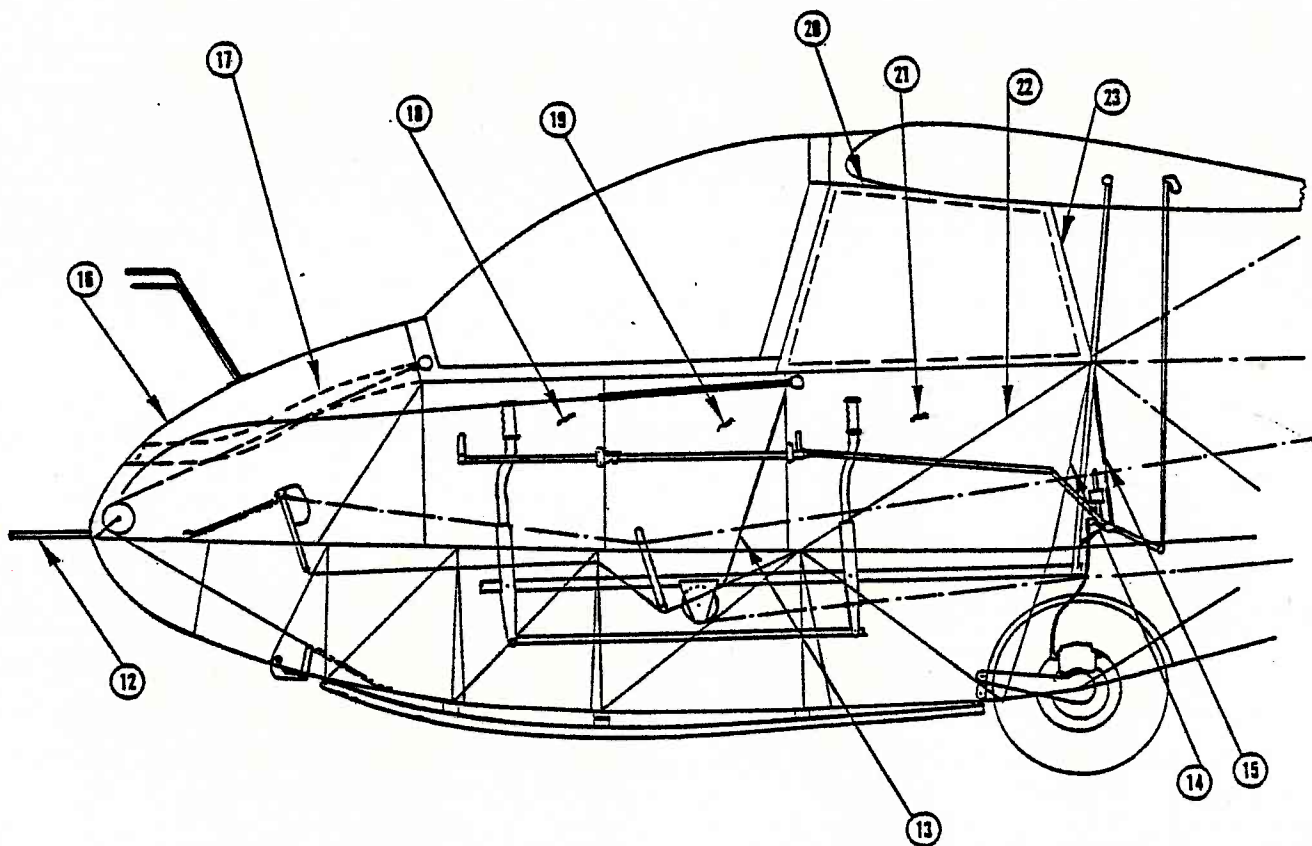
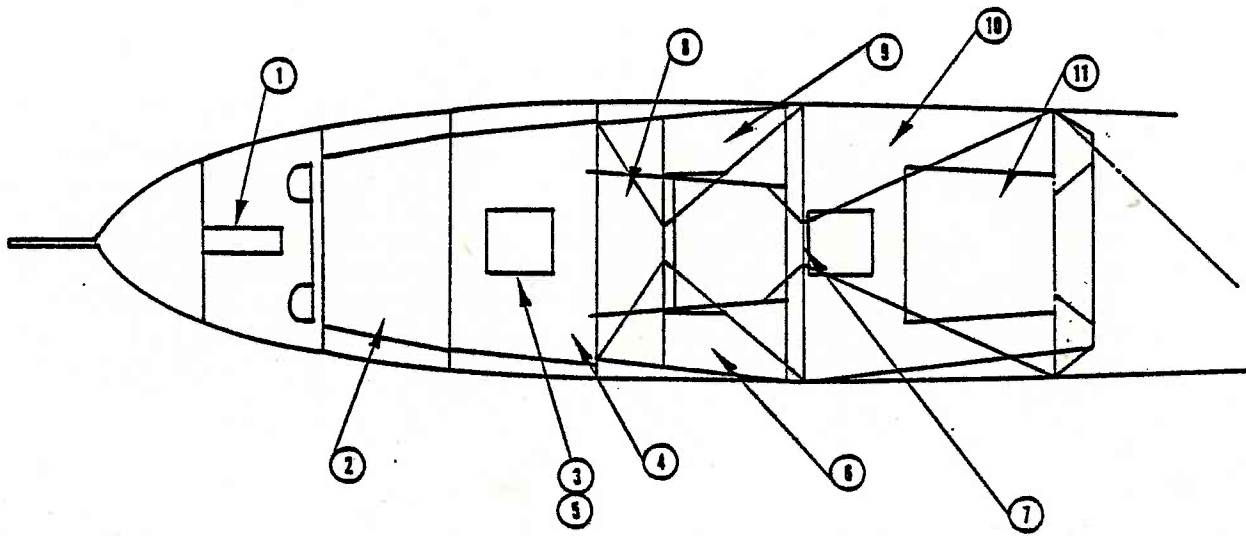
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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Fuselage Assy - Misc. Components



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

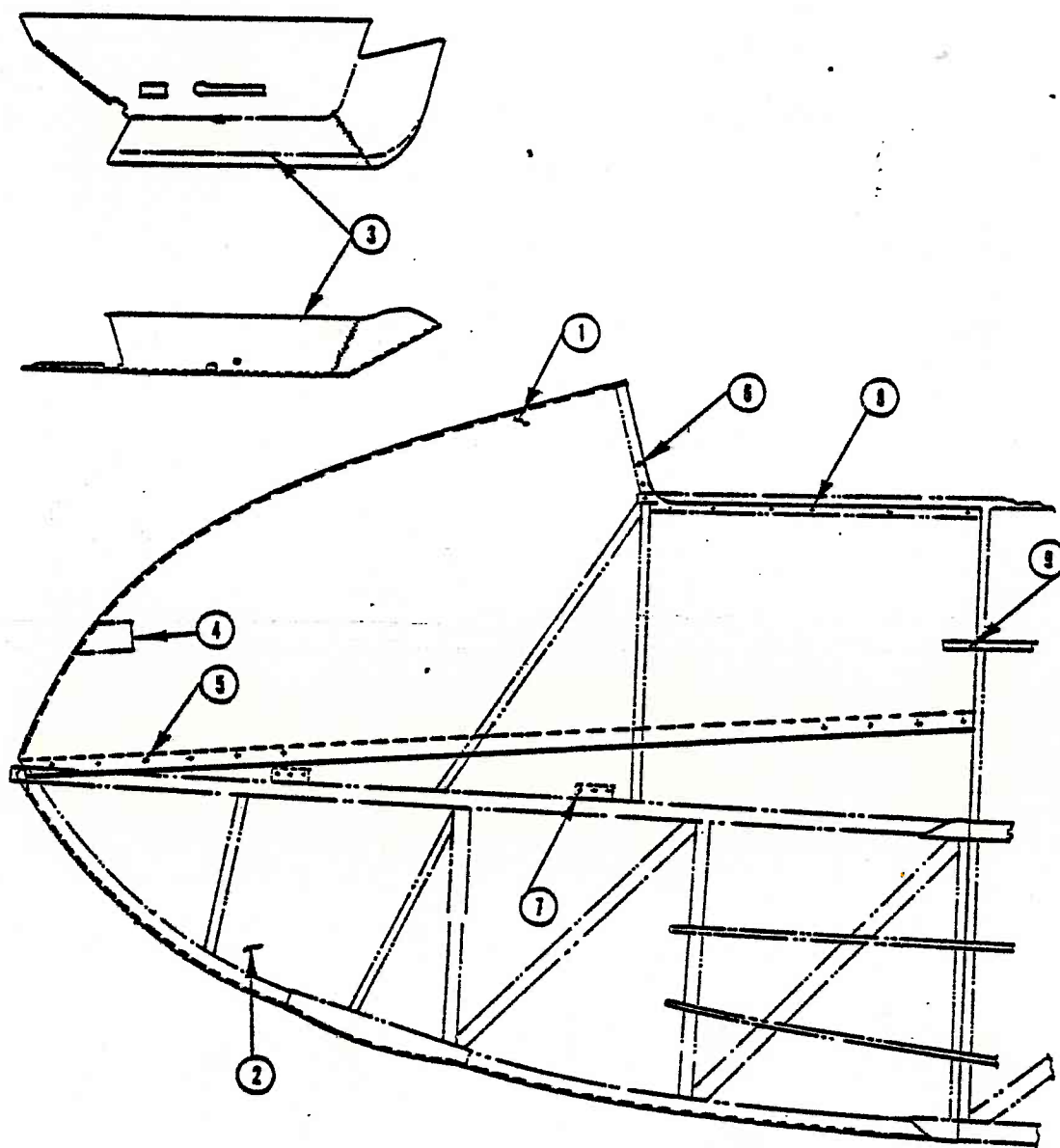
FUSELAGE ASSY - MISC. COMPONENTS

ITEM	PART NO.	NAME	QTY.	MODEL
1	33011	Ballast Wt. see page K9	Opt.	
2	33338	Forward Floor Board see page B14	1	
3	7090D-3 *	Boot - Control Stick	2	
4	33339	Floor - front see page B14	1	
5	33340-13 *	Retainer - Boot	2	
6	33342-11	Floor - foot support L. H. see page B14	1	
7	22D321	Seat Belt/Shoulder Harness Instl. see page K1	1	
8	22G349	Front seat bottom see page B15	1	
9	33342-12	Floor - foot support R. H. see page B14	1	
10	33340-1	Floor - rear see page B14	1	
11	33316D-1	Seat Bottom - rear see page B15	1	
12	33010D	Nose Handle see page B5	1	
13	22349-3	Front Seat Back Assy see page B15	1	
14	33330-3	Liner - rear seat back see page B24		
15	33137-1	Support Assy - Hyd. Brake	1	
16		Nose Fairing see page B3	1	
17	33312	Ventilator Instl. see page K4	1	
18		Fwd Cockpit trim panels see page B18, B21		
19		Intermediate Cockpit trim panels see page B20		
20		Fuselage/wing fairing see page B7	1	
21		Aft Cockpit trim panels see page B19		
22	33333	Door Sill see page B11		
23	33326	Head Protector see page B22		
*NOTE: Items 3 & 5 are sold as a boot assy only, order Part #33340-3				

Revised 12/1/81

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33302 Fairing Instl. - Fiberglass Nose



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

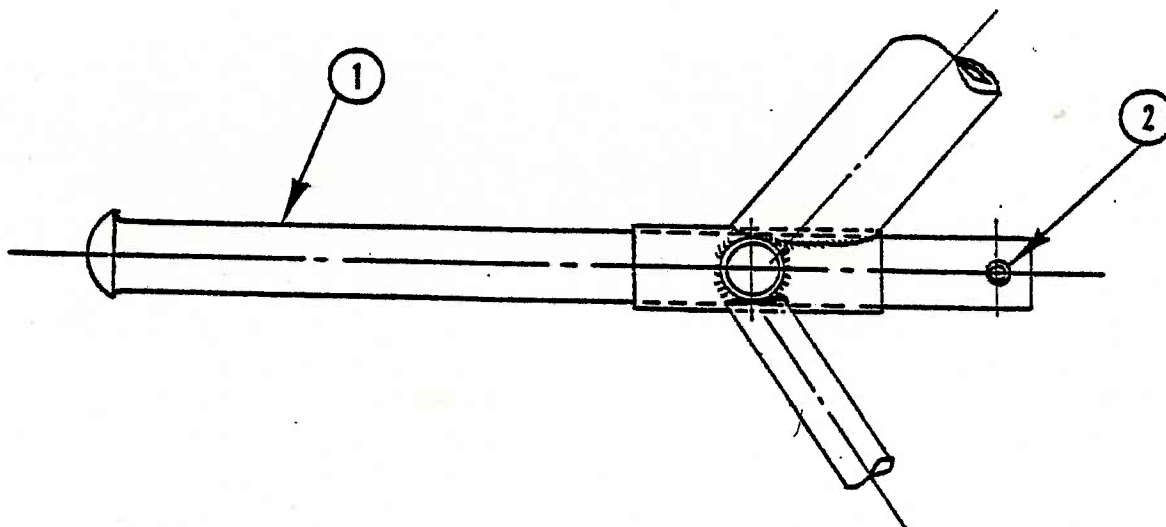
33302R Fiberglass Nose Fairing

ITEM	PART NO.	NAME	QTY.	MODEL
1	33324-7	Fairing - Upper	1	Thru A/C 466
1	33324-11	Fairing - Upper	1	A/C 467 & Up
1	33324-9	Fairing Assy Complete - Upper	1	A/C 467 & Up
2	33324-5	Fairing Lower	1	
3	33907-1	Fairing - C. G. Tow Release	1	
4	33309-1	Vent Tube	1	
5	MS20 426AD4	Rivet	22	
6	100V4	Rivet	19	
7	MS20426AD4	Rivet	12	
8	100V4	Rivet	12	
9	#4 x 1/4	F. H. P.K. Screw	6	

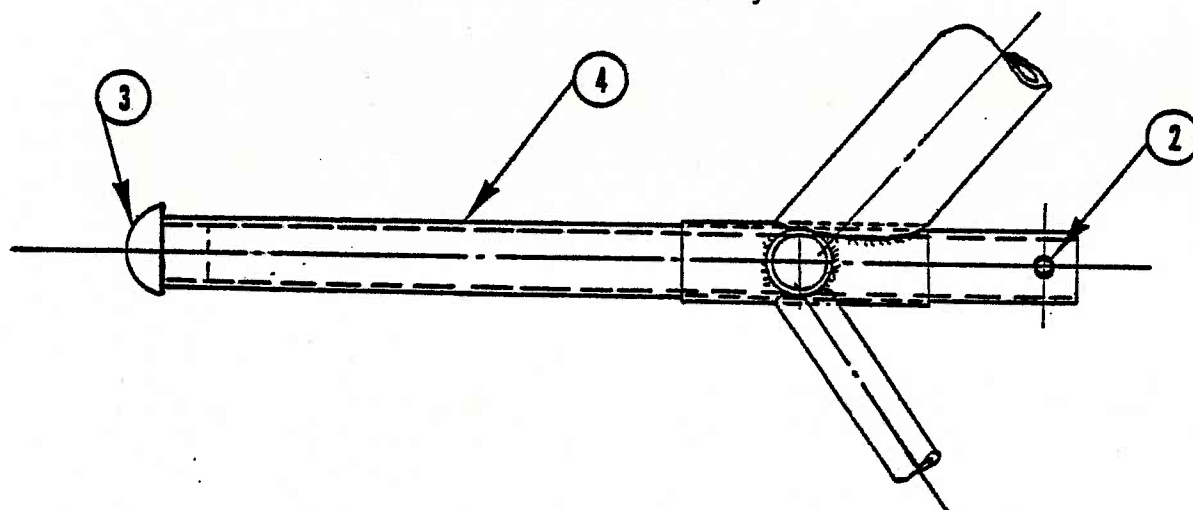
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Nose Handle Assy

33012B-1 Nose Handle (Optional)



33010D-1 Nose Handle Assy



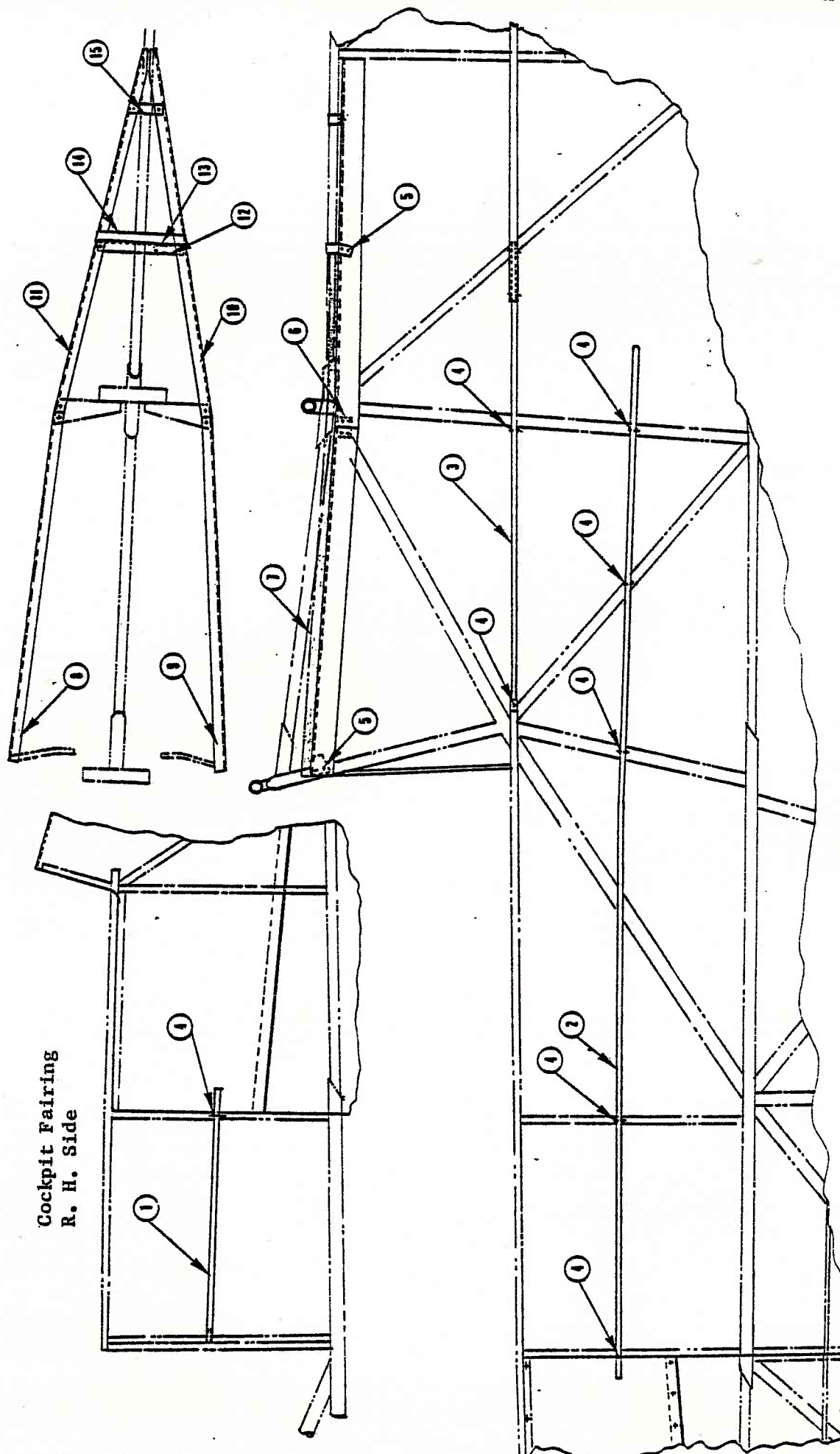
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33012B Nose Handle (Optional)

33010D Nose Handle

ITEM	PART NO.	NAME	QTY.	MODEL
1	33012B-1	Handle Alum. Bar	1	Optional
2	52-028-125-1000	Roll Pin	1	
3	33010-5	Button	1	
4	33010-3	Tube (4130N)	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE



Cockpit Fairing
R. H. Side

33302 Fairing Tube Inst' 1 - Fwd
33302 Wing Fairing Inst' 1

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

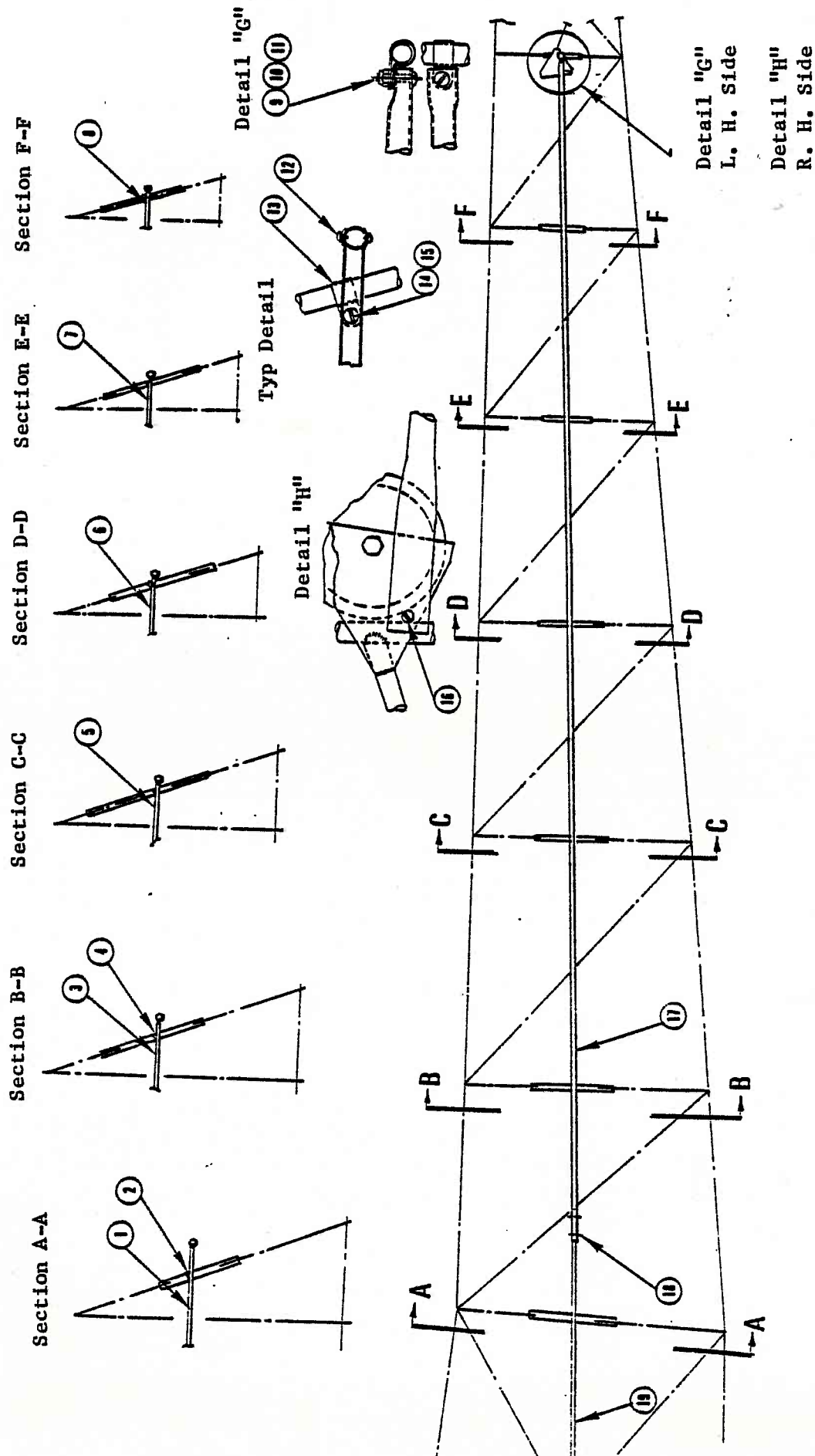
33302 Fairing Tube Instl - Fuse. Fwd

33302 Wing Fairing Instl

ITEM	PART NO.	NAME	QTY.	MODEL
1	33302-31	Tube - bow R. H.	1	A/C 66 & Up
2	33302-29	Tube - bow L. H.	1	A/C 66 & Up
3	33302-11	Tube - bow	2	
4	#4 x 1/4	F.H. P.K. Screws	A/R	
5	MS20470AD4	Rivet	A/R	
6	33302-23	Gussett	2	
7	33302-25	Seal	2	
8	33302-20	Wing Fairing R. H. (fwd)	1	
9	33302-19	Wing Fairing L. H. (fwd)	1	
10	33302-21	Wing Fairing L. H. (aft)	1	
11	33302-22	Wing Fairing R. H. (aft)	1	
12	33302-15	Angle	1	
13	33302-33	Seal	1	
14	33302-13	Fabric Support	1	
15	33302-17	"U" Bracket	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33302 Fairing Tube. Inst'l (Aft)



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

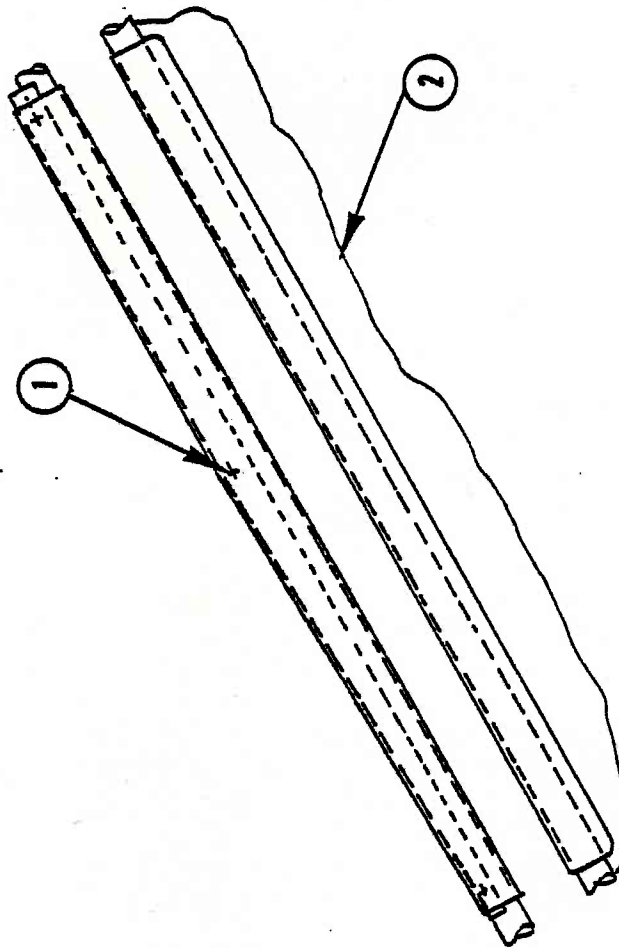
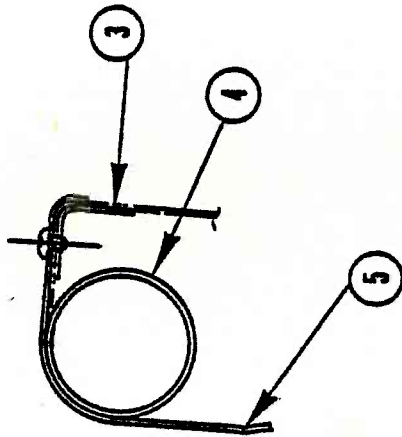
33302 Fairing Tube Inst'l - Aft

ITEM	PART NO.	NAME	QTY.	MODEL
1	33306-11	Fairing Clip	1	
2	AN742-D14	Clamp	2	
3	33306-1	Fairing Clip	1	
4	AN742-D10	Clamp	2	
5	33306-3	Fairing Clip	1	
6	33306-5	Fairing Clip	1	
7	33306-7	Fairing Clip	1	
8	33306-9	Fairing Clip	1	
9	AN742-8	Clamp	1	
10	AN520-10-14	Screw	1	
11	AN365-1032	Nut	1	
12	AN530-4-4	Screw	24	
13	AN742-D8	Clamp	12	
14	AN520-10-8	Screw	12	
15	AN365-1032	Nut	12	
16	AN530-4-4	Screw	1	
17	33302-27	L. H. Fairing Tube	1	
	33302-28	R. H. Fairing Tube	1	
18	AN530-4-4	Screw	8	
19	33302-11	Fairing Tube	2	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33333-1 TRIM - DOOR SILL

Eff. A/C 69 & Up
Opt. A/C 1 thru 68



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

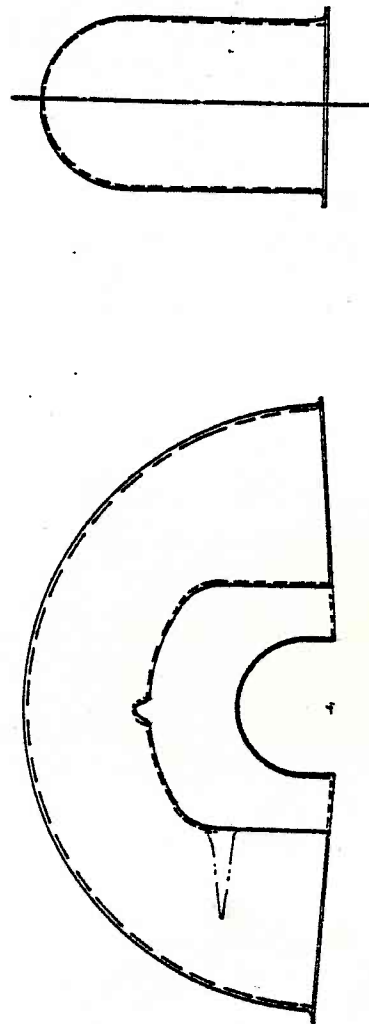
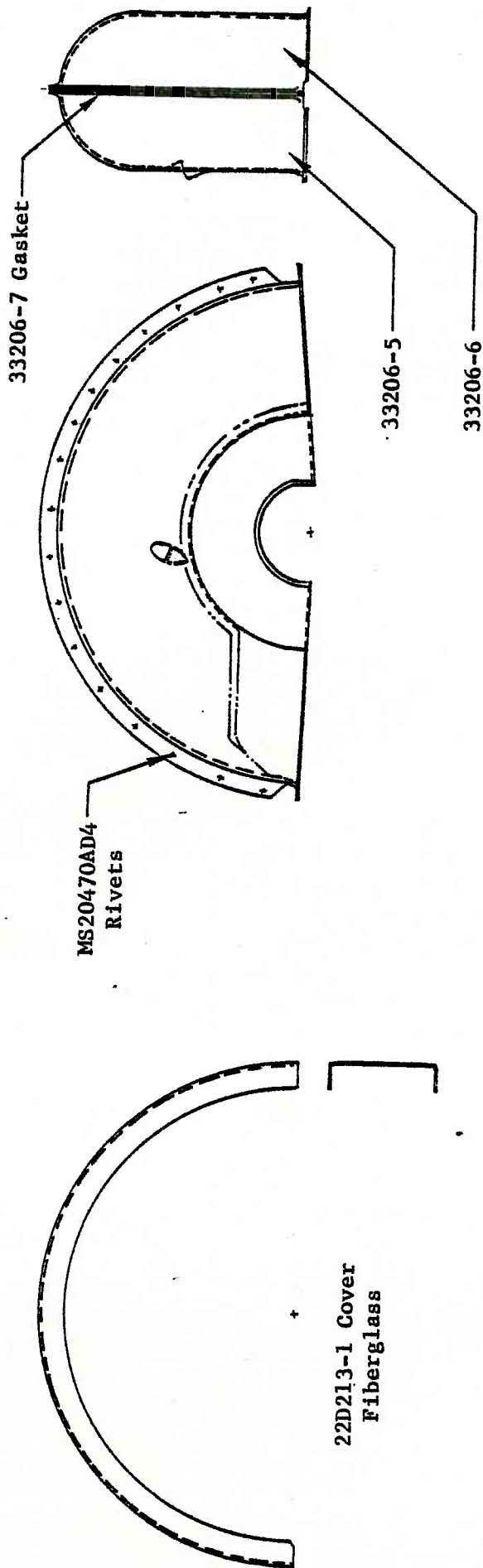
33333-1 TRIM - DOOR SILL

ITEM	PART NO.	NAME	QTY.	MODEL
1	#4 x 1/4	P. K. Screw	3	
2	33314D-4	Cockpit trim panel	Ref.	
3	33001-313	Angle	Ref.	
4	33001-26	Tube	Ref.	
5	33333-3	Trim	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Wheel Covers

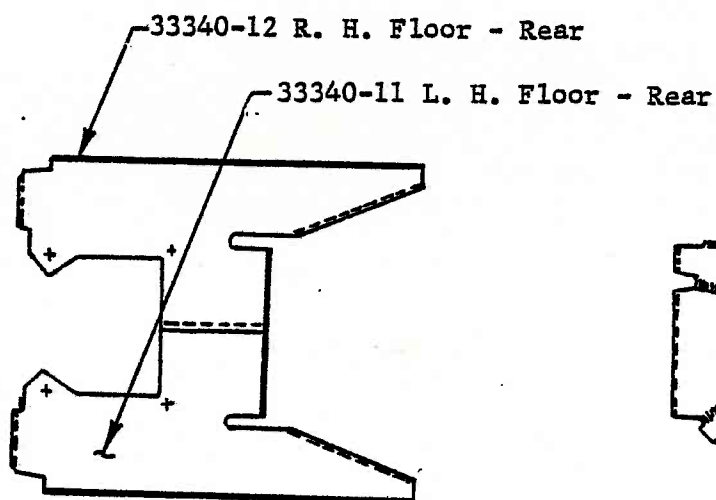
33206-3 Wheel Cover Assy
3 Piece



33206-13 Cover
1 piece - Kydex

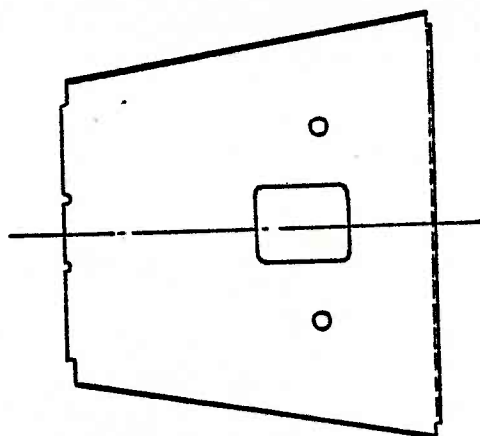
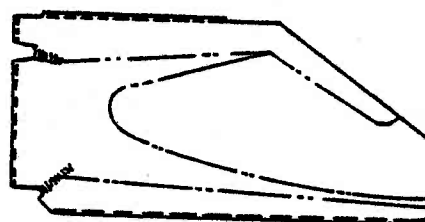
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Floorboards

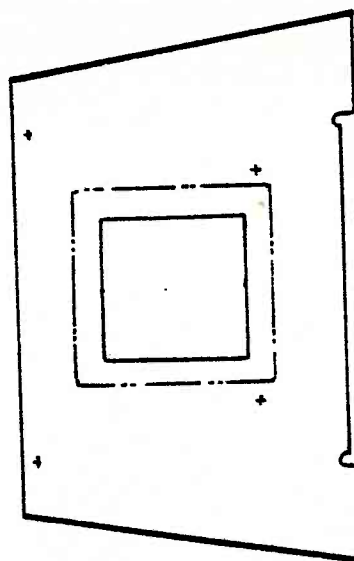


33342-11 Floorboard - Rear -
Foot Support (L.H., shown)

33342-12 Floorboard - Rear -
Foot Support (R.H. opposite)



33338-11 Floor - Fuselage
Forward

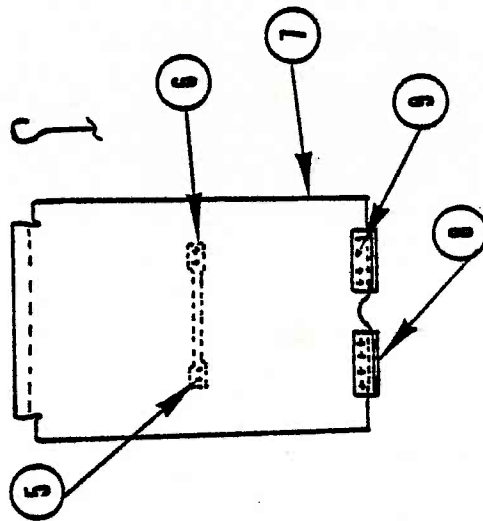


33339-1 Floor - Cockpit
Front

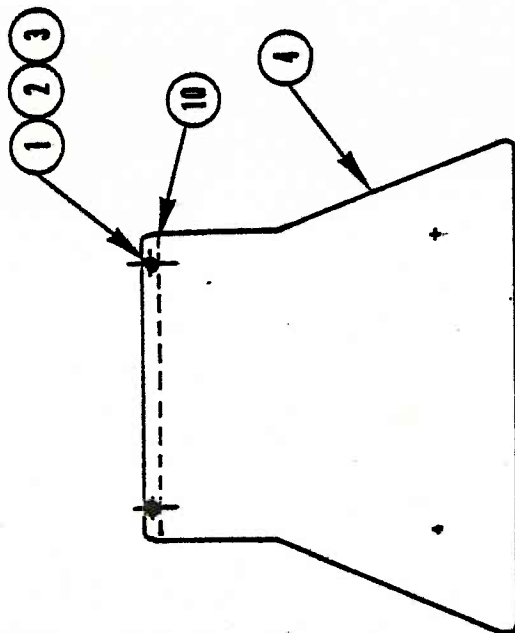
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Misc. Seat Components

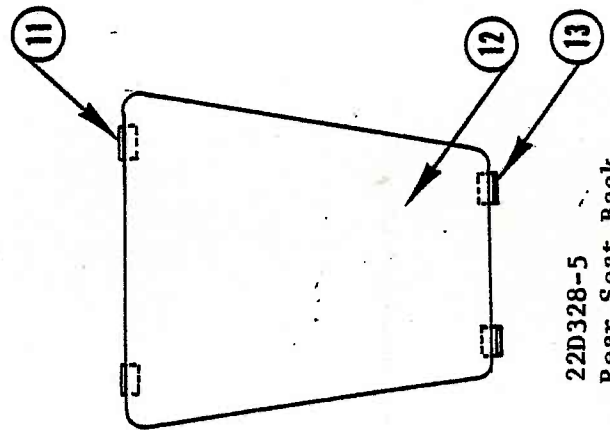
22G349-3 Front Seat Back Assy
(Complete)



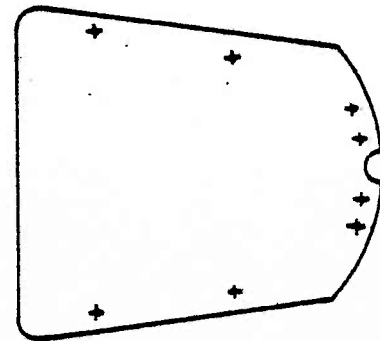
33316-1 Rear Seat Bottom Assy
(Complete)



22D328-5
Rear Seat Back



22G348-9 Seat Bottom
Front



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

MISC. SEAT COMPONENTS

ITEM	PART NO.	NAME	QTY.	MODEL
	33316-1	Seat Bottom Assy - Rear		
1	AN510-10-18	Screw	2	
2	AN365-1032	Nut	2	
3	AN960-10	Washer	2	
4	33316-3	Seat Bottom	1	
10	33316-5	Reinf.	1	
	22G349-3	Front Seat Back Assy		
5	MS20470AD4	Rivet	4	
6	22315-8	Strap Guide	1	
7	22349-11	Seat Back	1	
8	MS20470AD4	Rivet	8	
9	22315-3	Clip	2	
		Seat Cushions - Not Shown		
	33319D-1	Front Cushion - Seat	1	
	33319D-3	Front Cushion - Back	1	
	33320D-1	Rear Cushion - Seat	1	
	33320D-3	Rear Cushion - Back	1	
11	22D328-3	Clip - Upper	2	
12	22D328-5	Seat Back - Rear	1	
13	22D328-2	Clip - Lower	2	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

COCKPIT PANELS, FORWARD AND REAR, INSTALLATION

Drawing 33314D is the reference drawing for installation of the both front and rear cockpit trim panels. A word of caution to remember here is that, attachment screws are not to be driven into main structural members of the fuselage frame. The one-half inch diameter tubing above the side longerons (with steps attached) in the cockpit area is identified as fairing, however, rather than structure.

INSTALLATION OF PANELS

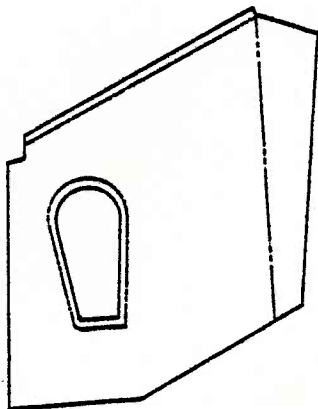
1. Select the 33314D-5 L.H. panel and work into position over the dive brake control handle and behind the forward edge of the intermediate (front seat) panel previously installed. Some local trimming will be required to achieve the necessary clearances to obtain a good fit. The upper edge should be trimmed 1/8 below the top of the side fairing tube to allow for the trim (bead strip) which is fastened between the panel and fuselage tube along the top.
2. As each panel is properly fitted, lay out the locations for the attaching screws. Along the top, the screws should be spaced at 3" to 4". Along vertical attachments 5" to 6" is adequate. The bottom attachment will be primarily into the floorboards at approx. 6" spacing.
3. Drill #36 (.106) and install the screws and finishing washers.
4. The 33314D-4 R.H. rear panel will require only three attaching screws into the floorboard along the bottom. The upper edge is secured behind the 33333D-3 door sill which is attached with 3 screws to the sheet metal angle welded to the top-outboard side of the sloped fuselage tube - see 33333D, Section A-A.
5. After the side trim panels on the rear cockpit are in place, set the 33330H rear seat back liner in place. Trim locally, as necessary for proper fit and clearances. Remove (two at a time) the four rear seat-back attaching screws, and back-drill #10 (.193). Reinstall the screws, picking up the seat back liner. At both side flanges, drill 5/64 (.078) through the flanges and the rear edge of the side panels as shown on drawing. Join the panels with #4 X 1/4" PK screws as shown.
6. Installation of the 33326H-1 thru -5 head protector and wing-root liners can not be done until the wings have been installed on the fuselage.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

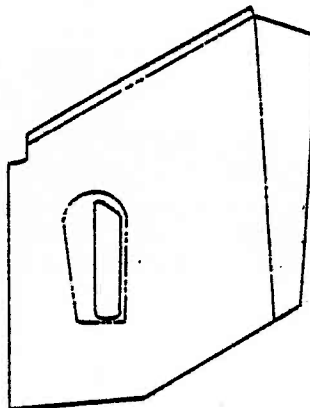
Interior Trim Panels - L. H. Forward

(some panels are not available for Spares in which case a functional substitution will be made by Schweizer)

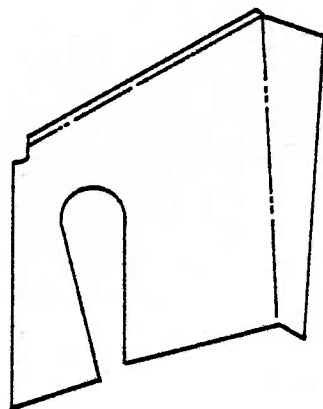
33314-5 Panel
Eff. A/C 8 thru 199



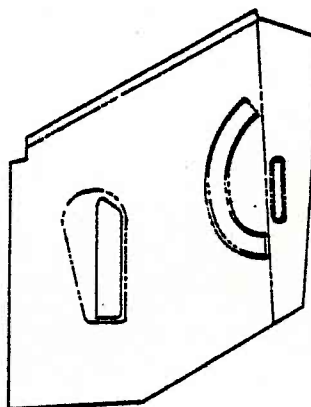
33314-25 Panel
Eff. A/C 500 - 536
and 538 - 546



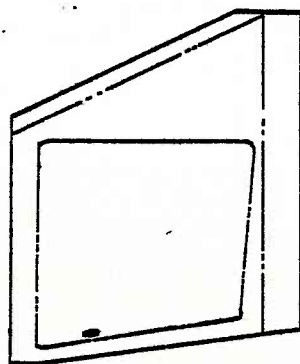
33314-5 Panel
Eff. A/C 1 thru 7



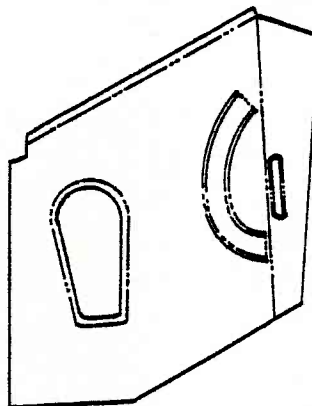
33314-15 Panel
Eff. A/C 429 - 499



33314-29 Panel
Eff. A/C 537, 547, & Up



33314-5 Panel
Eff. A/C 200 - 428



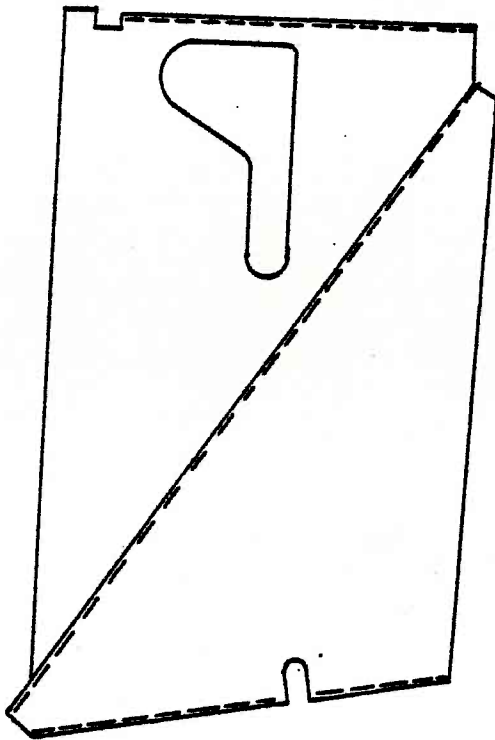
NOTE: Install panels with #6 x .38 P. K. Screws and FW-6 Fin Washer (approx. 18 each)

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

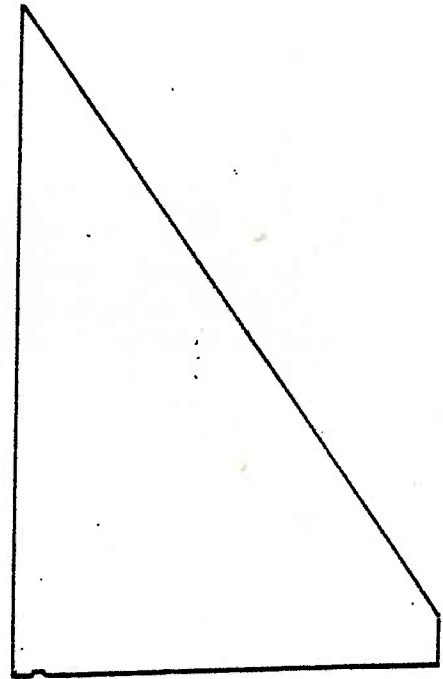
Interior Trim Panels - L. H. Rear and R. H. Door (Rear)

(some panels are not available for Spares in which case a functional substitution will be made by Schweizer)

33314-7 L. H. Rear Panel
Eff. A/C 1 thru 429

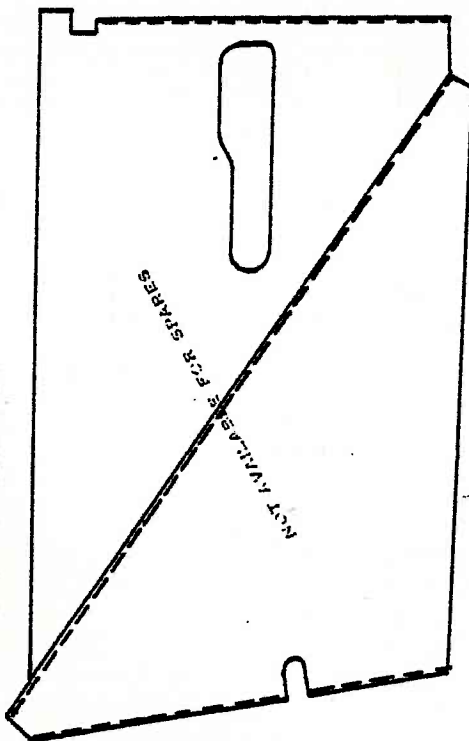


33317-41 R. H. Door Panel
Eff. A/C 380 and Up and Retrofit

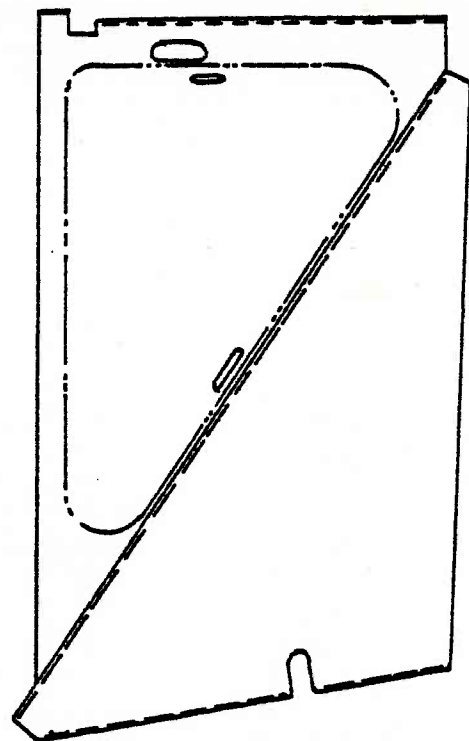


33314-17 L. H. Rear Panel
Eff. A/C 429 thru 559

Not available for Spares
Substitute 33314-31



33314-31 L. H. Rear Panel
Eff. A/C 560 and Up

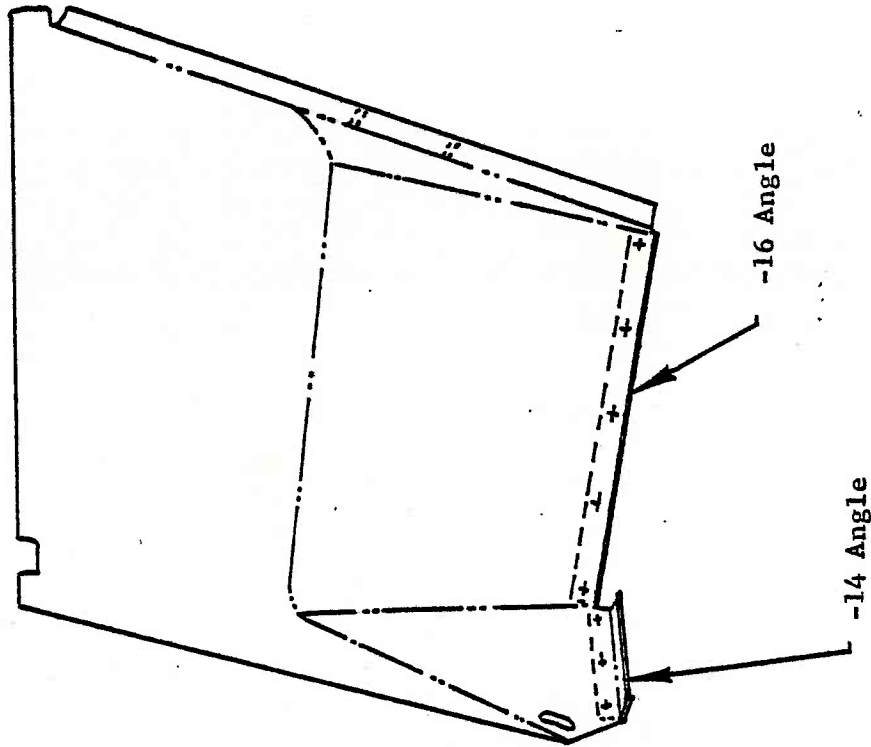


Revised 12/1/81

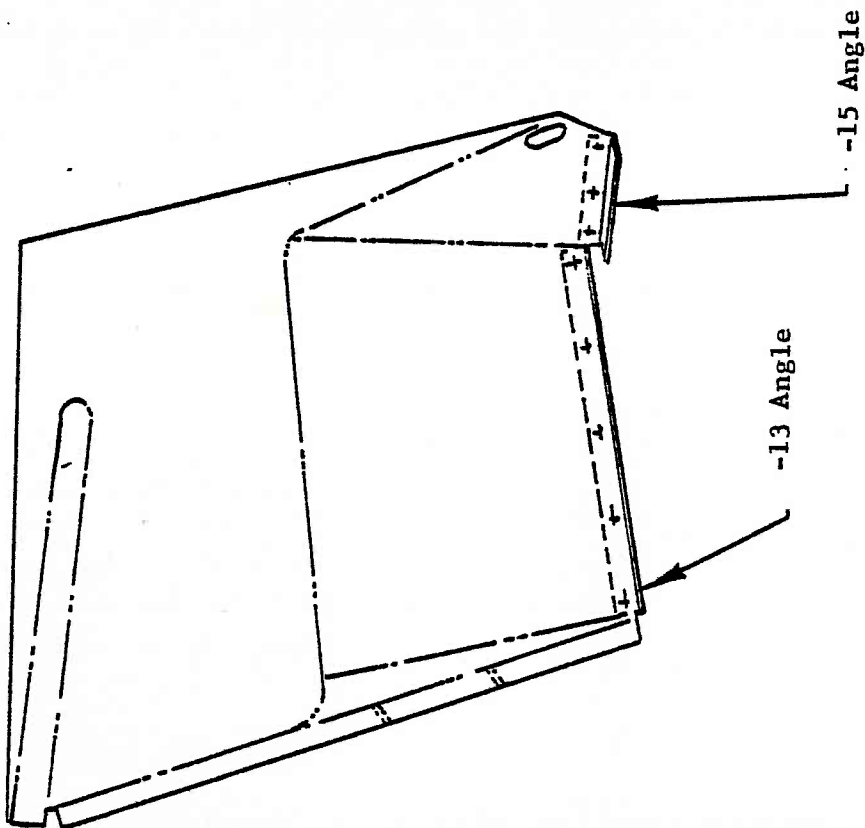
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Interior Trim Panels - Intermediate

33313-22 R. H. Panel
33313-4 R. H. Panel Assy
(Complete)



33313-21 L. H. Panel
33313-3 L. H. Panel Assy
(Complete)



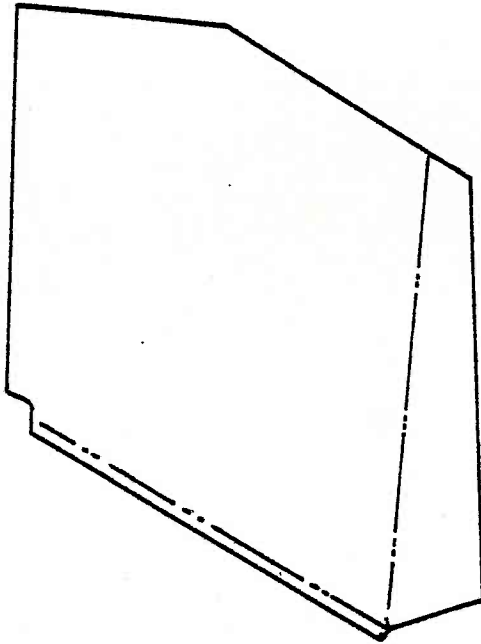
NOTE: Install angles with #6 x 1/4 oval Hd. P-K Screws
and FW-6 Finishing Washer

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

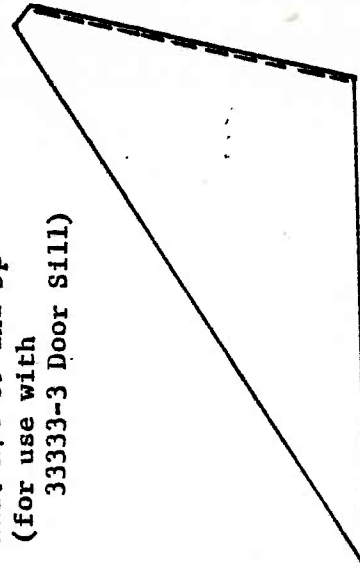
Interior Trim Panels - R. H. Forward and Rear

(some panels are not available for Spares in which case a functional substitution will be made by Schweizer)

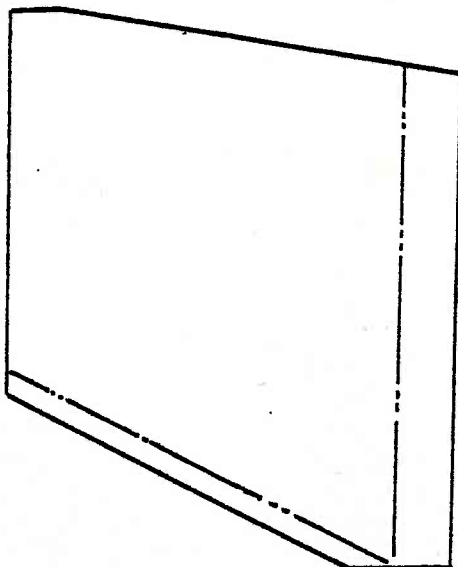
33314-6 R. H. Fwd Panel
Eff. A/C 1 thru 536
and 538 - 546



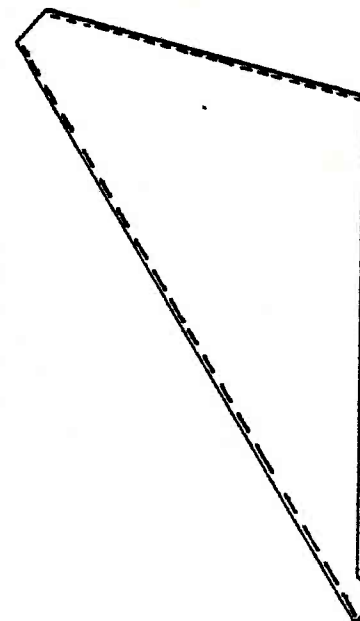
33314-4 R. H. Rear Panel
Eff. A/C 69 and Up
(for use with
33333-3 Door Sill)



33314-30 R. H. Fwd Panel
Eff. A/C 537, 547 and Up



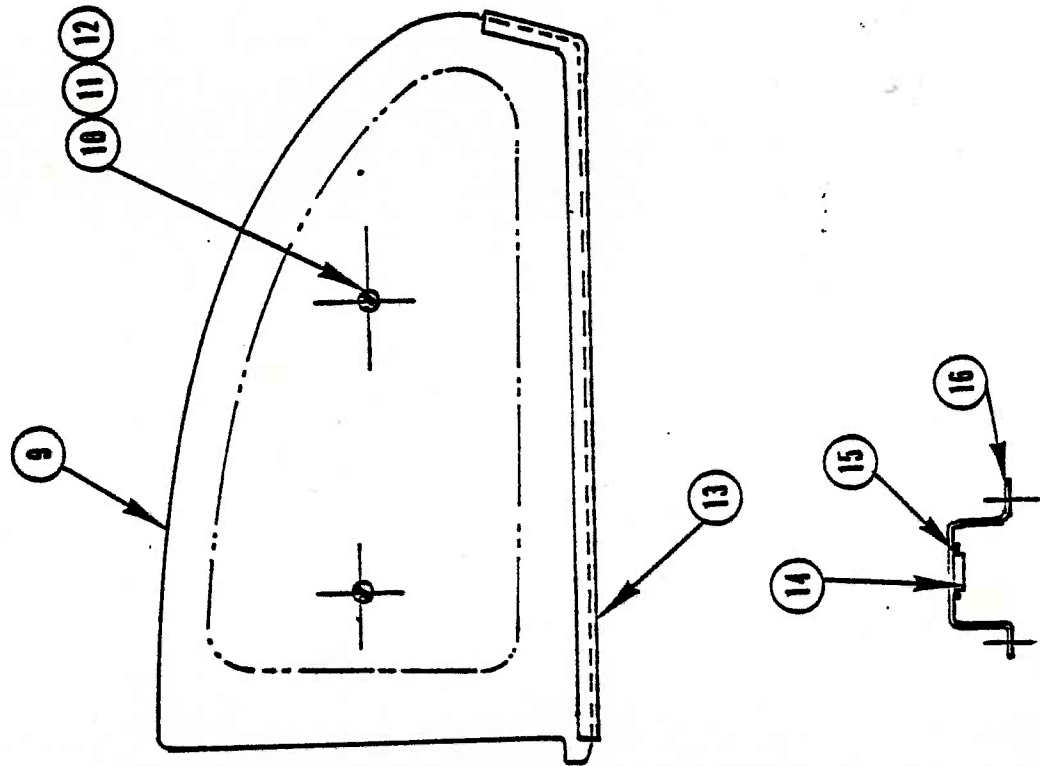
33314-4 R. H. Rear Panel
Eff. A/C 1 thru 68



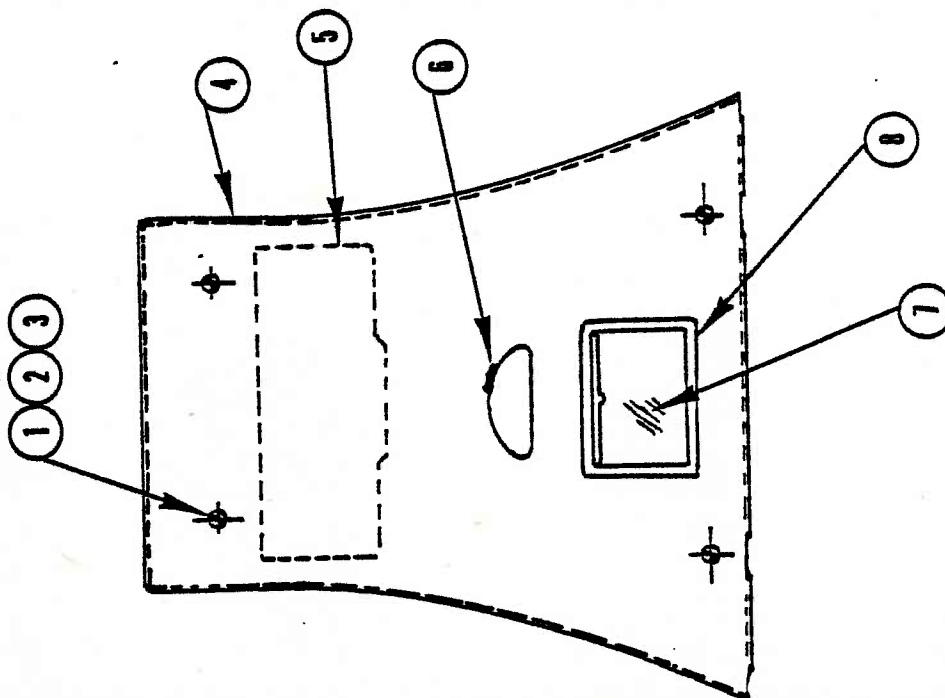
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Interior Trim Panels - Head Protector

33326-3 Wing Root Liner L. H.
33326-4 Wing Root Liner R. H.
(Complete)



33326-1
Heat Protector Assy
(Complete)



33326-5 Clip Assy - Head Protector

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

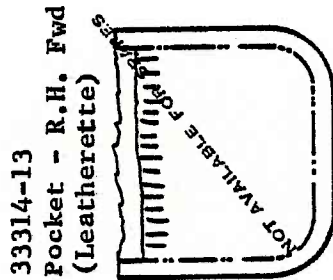
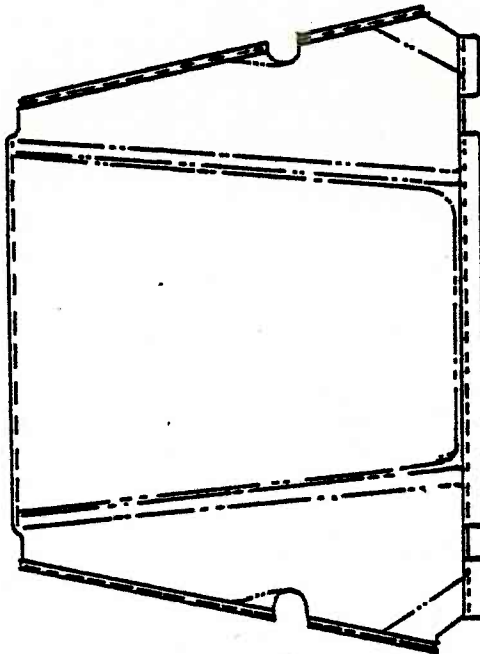
Interior Trim Panels - Head Protector

ITEM	PART NO.	NAME	QTY.	MODEL
1	4002-8	Camloc Stud	4	
2	4002-0	Camloc Collar	4	
3	R4G	Camloc Snap Ring	4	
1	98292	Airloc Stud (Optional)	4	
2	99863	Airloc Cross Pin (Optional)	4	
4	33326-7	Head Protector	1	
5	33326-11	Padding	1	
6	33326-15	Grommet (14.00")	1	
7	32937-35	Cover	1	thru A/C 169
7	10928D-5	Cover	1	A/C 170 & Up
8	32937-33	Frame	1	thru A/C 169
8	10928D-3	Frame	1	A/C 170 & Up
9	33326-9	Liner (L. H.) Wing Root	1	
9	33326-10	Liner (R. H.) Wing Root	1	
10	4002-8	Camloc Stud	2	
11	4002-0	Camloc Collar	2	
12	R4G	Camloc Snap Ring	2	
10	98292-120	Airloc Stud (Optional)	2	
11	99863	Airloc Cross Pin (Optional)	2	
13	33326-17	Seal	1	
14	244-16	Camloc Receptacle	1	
14	99947-P-130	Airloc Receptacle (Optional)	1	
15	AA PQ-42AY	Rivet	2	
16	33326-13	Clip	1	

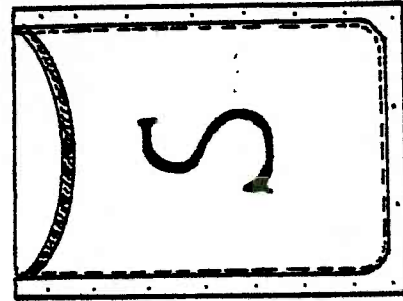
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Interior Trim Panels - Misc. and Optional

33330-1 Seat Back Liner
Eff. A/C 1 thru 199
33330-3 Seat Back Liner
Eff. A/C 200 & Up



33921-3 Pocket Assy (Complete)
(R. H. Rear)
33921-11 Pocket - only
33921-13 Edging Only



Revised 12/1/81

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

COCKPIT PLACARDS
(Not Shown)

ITEM	PART NO.	PLACARD STATEMENT	QTY.	MODEL
	10930A -001	Dive Brake	2	
	1A317-1	Canopy Release	1	
	10923A	Cockpit Check List	1	
	1B313-2	Release	2	
	33902B	Flight Limits	1	
	1A317-5	No Smoking	2	
	33914A-1	Flight Limits (Additional placard used only when removable ballast 33011D is installed)	1	
	1A316	Nose Trim - Up - Down	1	A/C 1 thru 200
	10930A -003	Trim Nose - Up - Down	1	A/C 201 thru 499
	10952A-11	Trim Nose - Up - Down	1	A/C 500 and Up
	1A314-1	Name Plate	1	A/C 1 - 59
	10327A	Standard Name Plate	1	A/C 60 and Up

REVISION: 2/3/83

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

FABRIC COVERING, FUSELAGE

The fabric used on the 2-33 is "Ceconite #102". This is a synthetic, proprietary material and instructions pertaining to its application are given in the Ceconite Procedure Manual No. 101. A thorough familiarization with this manual is necessary to achieve a good fabric covering, in conjunction with information shown on drawing No. 33901G.

1. Spiral-wrap the tubes on the fuselage structure to which fabric will be cemented, using "Super Seam" Cement. Scraps of Ceconite fabric, or one-inch gauze bandage may be purchased and used for this purpose. Saturate the wrapping strips with "Super Seam" Cement, or brush the cement both under and over the strips as the wrapping progresses. Wrapping is not required on fairing or other tubes, to which the fabric will not be attached.
2. To make the various pieces, lay the fabric loosely over the section of the fuselage to be covered by a panel - cut the fabric to shape leaving a two inch oversize edge to permit approximately a two-thirds wrap-around of the fabric to each spiral-wrapped tube.
3. As fabric panels are cut to shape, cement them loosely in place using "Super Seam" Cement. Use care to obtain a uniform degree of looseness to the panel and avoid wrinkles caused by uneven tensions.
4. After the panels have been cemented in place, cement the -7 (2") tapes in place at the lap seams over the tubes. Also apply the -9 and -11 tapes at their respective locations along the fiberglass nose fairing and rear door areas.
5. The fabric is now to be tautened using a household-type electric iron with the heat setting of not greater than 400°F. Since heat control settings on this type of iron are not very specific, it is recommended that the iron be tried on some scrap pieces of ceconite to find the actual melting point of the fabric (approx. 450°). This setting can be marked on the iron heat-control-dial as a point under which the setting must be kept. Review the Ceconite Procedure Manual and make some practice runs on fabric scraps before proceeding on the fuselage fabric.
6. After the heat-shrinking of the fabric has been accomplished, apply the clear coats of non-tautening dope. Apply the patches, grommets and reinforcements, doping them in place per the drawing in the sequence specified in specifications referenced. See manual Section M.
7. Obtain the (2 each) 33302R-25 and -33 wing fairing seals. Per drawing 33302R, bond the -25 seals to the top side of the -19 and -21 wing fairing support angles and the -33 seals to the upper side of the -15 angle adjacent to the -13 fabric support, using "Super Seam" Cement.
8. A fabric envelope is available for covering of the fuselage - order Part number 33901-3.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

NOTES

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

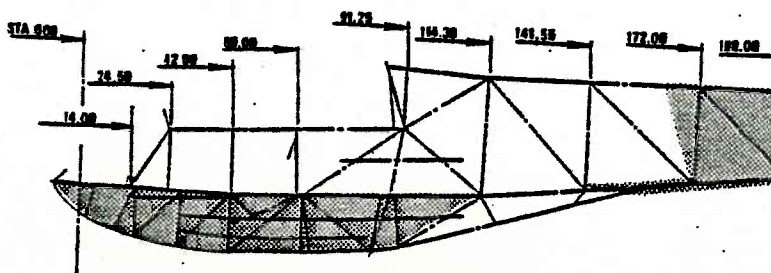
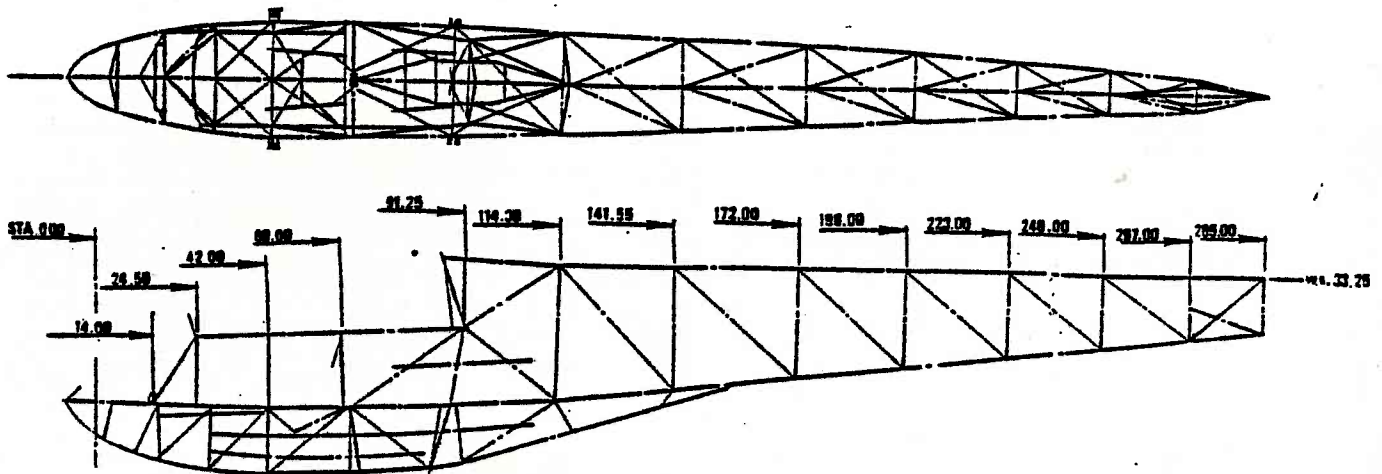
Section "C" Index

<u>TITLE</u>	<u>PAGE</u>
Fuselage Assembly (A/C 1 thru 536 & 538 thru 546)	1 thru 15
Center Section Weld Assembly	2 thru 6
Bottom Nose Assembly	7 thru 11
Tail Section Weld Assembly	12 thru 15
Fuselage Weld Assembly (A/C 537 & 547 & up)	16 thru 30
Tail Section Weld Assembly	17 thru 20
Bottom Nose Assembly	21 thru 25
Center Section Weld Assembly	26 thru 30

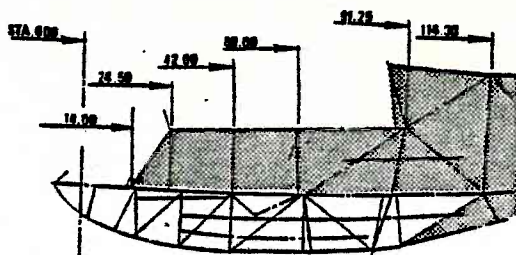
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-200 Fuselage Assy

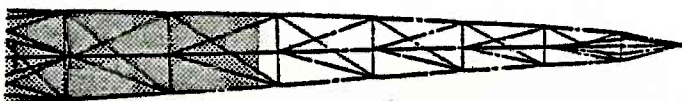
Eff. A/C 1 thru 536 and 538 thru 546



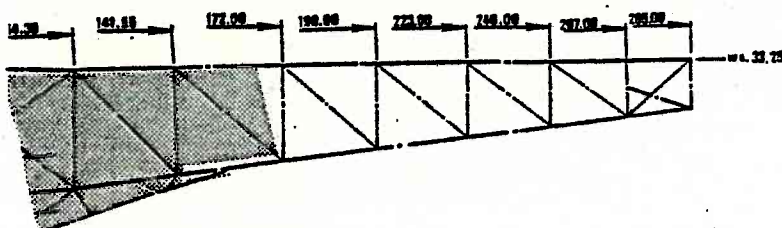
33001-118
Center Section Weld Assy
Detail on page C2



33001-116 Bottom Nose Assy
Detail on page C7



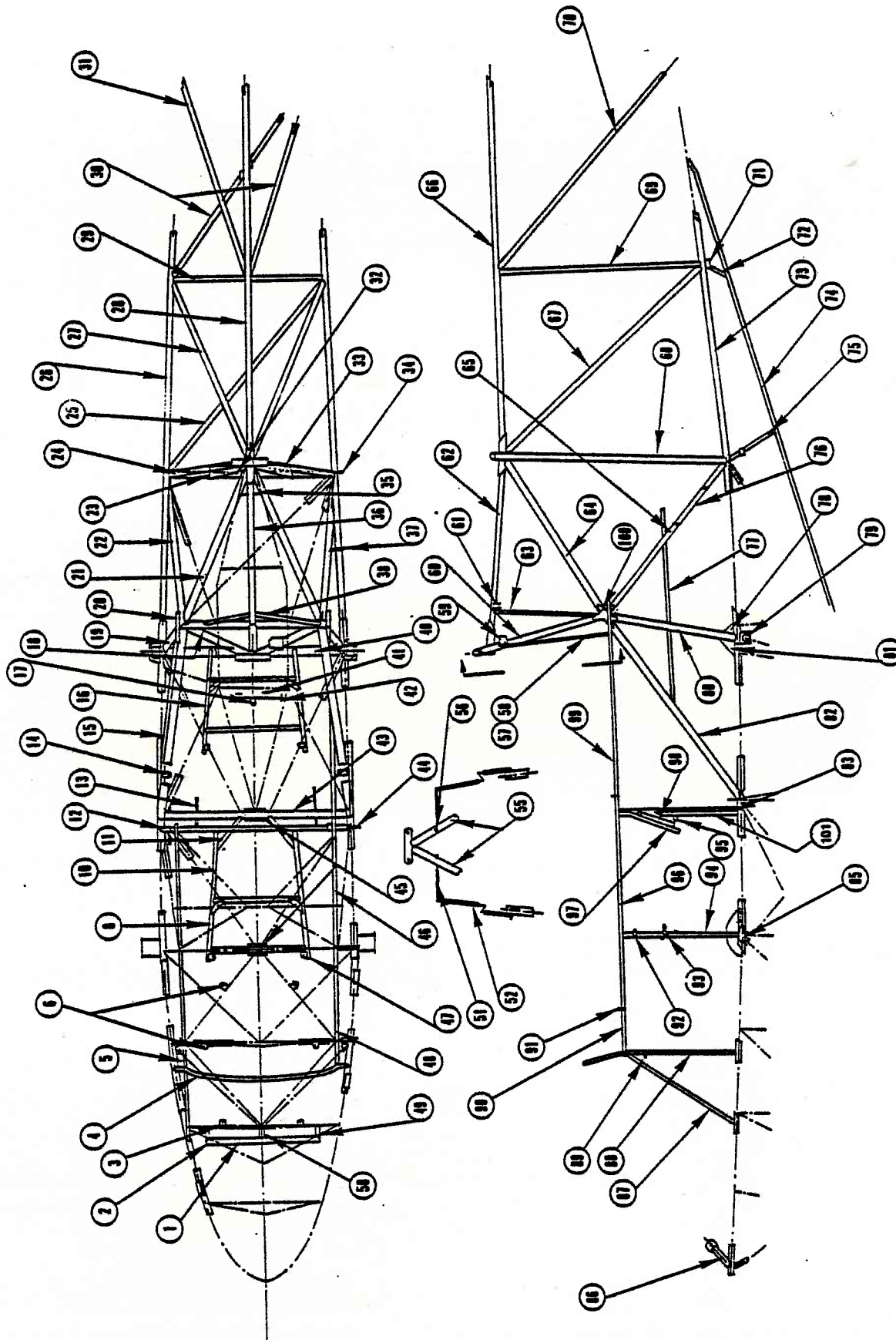
33001-117 Tail Section Weld Assy
Detail on page C12



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-118 CENTER SECTION WELD ASSY

EFF.: A/C 1 thru 536 & 538 thru 546



Revised 12/1/81

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-118 CENTER SECTION WELD ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
1	33001H-167	Tube .88 X .035 X 17.8 4130N	1	
2	22G001-158	Tube .50 X .028 X 17.20 4130N	1 LH & 1 RH	
3	19D302-3	Lug	4	
4	33001H-309	Instrument Panel Bow .50 Sq. X .028	1	
5	33001H-285	Tube .50 X .028 X 20.00 1010 St1.	1	
6	19D302-3	Lug	4	
7	33001H-318	Tube .50 Sq. X .035 X 17.38	1	
8	22G349-9	Tube	2	
9	33001H-287	Tube .50 X .028 X 37.00 1010 St1.	1	
11	22G349-7	Tube	2	
12	22G315-7	Cross Member	1	
13	33001H-278	Tube .31 X .028 X 53.00 1010 St1.	2	
14	19D302-3	Lug	4	
15	22G001-26	Tube 1.25 X .035 X 34.25 4130N	1 LH & 1 RH	
16	22D301-4A	Seat Bottom Assy	1	
17	19A027-2A	Lug	1	
18	22G001-63	Tube 1.00 X .035 X 21.00 4130N	1	
19	22G001-195	Tube .88 X .049 X 16.50 4130N	1 LH & 1 RH	
20	33001H-288	Tube .50 X .028 X 5.12 1010 St1.	1	
21	22G001-61	Tube 1.00 X .035 X 30.10 4130N	1 LH & 1 RH	
22	22G001-62	Tube .88 X .035 X 29.00 4130N	1 LH & 1 RH	
23	22H325-42	Fairing Support	1	
24	22G001-64	Tube .88 X .035 X 35.00 4130N	2	
25	22G001-89	Tube .62 X .028 X 37.70 4130N	1	
26	22G001-123	Tube .88 X .035 X 61.50 4130N	2	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-118 CENTER SECTION WELD ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
27	22G001-65	Tube .75 X .028 X 43.65 4130N	1 LH & 1 RH	
28	22G001-22	Tube .88 X .035 X 27.25 4130N	1	
29	22G001-66	Tube .62 X .028 X 32.40 4130N	1 LH & 1 RH	
30	22G001-87	Tube .62 X .028 X 37.00 4130N	1	
31	22G001-67	Tube .75 X .028 X 41.70 4130N	1 LH & 1 RH	
32	22G001-52	Tube .75 X .035 X 24.50 4130N	1	
33	22H325-41	Fairing Support	1	
34	1A300-2.06	Fairing Support	1	
35	22B314-1	Lug	1	
36	22G001-23	Tube .88 X .035 X 28.75 4130N	1	
37	1A300-1.81	Fairing Support	1	
38	22G001-96	Tube .44 X .028 X 19.18 4130N	2	
40	22G001-173	Tube 1.25 X .072 X 26.50 4130N	1	
41	22A327-1	Clip	2	
42	12A008	Hinge	2	
43	22G001-48	Tube 1.00 X .035 X 27.05 4130N	1	
44	1A300-2.25	Fairing Support	1	
45	33015B-11	Bracket - Torque Tube	2	
47	22G348-1	Seat Bottom Weld Assy	1	
49	33001H-340	Strap .090 X 1.31 X 2.8 4130N	2	
50	33001H-339	Tube .75 X .035 X 2.1 4130N	1	
51	22H325-55	Tube	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-118 CENTER SECTION WELD ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
52	33001H-299 LH -298 RH	Fairing Tube	1 Ea.	
55	22G001-24	Tube 1.00 X .035 X 22.28	1 LH & 1 RH	
56	22H325-56	Tube	1	
57	33001H-298	Fairing Tube .31 X .028 X 15.88	1	
58	33001H-299	Fairing Tube .31 X .028 X 15.88	1	
59	22H325-14	Gusset	2	
60	22G001-24	Tube 1.00 X .035 X 22.28 4130N	1 LH & 1 RH	
61	12A008	Hinge	2	
62	22G001-23	Tube .88 X .035 X 28.75 4130N	1	
63	22G001-96	Tube .44 X .028 X 19.18 4130N	2	
64	22G001-61	Tube 1.00 X .035 X 30.10 4130N	1 LH & 1 RH	
65	22G001-62	Tube .88 X .035 X 29.00 4130N	1 LH & 1 RH	
66	22G001-130	Tube .88 X .035 X 55.25 4130N	1	
67	22G001-65	Tube .75 X .028 X 43.65 4130N	1 LH & 1 RH	
68	22G001-64	Tube .88 X .035 X 35.00 4130N	2	
69	22G001-66	Tube .62 X .028 X 32.40 4130N	1 LH & 1 RH	
70	22G001-67	Tube .75 X .028 X 41.70 4130N	1 LH & 1 RH	
71	22G001-68	Tube .50 X .028 X 28.42 4130N	2	
72	33001H-274	Fairing Tube .50 X .028 X 4.0	1	
73	22G001-123	Tube .88 X .035 X 61.50 4130N	2	
74	33001H-270	Tube - Fairing .50 X .028 X 43 4130N	1	
75	33001H-273	Tube - Fairing .50 X .028 X 8.5 4130N	1	
76	22G001-142	Tube 1.00 X .035 X 36.80 4130N	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-118 CENTER SECTION WELD ASSY

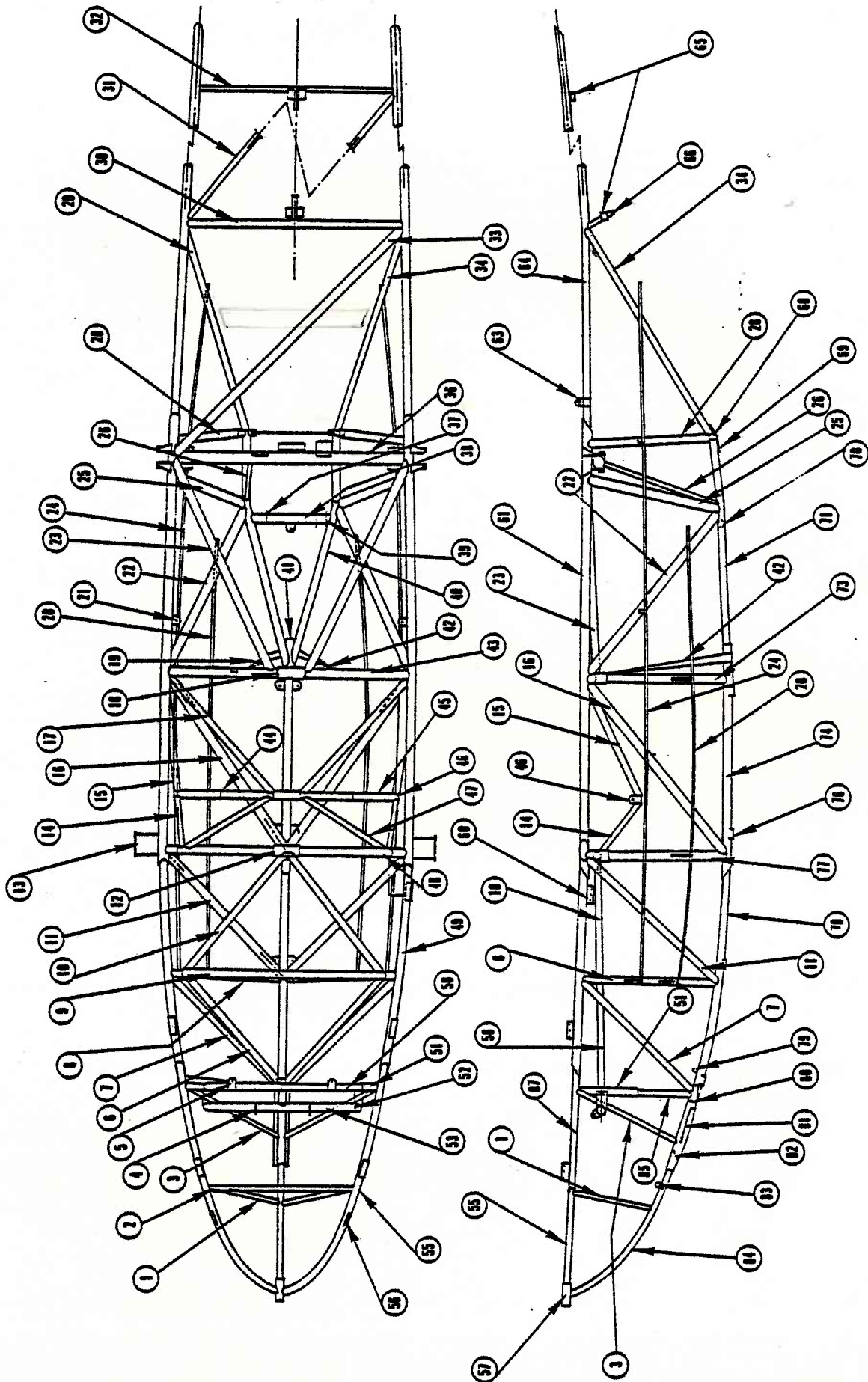
ITEM	PART NO.	NAME	QTY.	MODEL
77	22H325-35	Tube	1	
78	22D008-7	Gusset	2	
79	22D008-3	Plate	2	
80	22G001-25	Tube 1.00 X .035 X 19.65	1 LH & 1 RH	
81	22D008-6	Gusset	2	
82	22G001-26	Tube 1.12 X .035 X 34.25 4130N	1 LH & 1 RH	
83	22H325-37	Door Post	1	
85	19A029-1A	Step Assy	2	
86	33010D-7	Tube	1	
87	33001H-285	Tube .50 X .028 X 20.0 1010 St1.	1	
88	22H305-18	Fairing Tube	2	
89	19A030-1A	Lug	1	
90	33001H-317 LH -318 RH	Tube .50 Sq. X .035 X 17.38	1 EA.	
91	10325A-1	Locking Bracket	1	
92	19A030-1A	Lug	2	
93	10191A-1	Locking Bracket	1	
94	33001H-302	Tube .50 X .035 X 17.50 1010 St1.	2	
95	22H325-36	Stub	1	
96	33001H-287	Tube .50 X .028 X 37.00 1010 St1.	1	
97	22G349-9	Tube	2	
98	33331B-3	Body Assy	1	
99	33001H-308	Tube Fairing .50 X .028 X 69.00	1	
100	22D011-1	Gusset	2	
101	33001-303	Tube	1	

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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-116 Bottom Nose Assy

Eff. A/C 1 thru 536 and 538 thru 546



607-739-3821

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-116 BOTTOM NOSE ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
1	22G001-156	Tube .50 X .028 X 12.40 4130N	1 LH & 1 RH	
2	22G001-152	Tube .50 X .028 X 16.90 4130N	1	
3	22G001-158	Tube .50 X .028 X 17.20 4130N	1 LH & 1 RH	
4	12A008	Hinge	6	
5	19D302-3	Lug	4	
6	22G001-168	Tube .75 X .028 X 16.75 4130N	1 LH & 1 RH	
7	22G001-35	Tube .75 X .035 X 22.50 4130N	1 LH & 1 RH	
8	22G001-34	Tube .75 X .035 X 20.50 4130N	1 LH & 1 RH	
9	22G001-169	Tube .75 X .035 X 22.25 4130N	1	
10	22G001-170	Tube .75 X .028 X 17.75 4130N	1 LH & 1 RH	
11	33001H-233	Tube .88 X .035 X 81.75 4130N	1 LH & 1 RH	
12	33015B-11	Bracket - Torque Tube	2	
13	19A029-1A	Step Assy	2	
14	22G001-147	Tube .50 X .028 X 8.25 4130N	1 LH & 1 RH	
15	22G001-144	Tube .75 X .028 X 16.00 4130N	1 LH & 1 RH	
16	22G001-31	Tube 1.00 X .035 X 29.17 4130N	2	
17	22G001-145	Tube .75 X .028 X 18.50 4130N	1 LH & 1 RH	
18	33015B-11	Bracket - Torque Tube	2	
19	22G001-162	Strap .049 X 1.00 X 17.00	2	
20	22G001-278	Tube .31 X .028 X 53.00 1010 St1	2	
21	19D302-3	Lug	4	
22	22G001-29	Tube 1.00 X .035 X 21.09	1 LH & 1 RH	
23	22G001-49	Tube 1.00 X .035 X 27.05	1 LH & 1 RH	
24	33001H-280	Tube .31 X .028 X 80.00 1010 St1	2	
25	22G001-28	Tube 1.00 X .035 X 18.00 4130N	1 LH & 1 RH	
26	22G001-103	Tube .50 X .028 X 15.00 4130N	1 LH & 1 RH	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-116 BOTTOM NOSE ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
28	22G001-105	Tube .88 X .049 X 16.50 4130N	1 LH & 1 RH	
29	22G001-107	Tube .75 X .035 X 28.50 4130N	1 LH & 1 RH	
30	22G001-52	Tube .75 X .035 X 24.50 4130N	1	
31	22G001-89	Tube .62 X .028 X 37.70 4130N	1	
32	22G001-88	Tube .50 X .028 X 22.40 4130N	1	
33	22G001-51	Tube 1.00 X .035 X 36.40 4130N	1	
34	22G001-107	Tube .75 X .035 X 28.50 4130N	1 LH & 1 RH	
36	33013D-1	Strut Fitting Assy	1	
37	22A327-1	Clip	2	
38	22G001-141	Tube .88 X .049 X 9.08 4130N	1	
39	12A008	Hinge	6	
40	22G001-132	Tube .88 X .049 X 27.60 4130N	2	
41	10954B-15	Slug	2	
42	22G001-162	Strap .049 X 1.00 X 17.00 4130N	2	
43	22G001-48	Tube 1.00 X .035 X 27.50 4130N	1	
44	12A008	Hinge	6	
45	22G001-164	Tube .88 X .049 X 25.49 4130N	1	
46	22B010-1	Lug	2	
47	22G001-146	Tube .62 X .028 X 12.00 4130N	1 LH & 1 RH	
48	22G001-41	Tube 1.00 X .035 X 27.50 4130N	1	
49	22G001-120	Tube .88 X .049 X 28.00 4130N	2	
50	22G001-167	Tube .88 X .049 X 17.25 4130N	1	
51	22G001-171	Tube .88 X .049 X 7.50 4130N	1 LH & 1 RH	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-116 BOTTOM NOSE ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
53	33001H-166	Tube .88 X .035 X 17.8 4130N	1	
55	22G001-155	Tube .75 X .035 X 27.00 4130N	2	
56	12A153	Lug	3	
57	22B026-2	Tube	1	
58	22G001-170	Tube .75 X .028 X 17.75 4130N	1 LH & 1 RH	
60	33001H-311	Angle .040 X 1.62 X 2.12 1010 St1	6	
61	22G001-121	Tube 1.00 X .058 X 52.50 4130N	2	
63	22D173-5	Bearing Assy	1	
64	22G001-123	Tube .88 X .035 X 61.50 4130N	2	
65	1A120-1	Fairlead	4	
66	33001-10I	Tube - Fairing .50 X .028 X 8.5	1	
68	22D009-2	Tube	2	
69	22D009-1	Strap	2	
70	19A027-2A	Lug	1	
71	22G001-54	Tube .88 X .049 X 27.60 4130N	2	
73	22G001-30	Tube 1.00 X .035 X 21.09 4130N	2	
74	22G001-55	Tube 1.00 X .058 X 20.00 4130N	1	
76	19A027-1A	Lug	4	
77	22G001-32	Tube 1.00 X .035 X 21.09 4130N	2	
78	22G001-256	Tube .88 X .049 X 28.00 4130N	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-116 BOTTOM NOSE ASSY

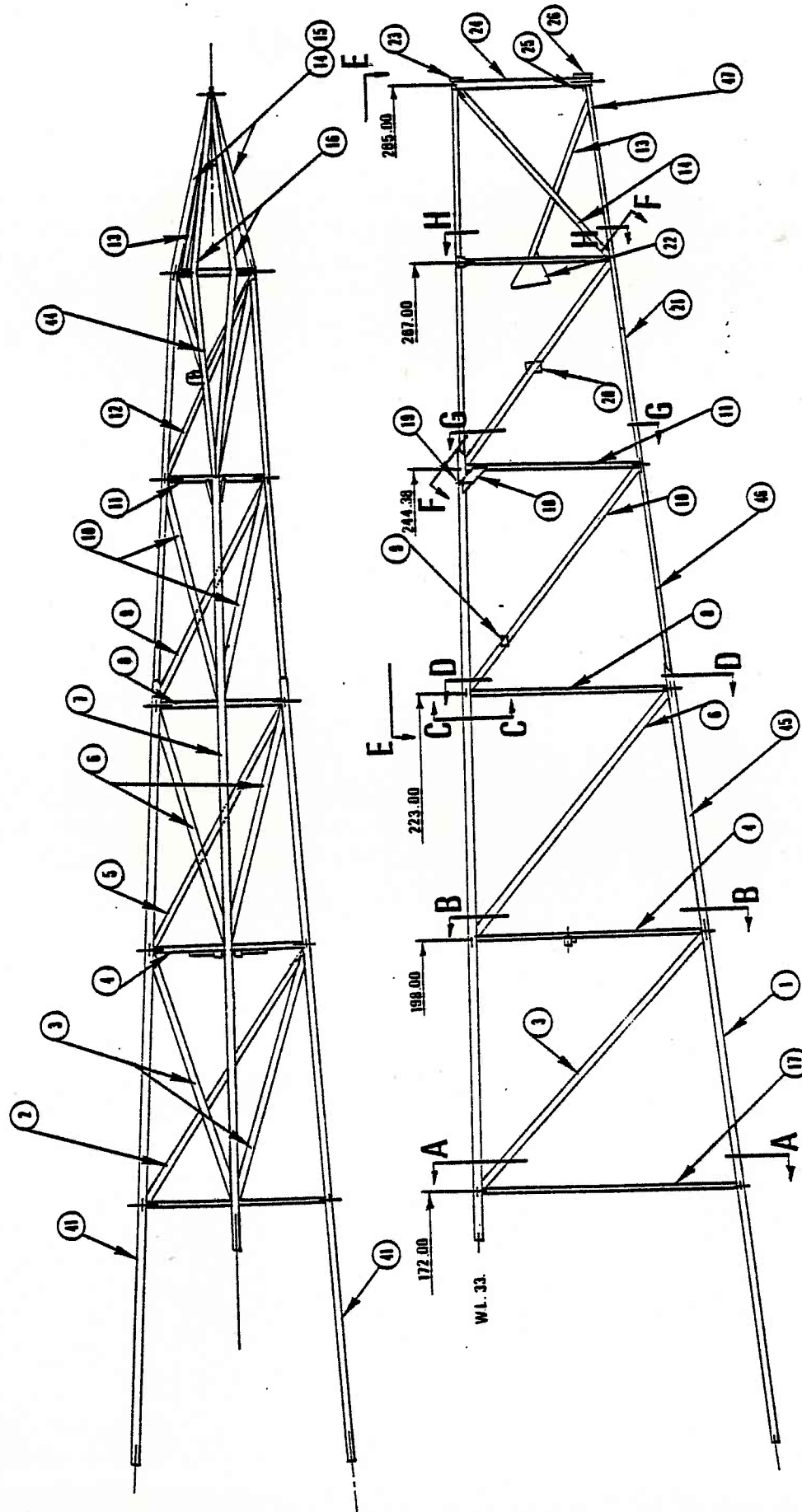
ITEM	PART NO.	NAME	QTY.	MODEL
79	12A153	Lug	3	All,
80	10954B-15	Slug	2	
81	1B210-5	Release Slot Assy	1	
82	10954B-11	Slug	1	
83	19A030-5	Lug	1	
84	22G001-157	Tube .75 X .035 X 23.00 4130N	1	
85	22G001-166	Tube .75 X .035 X 15.50 4130N	2	
87	22G001-159	Tube	1	

Revised: 2/3/83
Revised 12/1/81

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-117 Tail Section Weld Assy

Eff. A/C 1 thru 536 and 538 thru 546

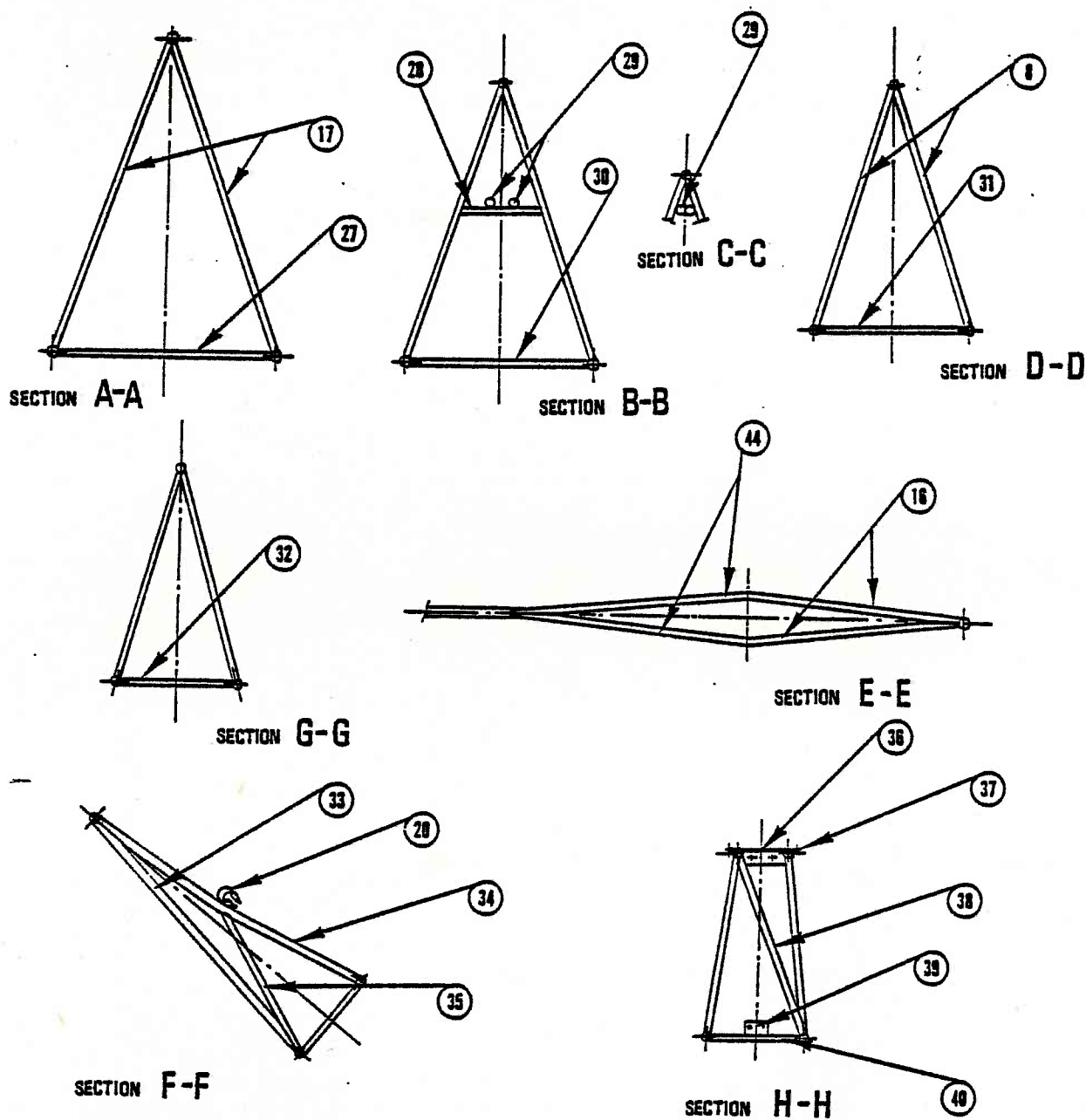


(See page C13
for Sections)

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-117 Tail Section Weld Assy

Eff. A/C 1 thru 536 and 538 thru 546



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-117 TAIL SECTION WELD ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
1	33001R-210	Tube .75 x .035 x 25.80 4130N	2	
2	22G001-85	Tube .62 x .028 x 31.60 4130N	1	
3	33001R-269	Tube .75 x .028 x 36.10 4130N	1 LH & 1 RH	
4	22G001-70	Tube .50 x .028 x 25.10 4130N	2	
5	22G001-83	Tube .62 x .028 x 29.10 4130N	1	
6	33001R-228	Tube .75 x .028 x 33.20 4130N	1 LH & 1 RH	
7	22G001-219	Tube .75 x .035 x 25.00 4130N	1	
8	33001R-72	Tube .50 x .028 x 21.80 4130N	2	
9	22G001-81	Tube .62 x .028 x 25.88 4130N	1	
10	33001R-229	Tube .75 x .028 x 29.76 4130N	1 LH & 1 RH	
11	22G001-74	Tube .50 x .028 x 18.85 4130N	1 LH & 1 RH	
12	22G001-79	Tube .62 x .028 x 23.00 4130N	1	
13	22G001-97	Tube .50 x .028 x 18.08 4130N	1	
14	22G001-77	Tube .62 x .028 x 23.90 4130N	1 LH & 1 RH	
15	22G001-14	Tube .62 x .028 x 18.75 4130N	2	
16	33001R-16	Tube .62 x .028 x 18.11 4130N	2	
17	22G001-68	Tube .50 x .028 x 28.42 4130N	2	
18	19A016-1A	Plate	2	
19	19A016-2A	Tube	1	
20	AN741-11	Clamp	1	
21	22G001-13	Tube .62 x .028 x 30.45 4130N	2	
22	22A-102-1A	Pulley Bracket Assy	1	
23	22D802-2	Stab. Attach Tube	1	
24	22G001-15	Tube .75 x .028 x 13.50 4130N	1	
25	22D802-3	Stab Strut Bracket	1	
26	33001R-336	Tube .75 x .058 x 2.00 1010 St1.	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

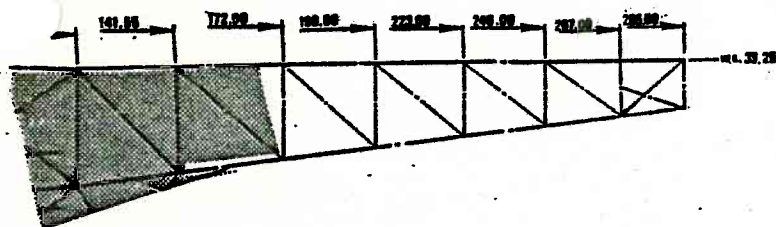
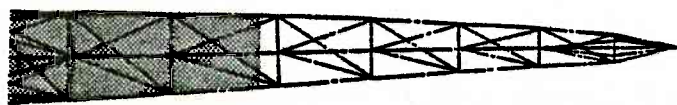
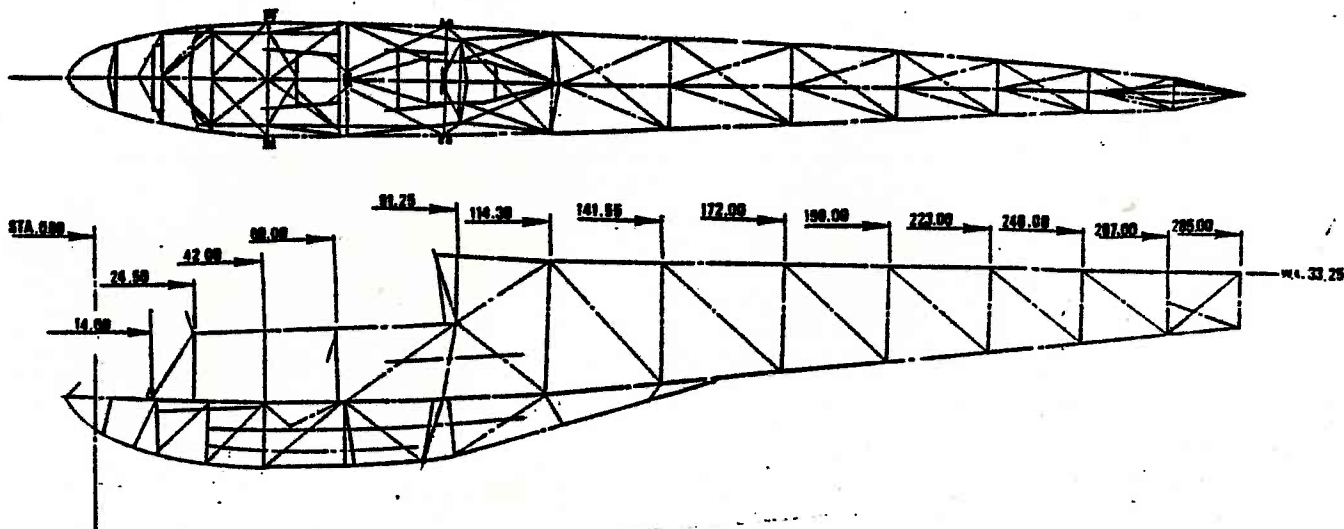
33001-117 TAIL SECTION WELD ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
27	22G001-86	Tube .50 x .028 x 18.90 4130N	1	
28	22G001-102	Tube .50 x .028 x 7.38 4130N	1	
29	1A120-1	Fairlead	4	
30	22G001-84	Tube .50 x .028 x 15.90 4130N	1	
31	33001H-82	Tube .50 x .028 x 13.04 4130N	1	
32	22G001-80	Tube .50 x .028 x 10.42 4130N	1	
33	22G001-153	Tube .75 x .035 x 26.45 4130N	1	
34	22G001-148	Tube .75 x .035 x 13.35 4130N	1	
35	22G001-93	Tube .50 x .028 x 13.95 4130N	1	
36	19D017-1A	Fin Attach Install.	1	
37	19D801-11A	Hinge	2	
38	22G001-91	Tube .50 x .028 x 16.75 4130N	1	
39	19D017-2A	Fin Attach Install.	1	
40	22G001-78	Tube .50 x .028 x 8.00 4130N	1	
41	22G001-209	Tube 3/4 x .035 x 30.7 4130N	2	
44	22G001-17	Tube 5/8 x .028 x 21.09 4130N	2	
45	22G001-211	Tube 3/4 x .035 x 25.20 4130N	2	
46	22G001-12	Tube 5/8 x .028 x 23.20 4130N	2	
47	22G001-14	Tube 5/8 x .028 x 18.75 4130N	2	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Fuselage Ass'y 33001R-401

EFF. A/C 537, 547 & UP

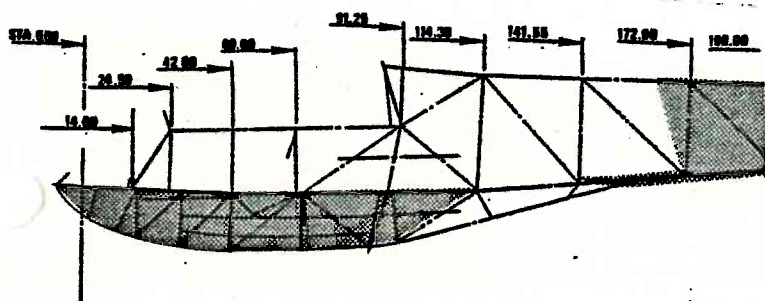
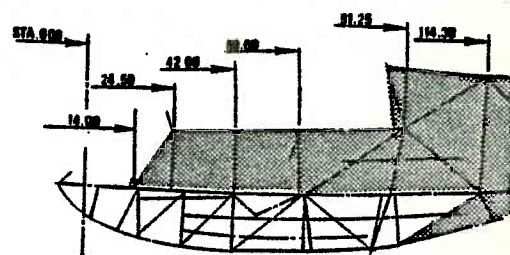


33001-417 TAIL SECTION WELD ASS'Y.

ass'y. detail on page C17

33001H-415 BOTTOM NOSE ASS'Y.

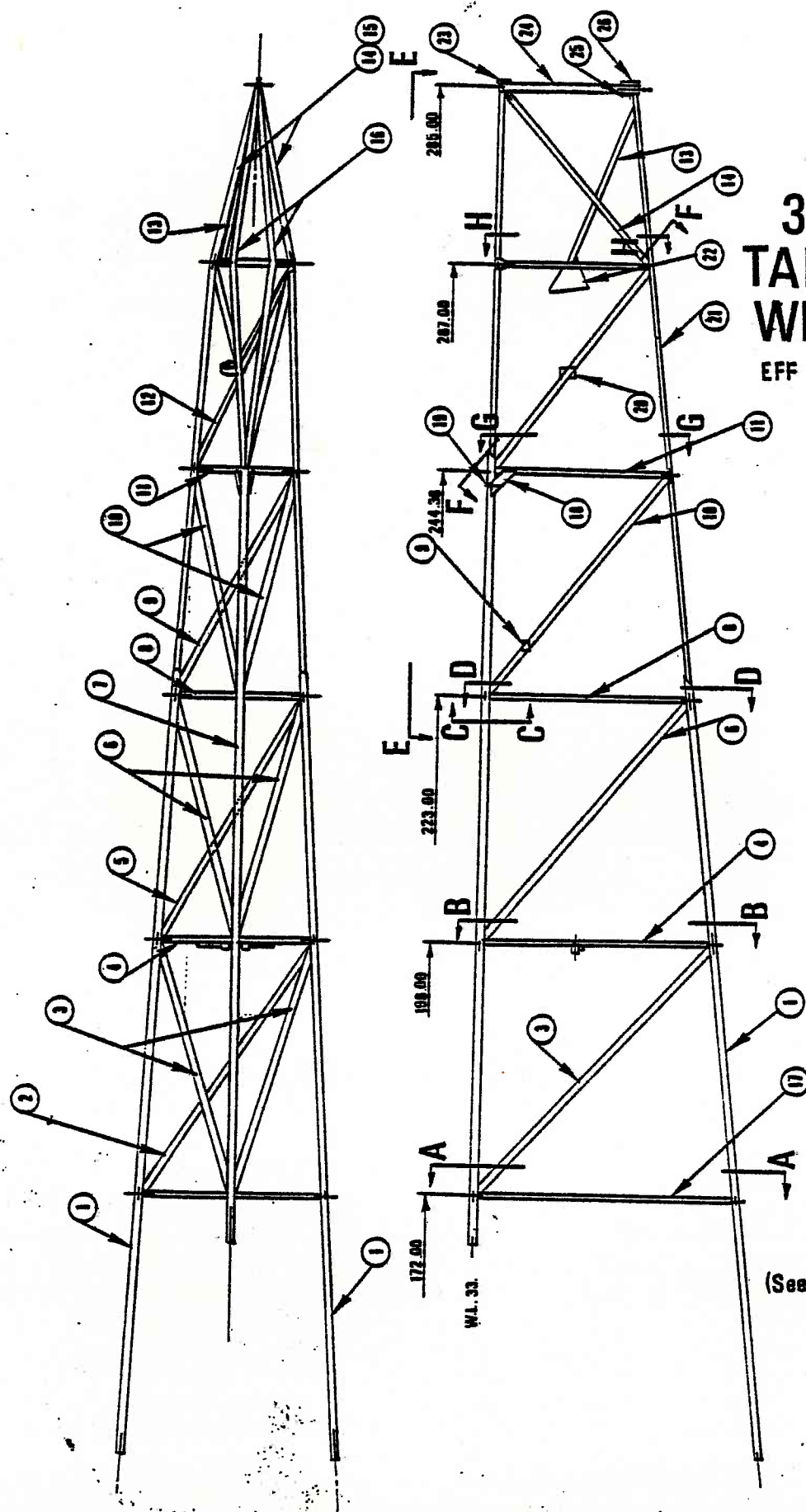
ass'y. detail on page C21



33001-419 CENTER SECTION WELD ASS'Y.

ass'y. detail on page C26

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE



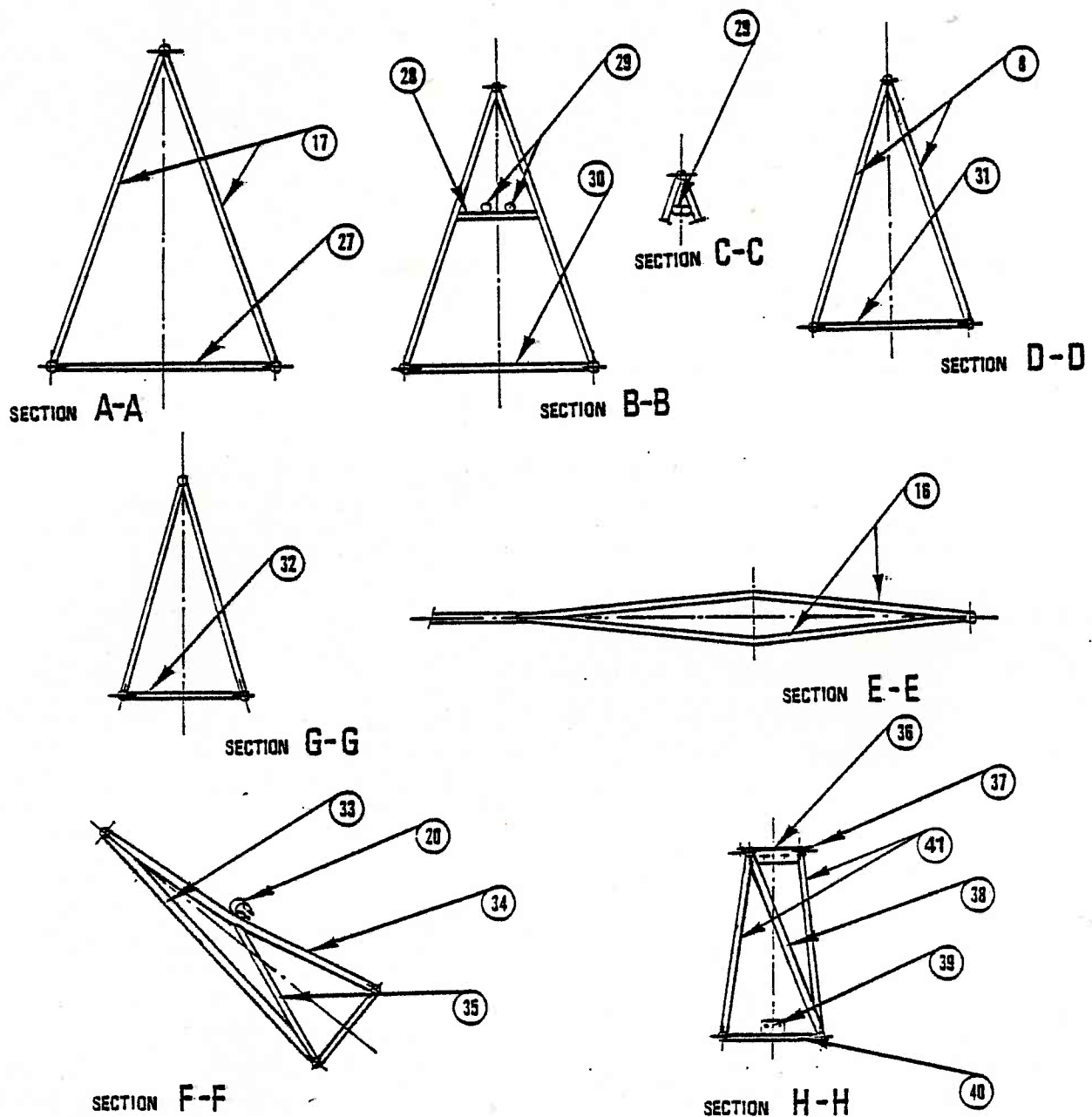
33001-417
TAIL SECTION
WELD ASS'Y.

EFF A/C 537,547 & UP

(See pg. 018 for sections)

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-417 TAIL SECTION WELD ASS'Y. (Sections)



Revised 2-3-83

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-417 TAIL SECTION WELD ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
1	33001R-177	Tube .75 X .035 x 81.75 4130N	2	
2	22G001-85	Tube .62 X .028 X 31.60 4130N	1	
3	33001R-269	Tube .75 X .028 X 36.10 4130N	1 LH & 1 RH	
4	22G001-70	Tube .50 X .028 X 25.10 4130N	2	
5	22G001-83	Tube .62 X .028 X 29.10 4130N	1	
6	33001R-228	Tube .75 X .028 X 33.20 4130N	1 LH & 1 RH	
7	22G001-175	Tube .75 X .035 X 79.00 4130N	1	
8	33001R-72	Tube .50 X .028 X 21.80 4130N	2	
9	22G001-81	Tube .62 X .028 X 25.88 4130N	1	
10	33001R-229	Tube .75 X .028 X 29.76 4130N	1 LH & 1 RH	
11	22G001-74	Tube .50 X .028 X 18.85 4130N	1 LH & 1 RH	
12	22G001-79	Tube .62 X .028 X 23.00 4130N	1	
13	22G001-97	Tube .50 X .028 X 18.08 4130N	1	
14	22G001-77	Tube .62 X .028 X 23.90 4130N	1 LH & 1 RH	
15	22G001-126	Tube .62 X .028 X 62.00 4130N	2	
16	33001R-129	Tube .62 X .028 X 39.75 4130N	2	
17	22G001-68	Tube .50 X .028 X 28.42 4130N	2	
18	19A016-1A	Plate	2	
19	19A016-2A	Tube	1	
20	AN741-11	Clamp	1	
21	22G001-126	Tube .62 X .028 X 62.00 4130N	2	
22	22A-102-1A	Pulley Bracket Assy	1	
23	22D802-2	Stab. Attach Tube	1	
24	22G001-15	Tube .75 X .028 X 13.50 4130N	1	
25	22D802-3	Stab Strut Bracket	1	
26	33001R-336	Tube .75 X .058 X 2.00 1010 Stl.	1	

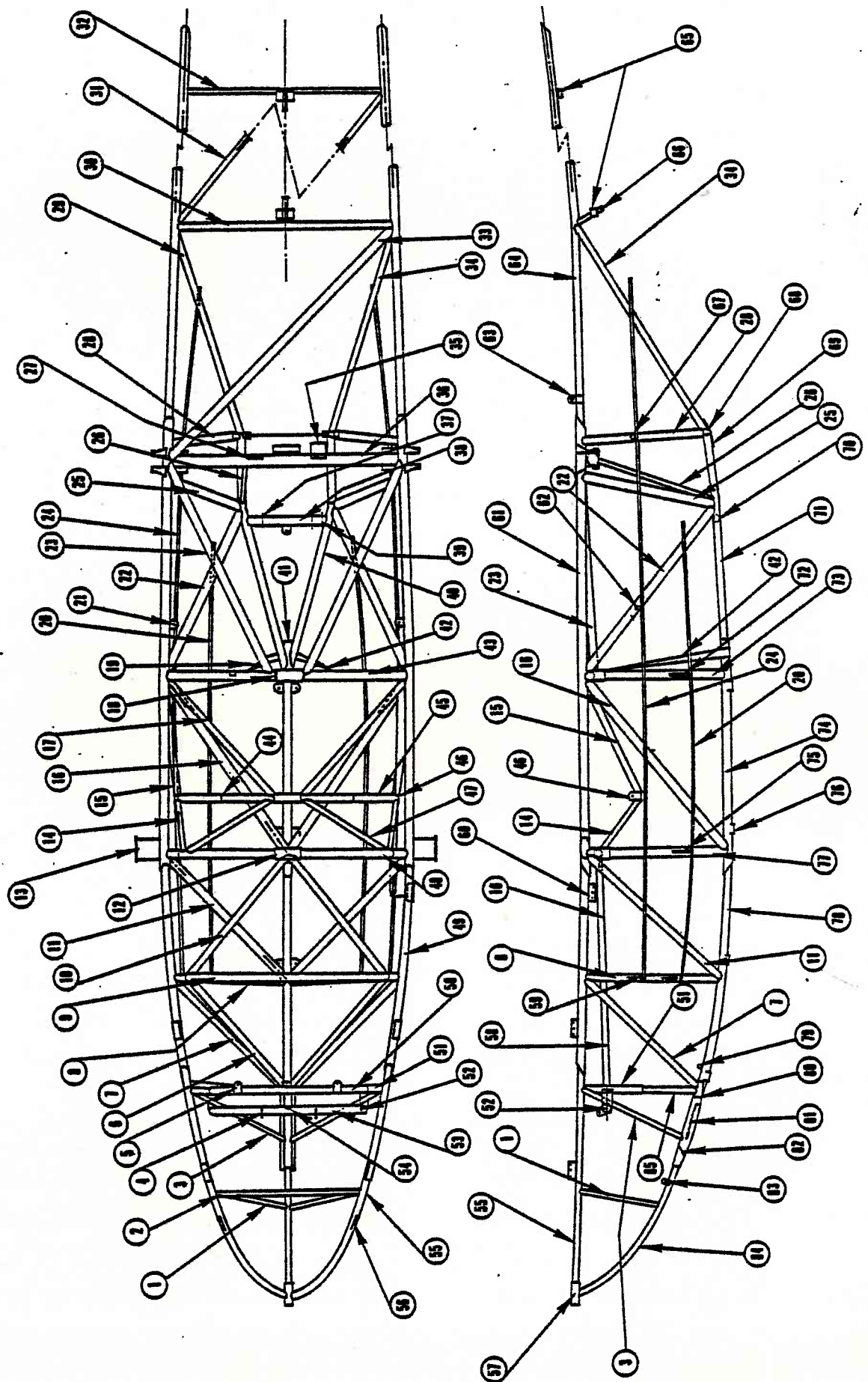
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-417 TAIL SECTION WELD ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
27	22G001-86	Tube .50 X .028 X 18.90 4130N	1	
28	22G001-102	Tube .50 X .028 X 7.38 4130N	1	
29	1A120-1	Fairlead	4	
30	22G001-84	Tube .50 X .028 X 15.90 4130N	1	
31	33001H-82	Tube .50 X .028 X 13.04 4130N	1	
32	22G001-80	Tube .50 X .028 X 10.42 4130N	1	
33	22G001-153	Tube .75 X .035 X 26.45 4130N	1	
34	22G001-131	Tube .75 X .035 X 26.58 4130N	1	
35	22G001-93	Tube .50 X .028 X 13.95 4130N	1	
36	19D017-1A	Fin Attach Install.	1	
37	19D801-11A	Hinge	2	
38	22G001-91	Tube .50 X .028 X 16.75 4130N	1	
39	19D017-2A	Fin Attach Install.	1	
40	22G001-78	Tube .50 X .028 X 8.00 4130N	1	
41	22001-76	Tube .50 x .028 x 15.75 4130N	2	

Revised 2-3-83

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE



33001-415 BOTTOM NOSE ASS'Y.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-415 BOTTOM NOSE ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
1	22G001-156	Tube .50 X .028 X 12.40 4130N	1 LH & 1 RH	
2	22G001-152	Tube .50 X .028 X 16.90 4130N	1	
3	22G001-158	Tube .50 X .028 X 17.20 4130N	1 LH & 1 RH	
4	12A008	Hinge	6	
5	19D302-3	Lug	4	
6	22G001-168	Tube .75 X .028 X 16.75 4130N	1 LH & 1 RH	
7	22G001-35	Tube .75 X .035 X 22.50 4130N	1 LH & 1 RH	
8	22G001-34	Tube .75 X .035 X 20.50 4130N	1 LH & 1 RH	
9	22G001-169	Tube .75 X .035 X 22.25 4130N	1	
10	22G001-170	Tube .75 X .028 X 17.75 4130N	1 LH & 1 RH	
11	33001H-233	Tube .88 X .035 X 81.75 4130N	1 LH & 1 RH	
12	33015B-11	Bracket - Torque Tube	2	
13	19A029-1A	Step Assy	2	
14	22G001-147	Tube .50 X .028 X 8.25 4130N	1 LH & 1 RH	
15	22G001-144	Tube .75 X .028 X 16.00 4130N	1 LH & 1 RH	
16	22G001-31	Tube 1.00 X .035 X 29.17 4130N	2	
17	22G001-145	Tube .75 X .028 X 18.50 4130N	1 LH & 1 RH	
18	33015B-11	Bracket - Torque Tube	2	
19	22G001-162	Strap .049 X 1.00 X 17.00	2	
20	22G001-278	Tube .31 X .028 X 53.00 1010 St1	2	
21	19D302-3	Lug	4	
22	22G001-29	Tube 1.00 X .035 X 21.09	1 LH & 1 RH	
23	22G001-49	Tube 1.00 X .035 X 27.05	1 LH & 1 RH	
24	33001H-280	Tube .31 X .028 X 80.00 1010 St1	2	
25	22G001-28	Tube 1.00 X .035 X 18.00 4130N	1 LH & 1 RH	
26	22G001-103	Tube .50 X .028 X 15.00 4130N	1 LH & 1 RH	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-415 BOTTOM NOSE ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
27	33001H-319	Clip .035 X 2.00 X 2.12 4130N	2	
28	22G001-105	Tube .88 X .049 X 16.50 4130N	1 LH & 1 RH	
29	22G001-107	Tube .75 X .035 X 28.50 4130N	1 LH & 1 RH	
30	22G001-52	Tube .75 X .035 X 24.50 4130N	1	
31	22G001-89	Tube .62 X .028 X 37.70 4130N	1	
32	22G001-88	Tube .50 X .028 X 22.40 4130N	1	
33	22G001-51	Tube 1.00 X .035 X 36.40 4130N	1	
34	22G001-107	Tube .75 X .035 X 28.50 4130N	1 LH & 1 RH	
35	33001H-321	Plate .035 X 1.75 X 2.12 4130N	1	
36	33013D-1	Strut Fitting Assy	1	
37	22A327-1	Clip	2	
38	22G001-141	Tube .88 X .049 X 9.08 4130N	1	
39	12A008	Hinge	6	
40	22G001-132	Tube .88 X .049 X 27.60 4130N	2	
41	10954B-15	Slug	2	
42	22G001-162	Strap .049 X 1.00 X 17.00 4130N	2	
43	22G001-48	Tube 1.00 X .035 X 27.50 4130N	1	
44	12A008	Hinge	6	
45	22G001-164	Tube .88 X .049 X 25.49 4130N	1	
46	22B010-1	Lug	2	
47	22G001-146	Tube .62 X .028 X 12.00 4130N	1 LH & 1 RH	
48	22G001-41	Tube 1.00 X .035 X 27.50 4130N	1	
49	22G001-120	Tube .88 X .049 X 28.00 4130N	2	
50	22G001-167	Tube .88 X .049 X 17.25 4130N	1	
51	22G001-171	Tube .88 X .049 X 7.50 4130N	1 LH & 1 RH	
52	33001H-340	Strap .090 X 1.31 X 2.8 4130N	2	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-415 BOTTOM NOSE ASSY

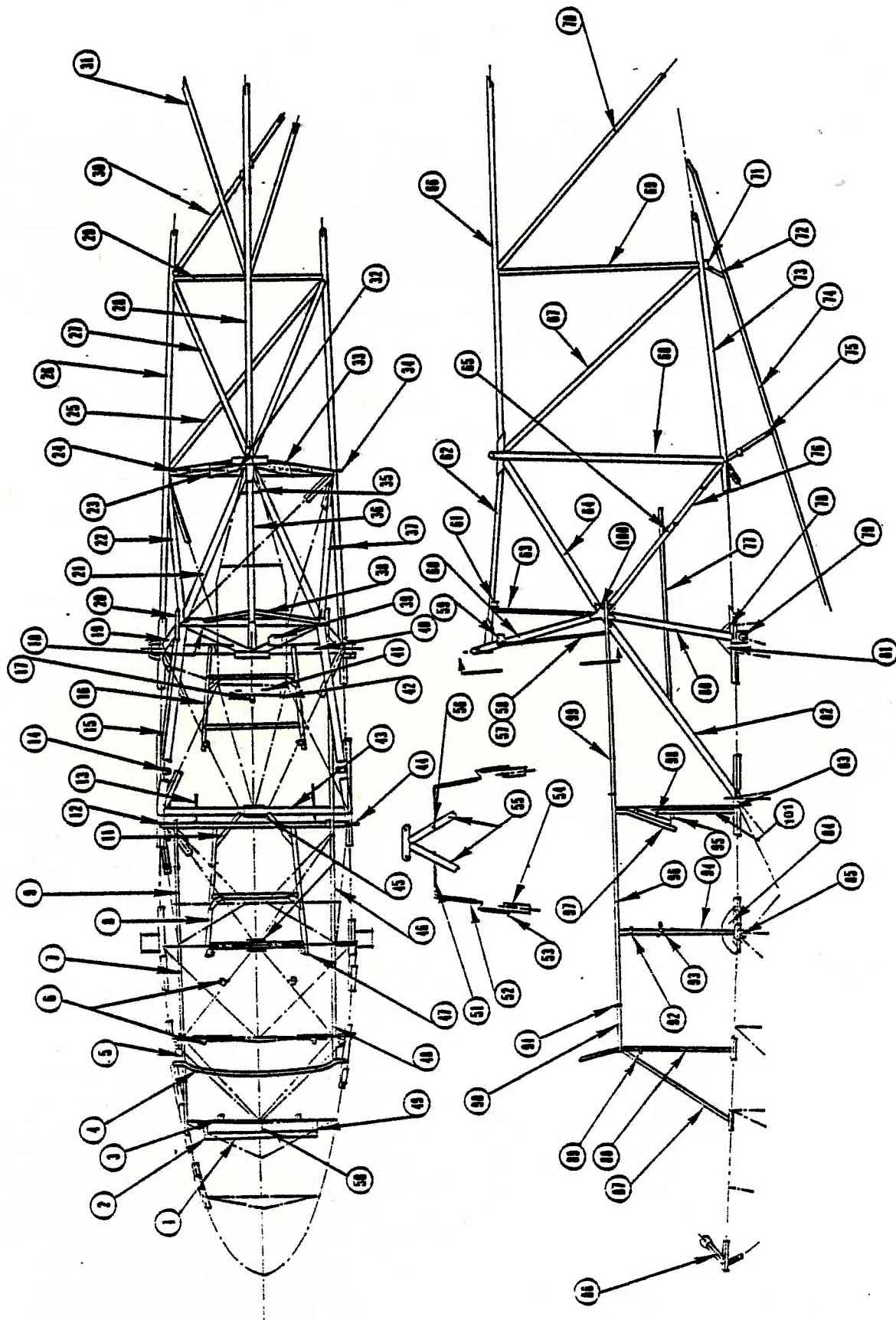
ITEM	PART NO.	NAME	QTY.	MODEL
53	33001H-338	Tube .88 X .035 X 17.8 4130N	1	
54	33001H-339	Tube .75 X .035 X 2.1 4130N	1	
55	22G001-133	Tube .75 X .035 X 27.00 4130N	2	
56	12A153	Lug	3	
57	33010D-9	Tube	1	
58	22G001-170	Tube .75 X .028 X 17.75 4130N	1 LH & 1 RH	
59	33001H-315	Tube .31 X .028 X 2.50 1010 St1	4	
60	33001H-311	Angle .040 X 1.62 X 2.12 1010 St1	6	
61	22G001-121	Tube 1.00 X .058 X 52.50 4130N	2	
62	33001H-307	Tube .31 X .028 X 1.50 1010 St1	2	
63	22D173-5	Bearing Assy	1	
64	22G001-123	Tube .88 X .035 X 61.50 4130N	2	
65	1A120-1	Fairlead	4	
66	33001-328	Tube - Fairing .50 X .028 X 8.5	1	
67	33001-296	Tube .31 X .028 X 1.00 1010 St1	2	
68	22D009-2	Tube	2	
69	22D009-1	Strap	2	
70	19A027-2A	Lug	1	
71	22G001-132	Tube .88 X .049 X 27.60 4130N	2	
72	33001H-306	Tube .31 X .028 X 3.00 1010 St1	4	
73	22G001-30	Tube 1.00 X .035 X 21.09 4130N	2	
74	22G001-55	Tube 1.00 X .058 X 20.00 4130N	1	
75	33001H-306	Tube .31 X .028 X 3.00 1010 St1	1	
76	19A027-1A	Lug	4	
77	22G001-32	Tube 1.00 X .035 X 21.09 4130N	2	
78	22G001-122	Tube .88 X .049 X 28.00 4130N	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-415 BOTTOM NOSE ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
79	12A153	Lug	3	Thru A/C 565
80	10954B-15	Slug	2	
81	1B210-1A	Release Slot Assy (Use -86 Eff. 566 & up)	1	
82	10954B-11	Slug	1	
83	19A030-1A	Lug	1	A/C 566 & Up
84	22G001-134	Tube .75 X .035 X 23.00 4130N	1	
85	22G001-166	Tube .75 X .035 X 15.50 4130N	2	
86	1B210-5	Release Slot Assy	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE



33001-419 Center Section Weld Ass'y.
EFF. A/C 537, 547 & UP

Revised 12/1/81

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-419 CENTER SECTION WELD ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
1	33001H-338	Tube .88 X .035 X 17.8 4130N	1	
2	22G001-158	Tube .50 X .028 X 17.20 4130N	1 LH & 1 RH	
3	19D302-3	Lug	4	
4	33001H-309	Instrument Panel Bow .50 Sq. X .028	1	
5	33001H-285	Tube .50 X .028 X 20.00 1010 St1.	1	
6	19D302-3	Lug	4	
7	33001H-318	Tube .50 Sq. X .035 X 17.38	1	
8	22G349-9	Tube	2	
9	33001H-287	Tube .50 X .028 X 37.00 1010 St1.	1	
11	22G349-7	Tube	2	
12	22G315-7	Cross Member	1	
13	33001H-278	Tube .31 X .028 X 53.00 1010 St1.	2	
14	19D302-3	Lug	4	
15	22G001-26	Tube 1.25 X .035 X 34.25 4130N	1 LH & 1 RH	
16	22D301-4A	Seat Bottom Assy	1	
17	19A027-2A	Lug	1	
18	22G001-63	Tube 1.00 X .035 X 21.00 4130N	1	
19	22G001-195	Tube .88 X .049 X 16.50 4130N	1 LH & 1 RH	
20	33001H-288	Tube .50 X .028 X 5.12 1010 St1.	1	
21	22G001-61	Tube 1.00 X .035 X 30.10 4130N	1 LH & 1 RH	
22	22G001-62	Tube .88 X .035 X 29.00 4130N	1 LH & 1 RH	
23	22H325-42	Fairing Support	1	
24	22G001-64	Tube .88 X .035 X 35.00 4130N	2	
25	22G001-89	Tube .62 X .028 X 37.70 4130N	1	
26	22G001-123	Tube .88 X .035 X 61.50 4130N	2	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-419 CENTER SECTION WELD ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
27	22G001-65	Tube .75 X .028 X 43.65 4130N	1 LH & 1 RH	
28	22G001-130	Tube .88 X .035 X 55.25 4130N	1	
29	22G001-66	Tube .62 X .028 X 32.40 4130N	1 LH & 1 RH	
30	22G001-87	Tube .62 X .028 X 37.00 4130N	1	
31	22G001-67	Tube .75 X .028 X 41.70 4130N	1 LH & 1 RH	
32	22G001-52	Tube .75 X .035 X 24.50 4130N	1	
33	22H325-41	Fairing Support	1	
34	1A300-2.06	Fairing Support	1	
35	22B314-1	Lug	1	
36	22G001-23	Tube .88 X .035 X 28.75 4130N	1	
37	1A300-1.81	Fairing Support	1	
38	22G001-96	Tube .44 X .028 X 19.18 4130N	2	
39	33001H-321	Plate .035 X 1.75 X 2.12 4130N	1	
40	22G001-173	Tube 1.25 X .072 X 26.50 4130N	1	
41	22A327-1	Clip	2	
42	12A008	Hinge	2	
43	22G001-48	Tube 1.00 X .035 X 27.05 4130N	1	
44	1A300-2.25	Fairing Support	1	
45	33015B-11	Bracket - Torque Tube	2	
46	33001H-308	Tube, Fairing .50 X .038 X 69.00 1010 Stl.	1	
47	22G348-1	Seat Bottom Weld Assy	1	
48	33001H-317	Tube .50 Sq. X .035 X 17.38	1	
49	33001H-340	Strap .090 X 1.31 X 2.8 4130N	2	
50	33001H-339	Tube .75 X .035 X 2.1 4130N	1	
51	22H325-55	Tube	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-419 CENTER SECTION WELD ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
52	33001H-299 LH -298 RH	Fairing Tube	1 Ea.	
53	33337A-1	Striker Plate	1	
54	33001H-325	Stop 3/16 Dia. X 2.12	1	
55	22G001-24	Tube 1.00 X .035 X 22.28	1 LH & 1 RH	
56	22H325-56	Tube	1	
57	33001H-298	Fairing Tube .31 X .028 X 15.88	1	
58	33001H-299	Fairing Tube .31 X .028 X 15.88	1	
59	22H325-14	Gusset	2	
60	22G001-24	Tube 1.00 X .035 X 22.28 4130N	1 LH & 1 RH	
61	12A008	Hinge	2	
62	22G001-23	Tube .88 X .035 X 28.75 4130N	1	
63	22G001-96	Tube .44 X .028 X 19.18 4130N	2	
64	22G001-61	Tube 1.00 X .035 X 30.10 4130N	1 LH & 1 RH	
65	22G001-62	Tube .88 X .035 X 29.00 4130N	1 LH & 1 RH	
66	22G001-130	Tube .88 X .035 X 55.25 4130N	1	
67	22G001-65	Tube .75 X .028 X 43.65 4130N	1 LH & 1 RH	
68	22G001-64	Tube .88 X .035 X 35.00 4130N	2	
69	22G001-66	Tube .62 X .028 X 32.40 4130N	1 LH & 1 RH	
70	22G001-67	Tube .75 X .028 X 41.70 4130N	1 LH & 1 RH	
71	22G001-68	Tube .50 X .028 X 28.42 4130N	2	
72	33001H-330	Fairing Tube .50 X .028 X 4.0	1	
73	22G001-123	Tube .88 X .035 X 61.50 4130N	2	
74	33001H-331	Tube - Fairing .50 X .028 X 43 4130N	1	
75	33001H-328	Tube - Fairing .50 X .028 X 8.5 4130N	1	
76	22G001-142	Tube 1.00 X .035 X 36.80 4130N	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33001-419 CENTER SECTION WELD ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
77	22H325-35	Tube	1	
78	22D008-7	Gusset	2	
79	22D008-3	Plate	2	
80	22G001-25	Tube 1.00 X .035 X 19.65	1 LH & 1 RH	
81	22D008-6	Gusset	2	
82	22G001-26	Tube 1.12 X .035 X 34.25 4130N	1 LH & 1 RH	
83	22H325-37	Door Post	1	
84	33001H-323	Reinforcement .050 X 2.5 X 7.12	1	
85	19A029-1A	Step Assy	2	
86	33010D-7	Tube	1	
87	33001H-285	Tube .50 X .028 X 20.0 1010 Stl.	1	
88	22H305-18	Fairing Tube	2	
89	19A030-1A	Lug	1	
90	33001H-317 LH -318 RH	Tube .50 Sq. X .035 X 17.38	1 EA.	
91	10325A-1	Locking Bracket	1	
92	19A030-1A	Lug	2	
93	10191A-1	Locking Bracket	1	
94	33001H-302	Tube .50 X .035 X 17.50 1010 Stl.	2	
95	22H325-36	Stub	1	
96	33001H-287	Tube .50 X .028 X 37.00 1010 Stl.	1	
97	22G349-9	Tube	2	
98	33331B-3	Body Assy	1	
99	33001H-308	Tube Fairing .50 X .028 X 69.00	1	
100	22D011-1	Gusset	2	
101	33001-303	Tube	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

NOTES

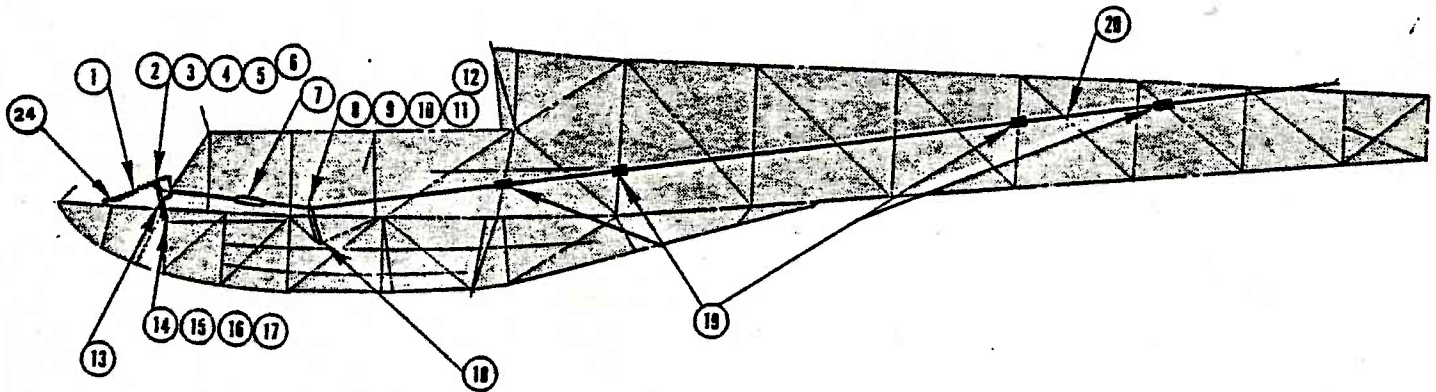
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

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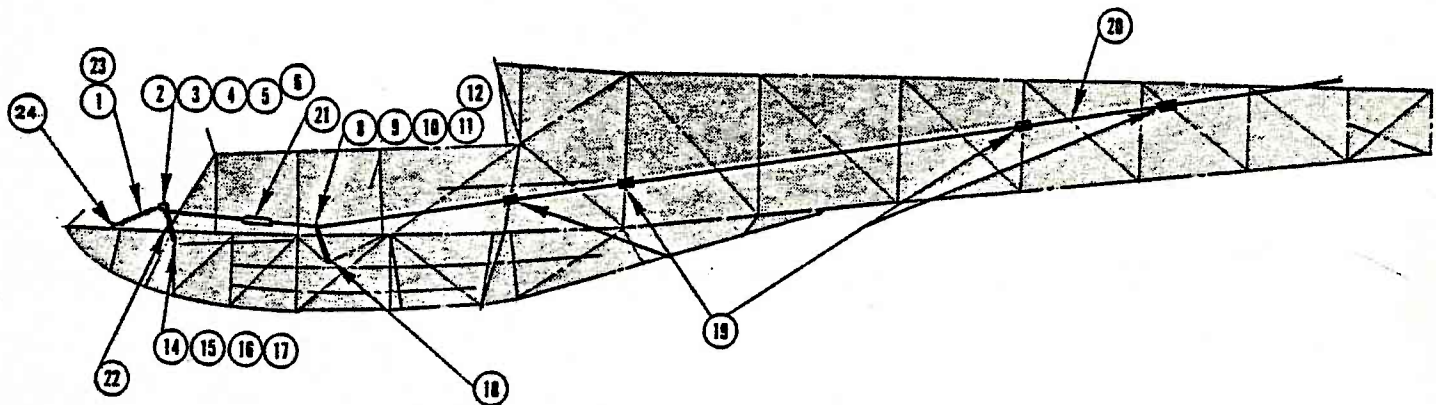
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

RUDDER CONTROL ASSYS



33100R-13 Rudder Control Assy

Eff: A/C 537 and 546 and Up



33100R-1 Rudder Control Assy

Eff: A/C 1 thru 536 and 538 thru 545

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33100R-1 RUDDER CONTROL ASSY

Eff: A/C 1 thru 536 and 538 thru 545

33100R-13 RUDDER CONTROL ASSY

Eff: A/C 537 and 546 and Up

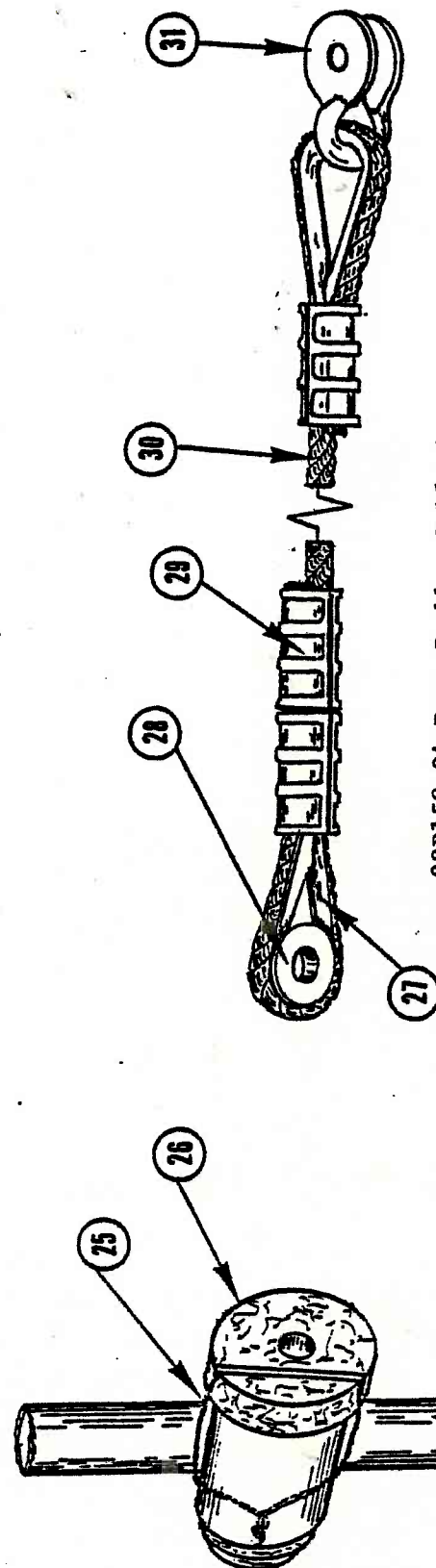
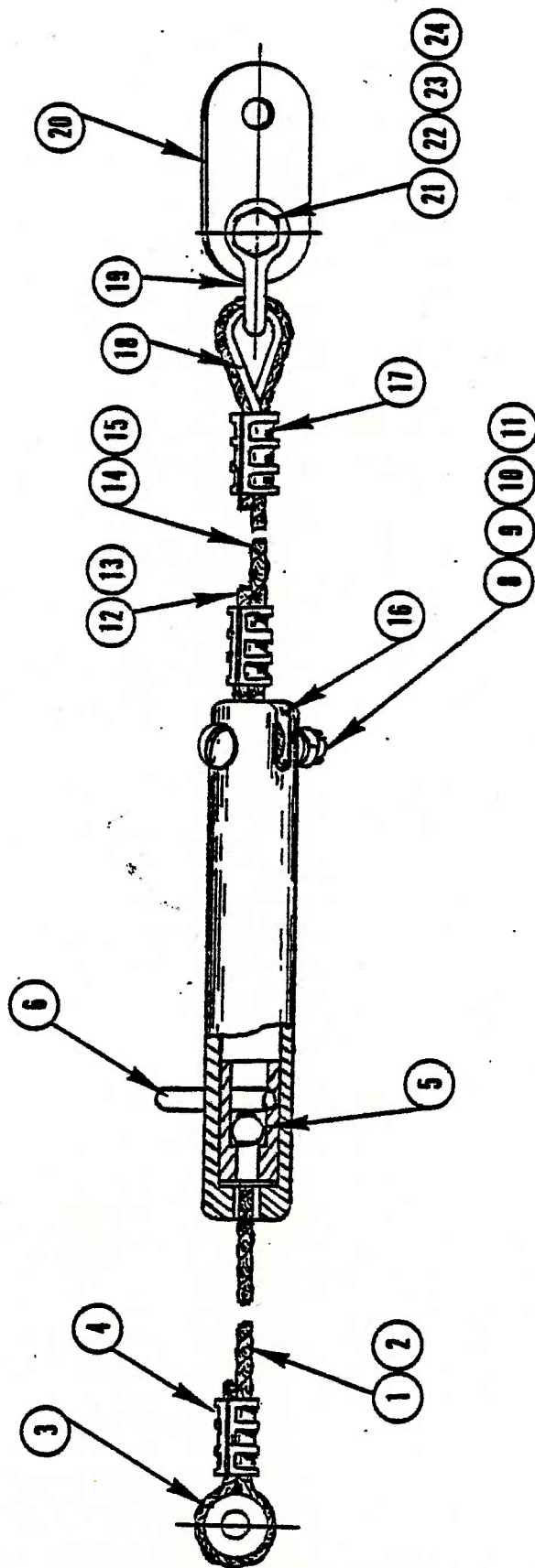
ITEM	PART NO.	NAME	QTY.	MODEL
1	19A137-1A	Spring	2	A/C 63 & Up
2	AN4-13	Bolt	2	
3	AN310-4	Nut	2	
4	AN380-2-2	Pin	2	
5	AN945-4	Washer	2	
6	AN960-416	Washer	2	
7	33126D-9	Cable Assy (Fwd)	2	
8	AN4-12	Bolt	2	
9	AN310-4	Nut	2	
10	AN380-2-2	Pin	2	
11	AN945-4	Washer	2	
12	AN960-416	Washer	2	
13	33145G-1	Pedal Assy with Extender	2	
14	AN4-11	Bolt	8	
15	AN310-4	Nut	8	
16	AN380-2-2	Cotter Pin	8	
17	AN960-416	Washer	8	
18	1D138-1A	Rudder Pedal	2	
19	1A123-1	Fairlead	8	
20	22B158-2A	Cable Assy (Aft)	2	
21	33126D-1	Cable Assy (Fwd)	2	
22	1D138-1A	Rudder Pedal	2	
23	1A142-1	Spring	2	A/C 1 thru 63
24	33129-1	"S" Hook	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

RUDDER CONTROL DETAILS

33126D-1 Front Cable Assy, Eff. A/C 1 thru 536 & 538 thru 545

33126D-9 Front Cable Assy, Eff. A/C 537 & 546 and Up



22B158-2A Rear Rudder Cable Assy

Typ. Fairlead Inst'l

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

RUDDER CONTROL DETAILS

ITEM	PART NO.	NAME	QTY.	MODEL
	33126D-1	Front Cable Assy, Eff. A/C 1 thru 536, 538 thru 545	2	
	33126D-9	Front Cable Assy, Eff. A/C 537, 546 & Up	2	
1	33126D-7	Cable Assy	1	
2	22B159-7	Cable		
3	AN111-5	Bushing		
4	1/8"	Nicopress Sleeve		
5	AN664C-4	Ball End Swaged		
6	10154D-1	Adjuster Assy		
8	AN23-15	Bolt	1	
9	AN310-3	Nut	1	
10	AN960-10	Washer	1	
11	AN380-2-2	Cotter Pin	1	
12	33126D-3	Cable Assy, Eff. A/C 1 thru 536, 538 thru 545	1	
13	33126D-5	Cable (in 33126D-3)		
14	33126D-11	Cable Assy, Eff. A/C 537 and 546 and Up	1	
15	33126D-6	Cable (in 33126D-11)		
16	AN111-4	Bushing		
17	1/8"	Nicopress Sleeve		
18	AN100-4	Thimble		
19	AN115-21	Shackle		
20	26D142-2	Lug	1	
21	AN3-5	Bolt	1	
22	AN960-10	Washer	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

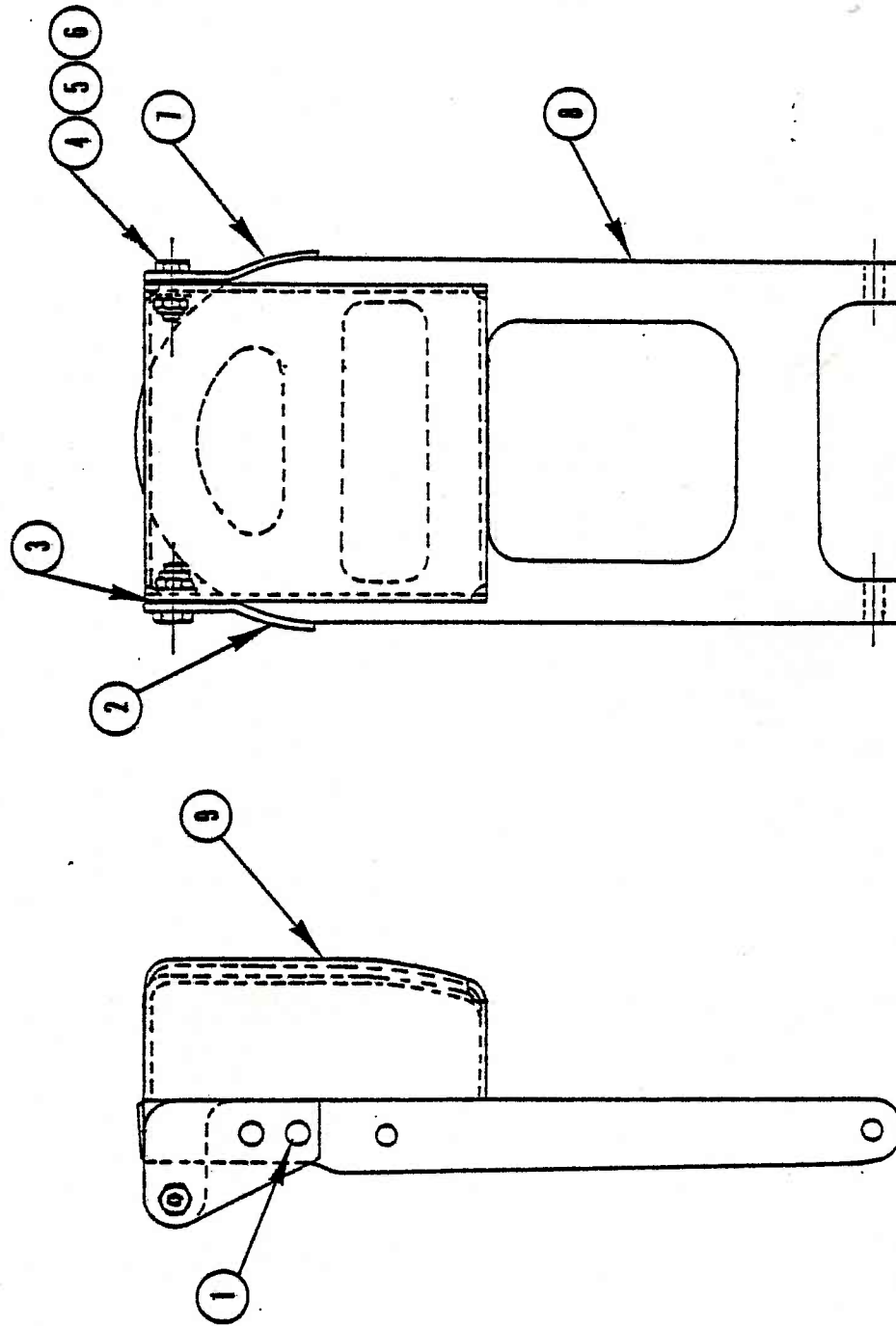
RUDDER CONTROL DETAILS

ITEM	PART NO.	NAME	QTY.	MODEL
23	AN310-3	Nut	1	
24	AN380-2-2	Cotter Pin	1	
		Fairlead Instl. (Typ.)		
25	.040 Dia.	Brass Safety Wire	A/R	
26	1A123-1	Fairlead	A/R	
	22B158-2A	Rear Rudder Cable Assy	2	
27	AN100-4	Thimble	2	
28	AN111-5	Bushing	1	
29	1/8	Nico Press Sleeve	3	
30	22B158-4	Cable	1	
31	AN115-21	Shackle	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33145G-1 Pedal Assy

Eff: A/C 537, 547 and Up



Revised 2-3-83

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33145G-1 PEDAL ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
1	MS20470AD5	Rivet	4	
2	33145-11	Lug	1	
3	3/16 I.D.	Hard Fiber Washer	2	
4	AN3-7A	Bolt	2	
5	AN960-10	Washer	2	
6	AN365-1032	Nut	2	
7	33145-12	Lug	1	
8	1D138-1A	Pedal	1	
9	33145-13	Extender	1	

Revised 2-3-83

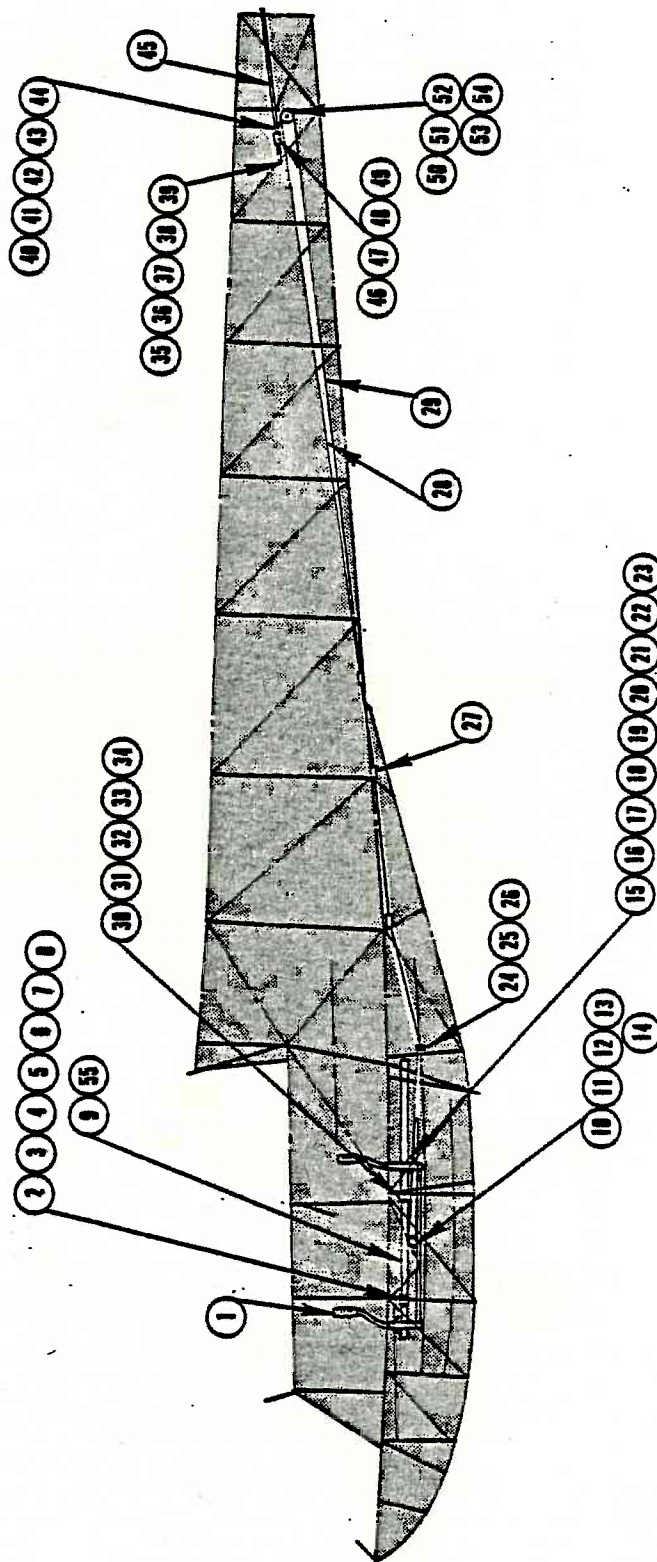
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33100R-3 ELEVATOR CONTROL ASSY

Eff: A/C 1 thru 536 and 538 thru 546

33100R-17 ELEVATOR CONTROL ASSY

Eff: A/C 537 and 547 and up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33100R-3 ELEVATOR CONTROL ASSY

Eff: A/C 1 thru 536 and 538 thru 546

33100R-17 ELEVATOR CONTROL ASSY

Eff: A/C 537 and 547 and Up

ITEM	PART NO.	NAME	QTY.	MODEL
1	RG 1355	Grip	2	A/C 537, 547 & Up
2	19B116-3A	Bearing Cap	2	
3	19B116-5A	Liner	4	
4	19B116-10A	Hanger Assy	2	
5	AN4-17A	Bolt	4	
6	AN960-416	Washer	A/R	
7	AN960-416L	Washer	A/R	
8	AN365-428	Nut	4	
9	33114J-1	Torque Tube Assy		
10	MS24566-4B	Pulley	1	
11	AN4-11	Bolt	1	
12	AN310-4	Nut	1	
13	AN380-2-2	Cotter Pin	1	
14	AN960-416	Washer	1	
15	AN4-7	Bolt	2	
16	AN310-4	Nut	2	
17	AN380-2-2	Cotter Pin	2	
18	AN960-416	Washer	2	
19	22D113-3	Link	2	
20	22D113-4	Spacer	2	
21	AN6-17	Bolt	2	
22	AN310-6	Nut	2	
23	AN960-616	Washer	2	
24	22A148-1	Fairlead	2	
25	AN520-10-18	Screw	2	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33100R-3 ELEVATOR CONTROL ASSY

Eff: A/C 1 thru 536 and 538 thru 546

33100R-17 ELEVATOR CONTROL ASSY

Eff: A/C 537 and 547 and Up

ITEM	PART NO.	NAME	QTY.	MODEL
26	AN365-1032	Nut	2	
27	1A123-1	Fairlead	6	
28	22D117-5A	Cable Assy	1	
29	22D117-4A	Cable Assy — <i>need new cable!</i>	1	
30	33130B-1	Bearing	2	
31	33130B-3	Strip	2	
32	AN4-21A	Bolt	2	
33	AN365-428	Nut	2	
34	AN960-416	Washer	2	
35	AN4-13	Bolt	1	
36	AN310-4	Nut	1	
37	AN380-2-2	Cotter Pin	1	
38	AN945-4P	Washer	1	
39	AN960-416	Washer	1	
40	AN4-15	Bolt	1	
41	AN310-4	Nut	1	
42	AN380-2-2	Cotter Pin	1	
43	AN945-4P	Washer	1	
44	AN960-416	Washer	1	
45	22D116-4A	Push/Pull Tube	1	
46	1A147-1A	Fairlead	1	
47	AN520-10-14	Screw	1	
48	AN365-1032	Nut	1	
49	AN960-10	Washer	2	
50	MS24566-4B	Pulley	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33100R-3 ELEVATOR CONTROL ASSY

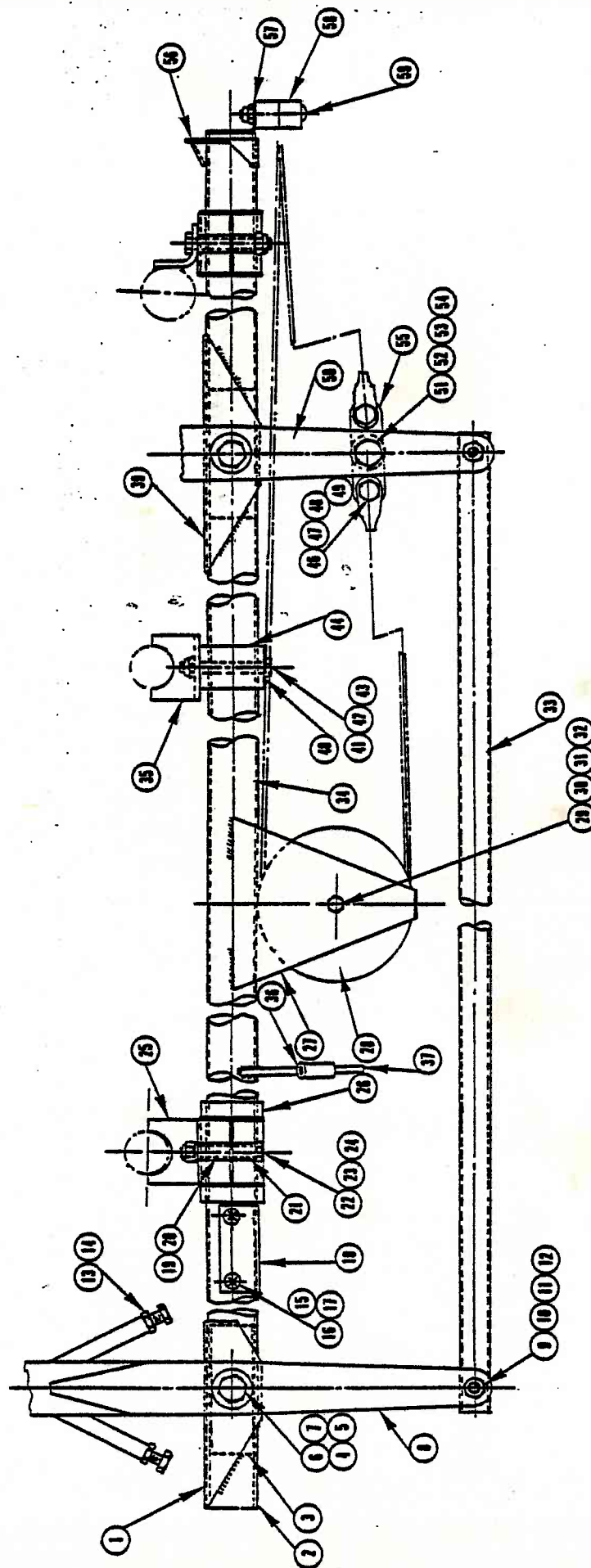
Eff: A/C 1 thru 536 and 538 thru 546

33100R-17 ELEVATOR CONTROL ASSY

Eff: A/C 537 and 547 and Up

ITEM	PART NO.	NAME	QTY.	MODEL
51	AN4-11	Bolt	1	
52	AN310-4	Nut	1	
53	AN380-2-2	Cotter Pin	1	
54	AN960-416	Washer	2	
55	22G114-3A	Torque Tube Assy	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE



22G114-1A TORQUE TUBE ASSY
Eff: A/C 1 thru 536 & 538 thru 546

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22G114-1A TORQUE TUBE ASSY

Eff: A/C 1 thru 536 and 538 thru 546

ITEM	PART NO.	NAME	QTY.	MODEL
1	19D115-2	Tube	1	
2	22G114-2	Torque Tube	1	
3	19D115-3	Tube	1	
4	AN6-21	Bolt	2	
5	AN310-6	Nut	2	
6	AN380-3-4	Cotter Pin	2	
7	AN960-616	Washer	2	
8	33123-1	Front Stick Assy	1	
9	AN4-14	Bolt	2	
10	AN310-4	Nut	2	
11	AN380-2-2	Cotter Pin	2	
12	AN960-416	Washer	2	
13	22D113-9	Bolt	2	
14	AN345-416	Nut	2	
20	19B116-10A	Bearing Hanger	2	
21	19B116-5A	Bearing Cap	4	
22	AN4-17A	Bolt	4	
23	AN365-428	Nut	4	
24	AN960-416	Washer	4	
25	22B108-1A	Bracket	1	
26	19A109-1A	Collar	2	
27	22B111-1A	Pulley Bracket	1	
28	AN210-41	Pulley	1	
29	AN4-11	Bolt	1	

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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22G114-1A TORQUE TUBE ASSY

Eff: A/C 1 thru 536 and 538 thru 546

ITEM	PART NO.	NAME	QTY.	MODEL
30	AN310-4	Nut	1	
31	AN960-416	Washer	1	
32	AN380-2-2	Cotter Pin	1	
33				
34	22G114-2	Tube	1	
35	22B108-3A	Bracket	1	
36	22B119-2	Tube	1	
37	22B119-1	Quadrant	1	
39	19D115-2	Tube	1	
40	33130-3	Bearing Cap	1	
41	AN4-17A	Bolt	2	
42	AN960-416	Washer	2	
43	AN365-428	Nut	2	
44	33130-1	Bearing	2	
46	AN4-7	Bolt	2	
47	AN310-4	Nut	2	
48	AN960-416	Washer	2	
49	AN380-2-2	Cotter Pin	2	
50	22D144-1A	Stick Assy	1	
51	AN6-17	Bolt	1	
52	AN310-6	Nut	1	
53	AN380-3-4	Cotter Pin	1	
54	AN960-616	Washer	1	
55	22D113-3	Link	2	
56	22D104-1	Bellcrank	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

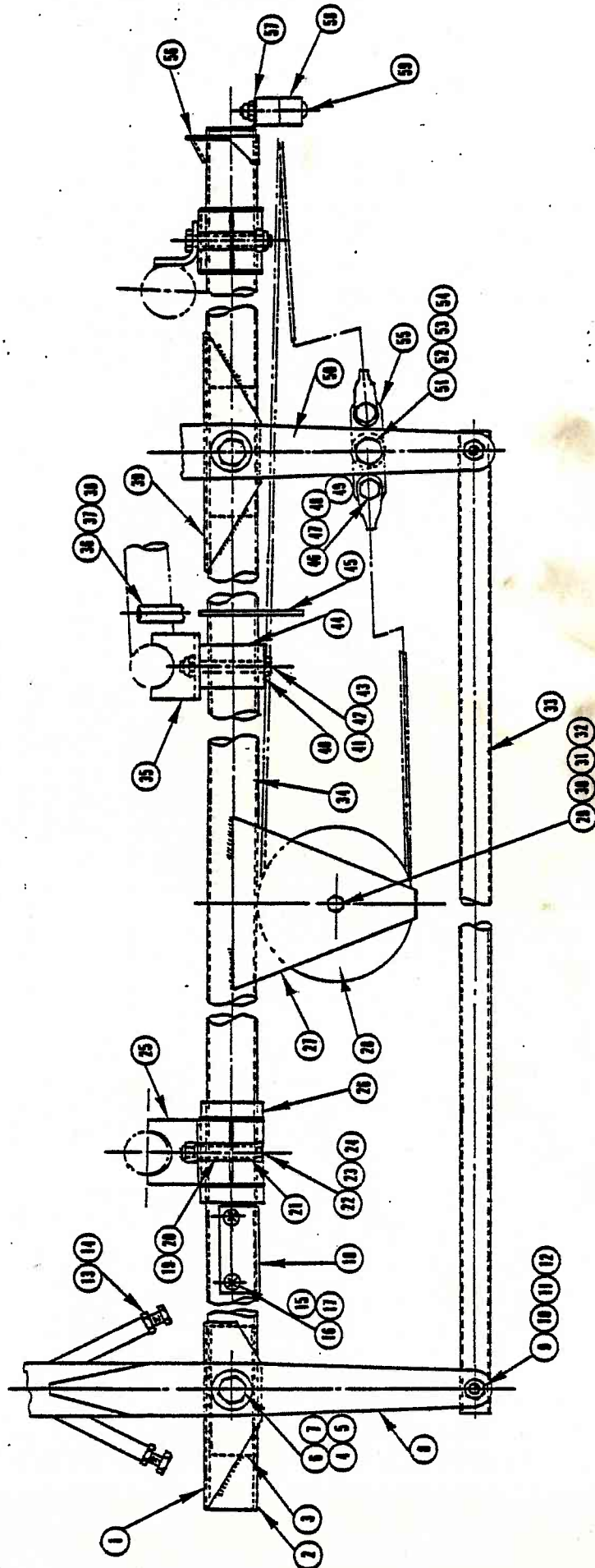
22G114-1A TORQUE TUBE ASSY

Eff: A/C 1 thru 536 and 538 thru 546

ITEM	PART NO.	NAME	QTY.	MODEL
57	22A122-2	Angle Block	1	
58	AN520-10-22	Screw	2	
59	AN365-1032	Nut	2	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33114J-1 TORQUE TUBE ASSY - ELEVATOR - EFF A/C 537, 547 & Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33114J-1 ELEVATOR TORQUE TUBE ASSY

Eff: A/C 537, 547 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
1	19D115-2	Tube	1	
2	22G114-2	Torque Tube	1	
3	19D115-3	Tube	1	
4	AN6-21	Bolt	2	
5	AN310-6	Nut	2	
6	AN380-3-4	Cotter Pin	2	
7	AN960-616	Washer	2	
8	33123-1	Front Stick Assy	1	
9	AN4-14	Bolt	2	
10	AN310-4	Nut	2	
11	AN380-2-2	Cotter Pin	2	
12	AN960-416	Washer	2	
13	22D113-9	Bolt	2	
14	AN345-416	Nut	2	
15	AN525-8R26	Screw	2	
16	AN365-832	Nut	2	
17	AN960-8	Washer	2	
18	33140G-5	Weld Assy	1	
19	19B116-10A	Bearing Hanger	1	
20	19B116-1A	Front Bearing Assy	1	
21	19B116-3A	Bearing Cap	1	
22	AN4-17A	Bolt	4	
23	AN365-428	Nut	4	
24	AN960-416	Washer	4	
25	33015B-11	Bracket	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33114J-1 ELEVATOR TORQUE TUBE ASSY

Eff: A/C 537, 547 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
26	19A109-1A	Collar	2	
27	22B111-1A	Pulley Bracket	1	
28	MS24566-4B	Pulley	1	
29	AN4-11	Bolt	1	
30	AN310-4	Nut	1	
31	AN960-416	Washer	1	
32	AN380-2-2	Cotter Pin	1	
33	22B130-5A	Transfer Tube	1	
34	33114J-3	Torque Tube Weld Assy	1	
35	33015B-11	Bracket	1	
36	33018A-1	Stop Tube	2	
37	AN316-4	Nut	2	
38	AN74-5A	Bolt	2	
39	19D115-2	Tube	1	
40	33130B-3	Strip	1	
41	AN4-21A	Bolt	2	
42	AN365-428	Nut	2	
43	AN960-416	Washer	2	
44	33130B-1	Bearing Block	1	
45	33017B-1	Quadrant	1	
46	AN4-7	Bolt	2	
47	AN310-4	Nut	2	
48	AN960-416	Washer	2	
49	AN380-2-2	Cotter Pin	2	
50	22D144-1A	Rear Stick Assy	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33114J-1 ELEVATOR TORQUE TUBE ASSY

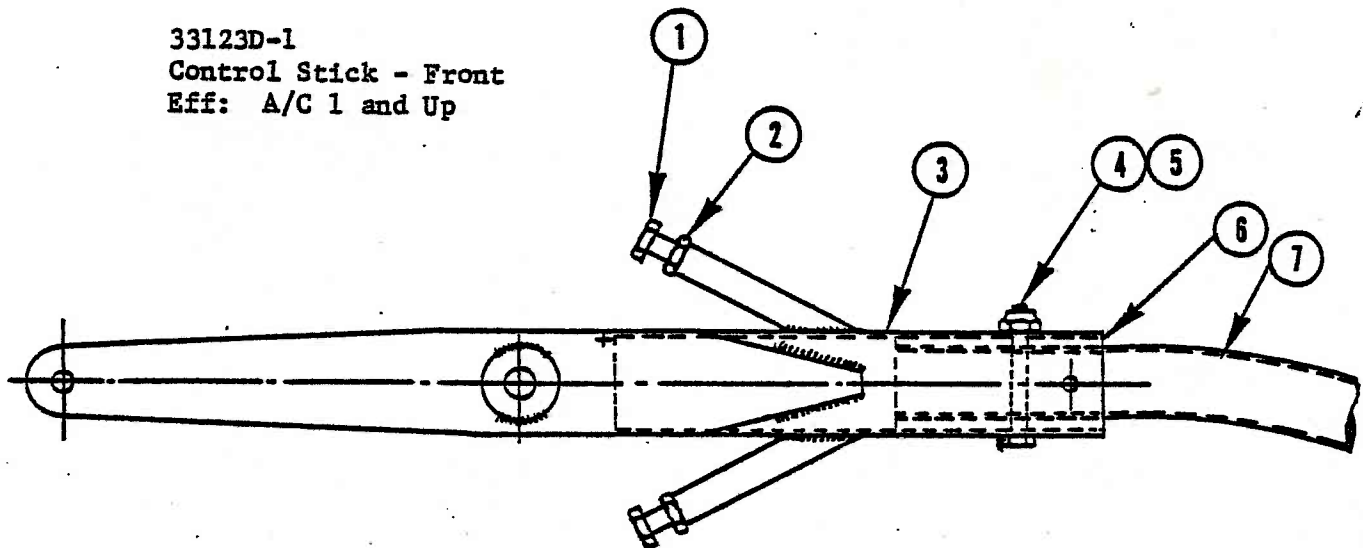
Eff: A/C 537, 547 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
51	AN6-17	Bolt	1	
52	AN310-6	Nut	1	
53	AN960-616	Washer	1	
54	AN380-3-3	Cotter Pin	1	
55	22D113-3	Link	2	
56	22D104-1	Bellcrank	1	
57	22A122-2	Angle Block	1	
58	22A122-1	Hanger	1	
59	AN520-10-22	Screw	2	
	AN365-1032	Nut	2	

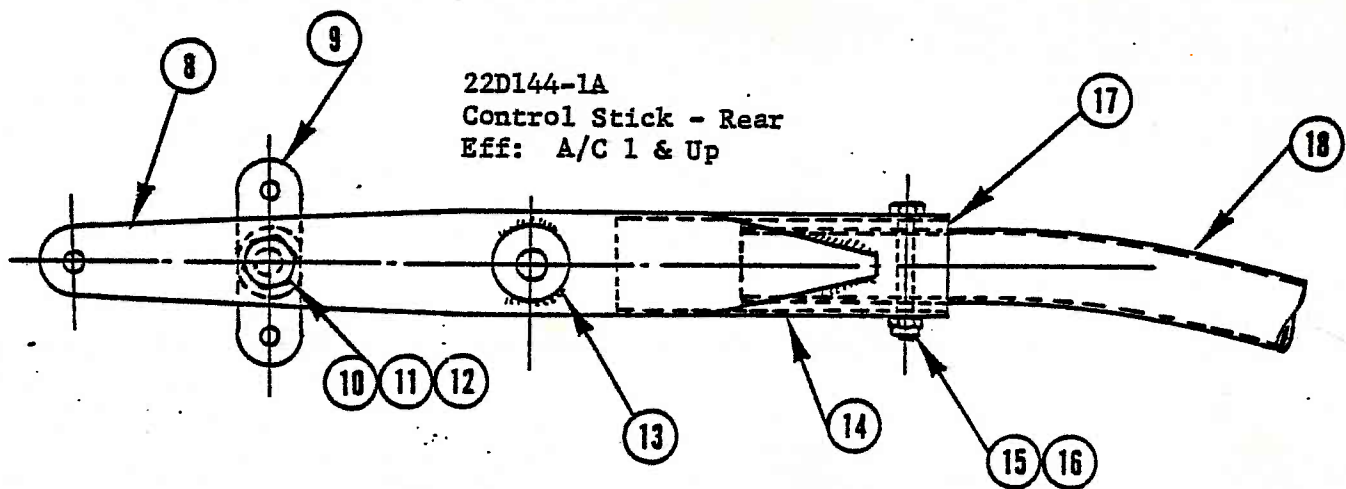
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

CONTROL STICK ASSY'S

33123D-1
Control Stick - Front
Eff: A/C 1 and Up



22D144-1A
Control Stick - Rear
Eff: A/C 1 & Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33123D-1 CONTROL STICK - FRONT

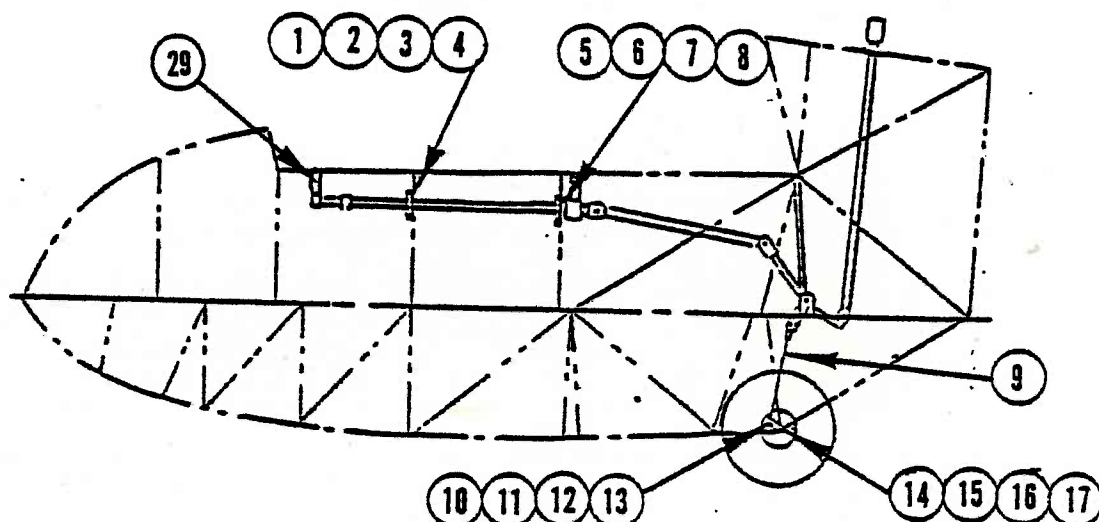
22D144-1A CONTROL STICK - REAR

ITEM	PART NO.	NAME	QTY.	MODEL
1	22D113-9	Stop Bolt	2	
2	AN345-416	Nut	2	
3	22D113-10A	Stub - Weld Assy	1	
4	AN3-15A	Bolt	1	
5	AN365-1032	Nut	1	
6	26139-2	Sleeve	1	
7	26139-1	Control Stick	1	
8	22D113-2	Strap	2	
9	22D113-3	Link	2	
10	AN6-17	Bolt	1	
11	AN310-6	Nut	1	
12	AN380-3-3	Cotter Pin	1	
13	1A000-7-065	Washer	2	
14	22D144-2	Tube Stub	1	
15	AN3-15A	Bolt	1	
16	AN365-1032	Nut	1	
17	26B139-2	Sleeve	1	
18	22B146-1	Control Stick	1	

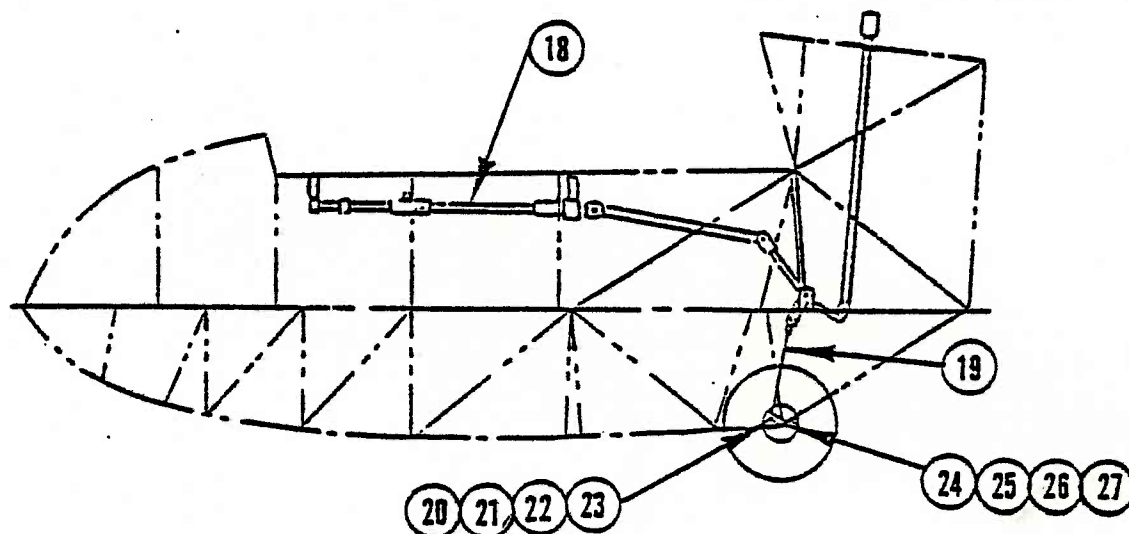
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Dive Brake Controls Instl.

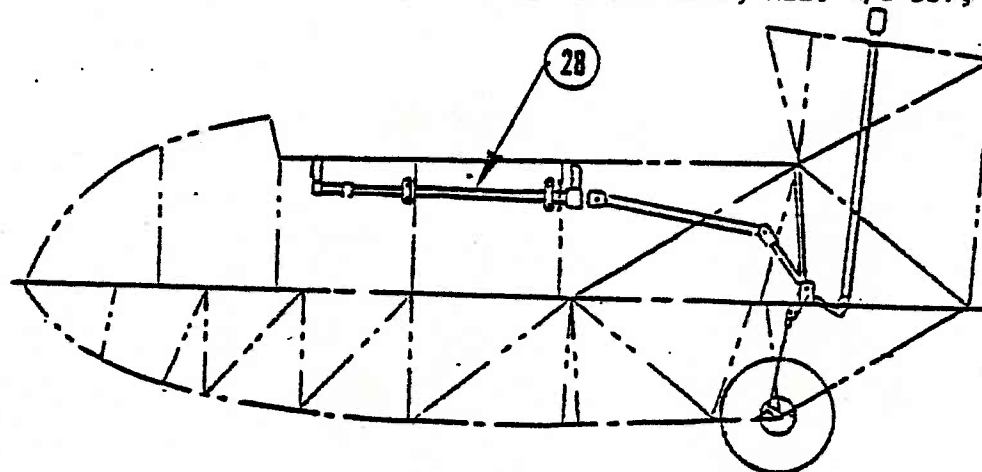
33100R-9 Dive Brake Controls, Eff. A/C 1 thru 399



33100R-11 Dive Brake Controls, Eff. A/C 400 thru 536 & 538 - 545



33100R-15 Dive Brake Controls, Eff. A/C 537, and 547 and Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Dive Brake Controls Instl.

33100R-9 Controls Instl., Eff. A/C 1 thru 399

33100R-11 Controls Instl., Eff. A/C 400 thru 536 and 538 - 545

33100R-15 Controls Instl., Eff. A/C 537 and 547 and Up

ITEM	PART NO.	NAME	QTY.	MODEL
1	33111-3	Lock Assy	1	
2	AN3-17A	Bolt	1	
3	AN960-10	Washer	1	
4	AN365-1032	Nut	1	
5	22173-23	Fairlead	1	
6	AN520-10-16	Screw	2	
7	AN365-1032	Nut	2	
8	AN960-10	Washer	2	
9	22173-49	Brake Cable Assy	1	Thru A/C 217
9	22173-55	Brake Cable Assy	1	A/C 218 & Up
10	AN3-5	Bolt	1	A/C 218 & Up
11	AN310-3	Nut	1	A/C 218 & Up
12	AN380-2-2	Cotter Pin	1	A/C 218 & Up
13	AN960-10	Washer	1	A/C 218 & Up
10	AN3-6A	Bolt	1	Thru A/C 217
11	AN365-1032	Nut	1	Thru A/C 217
12	AN960-10	Washer	1	Thru A/C 217
14	AN3-6	Bolt	1	A/C 218 & Up
15	AN310-3	Nut	1	A/C 218 & Up
16	AN380-2-2	Cotter Pin	1	A/C 218 & Up
17	AN960-10	Washer	1	A/C 218 & Up
14	AN3-5A	Bolt	1	Thru A/C 217
15	AN364-1032	Nut	1	Thru A/C 217
16	AN960-10	Washer	1	Thru A/C 217
18	33135R-1	Dive Brake Controls Instl.	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Dive Brake Controls Instl.

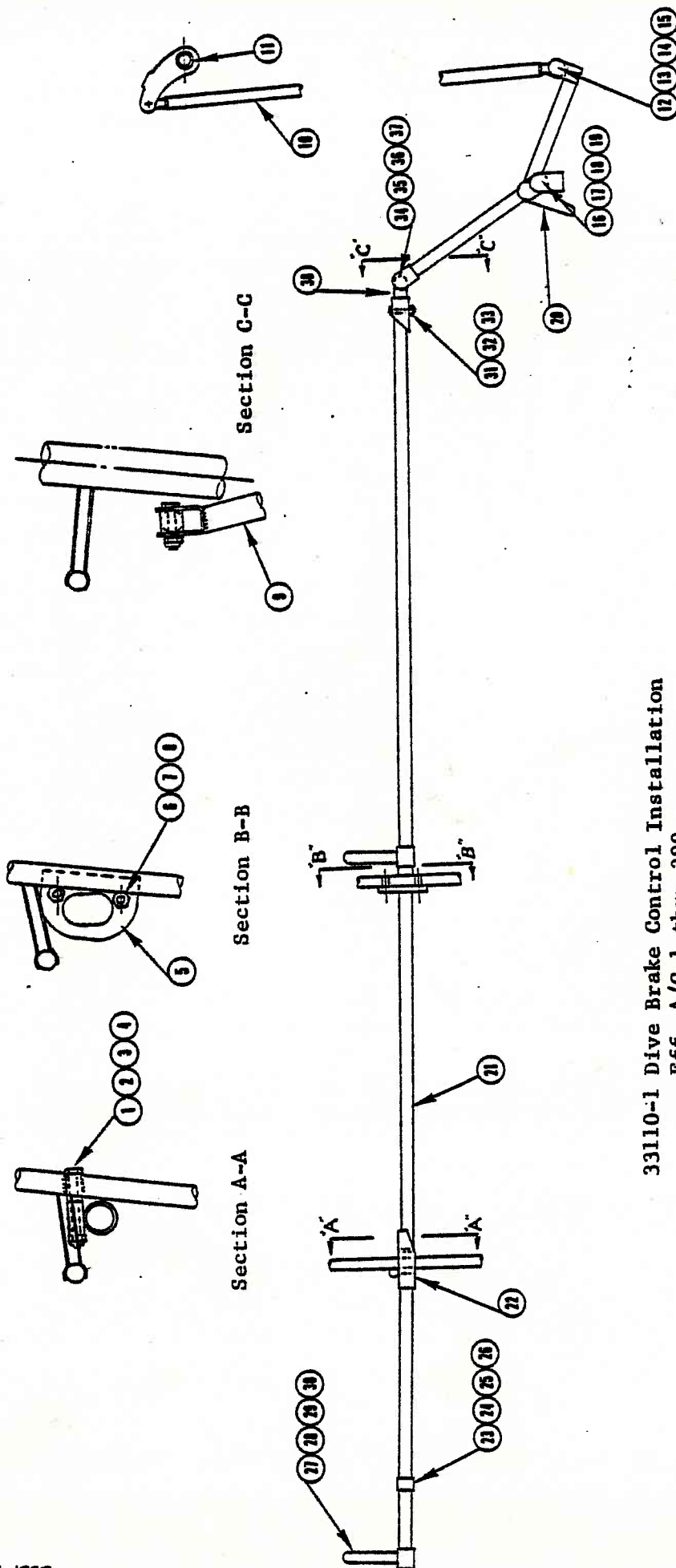
33100R-9 Controls Instl., Eff. A/C 1 thru 399

33100R-11 Controls Instl., Eff. A/C 400 thru 536 and 538 - 545

33100R-15 Controls Instl., Eff. A/C 537 and 547 and Up

ITEM	PART NO.	NAME	QTY.	MODEL
19	22173-55	Brake Cable Assy	1	Thru A/C 499
19	22173-59	Brake Cable Assy	1	A/C 500 & Up
20	AN3-5	Bolt	1	
21	AN310-3	Nut	1	
22	AN380-2-2	Cotter Pin	1	
23	AN960-10	Washer	1	
24	AN3-6	Bolt	1	
25	AN310-3	Nut	1	
26	AN380-2-2	Cotter Pin	1	
27	AN960-10	Washer	1	
28	33135-3	Dive Brake Control Instl.	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33110-1 DIVE BRAKE CONTROL INSTL.

Eff. A/C 1 thru 399

ITEM	PART NO.	NAME	QTY.	MODEL
1	33111-15	Bushing	1	
2	AN3-17A	Bolt	1	
3	AN960-10	Washer	1	
4	AN365-1032	Nut	1	
5	22173-23	Fairlead	1	
6	AN520-10-16	Screw	2	
7	AN960-10	Washer	2	
8	AN365-1032	Nut	2	
9	33109-1	Bellcrank Control	Ref.	
10	33107-7	Push Rod	1	
11	33117-3	Torque Tube Assy	1	
12	AN3-11	Bolt	1	
13	AN310-3	Nut	1	
14	AN380-2-2	Cotter Pin	1	
15	AN960-10	Washer	1	
16	AN4-10, AN4-13	Bolt	1 ea	
17	AN310-4	Nut	2	
18	AN380-2-2	Cotter Pin	2	
19	AN960-416	Washer	2	
20	33109-1	Bellcrank	1	
21	33111-1	Tube Assy	1	
22	33111-3	Assy (replaced by 10185-1)	1	
23	LA001-14-120-50	Collar	1	
24	AN3-12A	Bolt	1	
25	AN960-10	Washer	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

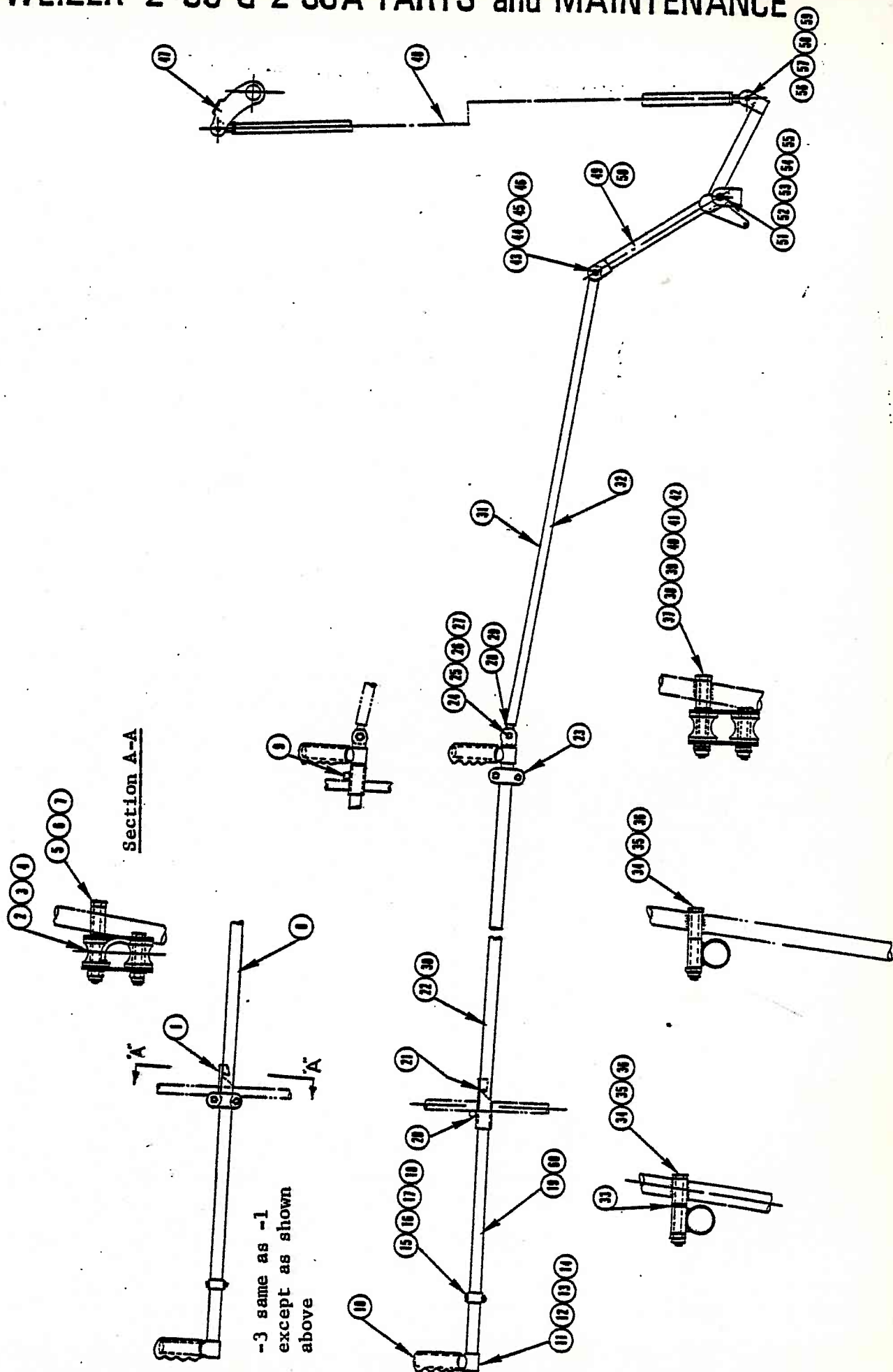
33110-1 DIVE BRAKE CONTROL INSTL.

Eff. A/C 1 thru 399

ITEM	PART NO.	NAME	QTY.	MODEL
26	AN365-1032	Nut	1	
27	22142-4A	Handle Assy	2	
28	AN3-11A	Bolt	2	
29	AN960-10	Washer	2	
30	AN365-1032	Nut	2	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33135R-1 Dive Brake Control Instl.
Eff. A/C 400 thru 536 and 538 thru 545
33135R-3 Dive Brake Control Instl.
Eff. A/C 537 and 546 and Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33135R-1 DIVE BRAKE CONTROL INSTL.

Eff. A/C 400 thru 536 & 538 thru 545

33135R-3 DIVE BRAKE CONTROL INSTL.

Eff. A/C 537 & 546 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
1	10191A-1	Catch (Welded on fuselage)	Ref.	
2	33138B-1	Bracket Assy	2	
3	33138B-15	Roller	2	
4	33138B-17	Spacer	2	
5	AN3-21A	Bolt	2	
6	AN365-1032	Nut	2	
7	AN960-10	Washer	6	
8	33134G-21	Control Assy Complete	1	537, 546
9	33134G-7	Weld Assy	1	and up thru A/C 428
10	BF3155	Grip	2	
11	26553G-3	Handle Assy	2	
12	AN3-11A	Bolt	1	
13	AN960-10	Washer	1	
14	AN365-1032	Nut	1	
15	1A001-14- .120- .50	Collar	1	
16	AN3-12A	Bolt	1	
17	AN960-10	Washer	1	
18	AN365-1032	Nut	1	
19	33134G-1	Control Assy Complete	1	400-536 538-545
20	10185B-1	Locking Sleeve	1	1-536 538-545
21	52-040-187-0750	Roll Pin	1	
22	33134G-9	Tube Weld Assy	1	
23	33138B-1	Roller Bracket Assy	1	529 & Up & Retrofit

Revised: 2/3/83

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33135R-1 DIVE BRAKE CONTROL INSTL.

Eff. A/C 400 thru 536 & 538 thru 545

33135R-3 DIVE BRAKE CONTROL INSTL.

Eff. A/C 537 & 546 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
24	AN4-14	Bolt	1	365 & 426 & Up
25	AN960-416	Washer	1	
26	AN310-4	Nut	1	
27	AN380-2-2	Cotter Pin	1	
28	MD46-16	Rod End	1	
29	AN316-6R	Check Nut	1	
30	33134G-13	Tube (Part of 33134G-9 Assy)	1	
31	33134G-3	Push Rod Assy	1	
32	33134G-15	Rod (Part of 33134G-3)	1	
33	AN960-10	Washer	1	
34	AN3-17A	Bolt	2	
35	AN960-10	Washer	2	
36	AN365-1032	Nut	2	
37	33138B-1	Bracket Assy	1	
38	33138B-15	Roller	1	
39	33138B-17	Spacer	1	
40	AN3-21A	Bolt	1	
41	AN365-1032	Nut	1	
42	AN960-10	Washer	1	
43	AN3-14	Bolt	1	
44	AN960-10	Washer	1	
45	AN310-3	Nut	1	
46	AN380-2-2	Cotter Pin	1	
47	33117G-3	Bellcrank	Ref.	
48	33107D-7	Push Rod	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33135R-1 DIVE BRAKE CONTROL INSTL.

Eff. A/C 400 thru 536 & 538 thru 545

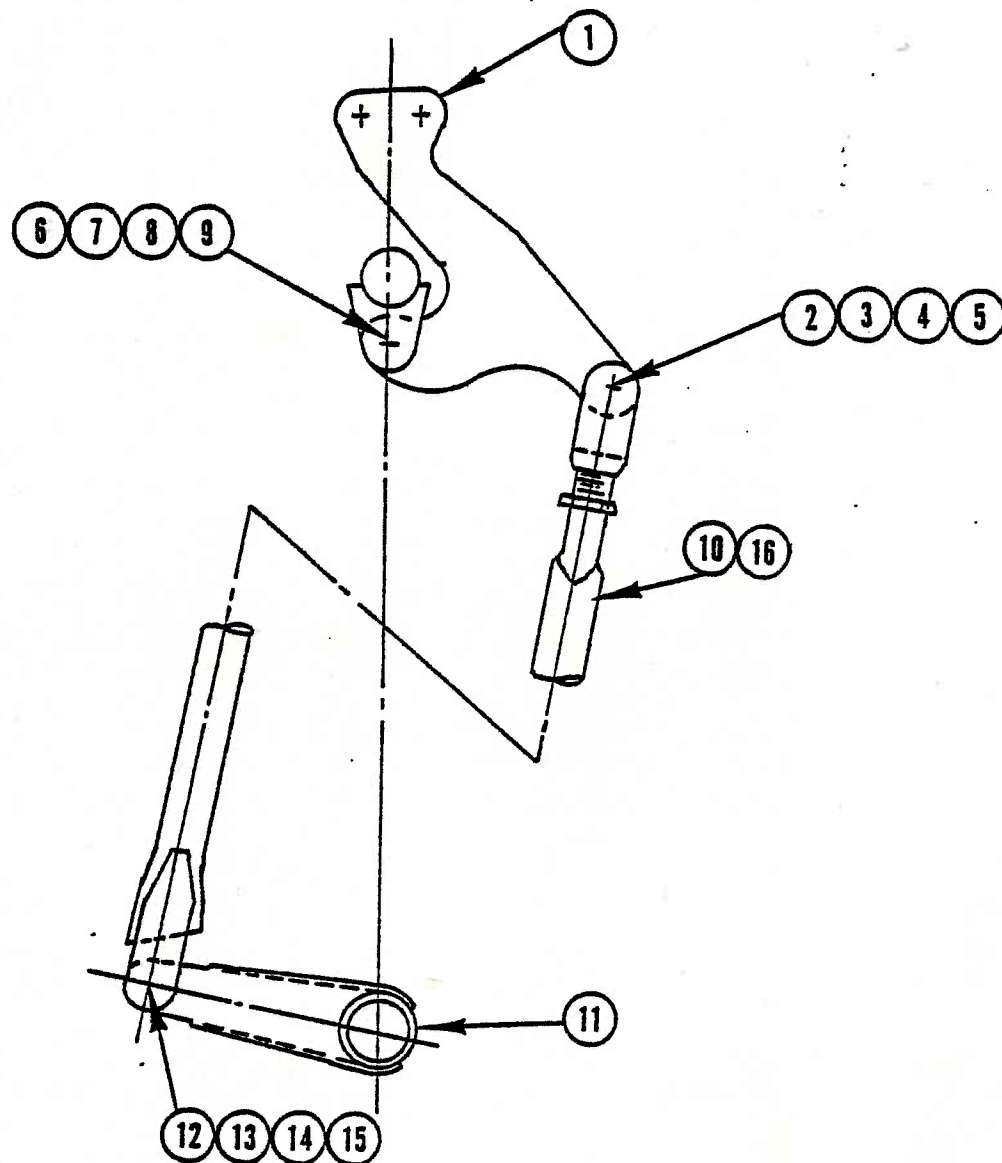
33135R-3 DIVE BRAKE CONTROL INSTL.

Eff. A/C 537 & 546 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
49	33109G-1	Bellcrank Control	1	thru 499
50	33136G-1	Bellcrank Control	1	A/C 500 & Up
51	AN4-10	Bolt	1	
52	AN4-13	Bolt	1	
53	AN960-416	Washer	2	
54	AN380-2-2	Cotter Pin	2	
55	AN310-4	Nut	2	
56	AN3-11	Bolt	1	
57	AN310-3	Nut	1	
58	AN380-2-2	Cotter Pin	1	
59	AN960-10	Washer	1	
60	33134-11	Tube (Part of 33134-9 Assy)	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33100-7 Aileron Control Instl.



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33100-7 Aileron Control Instl.

ITEM	PART NO.	NAME	QTY.	MODEL
1	33116-1	Bellcrank	1	
2	AN3-10	Bolt	1	
3	AN310-3	Nut	1	
4	AN380-2-2	Cotter Pin	1	
5	AN960-10	Washer	2	
6	AN4-13	Bolt	1	
7	AN310-4	Nut	1	
8	AN380-2-2	Cotter Pin	1	
9	AN960-416	Washer	2	
10	22B138-1A	Transfer Tube, Eff. A/C 1 thru 536 and 538 thru 546	1	
11		Torque Tube Assy	Ref.	
12	AN4-6	Bolt	1	
13	AN310-4	Nut	1	
14	AN380-2-2	Cotter Pin	1	
15	AN960-416	Washer	2	
16	22B138-3	Transfer Tube, Eff. A/C 537 and 547, and Up		

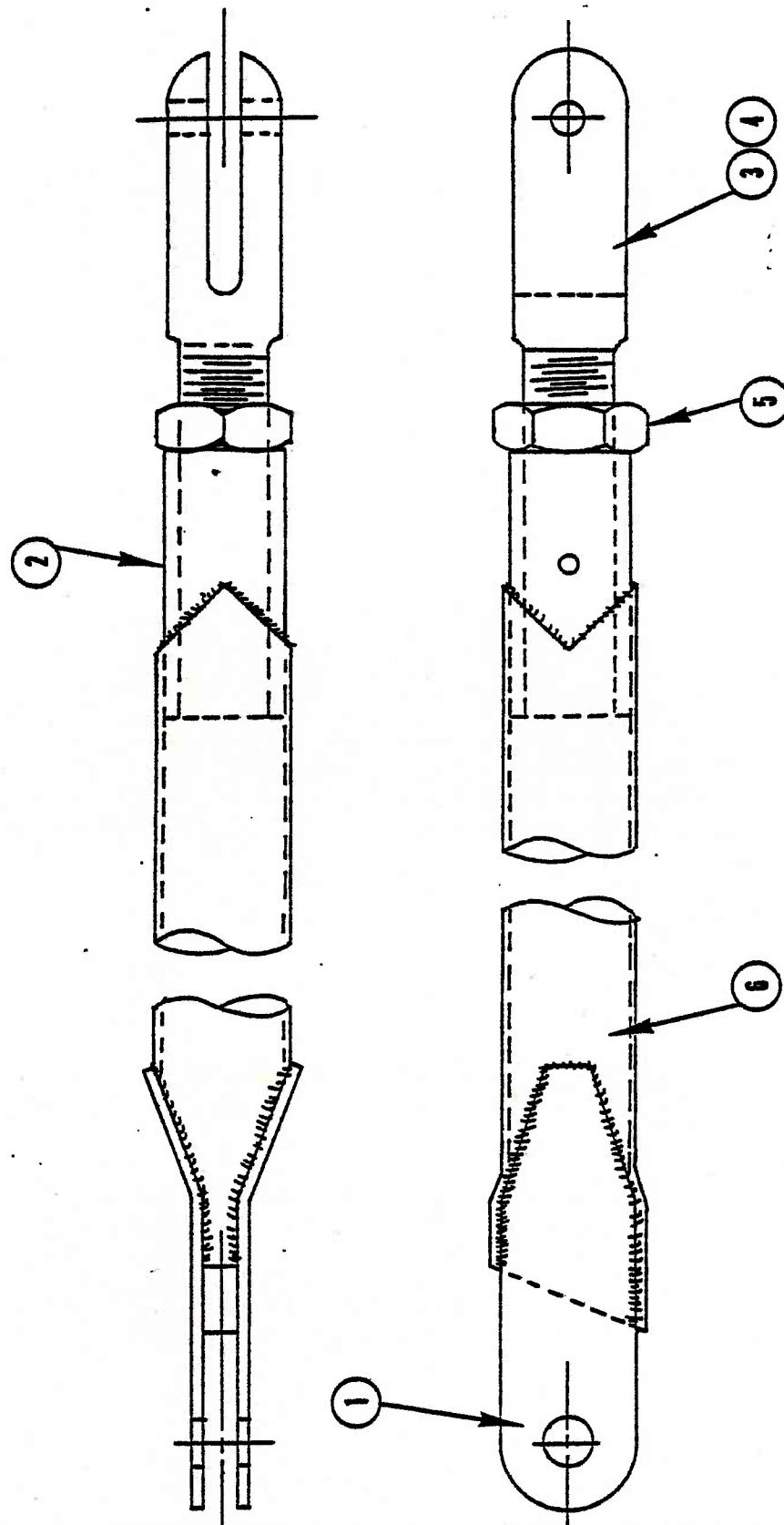
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22B138-1A Transfer Tube Assy

Eff. A/C 1 thru 536 and 538 thru 546

22B138-3 Transfer Tube Assy

Eff. A/C 537 and 547 & Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22B138-1A Transfer Tube Assy

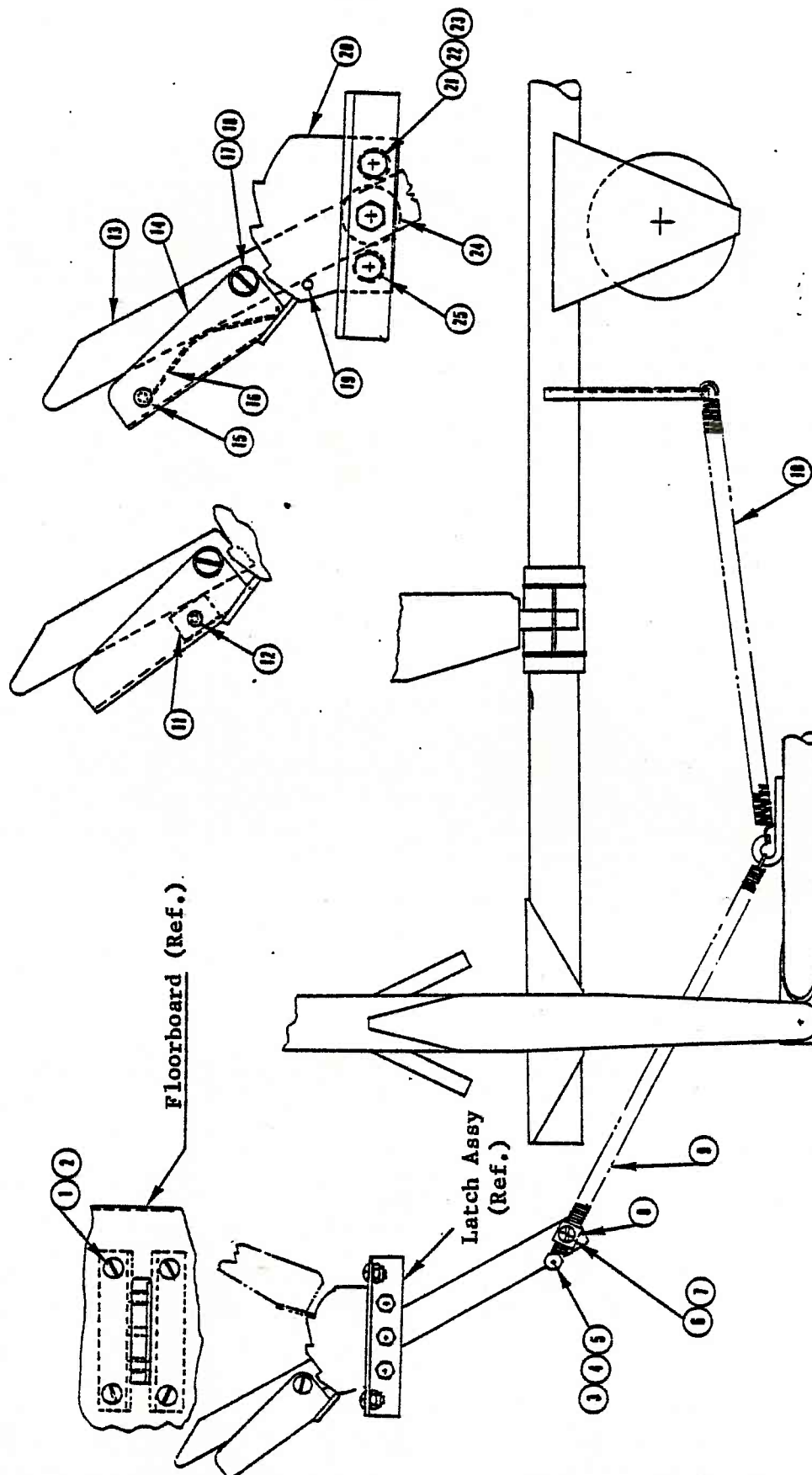
Eff. A/C 1 thru 536 and 538 thru 546

22B138-3 Transfer Tube Assy

Eff. A/C 537 and 547 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
1	19A107-3	Lug	2	
2	1A137-2	Insert	1	
3	1A-137-1	Rod End	1	A/C -1A Only
4	1A137-3	Rod End	1	A/C 3 Only
5	AN316-8R	Check Nut	1	
6	22B138-2	Tube	1	

33124G Trim Control Instl.
Eff. A/C 1 thru 199



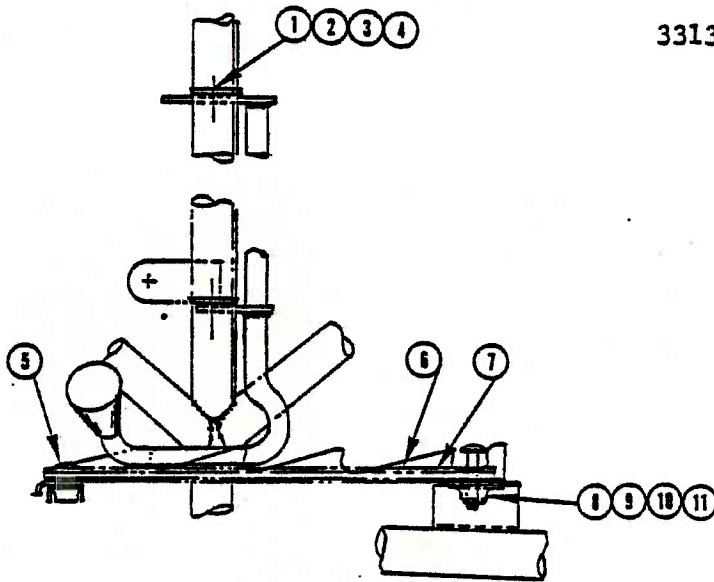
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

331246 Trim Control Instl.
Eff. Aircraft 1 thru 199

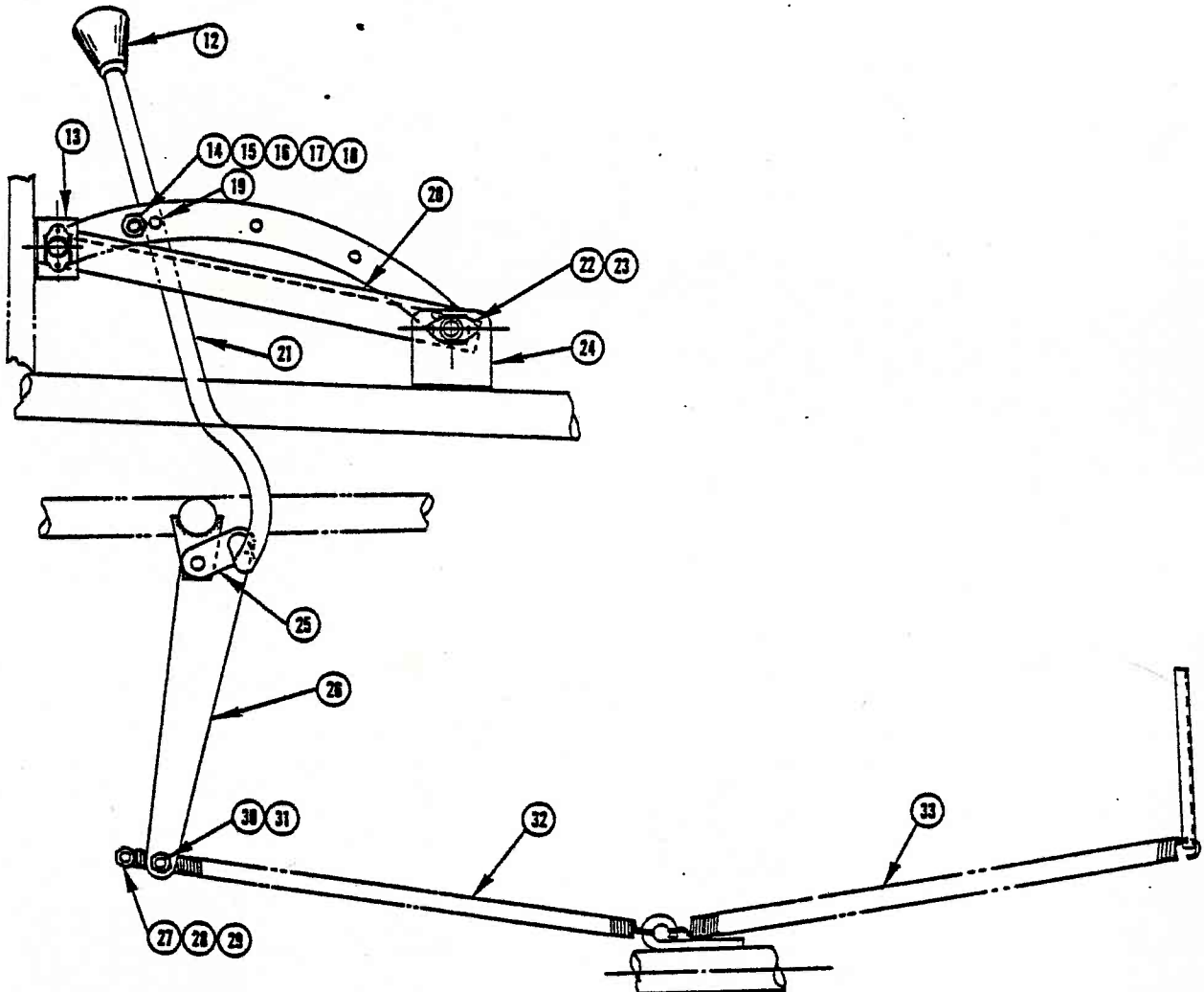
ITEM	PART NO.	NAME	QTY.	MODEL
1	AN525-10-7	Screw	4	
2	AN365-1032	Nut	4	
3	AN520-10-7	Screw	1	
4	AN364-1032	Nut	1	
5	AN960-10	Washer	2	
6	AN365-1032	Nut	1	
7	AN960-10	Washer	1	
8	33125A-1	Guide	1	
9	1A141-2	Spring	1	
10	19A137-1A	Spring	1	
11	33121D-23	Rubber Block	1	A/C 1 thru 69
12	MS20470AD4	Rivet	1	A/C 1 thru 69
13	33121-11	Arm	1	
14	33121-3	Handle Weld Assy	1	
15	MS20470AD4	Rivet	1	A/C 70 & Up
16	33128-1	Spring	1	A/C 70 & Up
17	AN525-8-9	Screw	1	
18	AN364-832	Nut	1	
19	52-028-125-0375	Roll Pin	1	
20	33121-15	Latch Plate	1	
21	AN3-10A	Bolt	3	
22	AN960-10L	Washer	3	
23	AN365-1032	Nut	3	
24	AN970-3	Washer	1	
25	33121-21	Bushing	2	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Elevator Trim Control



33132 Trim Control
 (Ratchet Style, Eff. A/C 300 and
 306 thru 507)
 (Detent Style
 Eff. A/C 299 and 301 thru 305)



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33132 Elevator Trim Control Instl.

ITEM	PART NO.	NAME	QTY.	MODEL
1	AN4-10	Bolt	2	
2	AN960-416	Washer	2	
3	AN320-4	Nut	2	
4	AN380-2-2	Cotter Pin	2	
5	AN525-10-12	Screw	1	
6	33132-19	Quadrant (Phenolic)	1	299 & 301 - 305
7	33132-17	Quadrant (Alum.)	1	299 & 301 - 305
8	AN525-10-16	Screw	1	299 & 301 - 305
9	AN960-10L	Washer	1	299 & 301 - 305
10	1A106-31	Bushing	1	299 & 301 - 305
11	AN525-10	Screw	1	300 & 306 & Up.
12	OA-2	Knob	1	
13	33132-15	Clip	1	
14	AN525-10-16	Screw	1	299 & 301 - 305
15	AN960-10	Washer	1	299 & 301 - 305
16	1A106-31	Bushing	1	299 & 301 - 305
17	AN960-10L	Washer (Thin)	1	299 & 301 - 305
18	AN365-1032	Nut	1	299 & 301 - 305
19	1/8 x 9/16 long	Dowel Pin	1	299 & 301 - 305

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33132 Elevator Trim Control Instl.

ITEM	PART NO.	NAME	QTY.	MODEL
20	33133-1	Ratchet	1	300 & 306 & Up
21	33132-5	Handle Rod	1	
22	22NA21-22-02	Nut Plate	2	
23	MS20426AD3	Rivet	4	
24	33132-13	Clip	1	
25	33132-11	Bellcrank	1	
26	33132-9	Bellcrank	1	
27	AN520-10-7	Screw	1	
28	AN364-1032	Nut	1	
29	AN960-10	Washer	2	
30	AN365-1032	Nut	1	
31	AN960-10	Washer	5	
32	1A141-2	Spring	1	
33	19A137-1A	Spring	1	

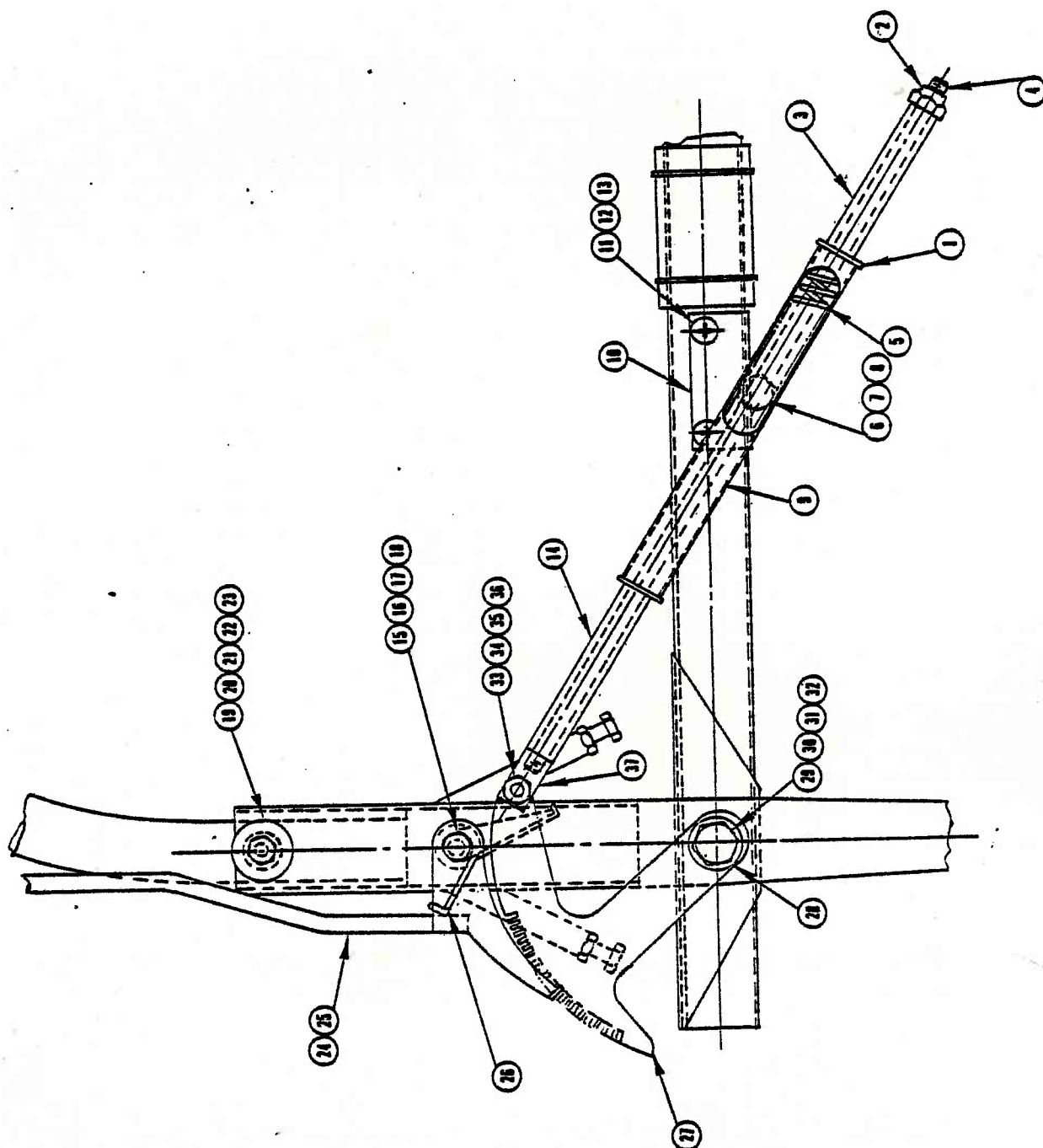
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33140-1 Ratchet Lock Trim System

Eff. A/C 508 thru 543

33140-3 Ratchet Lock Trim System

Eff. A/C 544 and Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33140 RATCHET LOCK TRIM SYSTEM

Eff. A/C 508 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
1	33141-9	Spring Assy (complete)	1	
2	AN365-428	Nut	1	
3	33141-29	Bushing	1	
4	33141-31	Rod	1	
5	33143-1	Spring	1	
6	AN310-5	Nut	1	
7	AN960-516	Washer	2	
8	AN380-2-2	Cotter Pin	1	
9	33141-13	Weld Assy	1	
10	33140-5	Spring Support	1	
11	AN52508R26	Screw	2	
12	AN365-832	Nut	2	
13	AN960-8	Washer	2	
14	33141-29	Bushing	1	
15	AN4-23	Bolt	1	
16	AN960-416	Washer	2	
17	AN310-4	Nut	1	
18	AN380-2-2	Cotter Pin	1	
19	33140-11	Bushing	1	thru A/C 543
20	AN970-3	Washer	1	thru A/C 543
21	AN3-21A	Bolt	1	thru A/C 543
22	AN365-1032	Nut	1	thru A/C 543
23	AN960-10	Washer	1	thru A/C 543

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

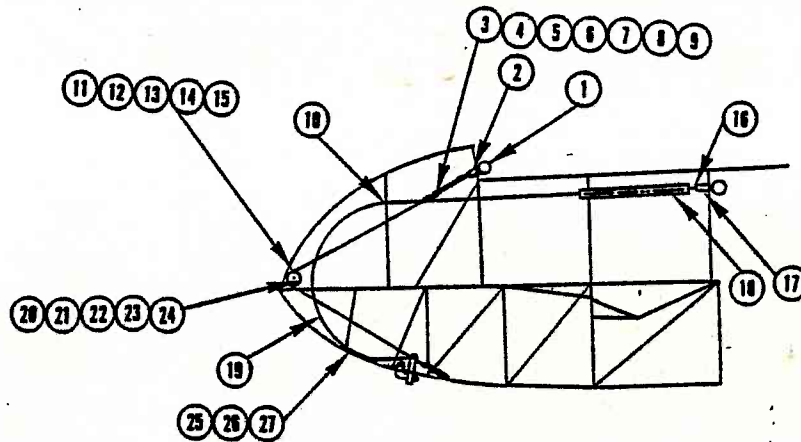
33140 RATCHET LOCK TRIM SYSTEM

Eff. A/C 508 & Up

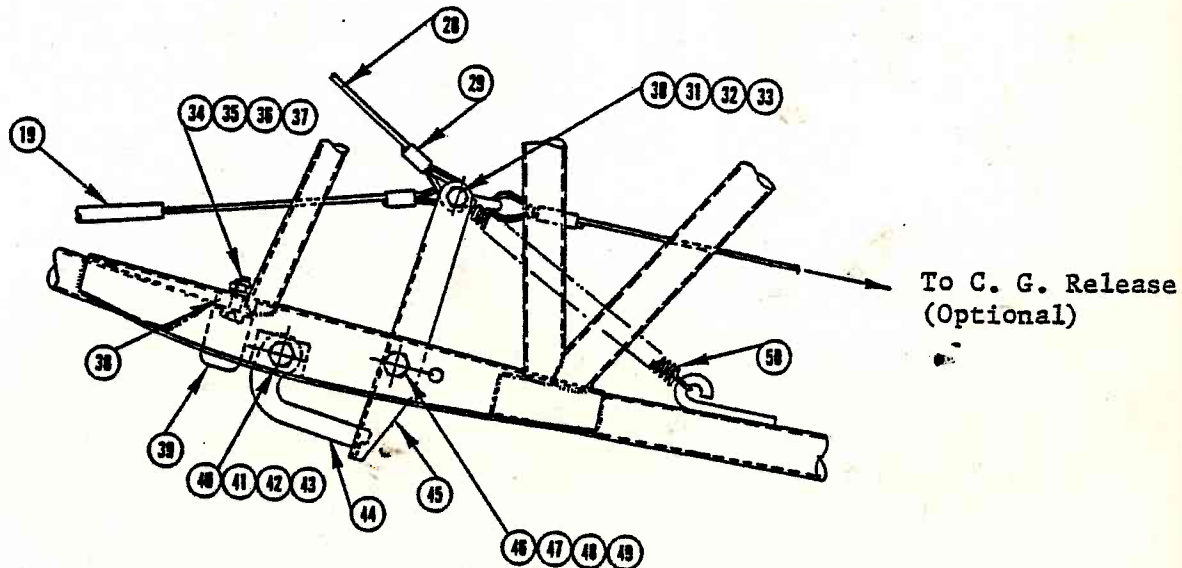
ITEM	PART NO.	NAME	QTY.	MODEL
24	BD-2	Knob (not shown)	1	
25	33144D-3	Handle Weld Assy	1	
26	33142-1	Spring	1	
27	33141-1	Ratchet Lock Assy	1	
28	FF-520-10	Bushing (part of 33141-1)	2	
29	AN6-31	Bolt	1	
30	AN960-616	Washer	1	
31	AN310-6	Nut	1	
32	AN380-3-3	Cotter Pin	1	
33	AN23-13	Screw	1	
34	AN960-10	Washer	1	
35	AN310-3	Nut	1	
36	AN380-2-2	Cotter Pin	1	
37	33141-35	Fitting	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

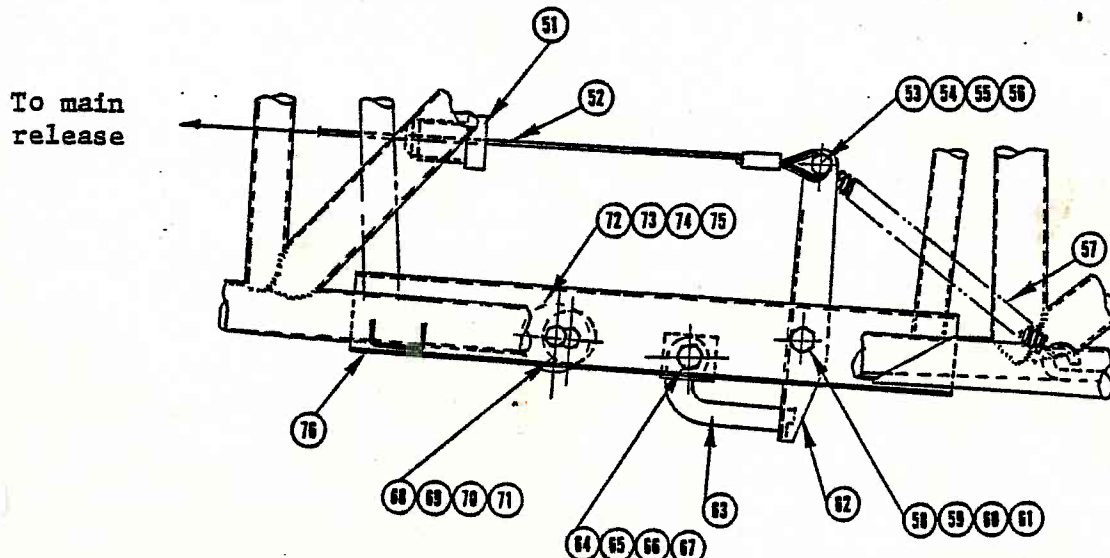
33100-5 Tow Release Instl.



33926-1 Release Hook Instl, Eff. A/C 539 thru 541 and 569 and Up
 22206-1 Release Hook Instl, Eff. A/C 1 thru 538, 542 thru 568



33926-3 C. G. Tow Release Instl. (Optional), Eff. A/C 539 - 541 and 569 and Up
 22218-1A C.G. Tow Release Instl. (Optional), Eff. A/C 1 - 538 and 542 - 568



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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

TOW RELEASE INSTALLATION

ITEM	PART NO.	NAME	QTY.	MODEL
1	R-16	Knob	2	
2	1A100-1	Tube (Rubber)	1	
3	23141-6A	Knob/Rod Assy	1	
4	AN115-21	Shackle	1	
5	AN100-4	Thimble	1	
6	AN3-6	Bolt	1	
7	AN310-3	Nut	1	
8	AN960-10	Washer	1	
9	AN380-2-2	Cotter Pin	1	
10		Brass Safety Wire	A/R	
11	1A140	Pulley Bracket	1	
12	AN3-4	Bolt	1	
13	AN310-3	Nut	1	
14	AN960-10	Washer	1	
15	AN380-2-2	Cotter Pin	1	
16	1A123-2	Fairlead	1	
17	1A100-1	Tube (Rubber)	1	
18	1B-114-1A-120	Handle/Cable Assy	1	
19	22156-3A	Guide Tube Assy	1	
20	AN210-2	Pulley	1	
21	AN3-7	Bolt	1	
22	AN310-3	Nut	1	
23	AN960-10	Washer	1	
24	AN380-2-2	Cotter Pin	1	
25	AN520-10-12	Screw	3	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

TOW RELEASE INSTALLATION

ITEM	PART NO.	NAME	QTY.	MODEL
26	AN365-1032	Nut	3	
27	AN960-10	Washer	3	
28	3/32 x 7 x 7	Cable	A/R	
29	3/32	Nico Press Sleeve	A/R	
30	AN3-11	Bolt	1	
31	AN310-3	Nut	1	
32	AN380-2-2	Cotter Pin	1	
33	AN960-10	Washer	1	
34	AN3-6A	Bolt (with 33926-13)	1	539-541, 569 & Up
35	AN3-4A	Bolt	1	1 thru 538, 542 - 568
36	AN960-10	Washer	1	
37	AN365-1032	Nut	1	
38	33926-13	Block	1	539 - 541, 569 & Up
39	10223B-1	Damper	1	
40	AN5-12	Bolt	1	1 - 538 542 - 568
40	AN5-13	Bolt	1	539 - 541 569 & Up
41	AN310-5	Nut	1	
42	AN380-2-3	Cotter Pin	1	
43	AN960-516	Washer	5	
44	1B221-3	Hook (Large)	1	1 - 538 & 542 - 568
44	10232A-1	Hook (Small)	1	539 - 541 569 & Up
45	1B217-1	Release Arm	1	1 - 538 542 - 568

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

TOW RELEASE INSTALLATION

ITEM	PART NO.	NAME	QTY.	MODEL
45	1B217-5	Release Arm (small hook)	1	539 - 541 569 & Up
46	AN4-12	Bolt	1	1 - 538 542 - 568
46	AN4-13	Bolt (small hook)	1	539 - 541 569 & Up
47	AN310-4	Nut	1	
48	AN380-2-2	Cotter Pin	1	
49	AN960-416	Washer	5	
50	1A141-4	Spring	1	
51	1A120-1	Fairlead	1	
52	22218-1A	Cable Assy	1	
53	AN3-10	Bolt	1	
54	AN310-3	Nut	1	
55	AN380-2-2	Cotter Pin	1	
56	AN960-10	Washer	1	
57	1A141-4	Spring	1	
58	AN4-14	Bolt	1	
59	AN310-4	Nut	1	
60	AN380-2-2	Cotter Pin	1	
61	AN960-416	Washer	5	
62	1B217-1	Release Arm	1	1 - 538 542 - 568
62	1B217-5	Release Arm (small hook)	1	539 - 541 569 & Up
63	1B221-1A	Hook (large)	1	1 - 538 542 - 568
63	10232A-1	Hook (small)	1	539 - 541 569 & Up

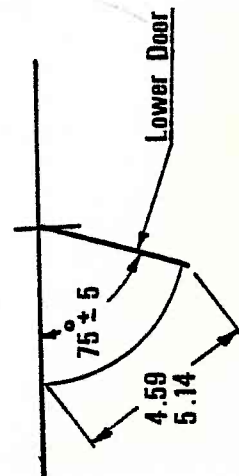
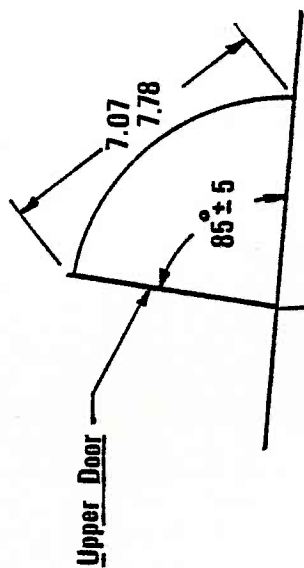
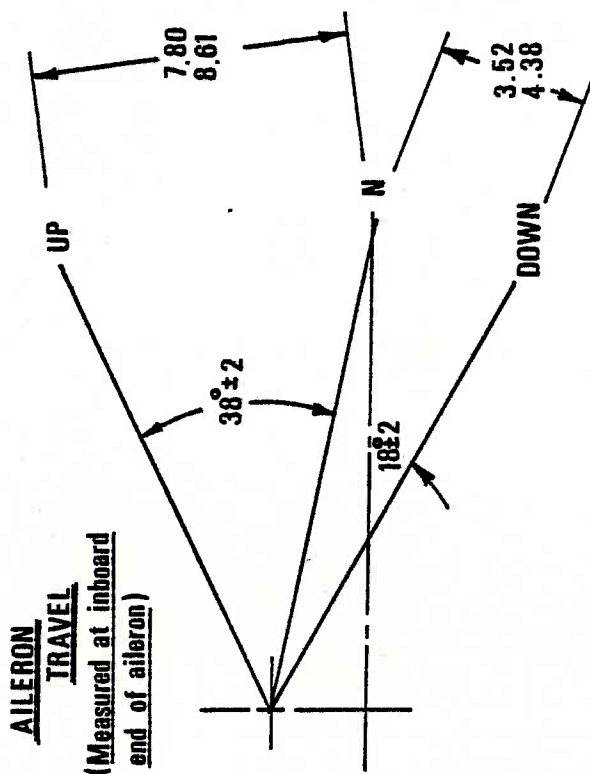
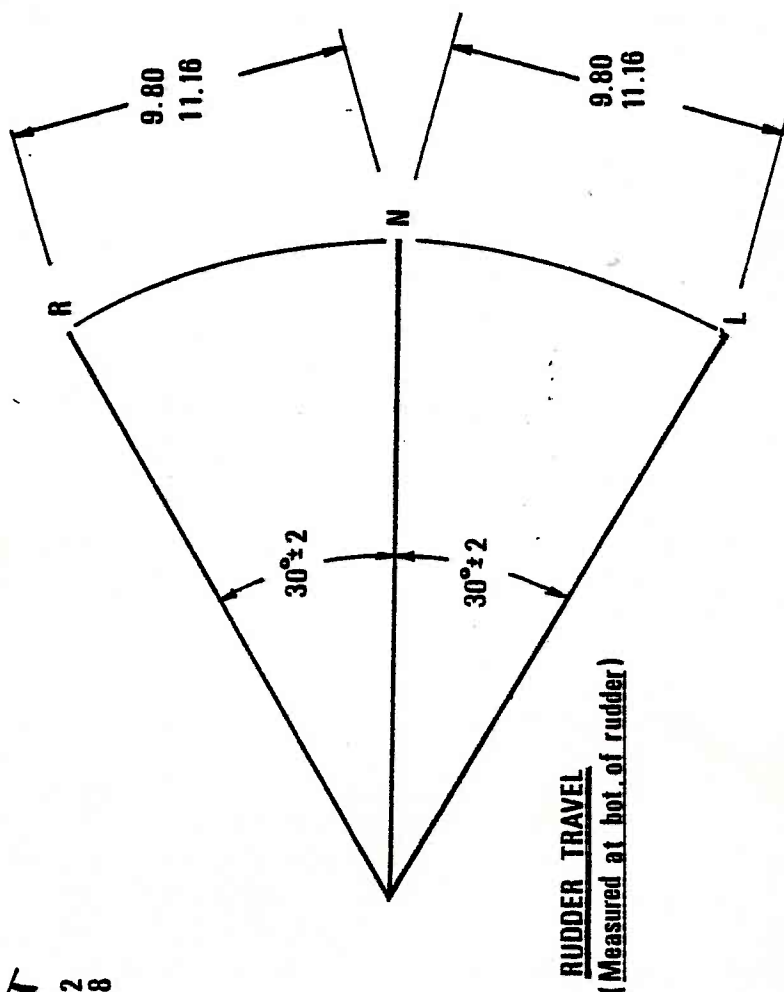
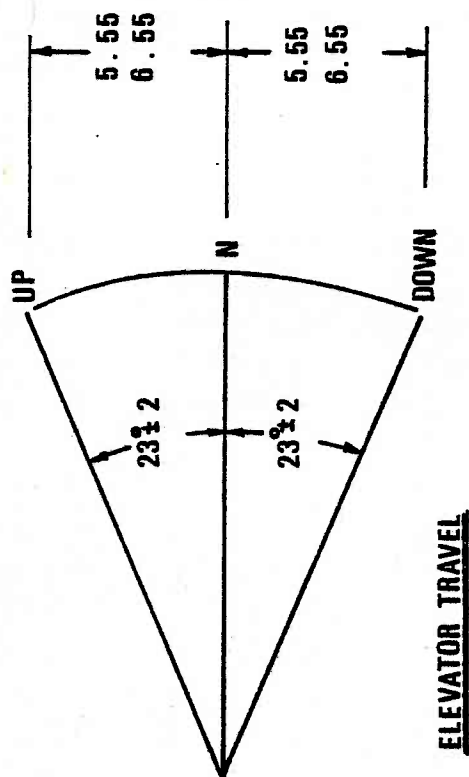
Revised 12/1/81

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

TOW RELEASE INSTALLATION

ITEM	PART NO.	NAME	QTY.	MODEL
64	AN5-14	Bolt	1	
65	AN310-5	Nut	1	
66	AN380-2-3	Cotter Pin	1	
67	AN960-516	Washer	5	
68	22A216-1	Stop	1	1 - 538 542 thru 568
69	AN3-13	Bolt	1	
70	AN365-1032	Nut	1	
71	AN960-10	Washer	1	
72	33926G-11	Stop	1	539, 540, & 541, 569 & U1
73	AN3-13	Bolt	1	
74	AN365-1032	Nut	1	
75	AN960-10	Washer	1	
76	22214	Channel	Ref.	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE



CONTROL TRAVELS

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

NOTES

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Section "E" Index

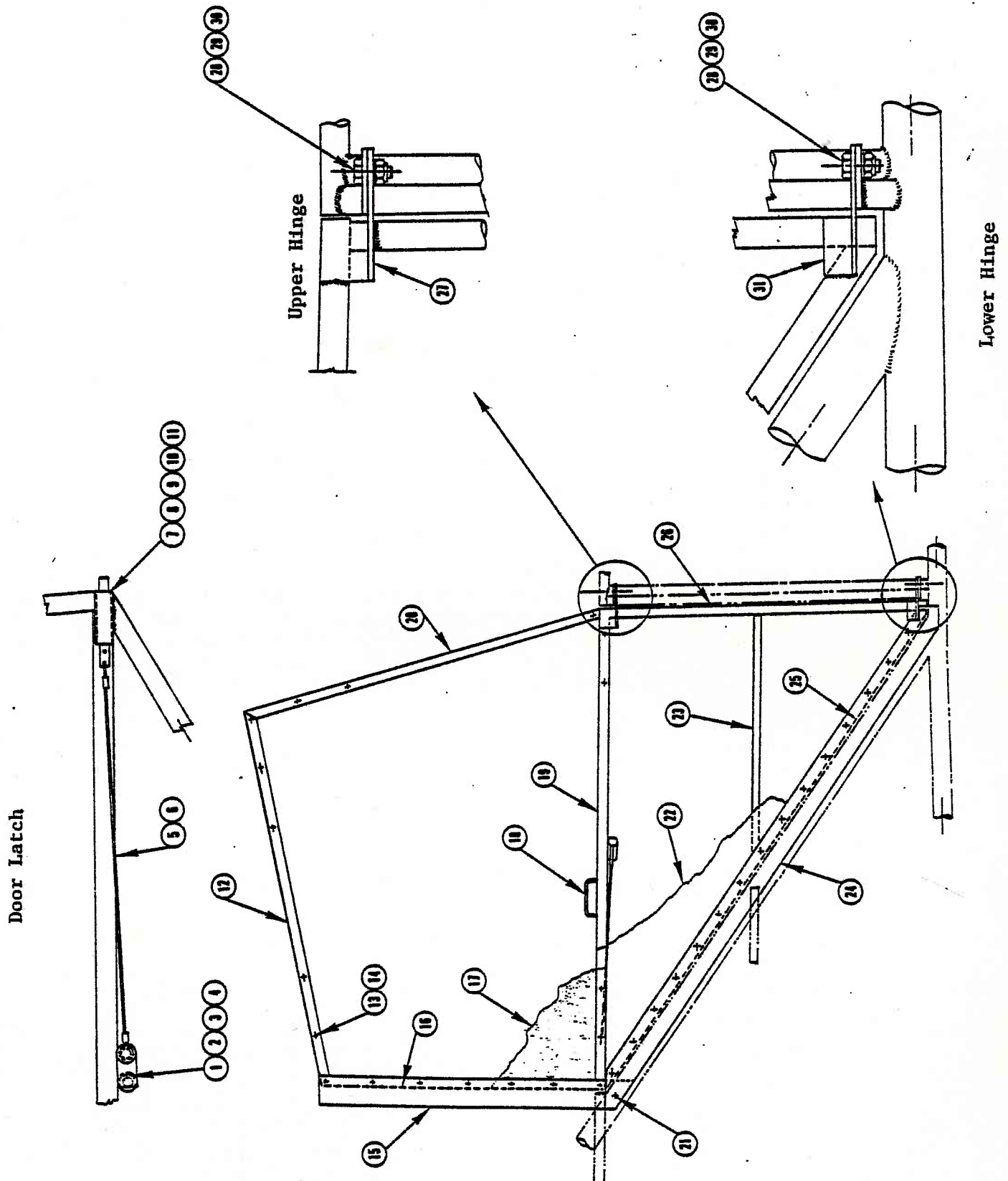
<u>TITLE</u>	<u>PAGE</u>
Door and Latch Assemblies	1 thru 7
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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33317H-1 DOOR ASSY (FABRIC COVERED)

33317H-5 DOOR FRAME ASSY

Eff. A/C 1 thru 379



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33317H-1 DOOR ASSY (FABRIC COVERED)

33317H-5 DOOR FRAME ASSY

Eff. A/C 1 thru 379

ITEM	PART NO.	NAME	QTY.	MODEL
1	33305-13	Latch Shaft	1	
2	52-040-187-1750	Pin	1	
3		1/16 Nicopress Sleeve	1	
4	33317H-33	Tube	1	
5	33317H-3	Cable Assy (Complete)	1	
6	33317H-29	Cable	1	
7	12A308-5	Tube	1	
8	1A143-2	Spring	1	
9	22A310-1	Pin	1	
10	52-022-094-0437	Pin	1	
11		1/16 Nicopress Sleeve	1	
12	33317H-19	Tube 1/2 X 1/2 X .035	1	
13	#4 X 3/8	Truss Hd. P.K. Screw	A/R	
14	AN960A4L	Washer	A/R	
15	33317H-37	Aft Fairing	1	
16	33317H-21	Tube 1/2 X 1/2 X .035	1	
17	33317H-27	Window 1/16 Polycarbonate	1	
18	33317H-31	Handle 1/8 Dia. Rod	1	
19	33317H-11	Tube 1/2 X 1/2 X .035	1	
20	33317H-17	Tube 1/2 X 1/2 X .035	1	
21	AN470AD4	Rivet	1	
22	33317H-25	Fabric	1	
23	33317H-23	Tube 4/16 X .028	1	
24	22H316-15	Fairing	1	
25	33317H-13	Tube 1/2 X 1/2 X .035	1	
26	33317H-15	Tube 1/2 X 1/2 X .035	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33317H-1 DOOR ASSY (FABRIC COVERED)

33317H-5 DOOR FRAME ASSY

Eff. A/C 1 thru 379

(Continued)

ITEM	PART NO.	NAME	QTY.	MODEL
27	22A312-3	Upper Hinge	1	
28	AN3-5A	Bolt	2	
29	AN960-10	Washer	2	
30	AN365-1032	Nut	2	
31	22A312-1	Upper Hinge	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

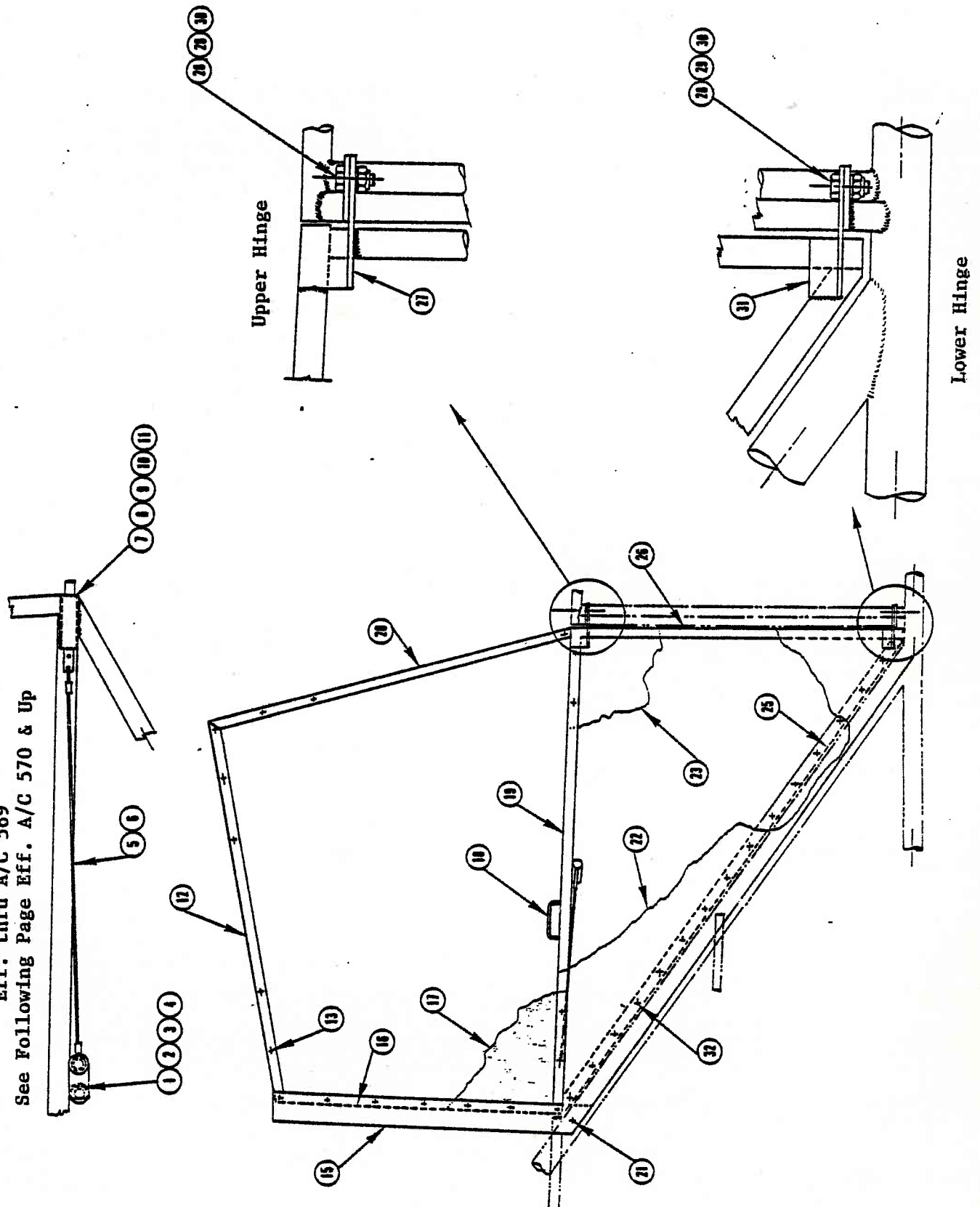
33317H-7 DOOR ASSY - METAL COVERED

Eff. A/C 380 & Up

33317H-9 DOOR FRAME ASSY

Eff. A/C 380 & Up

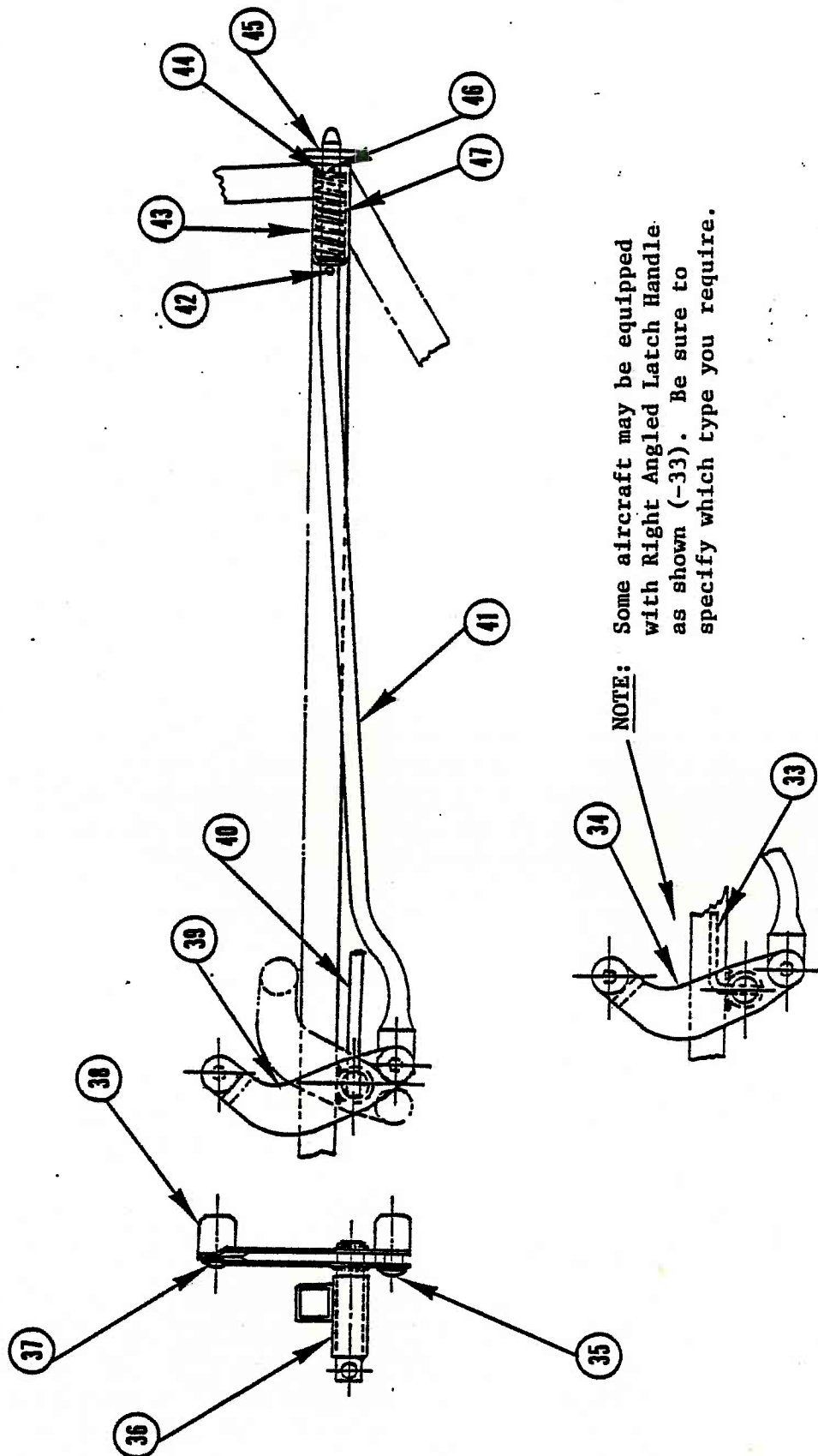
Door Latch Assy
Eff. thru A/C 569
See Following Page Eff. A/C 570 & Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

REAR DOOR LATCH ASSY

Eff. A/C 570 & Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33317H-7 DOOR ASSY - METAL COVERED

Eff. A/C 380 & Up

33317H-9 DOOR FRAME ASSY

Eff. A/C 380 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
1	33305-13	Shaft	1	Thru A/C 569
2	52-040-187-1750	Pin	1	Thru A/C 569
3	22H316-35	Tube	1	Thru A/C 569
4		1/16 Nicopress Sleeve	1	Thru A/C 569
5	33317H-3	Cable Assy (Complete)	---	Thru A/C 569
6	33317H-29	Cable	1	Thru A/C 569
7	12A308-5	Tube	1	Thru A/C 569
8	1A143-2	Spring	1	Thru A/C 569
9	22A310-1	Pin	1	Thru A/C 569
10	52-022-094-0437	Pin	1	Thru A/C 569
11		1/16 Nicopress Sleeve	1	Thru A/C 569
12	22H316-25	Tube	1	
13	AAPQ-43AX	Rivet	41	
15	33317H-37	Aft Fairing	1	
16	33317H-21	Tube	1	
17	33317H-27	Window	1	
18	22H316-13	Handle	1	
19	33317H-11	Tube	1	
20	22H316-23	Tube	1	
21	MS20470AD4	Rivet	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33317H 7 DOOR ASSY - METAL COVERED

Eff. A/C 380 & Up

33317H-9 DOOR FRAME ASSY

Eff. A/C 380 & Up

(Continued)

ITEM	PART NO.	NAME	QTY.	MODEL
22	33317H-39	Skin	1	
23	33317H-41	Liner - Royalite	1	
25	22H316-3	Tube	1	
26	33317H-15	Tube	1	
27	22A-312-3	Hinge	1	
28	AN3-5A	Bolt	2	
29	AN960-10	Washer	2	
30	AN365-1032	Nut	2	
31	22A312-1	Hinge	1	
32	AAPQ-41AX	Rivet	19	
	33343D-1	Door Latch Assy - Eff. A/C 570 & Up		
33	33343D-11	Handle	1	
34	33343D-3	Weld Assy - Handle	1 (No Spares)	
35	AN525-10-8	Screw	1	
36	22H316-35	Support Tube	1	
37	AN525-10-6	Screw	1	
38	35266A-1	Knob	2	
39	33343D-9	Weld Assy - Handle	1 (All Spares)	
40	52-040-187-1750	Roll Pin	1	
41	35244B-11	Rod	1	
42	52-022-094-0437	Roll Pin	1	
43	12A308-5	Tube	1	
44	1A150-1	Washer	2	
45	33337A	Striker Plate (Ref.)		
46	52-022-094-0375	Roll Pin	1	
47	1A143-2	Spring	1	

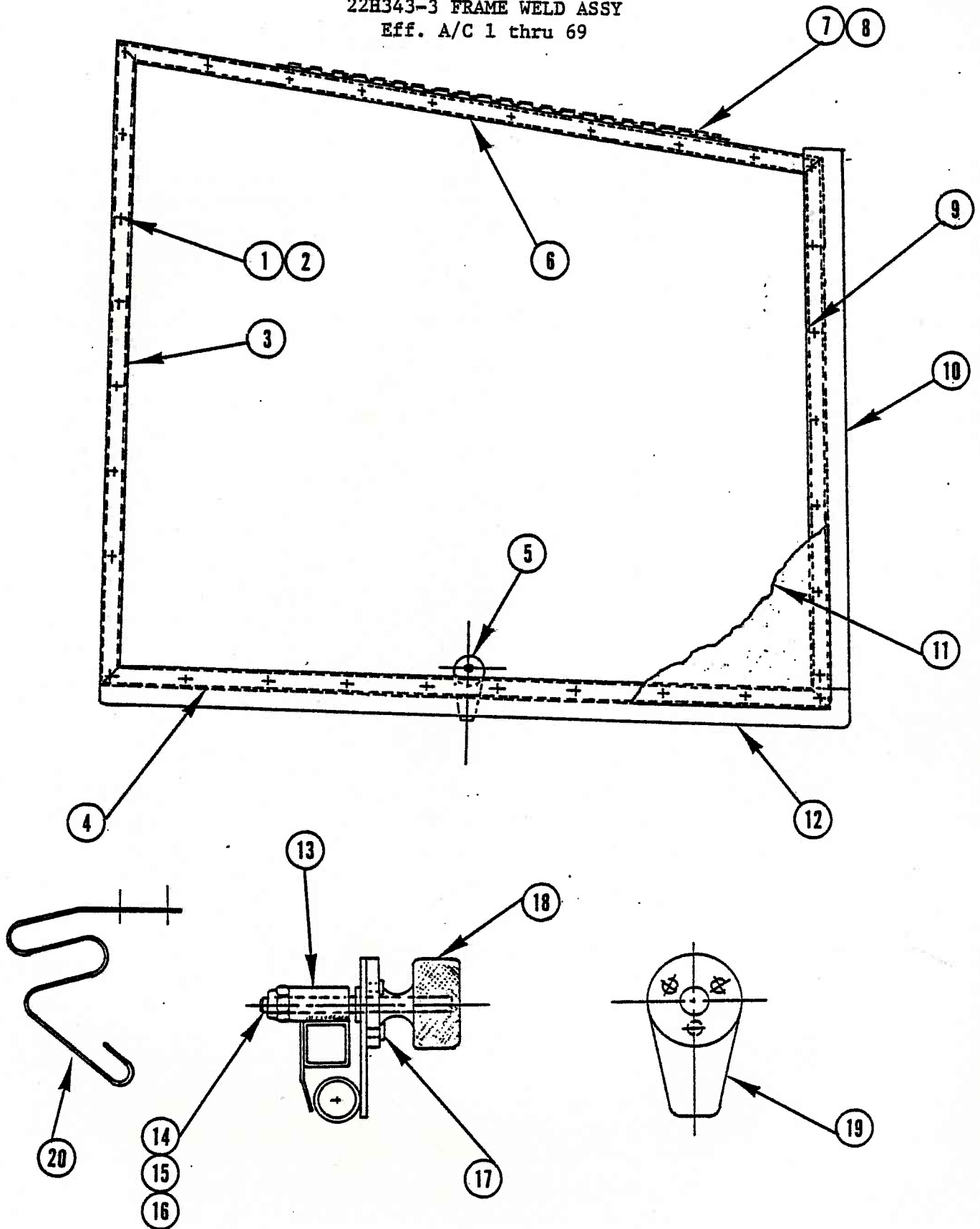
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22H343-1 REAR WINDOW ASSY

Eff. A/C 1 thru 69

22H343-3 FRAME WELD ASSY

Eff. A/C 1 thru 69



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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22H343-1 REAR WINDOW ASSY (COMPLETE)

Eff. A/C 1 thru 69

22H343-3 REAR WINDOW FRAME ASSY

Eff. A/C 1 thru 69

ITEM	PART NO.	NAME	QTY.	MODEL
1	#4	P.K. Screw	33	
2	AN960-4	Washer	33	
3	22H343-11	Tube	1	
4	22H343-5	Tube	1	
5	22H343-21	Latch Assy (See Detail)	1	
6	22H343-9	Tube	1	
7	22H343-19	Hinge	1	
8	MS20600AD4	Rivet	9	
9	22H343-7	Tube	1	
10	22H343-13	Fairing	1	
11	22H343-17	Window	1	
12	22H343-15	Fairing	1	
13	22H343-25	Pivot Tube	1	
14	AN509-8-35	Screw	1	
15	AN365-832	Nut	1	
16	AN960-8	Washer	1	
17	MS20426AD3	Rivet	3	
18	22H329-11	Knob	1	
19	22H343-23	Plate (Latch)	1	
20	22H329-15	Clip	1	

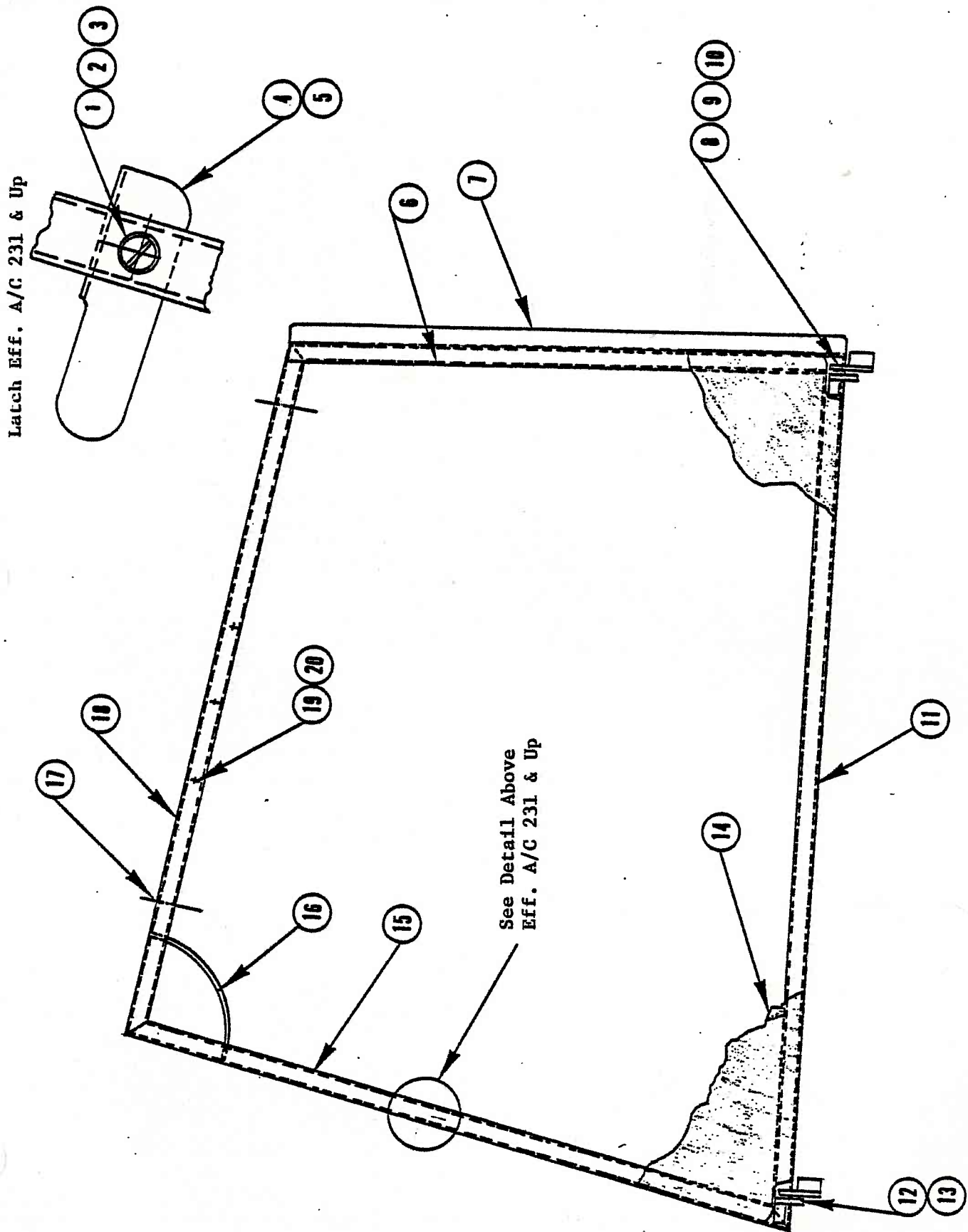
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33327H-1 REAR WINDOW ASSY (COMPLETE)

Eff. A/C 70 & Up

33327H-3 REAR WINDO FRAME ASSY

Eff. A/C 70 & Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33327H-1 REAR WINDOW ASSY (COMP.)

Eff. A/C 70 & Up

33327H-3 REAR WINDOW FRAME ASSY

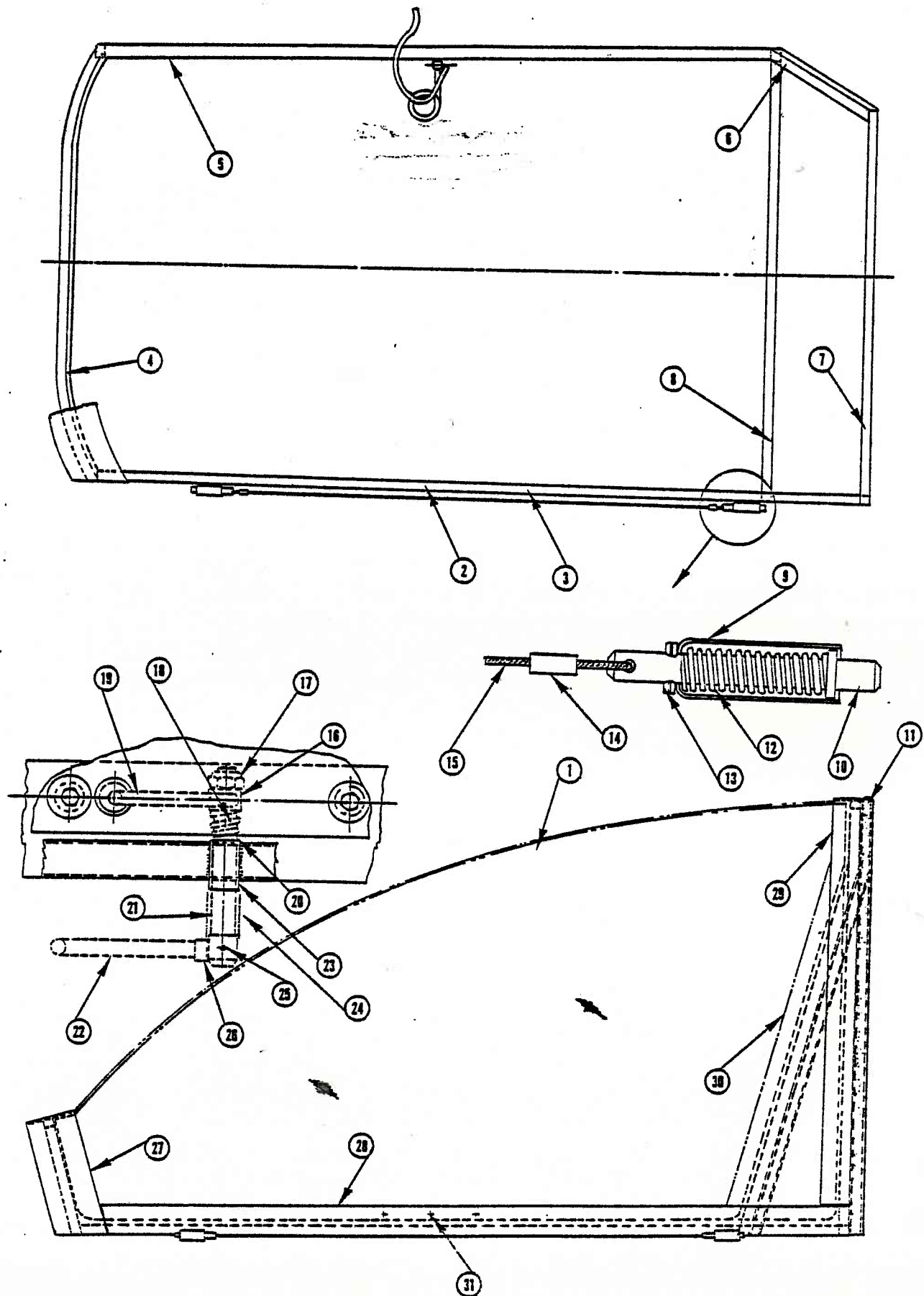
Eff. A/C 70 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
1	AN525-832R14	Screw	1	231 & Up
2	AN960-8	Washer	1	231 & Up
3	22KTM-832	Cap Nut	1	231 & Up
4	10334B-5	Arm	1	231 thru 454
5	10334B-7	Arm	1	455 & Up
6	33327H-11	Tube	1	
7	33327H-19	Fairing	1	
8	AN4-7A	Bolt	2	
9	AN365-428	Nut	2	
10	AN960-416	Washer	2	
11	33327H-5	Tube	1	
12	33327H-13	Hinge	2	Thru A/C 569
13	33300H-38	Hinge	2	570 & Up
14	33327H-17	Window	1	
15	33327H-9	Tube	1	
16	33327H-15	Handle	1	
17	3067	Corbin Latch	2	Limit thru A/C 230
18	33327H-7	Tube	1	
19	#4	P.K. Screw	32	
20	AN960-4	Washer	32	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33300H-1 CANOPY ASSY

Eff. A/C 1 thru 69



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33300H-1 CANOPY ASSY
Eff. A/C 1 thru 69

ITEM	PART NO.	NAME	QTY.	MODEL
1	33325G-1	Canopy Glass Rough Cut	1	
	33300H-7	Canopy Glass - Trimmed & Drilled	1	
2	33300H-3	Frame Assy Welded (Complete)	1	
3	33300H-15	Tube	1	
4	33300H-9	Tube	1	
5	33300H-16	Tube	1	
6	33300H-13	Tube	1	
7	33300H-11	Tube	1	
8	33300H-23	Tube	1	
9	12A308-5	Tube	1	
10	22A310-1	Pin	1	
11	33300H-25	Seal	1	
12	1A143-2	Spring	1	
13	52-022-094-0437	Roll Pin	1	
14	1/16	Nicopress Sleeve	2	
15	33300H-27	Cable	1	
16	33303G-7	Shaft	1	
17	AN364-624	Nut	1	
18	33318A-1	Spring	1	
19	33322B-1	Handle	1	
20	AN960-616L	Washer	1	
21		Canopy Structure (Ref.)		
22	33303G-5	Handle	1	
23	33303G-11	Support Tube		
24	33303G-9	Latch Tube (Ref.)		
25	52-028-125-0437	Roll Pin	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33300H-1 CANOPY ASSY

Eff. A/C 1 thru 69

(Continued)

ITEM	PART NO.	NAME	QTY.	MODEL
26	33303G-15	Spacer	1	
27	33300H-29	Fairing - Front	1	
28	33300H-19 LH & 20 RH	Fairing	1 Ea.	
29	33300H-33	Fairing Aft (Top)	1 Ea.	
30	33300H-18 RH -35	LH Fairing Aft (Top)	1 Ea.	
31	AN526-832R6	Screw	45	
	10326A-1	Washer	45	
	22NKTM-82	Nut	45	

Revised 12/1/81

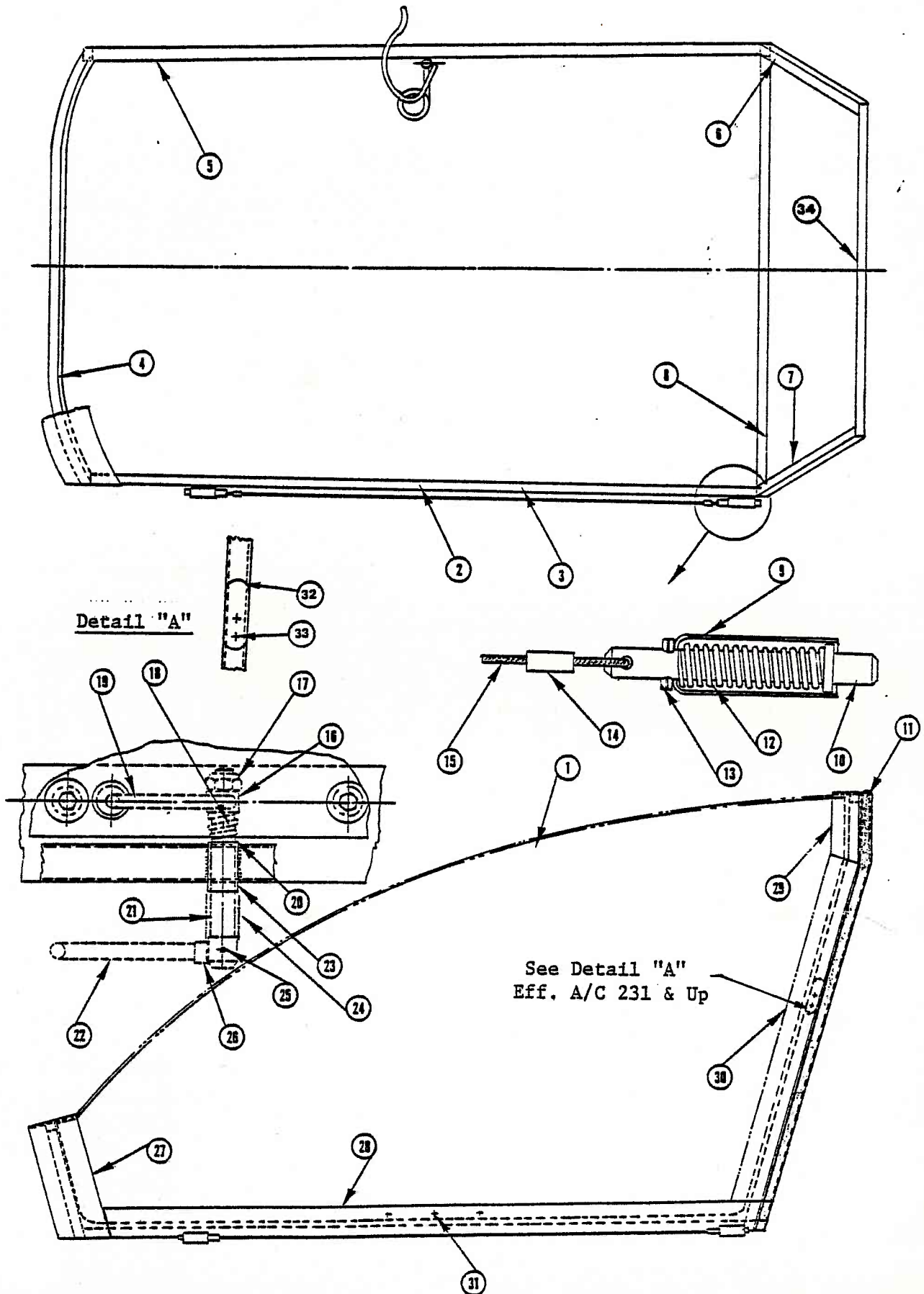
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33300H 101 CANOPY ASSY COMPLETE

Eff. A/C 70 & Up

33300H-103 FRAME WELD ASSY

Eff. A/C 70 & Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33300H-101 CANOPY ASSY

Eff. A/C 70 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
1		Canopy Glass		
	33325G-1	Canopy Glass - Rough Cut	1	
	33325G-3	Canopy Glass - Trimmed & Drilled	1	
2	33300H-103	Frame Assy Complete	1	
3	33300H-115	Tube	1	
4	33300H-9	Tube	1	
5	33300H-16	Tube	1	
6	33300H-13	Tube	1	
7	33300H-14	Tube	1	
8	33300H-23	Tube	1	
9	12A308-5	Tube	1	
10	22A310-1	Pin	1	
11	33300H-25	Seal	1	
12	1A143-2	Spring	1	
13	52-022-094-0437	Roll Pin	1	
14	1/16	Nicopress Sleeve	2	
15	33300H-27	Cable	1	
16	33303G-7	Shaft	1	
17	AN364-624	Nut	1	
18	33318A-1	Spring	1	
19	33322B-1	Handle	1	
20	AN960-616L	Washer	2	
21		Canopy Structure (Ref.)		
22	33303G-5	Handle	1	
23	33303G-11	Support Tube	1	
24	33303G-9	Latch Tube (Ref.)	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33300H-101 CANOPY ASSY

Eff. A/C 70 & Up

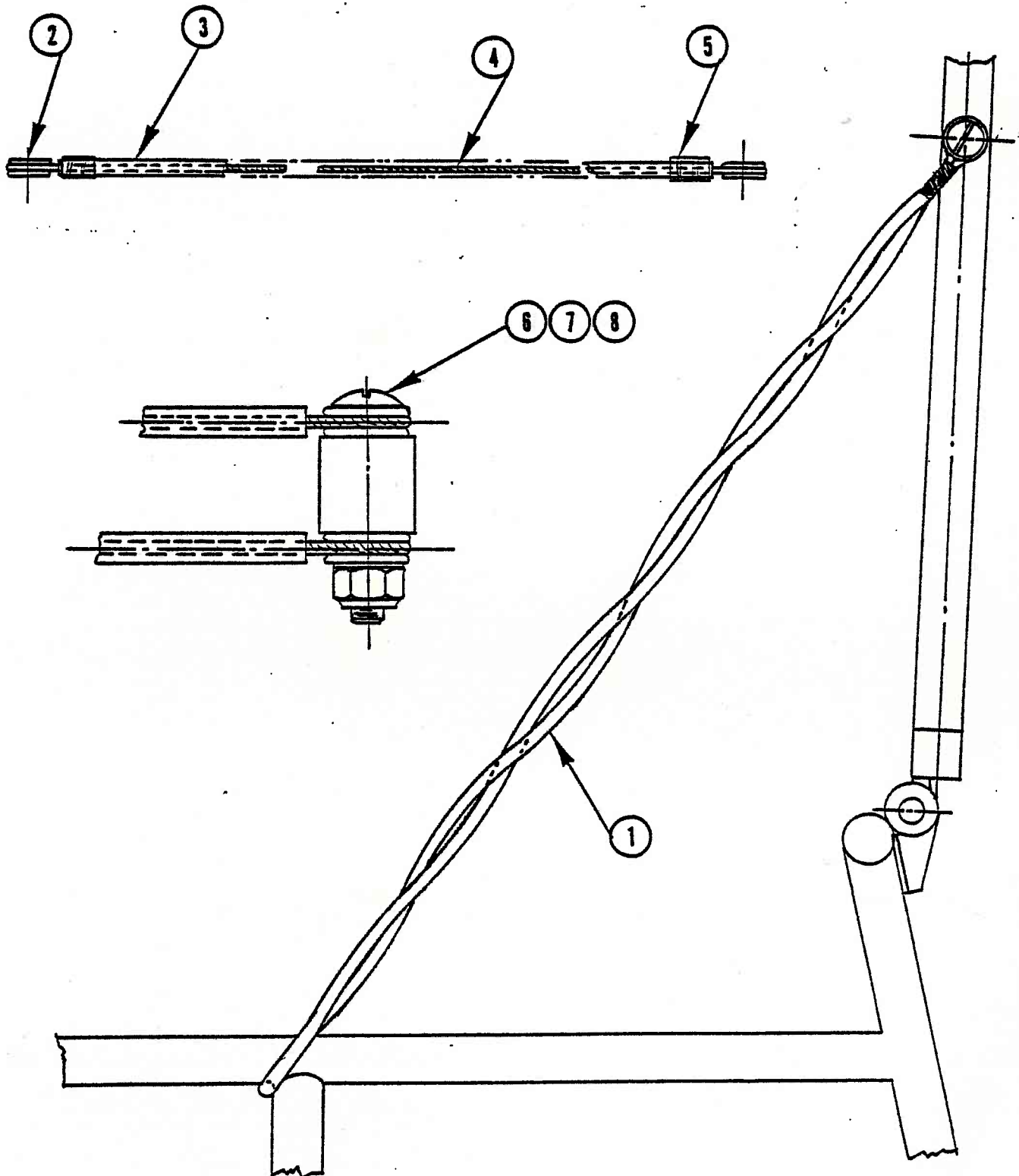
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ITEM	PART NO.	NAME	QTY.	MODEL
25	52-028-4-125-0437	Roll Pin	1	
26	33303G-15	Spacer	1	
27	33300H-29	Fairing - Front	1	
28	33300H-119	Fairing	1	
29	33300H-33	Fairing	1	
30	33300H-35	Fairing	2	
31	AN526-832R6	Screw	45	
	10326A-1	Washer	45	
	22NKTM-82	Nut	45	
32	10334B-7	Catch	1	231 & Up
33	CR2249-4-2	Rivet	1	231 & Up
34	33300H-31	Top Bow - Rear	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22957D CANOPY RESTRAINER

Eff. A/C 1 thru 69



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22957D CANOPY RESTRAINER
Eff. A/C 1 thru 69

ITEM	PART NO.	NAME	QTY.	MODEL
1	22957D-1	Cable Assy	1	
2	AN111-3	Cable Bushing	2	
3	22957D-5	Spaghetti	1	
4	22957D-3	Cable 1/16 X 26.0 (7 X 7)	1	
5	1/16"	Nicopress Sleeve	2	
6	AN525-832-18	Screw	1	
7	AN960-8	Washer	1	
8	AN365-832	Nut	1	

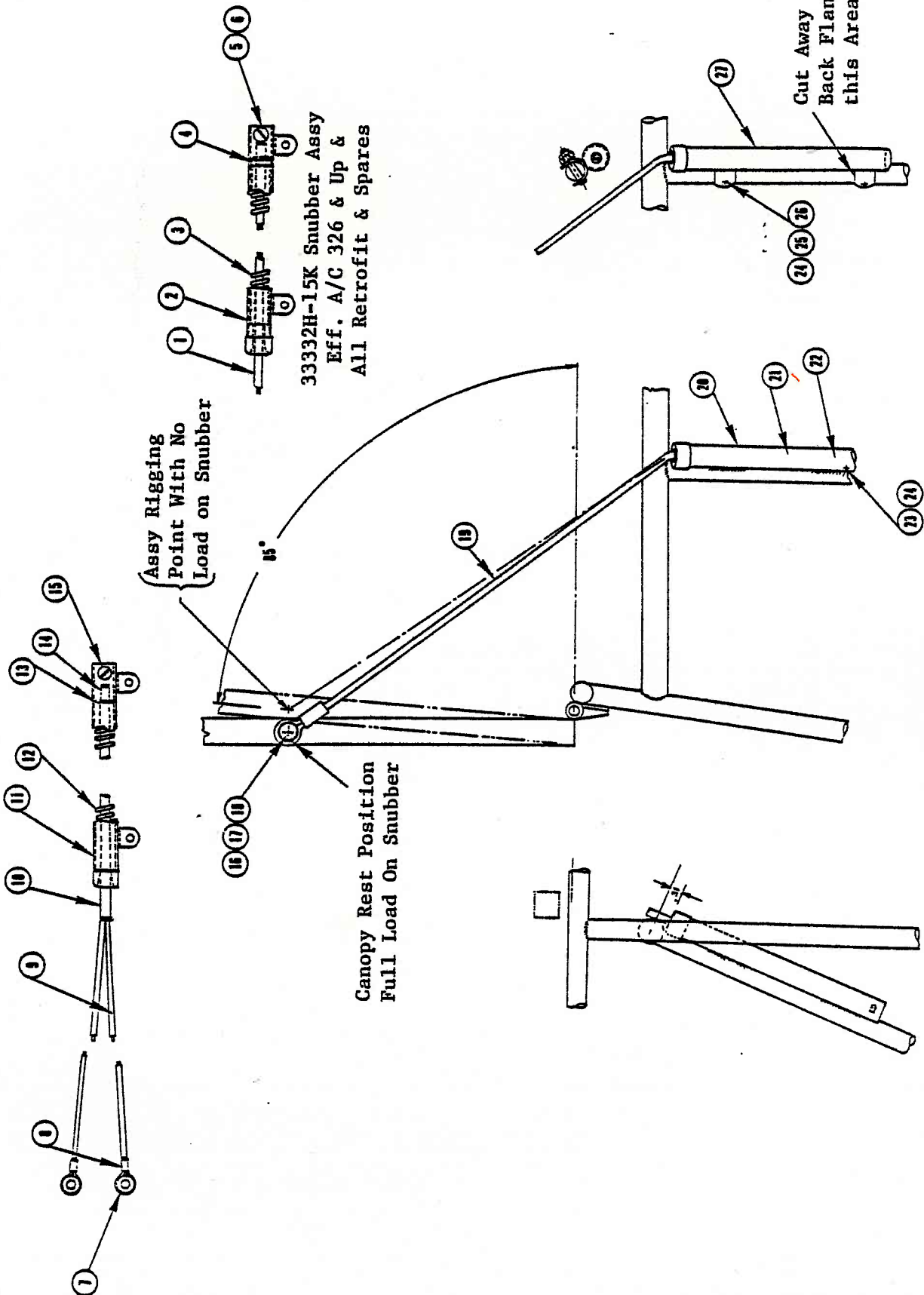
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

CANOPY SNUBBER ASSY

Eff. A/C 70 & Up

33332H-5 Snubber Assy
Eff. A/C 70 thru 325

Not Available for Spares - Use 33332H-15K



Revised 12/1/81

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

CANOPY SNUBBER ASSY

Eff. A/C 70 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
	33332H-15K	Snubber Assy Kit (for retrofit & all spares)		
1	33336B-1	Cable Assy	1	
2	33331B-19	Body Assy	1	
3	33331B-21	Spring	1	
4	AN365-420	Nut		
5	AN515-8-14	Screw	1	
6	AN365-832	Nut	1	
	33332H-5	Snubber Assy - Eff. A/C 70 thru 325 (Not available for spares - use 33332H-17)		
7	AN111-3	Bushing	2	
8	1/16	Nicopress Sleeve	2	
9	33332H-11	Tube	2	
10	33331B-23	Guide Tube	1	
11	33331B-19	Body Assy	1	
12	33331B-21	Spring	1	
13	33331B-25	Washer	1	
14	1/16	Nicopress Sleeve	1	
15	AN515-8-14	Screw	1	
15	AN365-832	Nut	1	
	33332H-13	Snubber Inst'l Prod.		
	33332H-15	Snubber Retrofit Inst'l.		
16	AN525-10-14	Screw	1	
17	AN960-10	Washer	1	
18	AN365-1032	Nut	1	
19	33336B-1	Cable Assy	1	
20	33331B-3	Body Assy	1	
21	33331B-21	Spring	1	

Revised 12/1/81

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

CANOPY SNUBBER ASSY

Eff. A/C 70 & Up

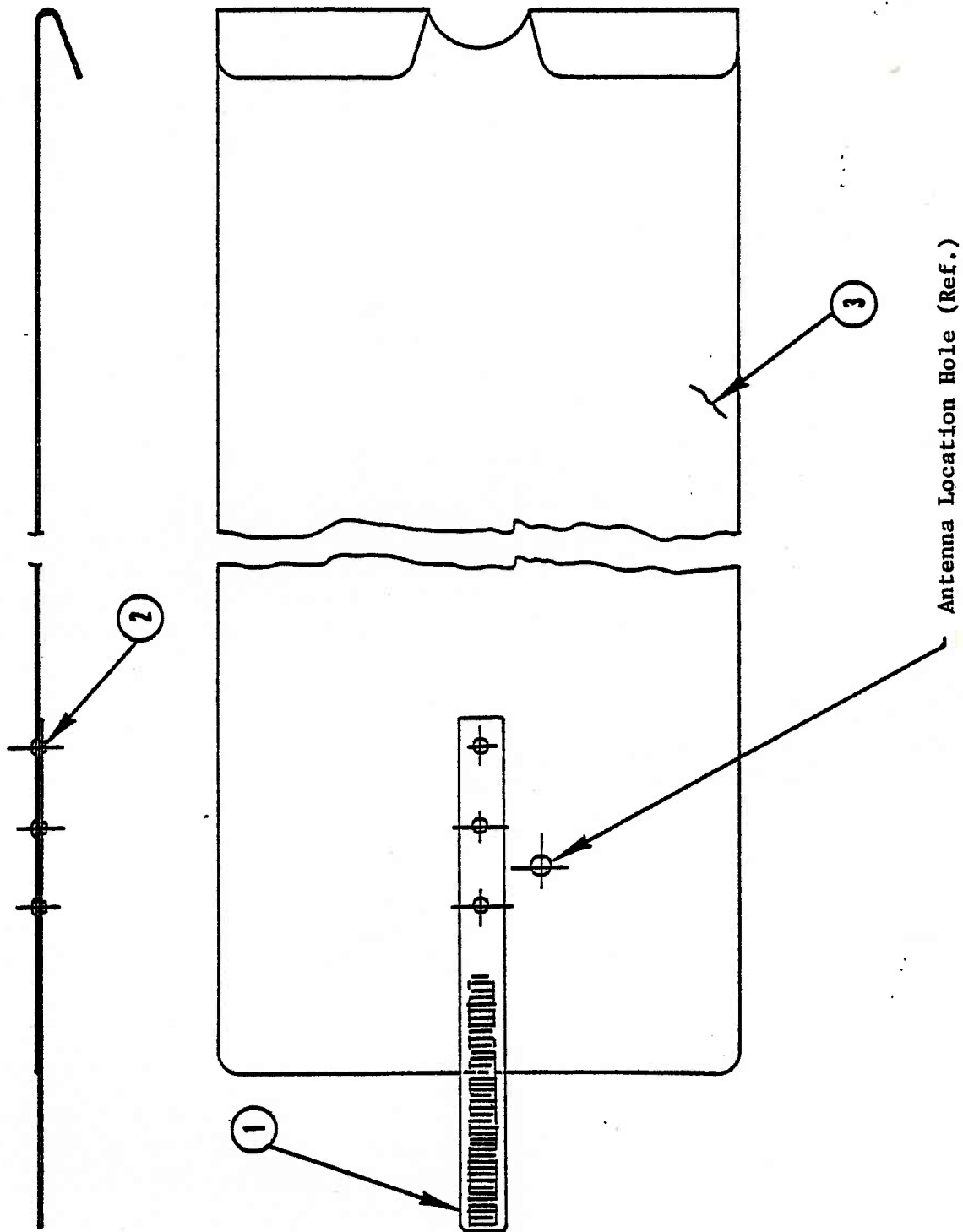
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ITEM	PART NO.	NAME	QTY.	MODEL
22	AN365-420	Nut	1	
23	AN515-8-14	Screw	1	
24	AN365-832	Nut	1 on -13 3 on -15	
25	AN960-8	Washer	2 on -15 only	
26	AN515-8-16	Screw	2 on -15 only	
27	33332H-17	Snubber Assy	-15 only	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22D945-1 AFT GAP COVER ASSY

Eff. A/C 1 & Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22D945 GAP COVER - AFT

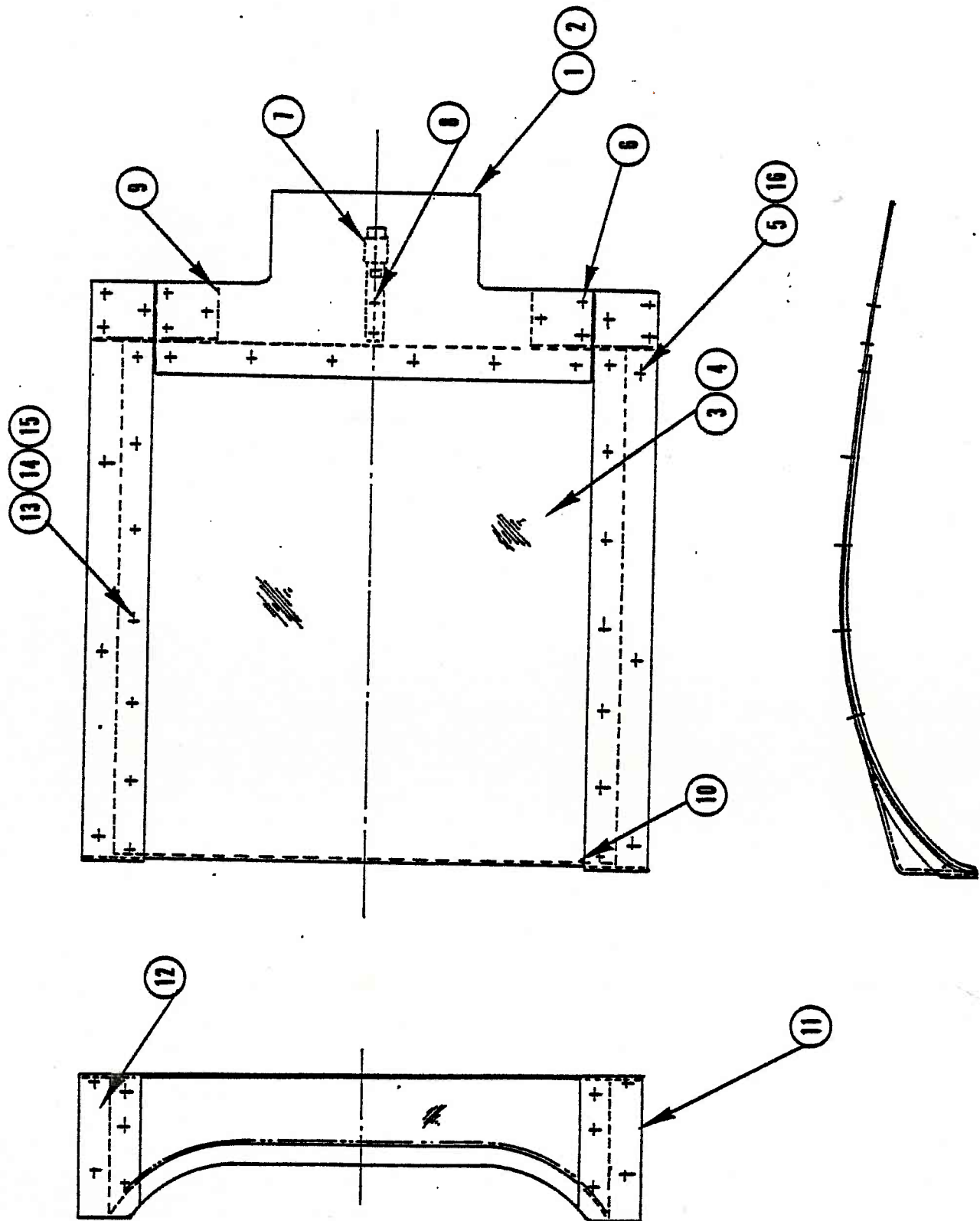
ITEM	PART NO.	NAME	QTY.	MODEL
	22D945-1	Aft Gap Cover Assy - Eff. A/C 1 & Up		
1	22D945-5	Clamp Strip	1	
2	MS20470AD4	Rivet	3	
3	22D945-3	Gap Cover .025 2024-T3	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22H946-1 FWD GAP COVER ASSY - GLASS

22H946-5 FRAME ASSY - GAP COVER

22H946-3 GLASS ASSY - GAP COVER



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22H946-1 FWD GAP COVER ASSY - GLASS

ITEM	PART NO.	NAME	QTY.	MODEL
1	22H946-5	Frame Assy - Complete	1	
2	22H946-11	Rear Attach	1	
3	22H946-3	Glass Assy - Complete	1	
4	22H946-7	Glass	1	
5	98292-.120	Airloc Stud *	6	
6	MS20470AD4	Rivet	12	
7	22H946-17	Attach Mech.	1	
8	MS20470AD4	Rivet	2	
9	22H946-15	Doubler	2	
10	22H946-9	Reinforcing - Fiberglass	1	
11	22H946-13	Side Strip	1	
12	22H946-14	Side Strip	1	
13	AN526-832R6	Screw	20	
14	10326A-1	Washer	20	
15	22NKTM-82	Cap Nut	20	
16	99836	Cross Pin *	6	
* Items 5 & 16 are limited and are replaced by Cam-loc P/N's 4002-N Grommet, R4G Snap Ring & 4002-5 Cam-loc Stud for all production & spares. (Cam-loc receptable must be used in conjunction with cam-loc studs - Order P/N 244-16)				

Revised 12/1/81

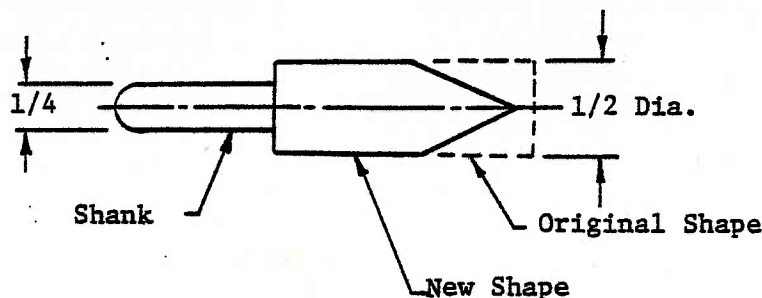
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SPECIAL INSTRUCTIONS

DRILLING AND ENLARGING HOLES IN PLEXIGLAS

When drilling, or reaming plexiglas, first drill half way through, then finish the hole from the opposite side. If drilled through completely one way, the glass will often crack as the drill or reamer breaks through.

The following method is recommended to enlarge the attach holes in the glass to 1/2" as per print 26J-311. Use an abrasive stone mounted on 1/4" or 1/8" shank. (One can be acquired from Schweizer Aircraft Corp. upon request). The stone is dressed down to a point, to act as a self-centering guide while reaming. The taper required is 35° or less (see sketch).



The stone can be shaped with any hard substance, preferably an abrasive wheel dresser. When reaming, be careful to stay on center and not let the stone wander. Again, run the stone through until the widest section of stone penetrates half way, then finish from the opposite direction.

There are a few alternate methods acceptable. (1) The use of the counterbore (spot facer). Use a 3/16" pilot on the counterbore and follow the same method as the abrasive by going half way through, then the rest of the way from the opposite side. (2) A 1/2" countersink (open) may be used also, by providing a 3/16" lead hole and using same method of reaming as above. The third method which may be used is also most apt to crack plexiglas. Pilot drill with 3/16" drill, then use slow turning motor, drill press with 1/2" drill to enlarge the holes.

1. With the above instructions in mind, drill the #41 holes in the plexiglas up to 3/16", then enlarge the holes to 1/2".
2. Polish all holes out with emery cloth to relieve all sharp edges.
3. Peel the Spraylat protective coating back enough to clear the fairings.
4. Place glass in position on canopy frame and install the AN526-832-7 screw in top of -6 and -8 fairings through glass, then aluminum washer (26J-311-11) and 22KTM-832 cap nut.
5. Turn the nut on until it is snug and you can turn the screw and nut with fingers. If nut is too tight, the glass will not give (temperature changes) and will crack.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

NOTES

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Section "F" Index

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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

INSTRUMENTS

INSTRUMENTS

The flight instruments include the altimeter, airspeed indicator and magnetic compass.

ALTIMETER

The range of the altimeter is 0 to 20,000 feet. Three concentric pointers indicate altitude in increments of 20, 100, and 1000 feet. A small scale on the instrument face, is calibrated in inches of mercury. The scale is rotated by a knob at the lower left of the instrument case to equal the ambient barometric pressure. After adjusting instrument to field barometric pressure, the reading of the altimeter will indicate the actual distance of the aircraft in feet above sea level. The altimeter uses cockpit statics so no static line is used in installation.

OPERATIONAL CHECK

- (a) Obtain correct barometric pressure reading corrected to barometric sea level.
- (b) Set reading in barometric scale window obtained in Step (a).
- (c) Altimeter reading should equal actual height above sea level.

REMOVAL

- (a) Remove 3 nuts and lock washers securing altimeter to instrument panel. Remove altimeter.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

INSPECTION

- (a) Inspect altimeter case for excessive dents and glass for cracks and security.
- (b) Inspect fitting at rear of altimeter case for stripped or otherwise damaged threads that would prevent an air tight connection.
- (c) Inspect markings for legibility, and pointers for cracked or peeling paint.

INSTALLATION

- (a) Coat threads of fitting with antiseize compound. Use sparingly and remove excess to prevent contamination of interior of instrument.
- (b) Install hose fittings on rear of altimeter case.
- (c) Install altimeter in instrument panel and secure with three screws, lockwashers and nuts.
- (d) Connect 1/4 inch hose to altimeter fitting and secure hose with lockwire.

AIRSPPEED INDICATOR

The airspeed indicator is a pressure sensitive unit actuated by the differential between impact and static air pressures. The impact pressure is transmitted from the pitot head to the inside of pressure sensitive diaphragm in the instrument case. Movements of the diaphragm caused by the resulting pressure difference are converted by mechanical linkage to pointer movement over the calibrated dial.

REMOVAL

- (a) Check master switch for OFF position.
- (b) Support instrument panel to prevent strain. Cut lockwire, securing hoses on fittings at rear of case. Tag and remove hoses from fittings at rear of airspeed indicator.
- (c) Remove nuts and lockwashers securing airspeed indicator to instrument panel. Remove airspeed indicator.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

INSPECTION

- (a) Inspect airspeed indicator case for excessive dents and glass for cracks.
- (b) Inspect the static and pitot fittings at rear of airspeed indicator case for stripped or otherwise damaged threads that would prevent an air tight connection.
- (c) Inspect glass for security and glass slippage mark for alignment, and proper range of markings.
- (d) Inspect markings for legibility, and pointer for cracked or peeling paint.

INSTALLATION

- (a) Coat threads of fittings with antiseize compound. Use sparingly and remove excess to prevent contamination of interior of instrument.
- (b) Install hose fittings of "S" port and "P" port on rear of airspeed case.
- (c) Install airspeed in instrument panel and secure with lockwashers and nuts.
- (d) Connect hoses to "P" port and "S" port fittings. Hose with "TEE" fitting connects to static line. "TEE" fitting provides connection of altimeter hose to common static line. Secure both hoses with lockwire.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

PITOT-STATIC SYSTEM

The pitot-static system includes a pitot tube, a static tube, and all connecting fittings and lines. Ram pressure enters the pressure line through an opening at the forward end of the pitot tube and passes through the pressure line to the airspeed indicator. Static pressure enters openings on the side of the static tube and is passed through the static pressure line which is connected to the airspeed indicator, and altimeter.

CLEANING SYSTEM ON AIRCRAFT

- (a) Disconnect static line from altimeter and airspeed indicator and disconnect pitot line from airspeed.
- (b) To clear undrained moisture, using clean dry compressed air blow from the cockpit ends of the pitot and static lines through the system including pitot/static head.
- (c) Check that pitot and static head is free of obstructions by feeling for air emission from the holes.

TEST PROCEDURE - PITOT PRESSURE SYSTEM

1. Connect pitot tester to pitot head and slowly apply pressure until airspeed indicator registers 150 MPH.

CAUTION

DO NOT APPLY SUCTION TO PITOT LINES.

2. Seal off pitot head for one minute. Indicator pointer must not fall more than 10 MPH over this period.
3. Tap the airspeed indicator lightly during test to ensure indicator pointer is free.
4. Remove the tester.

TEST PROCEDURE - STATIC PRESSURE SYSTEM

1. Seal all but one static hole in static tube air tight, using pressure sensitive tape.
2. Connect pitot tester to static tube hole.
3. Set altimeter pointers to field elevation and slowly apply suction to static line until altimeter reads 1000 feet above field elevation.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

TEST PROCEDURE - STATIC PRESSURE SYSTEM (Cont'd)

4. Close vacuum source for one minute.
5. After one minute, check to see that the leakage has not exceeded the equivalent of 100 feet in altitude.
6. Bring pressure back slowly until altimeter reads 0, then remove tester.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

TROUBLESHOOTING ALTIMETER

INDICATION OF TROUBLE	PROBABLE CAUSE	CORRECTIVE ACTION
Pointer does not move	Loose line or hose connection	Tighten line or hose connections
	Obstruction in lines	
	Defective altimeter	Replace altimeter
Pointer oscillation	Loose line or hose connections	Tighten line or hose connections
	Moisture in lines or hose	Clear lines or hose
	Defective altimeter	Replace altimeter
	Leak in airspeed indicator	Check airspeed indicator hose for leaks. Replace faulty component or tighten connections as required.
Pointer does not set on airport altitude (.06"Hg) on ground with proper barometric settings	Defective altimeter	Replace altimeter
	Moisture in lines or hose	Clear lines or hose
Low reading	Altimeter instrument case leaking	Replace altimeter
High reading	Improper venting	Clear lines or hose
No reading	Obstruction in lines or	Clear lines or hose
	Defective altimeter	Replace altimeter
	Defective altimeter	Replace altimeter
Excessive pointer oscillation	Defective altimeter	Replace altimeter
Setting knob binds	Defective altimeter	Replace altimeter

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

TROUBLESHOOTING AIRSPEED INDICATOR

INDICATION OF TROUBLE	PROBABLE CAUSE	CORRECTIVE ACTION
Pointer does not move	Loose line or hose connections	Tighten line or hose connections
	Obstruction in pitot lines or hose	Clear pitot line or hose
	Defective airspeed indicator	Replace airspeed indicator
Pointer oscillation	Loose line or hose connections	Tighten line or hose connections
	Moisture in pitot lines or hose	Clear pitot lines or hose
	Leak in altimeter system	Check altimeter and hose for leaks. Replace defective components.
Pointer does not set on 0 on ground	Defective airspeed indicator	Replace airspeed indicator
	Moisture in lines or hose	Clear lines or hose

TROUBLESHOOTING PITOT-STATIC SYSTEM

INDICATION OF TROUBLE	PROBABLE CAUSE	CORRECTIVE ACTION
No reading on airspeed indicator	Ice or water in pressure lines	Thaw out, clear and dry lines and traps
Erratic readings on pitot-static instruments	Leak in static line	Leak test line
	Ice or water in pressure lines	Thaw out, clear and dry lines and traps

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

MAGNETIC COMPASS

The magnetic compass is comprised of a liquid-filled case, afloat assembly incorporating a compass card and magnets, and a compensator assembly to provide for magnetically compensating the compass for deviation.

CALIBRATION

Prior to calibrating the compass make certain that liquid is clear and that no air bubbles show when the compass is in normal position. Check to see that the compass card is level and, when deflected a few degrees on each side of its equilibrium position, returns to its original position within friction error tolerance for the compass. Inspect case for damage and glass for security and discoloration.

- (a) Loosen screws securing compensator access cover located on bottom face of compass, lift cover upward to obtain access to compensator adjustment screws.
- (b) Position screw type NS and EW compensators to null effect by aligning dots on screws with dots on plate.
- (c) Turn on all electrical equipment.

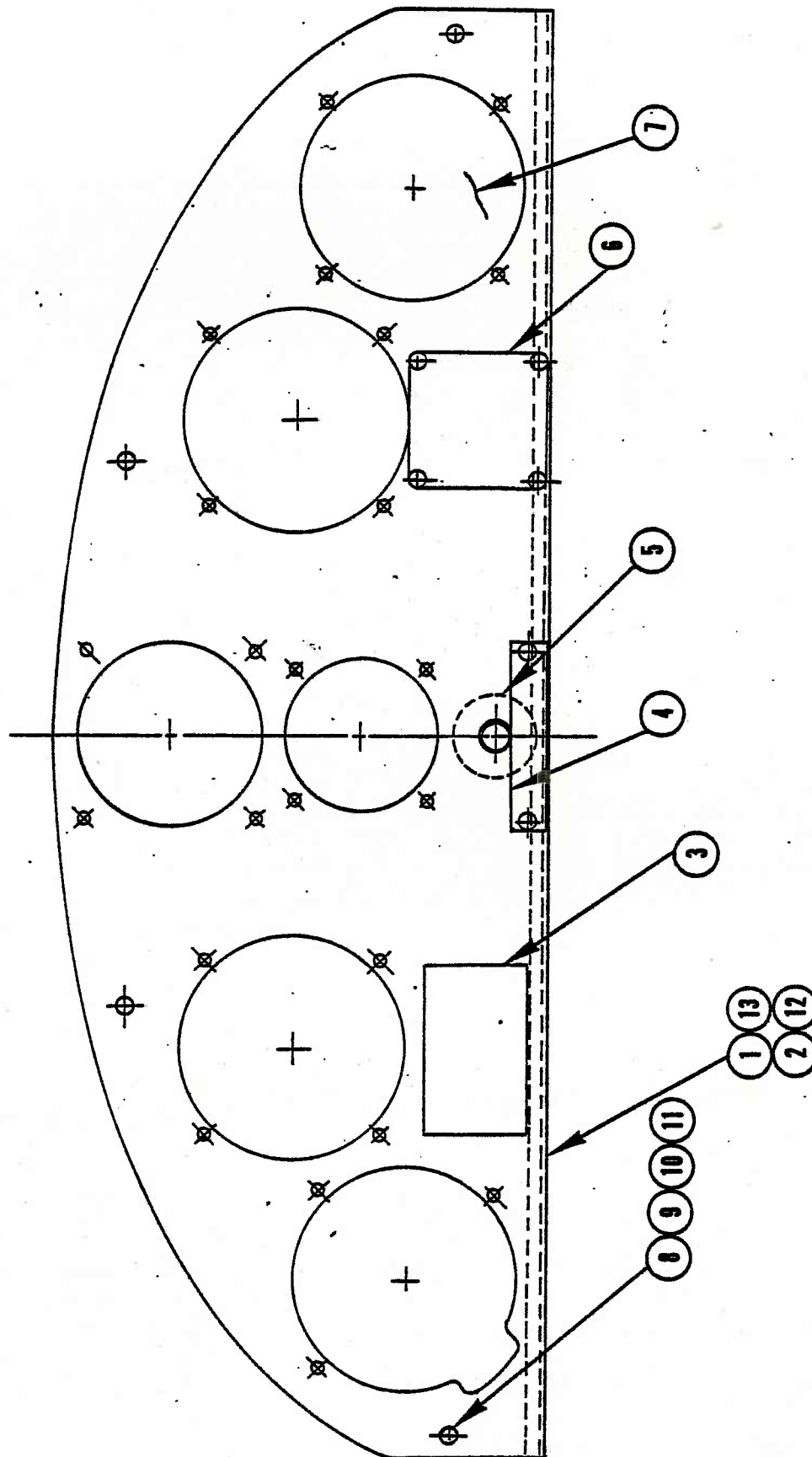
NOTE

ADJUSTMENTS OF COMPENSATORS MUST BE MADE WITH A NON-MAGNETIC SCREW DRIVER.

- (d) With electrical equipment on, place aircraft on north magnetic heading and adjust NS compensating screw until compass reads north.
- (e) Place aircraft on east magnetic heading and adjust EW compensating screw until compass reads east.
- (f) Place aircraft on south magnetic heading and note deviation from 180°. Determine index error and adjust compensating screw so that one-half of the index error has been removed.
- (g) Place aircraft on west magnetic heading. Determine index error and adjust compensating screw so that one-half of the index error has been removed.
- (h) Place aircraft on each successive magnetically 30° heading and record all errors on the deviation card located on the face of the instrument panel below the compass.

NOTE

IF ANY DEVIATION ERROR AT ANY ONE OF THE COMPASS CARD HEADINGS EXCEEDS 10 DEGREES, REMOVE COMPASS FROM AIRCRAFT.



INSTRUMENT PANEL ASS'Y.

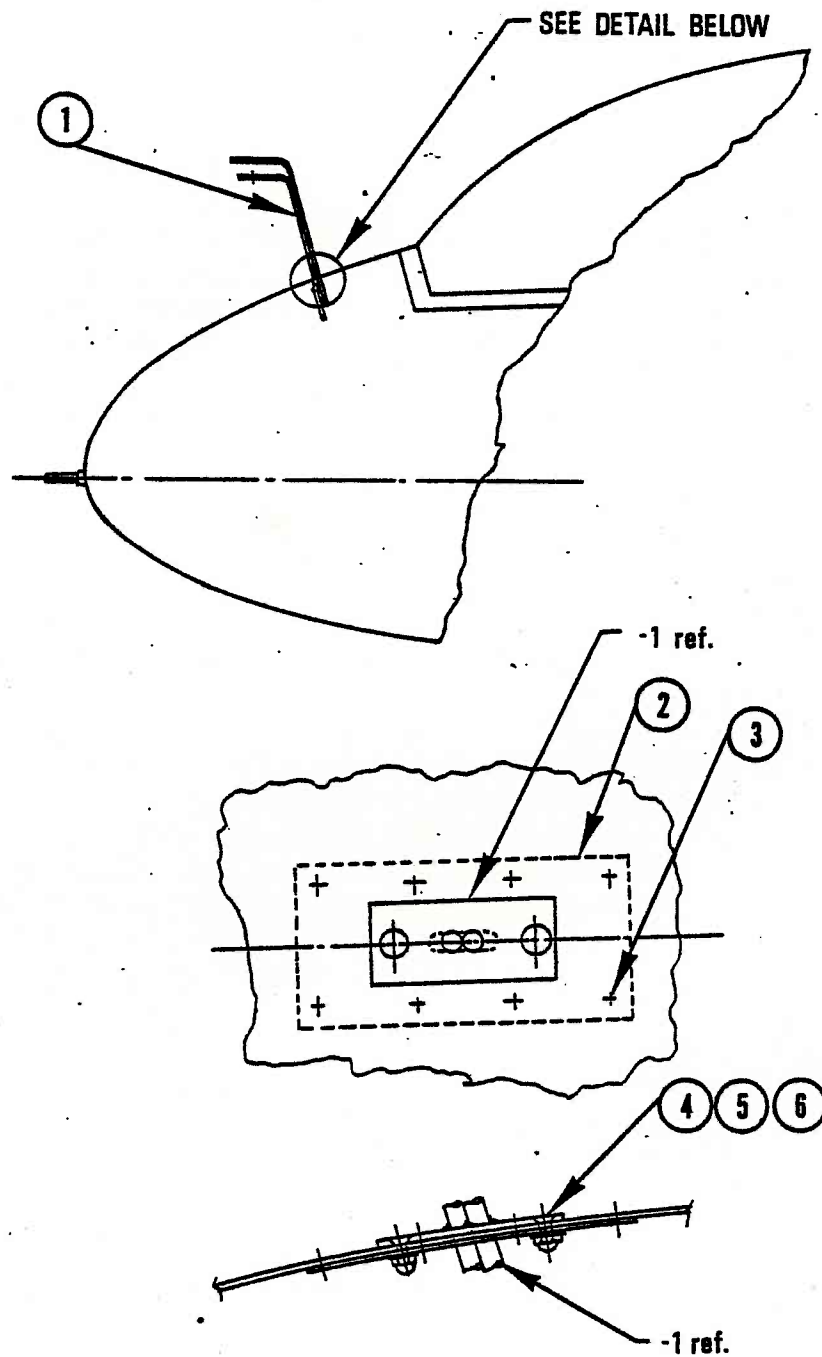
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

INSTRUMENT PANEL ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
1	33323-3A	Instrument Panel Assy (includes 22A147-5 Guide Assy. Panel is punched & painted black crackel finish.)	1	378 & Up
2	33323-1A	Instrument Panel Assy (includes 22A147-5 Guide Assy. Panel is punched & painted black crackel finish.)	1	1 thru 377
3	10923A	Placard - Cockpit Checklist	1	
4	1B-313-2	Placard - Release	1	
5	22A147-5	Release Assy Guide	1	
6	33902B-1	Placard - Flight Limits	1	
7	1D912-1	Cover - Instrument Panel Hole 3 1/8"	---	
	1D912-2	Reduction Cover 3 1/8 to 2 1/4	---	
	1D912-3	Cover - For Mounting Air Vent	---	
	1D912-9	Cover - Instrument Panel Hole 2 1/4"	---	
8	AN525-10R8	Screw	4	378 & Up
9	AN366F-1032	Nut Plate	4	378 & Up
10	33301-21	Instrument Panel Support Assy	1	378 & Up
11	V-22	Vibrex Fastener - (use with 33301-15 Panel Support Assy A/C 1 thru 377)	4	1 thru 377
12	33323-1	Instrument Panel (Alodined & Primed)	1	1 thru 377
13	33323-3	Instrument Panel (Alodined & Primed)	1	378 & Up

NOTE: See Service Letter SL102-9

PITOT ASS'Y.



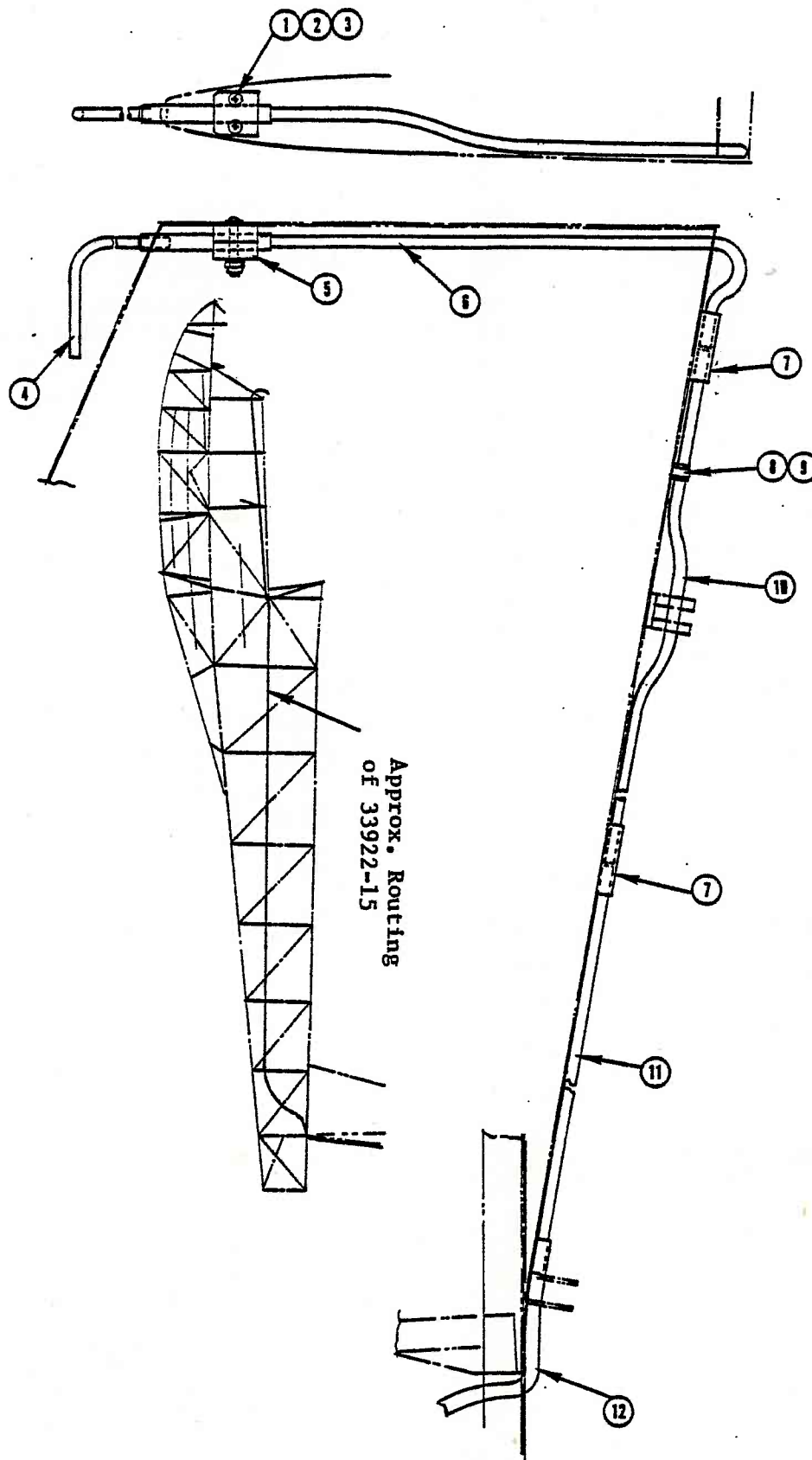
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33301G PITOT ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
1	33310G-1	Pitot Assy	1	
2	33310G-9	Back-up Plate	1	
3	MS20426AD4	Rivet	8	
4	AN509-8R10	Screw	2	
5	AN365-832	Nut	2	
6	AN960-10	Washer	2	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33922 Total Energy Tube Instl.



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33922 Total Energy Tube Instl.

ITEM	PART NO.	NAME	QTY.	MODEL
1	AN525-832R18	Screw	2	
2	AN365-832	Nut	2	
3	AN960-8	Washer	2	
4		T. E. Tube	1	
5	26971-3	Block	2	
6	33922-11	Tube	1	
7	26971-9	Tube	2	
8	SSC25-56CP	Strap	4	
9	AN530-4-4	Screw	4	
10	26971-13	Tube	1	
11	33922-13	Tube	1	
12	33922-15	Tubing	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

NOTES

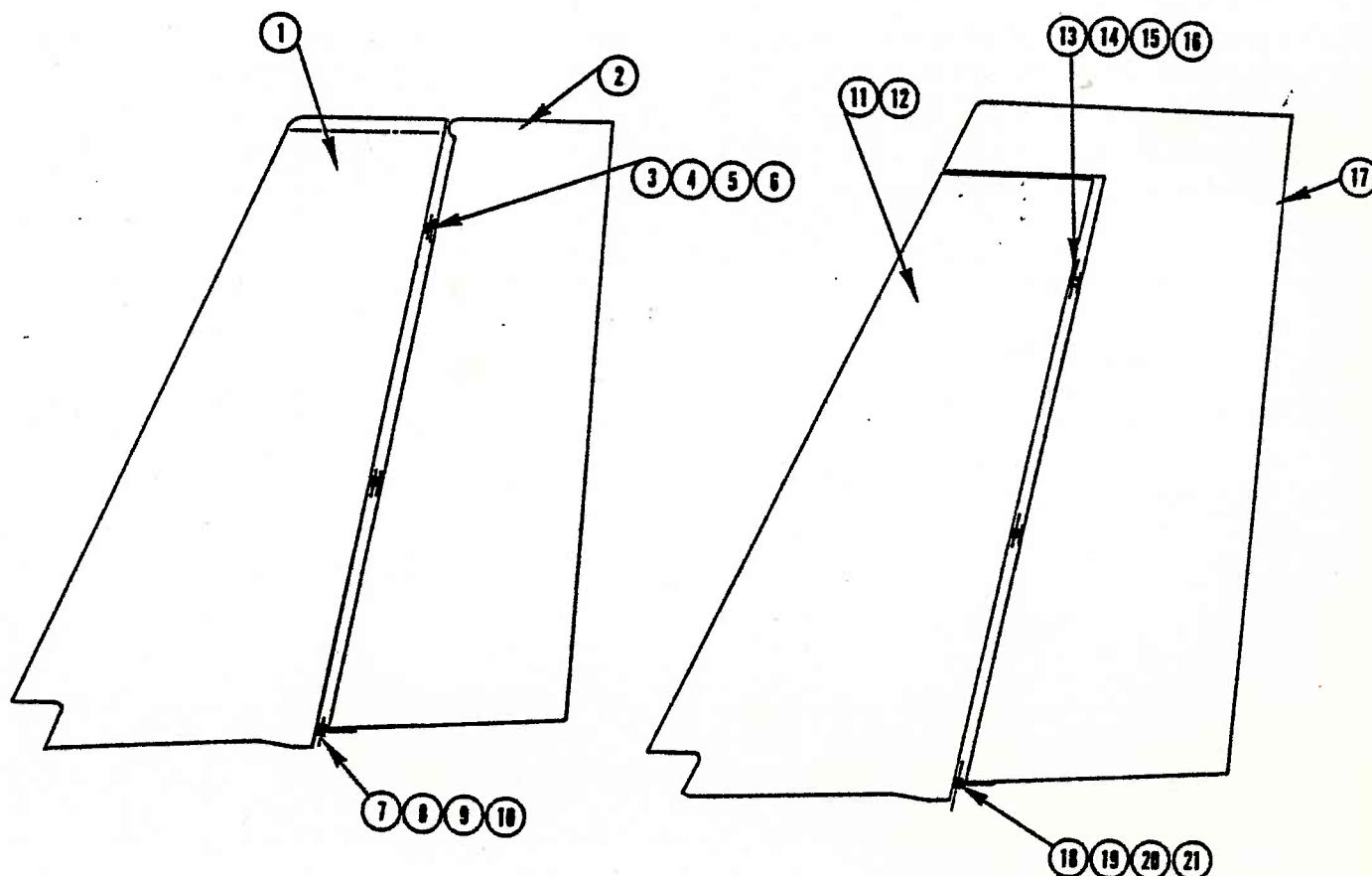
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

VERTICAL TAIL SURFACE ASSEMBLIES



33601D-1 VERTICAL TAIL ASSY
Eff. A/C 1 thru 85

33601D-1 VERTICAL TAIL ASSY
Eff. A/C 86 thru 507

33601D-3 VERTICAL TAIL ASSY
Eff. A/C 508 & Up

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

VERTICAL TAIL SURFACE ASSYS

ITEM	PART NO.	NAME	QTY.	MODEL
	33600D-1	Vertical Tail Assy - Eff. A/C 1 thru 85		
	33601D-1	Vertical Tail Assy - Eff. A/C 85 thru 507		
	33601D-3	Vertical Tail Assy - Eff. A/C 508 & Up		
1	26K712-5	Fin	1	1 thru 85
2	26K714-3	Rudder	1	1 thru 85
3	AN3-11	Bolt	2	
4	AN310-3	Nut	2	
5	AN960-10	Washer	2	
6	AN380-2-2	Pin	2	
7	AN4-11	Bolt	1	
8	AN310-4	Nut	1	
9	AN960-416	Washer (2 Ea. side of male hinge)	5	
10	AN380-2-2	Pin	1	
11	26K712-7	Fin (on 33601D-1)	1	86 thru 507
12	26K712-9	Fin (on 33601D-3)	1	508 & Up
13	AN3-11	Bolt	2	
14	AN310-3	Nut	2	
15	AN960-10	Washer	2	
16	AN380-2-2	Pin	2	
17	33906D-1	Rudder Assy	1	86 & Up
18	AN4-11	Bolt	1	
19	AN310-4	Nut	1	
20	AN960-416	Washer (2 Ea. side of male hinge)	5	
21	AN380-2-2	Pin	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

INSTALLATION AND REMOVAL OF FIN AND RUDDER

For normal handling and trailering, the Fin and Rudder Assembly are left attached to the fuselage. However, if an occasion arises where the Fin must be removed from the Fuselage, follow the procedure listed below.

1. Fin Removal from Fuselage:

- a. Disconnect rudder cables from rudder horn.
- b. Remove screws attaching metal fairing to fin. This includes the AN520-10 screw and nut.
- c. Remove inspection hole covers from aft fuselage.
- d. Remove the (5) AN3 bolts attaching fin to fuselage.
- e. Remove fin by lifting up, tilting it slightly to the right to clear the notch in the fin spar past the elevator push tube.

2. To install the Fin and Rudder Assembly reverse the procedure outlined in a. through e. above.

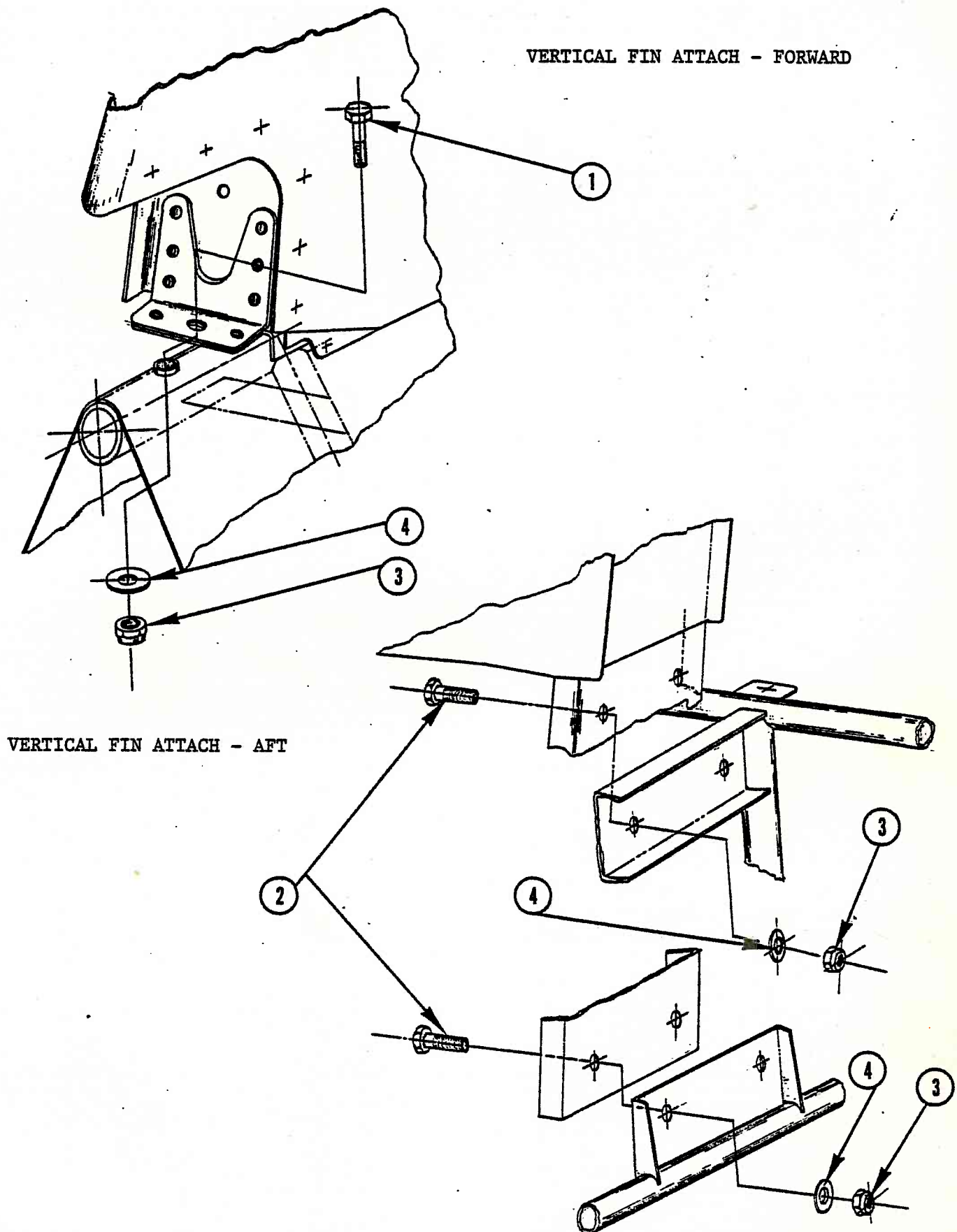
- *a. The fin rear spar is attached to the fuselage by (4) AN3-5A bolts, (4) AN960-10 washers and (4) AN365-1032 nuts.
- b. The fin forward-fitting is attached to the fuselage by (1) AN3-14A bolt, (1) AN960-10 washer and (1) AN365-1032 nut.
- c. The rudder cables are attached to the rudder horn by (2) AN3-6 bolts, (2) AN960-10 washers, (2) AN310-3 nuts and (2) AN380-2-2 cotter pins.
- d. The fin fairing is installed with (10) #4 X 1/4, Type Z, "PK" screws, (1) AN420-10-54 screw, (1) AN960-10 washer and (1) AN365-1032 nut.

3. In case the rudder has been removed from the fin, the hinge hardware for re-assembly is as follows:

- a. At upper and center hinges - AN3-11 bolt, AN960-10 washer, AN310-3 nut and AN380-2-2 cotter pin.
- b. At lower hinge - AN⁴-11 bolt, AN960-416 washers (2 each side of male hinge inside female segment), AN310-4 nut (with washer) and AN380-2-2 cotter pin.

*On ship 508 and up, the rear fin spar is attached using (4) each AN4-5A bolt, AN365-428 nut, AN960-416 washer (under nut), AN960-416L (under bolt head). All previous Ser. No's. may have the fin spar modified and use this hardware per drawing 33924D, Rev. A.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

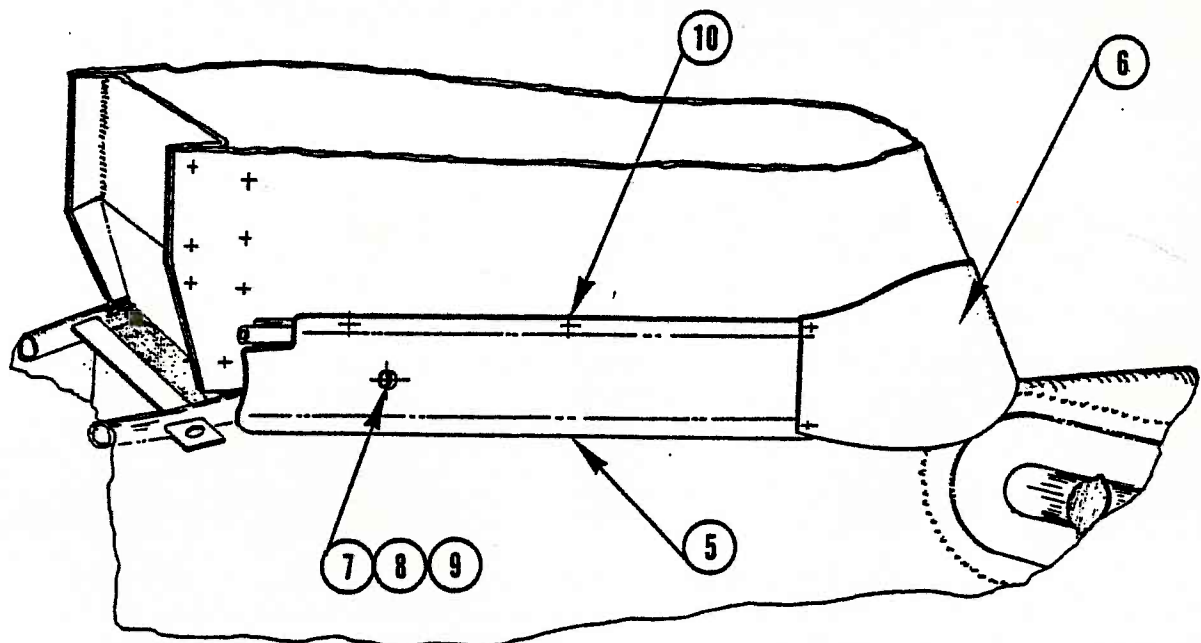
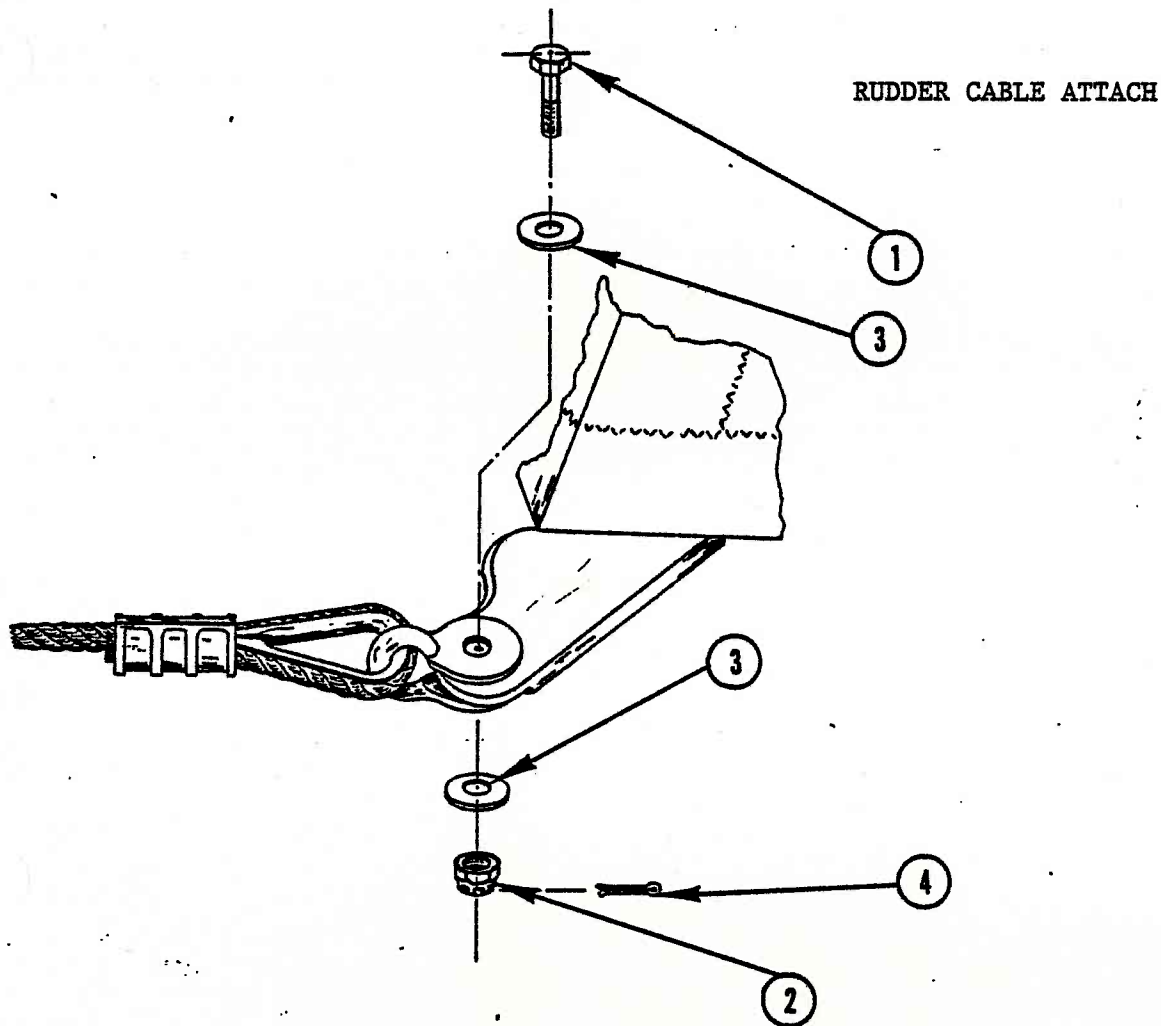


SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

VERTICAL FIN/TO FUSELAGE ATTACH

ITEM	PART NO.	NAME	QTY.	MODEL
1	AN3-14A	Bolt	1	
2	AN3-5A	Bolt	4	
3	AN365-1032	Nut	5	
4	AN960-10	Washer	5	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE



VERTICAL FIN/FUSELAGE FAIRING

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

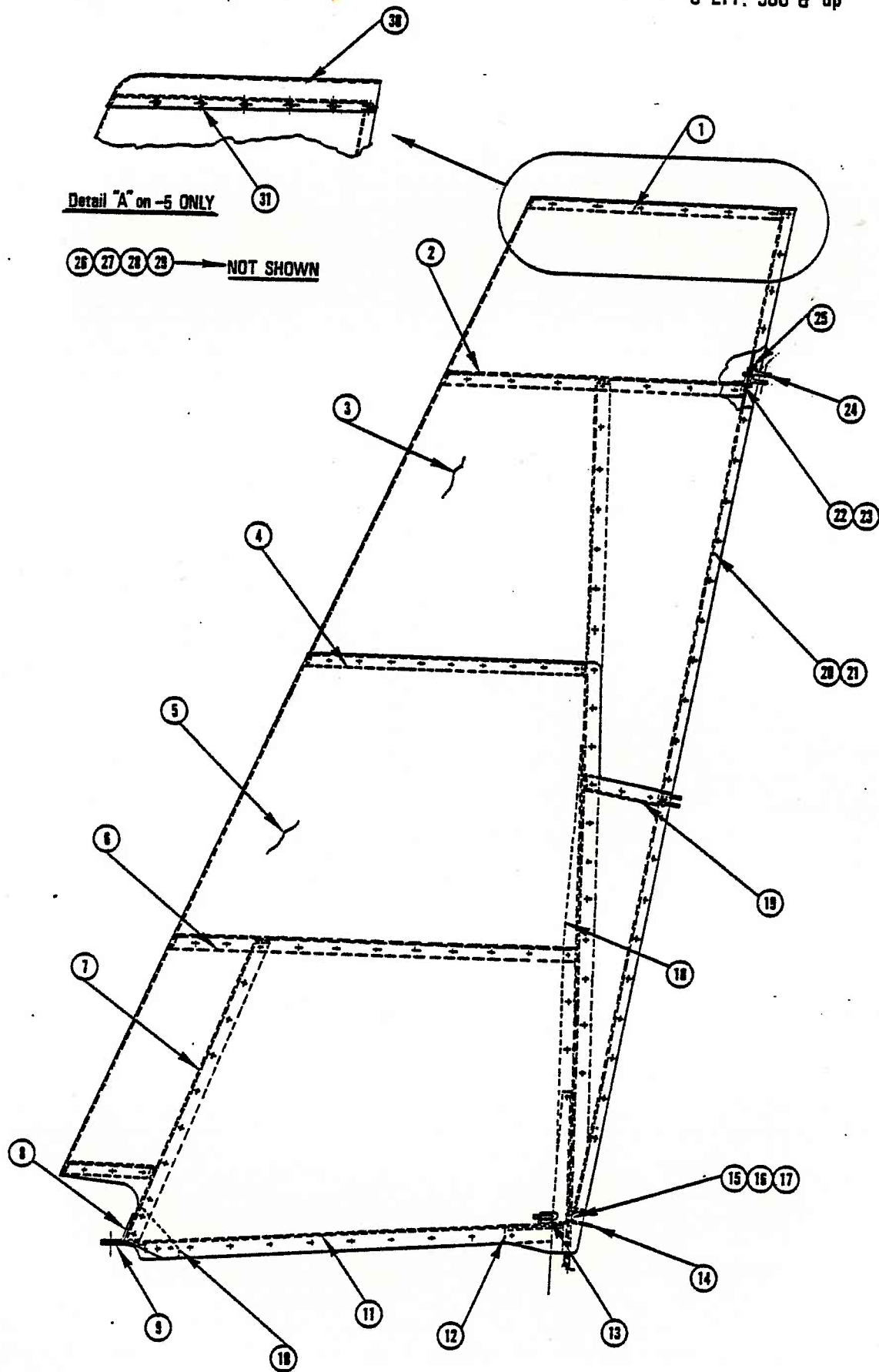
EMPENNAGE - MISC.

TEM	PART NO.	NAME	QTY.	MODEL
		Rudder Cable Attach		
1	AN3-6	Bolt	2	
2	AN310-3	Nut	2	
3	AN960-10	Washer	4	
4	AN380-2-2	Cotter Pin	2	
		Fairing Installation		
5	33315-12	Fairing	2	
6	33315-13	Fairing	1	
7	AN520-10-54	Screw	1	
8	AN960-10	Washer	1	
9	AN365-1032	Nut	1	
10	AN530-4-4	(P.K.) Screw	8	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

VERTICAL FIN ASS'Y. 26K712

-5 EFF. 1 thru 85
 -7 EFF. 86 thru 507
 -9 EFF. 508 & up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

26K712 - 5, -7, -9 VERTICAL FIN ASSY -5 Eff. A/C 1 thru 85
 -7 Eff. A/C 86 thru 507
 -9 Eff. A/C 508 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
1	26K712-25	Rib .020 2024-0-T4	1	A11
2	26K712-21	Rib .020 2024-0-T4	1	A11
3	26K712-35	Skin .016 2024-T3	1	A11
4	26K712-19	Rib .020 2024-0-T4	1	A11
5	26K712-33	Skin .016 2024-T3	1	A11
6	26K712-17	Rib .020 2024-0-T4	1	A11
7	26K712-13	Spar - Front .025 2024-0-T4	1	A11
8	26K712-49	Fitting .090 2024-T3	1	A11
9	26K712-47	Fitting .090 2024-T3	1	A11
10	26K712-15	Doubler .025 2024-T3	2	A11
11	26K712-31	Rib .032 2024-0-T4	1	A11
12	26K712-11	Doubler .065 2024-T3	2	A11
13	26K712-53	Stop Bracket Assy	1	A11
14	26K712-51	Hinge .090 1025 Stl.	1	A11
15	26K712-55	Tube .38 X .090 6061-T6 or 2024-T4	2	A11
16	AN3-7A	Bolt	2	A11
17	NAS1025-1032B.C.	Nut Plate	2	A11
18	26K711-5	Spar Assy	1	A11
19	26K712-23	Rib .025 2024-T3	1	A11
20	26K713-1	Spar (spar ass'y. with doublers = 26713-1A)	1	-5 & -7 Only
21	26K713-1	Spar (spar ass'y. with doublers = 26713-1A)	1	-9 Only
22	26K712-37	Angle .025 2024-T3	1	A11
23	NAS686A3	Nut Plate	2	A11
24	10155B-3	Hinge	2	A11
25	26K712-43	Doubler .063 2024-T3	1	A11

Revised 2/3/83
 Revised 12/1/81

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

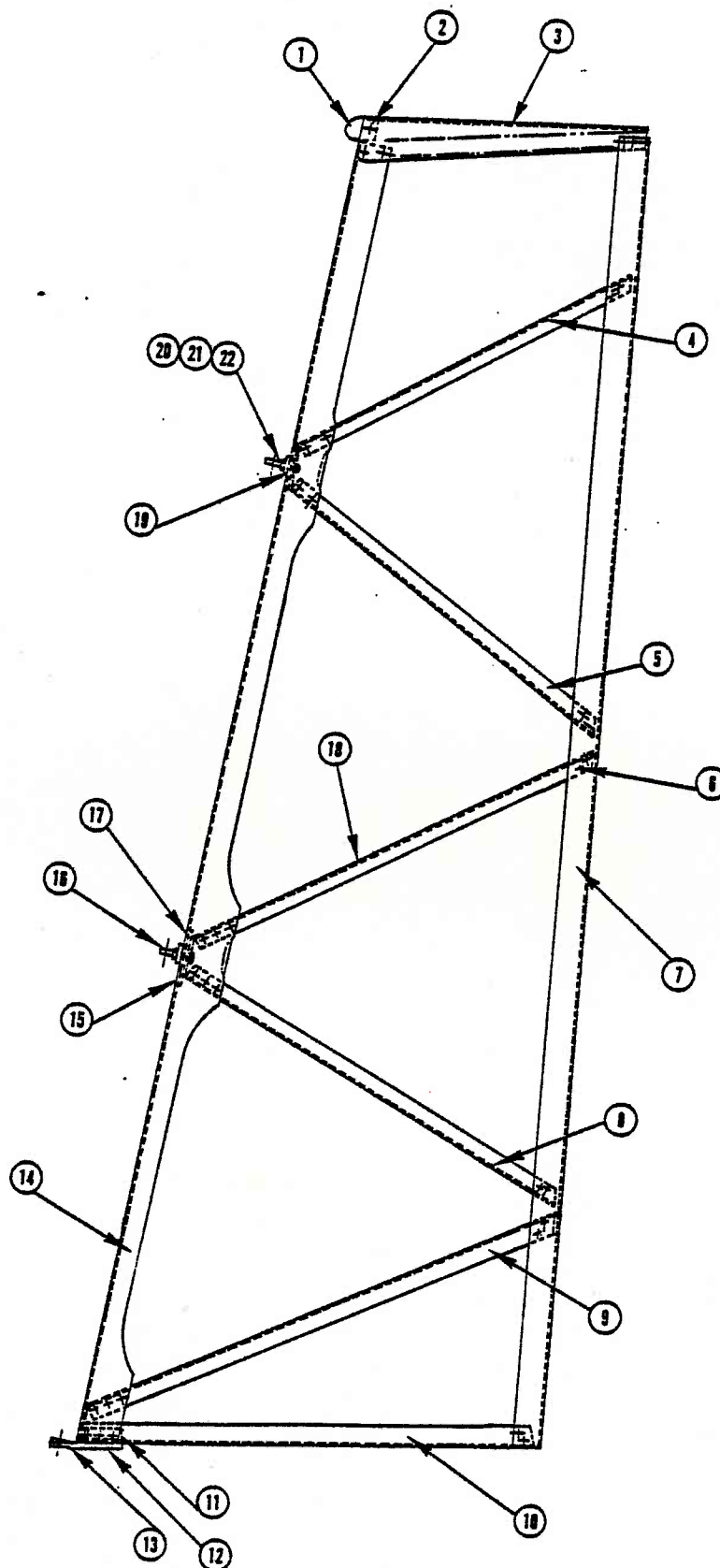
26K712-5, -7, -9 VERTICAL FIN ASSY -5 Eff. A/C 1 thru 85
 -7 Eff. A/C 86 thru 507
 -9 Eff. A/C 508 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
26	MS20470AD4	Rivet	See Note Below	
27	MS20426AD4	Rivet	See Note Below	
28	MS20426AD5	Rivet	See Note Below	
29	CCR26455-3-2	Rivet	See Note Below	
30	26K712-27 & -41	Royalite Tip & Rib	1	-5 Only
31		P-K Screws	See Note Below	
<u>NOTE:</u> For useage & placement of hardware request Schweizer Drawing No. 26K712 1/2 & 26G712 2/2.				

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

26K714-1 RUDDER ASSEMBLY

EFF A/C #1 THRU 85



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

26K714-1 RUDDER ASSEMBLY

Eff. A/C 1 thru 85

ITEM	PART NO.	NAME	QTY.	MODEL
1	26K714-39	Tip (Balsa Wood)	1	
2		#4 X 3/8 Wood Screw	2	
3	26K714-23	Rib	1	
4	26K714-19	Rib	1	
5	26K714-17	Rib	1	
6		#4 X 1/4 P.K. Screws	64	
7	26K714-27	Trailing Edge	1	
8	26K714-13	Rib	1	
9	26K714-11	Rib	1	
10	26K714-9	Rib	1	
11	26K714-33	Doubler (.020)	1	
12	MS20470AD4	Rivets	6	
13	26K714-35	Hinge	1	
14	26K714-7	Fwd. Spar	1	
15	26K714-31	Doubler (.040)	1	
16	10155B-4	Hinge	2	
17	MS20470AD4	Rivets	12	
18	26K714-15	Rib	1	
19	26K714-29	Doubler (.040)	1	
20	AN3-5A	Bolt	4	
21	AN365-1032	Nut	4	
22	AN960-10	Washer	4	

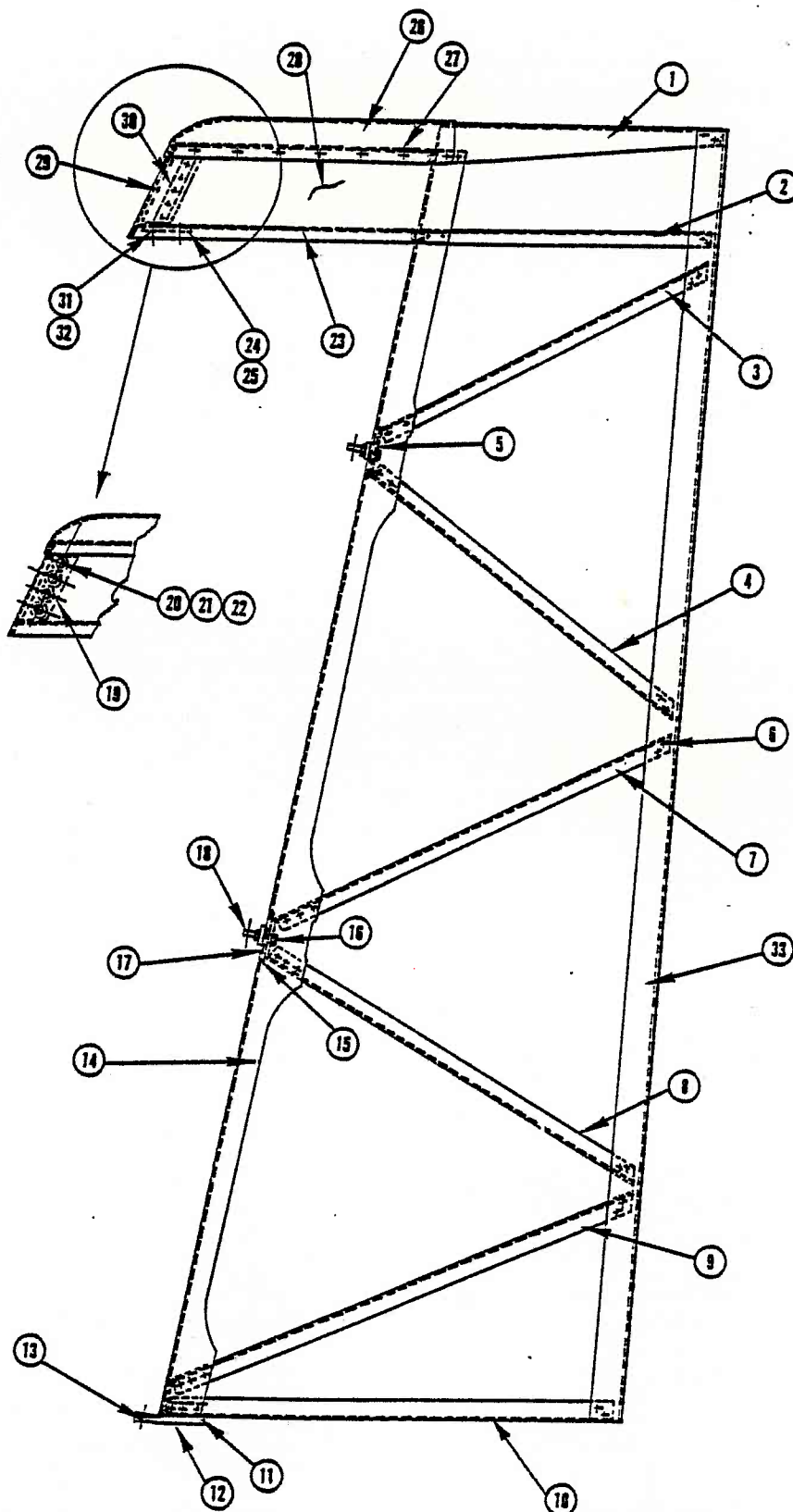
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33906-1 COVERED RUDDER ASSY

Eff. A/C #86 & Up

33700K-3 RUDDER FRAME ASSY

Eff. A/C #86 & Up



Revised 12/1/81

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33700K-1 COVERED RUDDER ASSY

Eff. A/C 86 & Up

33700K-3 RUDDER FRAME ASSY

Eff. A/C 86 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
1	33700K-27	Rib	1	
2	33700K-21	Rib	1	
3	3700K-19	Rib	1	
4	33700K-17	Rib	1	
5	26K714-29	Doubler	1	
6		#4 X 1/4 P.K. Screws	82	
7	33700K-15	Rib	1	
8	33700K-13	Rib	1	
9	33700K-11	Rib	1	
10	33700K-9	Rib	1	
11	26K714-33	Doubler	1	
12	MS20470AD4	Rivets	6	
13	33700K-33	Hinge	1	
14	33700K-5	Fwd. Spar	1	
15	26K714-31	Doubler	1	
16	AN3-5A	Bolt	4	
	AN365-1032	Nut	4	
	AN960-10	Washer	4	
17	MS20470AD4	Rivet	1	
18	10155B-4	Hinge	2	
19	33700K-45	Weight	1	394 & Up
20	AN525-832R9	Screw	4	394 & Up
21	AN364-832	Nut	4	394 & Up
22	10326A-1	Washer	4	394 & Up
23	33700K-23	Rib	1	
24	33700K-43	Ballast Weight - Eff. A/C 86 thru 279	A/R	
25	33700K-39	Ballast Weight - Eff. A/C 280 thru 393	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33700K-1 COVERED RUDDER ASSY

Eff. A/C 86 & Up

33700K-3 RUDDER FRAME ASSY

Eff. A/C 86 & Up

ITEM	PART NO.	NAME (Continued)	QTY.	MODEL
26	33700K-29	Tip	1	
27	33700K-25	Rib	1	
28	33700K-31	Skin	1	
29	33700K-35	Weight - Eff. A/C 86 thru 393	1	
30	33700K-37	Rivet Strip - Eff. A/C 86 thru 393	2	
31	MS20426AD4	Rivet - Eff. A/C 1 thru 289	10	
32	MS20601AD4-5	(Huck: Cherry-Loc Blind Rivets) Eff. A/C 290 thru 393	10	
33	33700K-7	Aft Spar	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

COVERING PROCEDURE - RUDDER

Refer to Drawing 33906D for Rudder covering details. Ceconite Procedure Manual No. 101 is also required for application of "Ceconite" fabric.

1. Drill the pilot holes in the ribs up to #30 (.1285). (Omit this step if P.K. screws and washers are to be used for fabric attachment to the ribs.)
2. Brush a coat of "Super Seam Cement" on the forward face of the spar and on the trailing edge. Allow to dry.
3. Cut two (2) pieces of fabric, each 25" X 61". Cement one edge of one piece to forward face of spar, cutting out for hinges.
4. When dry, pull fabric evenly along trailing edge and cement fast to one side by brushing and rubbing cement through fabric from outside.

NOTE: It is best to start in the center and work toward the ends, rubbing in the cement to wet the fabric thoroughly.

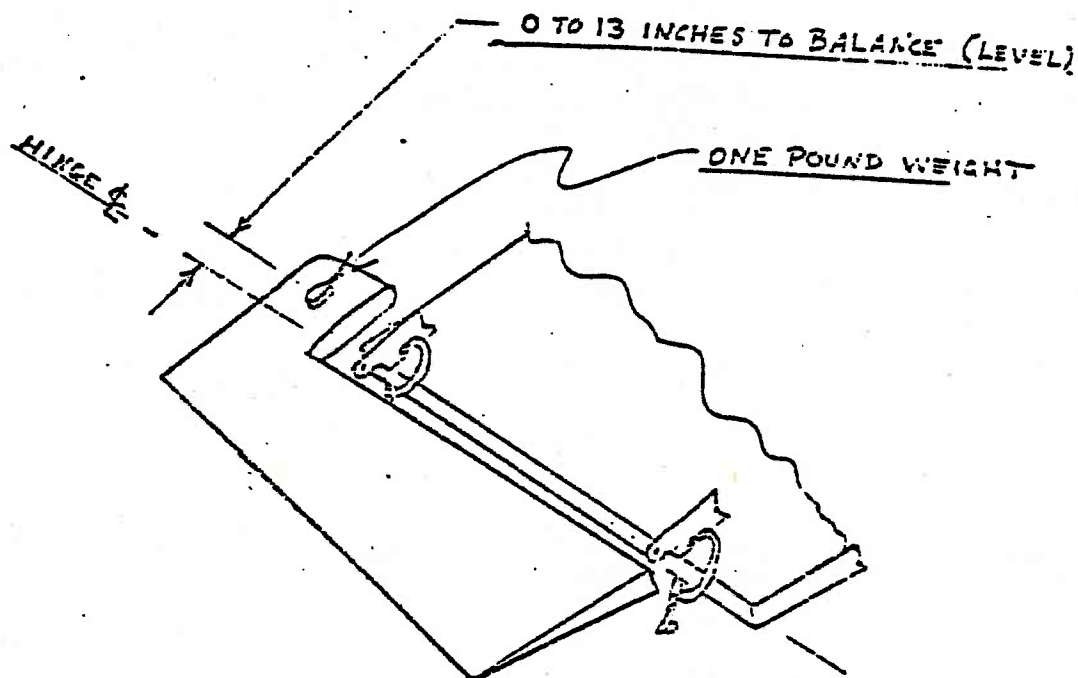
5. When the fabric is cemented fast and thoroughly dry, trim excess fabric leaving enough to wrap around the opposite side of the trailing edge.
6. Cover opposite side with remaining fabric piece, in same manner as above.
7. When cement is dry on this piece, shrink entire surface by ironing, using a household-type electric iron, using a heat setting of not greater than 400°F.
8. Brush two (2) coats of clear dope, with drying period between coats.
9. Install the P.K. screws and washers, or fabric rivets, in holes in ribs, (two (2) ribs only).
10. Apply the 2" surface tape over the two (2) ribs with attach-screws, also, over all dope lap seams.
11. Apply the -3 patch at rudder horn area as per drawing.
12. Sand lightly and spray on two (2) coats clear dope.
13. Scuff sand where necessary and spray cross coat aluminized pigmented dope over complete surface.
14. Sand and spray two (2) or three (3) coats of pigmented dope of selected color.
15. Paint and attach the -29 overhang cap using #4 X 1/4 Flathead P.K. screws, 7 each side, midspaced between existing rivets.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

COVERING PROCEDURE - RUDDER (Cont'd)

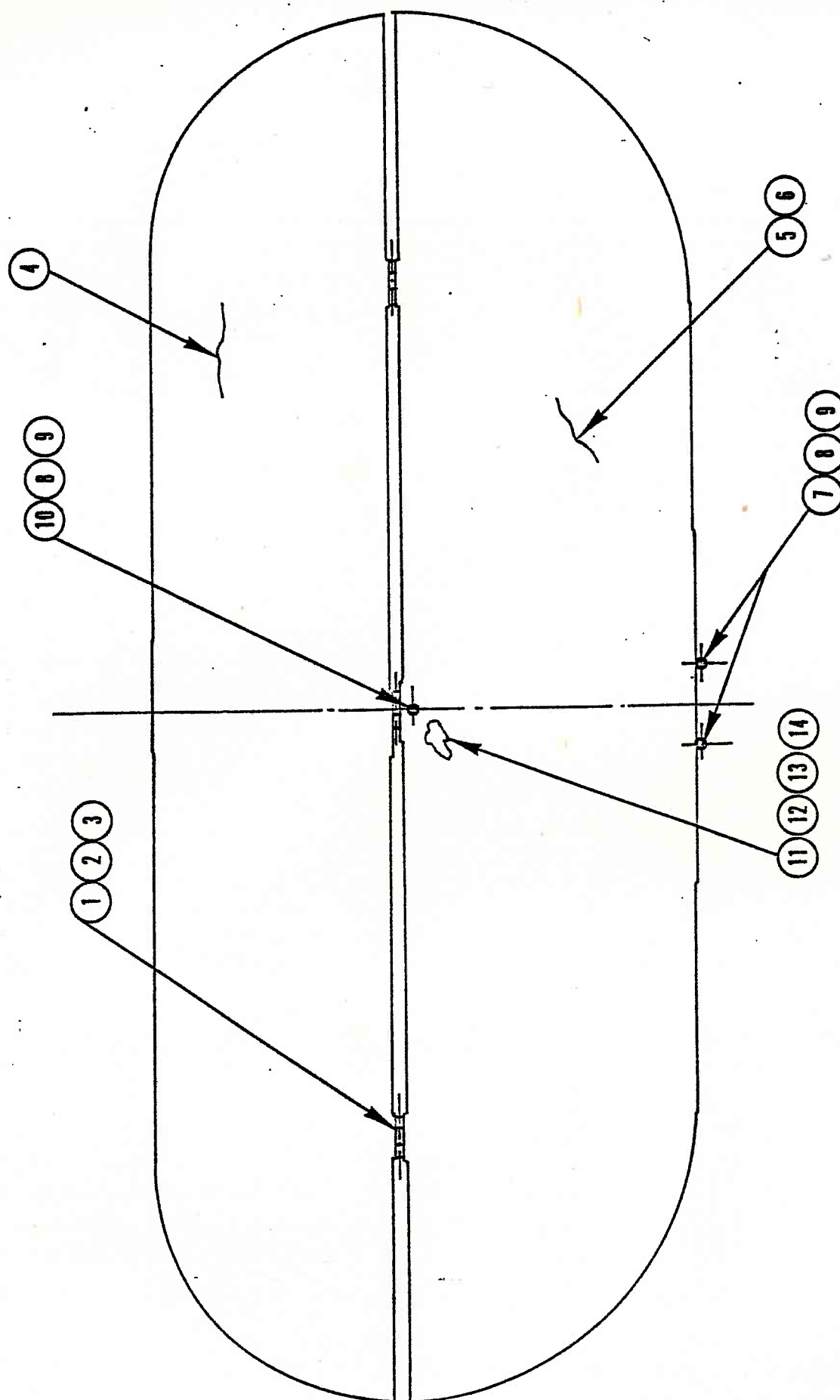
The 33700K Drawing specifies a static-balance, after all covering and finishes have been applied, of from 0 to 13 inch-pounds tail-heavy. A simple manner of checking this is to clamp two angles on the edge, and near one end, of a table or bench top - see sketch. Drill a $\frac{3}{16}$ " hole in one angle, a $\frac{1}{4}$ " hole in the other. Slip a bolt through the angles and hinges and check with a one pound weight as shown.

Should the rudder check out to be too tail-heavy, two $\frac{3}{16}$ " holes (with anchor nut-plates inside) are provided, near the forward end of the lower overhang rib, to bolt on extra weight. Use AN3 bolt.



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

HORIZONTAL TAIL SURFACE ASSY'S



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

HORIZONTAL TAIL SURFACE ASSY'S

ITEM	PART NO.	NAME	QTY.	MODEL
		Elevator to Stabilizer Attach Hardware		
1	AN394-71	Pin	3	
2	AN380-2-2	Cotter Pin	3	
3	AN960-416L	Washer	3	
4	19G800-1A	Stabilizer Assy - Eff. A/C #1 & Up		
4	19G800-1C	Stabilizer Covered Assy - Eff. A/C #1 & Up		
5	19G800-10A	Elevator Assy - Eff. A/C #1 thru 499		
5	19G800-10C	Elevator Covered Assy - Eff. A/C #1 thru 499		
6	19G800-6A	Elevator Assy - Eff. A/C #500 & Up		
6	19G800-6C	Elevator Covered Assy - Eff. A/C #500 & Up		
		Stabilizer to Aircraft Attach Hardware		
7	AN4-13A	Bolt	2	
8	AN365-428	Nut	3	
9	AN960-416	Washer	3	
10	AN4-33A	Bolt	1	
		Pushrod to Elevator Attach		
11	AN4-6	Bolt	1	
12	AN310-4	Nut	1	
13	AN380-2-2	Cotter Pin	1	
14	AN960-416	Washer	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

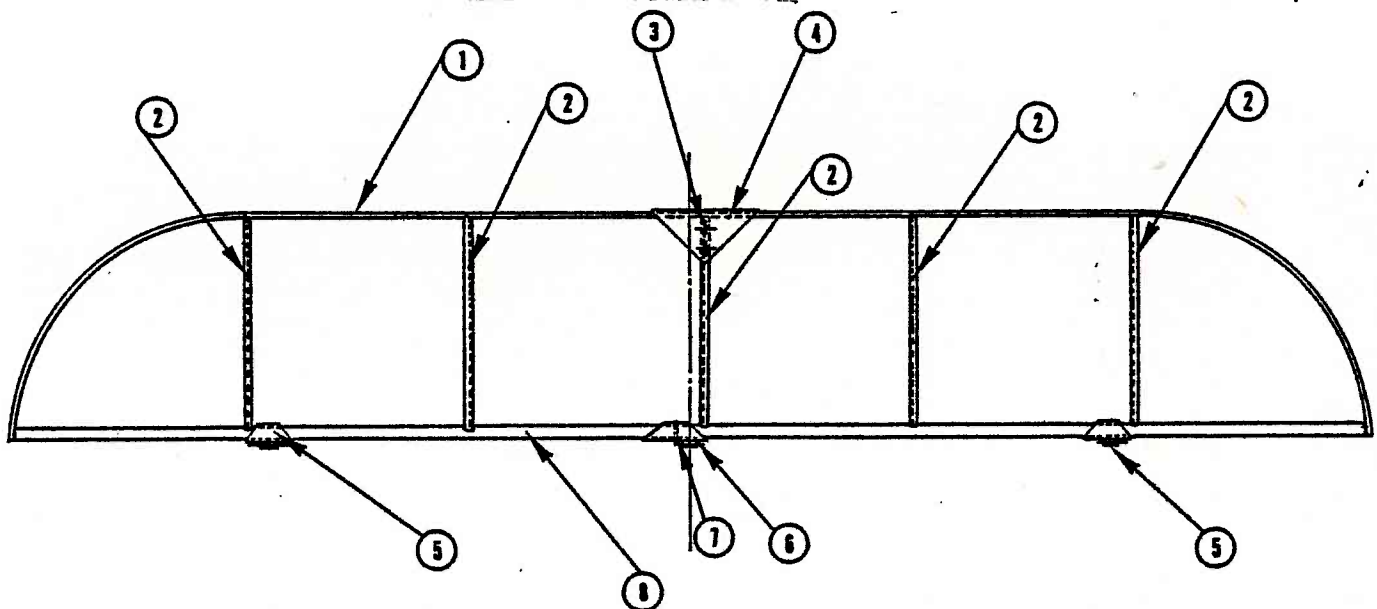
INSTALLATION OF STABILIZER AND ELEVATOR

1. It is seldom necessary to remove the elevator and stabilizer of this aircraft for normal purposes. However, if they have been removed, the following method should be used for re-assembly.
2. Place assembled elevator and stabilizer into position, with strut lugs on stabilizer on the bottom side. Secure with AN4 bolts, AN960-416L washers and AN365-428 nuts thru stabilizer front and rear spar fittings, and fuselage attach fittings.
3. Place stabilizer struts in position and secure each with 3/16" bolts, AN960-10 washer, AN310 nut and cotter pin.
4. Connect elevator push-rod to elevator horn with AN4-6 bolt, AN310-4 nut, AN960-416 washer and cotter pin. Use caution not to overtighten nut and cause binding of the elevator control.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE ELEVATOR ASS'YS

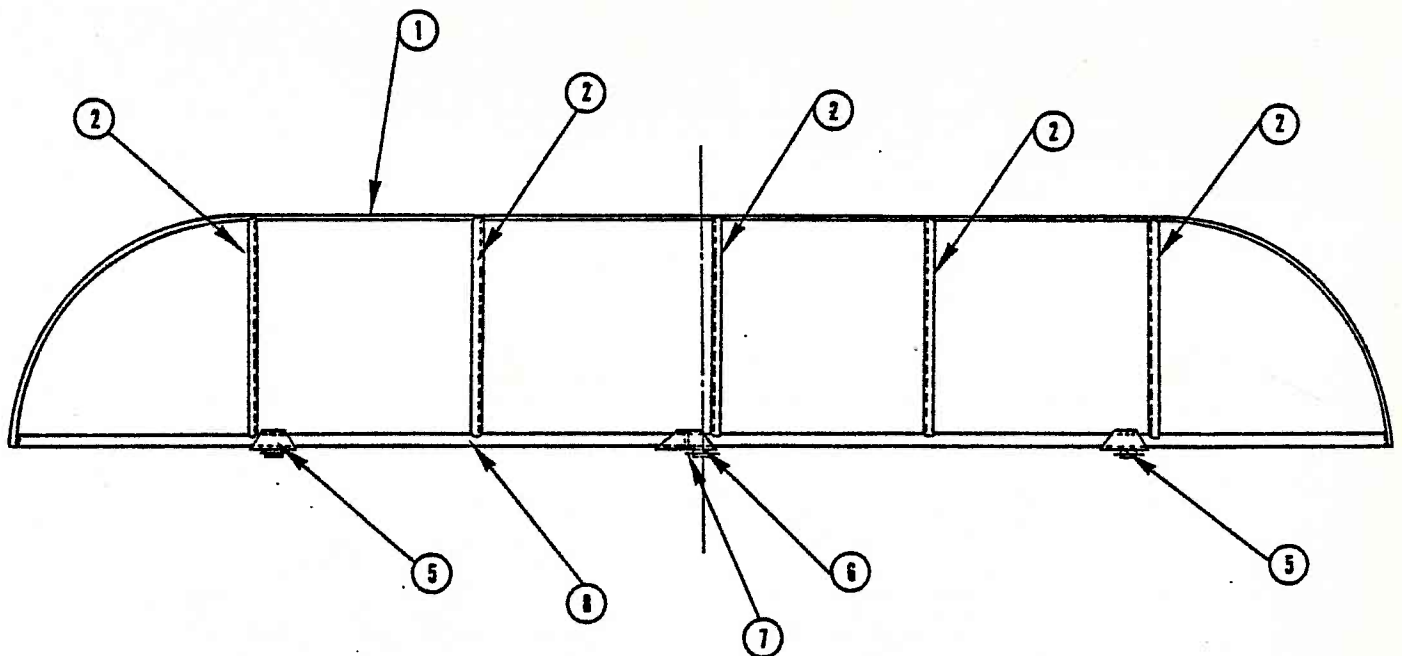
19G800-10A ELEVATOR FRAME ASSY

Eff. A/C 1 thru 499



19G800-6A ELEVATOR FRAME ASSY

Eff. A/C 500 & Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

ELEVATOR FRAME ASSYS

ITEM	PART NO.	NAME	QTY.	MODEL
	19G800-10A	Elevator Frame Assy - Eff. A/C 1 thru 499		
	19G800-10C	Elevator Covered Assy - Eff. A/C 1 thru 499		
	19G800-6A	Elevator Frame Assy - Eff. A/C 500 & Up		
	19G800-6C	Elevator Covered Assy - Eff. A/C 500 & Up		
1	19G800-8	Tube - Trailing Edge	1	
2	19D802-4A	Rib	5	
3	AN530-4-4	Screw	4	1 thru 499
4	19D800-9	Lead Weight	1	1 thru 499
5	19D801-7A	Hinge - Outboard	2	
6	19D801-1A	Hinge - Inboard	1	
7	19B803-1A	Horn	1	
8	19G800-7	Tube, Leading Edge	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

COVERING PROCEDURE - ELEVATOR

Refer to Drawing 19D-915 for covering details. Also Ceconite Procedure Manual No. 101 is a required reference when "Ceconite" fabric is to be used.

1. Drill the pilot holes in rib flanges to #30 (.1285). (Omit this step if P.K. screws and washers are to be used for fabric attachment to ribs.)
2. Brush a coat of "Super Seam Cement" on leading edge tube and curved tip tubes and let dry.
3. Cut a piece of fabric 96" long and fold on center line. Drape this fabric piece over the elevator frame with the fold line centered on trailing edge tube.
4. Cement one edge of fabric to leading edge tube by brushing and rubbing "Super Seam Cement" through the fabric from outside.
5. When thoroughly dry, trim off excess fabric along leading edge tube, leaving enough to wrap half around the tube. Cement this down.
6. Pull fabric evenly around elevator and secure remaining edge of fabric around leading edge tube making a 1" fabric cement lap.
7. Trim off excess fabric at curved tip tubes and make fabric cement laps in same manner as on leading edge tube.
8. When cement is dry, shrink entire cover by ironing with a household-type electric iron, using a heat setting of not greater than 400°F.
9. Brush on two (2) coats of clear dope with drying period between coats.
10. Locate and install the fabric attach screws and washers, or fabric rivets, in the holes in the ribs.
11. Apply 2" surface tape over all ribs and fabric lap joints using clear dope.
12. Apply the 19D-915 drain grommets to under side of surface as indicated on drawing.
13. Sand, and spray two (2) coats clear dope over complete surface.
14. Scuff sand where necessary and spray a coat of aluminum pigmented dope over complete cover.
15. Sand, and spray two (2) or three (3) coats of dope, pigmented with the desired color.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

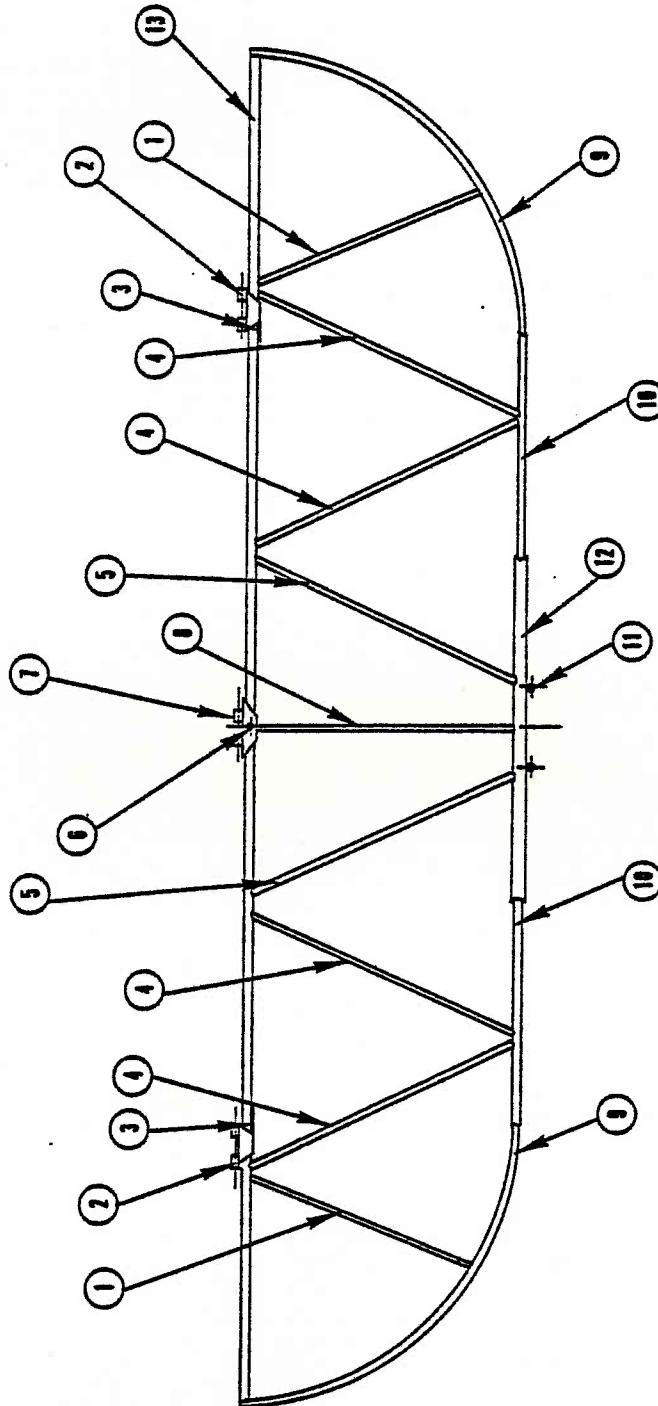
HORIZONTAL STABILIZER

19G800-11A STABILIZER ASSY

Eff. A/C #1 & Up

19G800-11C STABILIZER COVERED ASSY

Eff. A/C #1 & Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

HORIZONTAL STABILIZER

ITEM	PART NO.	NAME	QTY.	MODEL
	19G800-11A	Stabilizer Assy - Eff. A/C 1 & Up		
	19G800-11C	Stabilizer Covered Assy - Eff. A/C 1 & Up		
1	19D802-3A	Rib	2	
2	19D801-9A	Hinge	2	
3	19D804-1A	Fitting	2	
4	19D802-2A	Rib	4	
5	19D802-1A	Rib	2	
6	19D801-13A	Bushing	1	
7	19D801-4A	Hinge	1	
8	19G800-12	Tube	1	
9	19G800-3	Tube	2	
10	19G800-4	Tube	2	
11	22D802-1	Bushing	2	
12	19G800-5	Tube	1	
13	19G800-2	T.E. Tube	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

COVERING PROCEDURE - STABILIZER

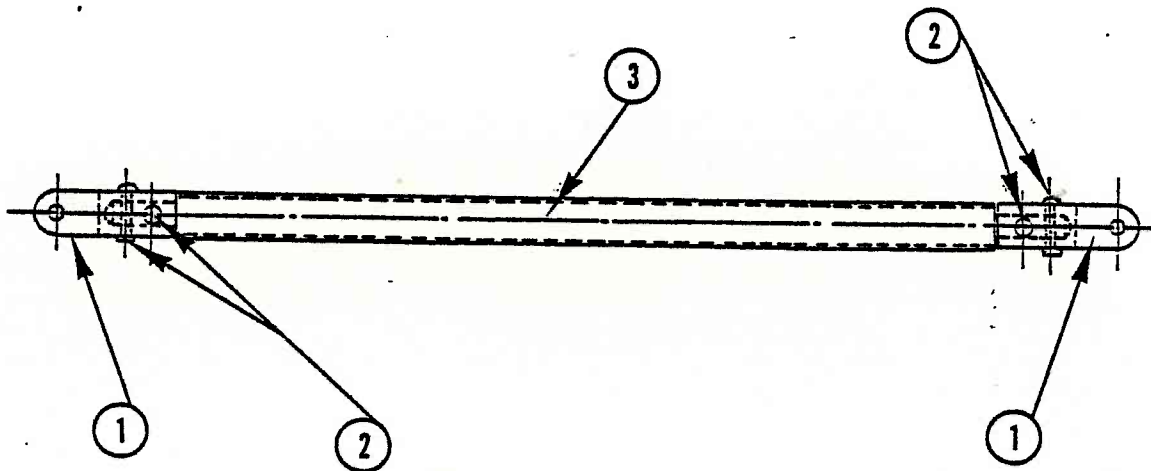
Refer to Drawing 19D-916 for details of stabilizer covering. Ceconite Procedure Manual No. 101 is also a required reference when "Ceconite" fabric is to be used for the cover.

1. Drill the pilot holes in rib flanges to #30. (.1285). (Omit this step if P.K. screws and washers are to be used for fabric attachment to ribs.)
2. Brush one coat of "Super Seam Cement" over trailing edge of stabilizer and let dry thoroughly.
3. Cut one piece of fabric 96" long and fold along center line. Drape fabric piece over stabilizer with the fold line over the trailing edge.
4. Cement one edge of cover to leading edge tube by brushing and rubbing the cement through fabric from outside. Trim fabric to reach half way around this tube.
5. Pull fabric evenly around surface of stabilizer and cement remaining edge of fabric to the leading edge tube in same manner as above making a lap seam as per Section K of this Manual (SAC F-2).
6. Slit fabric at trailing edge for hinge points to protrude and shrink entire cover by ironing with a household-type iron using a heat setting of not greater than 400°F.
7. Apply two brush coats of clear dope, drying thoroughly between coats.
8. Use an awl to punch holes through fabric to pick up the fabric-attach holes in rib flanges. Install the sheet metal screws and washers, or fabric rivets, per notes on drawing.
9. Apply 2" surface tape over all ribs and over the leading edge dope lap.
10. Apply the 19D-916-7 patch, also the 19D-916-6 patches around hinges. Apply the ten (10) pieces of -4 drain grommets to the bottom surface as per drawing.
11. Sand complete cover, being careful on high spots, and spray two (2) coats of clear dope over all.
12. Scuff sand where necessary and spray one (1) cross coat of aluminized pigmented dope.
13. Sand when dry and spray two (2) or three (3) coats of pigmented dope of the desired color.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

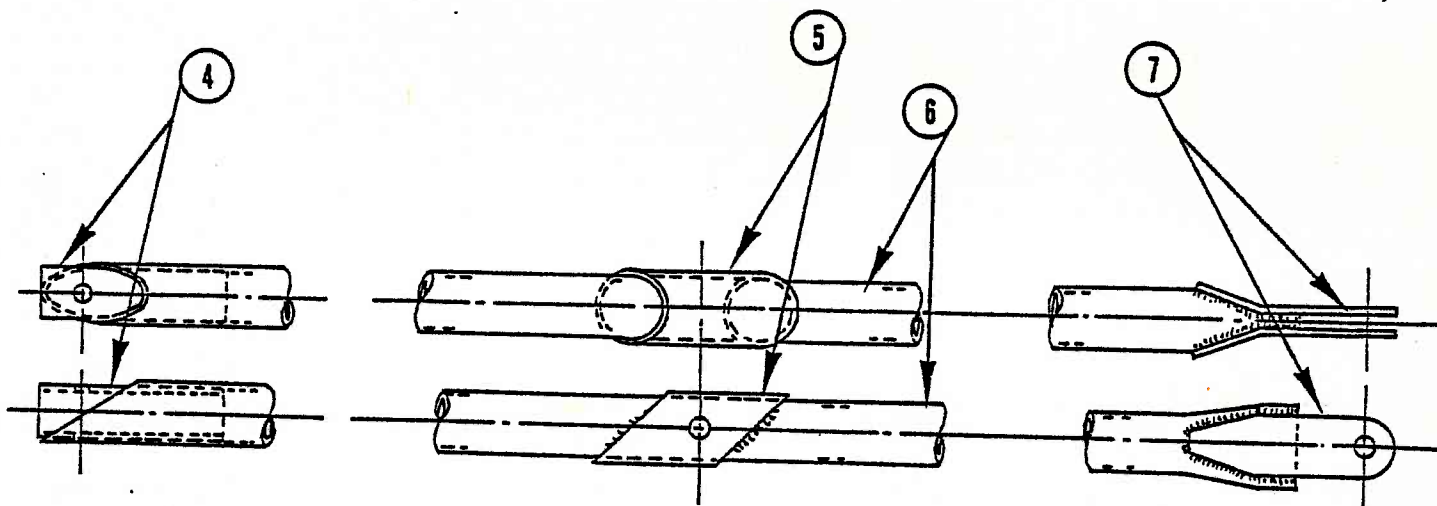
33603B-1 STABILIZER STRUT ASSY

Eff. A/C #1 & Up



22D116-4A ELEVATOR PUSH TUBE ASSY

Eff. A/C #1 & Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33603B-1 STABILIZER STRUT ASSY

22D116-4A ELEVATOR PUSH TUBE ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
		Stabilizer Strut Assy		
1	33603B-3	End Fitting	2	
2	AN435-4	Rivets	4	
3	33603B-5	Tube .56 X .028 4130N	1	
		Elevator Push Tube Assy		
4	22D116-7	Tube .63 X .058 4130N	1	
5	22D116-9	Tube .88 X .058 4130N	1	
6	22D116-5	Tube .75 X .035 4130N	1	
7	19A-107-1A	Fitting	2	
		Stabilizer Fuselage Strut Attach		
	AN3-7	Bolt	4	
	AN310-3	Nut	4	
	AN960-10	Washer	4	
	AN380-2-2	Cotter Pin	4	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

NOTES

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

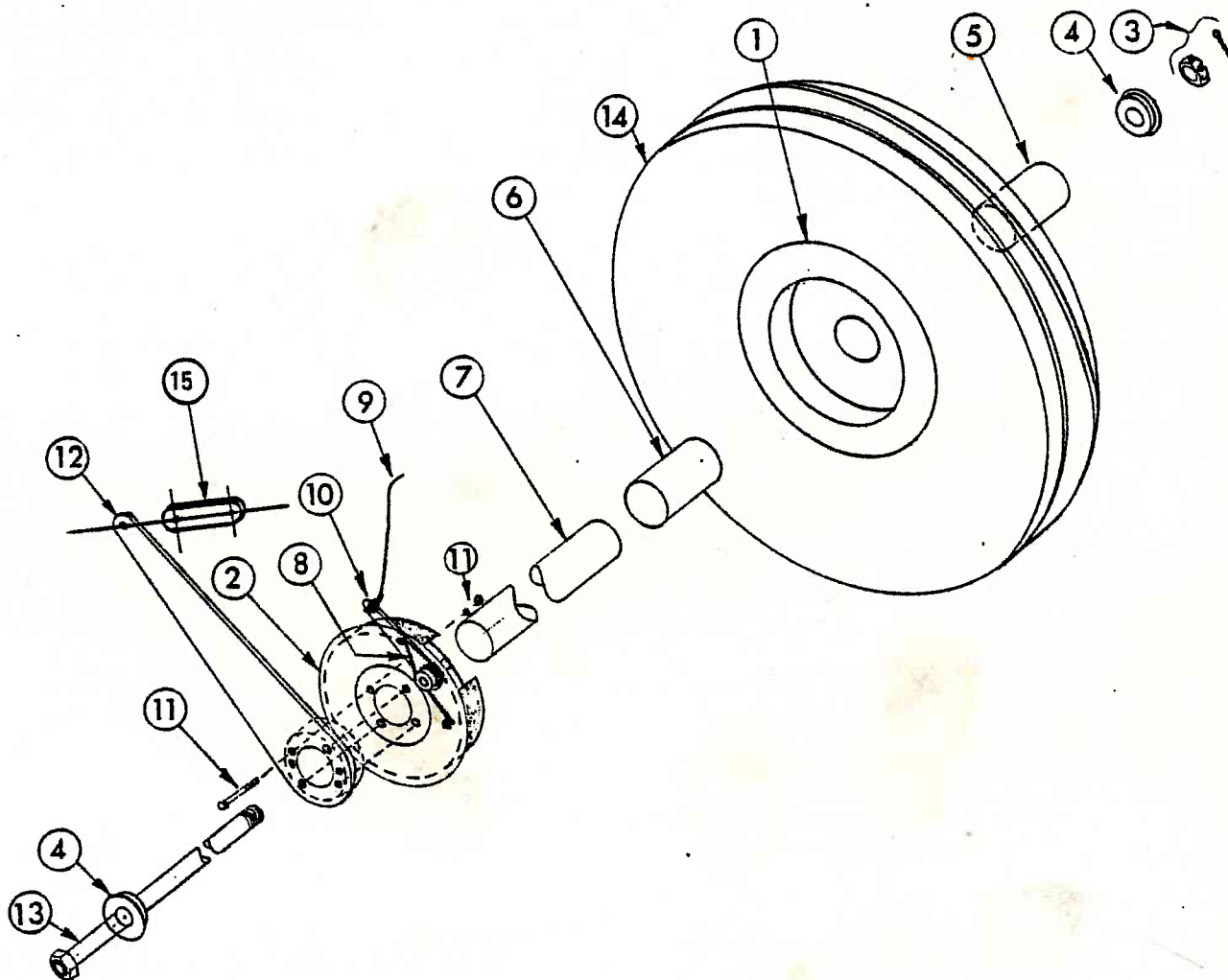
Section "H" Index

<u>TITLE</u>	<u>PAGE</u>
Main Wheel and Brake Instl.	1 thru 5
Wheel Assembly - Main	6 thru 8;
Brake Assembly	9 thru 12
Sprung Tail Wheel Instl.	13 thru 15
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Wing Tip Wheel Assembly	18,19
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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

MAIN WHEEL & BRAKE INSTALLATION

Eff. A/C 1 thru 499



Revised 12/1/81

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

WHEEL AND BRAKE INSTALLATION

(A/C 1-499)

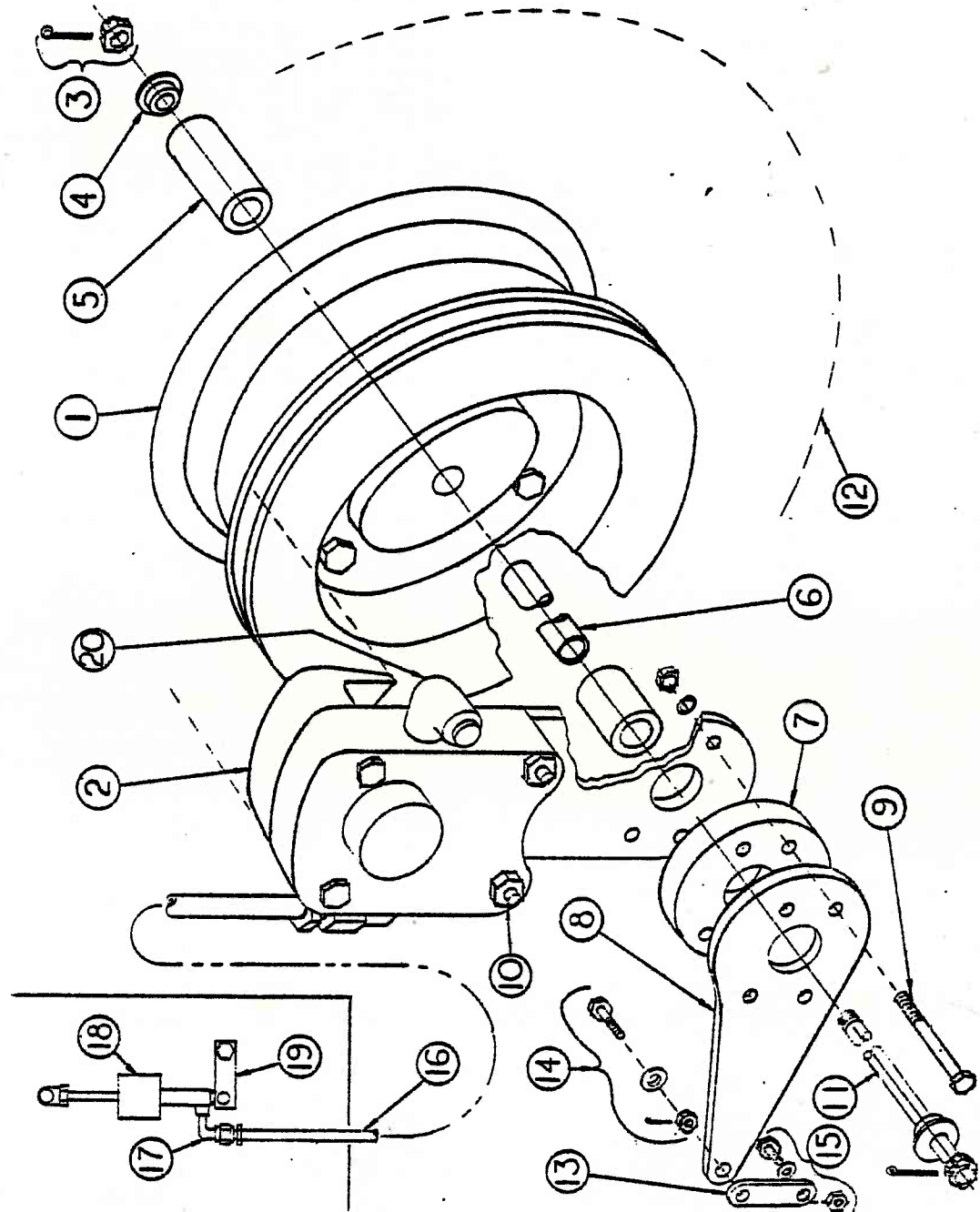
ITEM	PART NO.	NAME	QTY.	MODEL
1	40-7 (3050A)	Cleveland 6.00 X 6 Wheel		
2	30-3	Cleveland Brake Assembly		
3	AN320-10	Nut		
3	AN380-34	Cotter Pin		
4	19A221-1	Axle Bushings	2	
5	22 209-3	Spacer Tube		
6	22 209-6	Spacer Tube		
7	22 202-6	Axle Tube		
8	22 210-100	Brake Return Spring		
9	22 173-5	Brake Cable Assy		
10	AN3-5	Bolt		
10	AN310-3	Nut		
10	AN960-1016	Washer		
10	AN380-2-3	Cotter Pin		
11	AN4-14A	Bolt	4	
11	AN365-428	Nuts		
11	AN960-416	Washer		
12	22 209-5	Torque Arm		
13	33 201-1	Axle Shaft Assy		
14	6.00 X 6	4 Ply Tire (TSO C-62b)		
14	6.00 X 6	Tube		
15	22200-4	Link		
Reference: Drawing 7112A Wheel Assembly & Spares				

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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

MAIN WHEEL & BRAKE INSTALLATION

Eff. A/C 500 & Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

HYDRAULIC WHEEL AND BRAKE INSTALLATION

(A/C 500 & Up)

ITEM	PART NO.	NAME	QTY.	MODEL
1		Cleveland 40-97D Wheel		
2		Cleveland 30-63D Brake		
3	AN320-10	Nut		
3	AN380-3-4	Cotter Pin		
4	19A221-1A	Axle Bushings	2	
5	22B202-5	Axle Tube	2	
6	22B202-6	Spacer		
7	33213D-3	Spacer		
8	33213D-1	Torque Arm		
9	AN4-11A	Bolt	4	
9	AN365-428	Nut	4	
9	AN960-416	Washer	4	
9	1A001 6-.058-.115	Bushing	4	
10	AN365-428	Nut	2	
10	AN960-416L	Washer	2	
11	33201B-1	Axle Shaft Assembly		
12	6.00 X 6	4 Ply Tire (TSO C-62b)		
12	6.00 X 6	Tube		
13	22D200-4	Link		
14	AN3-6	Bolt		
14	AN310-3	Nut		
14	AN380-2-2	Cotter		
14	AN960-10	Washer		
15	AN4-5A	Bolt		
15	AN365-428	Nut		
15	AN960-416	Washer		

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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

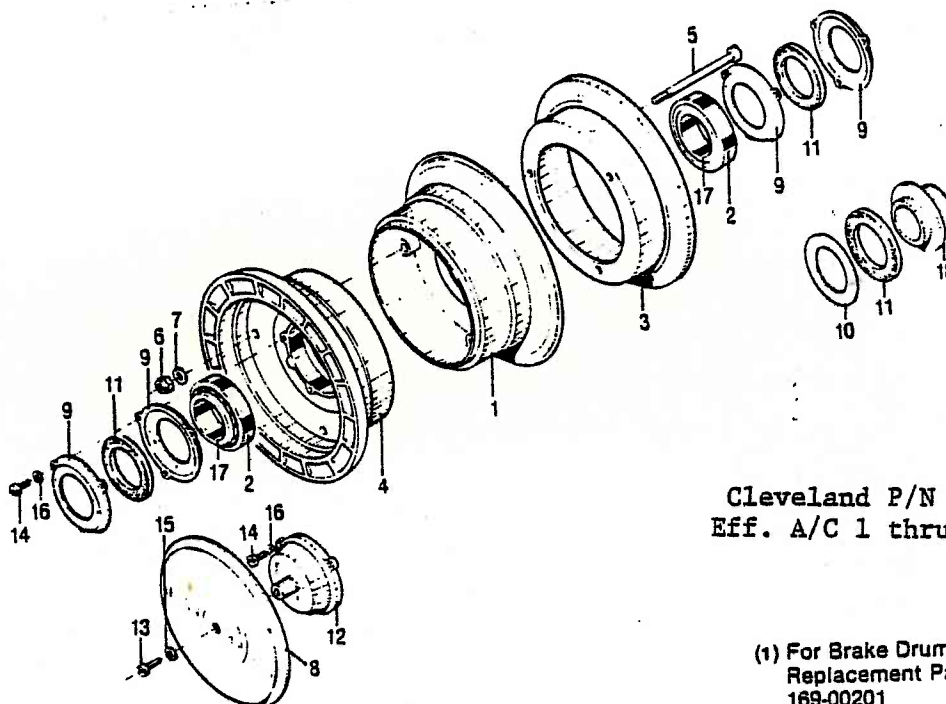
HYDRAULIC WHEEL AND BRAKE INSTALLATION

(Continued)

ITEM	PART NO.	NAME	QTY.	MODEL
16	K5-CY03-Q4NJ-Q4NJ- 18	Brake Line		
17	AN822-4D	Elbow		
18	A049-3P	Gerdes Master Cylinder		
19	33213D-5	Link	2	
20	AN914-1D	Brake Bleed Fitting		

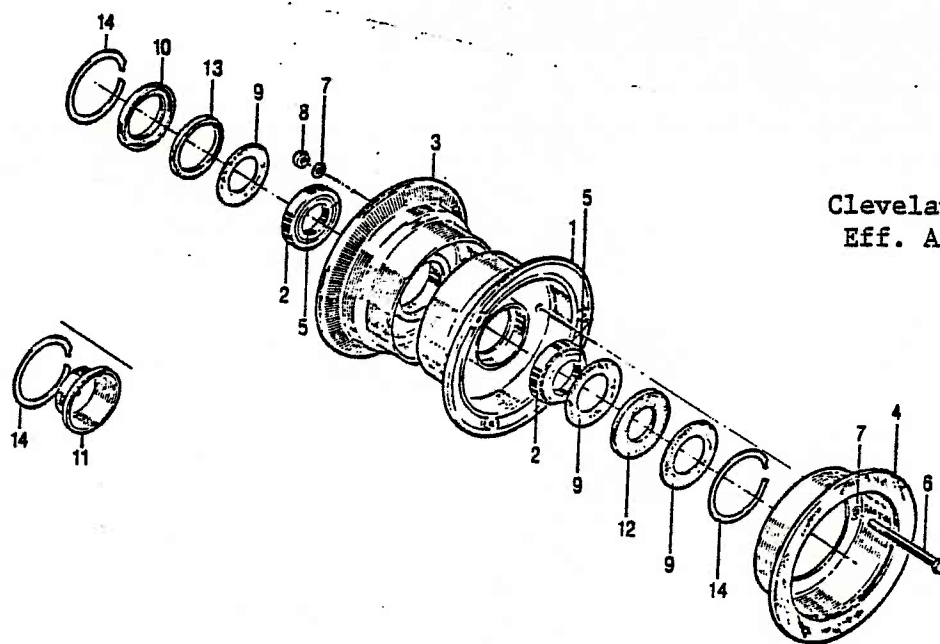
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

MAIN WHEEL ASSY



Cleveland P/N 40-7
Eff. A/C 1 thru 499

(1) For Brake Drum Assy.
Replacement Part order
169-00201
(Use Tube-Tire only)



Cleveland P/N 40-97D
Eff. A/C 500 & Up

(Portions of this section are reproduced from Parker Cleveland Wheel & Brake Catalog)

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

40-7 WHEEL ASSY

Eff. A/C 1-499

ITEM	PART NO.	NAME	QTY.	MODEL
1	161-00700	Inner Wheel Half Assy	1	
2	13836	Cup - Bearing Timkin	1	
3	169-00201	Brake Drum Assy	1	
4	162-00600	Outer Wheel Half Assy	1	
5	103-11000	Bolt	3	
6	094-10300	Nut	3	
7	095-10400	Washer	3	
8	157-00200	Shield - Dust	1	
9	153-00500	Ring - Grease Seal		
10	153-00300	Ring - Grease Seal	1	
11	154-00500	Felt - Grease Seal	1	
12	158-00200	Cap - Hub	1	
13	102-25100	Screw	1	
14	102-05100	Screw	3	
15	095-15400	Lock - Washer	1	
16	095-15100	Lock - Washer	3	
17	13889	Cone Bearing Timkin	2	
18	067-00300	Spacer - Inner Shldr.	1	

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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

40-97D MAIN WHEEL ASSY

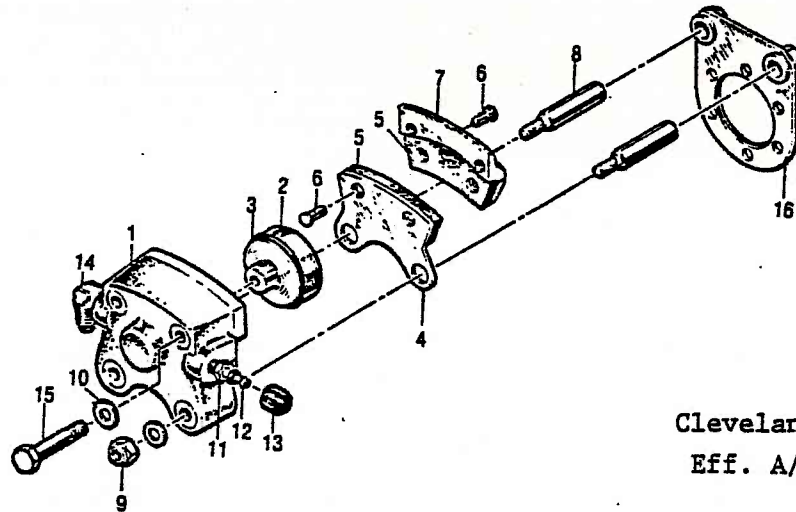
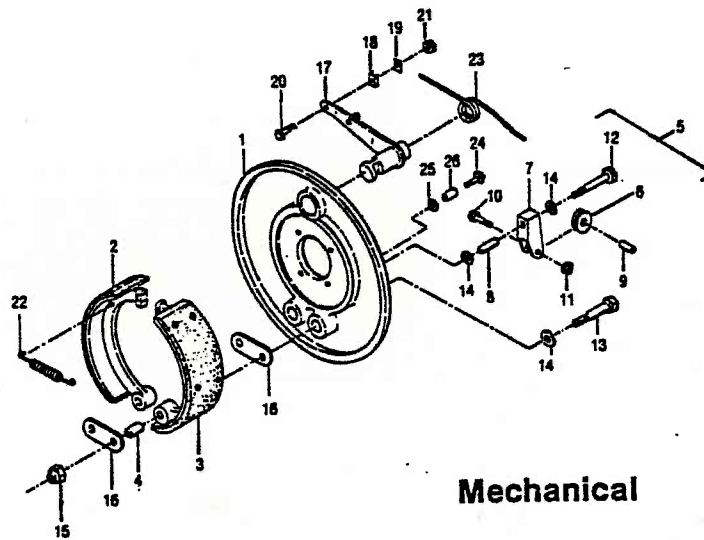
Eff. A/C 500 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
1	061-03000	Inner Wheel Half Assy	1	
2	214-00100	Cup - Bearing	1	
3	162-02700	Outer Wheel Half Assy	1	
4	164-02601	Brake Disc Assy	1	
5	214-00200	Cone - Bearing	2	
6	103-20400	Bolt	3	
7	095-10500	Washer	3	
8	094-10400	Nut	3	
9	153-00400	Ring - Grease Seal	2	
9	153-00300	Ring - Grease Seal	1	
10	153-01500	Ring - Grease Seal	1	
12	154-00300	Felt - Grease Seal	1	
13	154-01300	Felt - Grease Seal	1	
14	155-00100	Ring - Snap	2	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

BRAKE ASSY - MAIN

Cleveland P/N 30-3
Eff. A/C 1 thru 499



Cleveland P/N 30-63D
Eff. A/C 500 & Up

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

30-3 BRAKE ASSY - MAIN

Eff. A/C 1 thru 500 -

ITEM	PART NO.	NAME	QTY.	MODEL
1	065-00800	Plate - Torque	1	
2	172-00202	Shoe Assy	1	
2	139-04602	Shoe Sub Assy	1	
2	066-00500	Lining	1	
2	145-00300	Bushing	1	
2	105-00300	Rivet	6	
2	089-00200	Plate - Wear	1	
3	172-00201	Shoe Assy	1	
3	139-04601	Shoe Sub Assy	1	
3	066-00500	Lining	1	
4	145-00300	Bushing	1	
4	105-00300	Rivet	6	
4	089-00200	Plate - Wear	1	
5	174-00100	Pulley - Bracket Assy	1	
6	179-00100	Pulley Cable	1	
7	173-00100	Bracket Pulley	1	
8	145-00400	Bushing	1	
9	145-00500	Bushing	1	
10	103-00200	Bolt	1	
11	094-10200	Nut	1	
12	103-10600	Bolt	1	
13	103-10400	Bolt	1	
14	095-10400	Washer	3	
15	094-10300	Nut	2	
16	093-00200	Plate - Anchor Bolt	2	
7	181-00100	Cam. Assy	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

30-3 BRAKE ASSY - MAIN

Eff. A/C 1 thru 500

(Continued)

ITEM	PART NO.	NAME	QTY.	MODEL
17	175-00100	Cam - Brake	1	
17	177-00100	Pin - Brake	1	
17	178-00100	Lever - Cam	1	
18	176-00200	Clip - Washer	1	
19	176-00100	Clip - Washer	1	
20	103-00100	Bolt	1	
20	094-10200	Nut	1	
			1	
22	082-00400	Spring	1	
23	22B210-100	Spring	1	
24	095-00200	Washer	1	
25	145-00600	Bushing	1	

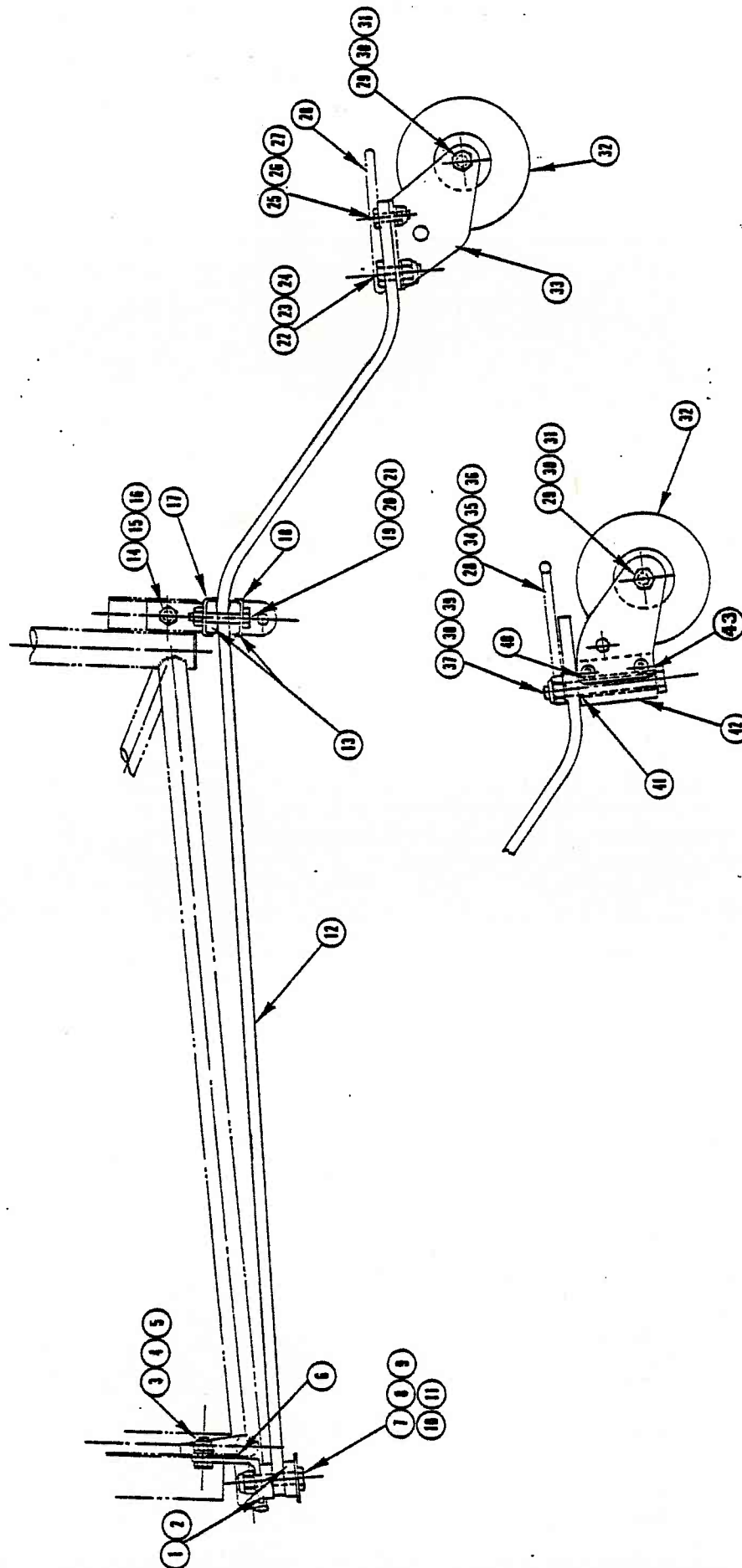
Revised 12/1/81

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

BRAKE ASSY - MAIN CLEVELAND P/N 30-63D
Eff. A/C 500 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
	091-02200	Cylinder Assy	1	
1	061-01900	Cylinder	1	
1	092-01700	Piston Assy	1	
2	062-01600	Piston	1	
3	101-05200	"O" Ring	1	
3	073-01100	Pressure Plate Assy	1	
4	063-01200	Plate - Pressure	1	
5	066-03000	Lining	1	
6	105-00200	Rivet	2	
6	074-01000	Back Plate Assy	1	
7	064-01500	Plate - Back	1	
7	066-03000	Lining	1	
7	105-00200	Rivet	2	
8	069-00400	Bolt - Anchor	2	
9	094-10300	Nut	2	
10	095-10200	Washer	4	
11	081-00100	Seat - Bleeder	1	
12	079-00300	Screw - Bleeder	1	
13	183-00100	Can - Bleeder	1	
15	103-11600	Bolt - Lock	2	
16	075-05200	Torque Plate Assy		

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE



SPRUNG TAIL WHEEL INSTALLATION (Optional)

- 33209G-1 Tail Wheel Inst'l - Fixed
- 33210G-1 Rixed Tail Wheel Assy
- 33209G-3 Tail Wheel Inst'l - Swivel
- 33210G-3 Swivel Tail Wheel Assy

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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SPRUNG TAIL WHEEL (OPTIONAL)

TEM	PART NO.	NAME	QTY.	MODEL
1	33212D-15	Block	2	1 thru 554
2	33212D-25	Block	2	555 & Up.
3	AN3-5A	Bolt	2	
4	AN960-10	Washer	2	
5	AN365-1032	Nut	2	
6	33212D-17	Bracket A/C 555 & Up & All Spares	1	
7	AN4-13A	Bolt	1	
8	AN365-428	Nut	1	
9	AN960-416	Washer	1	
10	AN970-4	Washer	1	
11	33212D-3	Bracket Assy with Nut Plate - - - - -	Deleted for	Spares
12	33210G-5	Spring	1	
13	33212D-21	Block	2	
14	AN3-11A	Bolt	1	
15	AN365-1032	Nut	1	
16	AN960-10	Washer	1	
17	33212D-1	Bracket Assy	1	
18	33212D-5	Bracket Assy	1	
19	AN3-12A	Bolt	2	
20	AN365-1032	Nut	2	
21	AN960-10	Washer	2	
22	AN5-6A	Bolt	1	
23	AN960-516	Washer	1	
24	AN365-524	Nut	1	
25	AN3-6A	Bolt	1	
26	AN960-10	Washer	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SPRUNG TAIL WHEEL (OPTIONAL)

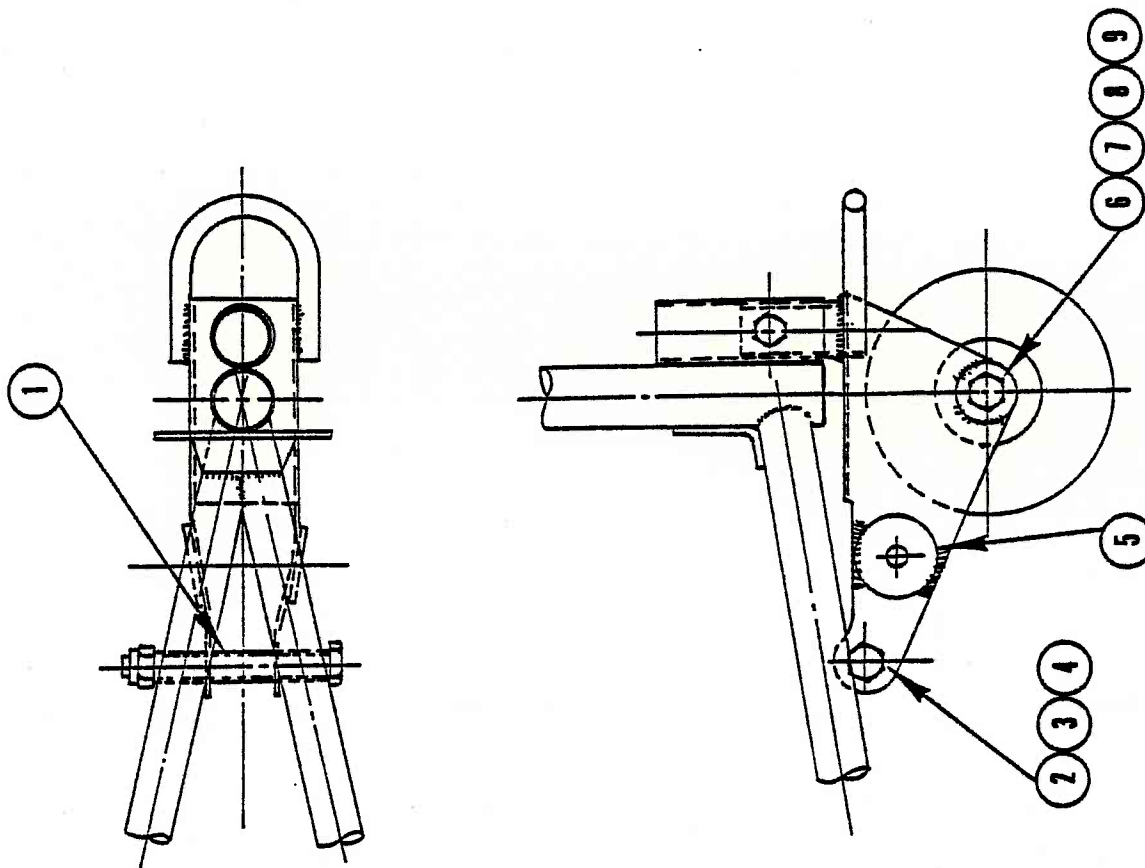
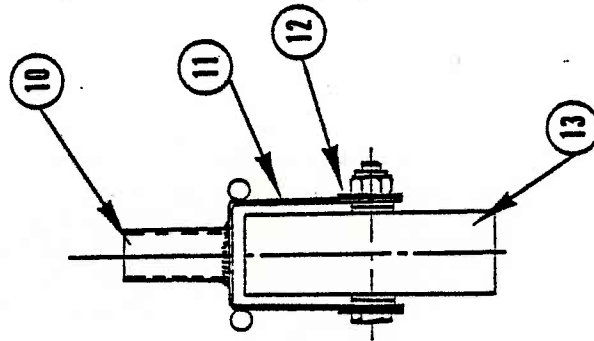
ITEM	PART NO.	NAME	QTY.	MODEL
27	AN365-1032	Nut	1	
28	33917B-1	Tie Down Fitting	Optional	
29	AN4-17A	Bolt	1	
30	AN364-428	Nut	1	
31	AN960-416	Washer	1	
32	1B220-1A	Wheel Assy	1	
33	33210G-7	Bracket	1	
34	AN509-10R13	Screw - use with 33917B-1	(1) Optional	
35	AN365-1032	Nut - use with 33917B-1	(1) Optional	
36	AN960-10	Washer - use with 33917B-1	(1) Optional	
37	AN5-24A	Bolt	1	
38	AN960-516L	Washer	2	
39	AN365-524	Nut	1	
40	1A-001-7-58-181	Bushing	1	
41	AN960-716L	Washer	1	
42	33211B-1	Swivel Assy	1	
43	AN960-716L	Washer	1	

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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22D203-1A TAIL WHEEL ASSY

22D203-8A TAIL WHEEL ASSY WITH TIEDOWN



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

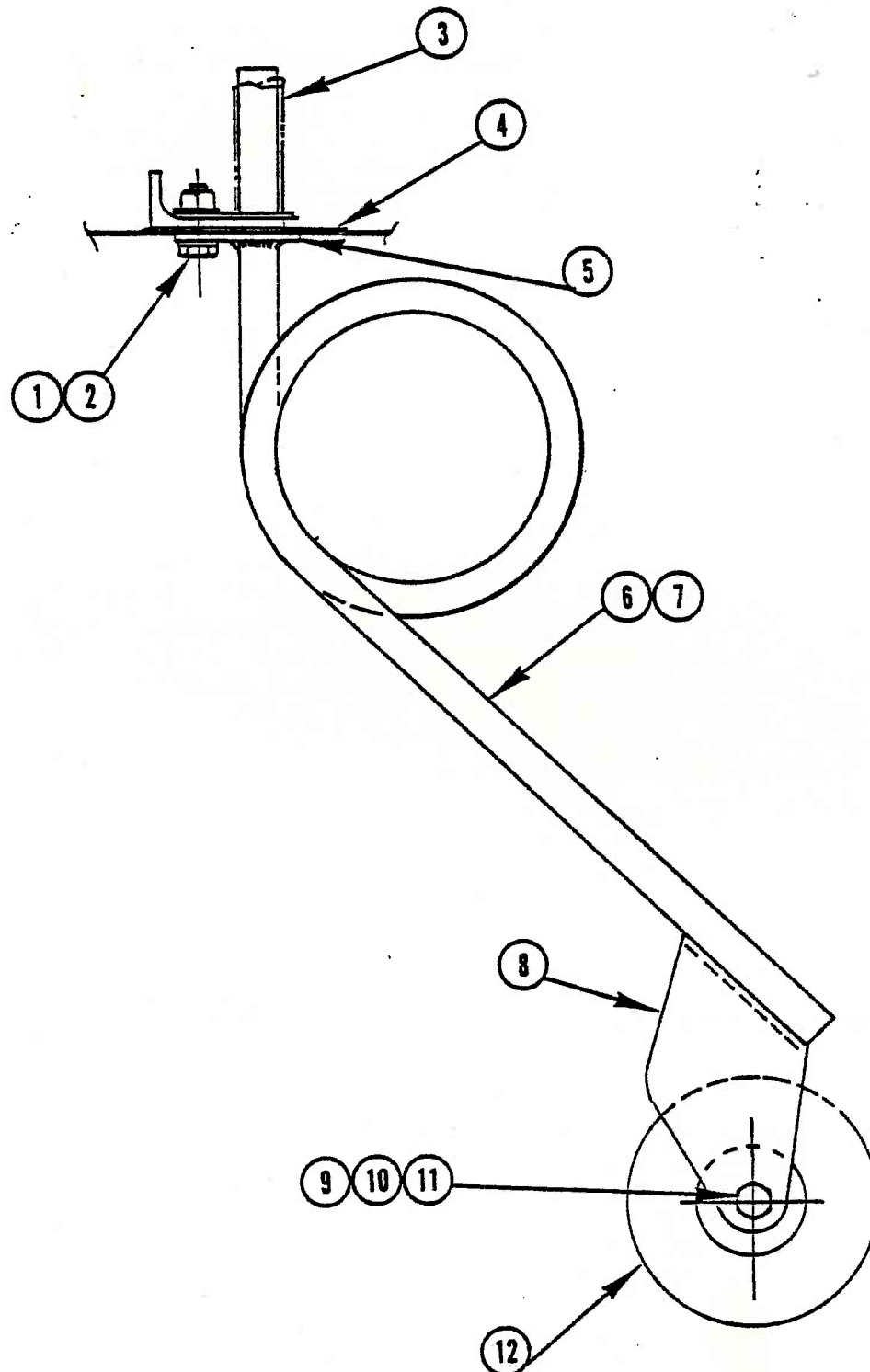
22D203-1A TAIL WHEEL ASSY

22D203-8A TAIL WHEEL ASSY W. TIEDOWN

ITEM	PART NO.	NAME	QTY.	MODEL
1	22D203-4	Spacer	1	
2	AN4-25A	Bolt	1	
3	AN365-428	Nut	1	
4	AN960-416	Washer	1	
5	1A000-8-95	Slug	1	
6	AN4-17	Bolt	1	
7	AN310-4	Nut	1	
8	AN960-416	Washer	2	
9	AN380-2-2	Cotter Key	1	
10	22D203-3	Support Tube	1	
11	22D203-6A	Wheel Bracket	1	
11	22D203-7A	Wheel Bracket with Tiedown	(1) Optional	
12	1A000-6-49	Washer	2	
13	1B220-1A	Tail Wheel	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33208D-27 WING TIP WHEEL ASSY



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33208D-27 WING TIP WHEEL ASSY

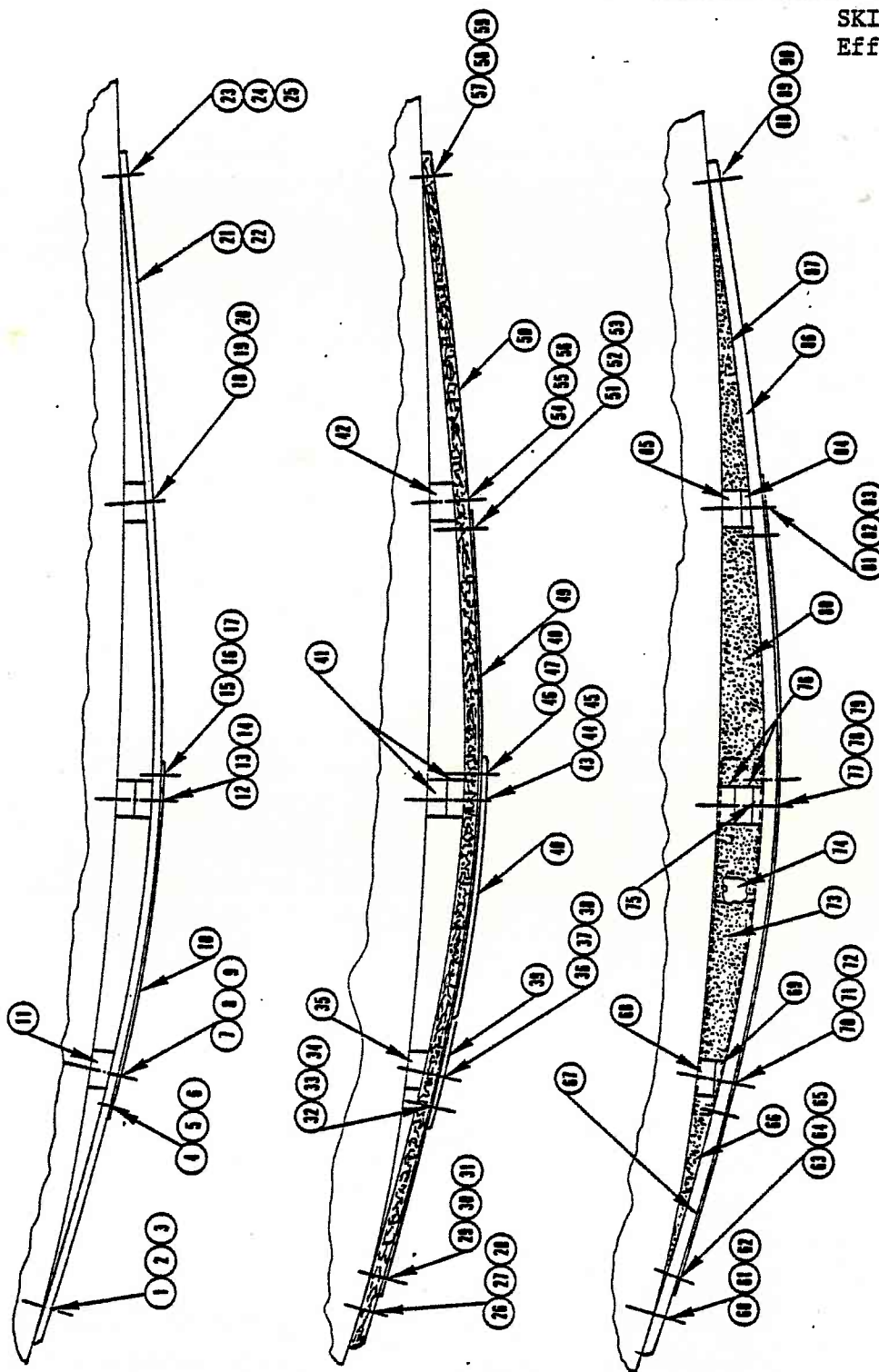
EM	PART NO.	NAME	QTY.	MODEL
1	AN3-6A	Bolt	1	
2	AN960-10	Washer	1	
3	33204D-3	Tube (Ref.)	1	
4	33401-55	Coubler (Reg.)	1	
5	32234G-11	Lug	1	
6	33208D-29	Spring Weld Assy	1	
7	33208D-31	Spring	1	
8	22H237-17	Bracket	1	
9	AN4-17A	Bolt	1	
10	AN364-428	Nut	1	
11	AN960-416	Washer	1	
12	1B220-1A	Wheel	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33217D-5 ALUM SKID (OPT)
Eff. A/C 564 & Up
& Retrofit

22D201 WOOD SKID
Eff. A/C 1 thru 564

22G219G-1 WOOD C.G. TOW RELEASE
SKID
Eff. A/C 1 thru 563
33217D-1 ALUM. C.G. TOW RELEASE
SKID
Eff. A/C 564 & Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33217D-5 ALUM SKID
Eff. A/C 564 & Up & Retrofit

EM	PART NO.	NAME	QTY.	MODEL
1	AN510-416-16	Screw *	2	
2	AN960-416	Washer	2	
3	AN365-428	Nut *	2	
4	AN510-416-18	Screw *	2	
5	AN960-416	Washer	2	
6	AN365-428	Nut *	2	
7	AN510-416-32	Screw *	2	
8	AN960-416	Washer	2	
9	AN365-428	Nut *	2	
10	33205D-7	Aux. Shoe	1	
11	1A-211	Block	4	
12	AN510-416-48	Screw *	2	
13	AN960-416	Washer	2	
14	AN365-428	Nut *	2	
15	AN510-416-18	Screw *	2	
16	AN960-416	Washer	2	
17	AN365-428	Nut *	2	
18	AN510-416-32	Screw *	2	
19	AN960-416	Washer	2	
20	AN365-428	Nut *	2	
21	33217D-3	Skid - Alum (C.G. Tow)	1 Optional	
22	33217D-7	Skid - Alum	1	
23	AN510-416-16	Screw *	1	
24	AN960-416	Washer	1	
25	AN365-428	Nut *	1	

* See Pg H23

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22D201 WOOD SKID
Eff. A/C 1 thru 564

ITEM	PART NO.	NAME	QTY.	MODEL
26	AN510-416-18	Screw *	2	
27	AN960-416	Washer	2	
28	AN365-428	Nut *	2	
29	AN510-416-18	Screw *	2	
30	AN960-416	Washer	2	
31	AN365-428	Nut *	2	
32	AN510-416-18	Screw *	2	
33	AN960-416	Washer	2	
34	AN365-428	Nut *	2	
35	1A211-1	Skid Blocks	4	
36	AN510-416-36	Screw *	2	
37	AN960-416	Washer	2	
38	AN365-428	Nut *	2	
39	33205D-7	Shoe Aux.	1 (All Spares)	
40	33205D-3	Shoe Aux. NOT AVAILABLE FOR SPARES	1 (Limited)	
41	1A211-1	Skid Block	---	
42	1A211-1	Skid Block	---	
43	AN510-416-48	Screw *	2	
44	AN960-416	Washer	2	
45	AN365-428	Nut *	2	
46	AN510-416-18	Screw *	2	
47	AN960-416	Washer	2	
48	AN365-428	Nut *	2	
49	22D201-2	Shoe	1	
50	22D201-3	Wood Skid NOT AVAILABLE FOR SPARES	1	
51	AN510-416-18	Screw *	2	

* See Pg H23

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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22D201 WOOD SKID
Eff. A/C 1 thru 564

(Continued)

FEM	PART NO.	NAME	QTY.	MODEL
52	AN960-416	Washer	2	
53	AN365-428	Nut *	2	
54	AN510-416-48	Screw *	2	
55	AN960-416	Washer	2	
56	AN365-428	Nut *	2	
57	AN510-416-18	Screw *	1	
58	AN960-416	Washer	1	
59	AN365-428	Nut *	1	
* Commercial Screw 1/4 - 20 may be substituted for AN510 Screw and Commercial Nut 1/4 - 20 and Lockwasher may be substituted for AN365-428 Nut.				

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22G219-1 WOOD C.G. TOW SKID

33217D-1 ALUM C.G. TOW SKID

TEM.	PART NO.	NAME	QTY.	MODEL
60	AN510-416-18	Screw *	2	
61	AN960-416	Washer	2	
62	AN365-428	Nut *	2	
63	AN510-416-18	Screw *	2	
64	AN960-416	Washer	2	
65	AN365-428	Nut *	2	
66	22G219-3	Filler (Ensolute)	1	
67	22B201-2	Shoe	1	
68	1A-211-1	Block	1	
69	1A-211-2	Block	1	
70	AN510-416-40	Screw *	2	
71	AN960-416	Washer	2	
2	AN365-428	Nut *	2	
73	22G219-5	Filler (Ensolute)	1	
74	22G217-2	Fairing Alum	1	
75	1A-211-2	Block	1	
76	1A211-1	Block	2	
77	AN510-416-56	Screw *	2	
78	AN960-416	Washer	2	
79	AN365-428	Nut *	2	
80	22G219-7	Filler (Ensolute)	1	
81	AN510-416-38	Screw *	2	
82	AN960-416	Washer	2	
83	AN365-428	Nut *	2	
84	1A211-3	Block	1	
85	1A211-1	Block	1	

* See Pg H23

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22G219-1 WOOD C.G. TOW SKID

33217D-1 ALUM C.G. TOW SKID

(Continued)

ITEM	PART NO.	NAME	QTY.	MODEL
86	22G219-3	Skid (on 22G219-1) 33217D-3 Skid (on 33217D)		
87	22G219-9	Filler (Ensolute)	1	
88	AN510-416-18	Screw *	1	
89	AN960-416	Washer	1	
90	AN365-428	Nut *	1	

* See Pg H23

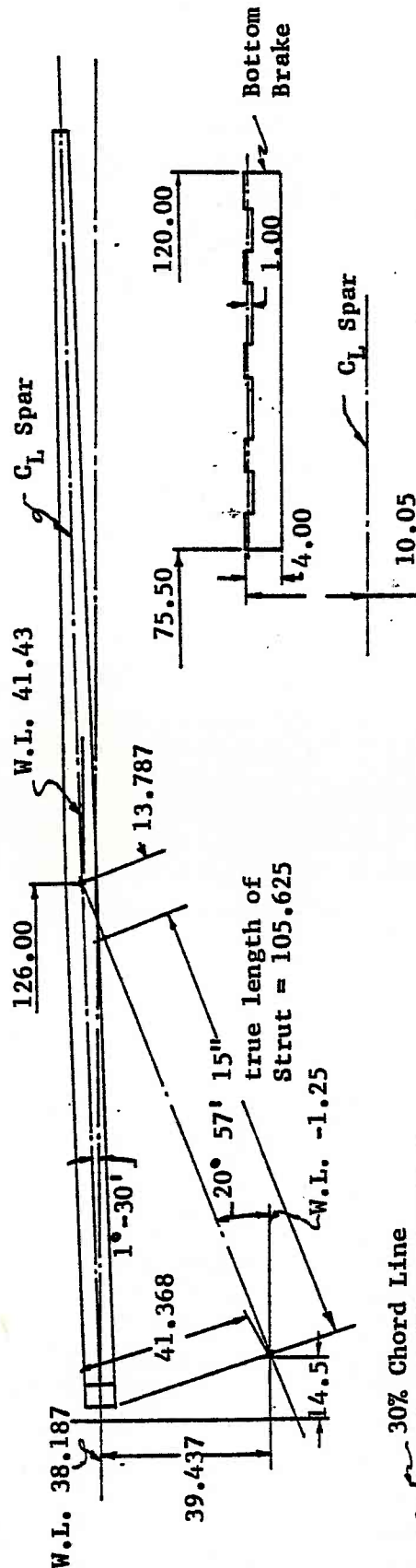
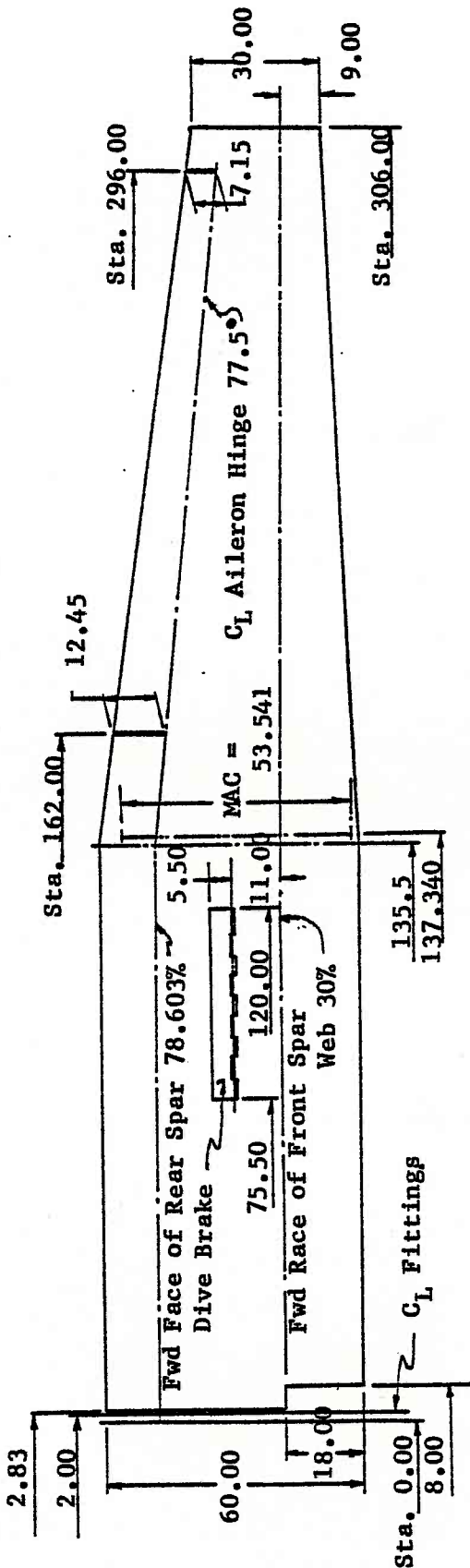
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

WING GEOMETRY



2°-31' Front Face Spar Web
87°-29'



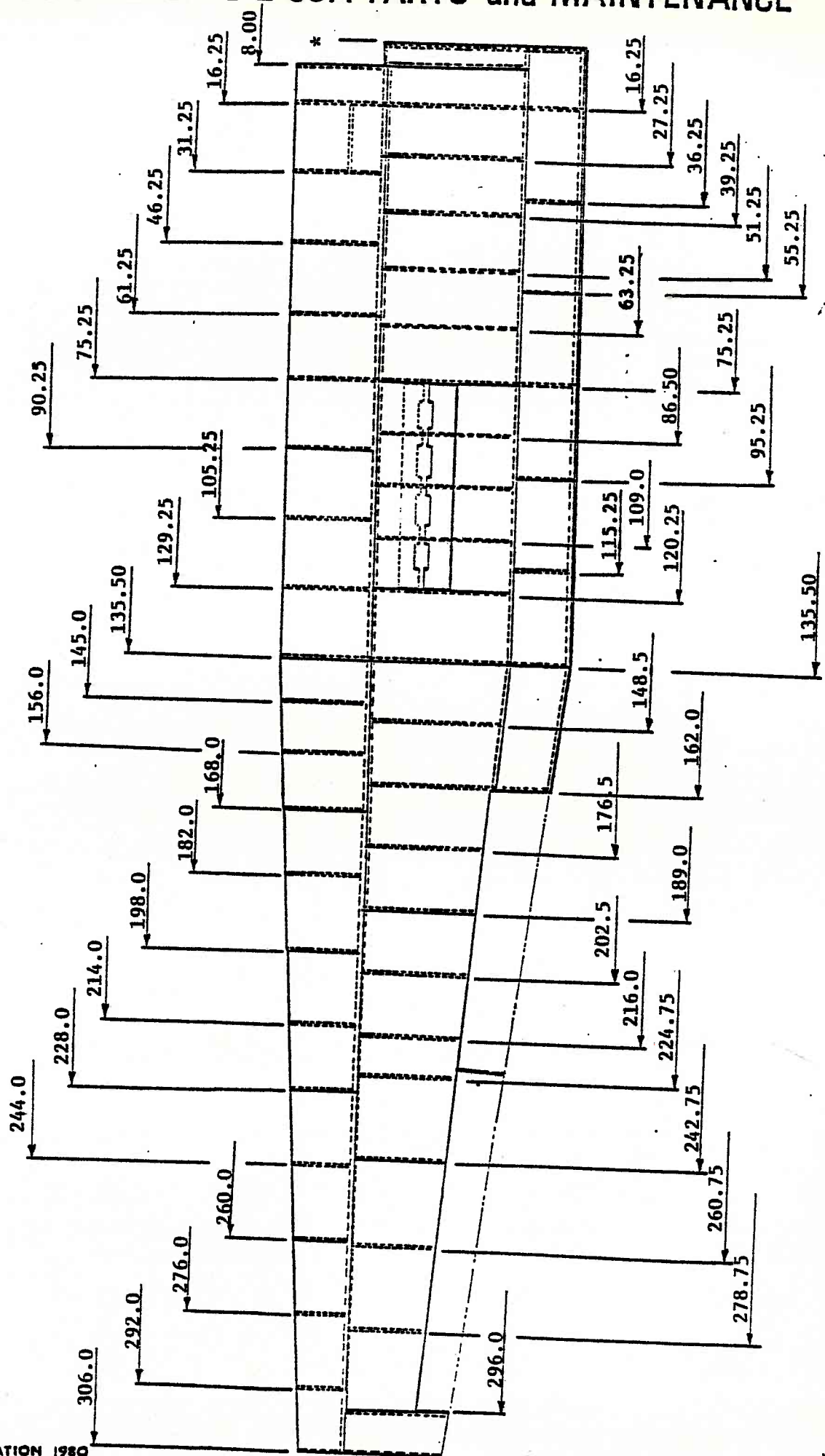
Wing Sta. 2.00
Airfoil Section = NACA 43012A
Chord = 60.00
Incidence = 4.00°
Twist = 0.00°

Wing Sta. 135.50
Airfoil Section = NACA 43012A
Chord = 60.00
Incidence = 2.315°
Twist = 1.685°

Wing Sta. 306.00
Airfoil Section = NACA 43012A
Chord = 30.00
Incidence = 1.00°
Twist = 3.00°

Wing Span = 51 ft
Wing Area = 219.48 sq ft
Aspect Ratio = 11.85
Wing Taper = .175953 in/in
Aileron Area = 18.24 sq ft
Dive Brake Area = 5.88 sq ft

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE



*Sta. 2.84

Wing Stations Typical Both Wings

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

WING COMPONENTS

33401-1	L. H. Wing Assy less Ailerons & Controls
33400-1	L. H. Wing Assy with Ailerons & Controls
33401-2	R. H. Wing Assy less Ailerons & Controls
33400-2	R. H. Wing Assy with Ailerons & Controls

SPAR COMPONENTS

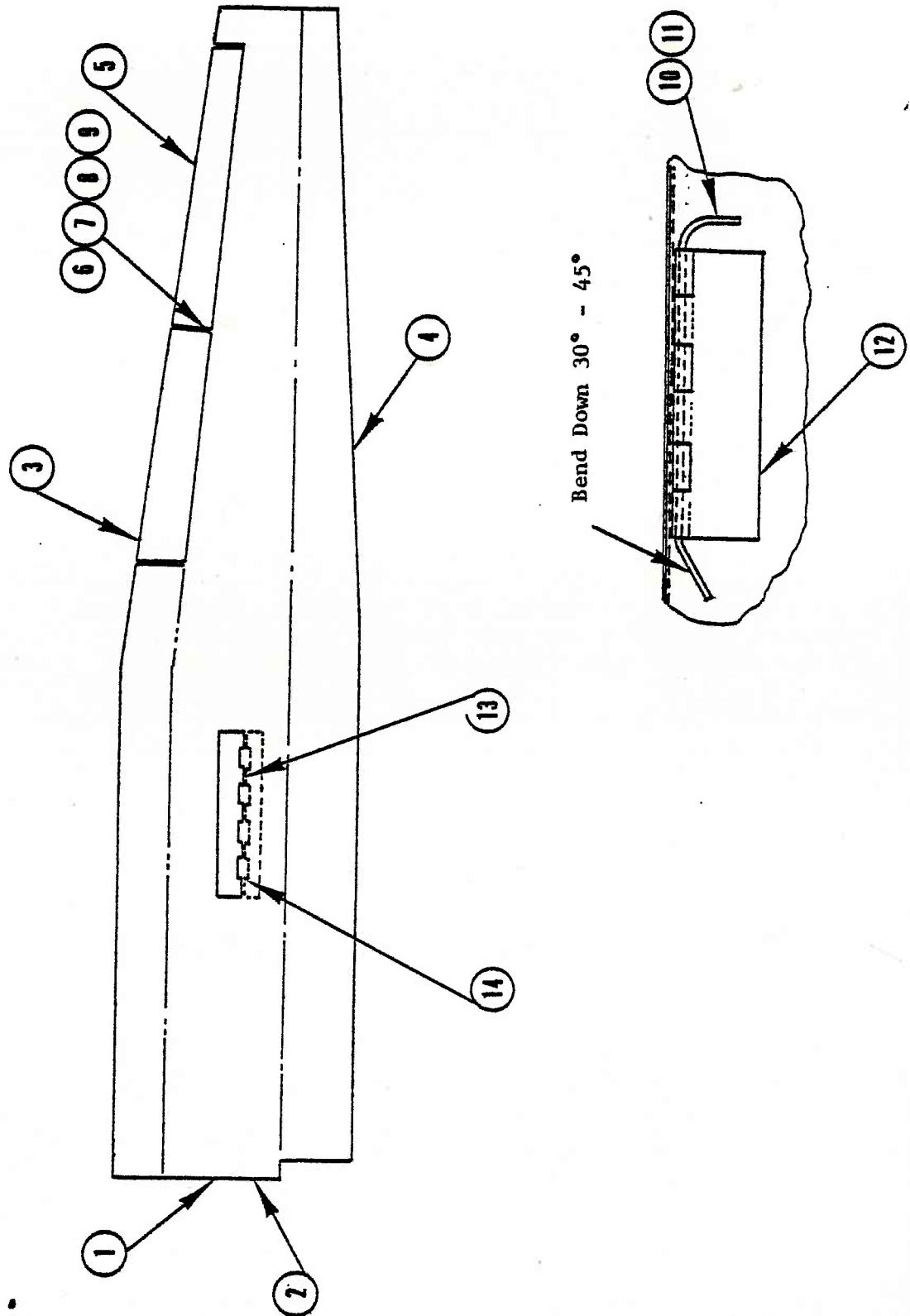
22H429-4	Rear Spar Assy (Inboard)
22H429-6	Rear Spar Web (only)
33403-2	Rear Spar Extension Assy
33403-4	Tapered Spar Assy
33404-2	False Spar Assy
33404-10	False Spar Inboard Channel only
33404-8	False Spar Outboard Channel only
33402-2	Main Spar Assy

AILERON

33501H-1	Aileron Assy L. H. Inboard
33501H-2	Aileron Assy R. H. Inboard
33501H-3	Aileron Assy L. H. Outboard
33501H-4	Aileron Assy R. H. Outboard

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33400G-1 WING ASSY L. H. Complete
33400G-2 WING ASSY R. H. Complete



Revised 2-3-83

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

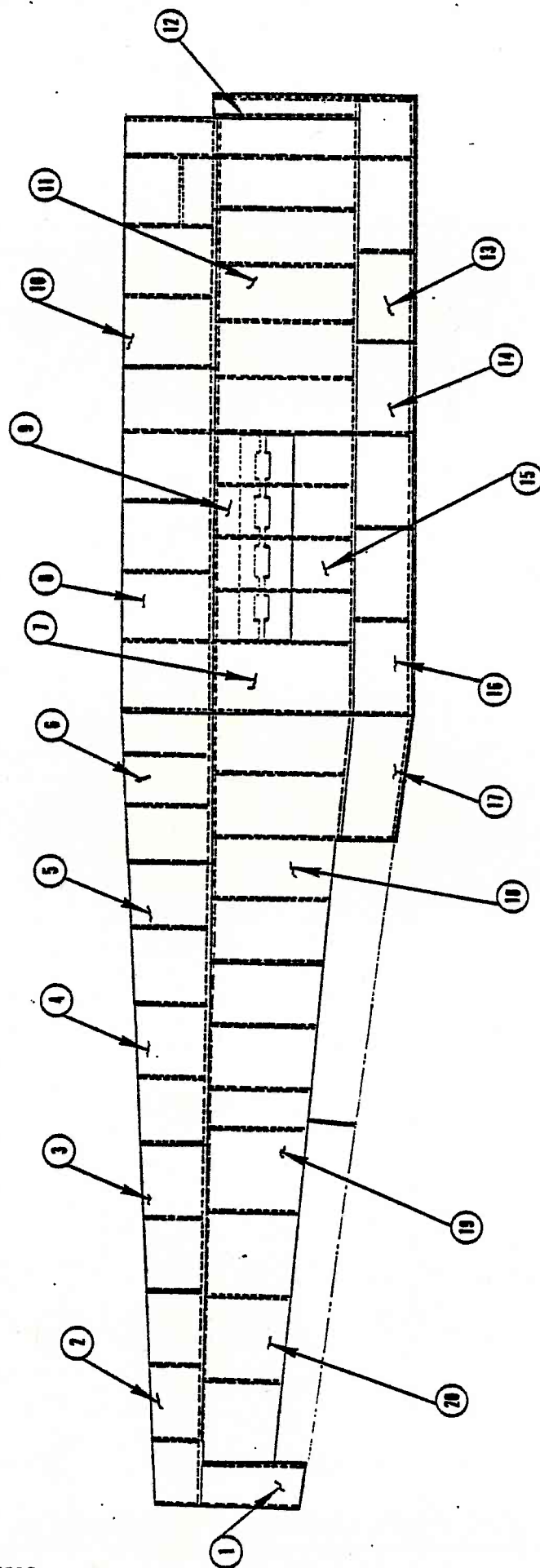
33400G-1 WING ASSY L. H. Complete
33400G-2 WING ASSY R. H. Complete

ITEM	PART NO.	NAME	QTY.	MODEL
1	33101-3	Dive Brake Control L. H.	1	
	33101-4	Dive Brake Control R. H.	1	
2	33101-1	Aileron Control Assy	1	
3	33501H-1	Aileron Assy Inb'd L. H.	1	
	33501H-2	Aileron Assy Inb'd R. H.	1	
4	33401K-1	Wing Frame Assy L. H.	1	
	33401K-2	Wing Frame Assy R. H.	1	
5	33501H-3	Aileron Assy - Outb'd - L. H.	1	
	33501H-4	Aileron Assy - Outb'd - R. H.	1	
6	AN3-12	Bolt	1	
7	AN310-3	Nut	1	
8	AN960-10	Washer	1	
9	AN380-2-2	Cotter Pin	1	
10	26A440-1	Hinge Pin	4	
11	26A440-2	Hinge Pin	2	
12		Aileron Hinge	Ref.	
13	33416-25	Hinge Pin	2	
14	33416-27	Hinge Pin	2	

Revised 2-3-83

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SKINS - WING (LEFT HAND)



33401K L.H. WING
View Looking Down

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SKINS - WING (LEFT HAND)

2024-T3 Aluminum (thickness as shown)

ITEM	PART NO.	NAME	STATION	QTY	MODEL
1	33401-57	Skin (Top) .016	296.0 - 306.0	1	
	33401-59	Skin (Bottom) .020	296.0 - 306.0	1	
2	33401-27	Skin (L.E.) .020	260.0 - 306.0		
3	33401-25	Skin (L.E.) .020	228.0 - 260.0	1	
4	33401-23	Skin (L.E.) .020	198.0 - 228.0	1	
5	33401-21	Skin (L.E.) .020	168.0 - 198.0	1	
6	33401-19	Skin (L.E.) .020	135.5 - 168.0	1	
7	33401-41	Skin Intermediate (Top) .020	120.25 - 135.5	1	
	33401-43	Skin Intermediate (Bottom) .016	120.25 - 135.5	1	
8	33401-17	Skin (L.E.) .025	90.25 - 135.5	1	
9	33401-35	Skin Intermediate (Top) .020	75.25 - 120.5	1	
	33401-33	Skin Intermediate (Bottom) .016	75.25 - 120.5	1	
10	33401-11	Skin (L.E.) .025	8.00 - 90.25	1	
11	33401-29	Skin Intermediate (Top) .025	2.84 - 75.25	1	
	33401-31	Skin Intermediate (Bottom) .025	2.84 - 75.25	1	
12	33401-87	Doubler .025	2.84 - 8.00	1	
	33401-89	Doubler .025	2.84 - 8.00	1	
13	33401-61	Skin T.E. (Top) .016	2.84 - 55.25	1	
	33401-61	Skin T.E. (Bottom) .016	2.84 - 55.25	1	
14	33401-63	Skin T.E. (Top) .016	55.25 - 95.25	1	
	33401-63	Skin T.E. (Bottom) .016	55.25 - 95.25	1	
15	33401-37	Skin Intermediate (Top) .016	75.25 - 120.5	1	
	33401-39	Skin Intermediate (Bottom) .016	75.25 - 120.5	1	
16	33401-63	Skin T.E. (Top) .016	95.25 - 135.5	1	
	33401-63	Skin T.E. (Bottom) .016	95.25 - 135.5	1	
17	33401-65	Skin T.E. (Top) .016	135.5 - 162.0	1	
	33401-65	Skin T.E. (Bottom) .016	135.5 - 162.0	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

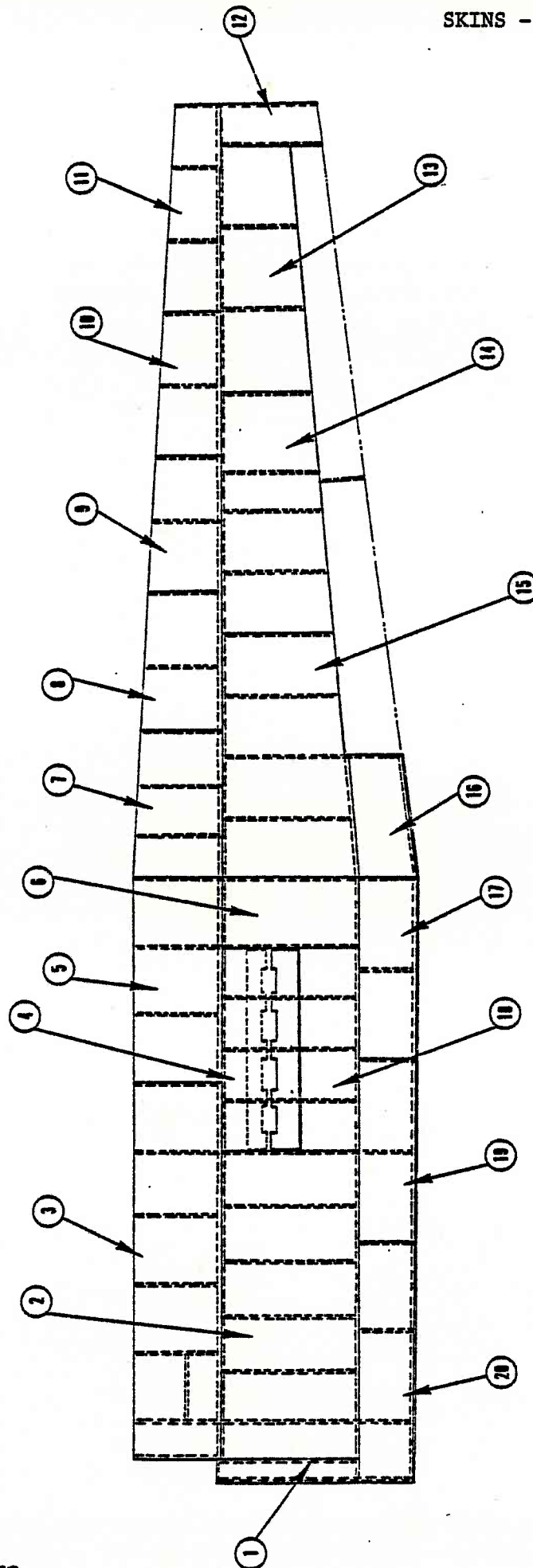
SKINS - WING (LEFT HAND)

(Continued) 2024T3 Aluminum (thickness as shown)

ITEM	PART NO.	NAME	STATION	QTY	MODEL
18	33401-45	Skin Intermediate (Top) .016	135.5 - 189.0	1	
	33401-47	Skin Intermediate (Bottom) .016	135.5 - 189.0	1	
19	33401-49	Skin Intermediate (Top) .016	189.0 - 242.75	1	
	33401-51	Skin Intermediate (Bottom) .016	189.0 - 242.75	1	
20	33401-53	Skin Intermediate (Top) .016	242.75 - 296.75	1	
	33401-55	Skin Intermediate .016	242.75 - 296.75	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SKINS - WING (RIGHT HAND)



33401K RIGHT WING
View Looking Down

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SKINS - WING (RIGHT HAND)

2024-T3 Aluminum (thickness as shown)

ITEM	PART NO.	NAME	STATION	QTY	MODEL
1	33401-87	Doubler (Top) .025	2.84 - 8.00	1	
	33401-90	Doubler (Bottom) .025	2.84 - 8.00	1	
2	33401-29	Skin Intermediate (Top) .025	2.84 - 75.25	1	
	33401-32	Skin Intermediate (Bottom) .025	2.84 - 75.25	1	
3	33401-12	Skin L.E. .025	8.00 - 90.25	1	
4	33401-35	Skin Intermediate (Top) .020	75.25 - 120.25	1	
	33401-33	Skin Intermediate (Bottom) .016	75.25 - 120.25	1	
5	33401-18	Skin L.E. .025	90.25 - 135.5	1	
6	33401-41	Skin Intermediate (Top) .020	120.25 - 135.5	1	
	33401-43	Skin Intermediate (Bottom) .016	120.25 - 135.5	1	
7	33401-20	Skin L.E. .020	135.5 - 168.0	1	
8	33401-22	Skin L.E. .020	168.0 - 198.0	1	
9	33401-24	Skin L.E. .020	198.0 - 228.0	1	
10	33401-26	Skin L.E. .020	278.0 - 260.0	1	
11	33401-28	Skin L.E. .020	260.0 - 306.0	1	
12	33401-57	Skin Tip (Top) .016	296.0 - 306.0	1	
	33401-59	Skin Tip (Bottom) .020	296.0 - 306.0	1	
13	33401-53	Skin Intermediate (Top) .016	242.75 - 296.75	1	
	33401-55	Skin Intermediate (Bottom) .016	242.75 - 296.75	1	
14	33401-49	Skin Intermediate (Top) .016	189.0 - 242.75	1	
	334-1-51	Skin Intermediate (Bottom) .016	189.0 - 242.75	1	
15	33401-45	Skin Intermediate (Top) .016	135.5 - 189.0	1	
	33401-47	Skin Intermediate (Bottom) .016	135.5 - 189.0	1	
16	33401-65	Skin T.E. .016	135.5 - 162.0	1	
	33401-65	Skin T.E. .016	135.5 - 162.0	1	
17	33401-63	Skin T.E. (Top) .016	95.25 - 135.5	1	
	33401-63	Skin T.E. (Bottom) .016	95.25 - 135.5	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SKINS - WING (RIGHT HAND)

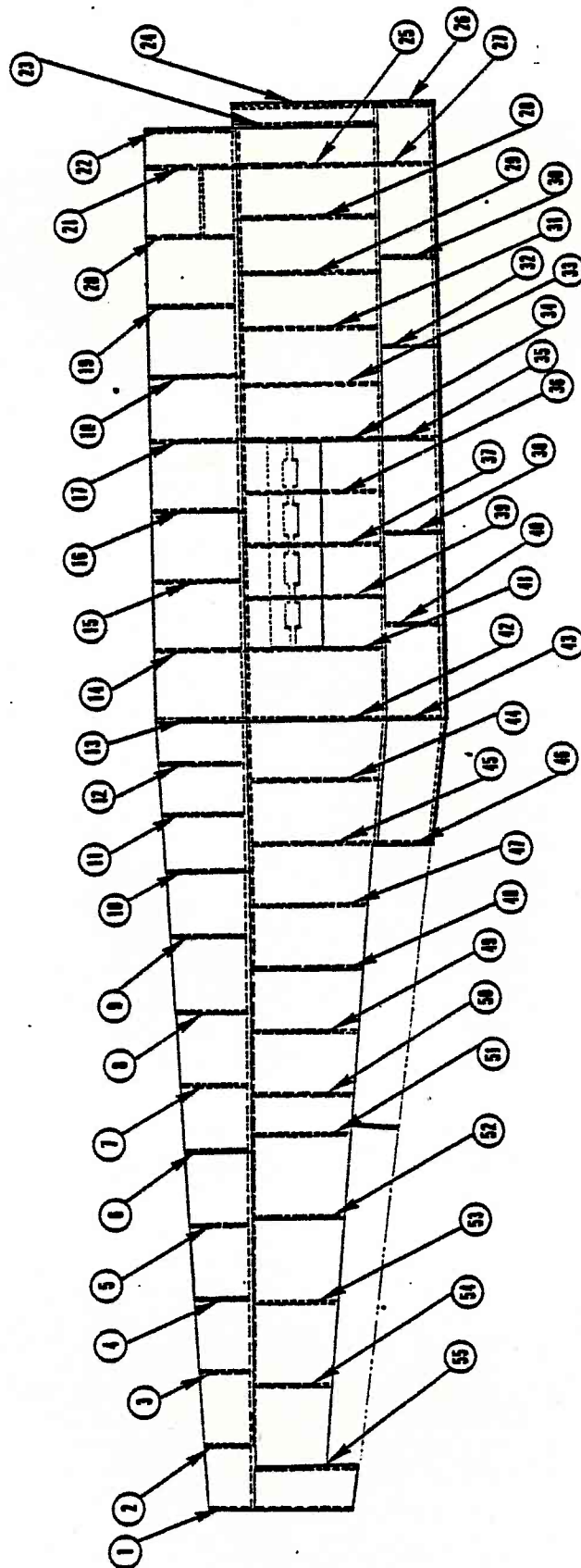
(Continued)

2024-T3 Aluminum (thickness as shown)

ITEM	PART NO.	NAME	STATION	QTY	MODEL
18	33401-37	Skin Intermediate (Top) .016	75.25 - 120.25	1	
	33401-39	Skin Intermediate (Bottom) .016	75.25 - 120.25	1	
19	33401-63	Skin T.E. .016	55.25 - 95.25	1	
	33401-63	Skin T.E. .016	55.25 - 95.25	1	
20	33401-61	Skin T.E. .016	2.84 - 55.25	1	
	33401-61	Skin T.E. .016	2.84 - 55.25	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

RIBS - WING (LEFT HAND)



33401K LEFT WING

(VIEW LOOKING DOWN)

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

RIBS - LEFT WING ASSY

ITEM	PART NO.	NAME	STATION	QTY	MODEL
1	33408-3	Rib - Tip	306.0	1	
2	33406-21	Rib - Nose	292.0	1	
3	33406-19	Rib - Nose	276.0	1	
4	33406-17	Rib - Nose	260.0	1	
5	33406-15	Rib - Nose	244.0	1	
6	33406-13	Rib - Nose	228.0	1	
7	33406-11	Rib - Nose	214.0	1	
8	33406-9	Rib - Nose	198.0	1	
9	33406-7	Rib - Nose	182.0	1	
10	33406-5	Rib - Nose	168.0	1	
11	33406-3	Rib - Nose	156.0	1	
12	33406-1	Rib - Nose	145.0	1	
13	33421-3	Rib - Nose	135.5	1	
14	33421-1	Rib - Nose	120.25	1	
15	33421-5	Rib - Nose	105-25	1	
16	22D404-11	Rib - Nose	90.25	1	
17	22D404-3	Rib - Nose	75.25	1	
18	22D404-9	Rib - Nose	61.25	1	
19	22D404-7	Rib - Nose	46.25	1	
20	22D404-7	Rib - Nose	31.25	1	
21	22D404-5	Rib - Nose	16.25	1	
22	22D406-1	Rib Assy - Nose	8.00	1	
23	22H431-13	Rib Assy - Intermediate	8.00	1	
24	33419-1	Rib Assy - Intermediate	2.84	1	
25	22H431-5	Rib - Intermediate	16.25	1	
26	22D432-1	Rib - T. E.	2.84	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

RIBS - LEFT WING ASSY

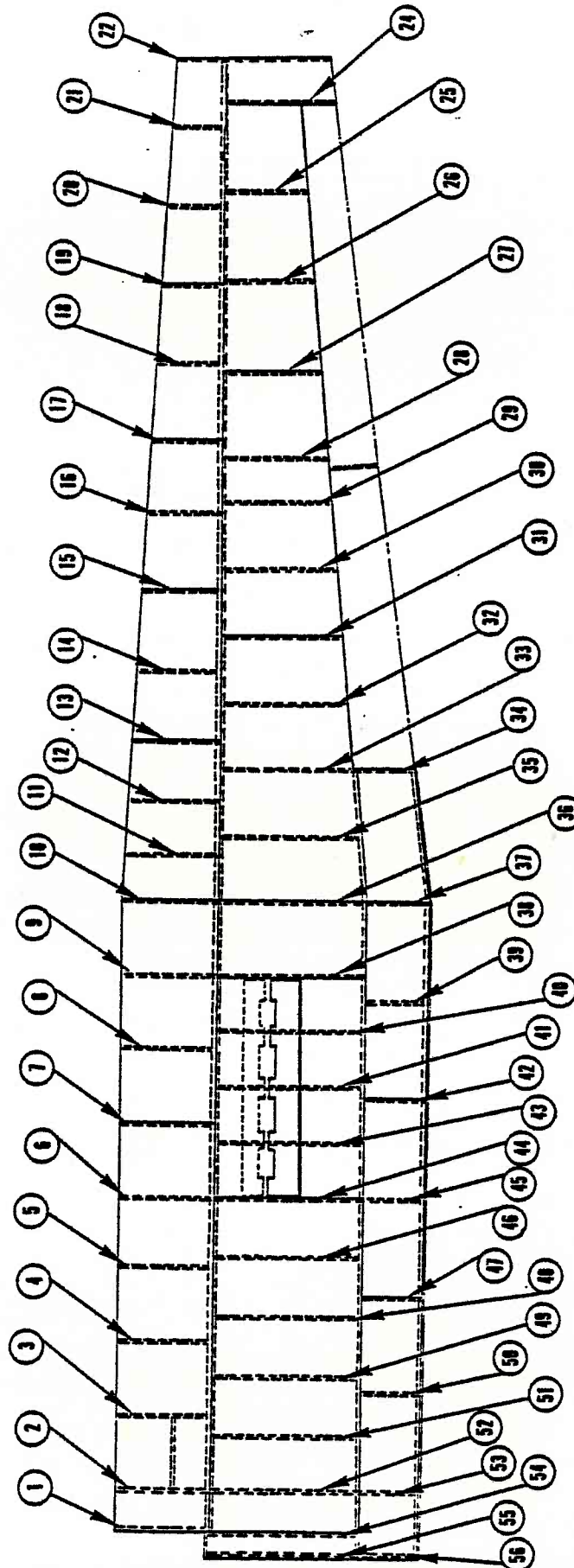
ITEM	PART NO.	NAME	STATION	QTY	MODEL
27	22D432-3	Rib - T. E.	16.25	1	
28	22H431-5	Rib - Intermediate	27.25	1	
29	22H431-5	Rib - Intermediate	39.25	1	
30	22D432-5	Rib - T. E.	39.25	1	
31	33413-1	Rib - Intermediate	51.25	1	
32	22D432-5	Rib - T. E.	55.25	1	
33	22H431-5	Rib - Intermediate	63.25	1	
34	22H431-7	Rib - Intermediate	75.25	1	
35	22D432-5	Rib - T. E.	75.25	1	
36	33410-1	Rib - Intermediate	86.5	1	
37	33410-5	Rib - Intermediate	97.75	1	
38	22D432-5	Rib - T. E.	95.25	1	
39	33413-17	Rib - Intermediate	109.0	1	
40	22D432-5	Rib - T. E.	115.25	1	
41	22H431-7	Rib - Intermediate	120.25	1	
42	22H431-9	Rib - Intermediate	135.5	1	
43	22D432-5	Rib - T. E.	135.50	1	
44	33409-1	Rib - Intermediate	148.5	1	
45	33413-3	Rib - Intermediate	162.0	1	
46	33412-1	Rib - T. E.	162.0	1	
47	33407-1	Rib - Intermediate	175.5	1	
48	33407-3	Rib - Intermediate	189.0	1	
49	33407-5	Rib - Intermediate	202.5	1	
50	33407-7	Rib - Intermediate	216.0	1	
51	33407-9	Rib - Intermediate	224.75	1	
52	33407-11	Rib - Intermediate	242.75	1	

RIBS - LEFT WING ASSY

SCHWEIZER AIRCRAFT CORPORATION 1980

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

RIBS - WING (RIGHT HAND)



33401K R. H. WING

View Looking Down

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

RIBS - RIGHT WING ASSEMBLY

ITEM	PART NO.	NAME	STATION	QTY	MODEL
1	22D406-2A	Rib	8.00	1	
2	22D404-5	Rib - Nose	16.25	1	
3	22D404-7	Rib - Nose	31.25	1	
4	22D404-7	Rib - Nose	46.25	1	
5	22D404-9	Rib - Nose	61.25	1	
6	22D404-3	Rib - Nose	75.25	1	
7	22D404-11	Rib - Nose	90.25	1	
8	33421-5	Rib - Nose	105.25	1	
9	33421-1	Rib - Nose	120.25	1	
10	33421-3	Rib - Nose	135.5	1	
11	33406G-2	Rib - Nose	145.0	1	
12	33406G-4	Rib - Nose	156.0	1	
13	33406G-6	Rib - Nose	168.0	1	
14	33406G-8	Rib - Nose	182.0	1	
15	33406G-10	Rib - Nose	198.0	1	
16	33406G-12	Rib - Nose	214.0	1	
17	33406G-14	Rib - Nose	228.0	1	
18	33406G-16	Rib - Nose	244.0	1	
19	33406G-18	Rib - Nose	260.0	1	
20	33406G-20	Rib - Nose	276.0	1	
21	33406G-22	Rib - Nose	292.0	1	
22	33408-4	Wing Tip Rib	306.0	1	
24	33411G-4	Intermed. Rib	296.75	1	
25	33407-16	Intermed. Rib	278.75	1	
26	33407-14	Intermed. Rib	260.75	1	
27	33407-12	Intermed. Rib	242.75	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

RIBS - RIGHT WING ASSEMBLY

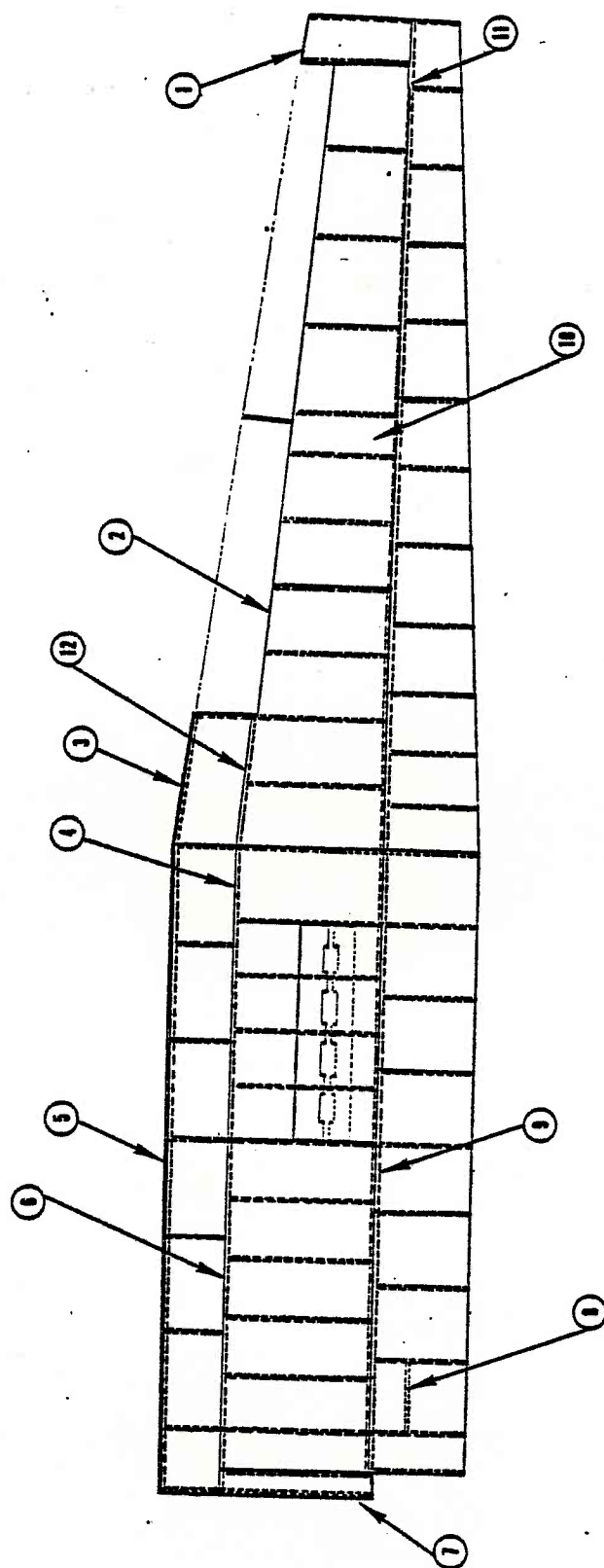
ITEM	PART NO.	NAME	STATION	QTY	MODEL
28	33407-10	Intermed. Rib	224.75	1	
29	33407-8	Intermed. Rib	216.0	1	
30	33407-6	Intermed. Rib	202.5	1	
31	33407-4	Intermed. Rib	189.0	1	
32	33407-2	Intermed. Rib	175.5	1	
33	33413-4	Intermed. Rib Assy	162.0	1	
34	33412-2	Trailing Edge Rib	162.0	1	
35	33409-2	Intermed. Rib	148.5	1	
36	22H431-9	Intermed. Rib	135.5	1	
37	22D432-5	T. E. Rib	135.5	1	
38	22H431-8	Intermed. Rib	120.25	1	
39	22432-5	T. E. Rib	115.25	1	
40	33413-18	Intermed. Rib	109.0	1	
41	33410-5	Intermed. Rib	97.75	1	
42	22432-5	T. E. Rib	95.25	1	
43	33410-1	Intermed. Rib	86.50	1	
44	22431-7	Intermed. Rib	75.25	1	
45	22432-5	T. E. Rib	75.25	1	
46	22431-5	Intermed. Rib Assy	63.25	1	
47	22432-5	T. E. Rib	55.25	1	
48	22413-1	Intermed. Rib Assy	51.25	1	
49	22431-5	Intermed. Rib	39.25	1	
50	22432-5	T. E. Rib	36.25	1	
51	22431-5	Intermed. Rib	27.25	1	
52	22431-5	Intermed. Rib	16.25	1	
53	22432-3	T. E. Rib	16.25	1	
54	22431-14	Intermed. Rib	8.00	1	

RIBS - RIGHT WING ASSEMBLY

ITEM	PART NO.	NAME	STATION	QTY	MODEL
55	33419-2	Intermed. Rib Assy (Root)	2.84	1	
56	22432-2	T. E. Rib (Root)	2.84	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SPARS, T. E. & MISC. L. H. WING



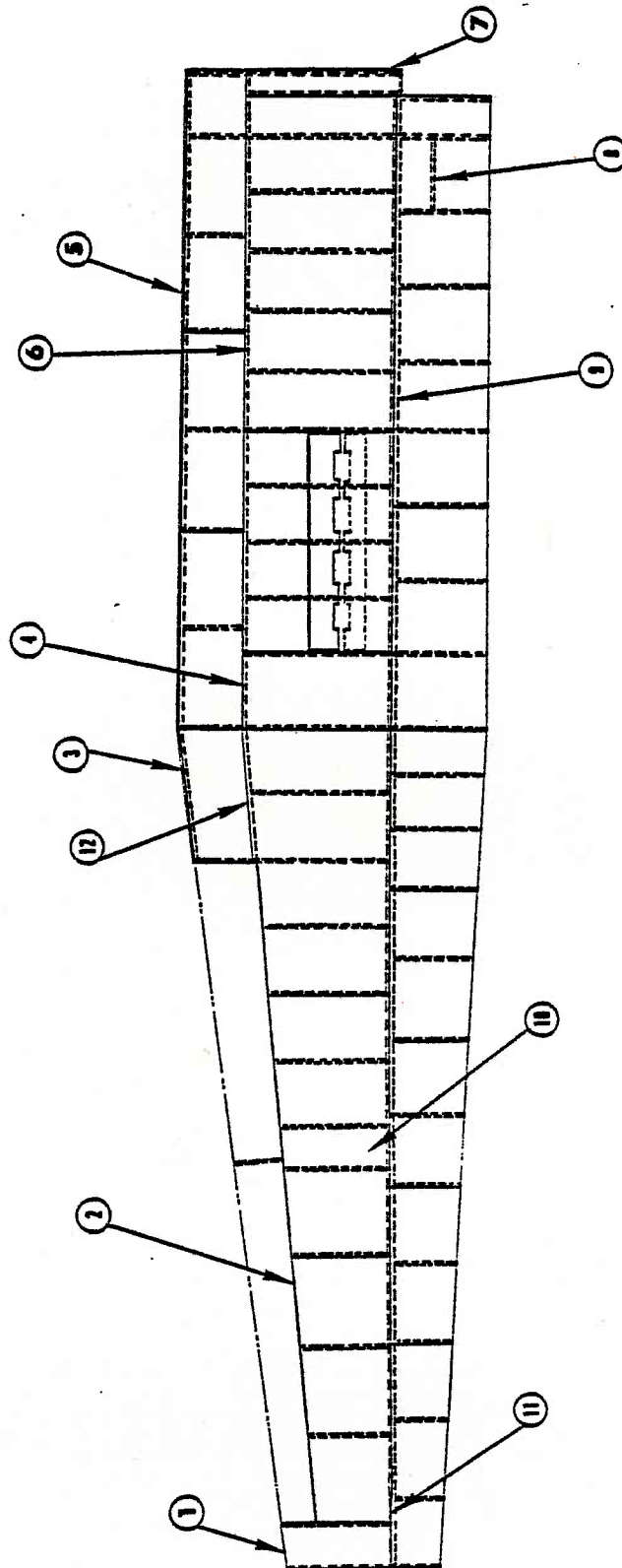
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SPARS, T. E. & MISC. L. H. WING

ITEM	PART NO.	NAME	STATION	QTY	MODEL
1	33401-67	Tip T. E.	296.0 - 306.0	1	
2	33404-1	False Spar Assy (see page J33)	158.0 - 296.0	1	
3	33418-3	T. E.	135.0 - 162.0	1	
4	33403-1	Spar Rear - Outboard (see page J30)	75.5 - 135.5	1	
5	33418-1	T. E.	2.84 - 135.0	1	
6	22H429-3	Spar Rear (see page J27)	2.84 - 75.5	1	
7	22G461	Fitting Instl. Main (see page J24)	-	1	
8	33401-73	Angle	16.25 - 31.25	1	A/C 1 - 69 only
9	33402-1	Main Spar Assy (see page J24)	2.84 - 336.0	1	
10	33401	Aileron Access Door (see page J36)		1	
11	33204D	Tip Wheel Attach Area (see page J36)	293.88	1	
12	33403-3	Tapered Spar Assy (see page J30)	135.5 - 161.44	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SPARS, T. E. & MISC. R. H. WING



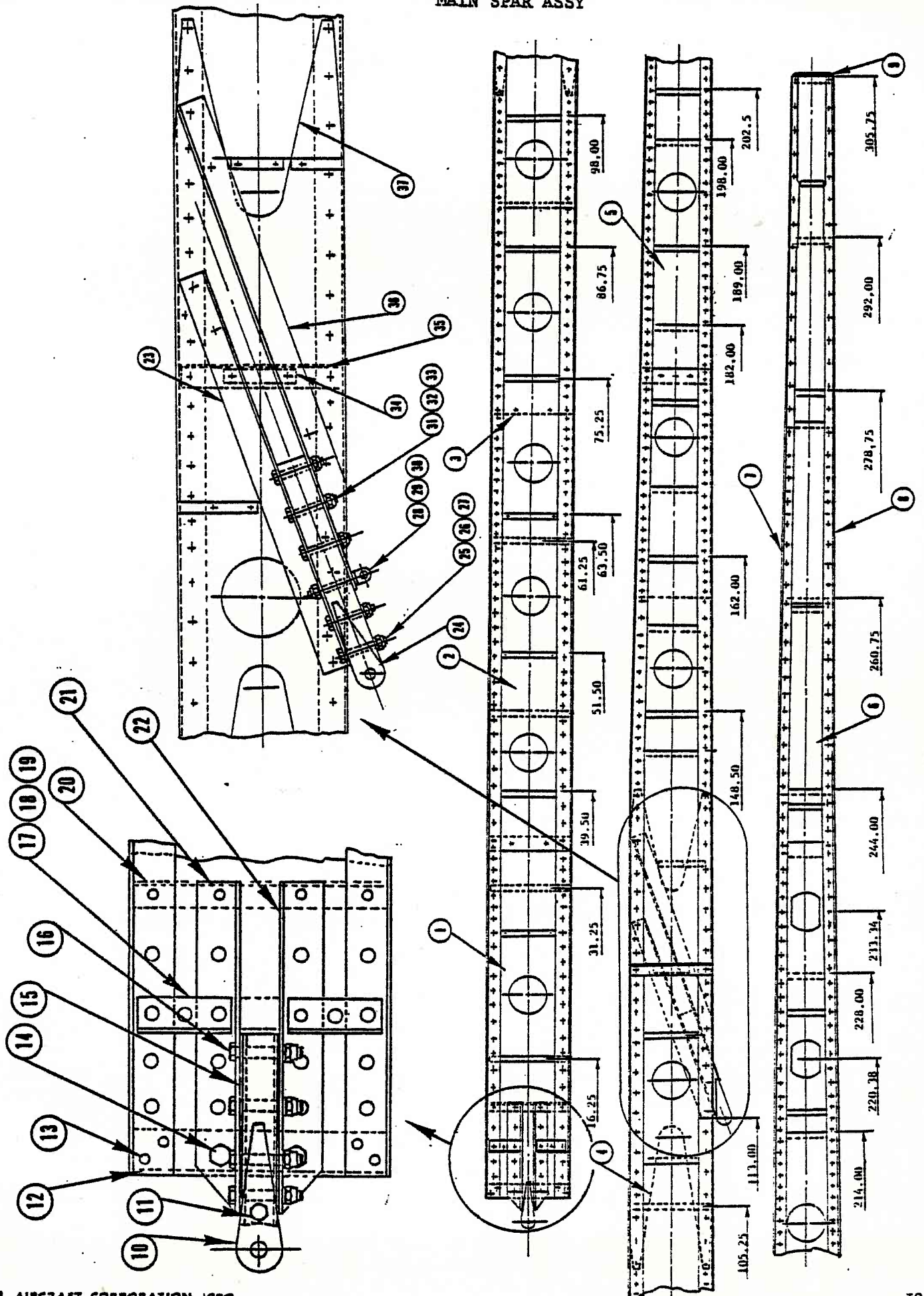
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SPARS, T. E. & MISC. R. H. WING

ITEM	PART NO.	NAME	STATION	QTY	MODEL
1	33401-67	Tip T. E.	296.0 - 306.0	1	A/C 1 - 69 Only
2	33404-2	False Spar Assy (see page J33)	158.0 - 296.0	1	
3	33418-3	T. E.	135.0 - 162.0	1	
4	33403-2	Spar Rear Outboard (see page J30)	75.5 - 135.5	1	
5	33418-1	T. E.	2.84 - 135.0	1	
6	22H429-4	Spar Rear (see page J27)	2.84 - 75.5	1	
7	22G461	Fitting Inst'l Main (see page J24)	-	1	
8	33401-7	Angle	16.25 - 31.25	1	
9	33402-2	Main Spar Assy (see page J24)	2.84 - 336.0	1	
10	33401	Aileron Access Door (see page J36)	-	1	
11	33204D	Tip Wheel Attach Area (see page J36)	293.88	1	
12	33403-4	Tapered Spar Assy (see page J30)	135.5 - 161.44	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

MAIN SPAR ASSY



33402R-1 MAIN SPAR ASSY L. H.
33402R-2 MAIN SPAR ASSY R. H.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33402R-1 MAIN SPAR ASSY L. H.

33402R-2 MAIN SPAR ASSY R. H.

ITEM	PART NO.	NAME	QTY.	MODEL
1	33402-5	Web	1	
2	33402-7	Web	1	
3	33402-9	Doubler	1	
4	33402-11	Doubler	1	
5	33402-13	Web	1	
6	33402-15	Web	1	
7	33402-3	Cap Angle	2	
8	33402-3	Cap Angle	-	
9	33402-17	Tip Angle	1	
10	22B413-1A	Fitting	1	
11	AN4-17A	Bolt	1	
	AN365-428	Nut	1	
	AN960-416	Washer	1	
12	22B449-2 Angle	Angle	1	
13	ALPPH-T6-5	Huck Bolt	8	
14	AN5-6A	Bolt	2	
	AN365-524	Nut	2	
	AN960-516	Washer	2	
15	22G461-13	Spacer	2	
16	AN5-15A	Bolt	4	
	AN365-524	Nut	4	
	AN960-516	Washer	4	
17	22G461-7	Angle	2	
18	22G461-11	Spacer	2	
19	22G461-9	Angle	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33402R-1 MAIN SPAR ASSY L. H.

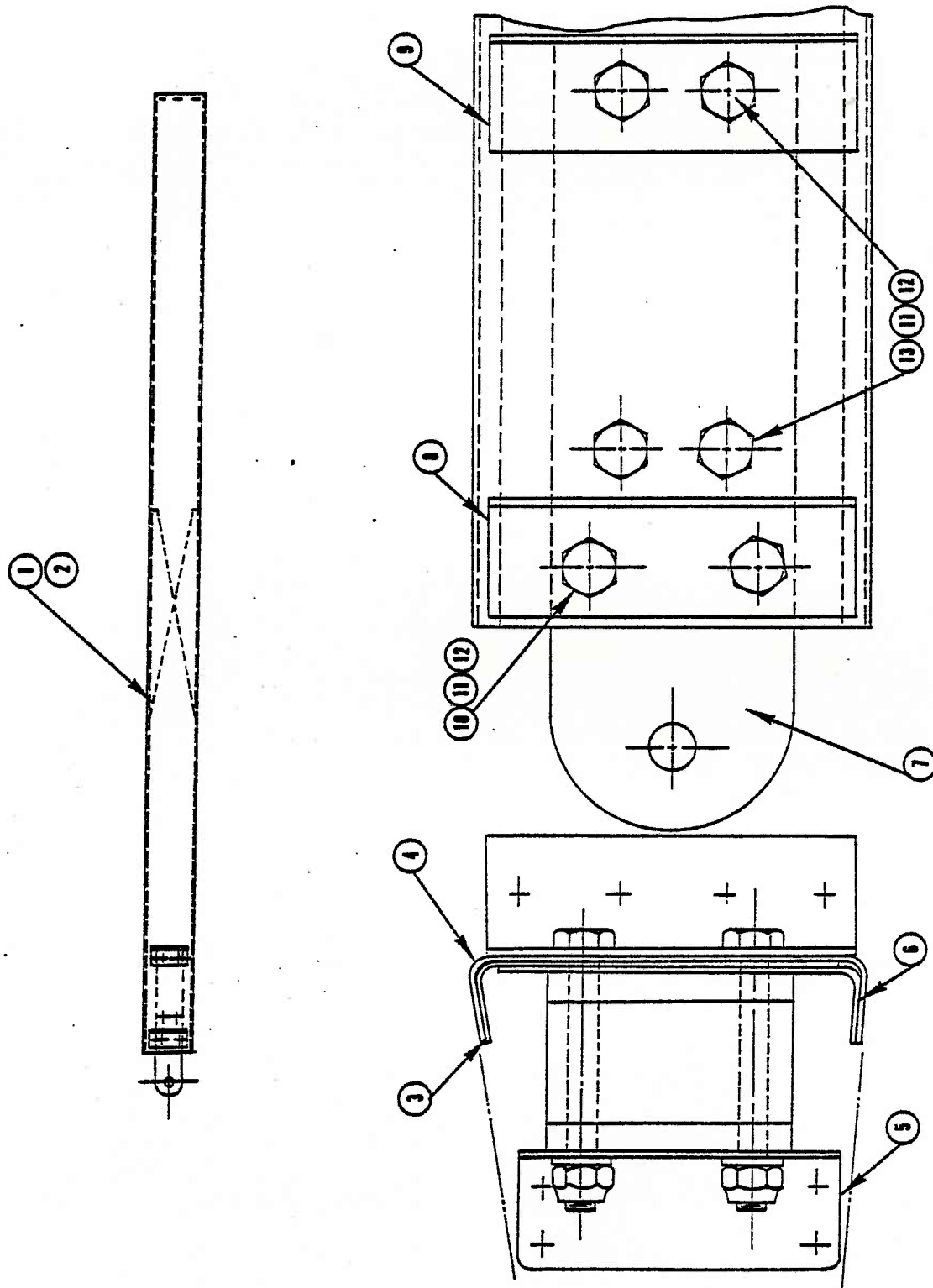
33402R-2 MAIN SPAR ASSY R. H.

ITEM	PART NO.	NAME	QTY.	MODEL
20	22B449-3	Angle	1	
21	22B449-1L	Angle	1	
22	22B449-1R	Angle	1	
23	33423D-1	Support	1	
24	33424B-1	Fitting Assy	1	
25	AN5-17A	Bolt	2	
26	AN960-516	Washer	2	
27	AN365-524	Nut	2	
28	AN45-20A	Eye Bolt	1	
29	AN960-516	Washer	1	
30	AN365-524	Nut	1	
31	AN5-20A	Bolt	3	
32	AN960-516	Washer	3	
33	AN365-524	Nut	3	
34	33422-9	Shim	1	
35	33422-7	Support	1	
36	33423D-3	Support	1	
37	33402R-11	Doubler	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22H429-3 Spar Assy - Rear L. H. (Shm.)

22H429-4 Spar Assy - Rear R. H. (Opp.)



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22H429-3 SPAR ASSY - REAR LEFT WING

ITEM	PART NO.	NAME	QTY.	MODEL
1	22H429-3	Spar Assy L. H.	1	
3	22H429-7	Doubler (Top)	1	
4	22H429-5	Web	1	
5	22H429-19	Clip	1	
6	22H429-9	Doubler (Bottom)	1	
7	22D428-1	Fitting - Rear Spar	1	
8	22D428-15	Extrusion	1	
9	22D428-17	Extrusion	1	
10	AN4-22A	Bolt	2	
11	AN960-416	Washer	6	
12	AN365-428	Nut	6	
13	AN4-7A	Bolt	4	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

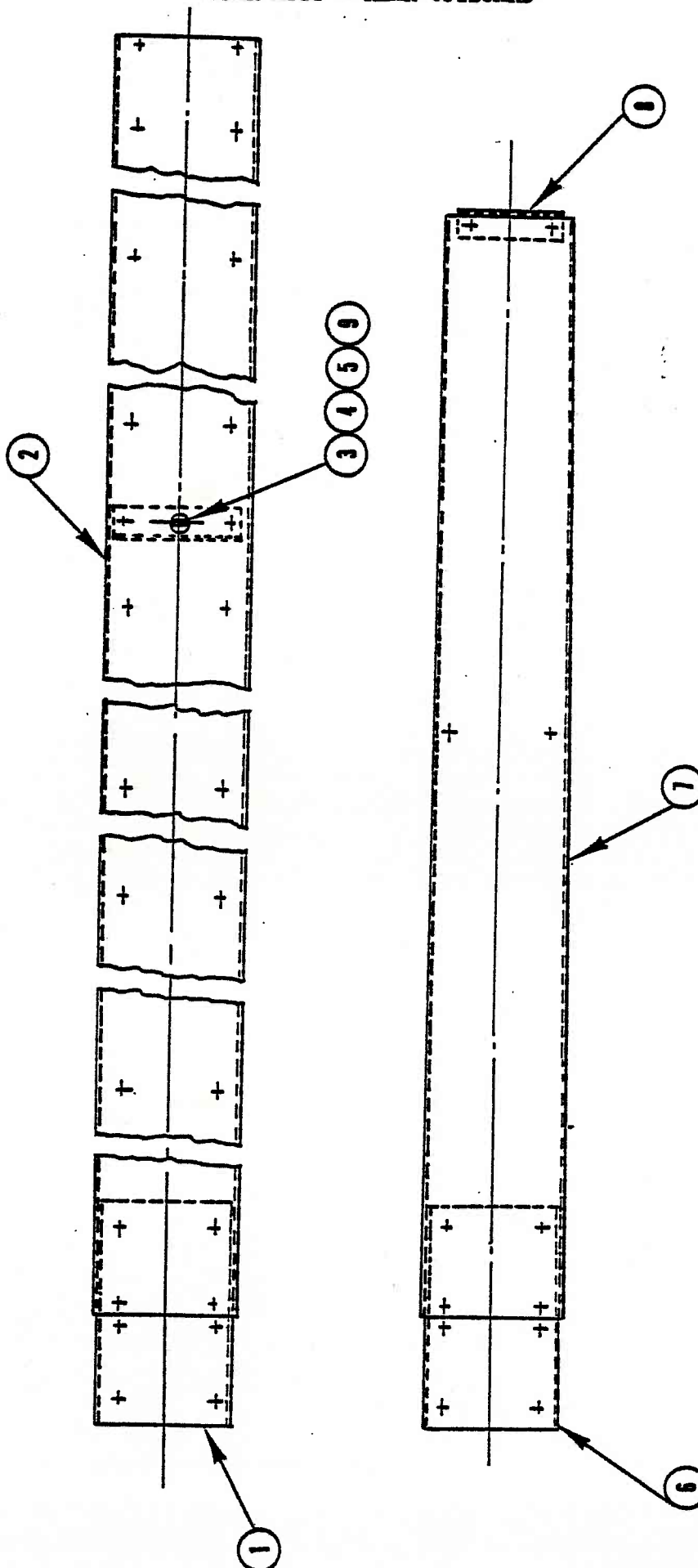
22H429-4 SPAR ASSY - REAR RIGHT WING

ITEM	PART NO.	NAME	QTY.	MODEL
2	22H429-4	Spar Assy R. H.	1	
3	22H429-8	Doubler (Top)	1	
4	22H429-6	Web	1	
5	22H429-20	Clip	1	
6	22H429-10	Doubler (Bottom)	1	
7	22D428-1	Fitting - Rear Spar	1	
8	22D428-15	Extrusion	1	
9	22D428-17	Extrusion	1	
10	AN4-22A	Bolt	2	
11	AN960-416	Washer	6	
12	AN365-428	Nut	6	
13	AN4-7A	Bolt	4	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SPAR ASSY - REAR OUTBOARD

33403-1 L. H. SPAR EXTENSION ASSY (Shn.)
33403-2 R. H. SPAR EXTENSION ASSY (Opp.)



33403-3 L. H. TAPERED SPAR ASSY (Shn.)
33403-4 R. H. TAPERED SPAR ASSY (Opp.)

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33403-1 L. H. SPAR EXTENSION ASSY

33403-3 L. H. TAPERED SPAR ASSY

ITEM	PART NO.	NAME	STATION	QTY	MODEL
1	33403-9	Inb'd Splice Plate	75.50	1	
2	33403-5	L. H. Spar	75.5 - 135.5	1	
3	AN42B-4A	Eye Bolt	110.98	1	
4	AN365-1032	Nut	110.98	1	
5	AN960-10	Washer	110.98	1	
6	33403-11	Tapered Splice Plate	135.5	1	
7	33403-7	L. H. Spar	135.5 - 161.44	1	
8	33403-13	Clip	161.44	1	
9	33403-15	Angle	110.98	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33403-2 R. H. SPAR EXTENSION ASSY

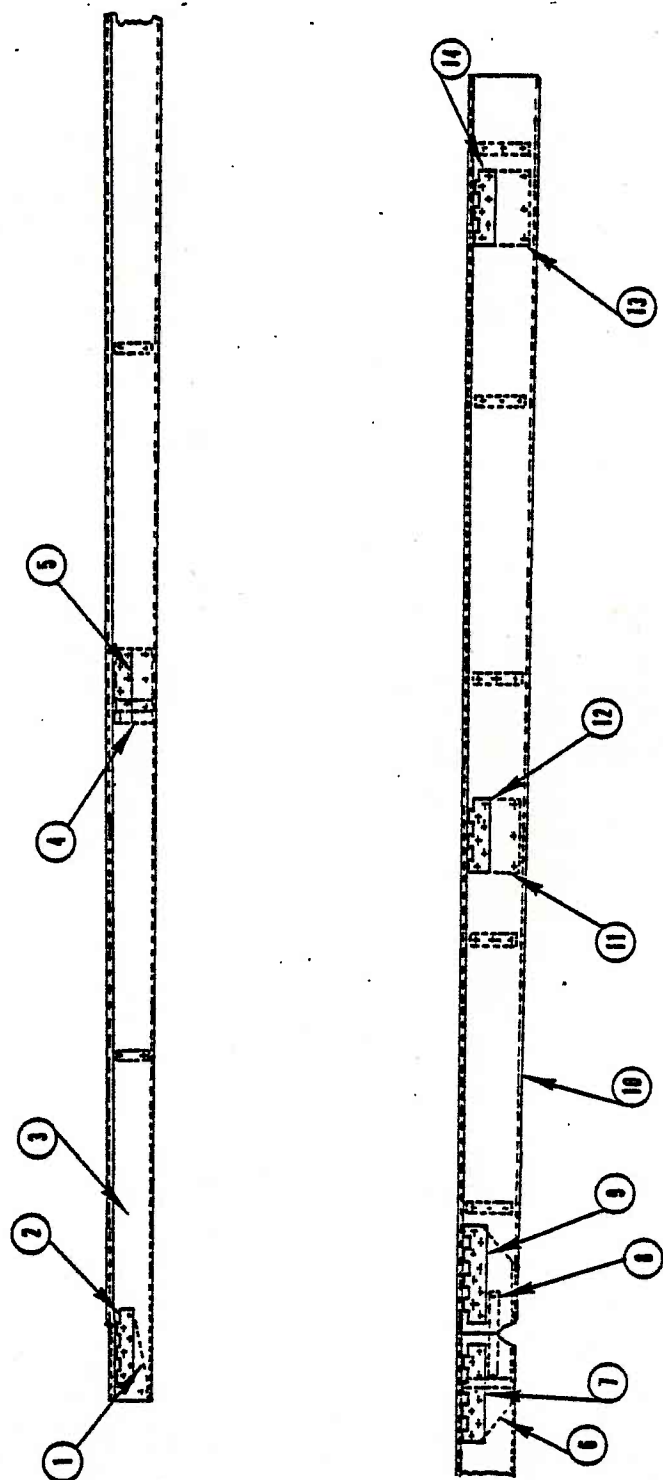
33403-4 R. H. TAPERED SPAR ASSY

ITEM	PART NO.	NAME	STATION	QTY	MODEL
1	33403-9	Inb'd Splice Plate	75.5	1	
2	33403-6	R. H. Spar	75.5 - 135.5	1	
3	AN42B-4A	Eye Bolt	110.98	1	
4	AN365-1032	Nut	110.98	1	
5	AN960-10	Washer	110.98	1	
6	33403-12	Tapered Splice Plate	135.5	1	
7	33403-8	R. H. Spar	135.5 - 161.44	1	
8	33403-13	Clip	161.44	1	
9	33403-15	Angle	110.98	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33404H-1 False Spar Assy L. H. (Shn.)

33404H-2 False Spar Assy R. H. (Opp.)



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33404H-1 FALSE SPAR ASSY L. H.

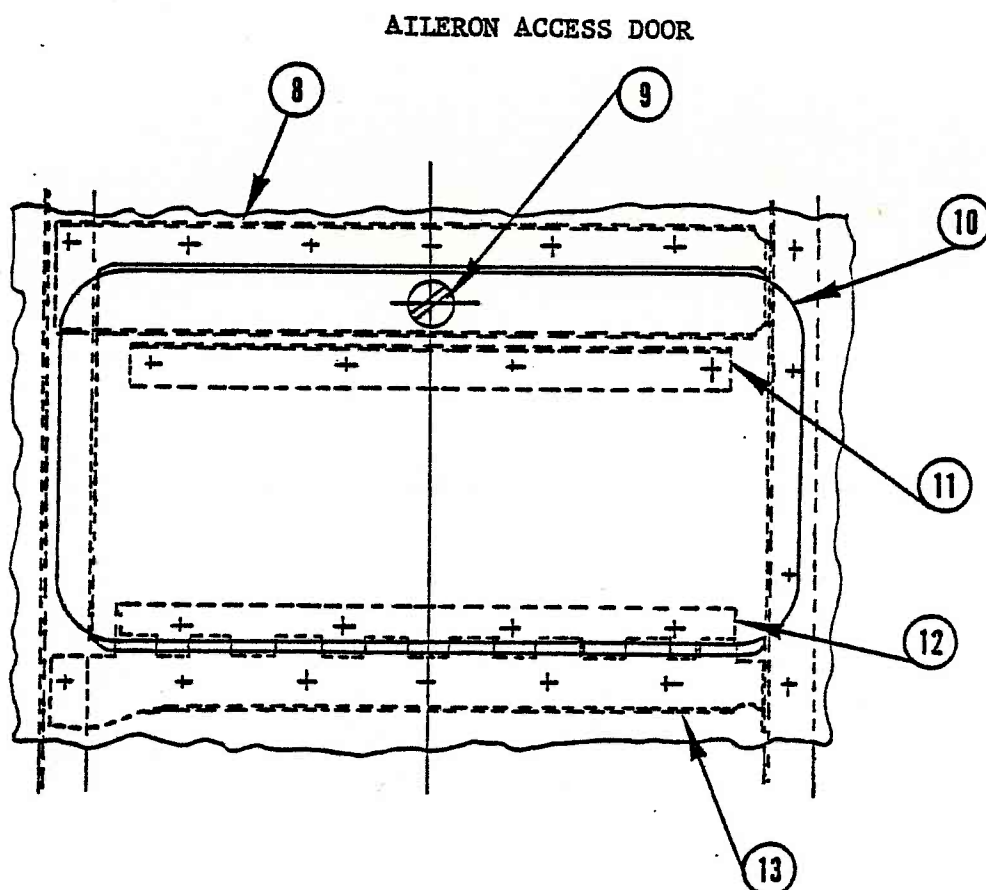
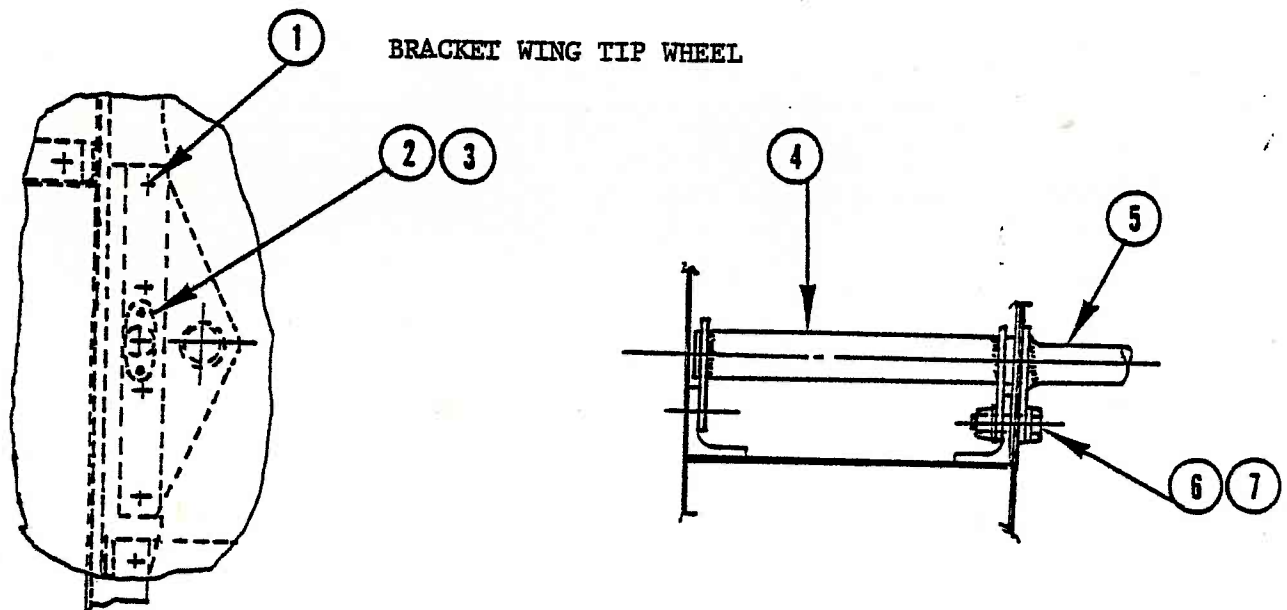
ITEM	PART NO.	NAME	QTY.	MODEL
1	33404-13	Doubler	1	
2	26G411-3L	Hinge	4	
3	33404-7	Spar	1	
4	33404-15	Doubler	1	
5	26G411-3L	Hinge	-	
6	33404-17	Doubler	1	
7	33404-23	Hinge	1	
8	33404-11	Angle	1	
9	33404-24	Hinge	1	
10	33404-9	Spar	1	
11	33404-19	Doubler	1	
12	26G411-3L	Hinge	-	
13	33404-21	Doubler	1	
14	26G411-3L	Hinge	-	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33404H-2 FALSE SPAR ASSY R. H.

ITEM	PART NO.	NAME	QTY.	MODEL
1	33404-14	Doubler	1	
2	26G411-3L	Hinge	4	
3	33404-8	Spar	1	
4	33404-16	Doubler	1	
5	26G411-3L	Hinge	-	
6	33404-18	Doubler	1	
7	33404-24	Hinge	1	
8	33404-11	Angle	1	
9	33404-23	Hinge	1	
10	33404-10	Spar	1	
11	33404-19	Doubler	1	
12	26G411-3L	Hinge	-	
13	33404-21	Doubler	1	
14	26G411-3L	Hinge	-	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE



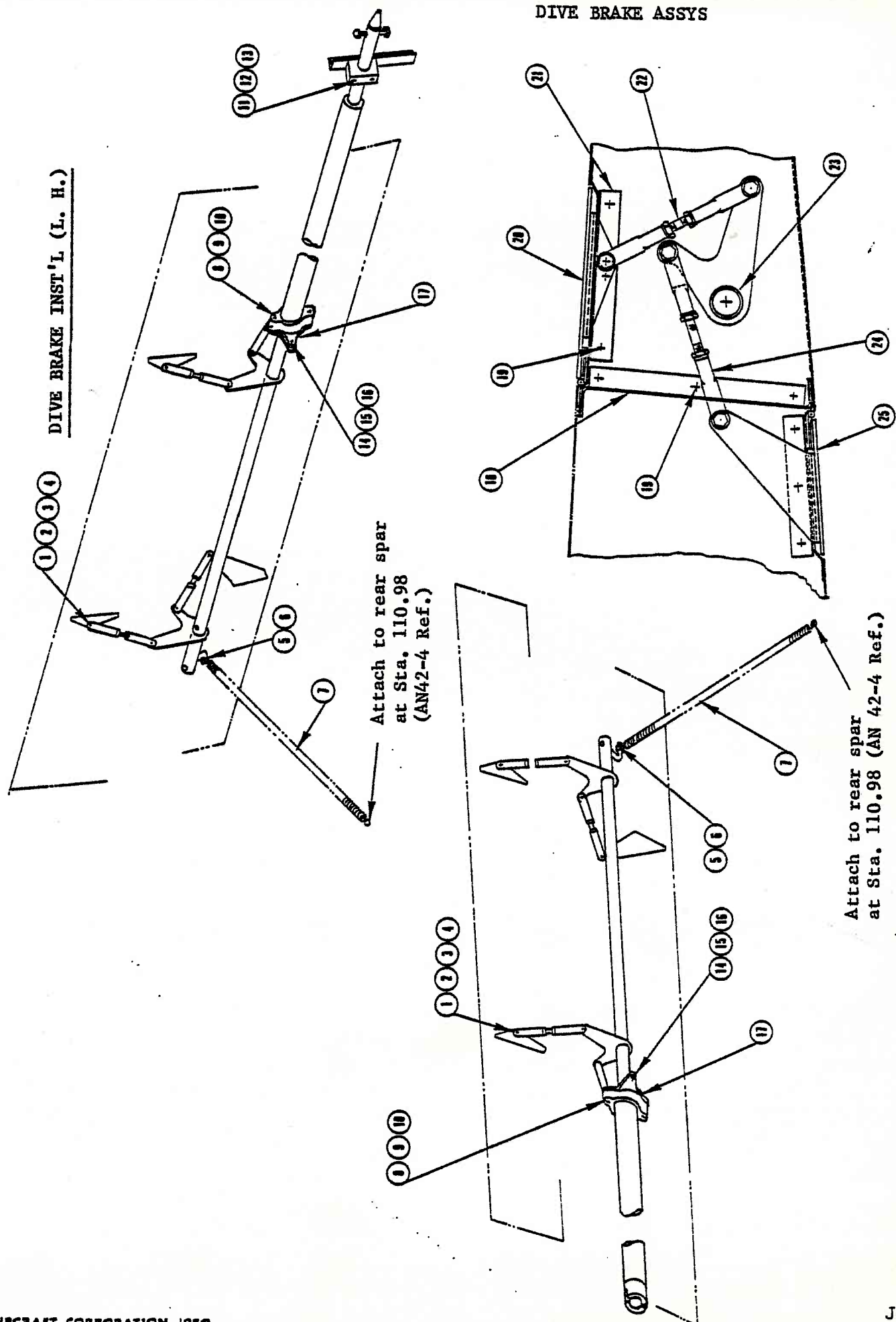
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33204D BRACKET WING TIP WHEEL
33401H AILERON ACCESS DOOR

ITEM	PART NO.	NAME	QTY.	MODEL
1	MS20470AD4	Rivet	8	
2	22NA1-02	Nut Plate	1	
3	MS20426AD3	Rivet	2	
4	33204D-3	L. H. Bracket Assy	1	
	33204D-4	R. H. Bracket Assy	1	
5	32234G	Spring Assy	Ref.	
6	AN3-6A	Bolt	1	
7	AN960-10	Washer	1	
8	33401-77	Support (L. H.)	1	
	33401-78	Support (R. H.)	1	
9	F-21	Vibrex Fastener *	1	
10	33401-85	Door	1	
11	33401-83	Angle	1	
12	33401-81	Hinge	1	
13	33401-79	Hinge (L. H.)	1	
	33401-80	Hinge (R. H.)	1	
	* 110	Pin-Airloc)		
	99836	Roll Pin) replace -9		
	99947P130	Receptacle) for all Spares		

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

DIVE BRAKE ASSYS



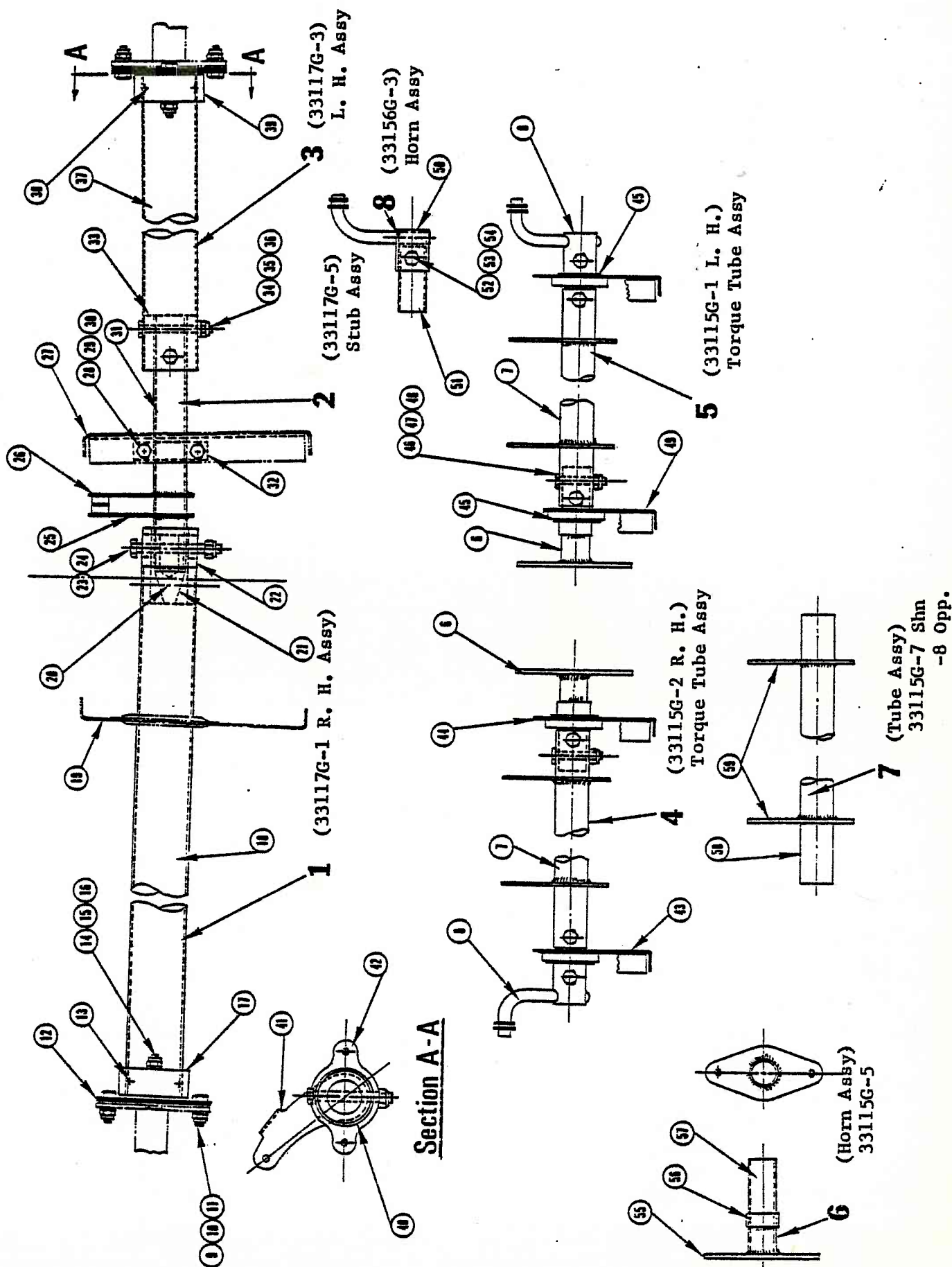
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

DIVE BRAKE ASSEMBLIES

ITEM	PART NO.	NAME	QTY. (ea)	MODEL
1	AN3-6	Bolt	8	
2	AN310-3	Nut	8	
3	AN380-2-2	Cotter Pin	8	
4	AN960-10	Washer	8	
5	AN380-3-2	Nut	1	
6	AN960-516	Washer	1	
7	1A142-3	Spring	1	
8	AN3-13A	Bolt	2	
9	AN365-1032	Nut	2	
10	AN960-10	Washer	4	
11	AN3-16A	Bolt	2	
12	AN365-1032	Nut	2	
13	AN960-10	Washer	2	
14	AN3-5A	Bolt	2	
15	AN365-1032	Nut	2	
16	AN960-10	Washer	4	
17	32517D-3	Spreader	3	
18	33415G	Intercostal (Ref.)		
19	MS20470AD4	Rivet (Ref.)		
20	33416G-1	Upper Door Assy	1	
21	33414G-7	Angle (Ref.)		
22	10163B-5	Control Rod Assy	1	
23	33115D-7	Tube Assy (Ref.)		
24	10163B-1	Control Rod Assy	1	
25	33416G-3	Lower Door Assy	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

TORQUE TUBE ASSY - DIVE BRAKES - WING



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

TORQUE TUBE ASSY DIVE BRAKES - WING

ITEM	PART NO.	NAME	QTY.	MODEL
1	33117G-1	R. H. Torque Tube Assy	1	
2	33117G-5	Stub Assy	1	
3	33117G-3	L. H. Torque Tube Assy	1	
4	33115G-2	R. H. Torque Tube Assy	1	
5	33115G-1	L. H. Torque Tube Assy	1	
6	33115G-5	Horn Assy	2	
7	33115G-7	L. H. Tube Assy	1	
	33115G-8	R. H. Tube Assy	1	
8	33115G-3	Horn Assy	2	
9	AN3-5A	Bolt	4	
10	AN365-1032	Nut	4	
11	AN960-10	Washer	8	
12	32517D-3	Spreader	6	
13	MS20470AD5	Rivet	A/R	
14	AN3-13A	Bolt	4	
15	AN365-1032	Nut	4	
16	AN960-10	Washer	8	
17	23D157-2	Fitting	1	
18	33117G-9	Tube	1	
19	33419H-2	Rib Assy	Ref.	
20	MS20470AD5	Rivet	4	
21	23A154-1	Point	1	
22	10162B-1	Fitting	1	
23	AN4-21A	Bolt	1	
24	AN365-428	Nut	1	
25	33117-16	Horn Half	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

TORQUE TUBE ASSY DIVE BRAKES - WING

ITEM	PART NO.	NAME	QTY.	MODEL
26	33117-15	Horn Half	1	
27	33419H-1	Rib Assy	Ref.	
28	AN3-16A	Bolt	2	
29	AN365-1032	Nut	2	
30	AN960-10	Washer	2	
31	33117-11	Tube	1	
32	33118B-1	Block	1	
33	33117-13	Bushing	1	
34	AN3-12A	Bolt	2	
35	AN960-10	Washer	2	
36	AN365-1032	Nut	2	
37	33117-7	Tube	1	
38	MS20470AD5	Rivet	6	
39	23D157-2	Fitting	1	
40	33117-7	Tube	Ref.	
41	33117G-5	Stub Assy	Ref.	
42	23D157-2	Fitting	2	
43	33413H-18	Rib	Ref.	
44	33410G-1	Rib	Ref.	
45	AN960-1216L	Washer	2	
46	AN3-12A	Bolt	6	
47	AN960-10	Washer	6	
48	AN365-1032	Nut	6	
49	334106-1	Rib	Ref.	
50	32122G-7	Horn Assy	2	
51	33115-13	Tube	2	

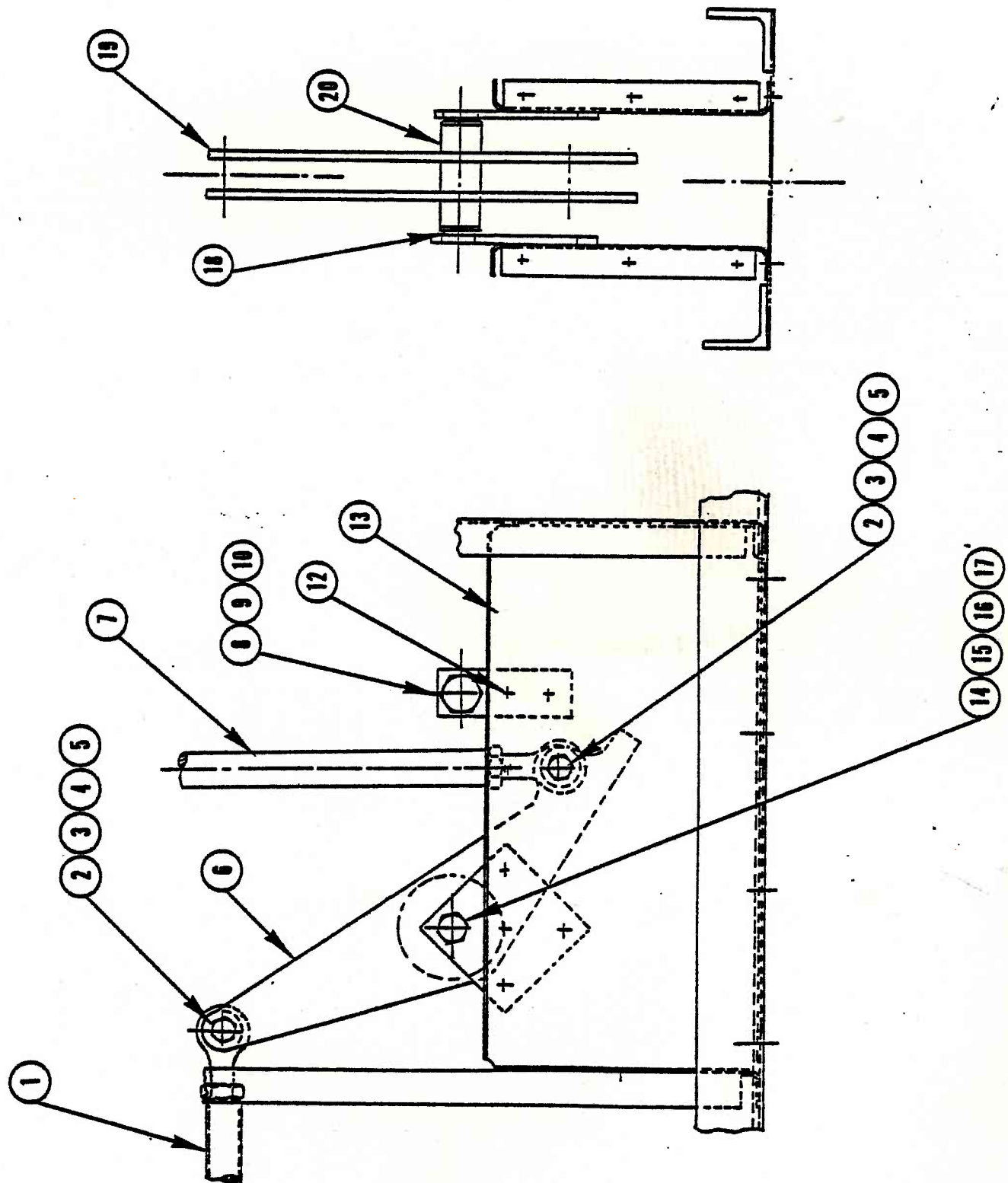
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

TORQUE TUBE ASSY DIVE BRAKES - WING

ITEM	PART NO.	NAME	QTY.	MODEL
52	AN3-12A	Bolt	2	
53	AN960-10	Washer	2	
54	AN365-1032	Nut	2	
55	32122G-11	Horn	2	
56	33115-19	Sleeve	2	
57	33115-15	Tube	2	
58	33115-11	Tube	2	
59	33115-17	Horn	4	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33107D AILERON HORN/CONTROL INSTL.



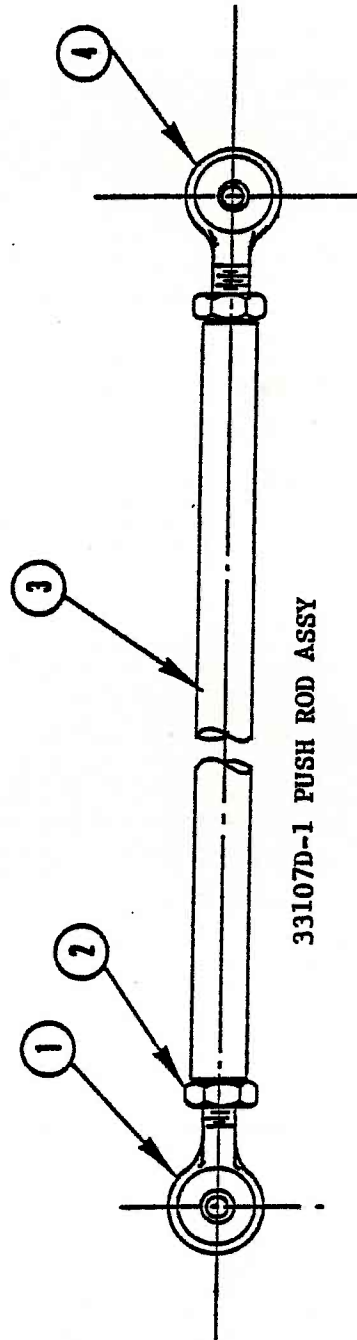
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33107D AILERON HORN/CONTROL INSTL.

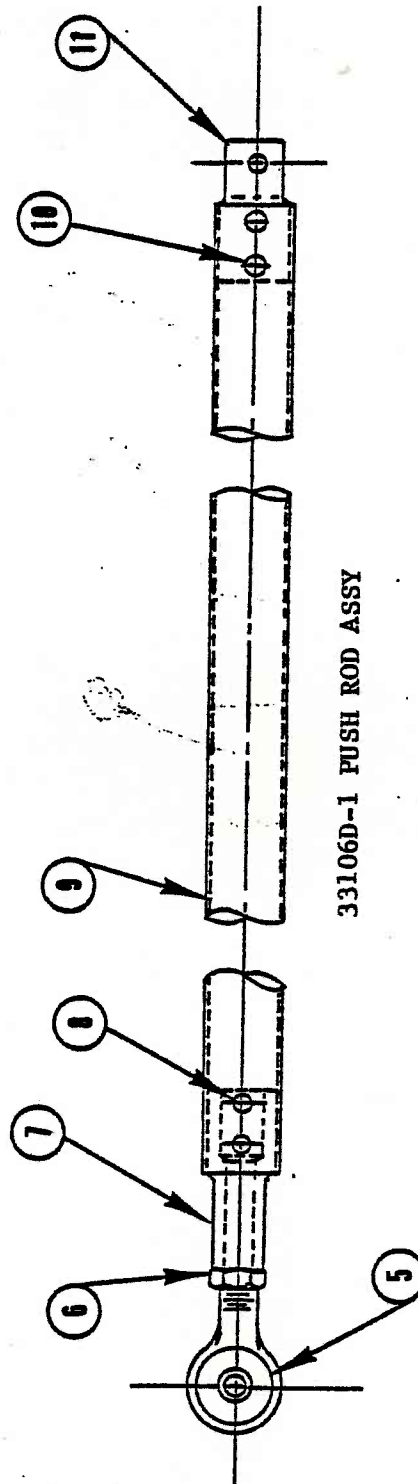
ITEM	PART NO.	NAME	QTY.	MODEL
1	33106D-1	Push Rod Assy	1	
2	AN3-11	Bolt	2	
3	AN960-10	Washer	2	
4	AN310-3	Nut	2	
5	AN380-2-3	Cotter Pin	2	
6	33105D-1	Horn Assy	1	
7	33107D-1	Push Rod Assy	1	
8	AN5-25A	Bolt	1	
9	AN960-516	Washer	1	
10	AN365-528	Nut	1	
12	AN470AD5	Rivets	A/R	
13	33108D-1 L.H.,	-2 R.H. Intercostal Assy	1	
14	AN4-25	Bolt	1	
15	AN960-416	Washer	1	
16	AN310-4	Nut	1	
17	AN380-2-3	Cotter Pin	1	
18	33105D-7	Bushing (Part of 33105D-1)	1	
19	33105D-5	Horn (Part of 33105D-1)	2	
20	33105D-9	Hub (Part of 33105D-1)	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

AILERON PUSH TUBE ASSEMBLIES



33107D-1 PUSH ROD ASSY



33106D-1 PUSH ROD ASSY

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

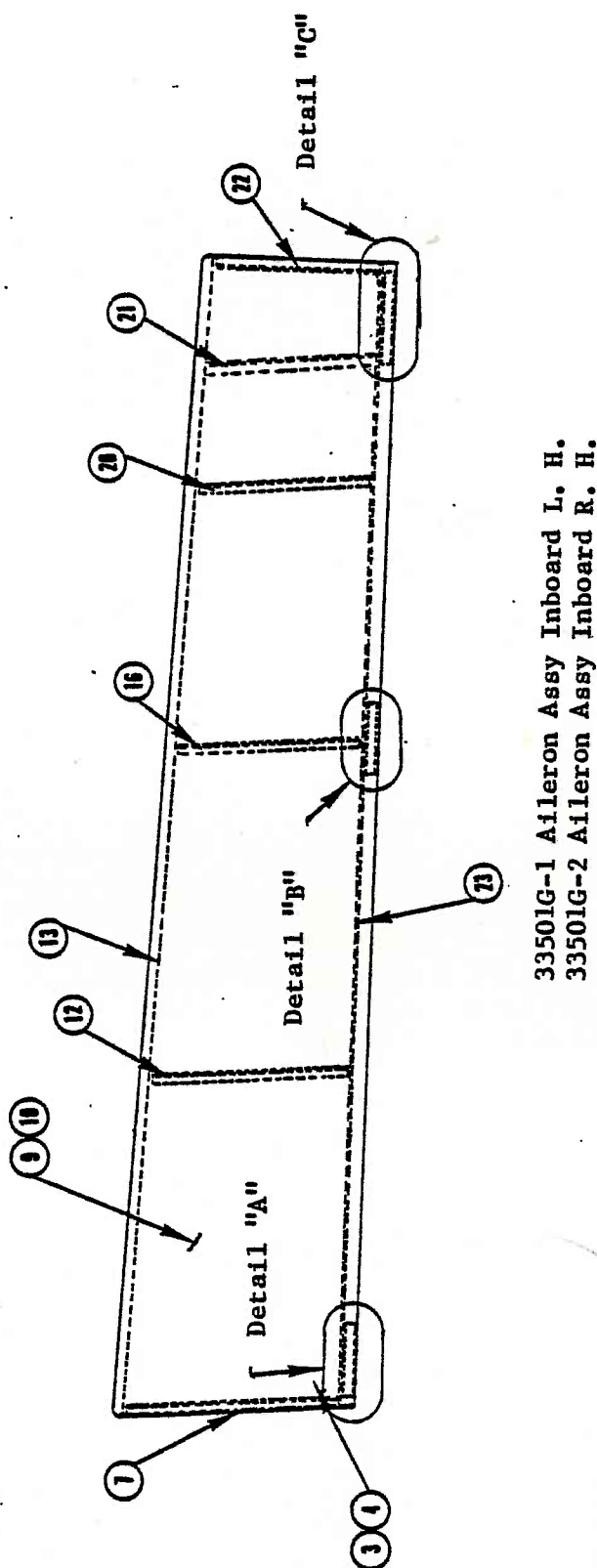
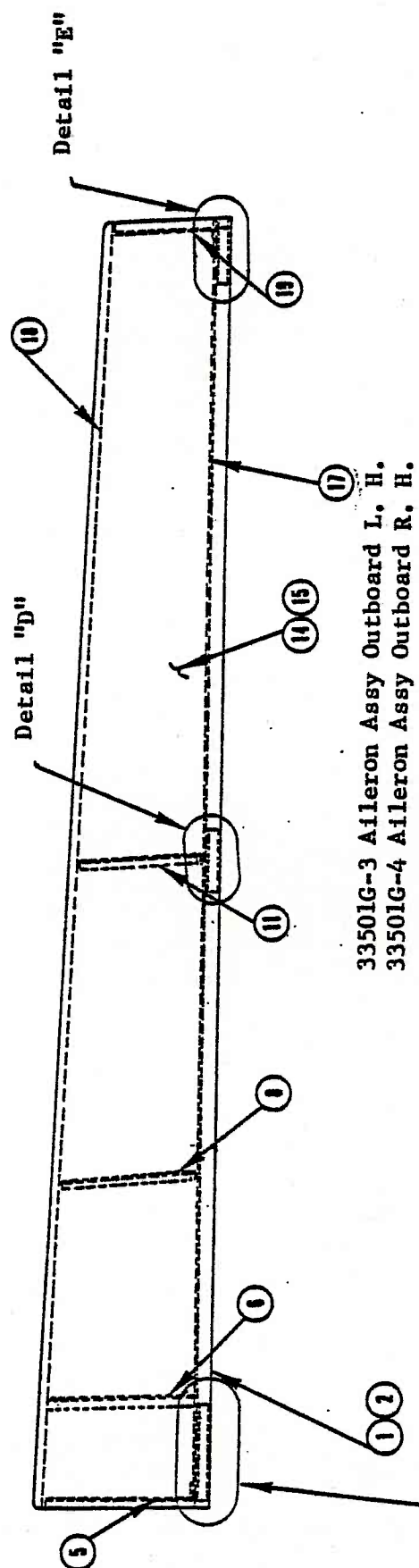
33107D-1 AILERON PUSHROD ASSY

33106D-1 AILERON PUSH TUBE ASSY

ITEM	PART NO.	NAME	QTY.	MODEL
1	MD36-16	Heim Bearing	1	
2	AN316-6	Nut	2	
3	33107-5	Pushrod	1	
4	MD36-14	Heim Bearing	1	
5	MD36-16	Heim Bearing	1	
6	AN316-6	Nut	1	
7	32116D-3	Fitting	1	
8	MS20470AD5	Rivet	2	
9	33106D-11	Tube	1	
10	MS20470AD5	Rivet	2	
11	33106D-13	Fitting	1	

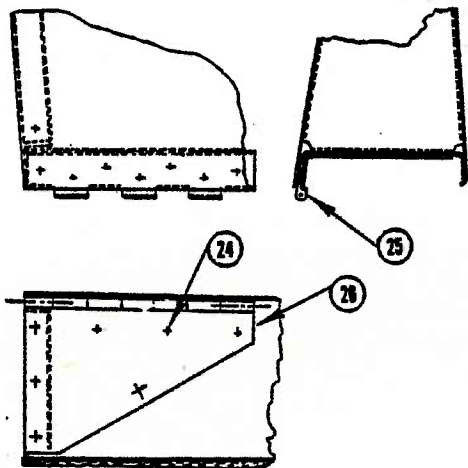
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

AILERON ASSEMBLIES

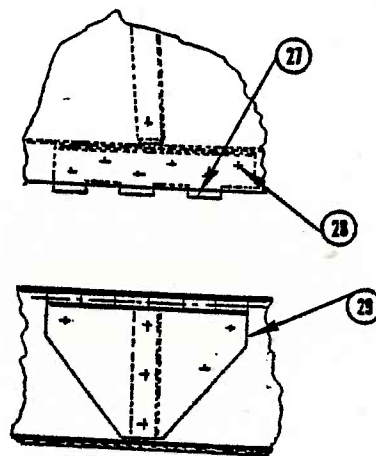


SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

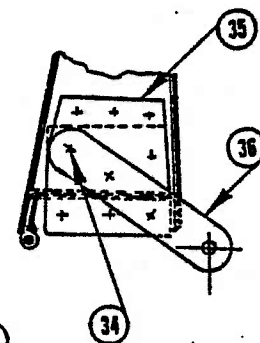
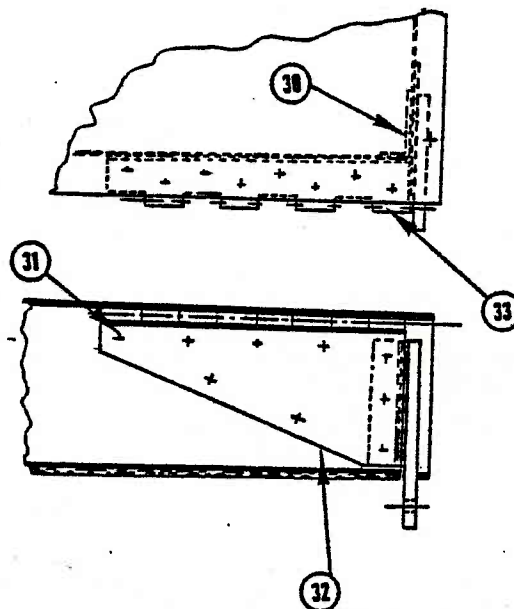
33501 AILERON (cont'd)



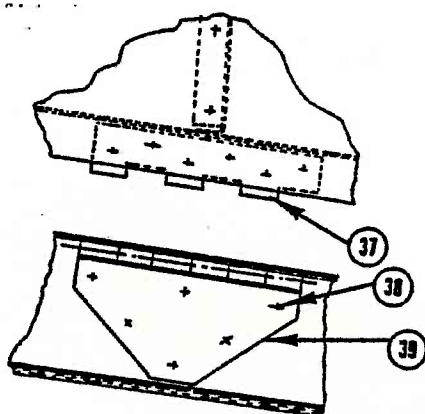
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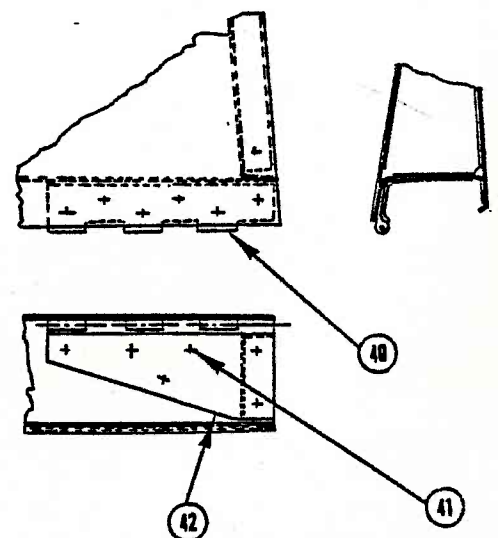
DETAIL "B"



DETAIL "C"



DETAIL "D"



DETAIL "E"

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33501G-3 AILERON ASSY OUTB'D L. H.

ITEM	PART NO.	NAME	QTY.	MODEL
1	33501G-3	Aileron Assy Outb'd L. H.	1	
5	33501- 23A	Rib	1	
6	33501-61	Rib	1	
8	33501-25	Rib	1	
11	33501-27	Rib	1	
14	33501-31	Skin (Bottom)	1	
15	33501-33	Skin (Top)	1	
17	33501-7	Spar	1	
18	33501-15	Trailing Edge	1	
19	33501-29	Rib	1	
30	33501-46	Angle	1	
31	MS20470AD4	Rivet	A/R	
32	33501-40	Doubler	1	
33	33501-54	Hinge	1	
34	MS20470AD6	Rivet	3	
35	33501-47	Reinf.	1	
36	33501-49	Horn	1	
37	33501-51	Hinge	1	
38	MS20470AD4	Rivet	A/R	
39	33501-41	Doubler	1	
40	33501-51	Hinge	1	
41	MS20470AD4	Rivet	A/R	
42	33501-43	Doubler	1	

Revised 2/3/83
Revised 12/1/81

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33501G-4 Aileron Assy Outb'd R. H.

ITEM	PART NO.	NAME	QTY.	MODEL
2	33501G-4	Aileron Assy Outb'd R. H.	1	
5	33501- 24A	Rib	1	
6	33501- 62	Rib	1	
8	33501-26	Rib	1	
11	33501-28	Rib	1	
14	33501-32	Skin (Top)	1	
15	33501-34	Skin (Bottom)	1	
17	33501-8	Spar	1	
18	33501-15	Trailing Edge	1	
19	33501-30	Rib	1	
30	33501-45	Angle	1	
31	MS20470AD4	Rivet	A/R	
32	33501-39	Doubler	1	
33	33501-53	Hinge	1	
34	MS20470AD6	Rivet	3	
35	33501-47	Reinf.	1	
36	33501-49	Horn	1	
37	33501-51	Hinge	1	
38	MS20470AD4	Rivet	A/R	
39	33501-41	Doubler	1	
40	33501-51	Hinge	1	
41	MS20470AD4	Rivet	A/R	
42	33501-44	Doubler	1	

Revised 2/3/83

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33501G-1 AILERON ASSY INB'D L. H.

ITEM	PART NO.	NAME	QTY.	MODEL
3	33501G-1	Aileron Assy Inb'd L. H.	1	
7	33501-17	Rib	1	
9	33501-9	Skin (Top)	1	
10	33501-11	Skin (Bottom)	1	
12	33501-19	Rib	1	
13	33501-13	Trailing Edge	1	
16	33501-21	Rib	1	
20	33501-55	Rib	1	
21	33501-59	Rib	1	
22	33501-24A	Rib	1	
23	33501-5	Spar	1	
24	MS20470AD4	Rivet	A/R	
25	33501-57	Hinge	1	
26	33501-35	Doubler	1	
27	33501-51	Hinge	1	
28	MS20470AD4	Rivet	A/R	
29	33501-37	Doubler	1	
30	33501-45	Angle	1	
31	MS20470AD4	Rivet	A/R	
32	33501-39	Doubler	1	
33	33501-53	Hinge	1	
34	MS20470AD6	Rivet	3	
35	33501-47	Reinf.	1	
36	33501-49	Horn	1	

Revised 2/3/83

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33501G-2 AILERON ASSY INB'D R. H.

ITEM	PART NO.	NAME	QTY.	MODEL
4	33501-2	Aileron Assy Inb'd R. H.	1	
7	33501-18	Rib	1	
9	33501-10	Skin (Top)	1	
10	33501-12	Skin (Bottom)	1	
12	33501-20	Rib	1	
13	33501-13	Trailing Edge	1	
16	33501-22	Rib	1	
20	33501-56	Rib	1	
21	33501-60	Rib	1	
22	33501-23A	Rib	1	
23	33501-6	Spar	1	
24	MS20470AD4	Rivet	A/R	
25	33501-58	Hinge	1	
26	33501-36	Doubler	1	
27	33501-51	Hinge	1	
28	MS20470AD4	Rivet	A/R	
29	33501-37	Doubler	1	
30	33501-46	Angle	1	
31	MS20470AD4	Rivet	A/R	
32	33501-40	Doubler	1	
33	33501-54	Hinge	1	
34	MS20470AD6	Rivet	3	
35	33501-47	Reinf.	1	
36	33501-49	Horn	1	

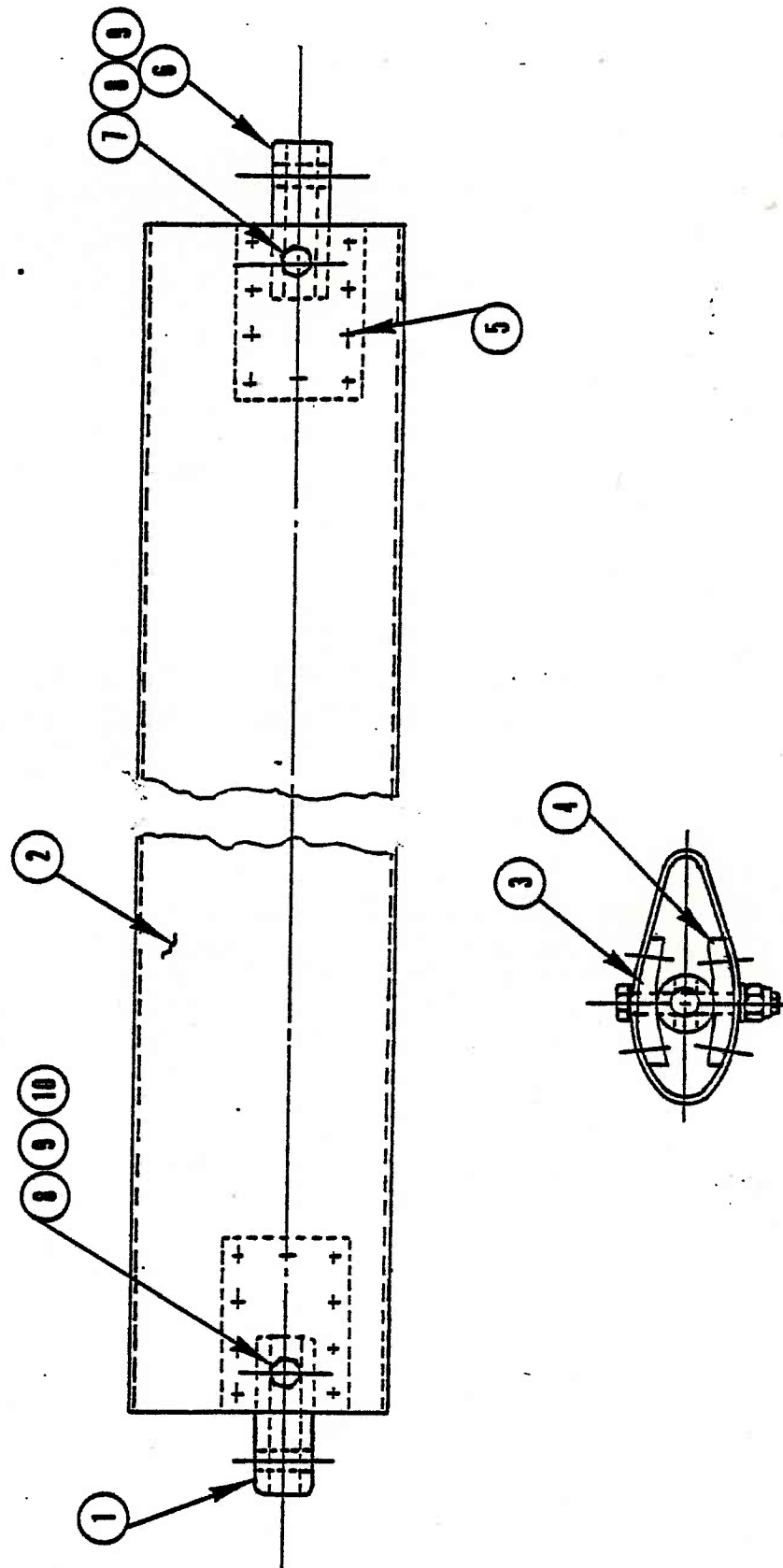
Revised 2/3/83

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33426G-1 STRUT - WING L. H.

33426G-2 STRUT - WING R. H.

33426G-3 STRUT ASSY/LESS END FITTINGS



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

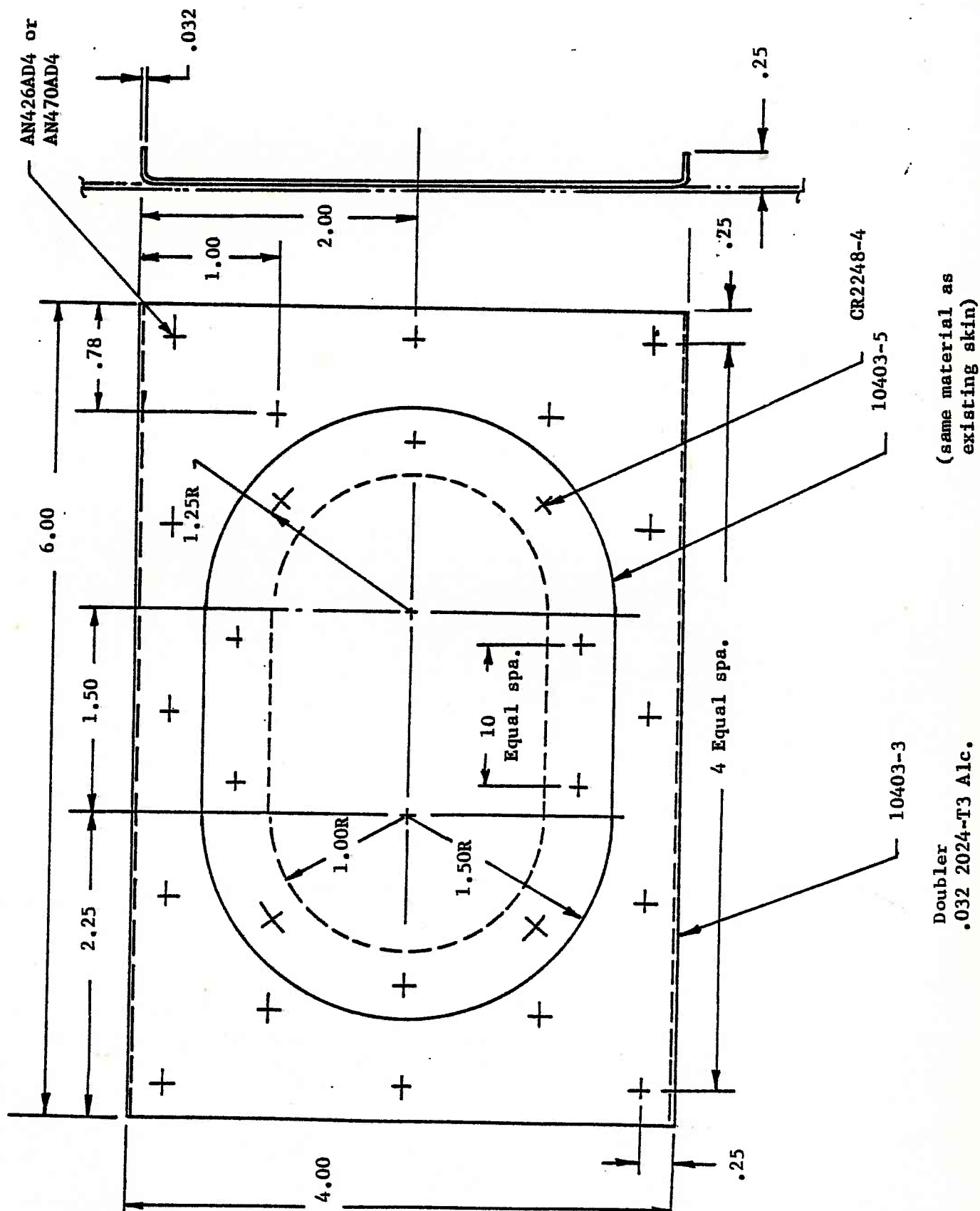
33426G-1 STRUT - WING L. H.
33426G-2 STRUT - WING R. H.

ITEM	PART NO.	NAME	QTY.	MODEL
1	33425B-1	Strut End Fitting - Upper	1	
2	33426-5	Strut Tube	1	
3	33426-8	Fitting	2	
4	33426-7	Fitting	2	
5	CR2249-6-8	Rivets	36	
6	22B464-1R	Strut End Fitting Lower for R. H. Strut	1	
	22B464-1L	" " " " " L. H. Strut	1	
7	AN7-27A	Bolt	1	
8	AN365-720	Nut	2	
9	AN960-716	Washer	6	
10	AN7-26A	Bolt	1	

Revised 12/1/81

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

FLUSH SKIN PATCH FOR ACCESS - OPEN BAY AREAS



NOTE: For skin max. - .032. For heavier skin check with Schweizer.
Limit to one opening per panel only.

3.00
TYR

2.25
TYR

DEFINE DAMAGE AREA
/ SMOOTH. (SEE NOTE 1)

OUTBOARD

STA 51.25

(2) A470-ADS
PULTS AS SHOWN

DAMAGE AREA
APPROX STA 48.62
CAN BE LOCATED
BETWEEN STA 39-70,
80-130 & 140-155

(3) A470-ADS
TYR (4) PLACES.

O40 2024-T3
POWDER PLATE.

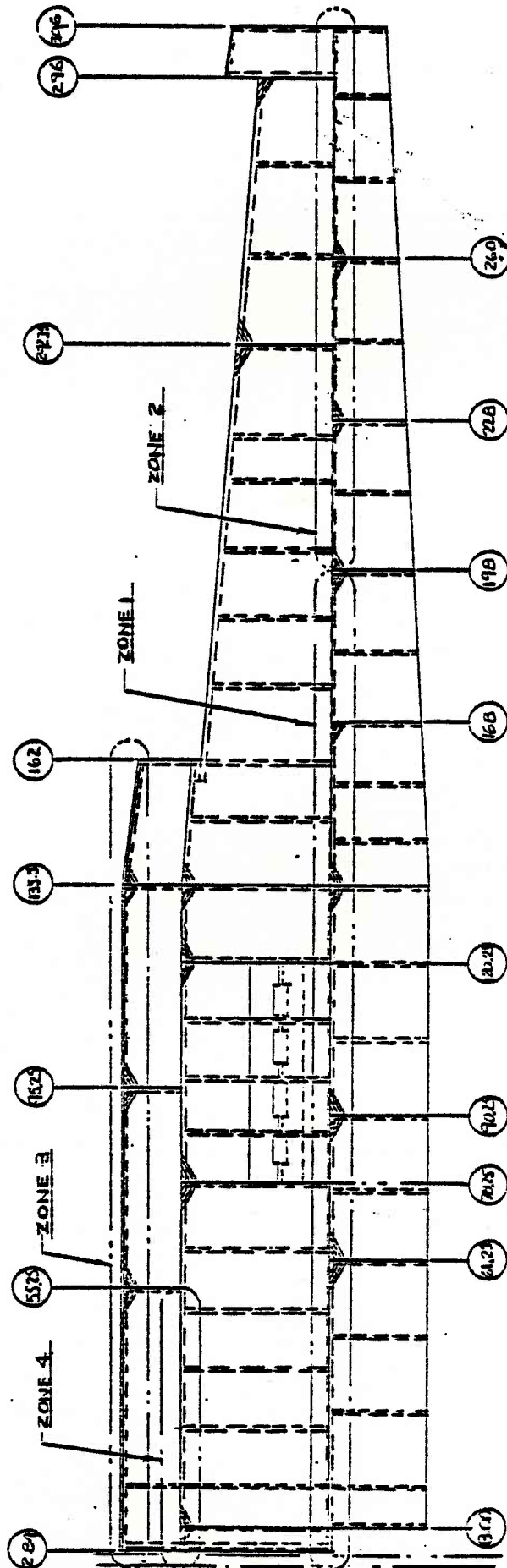
O40 2024-T4
POWDER ANGLES.

NOTE 1: SPAR MAY BE
CUT AT SLICE STR
AND NEW PIECE PUT IN,
PINET SHOULD NOT TO DAMAGE
AREA WOULD MOVE UP

[illegible]

[illegible]

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE



CR2249 or CR3243 CHERRY BLIND RIVETS MAY BE USED AS DESIRED IN ALL AREAS EXCEPT; ZONE 1, 2, 4
 ZONE 1: MS20470AD DRIVEN RIVETS ONLY ALONG MAIN SPAR, AND REAR SPAR.

ZONE 2: CR2249 or CR3243 CHERRY RIVETS MAY BE USED ALONG SPAR PROVIDED B RIVETS ARE ADDED MIDSPACED
 BETWEEN EXISTING RIVETS OUTBOARD OF STA. 198 AND INBOARD GOUTBOARD OF STA. 228 8260

ZONE 3: MS20600-AD4-1, CR2249-4-1, CR3243-4-1 OR AAPQ41 BLIND RIVETS MAY BE USED ALONG TRAILING EDGE,
 ABOVE APPLIES TO BOTH UPPER AND LOWER SURFACES, LEFT AND RIGHT WINGS.

APR	ET	7-11-77	SCHWEIZER AIRCRAFT CORP.	REPAIR SKIN RIVETING	REV.
DWN	A.D.	7-11-77	ELMIRA, NEW YORK	SG 52-33 WING'S	7292B

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

NOTES

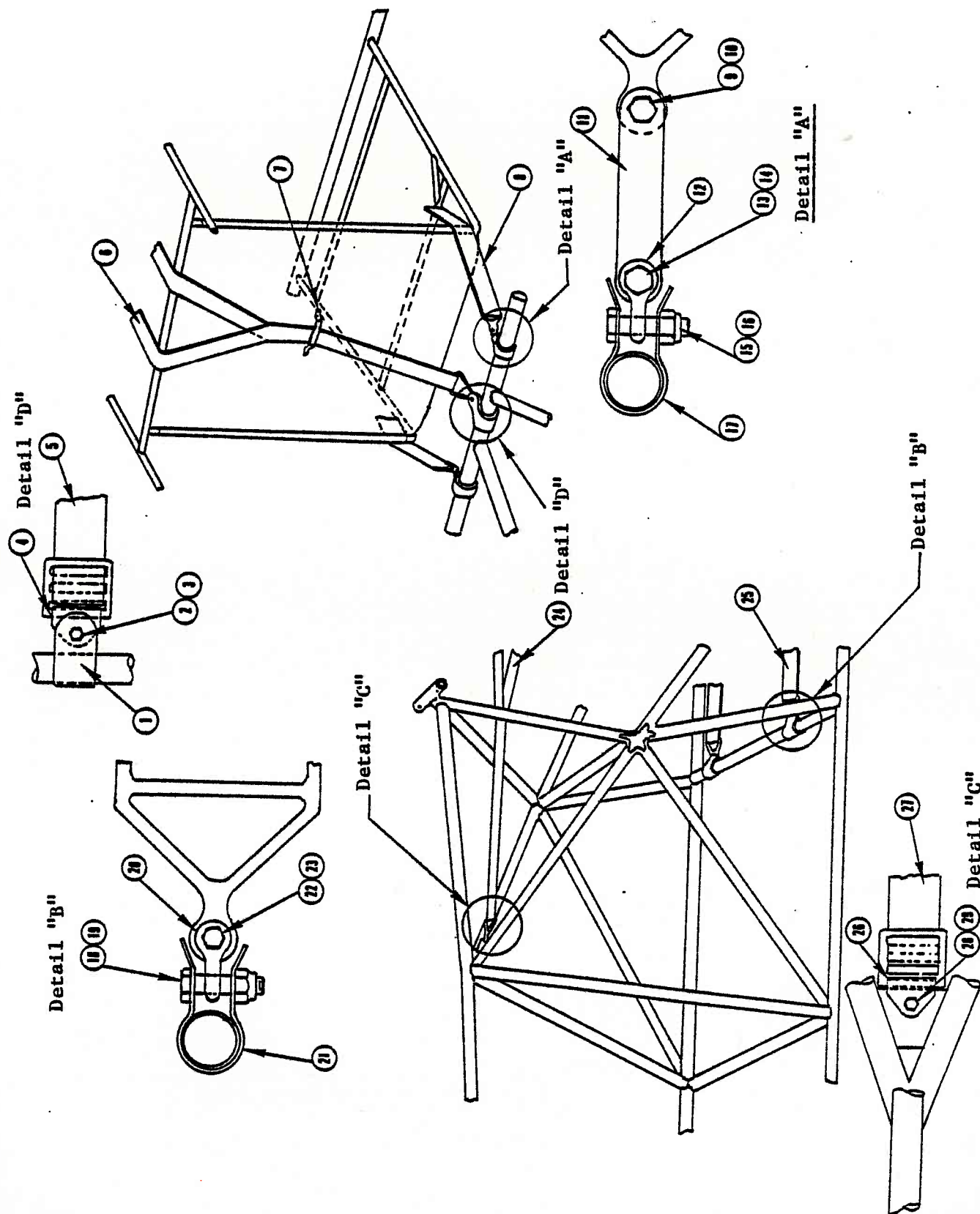
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22D321 Seat Belt and Shoulder Harness Instl.



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22D321 SEAT BELT & SHOULDER HARNESS INSTL.

ITEM	PART NO.	NAME	QTY.	MODEL
1	1A126-3	Clip	1	
2	AN4-12A	Bolt	1	
3	AN365-428	Nut	1	
4	1A318-1	Lug	1	
5	1B320-1	Shoulder Harness	1	
6		Harness (1B320-1)		
7	22315-8	Holder	1	
8	B-14	Seat Belt	1	
9	AN4-7A	Bolt	2	
10	AN365-428	Nut	2	
11	1A310-1	Lug	2	
12	AN115-32	Shackle	2	
13	AN4-7A	Bolt	2	
14	AN365-428	Nut	2	
15	AN5-12A	Bolt	2	
16	AN365-524	Nut	2	
17	1A126-2	Clip	2	
18	AN5-12A	Bolt	1	
19	AN365-524	Nut	1	
20	AN115-32	Shackle	1	
21	1A126-1	Clip	1	
22	AN365-428	Nut	1	
23	AN4-7A	Bolt		
24	B-15	Harness	1	
25		Seat Belt	Ref.	

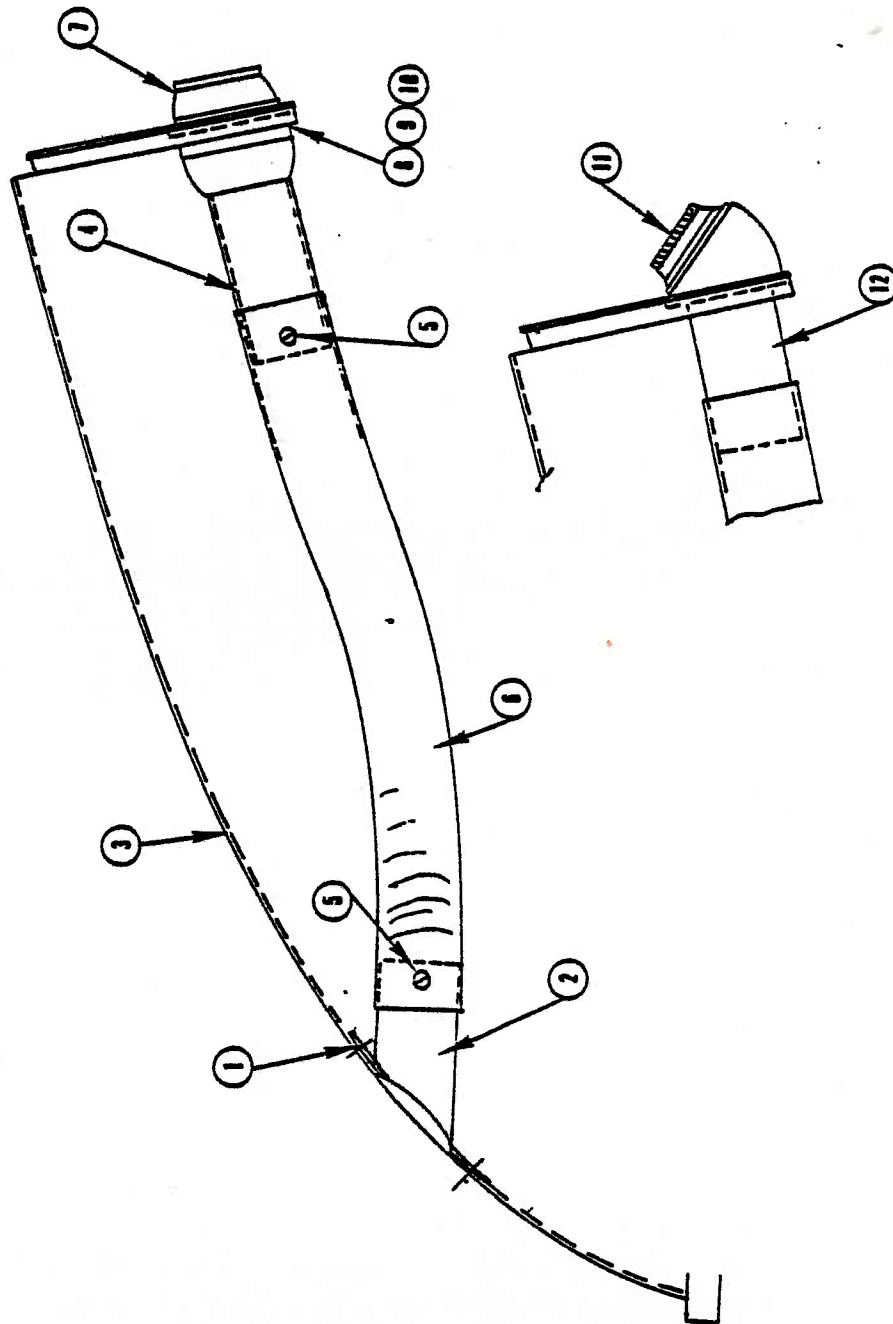
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

22D321 SEAT BELT & SHOULDER HARNESS INSTL.

ITEM	PART NO.	NAME	QTY.	MODEL
26	1A318-1	Fitting	2	
27	1B320-1	Seat Belt	1	
28	AN4-7A	Bolt	2	
29	AN365-428	Nut	2	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33312-5 Air Vent Instl.



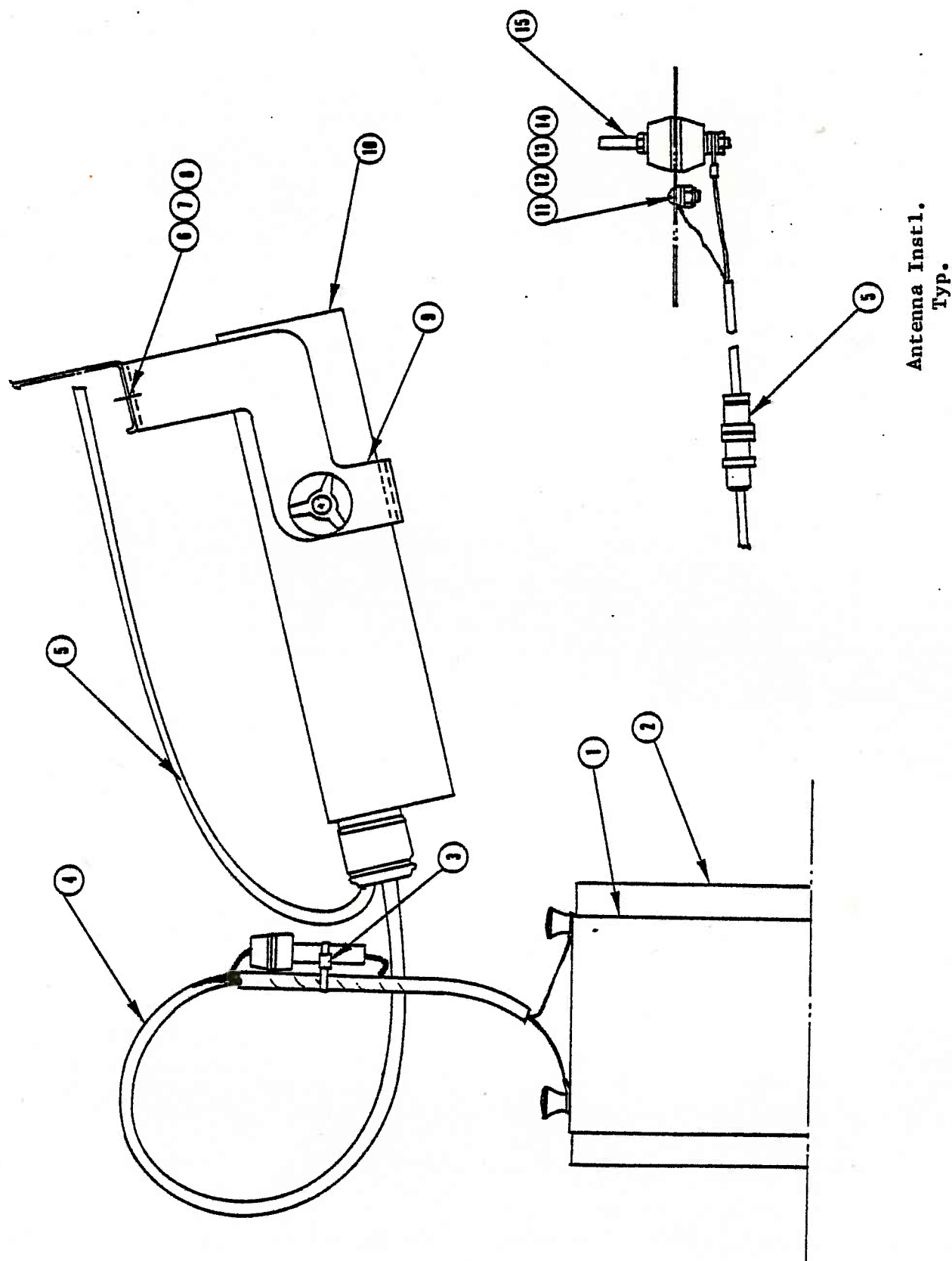
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33312-5 AIR VENT INSTL.

ITEM	PART NO.	NAME	QTY.	MODEL
1	MS20426AD3	Rivets	3	
2	33309-1	Vent Intake	1	
3	33324	Nose Fairing	Ref.	
4	10329-3	Spinning Adapter	1	
5	#4 x 1/4	Type Z P.K. Screws	2	
6.	33312-3	Flex Tube	1	
7	9977005-1	Air Vent	1	
8	AN515-6-6	Screw	4	
9	AN345-6	Nut	4	
10	AN935-6	Washer	4	
11	9977059	45° Air Vent	Optional	
12	10335-1	Panel Adapter	Optional	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Opt. - Radio Inst'l (Typ.) 33919D and 33918D



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

RADIO INSTL. TYPICAL

ITEM	PART NO.	NAME	QTY.	MODEL
1		Battery Mount (with ballast wt. instl.)	1	
	33915-1	Mount - Eveready Lantern #732 NBDA		
	33915-3	Mount - Globe - Battery 1245-1		
	10948-1	Mount - Globe (Cell Cell 1400)		
1		Battery Mount (No ballast weight)		
	10945D-1	Mount - Eveready Lantern #732 NBDA		
	34921D-1	Mount - Globe G. C. 1245-1		
2		Battery	1	
	732NBDA	Eveready		
	1245-1	Globe G. C.		
	G. C. 1400	Globe		
3	SST21	Wire Tie	A/R	
4		Wire Harness		
	33920-41	Harness for Alpha 100/Eveready 732 NBDA		
	33920-43	Harness for Alpha 100/1245-1 Globe G.C.		
	33920-47	Harness for Alpha 100/1400 Globe G.C.		
	33920-35	Harness for Mentor TR12/Eveready 732 NBDA		
	33920-37	Harness for Mentor TR12/1245-1 Globe G.C.		
	33920-39	Harness for Mentor TR12/1400 Globe G. C.		
5		Antenna Lead		
	10919-13	Lead for Alpha 100		
	10919-5	Lead for Mentor TR12		
6	AN525-10R10	Screw	2	
7	AN365-1032	Nut	2	
8	AN960-10	Washer	2	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

RADIO INSTL. TYPICAL

ITEM	PART NO.	NAME	QTY.	MODEL
9		Bracket - Radio Mount	1	
	10938-7	Mount - Genave Alpha 100		
	10938-5	Mount - Mentor Tr-12		
10		Radio	1	
	TR-12	Mentor		
	Alpha 100	Genave		
11	AN525-832-8	Screw	1	
12	AN365-832	Nut	1	
13	AN936-A8	Washer - Lock	1	
14	AN960-8	Washer	1	
15	Lambda 10	Antenna	1	

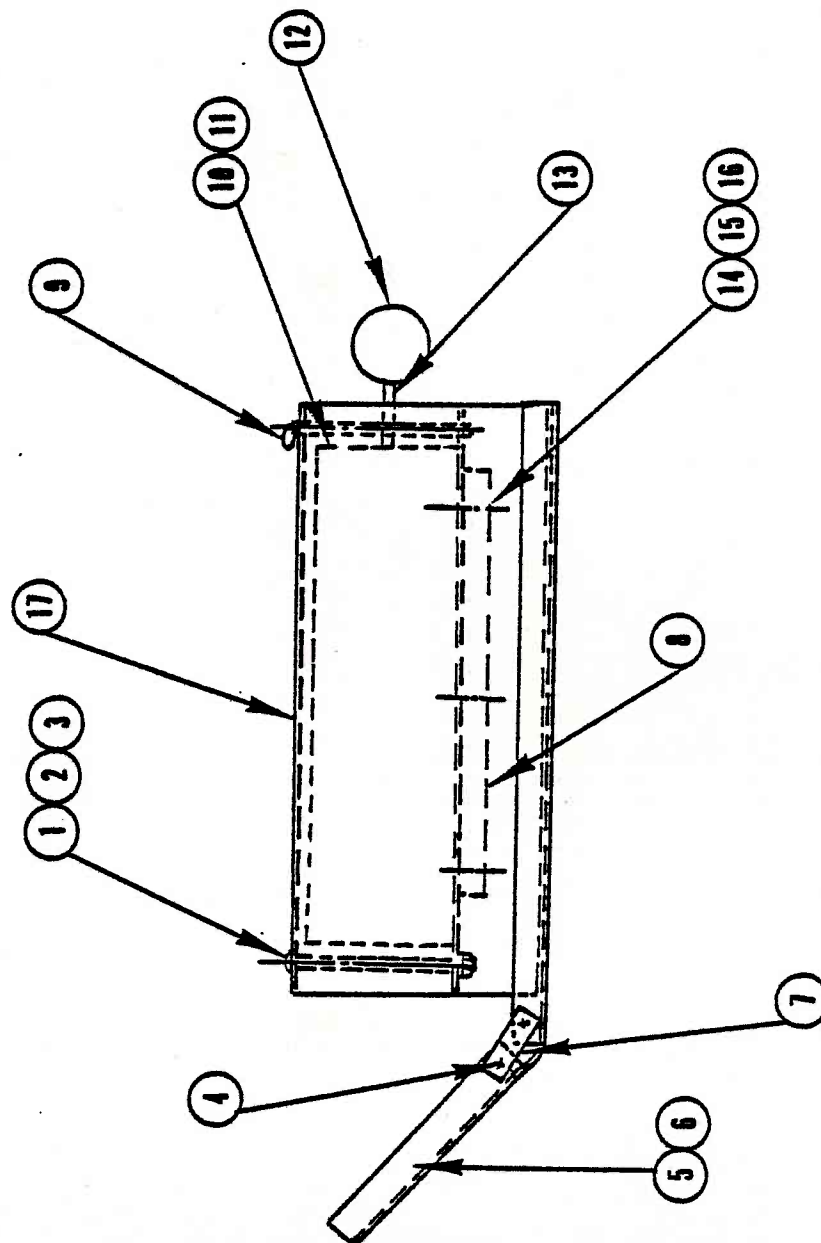
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33011D-1 Ballast Weight

thru 575

Instl. - Removable

33019D-1 576 & Up



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

33011D-1 BALLAST WEIGHT INSTL - REMOVABLE - thru 575

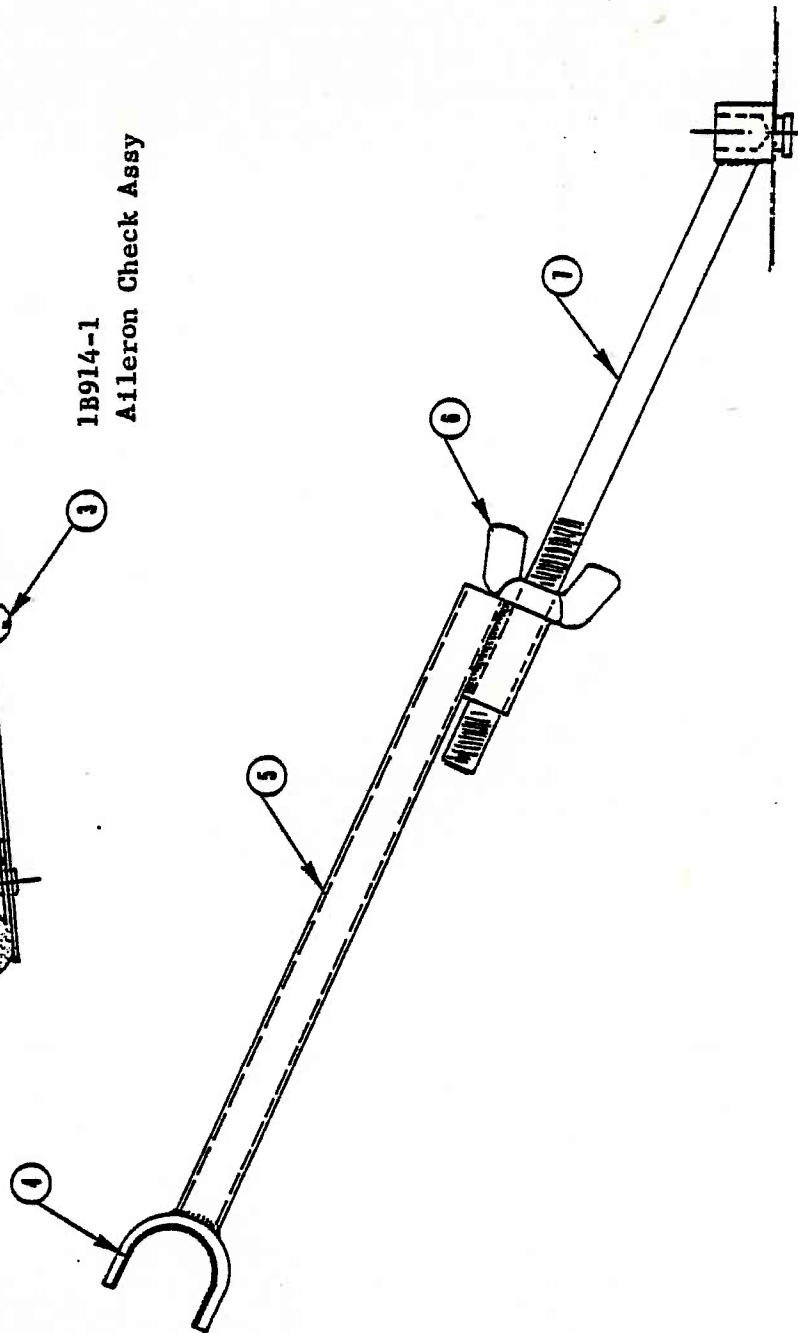
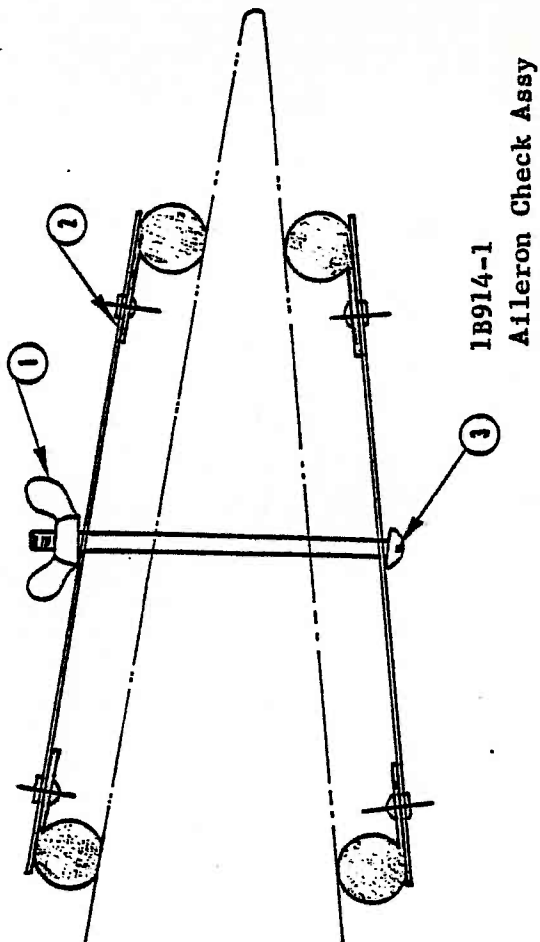
33019D-1 576 & Up

ITEM	PART NO.	NAME	QTY.	MODEL
1	AN24-48A	Screw	1	
2	AN960-D416	Washer	1	
3	AN365-428	Nut	1	
4	MS20470AD5	Rivet	4	
5	33011-3	Bracket Assy (complete)	1	thru 575
6	33011-7	Bracket (part of 33011-3)	1	thru 575
7	33011-9	Clip	2	
8	33011-11	Ballast - Non Removable	1	
9	1200-0250-0300	Pin	1	
10	26058-5	Ballast Assy Complete.	1	
11	26058-11	Ballast (Part of 26058-5)	1	
12	R-15	Ball Handle (Part of 26058-5)	1	
13	26058-13	Rod (Part of 26058-5)	1	
14	AN505-8-20	Screw	3	
15	AN365-832	Nut	3	
16	AN960-8	Washer	3	
17	33001-5	Canister Assembly	1	

Revised 2-3-83

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

Control Locks - Misc.



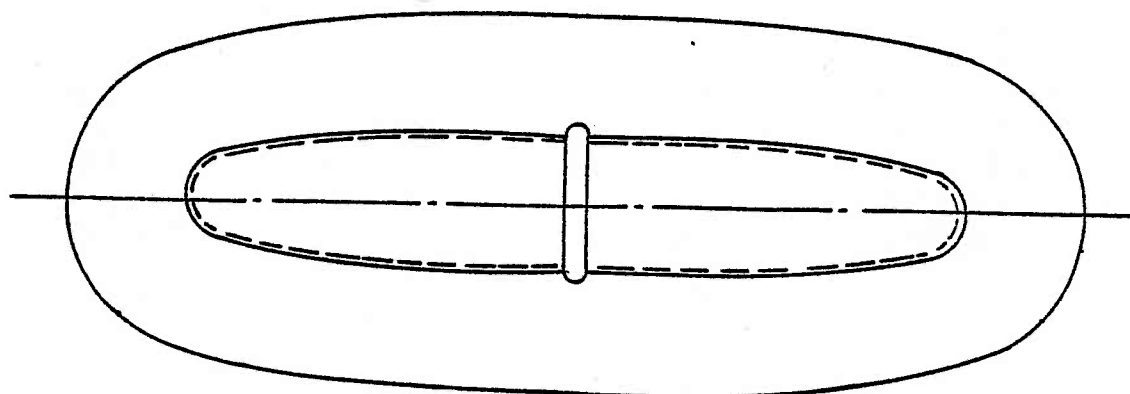
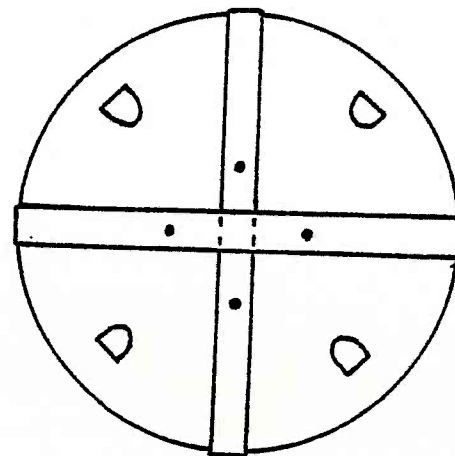
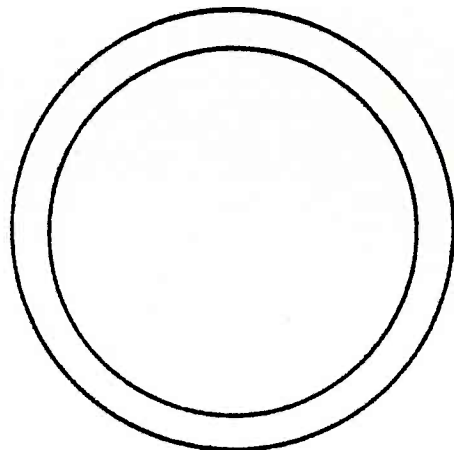
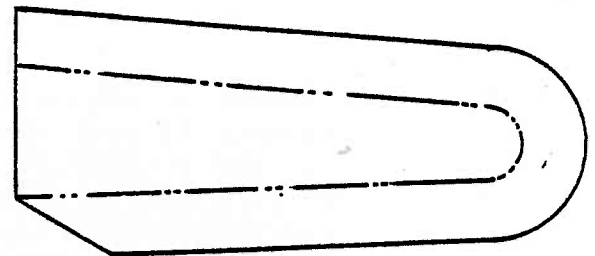
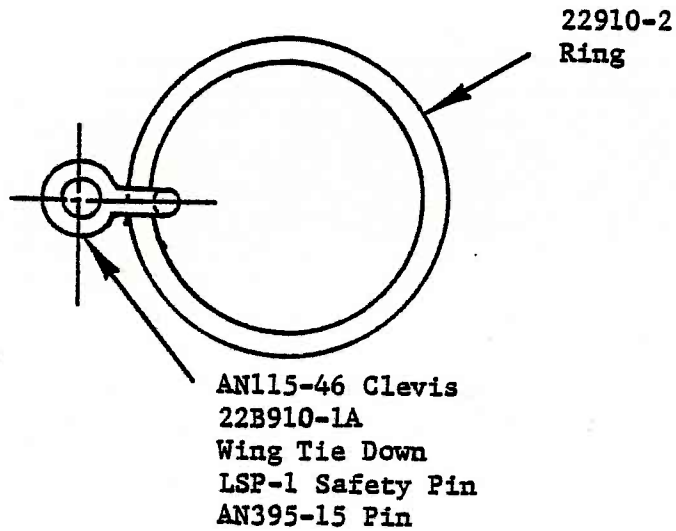
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

CONTROL LOCKS - MISC.

ITEM	PART NO.	NAME	QTY.	MODEL
	1B914-1	Aileron Chock Assy		
1	#8-32	Comm. Wing Nut	1	
2	#8-32 x 2.50	Machine Screw (Comm.)	1	
3	1B914-3	Plate Assy	2	
	10924D-1	Control Lock - Rudder		
4	10924-17	Pad - Rudder	1	
5	10924-13	Weld Assy	1	
6	3/8 - 16	Comm. Wing Nut	1	
7	10924-15	Weld Assy	1	

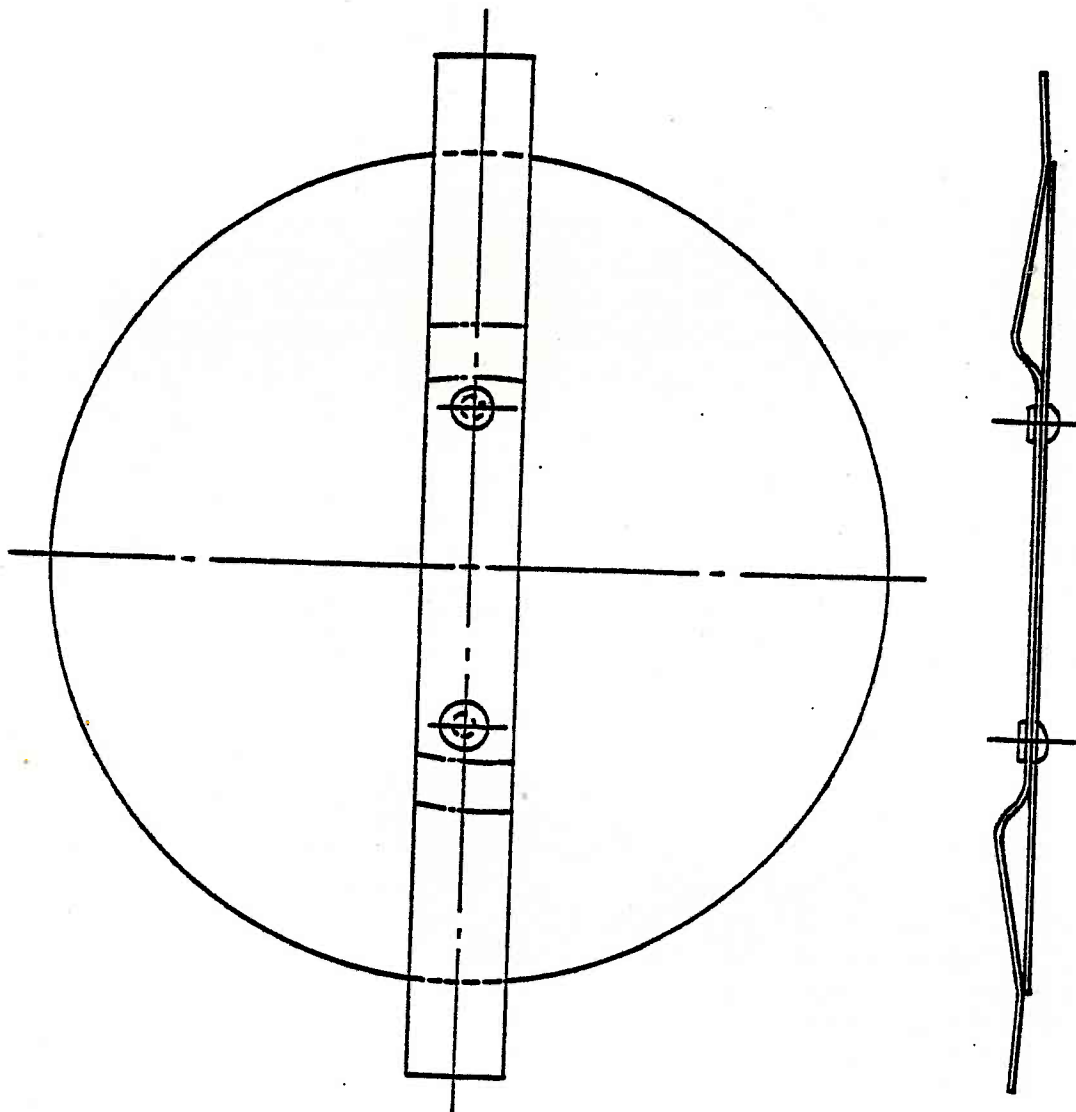
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

MISC. COMPONENTS



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

MISC. COMPONENTS

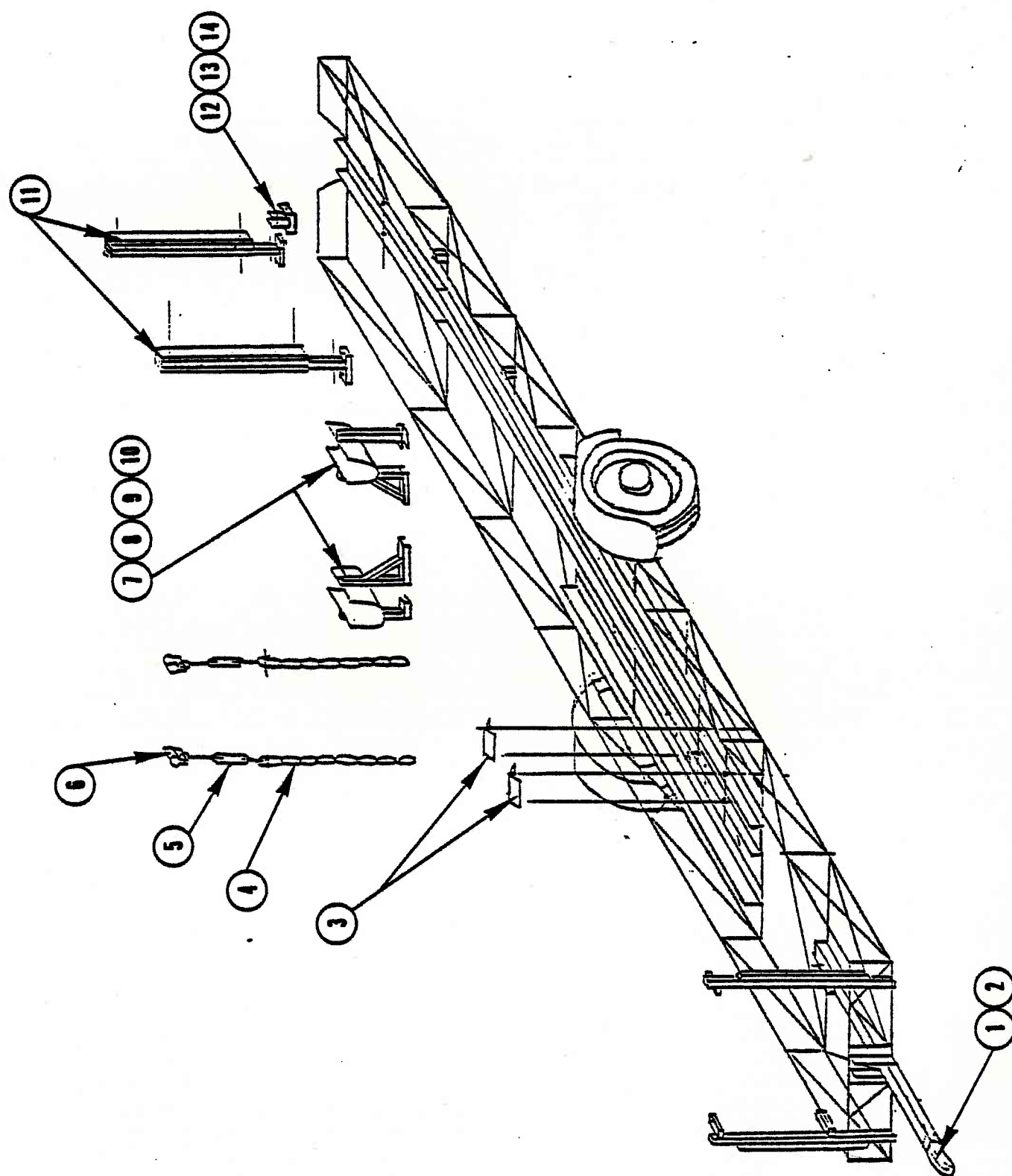


1B913-1 Hand Hole Cover (Std)

1B913-3 Hand Hole Cover (Flush)

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

LOADING ARRANGEMENT FOR 2-33 on 4228 COMBINATION TRAILER



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

LOADING ARRANGEMENT FOR 2-33 on 4228 COMBINATION TRAILER

ITEM	PART NO.	NAME	QTY.	MODEL
1	SP25080	Male Hitch Fitting - Cole-Hersee	1	
2	3715B-3	Female Pigtail	1	
3	CT1-19	Wheel Checks	2	
4	1/4" x 21"	Steel Chain	2	
5	3001-T-52	Turn Buckle (McMaster Carr)	2	
6	4228-34	Lugs	2	
7	4228-301	Wing Trough - Complete	2	
8	4228-307	Fabric Trough Assy	2	
9	4228-323	Fabric Only	2	
10	4228-331	Wing Trough Rugs	2	
11	CT1-86	Stab/Elev. Support	2	
12	4228-350	Aft Tie Down	1	
13	4228-359	Tie Down Pin - Aft	1	
14	LSP-1	Safety Pin - Tail Tie Down	1	

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

NOTES

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

STANDARD ASSEMBLY HARDWARE

KIT (2-33A)

33900-901K

Wings to Fuselage

2	33916A-3	Bolt
2	33916A-5	Bolt
4	LSP-1	Safety Pin
2	AN310-7	Nut
2	AN310-6	Nut

Wing Strut

2	33916A-5	Bolt
4	LSP-1	Safety Pin
2	33428-1	Bolt
2	33428-3	Collar
2	AN310-7	Nut
2	AN310-5	Nut

Stabilizer & Elevator to Fuselage

2	AN4-13A	Bolt	1	AN4-6	Bolt
1	AN4-33A	Bolt	1	AN310-4	Nut
7	AN960-416	Washer	1	AN380-2-2	Cotter Pin
3	AN365-428	Nut			

Stabilizer Struts

4	AN3-7	Bolt
4	AN310-3	Nut
4	AN380-2-2	Cotter Pin
4	AN960-10	Washer
4	AN960-10L	Washer

Aileron and Dive Brake

2	AN393-25	Pin
1	AN393-21	Pin
3	LSP-1	Safety Pin

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

OPTIONAL ASSEMBLY HARDWARE
KIT (2-33A)
33900-903K

Wings to Fuselage

2	33916A-3	Bolt
2	33916A-5	Bolt
4	LSP-1	Safety Pin
2	AN310-7	Nut
2	AN310-6	Nut

Optional Wing Strut Hardware Set

4	33916A-5	Bolt (strut/fuse.)
4	AN310-7	Castle Nut
4	LSP-1	Safety Pin

Stabilizer Struts

4	AN3-7	Bolt
4	AN310-3	Nut
4	AN380-2-2	Cotter Pin
4	AN960-10	Washer
4	AN960-10L	Washer

Aileron and Dive Brake

2	AN393-25	Pin
1	AN393-21	Pin
3	LSP-1	Safety Pin

Stabilizer & Elevator to Fuselage

2	AN4-13A	Bolt
1	AN4-33A	Bolt
7	AN960-416	Washer
3	AN365-428	Nut
1	AN4-6	Bolt
1	AN310-4	Nut
1	AN380-2-2	Cotter Pin

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

AVAILABLE REPAIR AND RETROFIT KITS

SECTION "A"

STANDARD ASSEMBLY HARDWARE KIT

33900-901K

Includes hardware for wing/fuselage, wing/strut, strut/fuselage, rudder/fin, horizontal stabilizer/fuselage, stab strut/fuselage and strut, and aileron pushrod (fuselage) rigging points.

OPTIONAL ASSEMBLY HARDWARE KIT

33900-903K

Includes hardware as above except wing/strut hardware utilizes tapered bolt (33428-1) collar, castle-nut and safety pin.

33313-151X

Complete cockpit trim panels inst'l hardware

33313-152X

Complete cockpit beading

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SECTION D

- 33140G-1K Ratchet Lock Trim Retrofit Kit installs stick-mounted, rapid-acting, finger-tip ratchet trim on any 2-33 prior to Ser. No. 507
- 22219 C. G. Tow Kit allows any 2-33 higher launches on winch or auto tow. Kit requires some welding, fabric and repaint.

SECTION E

- 33343D-1K Rear Door Latch Kit updates any 2-33 prior to Ser. No. 565 to a more positive rear door latch mechanism.
- 33332-15K Canopy snubber retro-fit kit for all 2-22's and 2-33(A)'s up to Ser. No. 325.

SECTION F

- 33301G-90K Instrument Panel Fastner Kit (replaces "Vibrex" panel fastners on all 2-33's)
- 33922-1K T. E. Tube Inst'l Kit
- Fin Leading Edge installation of popular Braunschweiz, Irving or other total energy probes, includes plastic tubing and probe.

SECTION G

- 33924D Fin "Fix" Kit, strengthens fin spar per Service Letter No. 102-33-2. Applies to 2-33A and 2-33AK, Ser. No. 1 - 507.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SECTION H

- 33205-7K 2-33 Auxiliary Skid Shoe #33205-7 with hardware,
replacement item for any 2-33A
- 33209-3K Spring Tail Wheel Assy with swivel and tie down,
protects tail during rapid accelerations, especially
on winch or auto tow. Also useful for light pilots
or when aero towing involves rapid accelerations
- 33216R-1K Hydraulic Brake and Wheel Retrofit Kit replaces
40-7 wheel and 30-3A brake to new Cleveland hydraulic
installation with 40-97D wheel and 30-63D brake,
Includes tire and tubes.
- 33214K Field Brake "Fix" Kit, increases braking effectiveness
on Cleveland 30-3A brake equipped, 2-33's
- 1B220-1K Tip/Tailwheel Kit provides rubber tailwheel assembly
with internal bushing and mounting hardware for tip
wheel and tail wheel application.

SECTION K

- 33011D -1K Removable Ballast Inst'l, retrofit kit to allow lighter
pilots to fly 2-33 with safely installed ballast weight.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

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FABRIC

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

FABRIC APPLICATION

Dope-Lap Method

This is an approved method of joining one piece of fabric to another previously doped section. This is done where there is a firm backing, such as tubing, metal skin, or wood fairing.

First section must be doped and dried before second section is applied. One inch lap is minimum permissible in places where the joint is to be covered by surface tape. On joints which are not to be taped, the lap should be from two to four inches.

Apply wet coat of dope to previously doped section and press new section in place, smoothing out air bubbles, and brush coat of dope over joined sections. Work small sections at a time, as the dope dries quickly.

LAP SEAMS

A lap seam shall be made by lapping fabric (width 1"), dope in place, apply finishing tape 2" minimum width over lap seam, dope in place.

REGISTRATION & IDENTIFICATION MARKING

Identification and Registration numbers are applied after the finish is complete. FAR Part 45 requires that, on small aircraft, the marks must be displayed horizontally, either on both sides of the vertical tail surfaces, or, on both sides of the fuselage between the wing and the stabilizer.

The marks must be at least 3" in height, but may be up to 12" high. The stroke shall be 1/6 of the height, with the width of the characters 2/3 of the height. Spacing between characters shall be at least 1/4 of the height.

The characters should be laid out, masked off, and sprayed or brushed on with a contrasting color.

BASIC PATCHING INFORMATION

Patching of a doped surface is a simple operation, and if properly done, does not mar the looks of the finished product.

Clean the area around the hole or puncture with lacquer thinner. (If the surface has been waxed, a wax remover should be used first.) Remove pigmented (colored) dope coats and aluminized coats.

If the hole or puncture is jagged, cut out with sharp knife to a symmetrical rectangular opening. Roll edge slightly inward. Cut a patch from unwrinkled scrap fabric large enough to extend 2 inches beyond the edge of the hole in all directions, using pinking shears if available. As an alternate, cut with plain shears and fray edges approximately 1/8".

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

BASIC PATCHING INFORMATION

(Continued)

Brush clear dope in the surface to be patched, keeping 1/4" away from edges of hole. Press the patch in place, making sure center does not sag. Brush dope on edges of patch but not the center. When dry, brush on two or more additional coats, covering the entire surface. Light sanding between coats is advisable. Apply at least one coat of aluminized dope before applying finish color.

HAND-SEWN SEAMS

Hand sewn seams may be used as an alternate for dope lapping, on patching large areas and in joining sections of fabric covering, around steel tubing.

Hand sewn seams shall be made turning under edge of fabric to be jointed 3/8". Stitches shall be made as per following sketch, using not less than 4 per inch and stitches shall be taken 1/4" or more from doubled edge of the fabric to prevent tearing out.

Seam is to be covered by applying standard 1 1/2" width (min.) finishing tape doped in place.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

STANDARD DOPING PROCEDURE

(For Minimum Fabric Finish Requirements)

1. Sponge fabric of covered surface with water to remove wrinkles, allow to dry.
2. Brush two (2) coats clear dope over cemented edges and let dry.
3. Using 3" brush, dope entire surface with clear nitrate unthinned dope, making sure dope is put on evenly and has no sags. Allow to dry thoroughly. (Length of time required depends on atmospheric conditions). Normally one to two hours should be sufficient.
4. Sand carefully with #320 sandpaper. Avoid too much pressure on sharp or protruding edges.
5. Brush second coat clear dope. This may be thinned slightly to facilitate ease of application. Allow to dry. Sand lightly with #320 paper.
6. Apply tapes as called out in instructions on the individual surfaces. sand tapes lightly when dry.

NOTE: Brush dope on surface, press tape in place and brush dope over tape, rub out air bubbles.

- *7. Spray a wet coat of clear dope. (Thin with dope and lacquer thinner only enough to atomize properly. After this coat has dried, sand lightly until the surface is smooth to touch.

NOTE: So-called Wet Coat should be glossy but without sags.

8. Spray a wet coat of aluminized-dope.

NOTE: Aluminized dope is made up of a mixture of 5 oz. aluminum powder per gallon of clear nitrate dope. Mix the powder thoroughly into a small quantity of lacquer thinner. Add this mixture to the clear dope and stir thoroughly. Add enough more thinner to acquire spraying consistency. Sand thoroughly with #320 sand paper.

9. Spray two (2) more coats aluminized dope.

EXTRA COATS

If final coats are to be color, the last coat of aluminum may be omitted, and two (2) or more coats of color added.

*Brush coats may be substituted for spray coats, if spraying equipment is not available.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

FABRIC TO METAL BONDING USING LITTLE BEAR LIQUID FABRIC CEMENT

1. Purpose & Scope:

- 1.1 To provide specific instructions for the use of Little Bear Liquid Fabric Cement in bonding fabric to zinc chromate primed metal surfaces.
- 1.2 This process is applicable only as specified on blueprints.

2. Materials:

<u>Material</u>	<u>Specification</u>
2.1 Little Bear Liquid Fabric Cement	(Proprietary) Manufactured by: Little Bear Specialities Co., Inc., 3840 Bennington Ave., Kansas City 3, Missouri
2.2 Thinner, Dope and Lacquer (Cellulose Nitrate)	TTT-T-266
2.3 Masking Tape	(Proprietary) 3-M or equivalent
2.4 Lint-free and dry cleaning cloths	

3. Procedure:

- 3.1 Using masking tape, outline the bond areas on the primed structure allowing a minimum of 1 inch for fabric lap.
- 3.2 Without removing primer, thoroughly clean all areas to be bonded by wiping with a clean cloth dipped in thinner and wrung dry, followed by wiping with a dry cloth before thinner dries.
- 3.3 Brush two (2) coats of "Little Bear" Cement on cleaned structure. To improve brushing qualities when necessary, the cement may be thinned up to a maximum of 1 part thinner to 5 parts cement.
- 3.4 After the cement on the structure has become dry to touch, fasten fabric in place with masking tape or pins and apply 1 brush coat of cement to fabric at edges only. Work the cement with brush and fingers until fabric has been thoroughly wetted through and complete contact is made on cement coated structure. Remove temporary fastenings as bonding progresses. Allow bonds to dry 1/2 hr. min.
 - 3.4.1 Wet the fabric with sponge or spray and let dry to remove wrinkles.
 - 3.4.2 If fabric is to be bonded at intermediate points, i.e., ribs, stringers, et., brush on cement on these areas as in 3.4 above after removing wrinkles as described in 3.4.1.
- 3.5 Allow a minimum of 2 hours drying under good conditions (more under poor drying conditions) before applying first coat of dope to fabric.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

FABRIC ATTACHMENT TO METAL RIBS

Scope: This Specification is applicable to glider type aircraft only and with use of intermediate grade fabric.

General: Fabric attachment to metal ribs may be made with either parker Kalon (P.K.) screws and washers or with blind, fabric type, rivets.

1. P.K. Screw Method

F #4 Cadmium plated, stove head, P.K. screws (Type A) with AN960-A4L (or equivalent) washer under head.

H #41 (.096)

S As specified on drawing

T As specified on drawing

2. Blind Rivet, Fabric Type, Method

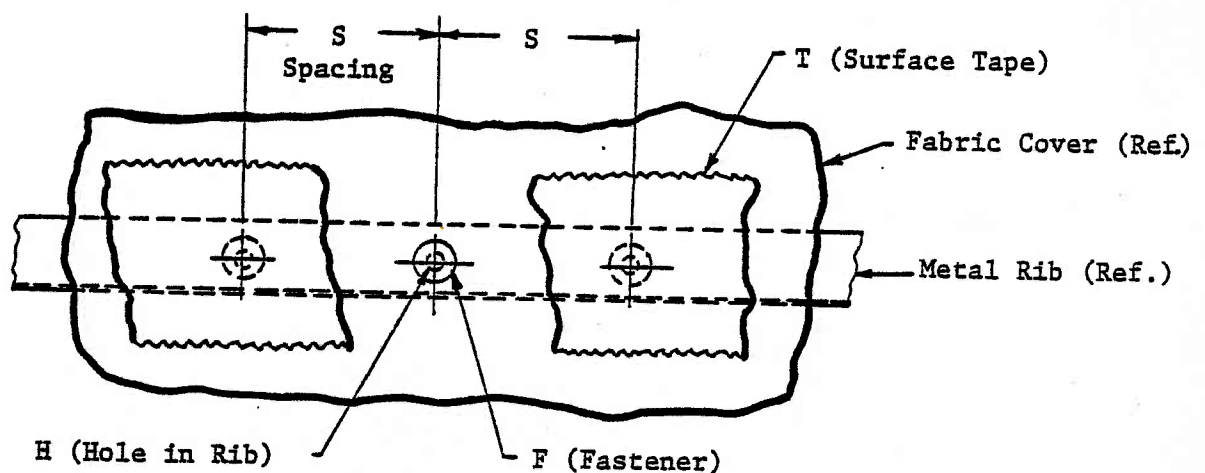
F a. "Huck", PT-T-A4-1

b. "Cherry", CR1481-4-2

H #30 (.1285)

S As specified on drawing

T As specified on drawing



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SGS 2-33 COVERING & FINISHING MATERIALS

32 yds.	Ceconite #102 (50") Fabric
2 yds.	1" Surface Tape, Grade A
63 yds.	2" Surface Tape, Grade A
3 yds.	3" Surface Tape, Grade A
2 yds.	4" Surface Tape, Grade A
140	AD42ABSLF Fabric Rivets
4 1/2 gal.	Clear Nitrate Dope (B-1460)
2 1/4 gal.	Clear Nitrate Dope (Non-Tautening #A-1915)
1 gal.	Super Seam Cement
6 oz.	Aluminum Paste (or powder)
2 1/4 gal.	Nitrate Dope Thinner
3 lbs.	"White Lightning" Body Fill and Additive
1 qt.	#30 Primer Surfacer
3	#37 Inspection Ring (1A903-1)
3	1A902-1 Inspection Hole Cover
7	AN231A2 Drain Grommet (1A905-1)
1	22D929-1 Fairlead
2	26A914-1 Cable Fairlead
1	33901G-23 Patch, Fabric
2	33901G-25 Patch, Fabric
1	Spray Can, Zinc Chromate Primer, Green
1	33901-3 Fuse Envelope (Opt.)

DRAWINGS

19D915	33901G
19D916	33906D

Ceconite Procedure Manual #101

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

FINISH APPLICATION

Fabric shall be finished in accordance with the following:

- (1) Two (2) coats of clear - nitrate dope brushed on, sanded when dry.
- (2) Apply necessary rib lacing, finishing tape as required by particular surface.
- (3) Two (2) additional coats of clear nitrate dope sprayed on.
- (4) One (1) coat of aluminized, pigmented dope sprayed on, sanded when dry.
- (5) Three (3) coats of pigmented dope sprayed on, sanded and rubbed in accordance with finish desired.

NOTE:

- (1) If surface is to be aluminum in color spray two (2) additional coats of aluminized dope after Item 4.
- (2) The above requirements are minimum; additional coats of dope may be applied, depending upon the finish required.
- (3) Spray coats may be brushed on if spray equipment is not available.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

FINAL PAINT FINISH

Owners naturally want an attractive paint job on a new sailplane. Several methods which may be used are shown below. For future reference (yours or subsequent owners), do not fail to enter the materials used for finishing, under the "Aircraft Description" section in the front of the Sailplane Logbook.

I. ENAMEL FINISH

Enamel is the ideal finish as it has very good lasting qualities, is flexible enough to work well on both fabric and metal, and makes a smooth finish.

1. Sand the fabric covered portion of ship carefully with #280 sand paper or finer, feathering out edge where fabric ends. Care should be taken to avoid sanding through fabric on high spot rivets, etc. Remove aluminum dust with clean rags or air stream.
2. Clean metal portion with enamel reducer, (not lacquer thinner) and dry. Scuff-sand metal portions lightly with #400 sand paper, preferably wet. Clean thoroughly with water and dry.
3. Touch up the primer where necessary and recheck for smoothness.
4. Using a good grade of automotive enamel, thin according to direction on label (usually 25% reducer) and strain mixture with commercial paint strainer or several thicknesses of cheesecloth.
5. Tack off surfaces with commercial tack rag and spray one light or mist coat over all, using approximately 60 lbs air pressure. Let dry 15 minutes or until surface becomes tacky, then spray on full wet coat. Avoid sags or runs. Let dry 24 hours or more before putting on identification numbers.

II. COMPLETE DOPE FINISH

This is a fairly serviceable finish. However, due to the severe shrinkage of dope film, the finish may crack at joints in metal after prolonged service.

The preparation of the surfaces is the same as for enamel. Pigmented dope should be reduced approximately 50% lacquer thinner to 50% pigmented dope for suction type spray gun. Use approximately 50 lbs air pressure. Three (3) coats are recommended for complete coverage. Since dope dries quickly, the surface may be sanded lightly with #400 paper and tacked off between coats if desired. Identification numbers may be put on one-half (1/2) hour after finish coat.

III. LACQUER FINISH

Should the decision be made to use either Nitrocellulose Lacquer or Acrylic Lacquer as the final finish, the following procedure is recommended to overcome the difficulty of making lacquer stick over aged zinc chromate primer.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

III. LACQUER FINISH (Continued)

1. Clean primed surfaces thoroughly with lacquer thinner or other suitable solvent. Scuff sand, using 400 grit paper. Avoid cutting through to the bare metal.
2. Spray one coat of a lacquer base primer-surfacer or a good sealer such as DuPont "Make Ready". Scuff sand, solvent wipe and apply lacquer coats.

RIVETING

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

DRIVING RIVETS

The basic tools for driving rivets are a rivet set, one end of which fits the shape of the manufactured head of the rivet (for flush riveting the end of the set is flat or slightly convex) and a bucking bar which forms the shape or upset head.

The force to drive the rivet is applied to the rivet set against the manufactured head and the bucking bar is held against the end of the shank forming the upset head as the rivet is driven. A rivet set to fit the manufactured head is always required. However, in certain instances the upset head can be formed by hitting the end of rivet shank with a hammer, eliminating the bucking bar. This would require the help of a vise, or other stationary means, to hold the rivet set, which in effect, would be used in place of the bucking bar.

Riveting is most easily accomplished by the use of a set in a pneumatic rivet gun, but, riveting may be done satisfactorily using a hand set and hammer. The blows to the end of the set with the hammer in handriveting should be moderate and rapid. It is possible to strike a much heavier blow with a hammer than is provided by the size of pneumatic rivet gun which would be used for the sizes of rivets encountered in assembly of the kit.

Care must be taken when riveting to be sure that the set is held firmly against the head of the rivet and perpendicular to the surface. The bucking bar must be held parallel with the surface of the work to prevent bending the shank of the rivet as it is driven to avoid causing a lop-sided upset.

Rivets should be driven as rapidly as possible and with one burst to prevent work hardening of the shank and resultant difficulty in obtaining a proper upset. However, care should be exercised to prevent denting of the structure around the rivet head by using too heavy blows and not enough pressure on the bucking bar.

The bucking bar should be held against the shank of the rivet lightly for the first few blows until the rivet begins to swell. This will avoid pushing the rivet slightly out of the hole causing a gap under the head (open rivet). As soon as the rivet begins to swell, the bucking bar pressure should be increased and held firmly against the rivet until it is driven.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

GENERAL RIVETING INFORMATION

Nearly all of the sheet metal parts are held together with rivets. Rivets are manufactured from several materials. Those which will be most used are Al7S called "AD" in the coding and identified by a small dimple in the center of the manufactured head.

In order to prevent any mistakes, we list below information on rivet lengths so you can check the rivets you install.

CHOOSING RIVET LENGTH

The proper length (L) rivet to use in a given application is equal to the total thickness of the material to be riveted (T) plus 1 1/2 times the diameter (D) of the rivet or $T + 1 \frac{1}{2} D = L$.

For example: The proper length 1/8 rivet that would be used to rivet a piece of .020 material to a piece of .040 material, would be determined as follows:

$$(.020 + .040) - (1/8 - 1/16) = 1/4" \text{ or } (4/16), -4 \text{ length}$$

Per the rivet code, this would be an AN470-AD4-4 for Universal Head, or AN426-AD4-4 for Flat Head.

In many cases, the calculated rivet length will not fall on an even 1/16" rivet length increment and in such cases the nearest larger or shorter length should be chosen. Experience will dictate whether to choose the larger or shorter, however, the thickness of the structure to be riveted has a great bearing on the choice. If the total thickness to be riveted is less than 1/4", the shorter size will generally produce the more satisfactory rivet. With thickness about 1/4", the longer length should generally be chosen.

The correct rivet length will produce an upset that is 1 1/2 D in diameter, 1/2 D in height and is concentric with the shank if the hole size is correct, and the rivet properly driven.

The desired dimensions for rivet upsets are as stated above. The minimum dimensions are 1 1/3" D for diameter of upset and 1/3 D for height of upset are shown in tabular form below.

Rivet Dia.	Dia. of Upset		Height of Upset	
	Min.	Max.	Min.	Max.
3/32	1/8	5/32	1/32	None
1/8	5/32	13/64	3/64	"
5/32	13/64	17/64	1/16	"

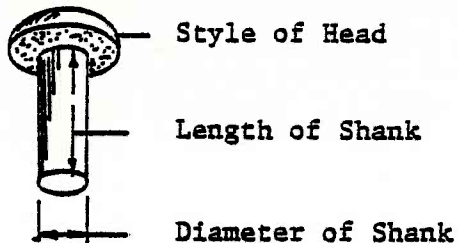
Upsets which fall within the above limits are acceptable. These which do not, should be retapped or removed and replaced.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

AN STANDARDS ON FASTENING DEVICES

RIVETS

Rivets Differ
According to ---



You Can Tell the Style by
the Shape of the Head ---

AN470



Universal
Head

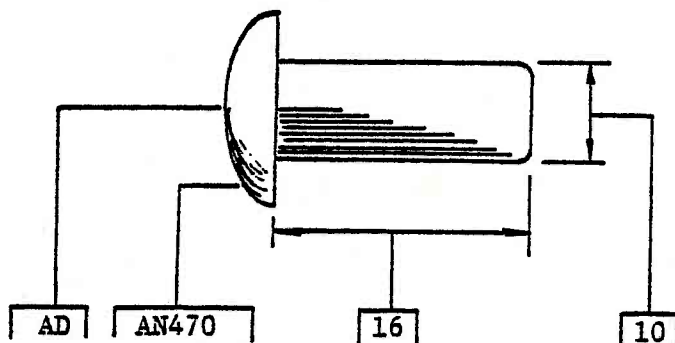
AN426



100° Countersunk
Head (Flush)

Rivets Also Differ According to Material

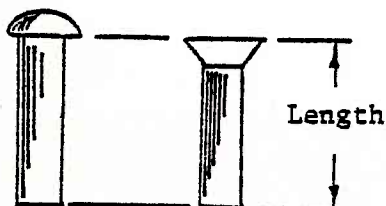
RIVET	CODE	HEAD MARKING	MATERIAL
	AD	Dimple	A17S
	DD	Two Raised Dashes	24ST



AN470 = Type of Head
AD = Material Code
10 = Dia. Measured in 1/32
16 = Length Measured in 1/16

EXAMPLE:

AN470AD10-16 - Universal Head, 17S Alum, 5/16 Dia., 1" Long



Length is measured from the top of the Flush
Head & the underside of the Universal Head.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

FLUSH RIVETING

There are two methods of providing a depression around a rivet hole into which the head of the rivet will seat.

Method 1 is by countersinking. This method may only be used on material at or above the minimum thickness as specified in Table 1.

Method 2 is by forming a depression of the proper size to accommodate the head of the rivet. This method is called dimpling and must be used on all skins, ribs, etc., in which the material thickness is less than the minimum shown on Table 1.

Either method may be used separately or in combination as shown in Table 2.

TABLE #1

<u>Rivet Dia.</u>	<u>Min. Gauge for Countersinking</u>
3/32	.032
1/8	.040
5/32	.051
3/16	.051

TABLE #2

	Top Sheet Countersunk	To be used if top sheet is above minimum shown in Table #1 & lower sheet may be below minimum
	Top Sheet Dimpled Bottom Sheet Countersunk	To be used if top sheet is below minimum shown in Table #1 & bottom sheet is above minimum.
	Both Sheets Dimpled	To be used if both sheets are below minimum shown in Table #1

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

COUNTERSINKING

Stop-Countersink

The use of a stop-countersink is recommended for all countersinking operations because its use produces uniform, concentric countersinks and greatly lessens the danger of over countersinking, which if extreme will spoil the work altogether or make necessary the use of an oversize rivet.

If a countersink is a few thousandths of an inch too deep, the rivet head will not fill the countersink. The rivet set will contact the material rather than the rivet and if so driven, will stretch the material causing loss in structural strength as well as buckling of the material.

Place the stop countersink in a drill motor and adjust as follows:

To adjust the stop countersink; hold the body firmly with one hand and the sliding sleeve with the other. Pull back the sleeve and turn the sleeve to the right or left for adjustment. Each mark on the sleeve represents an adjustment increment of .001 inch. Let the spring loaded sleeve drop back to its original position to lock the adjustment.

The stop countersink should be adjusted by trial and error - on a scrap piece of metal using a rivet of the size to be installed as a gage before any countersinking of the structure is begun. Set it so that the rivet head remains from .001 to .005 above the surface of the material. An occasional spot check should be made during the countersinking operation to be sure that the stop countersink is maintaining its set adjustment.

Standard Countersink

Extreme care must be taken in the use of a standard countersink to prevent chattering, eccentricity of countersink and over countersinking. Use of a hand drill of the "egg beater" type rather than a high speed drill motor is recommended. This eliminates chattering, which will be produced by a drill motor and makes control of the depth of the countersink more certain. Countersinking with a standard countersink should be done slowly and carefully, checking the depth of each countersink with a rivet of the size to be used, during the countersinking operation. As explained above, avoid countersinking too deeply.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

REMOVAL OF RIVETS

Once the rivet is driven it should be inspected to see if it meets the standards previously mentioned. The attached sketches will help you in determining what is acceptable.

When a rivet does not meet acceptance requirements - it should be removed by drilling it out. This has to be done very carefully and the proper method followed.

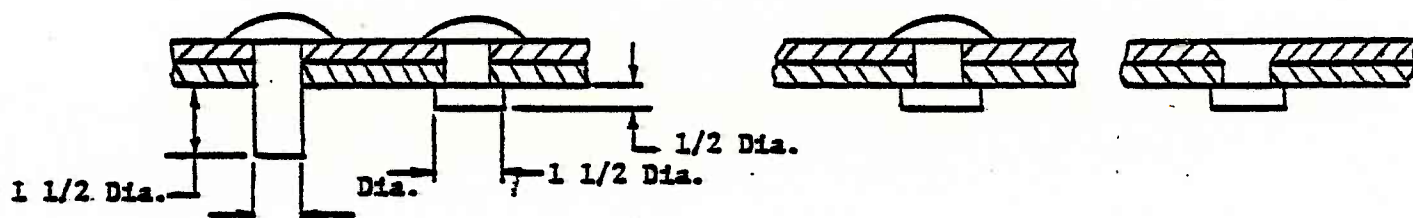
1. Use a drill of the same size, or slightly smaller than, the rivet shank. Drill part way into the rivet from the head side until the head may be removed. Care should be taken to drill in the exact center of the head to avoid elongating the rivet hole.
2. Remove the head of the rivet by inserting a drift pin of the same size as the rivet into the hole drilled into the head and bending very carefully back and forth.
3. After the head has been removed, hold a bucking bar along side the upset to support the material and tap the shank out of the hole with the drift pin.

This is the hard way, but the safe way.

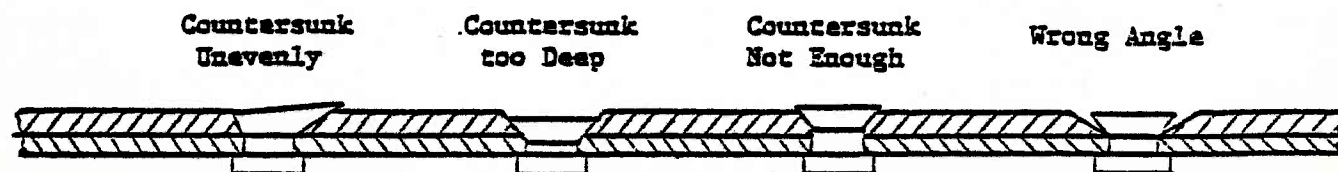
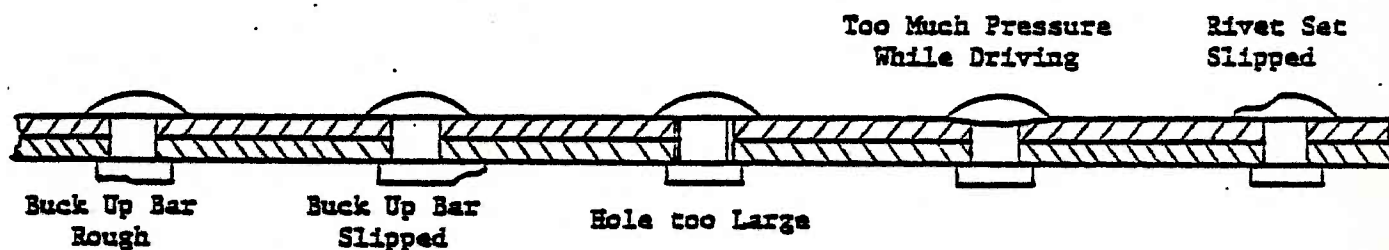
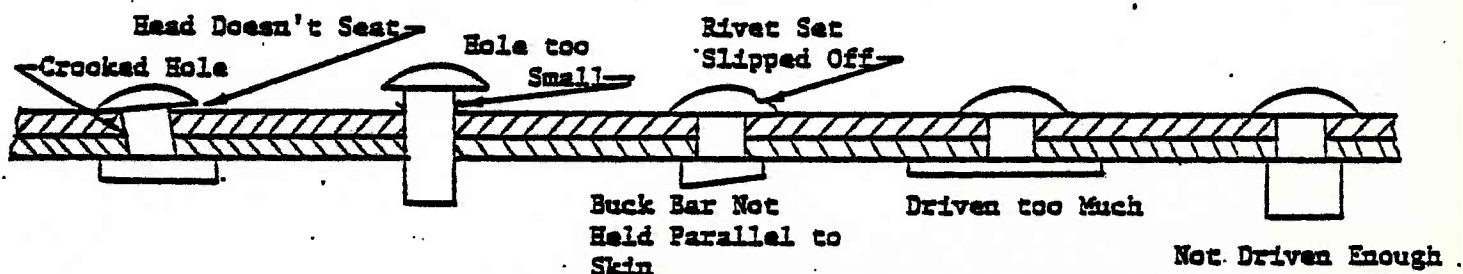
SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

GOOD & BAD RIVET HEADS

GOOD RIVETS

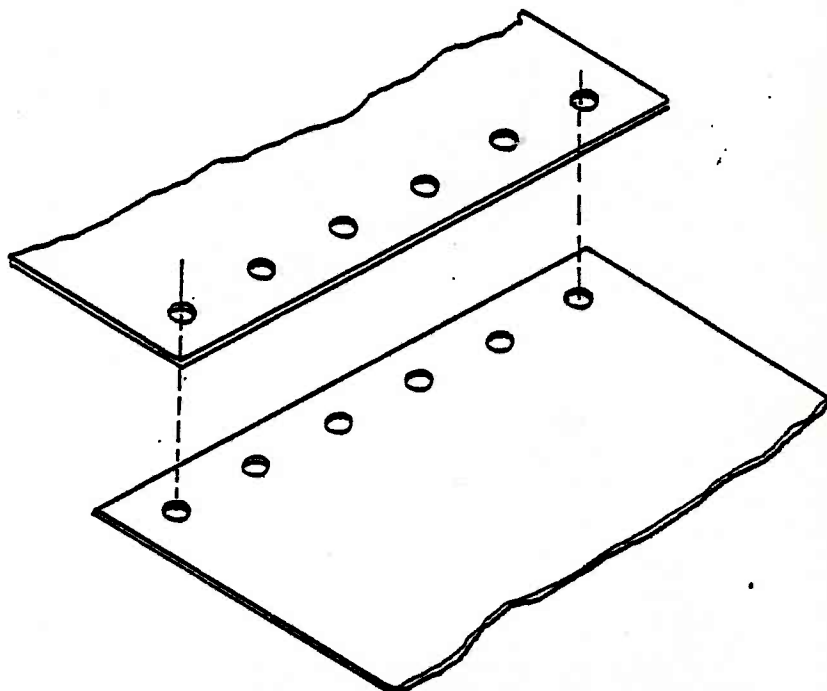


POOR RIVETS



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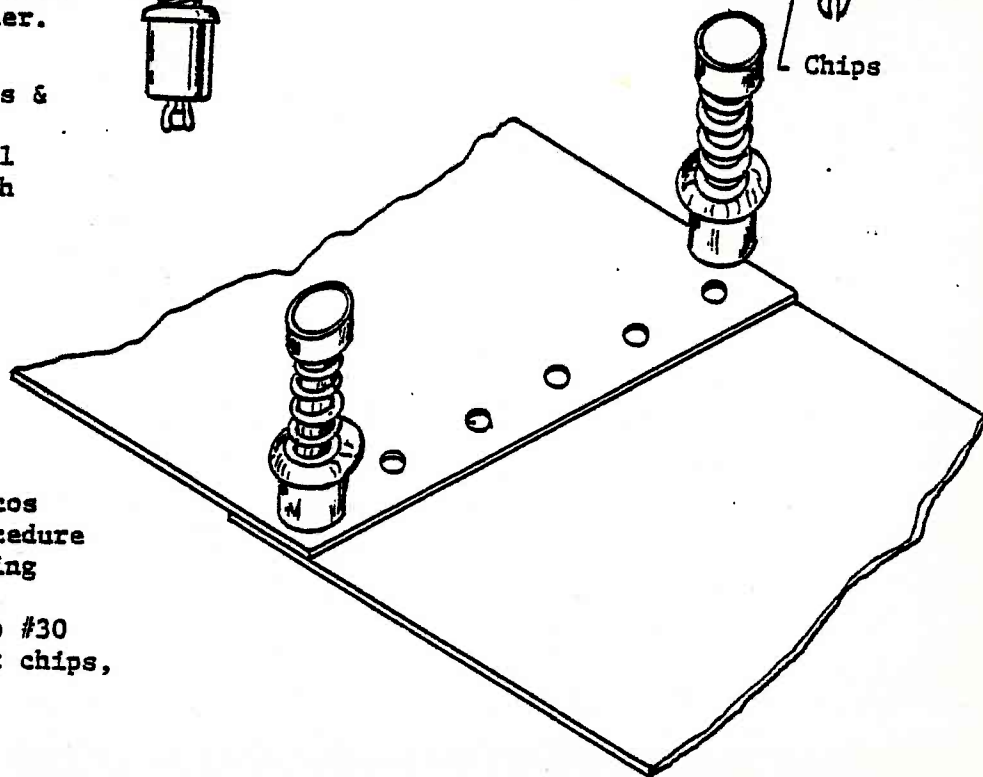
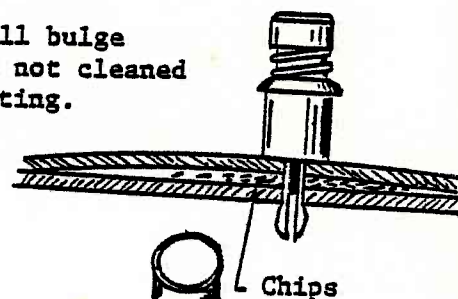
1. Before final drilling & riveting, parts must be held together with Clecos using #41 loft holes in parts.
2. Use a Cleco with a special pair of pliers to insert the clamp in the hole.



3. Space Clecos where needed to hold parts firmly together then drill holes to rivet diameter.
4. Disassemble, clean out chips & reassemble, rivet, remove Clecos. Drill remaining #41 holes to rivet dia. & finish riveting.



Material will bulge as shown if not cleaned before riveting.



5. Alternate method if #30 Clecos are also available, use procedure as above, except when drilling #30 holes insert #30 Clecos. Remove #41 Clecos & drill to #30 size, disassemble, clean out chips, reassemble & rivet.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

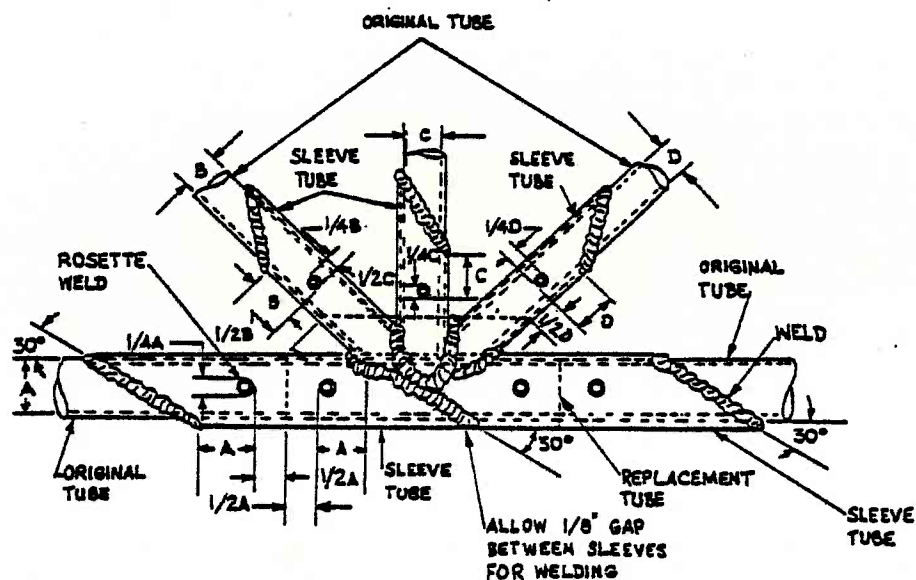
FUSELAGE REPAIR

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

FUSELAGE REPAIR

The tubular steel fuselage structure is made entirely of SAE 4130 chrome moly steel tubing of different diameters and wall thicknesses. All joints are heliarc welded. The completed assembly is first air blasted with steel filings then primed with an epoxy based zinc-chromate primer. The final coat is a special urethane resin based paint. After the final coat is applied, the oil plugs are removed from the upper and lower longerons, and these tubes pumped full of corrosive preventive "Rustban No. 397" then drained and the plugs resealed.

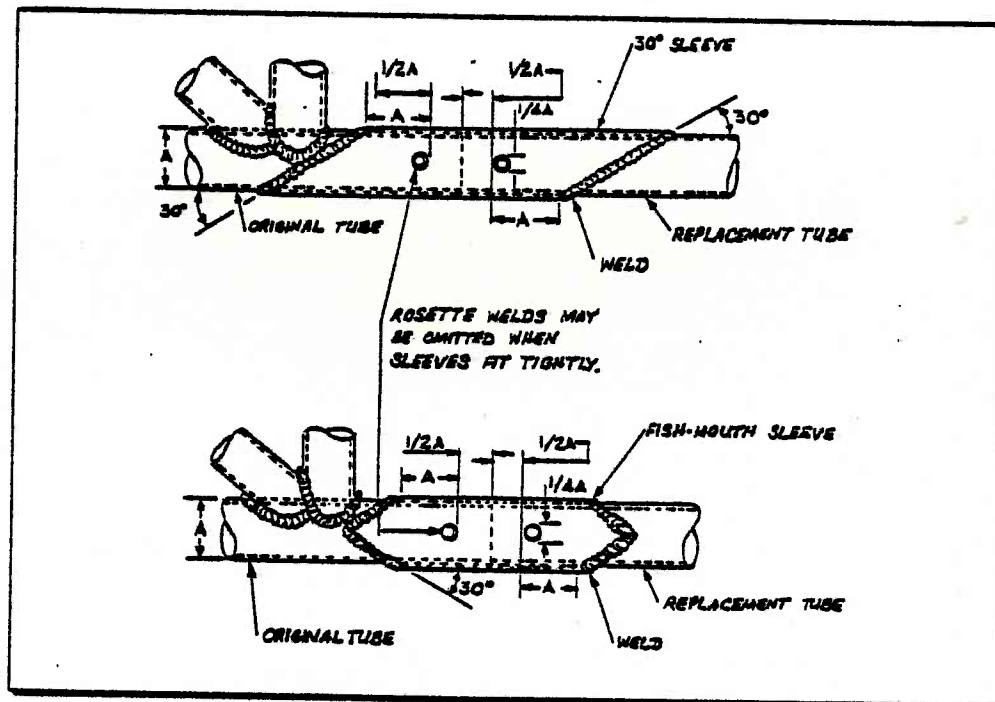
Before attempting to make repairs to the fuselage consult the parts catalog for available sub assemblies. The damaged area should be thoroughly cleaned and an investigation carried out to determine the full extent of the damage, including adjacent structural members. Attachment fittings must also be examined for distortion and cracks. If the damage is other than minor, the fuselage structure should be supported by a jig at the trestling points provided by the fuselage.



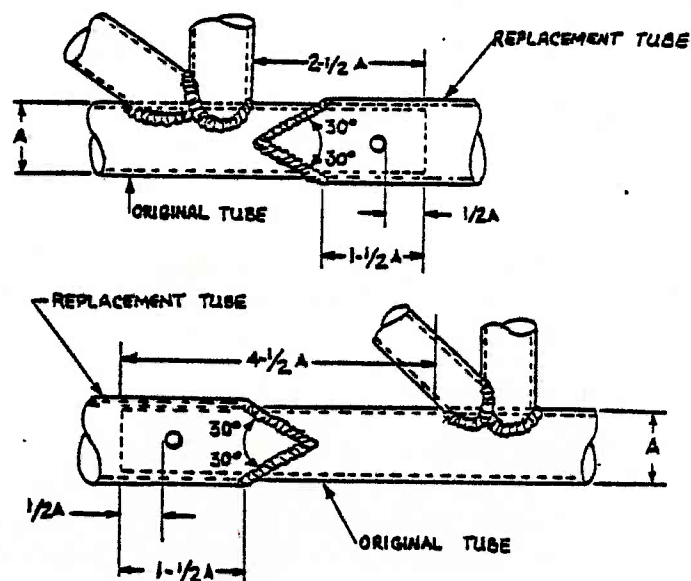
TUBE REPLACEMENT BY WELDED OUTER SLEEVE

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

FUSELAGE REPAIR (Cont'd).



TUBE REPLACEMENT BY WELDED OUTER SLEEVE



SPLICE USING LARGER DIAMETER REPLACEMENT TUBE

TORQUING PROCEDURES

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

TORQUING PROCEDURES

The following torquing procedures should be adopted:

- (a) Whenever possible, turn the nut - "NOT THE BOLT".
- (b) Tighten slowly and evenly to obtain consistent and accurate torque values.
- (c) After applying the specified torque do not loosen the fastener to obtain alignment for locking purposes. Always tighten to the low side of the specified torque range first, then if necessary, tighten further (up to the high side of the range) until the required alignment is obtained.
- (d) Do not back off and retorque a fastener that has been overtorqued, i.e., above the high limit. Instead, replace the mating parts with new parts.
- (e) As far as possible, torque at room temperature as all values specified apply with fasteners in this state.
- (f) Do not attempt to rectify joint leakage by torquing fasteners above the high limit. Instead, remove affected parts and determine cause. If necessary replace with new parts.
- (g) The standard torque specified in the text for self-locking fasteners should be added to the running torque, i.e., the torque required to run the fastener on the mating thread before seating it.
- (h) When torquing fasteners on to tubular metal gaskets, first torque to lower limit then retighten until torque remains constant within the specified range.
- (i) If the torque required to drive a stud to correct depth either exceeds the upper limit or fails to reach the lower limit, remove stud, determine the cause and rectify and/or replace affected parts.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

TORQUE APPLICATION

- (a) Where minimum and maximum figures are given for torque loads, they represent the intended tightening range. Where figures for castellated nuts are provided in the minimum column only, these nuts should be tightened to the designated torque and then further tightened, if necessary, to properly align the locking slot. Where figures are provided in the minimum and maximum columns, the alignment of the locking slot must be obtained without exceeding the maximum torque. If this is not possible, another nut should be used. After tightening nuts to the recommended torque, do not loosen them to permit insertion of lockwire or cotterpins.
- (b) All nut, bolt and screw torques should be obtained using a thread lubricant unless otherwise stated. The lubricant should be petroleum oil, or equivalent, unless otherwise specified. Torque requirements for interference fit application such as studs and pipe plugs may be obtained with or without lubrication, unless otherwise specified.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

MINIMUM AND MAXIMUM TORQUES FOR TIGHTENING TENSION-TYPE NUTS*

RECOMMENDED STANDARD NUT TORQUES

THREAD SIZE	RECOMMENDED TORQUE (in./lb)	MAX. ALLOWABLE (in./lb)
8-36	12-15	20
10-32	20-25	40
$\frac{1}{4}$ -28	50-70	100
5/16-24	100-140	225
3/8-24	160-190	390
7/16 -20	450-500	840
$\frac{1}{2}$ -20	480-690	1100
9/16-18	800-1000	1600
5/8-18	1100-1300	2400
3/4-16	2300-2500	5000
7/8-14	2500-3000	7000
1-14	3700-5500	10000
1-1/8-12	5000-7000	15000
1- $\frac{1}{4}$ -12	9000-11000	25000

THREAD SIZE	RECOMMENDED TORQUE (in./lb)	MAX. ALLOWABLE (in./lb)
8-32	12-15	20
10-24	20-25	35
$\frac{1}{4}$ -20	40-50	75
5/16-18	80-90	160
3/8-16	160-185	275
7/16-14	235-255	475
$\frac{1}{2}$ -13	400-480	880
9/16-12	500-700	1100
5/8-11	700-900	1500
3/4-10	1150-1600	2500
7/8-9	2200-3000	4600
1-8	3700-5000	7600
1-1/8-8	5500-6500	12000
1- $\frac{1}{2}$ -8	6500-8000	16000

* AN 310, AN 365, MS 20365, MS 21042, NAS 1021, NAS 1291, NAS 679

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

MINIMUM AND MAXIMUM TORQUES FOR TIGHTENING SHEAR-TYPE NUTS*

RECOMMENDED STANDARD NUT TORQUES

THREAD SIZE	RECOMMENDED TORQUE (in./lb)	MAX. ALLOWABLE (in./lb)
8-36	7-9	12
10-32	12-15	25
$\frac{1}{4}$ -28	30-40	60
5/16-24	60-85	140
3/8-24	95-110	240
7/16-20	270-300	500
$\frac{1}{2}$ -20	290-410	600
9/16-18	480-600	960
5/8-18	660-780	1400
3/4-16	1300-1500	3000
7/8-14	1500-1800	4200
1-14	2200-3300	6000
1-1/8-12	3000-4200	9000
1-1/2-12	5400-6600	15000

THREAD SIZE	RECOMMENDED TORQUE (in./lb)	MAX. ALLOWABLE (in./lb)
8-32	7-9	12
10-24	12-15	21
$\frac{1}{4}$ -20	25-30	45
5/16-18	48-55	100
3/8-16	95-100	170
7/16-14	140-155	280
$\frac{1}{2}$ -13	240-290	520
9/16-12	300-420	650
5/8-11	420-540	900
3/4-10	700-950	1500
7/8-9	1300-1800	2700
1/8	2200-3000	4500
1-1/8-8	3300-4000	7200
1-1/2-8	4000-5000	10000

* AN 320, AN 364, MS 20364, NAS 1022

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

TORQUE WRENCHES AND EXTENSIONS

- (a) Check torque indicating wrenches periodically for accuracy by calibrating them with weights and a measured lever arm. Do not check one wrench against another.
- (b) Whenever it is necessary to add an extension or adapter to a standard type torque wrench, use the following formula to calculate the actual torque reading required: (See Figure 2-3).

$$R = \frac{LT}{A} = \frac{LT}{L + E} \text{ where:}$$

R = reading on torque wrench scale or dial

L = effective length of standard torque wrench

T = desired fastener torque

A = effective length of standard torque wrench plus extension or adaptor

E = effective length of extension or adaptor

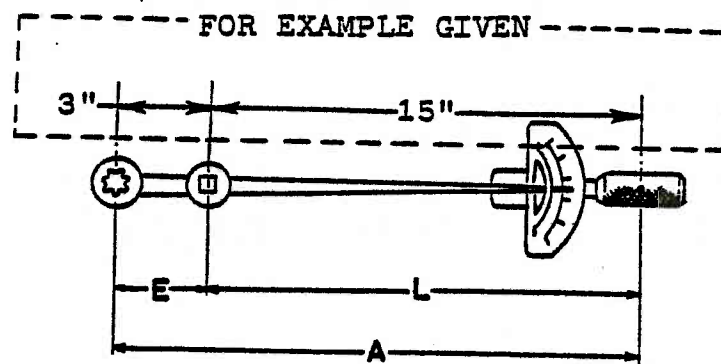
Example:

A torque (R) of 1440 lb. in. is desired, using an extension with a between centers dimension (E) of three inches and a standard type torque wrench with an effective length (L) of 15 inches between center of handle (or swivel pin) and center of adaptor. Using these figures:

$$R = \frac{LT}{L + E} = \frac{15 \times 1440}{15 + 3} = 1200$$

With axis of torque wrench and extension in a straight line, tightenting to a wrench reading (R) of 1200 will provide the desired torque (T) of 1440 lb. in.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE



TORQUE WRENCH & EXTENSION

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

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SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

NOTES

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

INSPECTION PRACTICES

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

PREFLIGHT INSPECTION:

1. Inspect the following for condition, operation, security of attachment and/or other signs of failure.
 - a. Wing and attachment bolts
 - b. Struts and strut attachment bolts
 - c. Stabilizer struts and attachment bolts
 - d. Stabilizer
 - e. Elevator
 - f. Fin
 - g. Rudder
 - h. Fuselage covering and structural tubing
 - i. Control cables
 - j. Controls and control system push rods
 - k. Ailerons
 - l. Dive-brakes and controls
 - m. Main wheel and brake
 - n. Tire (Maintain tire pressure at 15 lbs.)
 - o. Tail wheel and bracket
 - p. Skid and skid shoe (Skid should be replaced if cracks or splits are evident. Shoe need not be replaced except for wear-through or breakage.)
 - q. Shoulder harness and safety belts
 - r. Canopy
 - s. Release hook and release system
 - t. Pitot system (After prolonged tie-down or exposure to rainy weather, remove lines from instruments and expel any water which may have collected in lines through them.)

CAUTION: DO NOT BLOW INTO PITOT TUBE WITH INSTRUMENTS CONNECTED.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

INSPECTION

Mechanic and Inspector Initials			
		Annual	
		100 Hour	
	Routine/Daily		
1. GENERAL			
a. All controls move freely in the correct direction with no binding or lost motion.	X		
b. All control components are properly saftied.	X		
c. Both dive brakes open equally and the wheel brake is actuated at the end of the control travel.	X		
d. Ailerons are in neutral, in conjunction with the stick position.	X		
2. FUSELAGE GROUP			
a. Check control stick and torque tube assembly, lubricate torque tube support bearings. Inspect internal surface of torque tube for corrosion, clean and apply Paralketone if necessary.		X	X
b. Check controls for ease of operation.	X	X	X
c. Check control cables for safety, corrosion, wear and security of attachment.		X	X
d. Check elevator push tube for condition, wear, especially at fairlead and security of cable attachments. Also check fairlead for slippage in clamp.		X	X
e. Check fuselage members for cracks, misalignment and any other damage. Weld clusters for rust particularly in "cupped" areas without adequate drainage.		X	X
f. Note if the primer has been scraped off any fuselage member leaving exposed metal, sandpaper lightly to remove rust or impurities and touch up with zinc chromate primer, Specification MIL-P-8585A.		X	X
g. Check cable pulleys for wear and attachment, replace if necessary.		X	X

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

INSPECTION

		Mechanic and Inspector Initials	
		Annual	
		100 Hour	
		Routine/Daily	
2. <u>FUSELAGE GROUP</u> (Cont'd)			
h.	Check fairleads for wear and attachment, replace if necessary.	X	X
i.	Check fuselage fabric and finish for cracks and deterioration (check tensile strength, if below 35 pounds per inch fabric must be replaced.)	X	X
<u>NOTE:</u> A synthetic fabric "Ceconite 103" manufactured by Cooper Engineering Co., Box 3428, Van Nuys, California 91405, is used on the aircraft. The "Ceconite Process"* Procedure Manual No. 101" should be procured from them for guidance in repair and maintenance of this fabric. FAA Manual No. AC43.13-1 (Superseding CAM 18) is also used as a guide for testing and repairs - See Chapter 3. *Trade Mark R Registered in U.S. Patent Office and Canada.			
j.	Check canopy and rear door for condition latches and attachment.	X	X
k.	Check plexiglas for cracks or excessive crazing.	X	X
l.	Check safety belts, shoulder harness, brackets and bolts	X	X
m.	Check springs for corrosion, cracks and wear at ends.	X	X
n.	Check bungee control latch plate, if badly worn, replace.	X	X
o.	Dive-brake/wheel-brake mechanism for wear, alignment and linkage attachment. Lubricate control rod at forward guide with a dry stick-type lubricant.	X	X

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

INSPECTION

		Mechanic and Inspector Initials		
		Annual		
		100 Hour		
		Routine/Daily		
3. <u>LANDING GEAR GROUP</u>				
a.	Remove wheel, inspect for brakes.		X	X
b.	Inspect wheel bearings for condition, repack if necessary		X	X
c.	Check tire pressure (15 lbs. sq. in.)	X	X	X
d.	Inspect tire for wear and cuts.	X	X	X
e.	Inspect tail wheel and bracket for cracks and wear.	X	X	X
f.	Inspect skid and shoe for cracks, wear and attachment.	X	X	X
g.	Inspect brake for wear and operation.		X	X
4. <u>EMPENNAGE GROUP</u>				
a.	Inspect stabilizer for condition and attachment.	X	X	X
b.	Inspect stabilizer fittings and bolts for wear and signs of failure.		X	X
c.	Inspect stabilizer struts for damage and security of attachment.	X	X	X
d.	Inspect elevator and hinges for condition and security of attachment.	X	X	X
e.	Inspect elevator horn for condition and pushrod for security of attachment.	X	X	X
f.	Inspect fin for dents, general condition and attachment.	X	X	X
g.	Inspect rudder and hinges for condition and security of attachment.	X	X	X
h.	Check fabric and finish on stabilizer, elevator and rudder for cracks and deterioration. (Check tensile strength, if below 35 pounds per inch fabric must be replaced.)		X	X

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

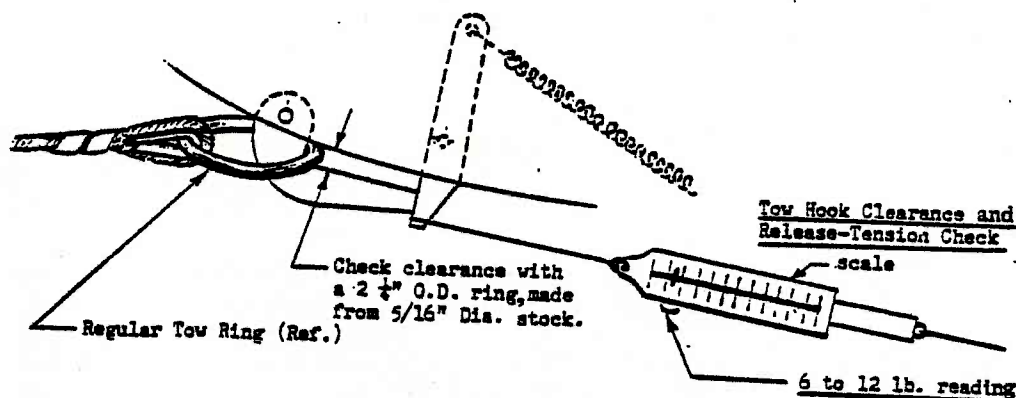
INSPECTION

Mechanic and Inspector Initials			
Annual			
100 Hour			
Routine/Daily			
5. CABIN GROUP			
a. Inspect instruments for range markings, zero reading and security of attachment.	X	X	X
b. Inspect instrument panel for security of attachment.		X	X
c. Inspect nameplate, decals for legibility and security of attachment. Check "Flight Limits" placard for correct Min./Max. Pilot weights per current Weight and Balance statement.	X	X	X
d. Inspect air-vent for operation and security of attachment.		X	X
e. Inspect seats for damage and security of attachment.		X	X
6. WING GROUP			
a. Remove wing gap cover, inspect wing attachment fittings and bolts for condition and security of attachment.	X	X	X
b. Inspect aileron push rods for condition and security of attachment.	X	X	X
c. Inspect dive brake linkage for corrosion, wear and security of attachment.	X	X	X
d. Inspect wing struts, strut fittings and attachment bolts for condition and attachment.	X	X	X
e. Inspect fixed surfaces for dents, corrosion, loose rivets and other signs of structural failure or damage.	X	X	X
f. Inspect ailerons and hinges for condition, operation and attachment.	X	X	X
g. Inspect aileron bellcranks for condition, evidence of damage and attachment.	X	X	X
h. Inspect dive brake mechanism and hinges for condition, operation and attachment.	X	X	X

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

INSPECTION

Mechanic and Inspector Initials			
		Annual	
	100 Hour		
	Routine/Daily		
6. <u>WING GROUP</u> (Cont'd)			
i. Inspect wing tip wheels for damage and attachment.	X	X	X
j. Inspect push rod fairleads for wear or breakage and attachment.		X	X
7. <u>TOW HOOK</u>			
a. Inspect hook for wear, cracks, roughness and attachment.	X	X	X
b. Check mechanism for freedom of operation. Lubricate guide-tubes with a dry stick-type lubricant.	X	X	X
c. Check release mechanism by applying a force of 6-12 lbs. Ref. paragraph B. 3. d. and Figure 2.		X	X
d. Check ring clearance between hook and fuselage when hook is closed, using a 2-1/4" O.D. ring made from 5/16" dia. stock.		X	X



SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SCHWEIZER AIRCRAFT CORP.
Elmira, NY 14902
Form I-4758, 7-80

INSPECTION RECORD
ANNUAL &/or 100 HOUR INSP.
(circle one)

Model: 2-33; Ser. No. _____ Reg. No. _____ Work Order No. _____

Check the following for proper installation, tension, safety, wear, excessive free play, evidence of corrosion or other damage. Indicate airworthiness by checking () block. When unairworthy items are noted, leave appropriate block blank, until corrected.

FWD. FUSELAGE & COCKPIT

- | | <u>A/W</u> |
|-------------------------------------|------------|
| a. Control stick & torque tube | _____ |
| b. Forward elevator bellcrank | _____ |
| c. Elevator cables and guides | _____ |
| d. Trim control | _____ |
| e. Release control and cable | _____ |
| f. Dive brake control | _____ |
| g. Rudder pedals and springs | _____ |
| h. Rudder cables and guides | _____ |
| i. Instrument installations | _____ |
| j. Cabin ventilator | _____ |
| k. Canopy (glass, hinges & latches) | _____ |
| l. Safety belt | _____ |
| m. Shoulder Harness | _____ |

RIGHT WING:

- | | |
|----------------------------------|-------|
| a. Main attach pin holes | _____ |
| b. Drag fittings & attach holes | _____ |
| c. Long ail. push rod and guides | _____ |
| d. Dive brake T.T. & bellcrank | _____ |
| e. Dive brake hinges | _____ |
| f. Aileron idler inst. | _____ |
| g. Aileron push rod and horn | _____ |
| h. Aileron hinges | _____ |
| i. Wing tip | _____ |
| j. Exterior surface | _____ |
| k. Visible interior surfaces | _____ |
| l. Leading edge | _____ |
| m. Tip wheel spring & tire | _____ |

EMPENNAGE GROUP:

- | | |
|---------------------------------|-------|
| a. Stabilizer | _____ |
| b. Elevator hinges | _____ |
| c. Elev. horn att. holes & pins | _____ |
| d. Elevator idler horn inst. | _____ |
| e. Elev. cables and guides | _____ |
| f. Fin & attach points | _____ |
| g. Rudder hinges | _____ |
| h. Rudder cables and guides | _____ |
| i. Tail wheel, brkt. & spring | _____ |
| j. Tail fairing | _____ |
| k. Rudder covering - fabric | _____ |
| l. Elevator covering - fabric | _____ |

AFT FUSELAGE

- | | <u>A/W</u> |
|--------------------------------|------------|
| a. Main wing attach holes | _____ |
| b. Forward carry-thru attach | _____ |
| c. Aft wing attach holes | _____ |
| d. Aft carry-thru attach | _____ |
| e. Aileron, transfer inst. | _____ |
| f. D.B. instl. | _____ |
| g. Brake inst. | _____ |
| h. Elevator cables and guides | _____ |
| i. Rudder cables and guides | _____ |
| j. Inside skins | _____ |
| k. Wing fairing, aft of canopy | _____ |

LEFT WING:

- | | |
|----------------------------------|-------|
| a. Main attach pin holes | _____ |
| b. Drag fittings & attach holes | _____ |
| c. Long ail. push rod and guides | _____ |
| d. Dive brake T.T. & bellcrank | _____ |
| e. Dive brake hinges | _____ |
| f. Aileron idler inst. | _____ |
| g. Aileron push rod and horn | _____ |
| h. Aileron hinges | _____ |
| i. Wing tip | _____ |
| j. Exterior surface | _____ |
| k. Visible interior surfaces | _____ |
| l. Leading edge | _____ |
| m. Tip wheel spring & tire | _____ |

GENERAL

- | | |
|--|-------|
| a. Tow hook inst. & oper. | _____ |
| b. Tow hook damper | _____ |
| c. Nose skid and shoe | _____ |
| d. Wheel & hydraulic brake | _____ |
| e. Tire and inflation (31 psi) | _____ |
| f. Identification markings | _____ |
| g. Metal skin condition | _____ |
| h. Pitot-static tubes/vents | _____ |
| i. Lubricate all noted points per charts | _____ |
| j. Wt. and balance | _____ |
| k. Placard installations | _____ |
| l. Airworthiness papers | _____ |

Aircraft Total Time _____ hrs.
Prev. Annual Insp. on _____ date
@ _____ hrs.

Latest AD Note, No. _____ complied with
on _____.

Mechanic's Signature _____ Cert. No. _____ Date _____

Insp. Auth. Signature _____ Cert. No. _____ Date _____

Issued:

8-9

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

NOTES

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

MFG. SERVICE LETTERS & SERVICE BULLETINS

APPLICABLE TO SGS 2-33 & 2-33A

MFG. SERVICE BULLETINS

<u>NUMBER</u>	<u>SUBJECT</u>
102-26-7 2/11/71	Lw'r rudder hinge, swept tail
102-33-1 4/8/76	Internal rust, Fuselage frame (S/N's 1 thru 200)
102-33-2 3/17/78	Attach Bolts, Fin Spar (S/N 1 thru 507) AD 77-23-10
102-33-3 7/15/83	BALLAST WTB

MFG. SERVICE LETTERS

<u>NUMBER</u>	<u>SUBJECT</u>
SL-102-1 9/29/67	Water in pitot-static system
SL-102-2 10/6/67	Possible tow ring foul
SL-102-3 1/15/68	Fire potential-fabric cover
SL-102-4 3/20/68	Conversion to SGS 2-33A
SL-102-9 11/22/74	Rel. control - Instrument Panel
SL-102-12 1/20/74	Wing-Strut Attachment
SL-102-13 2/11/78	Aileron Security at Tie-down
SL-102-14	
SL-102-15	
SL-102-16 2/8/82	FABRIC
SL-102-17 7/17/83	BELLCRANK
SL-102-18 7/14/83	TOW RELEASE SLOT CRACK

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

MFG. SERVICE LETTERS & SERVICE BULLETINS

APPLICABLE TO SGS 2-33 & 2-33A

MFG. SERVICE BULLETINS

<u>NUMBER</u>	<u>SUBJECT</u>
102-26-7 2/11/71	Lw'r rudder hinge, swept tail
102-33-1 4/8/76	Internal rust, Fuselage frame (S/N's 1 thru 200)
102-33-2 3/17/78	Attach Bolts, Fin Spar (S/N 1 thru 507) AD 77-23-10
102-33-3 7/15/83	BALLAST W/B

MFG. SERVICE LETTERS

<u>NUMBER</u>	<u>SUBJECT</u>
SL-102-1 9/29/67	Water in pitot-static system
SL-102-2 10/6/67	Possible tow ring foul
SL-102-3 1/15/68	Fire potential-fabric cover
SL-102-4 3/20/68	Conversion to SGS 2-33A
SL-102-9 11/22/74	Rel. control - Instrument Panel
SL-102-12 1/20/74	Wing-Strut Attachment
SL-102-13 2/11/78	Aileron Security at Tie-down
SL-102-14	
SL-102-15	
SL-102-16 2/8/82	FABRIC
SL-102-17 7/17/83	BELL CRANK
SL-102-18 7/14/83	TOW RELEASE SLOT CRACK

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

MFG. SERVICE LETTERS & SERVICE BULLETINS

APPLICABLE TO SGS 2-33 & 2-33A

MFG. SERVICE BULLETINS

<u>NUMBER</u>	<u>SUBJECT</u>
102-26-7	Lw'r rudder hinge, swept tail
102-33-1	Internal rust, Fuselage frame (S/N's 1 thru 200)
102-33-2	Attach Bolts, Fin Spar (S/N 1 thru 507)

MFG. SERVICE LETTERS

<u>NUMBER</u>	<u>SUBJECT</u>
SL-102-1	Water in pitot-static system
SL-102-2	Possible tow ring foul
SL-102-3	Fire potential-fabric cover
SL-102-4	Conversion to SGS 2-33A
SL-102-9	Rel. control - Instrument Panel
SL-102-12	Wing-Strut Attachment
SL-102-13	Aileron Security at Tie-down

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SERVICE BULLETINS

SCHWEIZER AIRCRAFT CORP.

P. O. Box 147

Elmira, New York 14902

February 11, 1971

SERVICE BULLETIN NO. 102-26-7

MODELS AFFECTED: SGS 1-26B and C, Ser. No.'s 289 thru 399 which have Swept-back Vertical Tail Surfaces

SGS 1-26D, Ser. No.'s 400 thru 475

SGS 2-33 and 2-33A, Ser. No.'s 1 thru 196

SUBJECT: Rudder Hinge, Lower, Attachment to Fin Spar

A report from the field has been received indicating failure of both AN3-7A bolts attaching the lower rudder hinge to the fin spar. This report was from one aircraft only.

One bolt only, of the two which failed, was found and, under a 50X magnification, an apparent defect in the bolt itself was noted. Whether this bolt was the first to fail, leading to the failure of the second, is not known. However, it was stated that a rudder lock was not used during periods of tie-down which may have been a contributing factor, as flight loads are very low on these bolts.

To assure that a similar failure has not occurred on ships in service -

1. Preflight inspect the aircraft to assure the bolts are in place.
2. Accomplish the following at the first 100-hour or Annual Inspection, whichever occurs first. One at a time, remove each AN3-7A bolt (these bolts have a one quarter inch long, 3/8 diameter x .090 wall, aluminum bushing under the bolt head). Solvent-clean and inspect, especially at the thread and shank intersection, for damaged threads or cracks. Magnetic particle inspection is recommended, if available. Otherwise a magnifying glass of 3.5X to 5X should be used.

Replace the bolts with new bolts, when:

- a. Inspection equipment is not available.
- b. Aircraft has been in service for more than either 200 hours, or three years.
- c. Inspection reveals any defect in the bolt (s).

Use a torque-value of 20 to 25 inch-pounds when reinstalling the bolts, and insure that the bushings are transferred to the new bolts.

RECOMMENDATION: Since wind-gust loads are usually much greater than flight loads, it is strongly recommended that control chocks be used during all periods of tie-down.

SCHWEIZER AIRCRAFT CORP.

Milton A. Courtright

Milton A. Courtright
Quality Control Supervisor

April 8, 1976

SGS 2-33 & SGU 2-22 SERVICE BULLETIN NO. 102-33-1

Recently we have had reports of a few cases of internal rust in the steel tube structure of earlier 2-33 aircraft. In some cases it is possible that there can be a small internal void in the nose cluster of the two longerons, keel tube, and nose handle bushing. In welding the cluster, the internal welds may not be completely sealing the joint. It is possible in such cases that small amounts of water may enter the keel member and lower longerons if the aircraft is stored outside. It would be critical in areas subject to salt air. This will depend on the amount of exposure to weather.

Aircraft that are largely stored outside should be checked more frequently for external rusting, particularly along the lower longerons and skid members. This may necessitate the removal of the fabric covering if exposure has been severe even though fabric condition is still acceptable.

The internal rusting should not occur in later aircraft in which the retractable nose handle is used. This installation has a different weld detail and has been used in aircraft since about Ser. No. 200, 1970. This detail was made optional at first and then made a production standard about that time. Aircraft with the retractable nose handle should not have this condition.

The AD Note applies to all 2-33 aircraft not incorporating the retractable nose handle. The Note also applies to 2-22 Serial Numbers 98 thru 258. The earlier 2-22 aircraft have a different nose detail and should not be involved in this condition, but this does not preclude other service problems since some of these aircraft are 28 years old.

FAA AD Note 76-13-11 requires drilling of No. 41 holes in the two aft longerons at the tail skid cluster and in the keel tube just ahead of the release.

If there is water drainage, the AD Note requires either X-Ray examination of the subject area or equivalent FAA approved method to determine extent of corrosion.

If water is found in the aft longerons, it is considered necessary to X-Ray all the splice areas in the lower longerons marked "A" on the fuselage diagram, page 4. If corrosion is indicated by the X-Ray the corroded area must be replaced by AC 43.13-1A, Chapter 2, Section 2, or FAA approved methods. All tube material is 4130N steel.

In investigation of the problem, it appears that when small amounts of water occur in the fuselage, the water will be retained at the aft-facing splices and will cause corrosion of the splice area. The aft member in a splice telescopes forward into the forward member, leaving a small void between the two tubes which will retain the moisture since these aircraft are usually tied down with the tail on the ground.

April 8, 1976

SGS 2-33 & SGU 2-22 SERVICE BULLETIN NO. 102-33-1

The structure should be first examined externally for signs of corrosion on the longerons.

In cases of severe corrosion there may be external indications. The underside of the longerons at the tail skid and at the aft splices on the lower longerons may show rust thru or will be penetrated if subjected to pressure from a pointed but smooth tool such as a dull ice pick. If there is this case there is no need to X-Ray. The structure should be opened up as necessary to determine the extent of corrosion and repaired or replaced as necessary.

An alternate method to X-Ray is to drill holes at subject splices to visually inspect the condition. The hole should be drilled at about 45° in the lower outboard quarter of the tube just ahead of the splices. In the tail wheel area, enlarge the No. 41 holes to 7/16" maximum.

For the inspection holes at the splices, the following are the maximum hole size to be drilled that is repairable with a diamond patch.

<u>Tube Size</u>	<u>Max. Hole</u>
5/8	.437
3/4	.500
7/8	.563
1"	.625

The inside of the tube should be checked visually. If there is superficial corrosion, it should be scraped away and the wall thickness measured with a micrometer. This can be done with a 1/2" ball micrometer and a 1" micrometer with a ball adapter or a 1" to 2" micrometer with a ball end pin. With this, the length of the pin is first measured and then subtracted from the measurement of the pin and wall thickness. If the wall thickness lost is 10% or more of the nominal wall thickness of the tubing, the tube should be replaced. If the wall thickness loss is less than this, the member is acceptable to use, after anti-corrosion treatment specified at the end of this Service Bulletin. The hole can be repaired with a patch per Fig. 2.6, AC 43.13-1A, Chapter 2, Section 2.

It is important to be conservative in estimate of corrosion and if there is any doubt the member should be replaced.

See pages 4 and 5 for location of splices and inspection holes. If there is water in the tail cluster, each splice should be checked progressively forward for condition.

Due to lack of room for a patch, the splice just aft of the strut fitting requires a different method. This is called out on page 5.

In the case where water is found only in the forward keel tube, it is advisable to check on each aft splice to make certain the longeron is O. K.

April 8, 1976

SGS 2-33 & SGU 2-22 SERVICE BULLETIN NO. 102-33-1

It is possible to replace the entire aft longeron but it takes care in doing so to maintain the alignment of the fuselage.

In the case of the front keel tube, if there is excessive corrosion it is preferable to replace the tube rather than to attempt a splice in this member. It is recommended that the handle detail be replaced with the new detail per Drawing 33010D. If this is not done the weld cluster inside of the nose bushing should be sealed with a waterproof caulking compound.

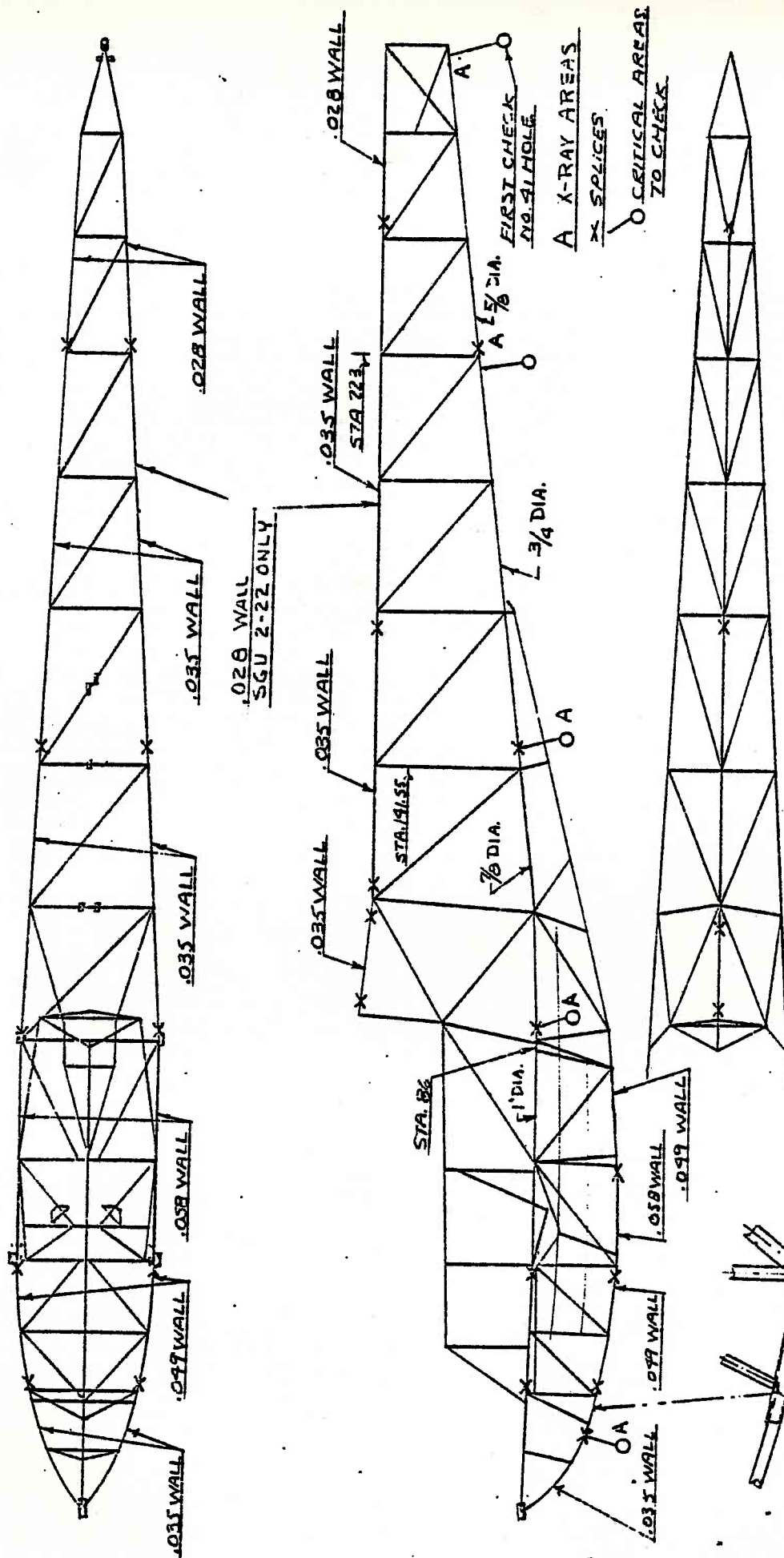
After it has been determined that the fuselage is satisfactory or after repairs are made, it is recommended that all the longerons be filled with linseed oil and drained and sealed. The holes drilled for examination, plus some additional holes, are required to accomplish this. Information on this procedure is available from S.A.C. (Form F-234)

TUBE TOLERANCES

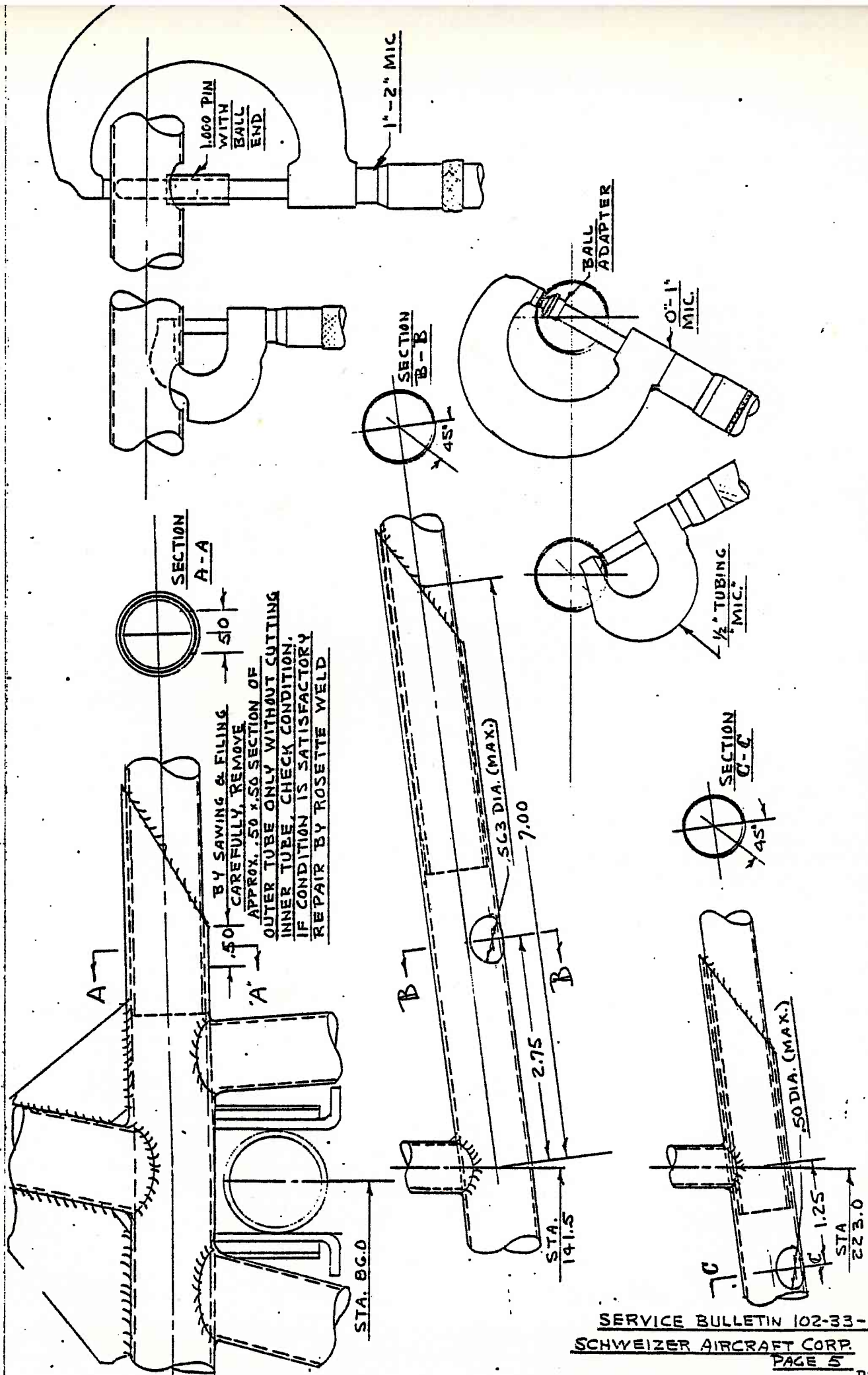
<u>Nominal Tube Gauge</u>	<u>Min. Acceptable Wall</u>
.028"	.026
.035"	.032
.049"	.045
.058"	.053

NOTE: Tube specification allows $\pm 10\%$ of wall variation so that there may be tubes of minimum thickness specified above in production aircraft. Any loss of wall thickness on such tubes would not be acceptable.

The .028 tubes have lower margins than other tubes and should be subject to particular care in evaluation of condition. If there is a question on any tube, S.A.C. will advise on request.



FOR ACCEPTABLE WALL THICKNESS
SEE CHART PAGE 3



SGS 2-33 & SGU 2-22 FUSELAGE OILING PROCEDURE

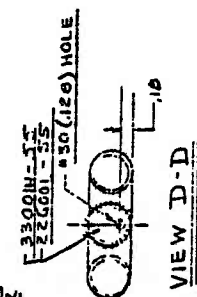
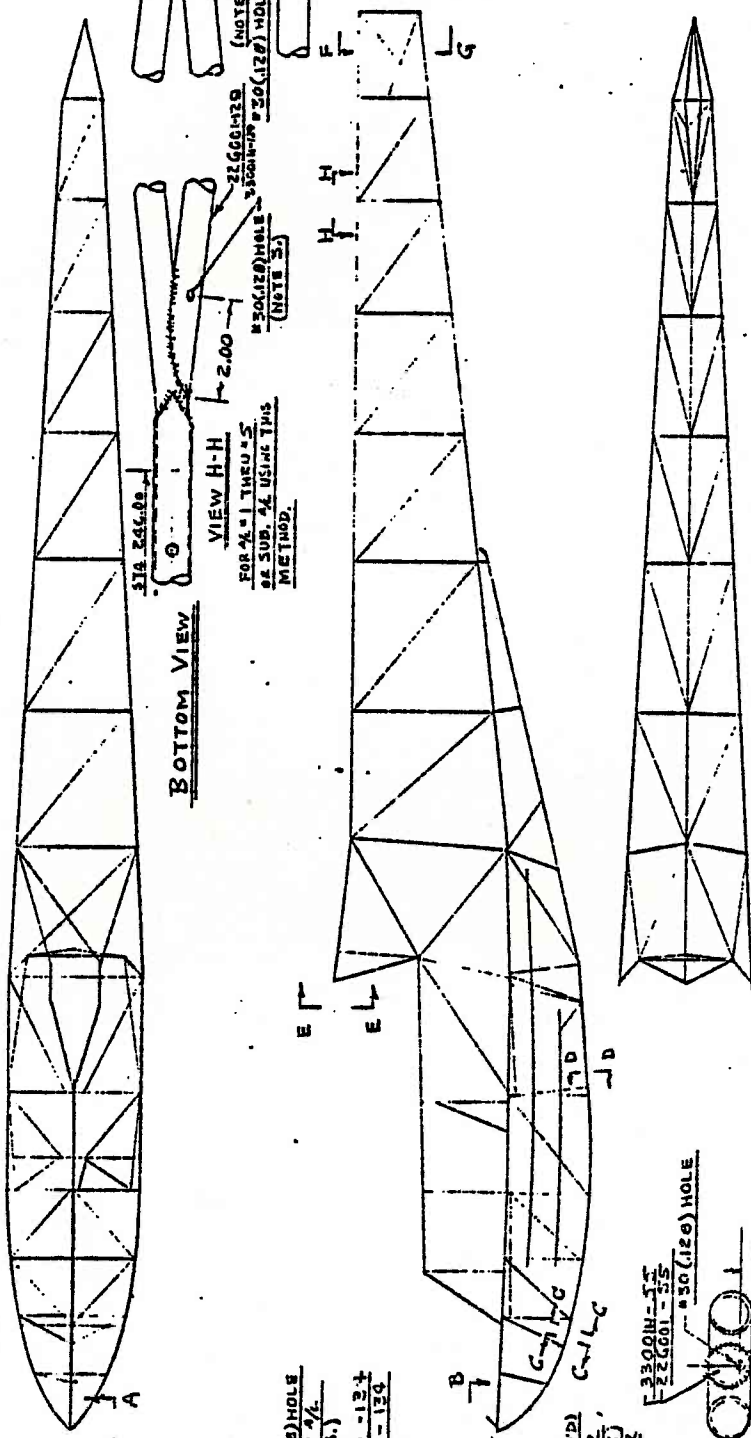
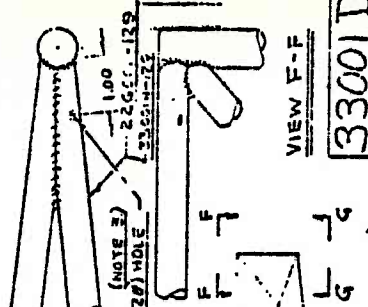
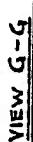
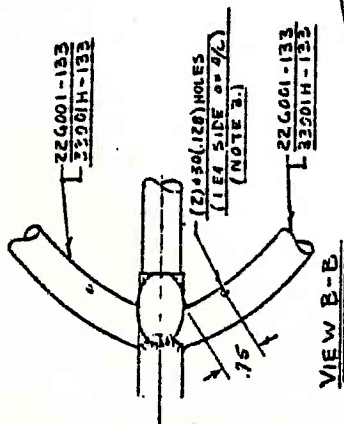
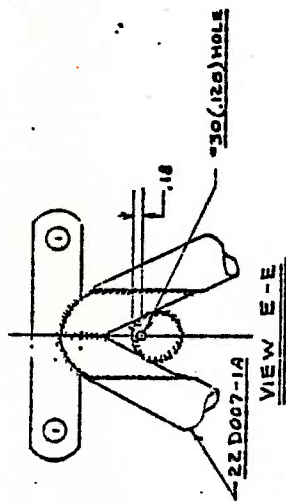
Drawing 33001D 4/4 shows procedure of oiling fuselages used at S.A.C. This would apply also to aircraft being oiled in the field.

At S.A.C. a powered pump with a small diameter nozzle is used to fill with oil. The fuselage tubes involved are filled and then allowed to drain. It may be necessary in the field to improvise methods of filling with oil thru the use of a hand pump or other means. The holes in the nose tubes may be opened up to 3/16" if this size blind rivet is available. After draining, these holes are sealed. If the Pro-Seal material is not available, there are other sealants available in the field made by Dow, G. E., or 3M, which can be used for sealing the plug rivets.

Note that the fuselage should be properly leveled to make certain that the particular longeron being oiled is full of oil before draining and sealing it.

The general procedure can be applied to other steel tube structures such as 1-26, 1-19, etc.

August 3, 1976



NOTES:

1. PLUG ALL 30(120) HOLES USING AAQP - 91 POP RIVETS AFTER CILING OPERATION IS COMPLETE. SEAL ALL RIVETS WITH PROSEAL 890.
2. OIL SPEC. RAW LINSEED OIL DILUTED 65% BY VOLUME WITH TURPENTINE.
3. LOCATE HOLES APPROX. 30" OF VERTICAL CENTER LINE.
4. # EFF. FUSELAGE MATS 2 UP.

[illegible]



AIRCRAFT CORP. - P. O. BOX 147 - ELMIRA, N. Y. 14902 - (607) 739-3821

TELEX NO. 932459

May 9, 1978

To: 2-33, 2-33A and 2-33AK Sailplane Owners and Operators
From: Schweizer Aircraft Corp., Paul A. Schweizer, Vice President
Subject: AD NOTE 77-23-10

As you know, the FAA has seen fit to issue subject Ad Note on 2-33 Sailplanes covering the fin attachment to the fuselage.

It has been our contention all along that the one failure that did occur was the result of poor maintenance-repair practices. Although the FAA made a survey of a great number of ships in the field, they only found one ship with any indication of the problem, and this was a situation which we feel should have been caught as an inspection item. However, they still insisted in issuing the Ad Note.

The Ad Note requires the removal and inspection of the fin and attach hardware every 100 hours or 6 months, whichever comes first, which is a great inconvenience to the operators of 2-33's.

In order to eliminate the need for this process being repeated every 100 hours, SAC has developed an FAA-approved modification to the fin which will eliminate these scheduled inspections. This approved modification is shown in Schweizer Service Bulletin No. 102-33-2, Rev. March 17, 1978, item 3. The modification is being incorporated on production sailplanes Ser. No. 508 and up.

We are making this kit available at cost, direct from the plant at a post paid price of \$4.00 per kit. If you are interested in getting one of these, please send us your order with check, listing the name of the owner and the serial number of the 2-33's on which you will incorporate this modification.

If there are any questions on this, please get in touch with us or your nearest Schweizer Dealer.

mep

SERVICE BULLETIN NO. 102-33-2
Models SGS 2-33, SGS 2-33A, SGS 2-33AK

Variations in the hardware attaching the vertical fin spar to the fuselage structure have been found which has resulted in some looseness of this joint and some cases of cracking of the lower fin spar at the subject holes. To correct any possible unsatisfactory situations, the following action should be taken.

1. Within the next 25 hours, check this connection as follows:
 - a. Remove hand hole covers and fin to fuselage fairing.
 - b. Remove the fin-spar attach bolts (AN-3), one at a time, and check for initial tightness, condition of hole, and corrosion.
 - c. If the condition of the holes and bolts are satisfactory, install serviceable AN3-5A bolts and new AN365-10 nut with 3 washers (AN960-10), one under the head of the bolt and 2 under the nut. This applies to both upper and lower bolts and is required to insure that the nut does not bottom on the threads. Apply 20 to 25 in./lbs torque to the nut and check to make certain that there is clamp-up between the spar and fuselage fitting.
 - d. If a hole, or holes, are more than .010" oversize, line-ream subject hole/s to $.250 \pm .001$ with other attach bolts in place. Install AN4-5A bolt and AN365-428 nut, with one AN960-416L washer under the bolt head and two AN960-416 washers under the nut. Torque to 50 - 70 in./lbs.
 - e. Check the tightness of the forward attach bolt, AN3-14A. This should be torqued to 20 - 25 in./lbs and must clamp up.
 - f. If any corrosion is found, the corroded part must be replaced with a new part.
 - g. If cracks at hole edges are found that can not be cleaned out with the .250 ream, S.A.C. will recommend repairs on receipt of detail information.
 - h. If cracks are found in the spar webb or flange area, replace with new parts or S.A.C. will furnish recommended repairs on receipt of detailed data.
2. The inspection in paragraph 1. shall be repeated every 100 hours or six months, whichever comes first, from the last inspection.
3. Modification of an undamaged fin spar in accordance with Drawing 33924D will eliminate the need for the repeated inspection of Paragraph 2. Production aircraft, Ser. No. 508 and up, will incorporate this doubler and attach hardware change, in accordance with Drawing 33924D.

If there is damage that can not be eliminated by 1.g. above, the installation of the doubler will not delete the repetitive inspection. S.A.C. will furnish recommended repairs on receipt of details of damage.

- End -

2-33 Fin Modification Kit - P/N 33924 for 2-33 _____ S/N _____ N _____

Please send _____ kit(s). Check or money order for \$ _____ enclosed.

Ship to: _____

Name & Address of owner, if different:

Address _____

Name: _____

Address _____

Signed: _____

Date: _____

July 15, 1983

SERVICE BULLETIN NO. 102-33-3

SUBJECT: Removable Ballast Installation, Weight & Balance
MODEL AFFECTED: SGS 2-33A
SERIAL NO.'S AFFECTED: 262 thru 370 and retrofit installations

It has been determined that on Model SGS 2-33A having Part No. 33011D Removable Ballast Weight installation, a condition exists whereby pilot weights shown on the Calculated Weight and Balance, Removable Ballast (Form I-4606RB, 4/74) and on the 33914A placard on the instrument panel are incorrect.

The condition stems from the circumstance that the removable portion of the ballast weighs 19 lbs with the balance of the 26 lb total for the installation being in the fixed cannister assembly portion.

INSTRUCTIONS:

Obtain Form I-4606RB, 4/82 Calculated Weight and Balance (Removable Ballast) and recalculate the various pilot weights using the formula's on the form.

Revise the weights shown on the 33914A placard, using an overlay, or obtain a new blank placard on which to engrave or stamp the recalculated weights and install in place of the existing placard. Make a logbook entry of compliance with this Service Bulletin.

NOTE:

Form I-4606RB, 4/82 and Part Number 33914A blank placard will be available at no cost, from Schweizer Aircraft Corporation or from Schweizer dealerships.

COMPLIANCE TIME:

At, or prior to, the next 100-hour or Annual Inspection, whichever occurs first.

"FAA APPROVED"

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

SERVICE LETTERS

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

SERVICE LETTER

Sept. 29, 1967

SERVICE LETTER NO. SL-102-1

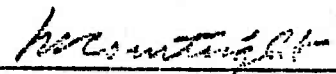
SUBJECT: Water in Pitot System of SGS 2-33
Ser. No's 12 and up

On ship Serial No. 12 the pitot tube mast was moved somewhat aft on the nose section to remove a potential hazard to ground-handling personnel. The former location, in many instances, came very close to a person's eyes as he stooped to attach the tow line.

Since this relocation, it has become apparent that the pitot lines have become more susceptible to picking up water while the aircraft is in 3-point position on the ground.

It is therefore recommended that a pitot cover be used when the aircraft is parked. The preflight check should include a check for water in the system to prevent instrument error or damage.

SCHWEIZER AIRCRAFT CORP.



M. Courtright
Quality Control.

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

SERVICE LETTER

October 6, 1967

SERVICE LETTER NO. SL-102-2

SUBJECT: Possibility of Tow-line-ring fouling
Model SGS 2-33, Ser. No's 1 thru 40

It has been reported that the cut-out in the fiberglass nose fairing, forward of the tow hook is shaped so that there is a possibility that the tow ring could become caught under the corners of the cut-out when the tow-ring is released from the hook.

Should this happen, the forces involved would simply tear the tow ring from under the fiberglass fairing and not endanger further flight, however damage such as this is obviously undesirable.

To prevent the above possibility it is recommended that the fairing opening be reworked in accordance with Schweizer sketch No. 4550A, copy of which is attached to this letter.

SCHWEIZER AIRCRAFT CORP.

Milton A. Courtright
Milton A. Courtright
Quality Control

2-33

C. SHIP (BOTTOM)

FIBER GLAS

NOSE FAIRING

TOW ROPE

NOTE:

1. IF FAIRING IS AS SHOWN IN SOLID LINE - REWORK TO DOTTED LINE SHOWN TO ALLOW TOW RING TO "RIDE" OVER FIBERGLAS NOSE FAIRING.
2. THESE "LIPS" ALLOW THE TOW RING TO "HANG UP" WITH POSSIBLE "JAMMING" OF THE TOW RING BETWEEN THE FIBERGLAS FAIRING & STEEL STRUCTURE. THE FIBERGLAS FAIRING WILL EVENTUALLY BREAK & DETERIORATE, CREATING A "RAGGED" APPEARANCE AROUND THE RELEASE SLOT.

APPROX.
4"

2 1/2"

FWD.

TOW RING

RELEASE HOOK BOLT

RELEASE HOOK

RELEASE SLOT

2-33 RELEASE SLOT FAIRING REWORK

DRAWN. 9-12-67-POWELL

CHECKED: J. J. 7-12-67

SCHWEIZER AIRCRAFT CORP.

January 15, 1968

SERVICE LETTER

SERVICE LETTER NO.: SL-102-3

SUBJECT: Fire Potential of Fabric Covered Aircraft

MODELS AFFECTED SGU 2-22 & SGS 2-33 having C.G. Tow Release Installation

(1) A report was received recently of a 2-33 glider which caught fire after completion of landing. The fire burned the entire fabric covering from the aircraft.

From the owner's report, they believe the cause of the fire was due to excessive generation of heat in the nose skid shoe, during the landing roll. The heat buildup was apparently enough to ignite the doped fabric fairing covering the gap between the skid and lower fuselage surface.

This is the only case of fire resulting from skid friction that we know of in our 38 years' experience in gliding. However, since it did happen, we feel it is our responsibility to distribute the information, and suggest a way to lessen the possibility of repetition.

Since this has never happened before, it seems that the two factors which could cause the skid to heat up enough to start a fabric fire was (A) The prolonged skid contact during a long downwind landing roll, and, (B) To the fact that the landing was made on a very smooth dry lake bed.

The ship involved in the above incident was equipped with Center of Gravity (C.G.) Tow Hook. On this installation, the gap between the nose skid and the fuselage was filled with ensolite blocks. These blocks are, in turn, covered with a doped fabric fairing on each side of the skid. This fabric fairing would appear to be the point where ignition could occur if the skid was overheated, so we assume that a fire from this source could only happen on ships with a covered skid.

RECOMMENDATIONS:

- (1) On 2-33 with C.G. Hook, remove the fabric fairing from both sides between the nose skid and the bottom of the fuselage. The "Ensolite" blocks thus exposed, may be bonded in place using a good commercial-type waterproof adhesive. The edges of the blocks can then be painted to match the finish or trim on the fuselage.
- (2) Refrain from doing prolonged downwind landings or take-offs, on surfaces that will cause heat buildup. If you must operate from pavement or hard surface runways, we recommend adding a heavy steel plate at the area of the skid that touches the ground. The heavier steel will dissipate the heat better. Also, an asbestos fabric strip between the steel shoe and the wooden skid should be of help.
- (3) While on the subject of fire possibilities, we feel it appropriate to caution against smoking in fabric covered aircraft. The possible consequences for doing this requires the sober reflection of each glider pilot.

ADDITIONAL NOTE: The student in the front seat experienced some difficulty in getting out and had to be helped by the instructor. The student was wearing a parachute and the seat belt adjustment buckles apparently caught on the parachute harness. We have tried to duplicate this situation in different combinations of pilots and positions in adjustment, but have not been able to do so. Since this seems to be an isolated case, and since it is not general practice to use parachutes in this aircraft, no action is taken on this at this time.

SERVICE LETTER

SUBJECT: Conversion of Glider, Model SGS 2-33 to Model SGS 2-33A

SER. NO.'s AFFECTED: Ser. No.'s 70 through Ser. No. 85
(Optional on Ser. No.'s 1 through 69)

The Model SGS 2-33A Glider is the same as Model SGS 2-33 except for the rudder used. SGS 2-33 uses rudder, P/N 26K714-3, whereas Model SGS 2-33A uses rudder, P/N 33700K-1. The 33700K-1 rudder is taller and incorporates a balance weight in the upper forward end which overhangs the top of the fin. The static-unbalance limits of the 33700K-1 rudder, after covering and finishing is complete, is 10 to 13 in./lbs. tail-heavy, measured from the hinge center line. Two 10-32 self-locking nut plates are installed internally, on the lower overhang rib to provide for attachment of additional weight, if required, to meet the unbalance limits.

PROCEDURE

1. Disconnect rudder control cables from rudder horn.
2. Remove rudder-hinge bolts ((1) AN4-11 lower with (2) washers each above and below male hinge, and (2) AN3-11 center and upper), and remove 26K714-3 rudder assembly from the aircraft.
3. Remove royalite fin cap, P/N 26K712-3, from fin. Install #4 x 1/4 stove-head P.K. screws in open holes resulting from fin cap removal. Touch up to match finish.
4. Place P/N 33700K-1 rudder in position and reinstall hinge-bolts (see 2. above). Replace bolts if original hinge bolts are worn.
5. Check clearance along top of fin (.20 nominal, .10 min.). Adjust clearance if necessary by removing or adding washers at the lower hinge. Also, a slight file touch up, to straighten the skin trim lines, on both the fin and rudder may be in order.

Check clearance along fin spar at full-travel positions, (30° + 2°) left and right. File fin spar and skin locally, if necessary, to effect a minimum of .02 clearance. Care must be exercised to avoid insufficient edge distance at rivets in fin skin-to-spar flange (.40 min.).

6. Safety the castle-nuts at hinges and cable-attach points.
7. Weight and Balance - - The balanced rudder weighs two (2) pounds more than the unbalanced version which will increase the tail weight directly, while the main wheel weight change will be negligible. The empty weight C.G. will be moved aft .60 (example: 95.85 to 96.45). The "Flight Limits" placard on the instrument panel must be corrected in the amounts listed below:

Max. Wt. Aft Pilot/220# Fwd	- 2 lbs
Min. Wt. Aft Pilot/100# Fwd	+35 lbs
Min. Wt. Fwd Pilot Solo	+10 lbs

8. Since the above installation affects both the aircraft C.G. and the model designation, the alteration must be entered on FAA Form 337 and Returned to Service by a person so authorized by the Federal Aviation Administration. Suggested statement of "Description of Work Accomplished" is as follows:

a. Removed 26K714-3 rudder and installed 33700K-1 rudder in accordance with manufacturer's drawing No. 33601D, Vertical Tail Surface Assy.

b. Weight and Balance information:

Empty C.G. _____

Max. Weight, Aft Pilot _____

Min. Weight, Aft Pilot _____

Min. Weight, Fwd Pilot, Solo _____

* _____

*See original Weight and Balance, and enter adjusted figures as explained in Para. 7. above.

- c. Changed "Flight Limits" placard on instrument panel to reflect new min./max. pilot weights as shown.
- d. Stamped suffix "A" on aircraft nameplate to read: "Model SGS 2-33A" - - reference approval statement on Glider Data Sheet No. G2EA.

November 22, 1974

SERVICE LETTER

SERVICE LETTER NO. SL-102-9

SUBJECT: Instrument Panel Installation, Lower V-22 Fasteners

MODELS AFFECTED: SGS 2-33 and 2-33A, Serial No's. 1 thru 370

A report from the field indicates that pulling aft on the lower edge of an instrument panel during flight has resulted in an undesired release of the tow rope. V-22 "Vibrex" fasteners, used to install the 33301-1 instrument panel assembly, have a limited tensile load capacity. If the panel is pulled aft firmly, the two lower V-22 fasteners can be disengaged and the panel can force the release knob aft actuating the tow release hook.

A. To assure that this does not occur on ships in service the following action should be taken.

- 1) Remove the two lower V-22 fasteners used to install the instrument panel.
- 2) Install AN525-10, -12 screw, AN931-4-12 rubber grommet, AN970 3 wood washer per the sketch on sheet 2.

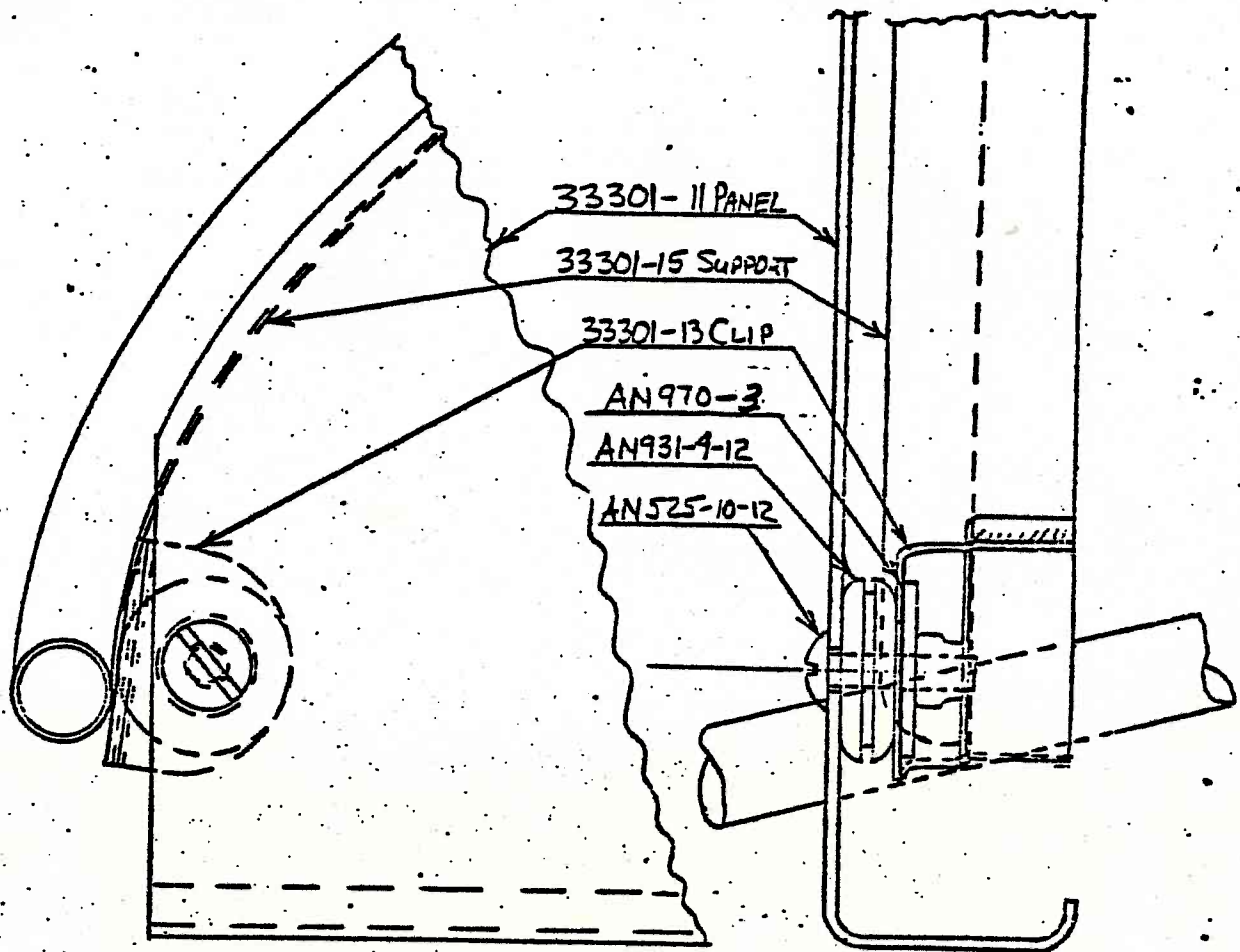
B. An alternate method which will substantially reduce the probability of an undesired release, resulting from the panel being pulled aft, may be accomplished in lieu of the method described in A. above as follows:

Disconnect the release cable at the forward end of the rod attached to the release knob. Pull the rod from its guide and remove the rubber bumper from the rod. With a sharp knife, reduce the length of the rubber bumper from 3/4 inch to 1/4 inch.

Reinstall the knob and rod using the 1/4 inch long bumper, reconnect the release cable to the rod and safety.

November 22, 1974

SERVICE LETTER NO. SL-102-9 cont'd



VIEW FORWARD - L.H. LOWER
CORNER OF INST PANEL SH'N.

January 20, 1951

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

SERVICE LETTER

Service Letter No. SL-102-12

Subject: SGS 2-33 Wing Strut Attach Options

Model/Ser. No's. Affected: All

Since the model SGS 2-33 was Type Certificated, various methods of attachment of the wing strut, to the wing and fuselage, have been approved. Several of these are shown on the sketch below, one of which should meet the needs of most operators.

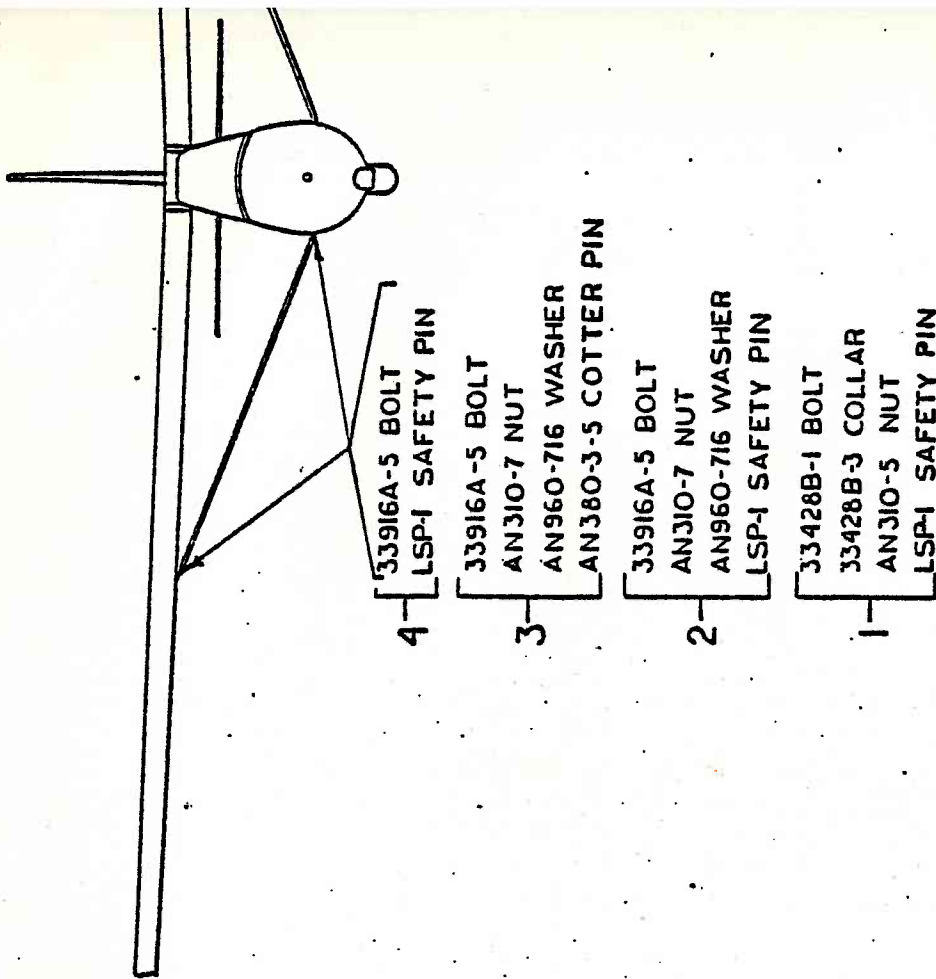
Occasionally, reports have been received from the field of a problem, primarily with the option no. 4 in sketch below. The usual report was that the attach bolt had backed out to the point where one or more threads were in bearing. Part of the reported problem may be attributed to inadequate Preflight Inspection.

The order of the numbered options shown may not be applicable for all operators because of certain operating conditions, such as -

- a. Need for frequent disassembly and reassembly of the sailplane.
- b. Operations from field with high grass, during which, use of the safety pin might result in excessive pick-up of vegetation.

The options listed on the sketch may be used in either of the two strut locations indicated, in any combination.

SGS 2-33 WING STRUT ATTACH OPTIONS



OPTIONS ARE NUMBERED IN ORDER OF PREFERENCE

SERVICE LETTER

Service Letter No. SL-102-13

Model/Ser. No's Affected: SGS 2-33 & SGS 2-33A, Ser. No's 1 thru 487.

Subject: Securing of Ailerons During Tie-Down

Schweizer has received some random reports of a crack occurring in the aileron spar doubler (Part No. 33501H-39, -40) on the forward side of the aileron spar near the actuating horn. The cracking appeared in the bend radius of the upper flange. It has been reported on both inboard and outboard ailerons.

CAUSE: Air loads are not normally great enough to cause an incipience of such cracks. It appears therefore that cracks were caused by ground wind-loads by a ground tail wind driving the aileron upward and coming up hard, against the wing control-stops.

INSPECTION: Because of the several reportings it is recommended that, at the next preflight inspection the doublers on both inboard and outboard ailerons of each wing be visually inspected for the existence of a crack in the formed radius of the doubler, at the end of the doubler adjacent to the actuating horns.

If a repair is indicated, which is considered to be beyond the scope of AC43.13-1A, Schweizer Aircraft Corp. will furnish necessary information upon request.

RECOMMENDATION: It is recommended that aileron chocks (as supplied with each sailplane), or other method of securing control surfaces, be used at all times when the sailplane is tied-down in an area exposed to wind.

NOTE: On sailplanes, serial number 488 and up, the ailerons incorporate a -39 and -40 doubler of .050 thickness, in lieu of an .032 thickness on previous ships.

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

SERVICE

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

SERVICE LETTER NO. SL-102-16

DATE: February 8, 1982, Rev. August 26, 1983
TO: All Owners, Dealers
SUBJECT: FUSELAGE FABRIC COVER SEPARATION
MODEL AFFECTED: SGS 2-33, A
SERIAL NO.'S: Through 570

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There have been reports of the fuselage fabric coming apart at the machine-sewn seam along the bottom centerline of the fuselage between the main landing gear wheel well and the tail wheel.

The fabric on the bottom surface of the aircraft is normally subjected to a greater amount of deterioration - inducing conditions, i.e., water and mud splash and bouncing sticks or stones. Sailplanes in some areas are, at times, subjected to blown-in snow packed beneath the fuselage while in tie-down position.

For these reasons, the condition of the fabric along the lower surface of the fuselage should receive particular attention at each Annual Inspection.

Repairs to fabric covering, including seams, should be made using approved materials in accordance with Caconite Process Procedure Manual No. 101 and/or Chapter 3 of Advisory Circular No. AC 43.13-1A, if the aircraft has been recovered in the field with cotton fabric.

July 13, 1983

SERVICE LETTER NO. SL-102-17

MODELS SGS 2-33, A, AK

SUBJECT: Bellcrank, Aileron - Wing

SER. NO.'S AFFECTED: All, thru Ser. No. 573

It has been reported that the steel bushing, at the pivot bolt, for the aileron bellcrank assembly has become rusted and siezed on both the pivot bolt and the bellcrank assembly hub. This condition, upon actuation of the aileron controls, would cause the bellcrank, bushing and bolt to turn together. This, in turn, causes the bolt to pivot in the mounting plates attached to the intercostal assembly, rather than the bellcrank hub pivoting on the steel bushing.

The condition is the result of improper maintenance practices.

The net result of the above cumulative conditions might be a rapid wear of the bolt holes in the aluminum intercostal mounting plates, with consequent play in the aileron control movement.

INSPECTION:

1. Within the next fifty (50) hours of operating time and at annual lubrication intervals thereafter, inspect the aileron bellcrank installation as follows:
 - A. Through the access door in the lower surface of the wing, observe the action of the bellcrank while a second person actuates the aileron controls:
 - (1) Should the pivot bolt remain stationary while the bellcrank is rotating, no further action is necessary except that the bellcrank and bushing be lubricated with SAE #30 lubricating oil as specified in Section 2 of the Flight Erection Maintenance Manual.
 - (2) Should the pivot bolt rotate and/or show radial movement in excess of .005, the bellcrank assembly must be removed from the wing for maintenance:

- (a) Disassemble the bellcrank assembly and inspect the pivot bolt, hub and bushing for evidence of rust.
- (b) Take corrosion protection steps in accordance with Chapter 6 of AC 43.13-1A. If desired, the part number 33105D-9 bellcrank hub may be reworked per Schweizer Dwg 33105D, Rev C, by tap drilling #3 (.213) through one side of the hub to the .375 dia. hole. Tap the drilled hole .25 deep with $\frac{1}{4}$ -28 UNF tap. Install MS15002-1, or equivalent, grease fitting. This will facilitate lubrication with a grease gun, using a low-viscosity lubricant such as "Lubriplate", or equivalent.
- (c) Parts having corrosion-attack beyond salvage limits must be replaced with new manufacturers parts.

<u>Part No.</u>	<u>Part Name</u>	<u>Req'd per wing</u>
33105D-9	Hub	1
-7	Bushing	1
AN4-25	Bolt, Pivot	1

- B. Inspect the pivot bolt holes in the wing for wear or elongation in excess of .253 dia. (max.) or scoring due to rotation of the steel bushing.
 - (1) Plates which are scored and/or have oversize bolt hole must either:
 - (a) Be replaced with new mfg'r's part. Part No. 33108D-7 Plate,
 - (2) req'd per wing, or -
 - (b) Be reworked by line-reaming the -7 plates and also the 33105D-7 Hub bushing to .3125/.3145 diameter and replacing the original AN4 pivot bolt with AN5-25 bolt, AN310-5 nut with appropriate washer and cotter pin.

July 14, 1983

SERVICE LETTER NO. SL-102-18

MODEL: SGS 2-33, A, AK
SER. NO.'S: 1 through 568 (excluding S/N's 539 - 541)
SUBJECT: Tow-Release Slot, Cracking Of

There have been instances in which the forward tow release hook slot assembly, Part No. 1B210-1A, in the fuselage has been found cracked. The cracking has usually occurred in the area of the formed radius of the part, adjacent to the damper spring bolted into the top of the release slot assy forward of the tow hook pivot bolt. At times, cracking has also been found radiating from the hole for the attach of Part No. 10223B-1 Damper Spring, Release Hook.

Quite often the cracking has occurred subsequent to breakage of the damper spring, allowing the release hook to contact, with full force, the bolt-head attaching the damper spring. Continued pounding by the release hook has, eventually resulted in cracks forming in the release slot fuselage member.

RECOMMENDATION:

It is recommended that at the next Annual Inspection, the 1B210-1A release slot assy be carefully examined in the area adjacent to the damper spring. Replacement of a damaged damper spring should be accomplished when so indicated by this inspection.

CORRECTIVE ACTION:

- A. Should cracks be evident in the 1B210-1A release slot assy, it will be necessary to remove the cracked member and weld in a new manufacturer's part. Should this be found necessary, it is recommended that a part number 1B210-5 release slot be used for the replacement member which will allow modification of the Tow Hook installation in accordance with Schweizer Drawing 33926G. This modified installation uses a small tow hook, Part No. 10232A-1 and a new Release Arm, Part No. 1B217-5. The reduced mass of this small hook greatly diminishes the inertial force of the hook contact with the damper spring bolt, thereby lessening the chance of a crack reoccurring.
- B. Existing tow hook installations may also be modified per Drawing 33926G. This entails modification of the existing 1B210-1A slot assy by drilling a new pivot bolt hole for the release arm .78 forward of the existing bolt hole. Also, elongating the arm-clearance opening in the top of the release slot assy a like amount. The modification is applicable to both the normal nose tow hook and to the center of gravity release tow hook.

SCHWEIZER 2-33 & 2-33A PARTS and MAINTENANCE

NOTES