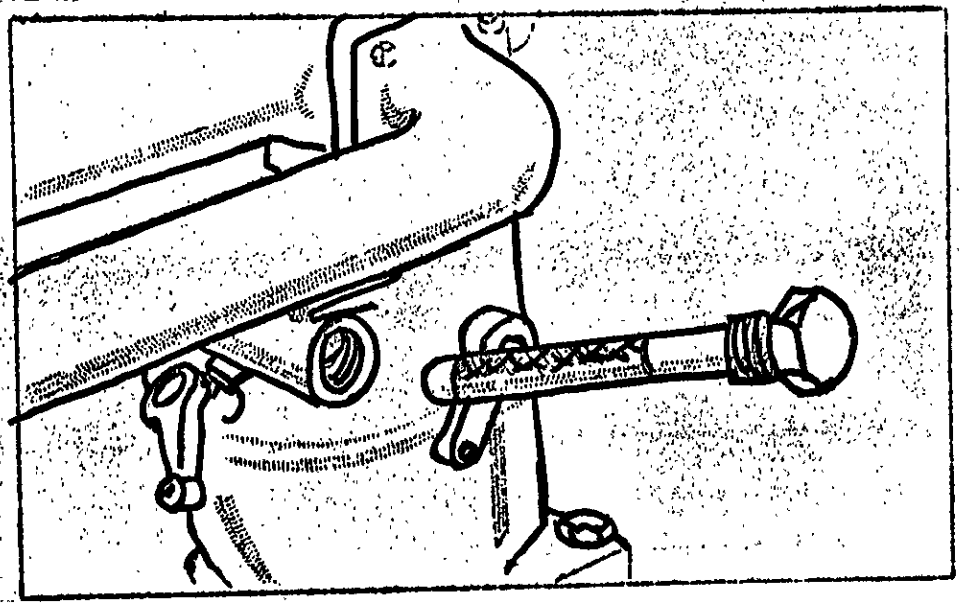
INDEX

Distributors bulletin no 2

Aug 28, 1946

The extremely fine mesh of the carburetor finger screen is easily clogged by fine particles and fibers of foreign materials which pass through the coarser filters in the tank and fuel line. One case has been experienced wherein fine fiber, possibly decomposed paper, sufficiently blocked off the area of the finger screen to cause lean operation with resultant high head and oil temperatures. Before establishing the source of difficulty, forced landings were experienced due to fuel starvation.

CLEAN CARBURETOR FINGER SCREEN EVERY 10 HOURS!



It is imperative that the strainer be removed and thoroughly cleaned every ten hours of operation. The main fuel strainer, being of larger size and coarser mesh, should be cleaned every 25 hours. Great care should be taken to prevent the entrance of any foreign material into the fuel system.

Sea Bee Service News

Republic Aviation Corporation

Sept. 14, 1948

Distributors No. 3

Subject: Emergency Keel Landing.

TIGHT SPOT?....Too dark to make a safe wheel landing?....Forced landing in a short field?....Then leave your wheels up and come in for a normal keep landing.

Through a year of flight testing, we have learned that an emergency keel landing apparently is a safe landing. In no cas has damage been sustained by the hull and in no case has anyone ever been hurt. Recently a SeaBee had the misfortune to run out of gas just short of the runway. The landing gear was already extended when the engine cut. Being too low, there was no time to retract the gear. Therefore the ship landed in a rough cornfield, rolled through a fence and uprooted a 6" tree. The forward end of the hull was damaged and the right wing was well beyond repair. Several non-structural peices were damaged, but the cabin remained entirely intact and the occupants were neither bruised nor shaken. Rugged and safe as the airplane is, it still means a repair job. You can save work if there is time to retract the landing gear and make a normal keel landing.

At Farmingdale, we have accomplished keel landings on hard surfaced runways, on "sand beaches", and on turf. Other than polishing some paint off the keel, no damage has ever been sustained by the airplane. The most successful landing is on turf where grass lubricates the slide to a smooth stop in a short distance.

We hope it may never be necessary, but should you be in a tight spot retract your gear and make a keel landing. If you do not have time to retract your gear, then move the landing gear selector handle back into "landing gear up" position and start pumping. The first few strokes will unlock the gear and move it sufficiently aft to permit it to swing on landing. The extent of damage in this case will be limited to breakage of the locking yoke or the actuating cylinder rod end but this is slight when compared with the repairs mentioned above. In case of an emergency, a keel landing is the best way out and should bring you to a smooth stop.

Service Bulletin(Distributers) No 14

Subject: Operation with one wing float

date: Nov 1946

On several occasions, during water landings float struts were broken by excessive side loads In each case, the pilot took off immediatelywhilte the airplane was still on its step, however, if the airplane had slowed down sufficiently to lose aileron control the wing may have dropped into the water. In one instance, the wing dropped and was permitted to settle, unfortunately an attempt was made to taxi to shore without swinging the airplane onto its good float Since the wing took on water at a very slow rate, balance could easily have been regained by throwing sufficient weight onto the other side of the airplane. The wing sank slowly requiring approximately 15 minutes to capsize, the airplane, however, remained afloat and was later towed to shore.

Should the float strut in your SeaBee shear during a water landing, compliance with the following recommendations will prevent damage to the airplane

1 Hold your good float on the water keeping the damaged wing off the water Effective aileron control can easily be maintained at 40 mph or over, should the speed be less, the airplane may still be held in its normal altitude by keeping the damaged wing headed into the wind so that the airplane will lean over onto its good float

2 If the wing has already dropped onto the water, step out and throw your weight on the wing lift strut of the undamaged side You can then taxi to shore Any water in the wing will drain off in a few minutes

W.H. Ehmann
Service manager.

December 6, 1946 Distributor's No. 19

FREEZING BRAKES

The possibility of brakes freezing during cold weather operations has been discussed with the B. F. Goodrich Company. They have suggested when operating from water or when the wheels have been subjected to water spray during cold weather, that the brakes be applied several times after take-off. This will squeeze out the water from between the brake lining and brake drum, thereby reducing the possibility of brake lock caused by ice forming in the wheel during flight.

W. H. Ehmann
Service Manager

December 6, 1946 Distributors' No. 20

FILLING, BLEEDING AND ADJUSTING SEABEE HYDRAULIC BRAKES

Filling, Bleeding and adjusting the hydraulic brake system may be accomplished by two alternate methods: (1) PRESSURE, wheel to master cylinder, (2) GRAVITY, Master cylinder to wheel. The first or pressure method has been found to be the fastest, surest, and most satisfactory way of producing a good brake and a system free from air. The second method should be used under field conditions only; it may be possible to produce a brake which is good enough to negotiate careful landings, but it takes excessive time to bleed the brake and final results are questionable.

Pressure Bleeding Tank

It will be necessary to have a pressure tank made from a hydraulic can or any can of one or two gallons capacity having a screw cap and which is clean and free from residue of previously contained fluids. Attach an air valve to the filter neck cap by welding, solder or nut. Install a steel threaded fitting for a 1/4" tube or weld a short length of beaded steel tubing to the side of the can approximately an inch above the bottom. Attach a 12" length of synthetic rubber tubing to the fitting. Cut the head off and drill a hole thru the center axis of a 10-32NF3 screw approximately 3/4" to 1" long. Weld or solder the screw to the end of a short length of beaded steel tubing and attach to the other end of this rubber tube. A hook or piece of wire may be used to keep the tube high and prevent loss of fluid. Make an additional screw and tube assembly and attach to the end of another piece of rubber tubing approximately 12" long.

Pressure Bleeding Procedure

1. Remove the cover from the brake compensator valve of the brake being bled and back off all the way, counterclockwise, on the compensator knurled adjusting screw.

2. Remove the vent plug in the top plate of the master cylinder and install the screw attached to the short length of rubber tubing in its place. Hang the end of this tubing in an open container, this will catch the oil which is bled up thru from the wheel.

3. Remove the #10-32 screw from the wheel bleeder fitiing and attach the tank hose. (Tank should be 3/4 full of hydraulic oil, Spec. #3580). If an AN type bleeder fitting is installed,(Ship #126 and up), open the fitting by backing off (counterclockwise) one-half to one full turn. If the plain screw bleeder is used, you are already to bleed as soon as the dust screw is removed and the tank screw is installed.

4. Apply air pressure to the bleeding tank with an automobile tire pump. Apply only enough pressure to force the oil up the brake line, out of the master cylinder into the container in the cockpit.

Allow oil to flow from the master cylinder tube until a clear flow, without evidence of air bubbles is observed.

5. Close the wheel bleeder. Apply full brake with the pedal and holding the brake on, (or screw down on the compensator screw) open the wheel bleeder. Applying the brake will inflate the wheel expander tube with oil and opening the wheel bleeder will allow the tube to deflate and release the trapped air back into the bleeding tank. With the wheel bleeder and compensator valve open, apply air pressure to the tank and bleed additional oil back into the cockpit container.

6. Close wheel bleeder, remove bleeding tank and install dust screw. Remove bleeding tube from the master cylinder.

Brake Adjustment

After the brake has been bled it will be necessary to adjust the brake compensator valves in the cockpit so that after application and release of the pedal, the wheel can be turned with a slight drag in the brake lining. This valve is a form of pressure relief which traps pressure (approximately 10 psi) in the brake system after the brake has been applied and pedal released. This trapped pressure holds the expander tube in the wheel full of oil, compensates for brake wear and results in immediate brake reaction upon actuation of the pedal. The amount of pressure trapped is controlled by the knurled compensator adjustment screw. Turning it clockwise raises the relief pressure and backing off, counterclockwise, lowers the pressure.

To adjust the compensator, jack up the wheel, screw in the compensator adjustment screw for that brake and apply full brake with the pedal. Release the pedal and try turning the wheel by hand. If the brake is locked, the adjustment screw has been turned in too far. Back out the screw until the wheel will turn with a slightly noticeable drag. Reapply the brake, release the pedal and recheck the wheel for drag. It may be necessary to readjust the compensator a second time to obtain the brake desired.

After adjusting the brakes, refill the system as follows: With the master cylinder in a vertical position, remove the high level screw on the side of the cylinder and add oil thru the vent plug hole on the top until it flows from this high level screw hole. When this level is obtained, reinstall high level screw and vent plug. If at any time during service, the brakes appear to be dragging excessively, the wheels should be jacked up and compensator adjustment checked.

Gravity Bleeding Pressure

Field bleeding may be accomplished by removing the master brake cylinder vent screw and adding fluid by the use of an oil can with a flexible snout and at the same time opening the bleeder screw on the wheel fitting allowing fluid to flow out. It will be necessary to back all the way out on the compensator adjustment screw. The expansion tube may be bled by closing the bleeder at the wheel, applying brake and cracking the bleeder open allowing air and oil to escape. Compensator adjustment is made in the same manner as described above. Make sure the master brake cylinder reservoir is full to the bottom of the filler level screw. Fluid should be added to the master cylinder reservoir periodically in order to maintain proper fluid level.

June 3, 1947 Distributors' No. 42

SALVAGE OPERATION IN WATER

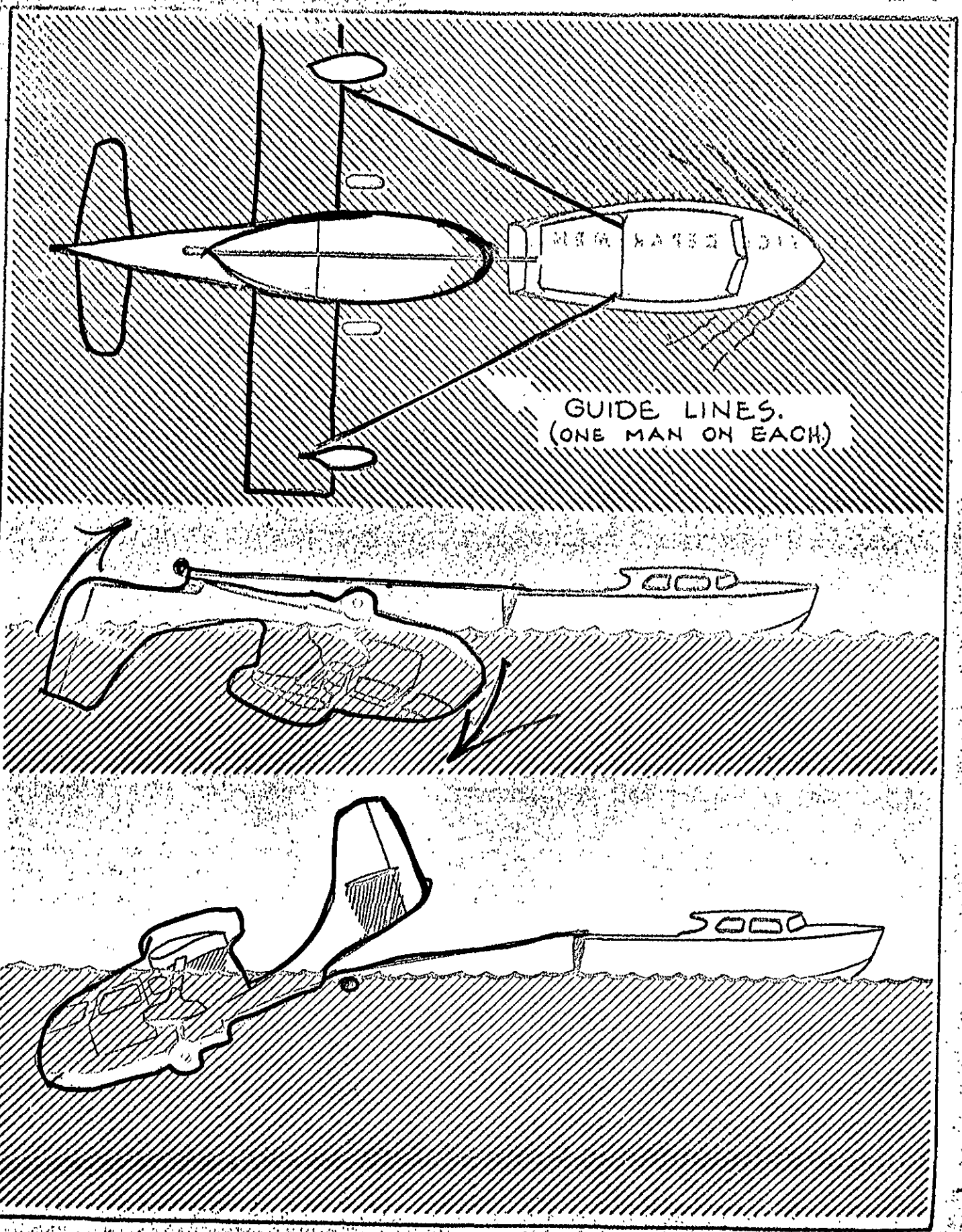
In the past a great deal more damage has been done to Seabees during salvage operations than has occurred during the initial water accident. Before attempting to right the airplane, it is best to tow it somewhere near the shore or beach where the salvage operation will be accomplished.

From past experience, it appears that the best way to turn the Seabee back to the upright position when it is floating inverted is to tie a heavy rope to the tail wheel and pull the tail over the nose. A power launch can be used for this purpose satisfactorily. However, the water should be deep enough and guide lines should be used to steady the wings. Once the airplane is righted, the launch should continue towing steadily towards a sloping beach until the airplane's wheels are well planted on the beach. Refer to illustration on reverse side. This method has been used successfully. The wings ride just out of the water and plane along on the surface. After reaching shallow water, the airplane may be towed from shore onto the beach.

When the water is too shallow to permit the Seabee to be pulled over as described above, it is recommended that the entire empennage and one wing be removed. Then roll the ship over on its side by lifting the other wing. Ropes tied to the wing on each side will stabilize the ship and prevent it from rolling into the upright position too fast after the wing has passed the vertical position. After the Seabee is standing upright and resting on wheels, remove the other wing and tow the airplane out.

The conditions of each case may vary considerably; consequently some thought should be given to your local problem, as to the availability of emergency and salvage equipment and the best procedure to suit your local water conditions.

W. H. Ehmann
Service Manager


GUIDE LINES.
(ONE MAN ON EACH)

Service News No 1

date april 20, 1946

subject: Propellers

This is the firt issue of Republic SeaBee Service News which will be published periodically for all Seabee distributors and dealers to keep them informed of SeaBee maintenance, service and operation information

Standard Prop:

The standard propeller with which your Seabee is now equipped is an Aeromatic ground-adjustable type manufactured by Koppers Co. Inc As delivered, the blades are adjusted at the angle which provides best take-off and high speed performance

The blades of the Aeromatic propeller are of laminated wood construction with a plastic coating the resists mold, water and penetration Metal leading edges and tips are provided. A positive locking clamp secures the blades in their proper position

Watch for more information of the effect of changes in blade angle of the Aeromatic propeller on Seabee performance in a later issue of SeaBee service news

Controllable-Reversible prop:

Now available as an optional installation on the Seabee is a controllable pitch, fully reversible prop designed and manufacutred by Hartzell Propeller Co This propeller is recommended for those who desire extra performance plus the pleasure of operation with reversible pitch

Its controllable pitch affords a wide adjustment for maximum BMEP engine control settings which gives notable advantages in fuel economy speed best climb and long engine life.

The reversible pitch feature adds considerable maneuberability for ground and water operation, such as backing away from a gas pump or easing to a smooth stop at a dock

The blades of the Hartzell Propeller are a plastic bonded type of thin airfoil section, which minimize propeller tip losses The angle or the pitch of the blade can be changed by a push-pull control located on the pilot's panel. This control which operates a valve admitting pressure to an engine-oil operated piston in the propeller hub is moved from its neutral position until the desired setting is reached; then the pilot merely returns the control to its neutral position and the selected setting is retained.

Reversible pitch selection during open throttle operation is prohibited by a safety device and stops as provided for permissible high and low pitch settings.

Just as soon as available you will receive the rpm manifold pressure correlations for optimum blade setting necessary for operation of the Hartzell propeller installation

Wing Platform

Easy and safe access to the Seabee power plant is assured by use of the Wing platform sketched below We found this platform essential in preventing the denting or scratching of the wings or flaps in our maintenance operations, it is extensively used as a wing protector by our factory as well as the hangars when working around the engine.

We recommend that you build sever of these platforms in preparation for your Seabee operations. The design is simple and inexpensive. Plywood, pine, felt and paint in colors of your choice are the only materials required.

Your next issure of Seabee Service News will have plans for an easily-built engine access stand which will further streamline your maintenance facilities.

1) 12 x 60 x 1 plywood - 2 pcs

2) 36 x 61 x ½ plywood-1 pc.

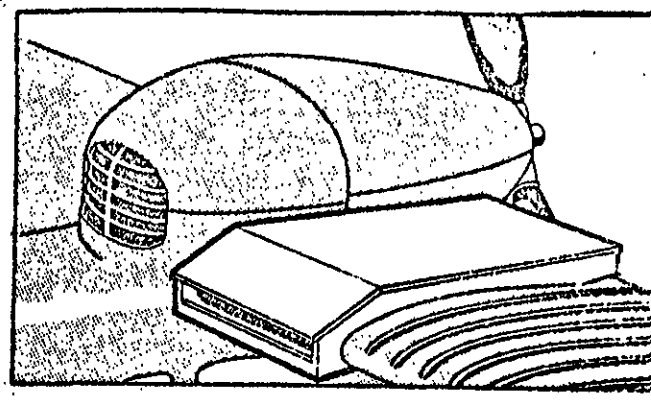
3) 1 x 2 x 33½ wood-8 pcs.

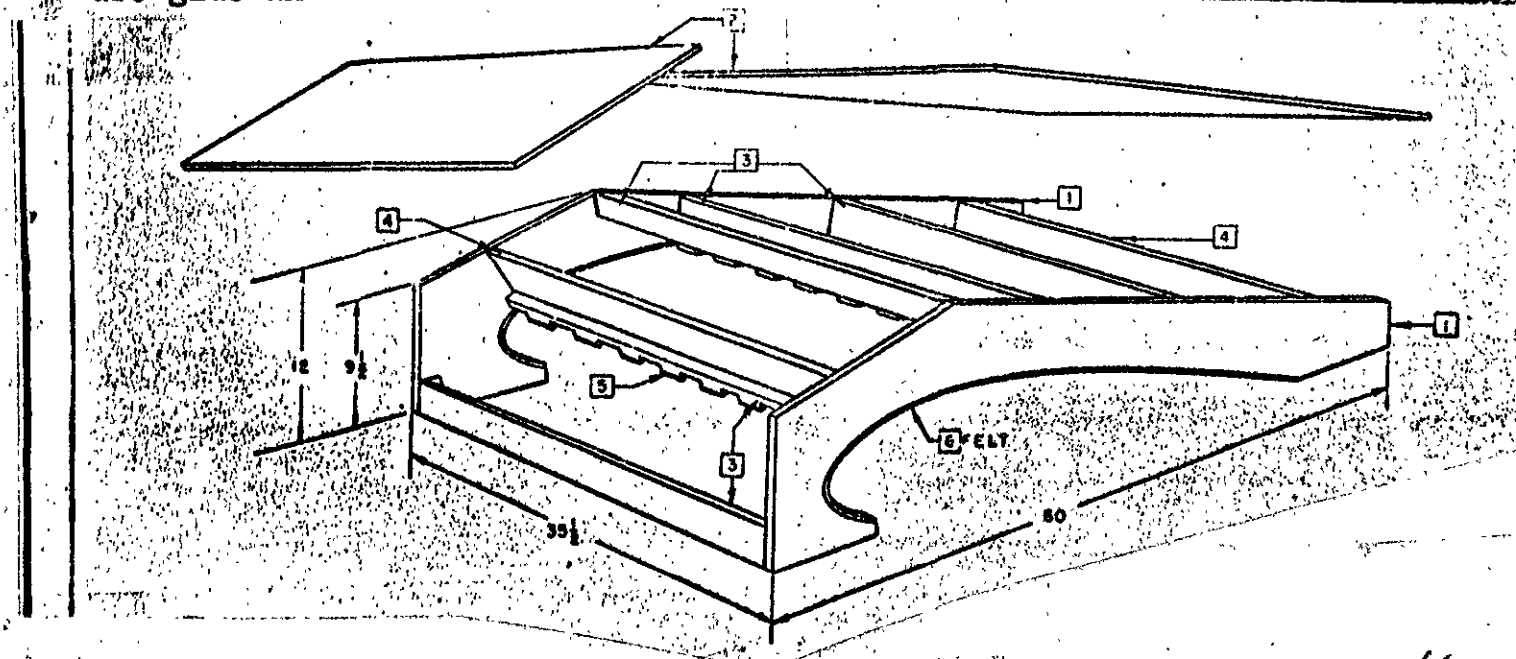
4) 1 x 4 x 33½ wood 2 pcs.

5) 1/8 x 2 felt *to be glued) -5 ft.

6) 1/8 x 1 felt-10 ft.

use glue and screws as needed.





Seabee
Service News

REPUBLIC AVIATION CORPORATION
FARMINGDALE, LONG ISLAND, NEW YORK
• • • SERVICE DEPARTMENT • • •

AUG 30, 1946 NO. 2

SEABEE SPARES PROGRAM ANNOUNCED

PROMPT DELIVERIES

Spare parts will become available progressively to keep pace with accelerated production. It is planned that you will requisition your urgent replacements by purchase order directly from the Service Department of Republic Aviation Corporation during the summer and early fall of this year. In line with our previous commitments, we will fill your orders and ship the parts you need within twenty-four hours.

As production increases and the quantity of spare parts required for the Seabee program increases, we will notify you that your initial inventory of spare parts for stock is available. The details of what shall comprise your initial inventory are dependent upon your proximity to Republic Aviation Corporation, the terrain and general climatic conditions of your area, and various other factors, all of which are being used to figure the quantity of spare parts for your stock.

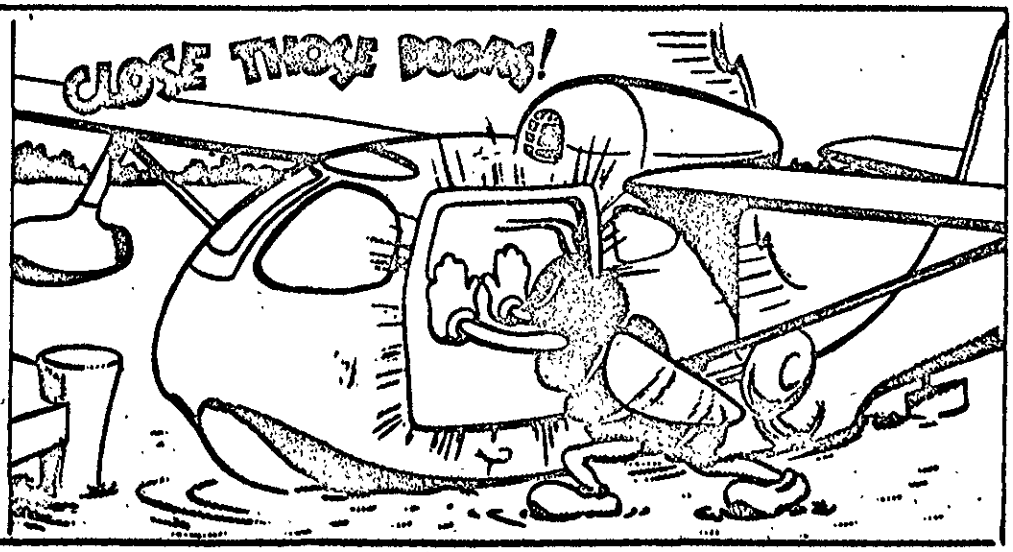
Realizing the necessity for offering good services to Republic distributors and dealers and to the ultimate customer, the Service Department has developed an aggressive spare parts program which will insure the maximum utility of Seabee aircraft; will give your customer the service to which he is entitled; and will enable you as a distributor or dealer to make a profit and a satisfied customer. It offers:

1. Concurrent Spares.
2. Parts shipment within 24-hours of your request.
3. Packaged spares—includes all attaching hardware and materials.
4. No complex or appendaged part numbers.
5. Stable part numbers—no changes unless interchangeability and/or function are affected.

CLOSE THOSE DOORS

Since the Seabee has conveniently wide doors, a generous area is exposed to the breeze when doors are open; in ordinary circumstances all operations tend to keep the doors closed. However, during reversed propeller operation, the blast tends to whip open the doors against the door checks and subject them to undue abuse or damage.

So make it a habit to check the doors before you reach for the propeller reverse lever.

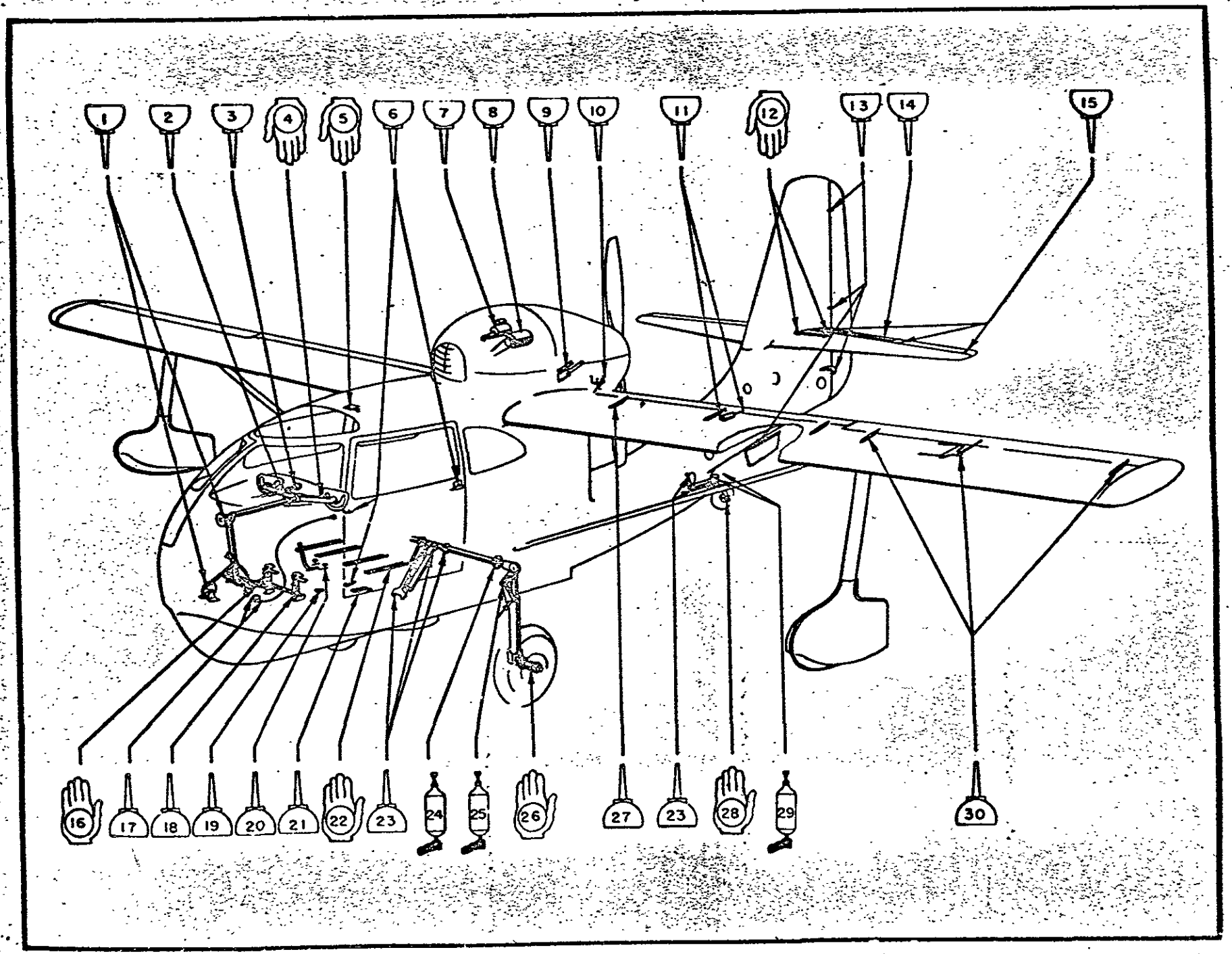


Lubrication OF THE Seabee

Parts to be Lubricated	Lubricate Every 25 50 100 Hours
Control Column Pulleys	1
Control Column Bearings	2
Engine Control Shafts	3
Aileron Control Chain	4
Trim Tab Control	5
Door Hinges and Locks	6
Generator	7
Starter	8
Cowl Hinges	9
Throttle and Mixture Controls	10
Flap Cylinder Pivots	11
Tab Mechanism	12
Tail Surfaces' Hinges, Water Rudder	13 14 15

Parts to be Lubricated	Lubricate Every 25 50 100 Hours
Gear Segments at Rudder Pedal Rods	16
Parking Brake	17
Rudder and Brake Pedal Pivots	18
Fuel Shut-off Valve	19
Flap and Gear Selectors	20
Door Stop	21
Seat Tracks	22
L.G. Pivots	23 24
L.G. Bearings	25
L.G. Wheel Bearings	26 28
Flap Hinges	27
Tail Wheel Shaft	29
Aileron Hinges and Bracket	30

Symbol	Lubricant	* Engine Oil
	General purpose, aircraft lubricating oil	SAE 40—Above 40°F (Free Air Temp.)
	General purpose, aircraft lubricating grease AN-G-15	SAE 30—Between 40°F and 10°F
	General purpose, aircraft lubricating grease AN-G-15	SAE 20—Below 10°F
		*Use Aircraft Engine Lubricating Oil (AN-VV-0-446a or equivalent)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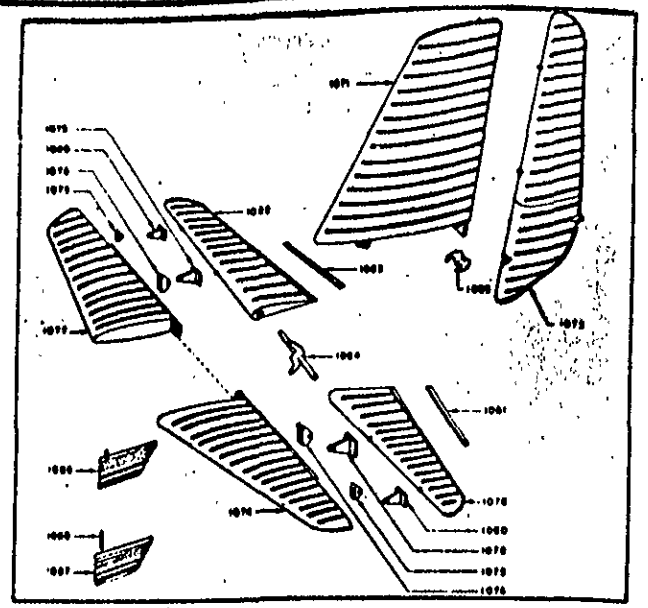


1071	Fin	$ xx.xx
1073	Rudder	$ xx.xx
1074	Stabilizer, left hand	$ xx.xx
1075	Hinge, stabilizer, outboard	$ xx.xx
1076	Hinge, stabilizer, inboard	$ xx.xx
1077	Stabilizer, right hand	$ xx.xx
1075	Hinge, stabilizer, outboard	$ xx.xx
1076	Hinge, stabilizer, inboard	$ xx.xx
1078	Elevator, left hand	$ xx.xx
1081	Trim tab, left hand elevator	$ xx.xx
1079	Hinge, elevator, inboard	$ xx.xx
1080	Hinge, elevator, outboard	$ xx.xx
1082	Elevator, right hand	$ xx.xx
1083	Trim tab, right hand elevator	$ xx.xx
1079	Hinge, elevator, inboard	$ xx.xx
1080	Hinge, elevator, outboard	$ xx.xx
1084	Tube assembly, elevator torque	$ xx.xx
1085	Quadrant assembly, rudder	$ xx.xx
1086	Rudder Assembly, water, with post	$ xx.xx
1087	Rudder, water	$ xx.xx
1088	Post, water rudder	$ xx.xx

SIMPLIFIED NUMBERS

We made a very careful analysis of the causes of spares troubles and found that although manufacturing part numbers are very explicit to aircraft manufacturers, they are unclear to anyone else. For example, in the manufacturing process there occur on many occasions, minor changes expediting manufacturing processes which do not change the function of the part such as the substitution of a one piece stamping for an assembly of two or more parts. For the manufacturer it is necessary to renumber the new part or to suffix the original part number; yet from a functional viewpoint no change has been made. In such instances, a spares purchase order bearing the old part number can create confusion, needless correspondence and duplicate stocking.

There also exists in the industry the practice of designating parts as left and right by the use of suffixes "L" and "R" or dash numbers. This practice sometimes becomes very involved particularly when a left hand component is required on a right hand assembly or when a dash-numbered sub-assembly is a component of a similarly dash-numbered assembly.

These systems and practices are very useful and necessary to the industry but do cause troubles in spares. We, therefore, will not subject you to any of these mysterious symbols; rather, there is established a simple catalog numbering system to replace our part numbers. The catalog number is restricted to four digits and will carry appendages of no kind for designating left, right, upper, lower, model, etc. Left and right hand parts, when they differ, will have different catalog numbers and will be separately illustrated in our parts catalog. The catalog number will remain static and will only change when function or interchangeability is affected.

ENGINE SPARES.

Spares for the Franklin engine may be ordered directly from either Franklin or Republic. If you order from Republic, your order will be relayed direct to Franklin for shipment within 24 hours of its receipt here.

The same procedure is also in effect for both the Hartzell and Koppers propeller spares.

PACKAGED SPARES

Each spare part that you order will be individually packaged. The package will contain, in addition to the major part or parts to be replaced, all of the hardware necessary to effect immediate installation of the part on the Seabee. For example, if you need a wing float, the package containing the float will also have the bolts, nuts and washers for attachment to the float strut. If you order a section of bow skin, you will also receive sealing tape, rivets and sealing cement. Our aim is to make tools the only extras needed by your mechanic to do the replacement job.

LUBRICATION

Lubrication requirements of the Seabee have been simplified as much as possible; use of special applicators or lubricants are not required.

It will be noted on the lubrication chart in the center fold that grease is restricted to one type and that oil is also restricted to one type; also, note the consistency of the periods involved. All units are lubricated at the 25 hour inspection thus eliminating odd lubrication periods for isolated units. This is one of the many ways that we are minimizing your Seabee maintenance procedures.

"NEWS" DISTRIBUTION

Beginning with the next issue, you will receive your copy of the Seabee Service News direct from the Seabee distributor in your area. Therefore, please direct all requests for mailing list changes to your Seabee distributor.

Seabee
Service News

REPUBLIC AVIATION CORPORATION
FARMINGDALE, LONG ISLAND, NEW YORK
SERVICE DEPARTMENT

NOVEMBER 27, 1946 No. 3

HYDRAULIC SERVICE

Upon inspection of the hydraulic system, should it be determined that additional fluid is necessary there are two precautions to observe to insure proper operation of the system.

One is to maintain the proper level of fluid. The tank should be filled to 1½ inch of the top. The other is when fluid is added, the wheels must be fully down and the flaps completely up. This is important because if filling of the reservoir is attempted with the wheels and flaps in a position other than prescribed, overfilling of the system will result.

When filling use utmost precautions against the introduction of any foreign material into the tank and be sure to use a petroleum-base hydraulic fluid conforming to Specification 3580D or equivalent. Commercial trade names for hydraulic fluids which pass Specification 3580D requirements are: Intava Hydraulic Fluid 1, Aeroshell Fluid 1A, Texaco Hydraulic Oil A or Texaco 641 Aircraft Hydraulic Oil AA, Mobil Aero Hydrol HFD or Mobil Aero Hydrol HFA.

Do not use alcohol or mineral oil base hydraulic fluids such as Lovejoy Fluid, Lockheed Brake Fluid, Sperry Brake Fluid, and other automobile-type fluids.

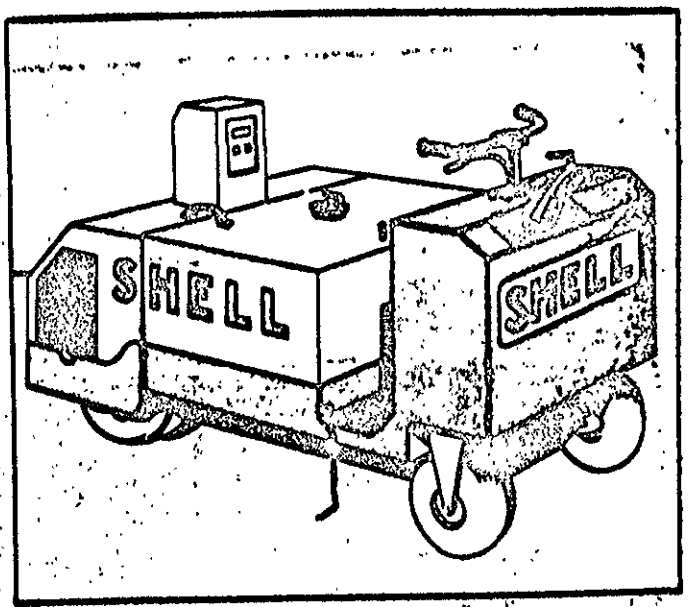
LET'S SEE

Flying through the overcast is often a nerve racking business, but flying through the overcast with your vision further restricted by the formation of mist on the windshield and windows can prove doubly dangerous.

Formation of this mist can be prevented by the simple process of thoroughly Simonizing the vision surfaces. Before applying this wax it is of extreme importance that the surfaces be cleaned thoroughly since the presence of dirt will scratch or otherwise mar the surfaces. The best cleaning agent is mild soap and water.

Not only will the formation of mist be prevented but well waxed Plexiglass is also less susceptible to damage caused by wind-blown dirt and grit.

MEET THE BEAVER



A small and maneuverable fuel cart has made its appearance on the apron of the Republic Aviation Corporation field at Farmingdale. This newest addition to our line equipment is in keeping with our policy of seeking out new devices or improvements on old ones for the benefit of the individual or the industry as a whole.

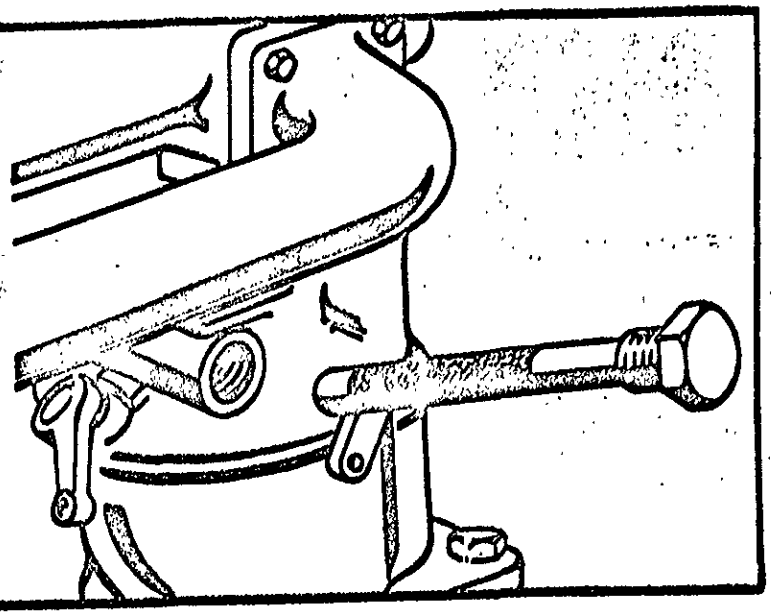
The Beaver has been especially developed by the Shell Oil Company for the servicing of light aircraft. With a tank capacity of 150 gallons, this self-powered unit will pump fuel at a maximum rate of 25 gallons per minute. Powered by a five-horsepower gasoline engine, it is capable of doing eight miles per hour in either forward or reverse. The computing pump is operated by a power take-off from the motor. The forward compartment of the Beaver contains a 12 foot hose on a spring loaded reel, complete with safety nozzle. Space is also provided for two cases of oil and miscellaneous equipment.

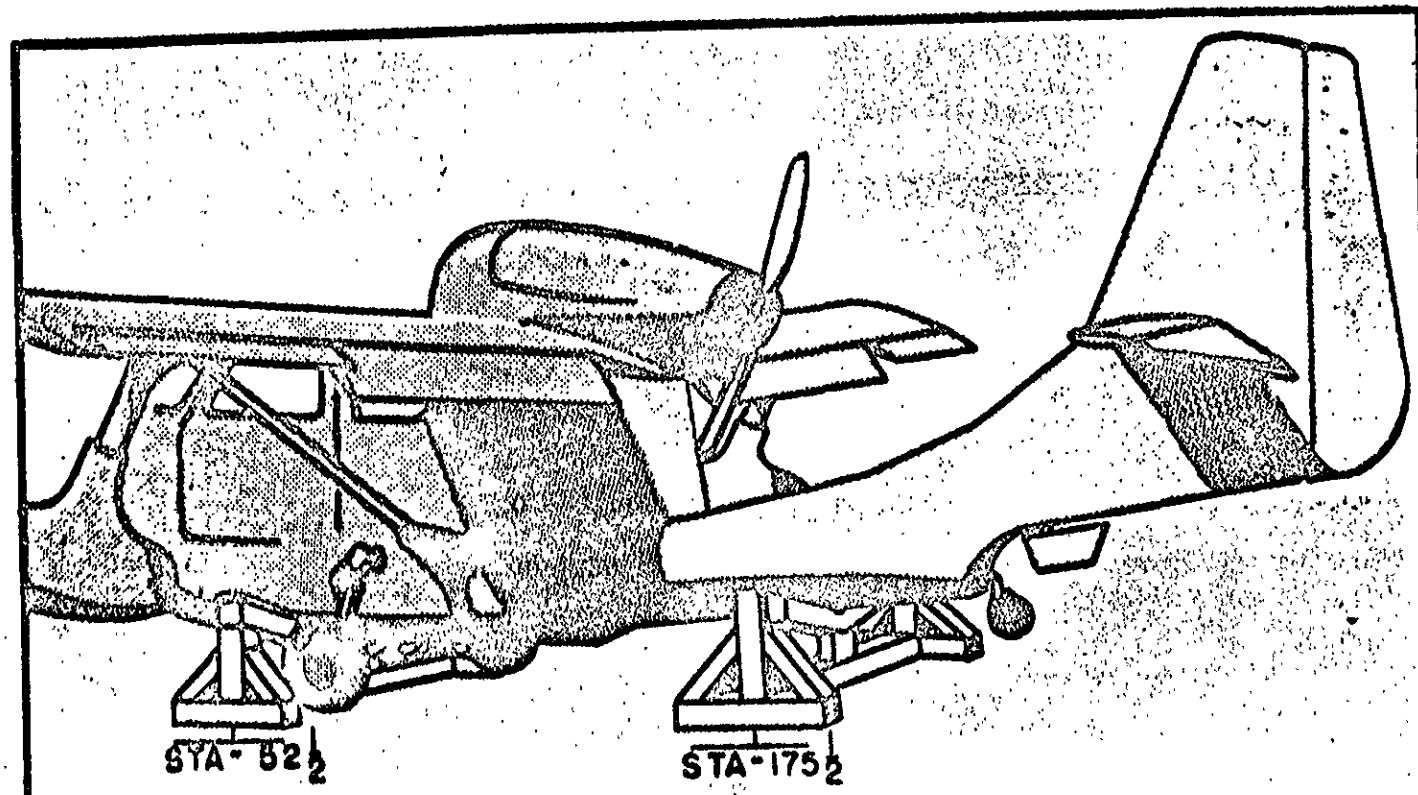
Use of the beaver offers smoother and more efficient airport operation by making it unnecessary for small planes to taxi to the fuel pits or pumps.

CLEAN CARBURETOR FINGER SCREEN

The extremely fine mesh of the carburetor finger screen is easily clogged by fine particles and fibers of foreign materials which pass through the coarser filters in the tank and fuel line. One case has been experienced wherein fine fiber, possibly decomposed paper, sufficiently blocked off the area of the finger screen to cause lean operation with resultant high head and oil temperatures. Before establishing the source of difficulty, forced landings were experienced due to fuel starvation.

It is imperative that the strainer be removed and thoroughly cleaned every ten hours of operation. The main fuel strainer, being of larger size and coarser mesh, should be cleaned every 25 hours. Great care should be taken to prevent the entrance of any foreign material into the fuel system.





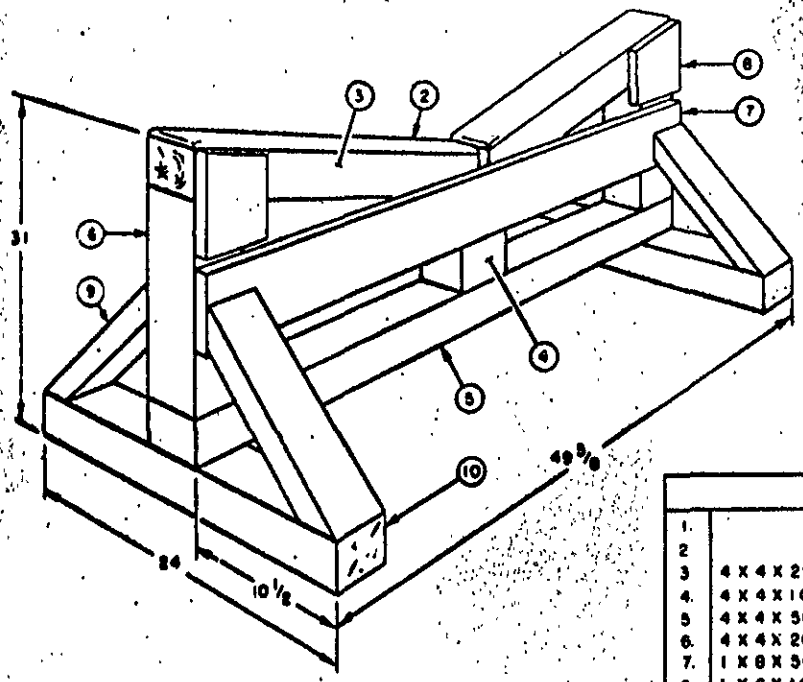
HULL STANDS

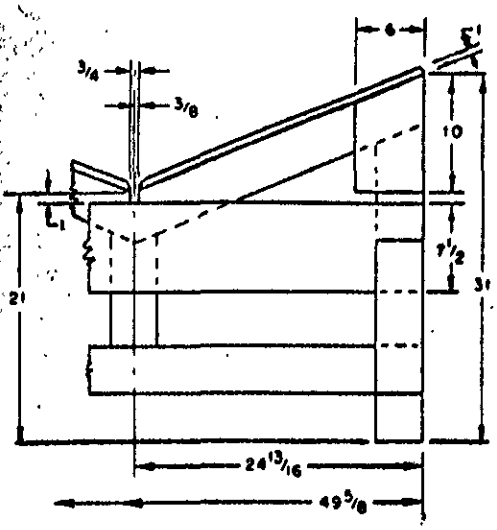
Here at Republic, we use hull stands constructed according to the specifications indicated on the opposite page. These stands are padded at the hull contact areas so as to avoid scratching and marring. As shown above, the stands are designed for use in the areas at stations 52½ and 175½.

The rear stand is best placed under the boom from the side after jacking up the Seabee at the aft end of the keel.

The forward stand is slid under the bow after jacking up the Seabee at the base of the struts or under the landing gear cross tubes.

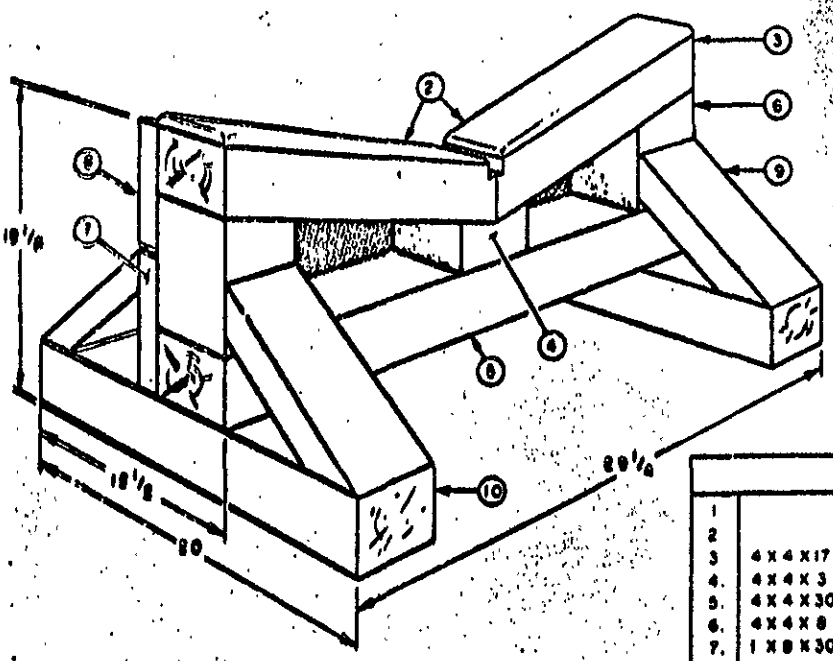
The Seabee may be lifted high enough for admission of the forward stand by overinflating the struts; after the stand is in place deflate the struts so that weight of the front end rests on the stand. If this method is used, be sure to reinflate the strut according to the requirements noted on the back page of this issue before using the airplane.

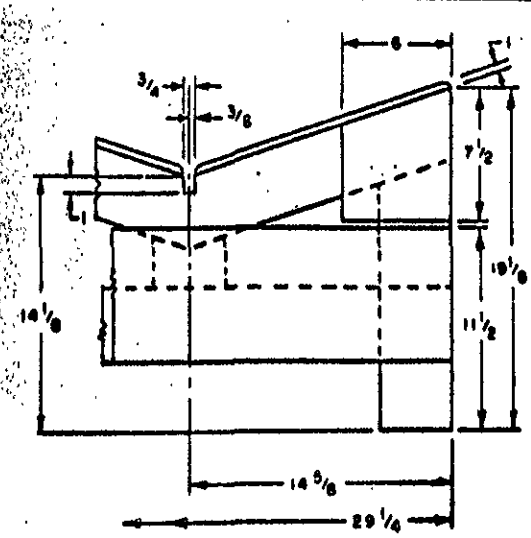




HULL STAND—STATION 175½

BILL OF MATERIALS					
1.		NAILS	COMMERCIAL	AS	REQ
2		PADDING	"	"	"
3	4 X 4 X 29 REST	PINE (OR EQIV)	"	2	PCS
4.	4 X 4 X 10 UPRIGHT	"	"	1	PC.
5	4 X 4 X 50 SPREADER	"	"	1	PC
6.	4 X 4 X 20 UPRIGHT	"	"	2	PCS.
7.	1 X 8 X 50 TIE	"	"	1	PC.
8.	1 X 6 X 10 GUSSET	"	"	2	PCS.
9.	2 X 4 X 17 BRACE	"	"	4	PCS.
10.	4 X 4 X 24 SLEEPER	"	"	2	PCS.





HULL STAND—STATION 52½

BILL OF MATERIALS					
1		NAILS	COMMERCIAL	AS	REQ.
2		PADDING	"	"	"
3	4 X 4 X 17 REST	PINE (OR EQUIV.)	COMMERCIAL	2	PCS
4.	4 X 4 X 3 UPRIGHT	"	"	1	PC.
5.	4 X 4 X 30 SPREADER	"	"	1	PC.
6.	4 X 4 X 8 UPRIGHT	"	"	2	PCS.
7.	1 X 8 X 30 TIE	"	"	1	PC.
8.	1 X 6 X 8 GUSSET	"	"	2	PCS.
9.	2 X 4 X 11 BRACE	"	"	4	PCS.
10	4 X 4 X 20 SLEEPER	"	"	2	PCS.

SERVICING THE SHOCK ABSORBER STRUT

Compliance with the following service instructions will assure rapid and proper servicing of your shock absorber. All references used in this outline pertain to the illustration shown.

Instructions are given for both pressure readings and measurements. Before attempting to take an extension measurement the airplane must be vigorously rocked. This is necessary since the gear is equipped with packing and is subject to the usual binding loads. It is also recommended that the gear be inflated to a higher pressure and the air bled to achieve proper extension, rather than try to build up the proper pressure by lifting the entire airplane with air pressure.

The fluid level should be checked with the gear in the fully compressed condition before inflation. Before attempting to add to or check the fluid it is absolutely necessary to first bleed off any air that might be present by depressing the air valve. When all air has escaped the valve housing may be removed so that fluid can be added.

1. Depress air valve (A) allowing all air to escape.

2. Rock airplane vigorously. Check dimension (X) for full compression. This should be approximately $2\frac{7}{16}$ inches.

3. Remove air valve body (A) and fill to overflowing with petroleum oil base hydraulid fluid, Specification AAF-3580D or equivalent. DO NOT USE ALCOHOL OR CASTOR OIL BASE FLUIDS IN SEABEE STRUTS.

4. Replace and tighten air valve body and with the airplane in the empty weight condition, inflate to approximately 140-150 psi. Rock the airplane vigorously to get a true extension reading at "X". This should be $6\frac{1}{2} \pm \frac{1}{4}$.

5. If necessary to obtain this reading, slowly bleed the air valve, rocking the Seabee at intervals until the desired dimension has been reached.

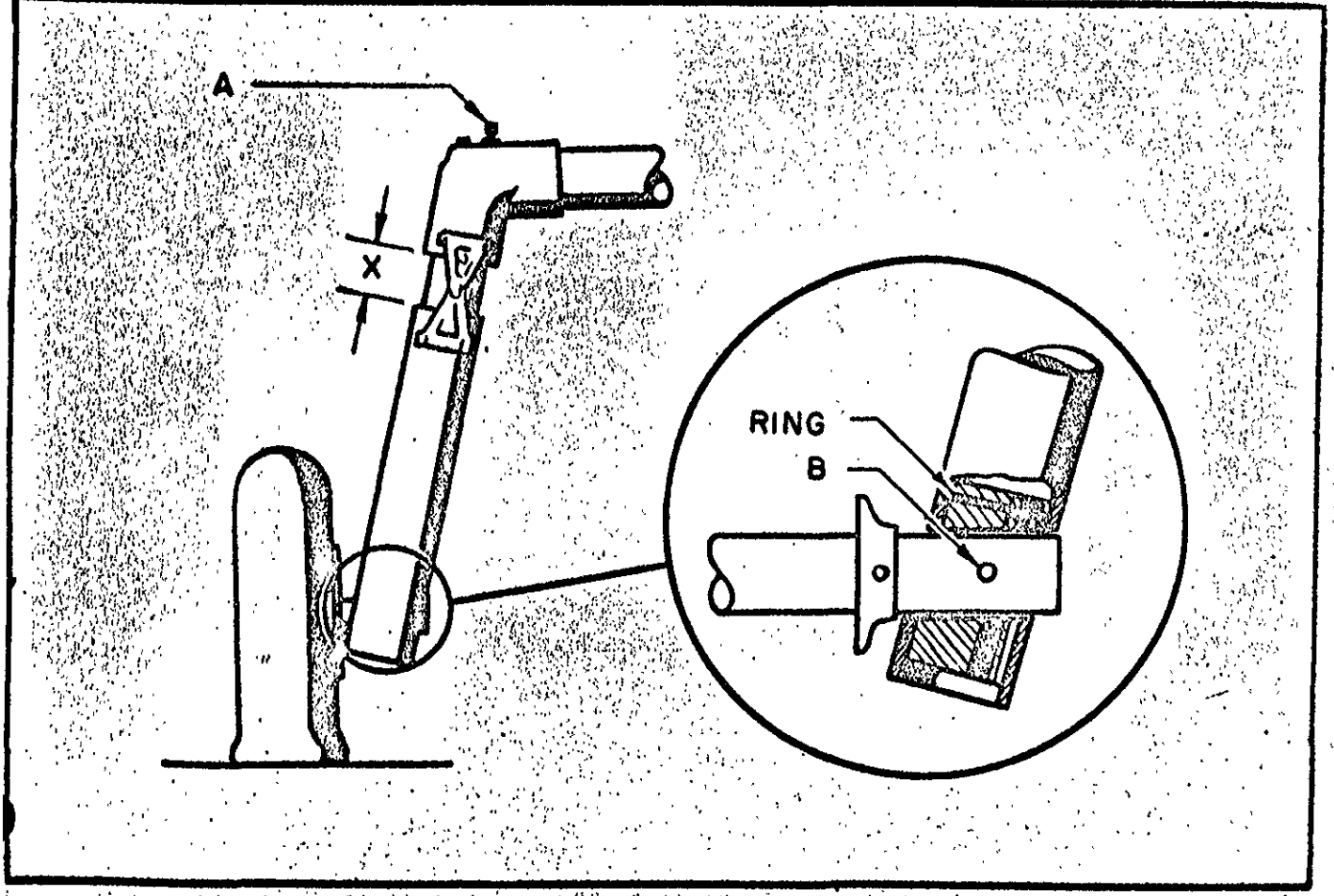
6. Should the gas tanks be full but the airplane otherwise empty inflate to approximately 190-200 psi. Bleed air pressure, rocking aircraft at intervals until the "X" dimension is 5" $\pm\frac{1}{4}$.

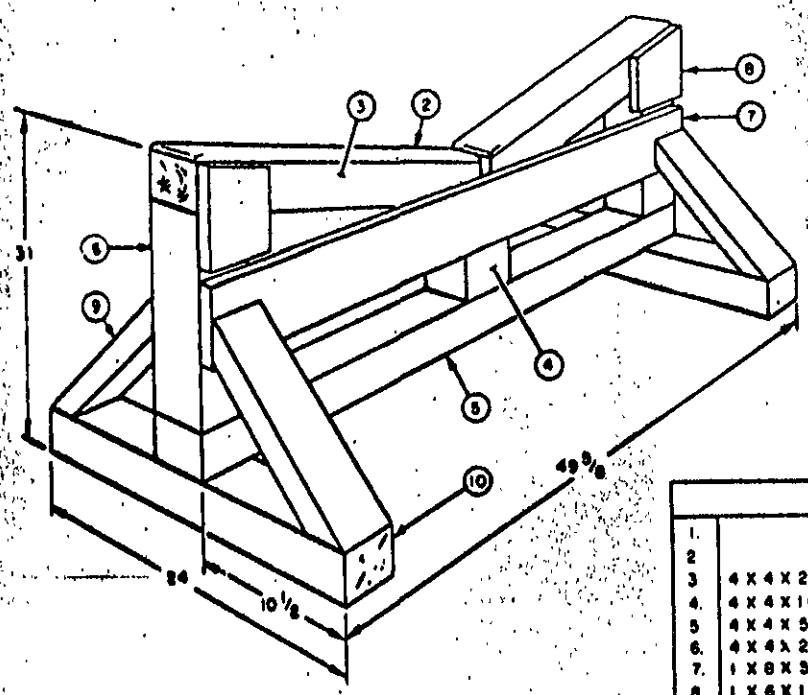
7. To service the gear on a jacked-up plane, the strut should be inflated to 53 psi ± 5. This should indicate a full extension or $10\frac{7}{16}$" $\pm\frac{1}{4}$.

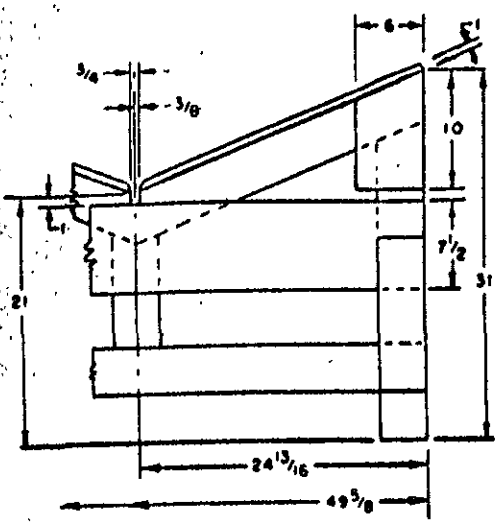
REMOVAL OF WHEEL AXLE

The proper method of removing the axle from the strut is related to the other phases of strut servicing in that *the air must be completely removed from the strut before the axle itself is touched.* The air valve body must not only be loosened, but must be removed when sufficient air has escaped to safely permit this. This is necessary because even with the air valve in the open position there still remains enough trapped air to push down on the lower sealing ring as the axle is removed. This force although slight could result in injury.

When the air pressure has been removed from the strut, loosen and remove the bolt (B) in the lower portion of the strut and extract the axle. As an added safety precaution, a soft metal mandrel should be used to tap the axle out of the strut.



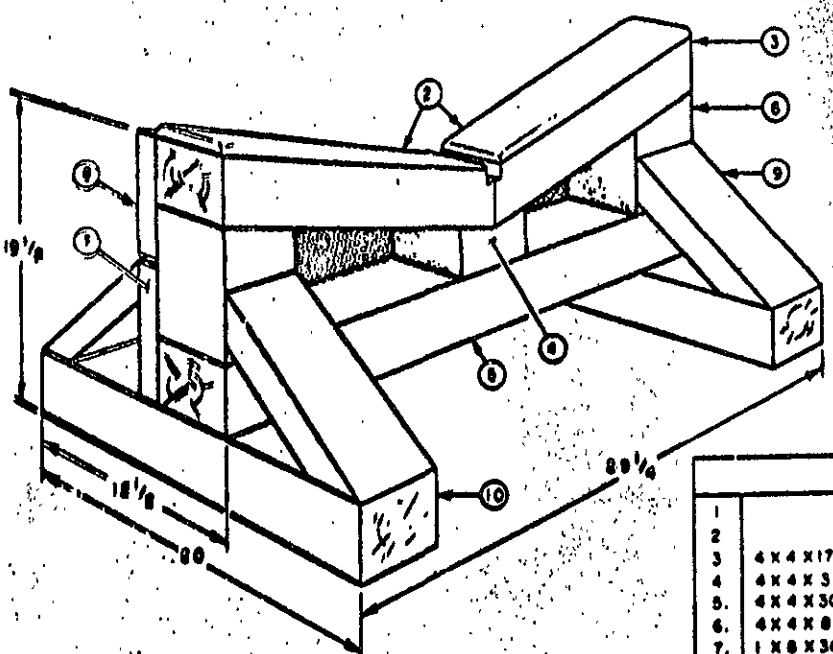


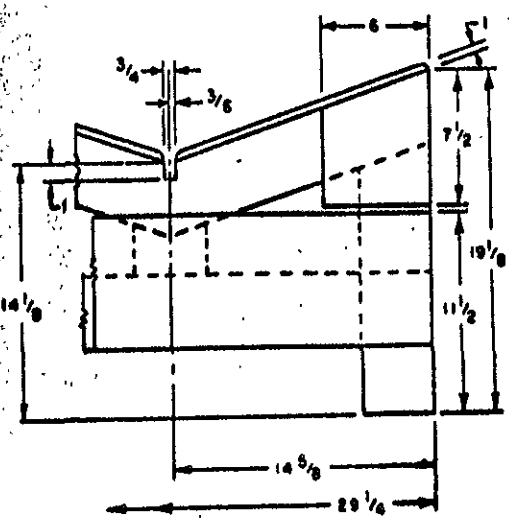


HULL STAND—STATION 175½

BILL OF MATERIALS

1.		NAILS	COMMERCIAL	"	"
2		PADDING		"	
3	4 X 4 X 29 REST	PINE (OR EQUIV)			2 PCS.
4.	4 X 4 X 10 UPRIGHT	"	"	"	1 PC.
5	4 X 4 X 50 SPREADER	"	"	"	1 PC.
6.	4 X 4 X 20 UPRIGHT	"	"	"	2 PCS.
7.	1 X 8 X 50 TIE	"	"	"	1 PC.
8.	1 X 6 X 10 GUSSET	"	"	"	2 PCS.
9.	2 X 4 X 17 BRACE	"	"	"	4 PCS.
10.	4 X 4 X 24 SLEEPER	"	"	"	2 PCS.





HULL STAND—STATION 52½

BILL OF MATERIALS

1		NAILS	COMMERCIAL	"	"
2		PADDING		"	
3	4 X 4 X 17 REST	PINE (OR EQUIV.)	COMMERCIAL	2	PCS
4	4 X 4 X 3 UPRIGHT	"	"	1	PC.
5.	4 X 4 X 30 SPREADER	"	"	1	PC.
6.	4 X 4 X 8 UPRIGHT	"	"	2	PCS.
7.	1 X 8 X 30 TIE	"	"	1	PC.
8.	1 X 6 X 8 GUSSET	"	"	2	PCS.
9.	2 X 4 X 11 BRACE	"	"	4	PCS.
10	4 X 4 X 20 SLEEPER	"	"	2	PCS.

Seabee
Service News

REPUBLIC AVIATION CORPORATION
FARMINGDALE, LONG ISLAND, NEW YORK
• • • SERVICE DEPARTMENT • • •

DECEMBER 4 1946 No. 4

ATTENTION! STORM APPROACHING

When the Weather Bureau sends out storm warnings, the aircraft operator knows that unless he takes adequate protective measures to secure his airplane in advance of the storm, the impending foul weather, particularly strong or gusty winds, can prove most destructive.

LOCATION

Care should be given to the choice of location; the safety of your ship demands this. Naturally, the ideal solution would be to hangar your Seabee, but unfortunately this is not always possible. If you can't put your plane in a hangar, tether it. Tie it down and tie it down properly. In all cases it is desirable to secure your aircraft on land but a properly prepared Seabee can easily ride out the storm on water.

PICK A GOOD SPOT

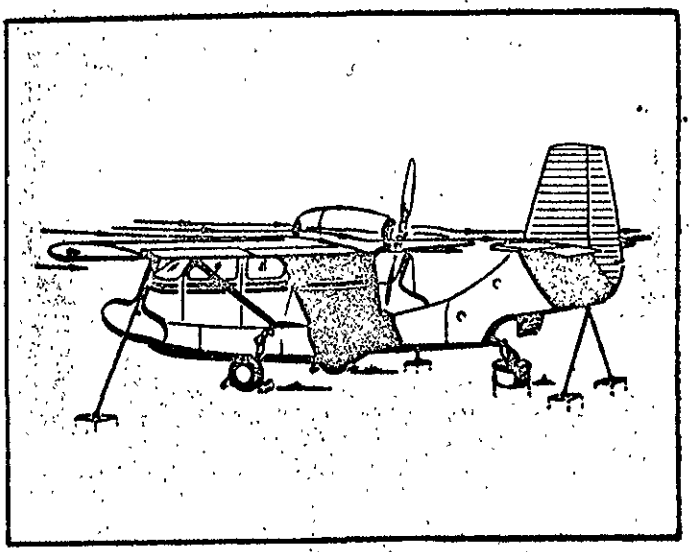
First let us consider ground locations. Unless it is possible to locate the Seabee close enough to a building as to afford almost complete shelter it is much better to tether it completely in the open This at least protects the plane from the interrupted and often intensified currents of air prevalent close to buildings. Another factor to be considered is uneven ground. This type of terrain often creates an air turbulence that could cause an undue strain on the tiedown ropes and the attaching sections.

TIE IT DOWN

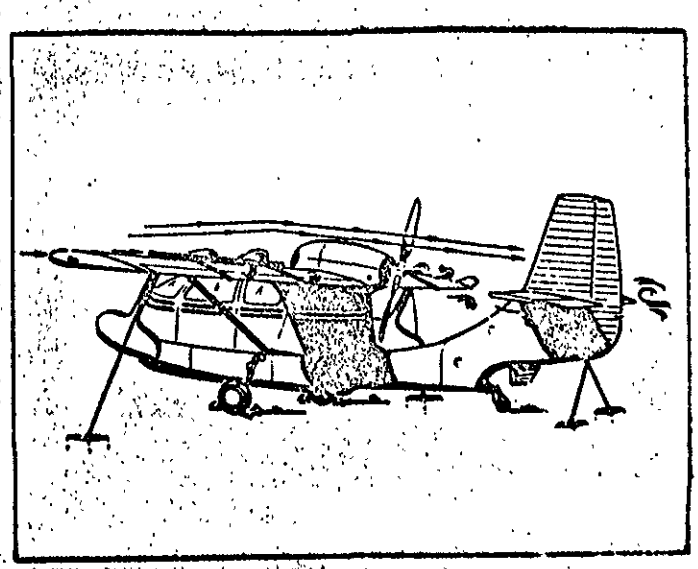
Position the airplane so that it is heading into the wind and if at all possible in a level position. Leveling can be accomplished either by supporting the tail wheel on a pedestal (see illustration) or by sinking the main wheels into a pit. When tethering the Seabee in this position it is desirable to raise the tail surfaces slightly above the normal flight position as in this attitude the wing lift is neglible.

If leveling cannot be accomplished the best alternate method is to head the airplane into the wind in its normal tail down position, chock the wheels and secure spoiler boards to the wings (see illustration). These spoiler boards should be at least

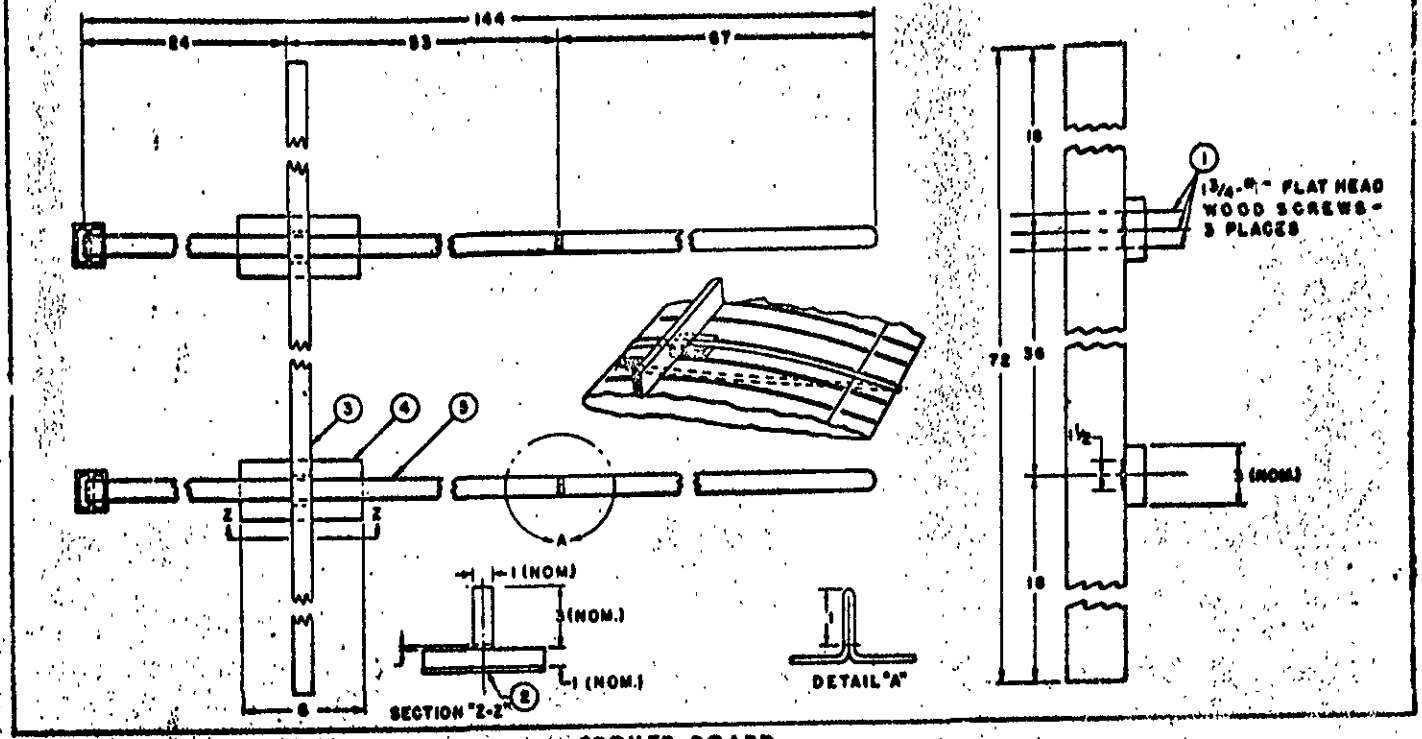
HORIZONTAL POSITION



THREE POINT POSITION

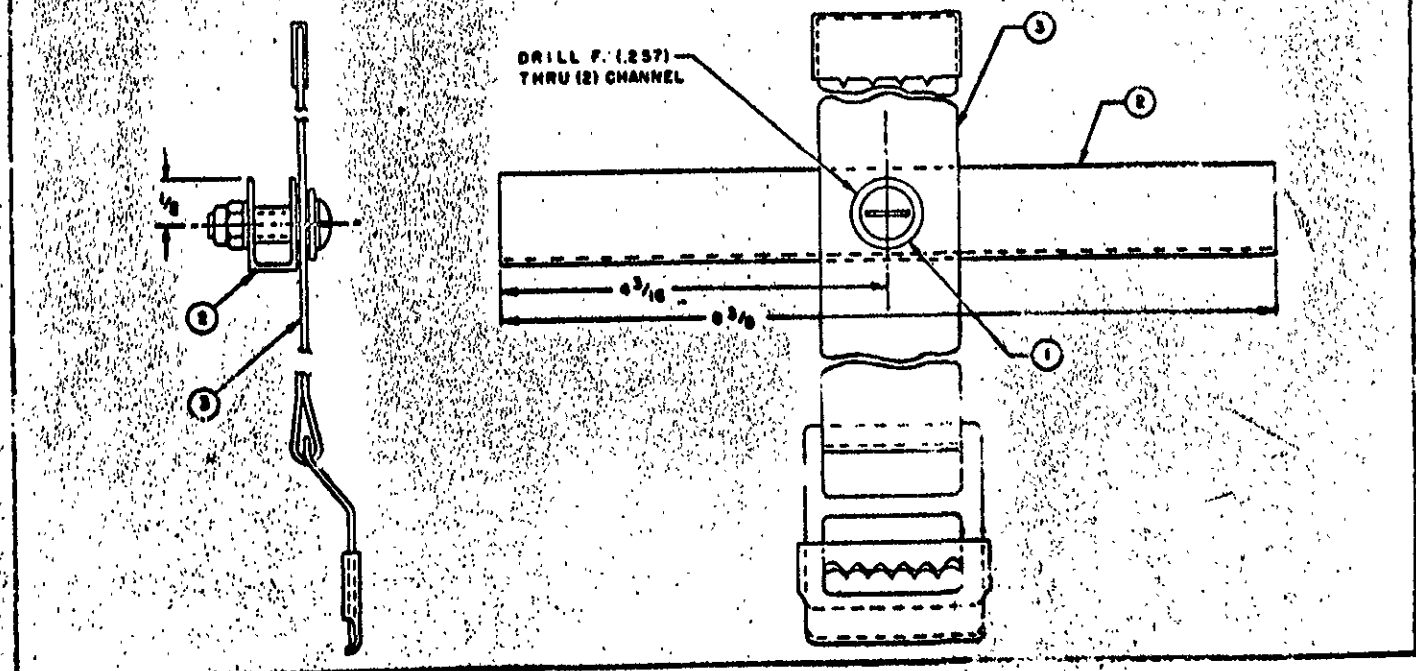


BILL OF MATERIALS			
1.	1 3/4 - #10	FL HD WOOD SCREW	3 REQ.
2.	(AS REQUIRED)	FELT PADDING	1 PC.
3.	1 X 3 X 72	PINE BOARD	2 PCS.
4.	1 X 3 X 6	" "	2 PCS.
5.	3/32 X 1 X 144	WEBBED STRAP (WITH BUCKLE)	2 PCS.



SPOILER BOARD

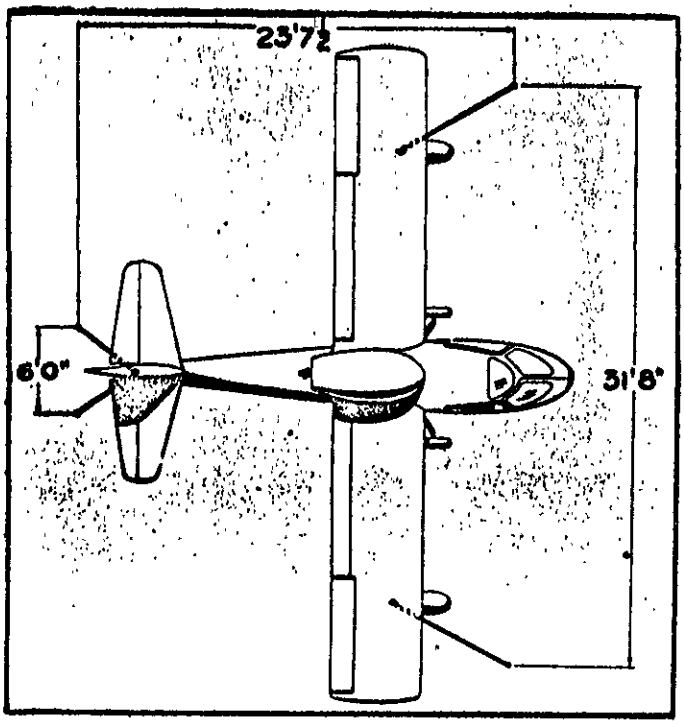
BILL OF MATERIALS			
1.	AN 526C428-20	BOLT	1 REQ.
	AN 945-4P	WASHER	"
	AN 960D416	"	"
	AN 365-428	NUT	"
	S- 9720-400	SPACER	"
2	75 ST. AL. ALL. EXT.	CHANNEL	"
3.	1 1/2 X 55	WEBBED BELT (WITH BUCKLE)	"



CONTROL LOCK STRAP

five per cent of the wing chord in height and should cover as much of the span as possible being located as close to the leading edge as practical. Manufacturing details for effective spoilers are on the opposite page.

Tie down cleats are located on the outboard side of each float strut and in the aft end of the boom (see illustration below). A ⅜" hemp rope should be used in the tie down operation, leaving only enough slack to prevent undue bending strains.

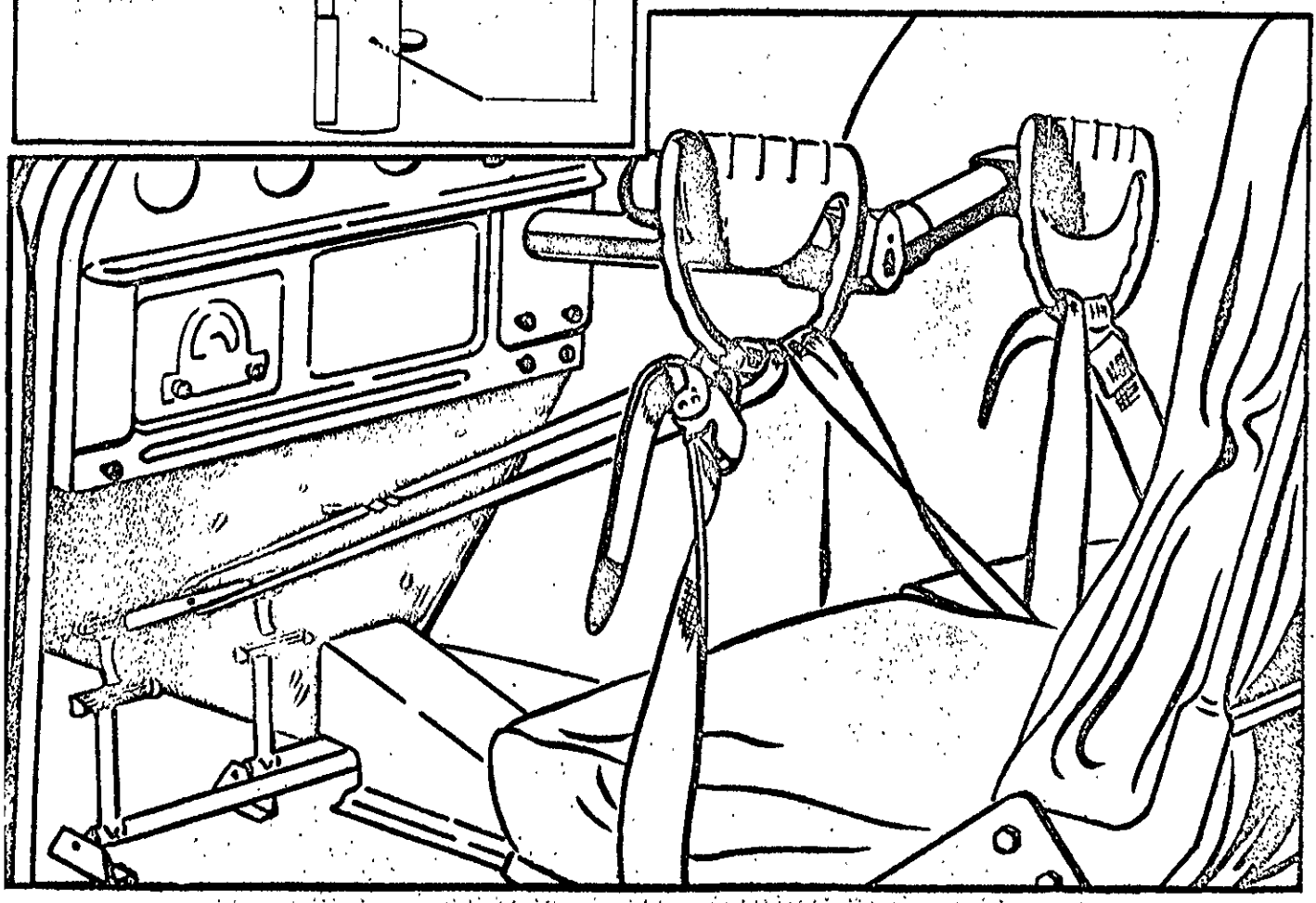


LOCK YOUR CONTROLS

Naturally the parking brakes are on and secured but have you remembered the control surfaces? All these surfaces must be locked in their neutral position. This is best done in the cabin as the danger of attempting to fly with external control locks in place is largely eliminated. The safety belts (see illustration below) provide an ideal device for locking the control wheel. The rudder is locked by attaching the rudder locking clamp to the brake pedals and lashing an attaching strap to the control wheel. Details for manufacture of this strap are shown on the opposite page.

ADDED WEIGHT IN EMERGENCIES

In those sections of the world where the wind really blows it might be desirable to give serious consideration to the addition of ballast as a safety precaution. This additional weight may be obtained by filling the lower sections of the hull with fresh water. This is easily accomplished by pouring the water through the access holes located in the aft section and in the cabin floor. The total weight so added can be controlled if you remember that fresh water weighs approximately 8.5 pounds per gallon. Never use salt water, as the corrosive action of this water may lead to weakened or damaged aircraft sections. It is also considered desirable to fill the gas tank with 80 octane



ıleaded gasoline. Besides serving as extra ballast this gasoline so reduces the risks of fire by reducing the possibility of gas ıpors being present.

On those rare occasions where water ballast is resorted , extra precautions are necessary in getting your Seabee ck into flying condition. First, the keel drain plug should be moved and the water allowed to run off. Then the inside of e hull must be wiped dry. After the inside of the hull and lge have been dried, all fittings, controls and units con- ned therein must be lubricated. This is important as neglect uld lead to costly repairs or worse yet a serious accident.

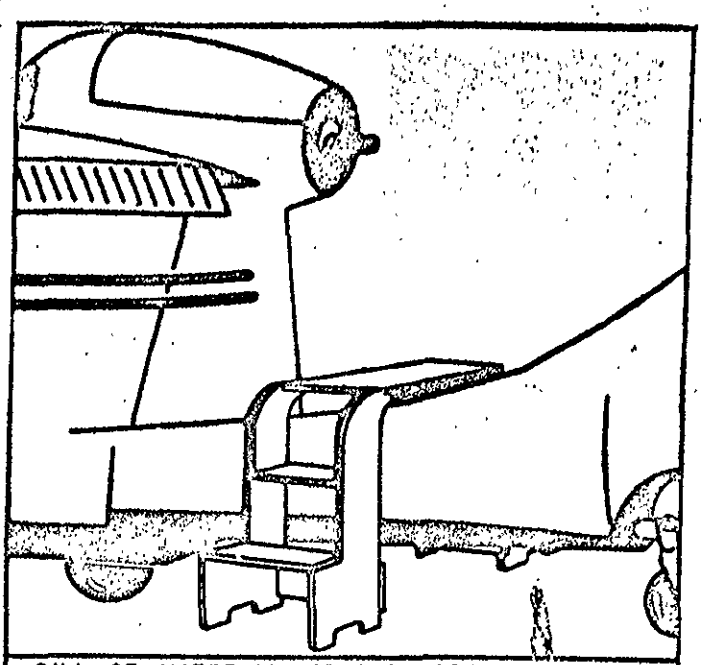
THER PRECAUTIONS

Whenever the possibility of sand, hail, or snow storms are esent extra protective precautions should be taken. Protec- 'e covering should be provided for the plexiglass windshield d windows, the propeller, the engine airscoop and vents, and : pitot tube. Simple precautions before the storm can prevent pensive repairs after the storm. Covers offer double protec- ın; one against weather wear and tear, the other, against uctural damage.

In all cases ample warning notices should be prominently ıplayed in the cabin. These notices should remind the pilot all coverings, control locks, tiedowns, water ballast, and of y other tethering device used, as any of them neglected could ıse a serious accident if flight were attempted.

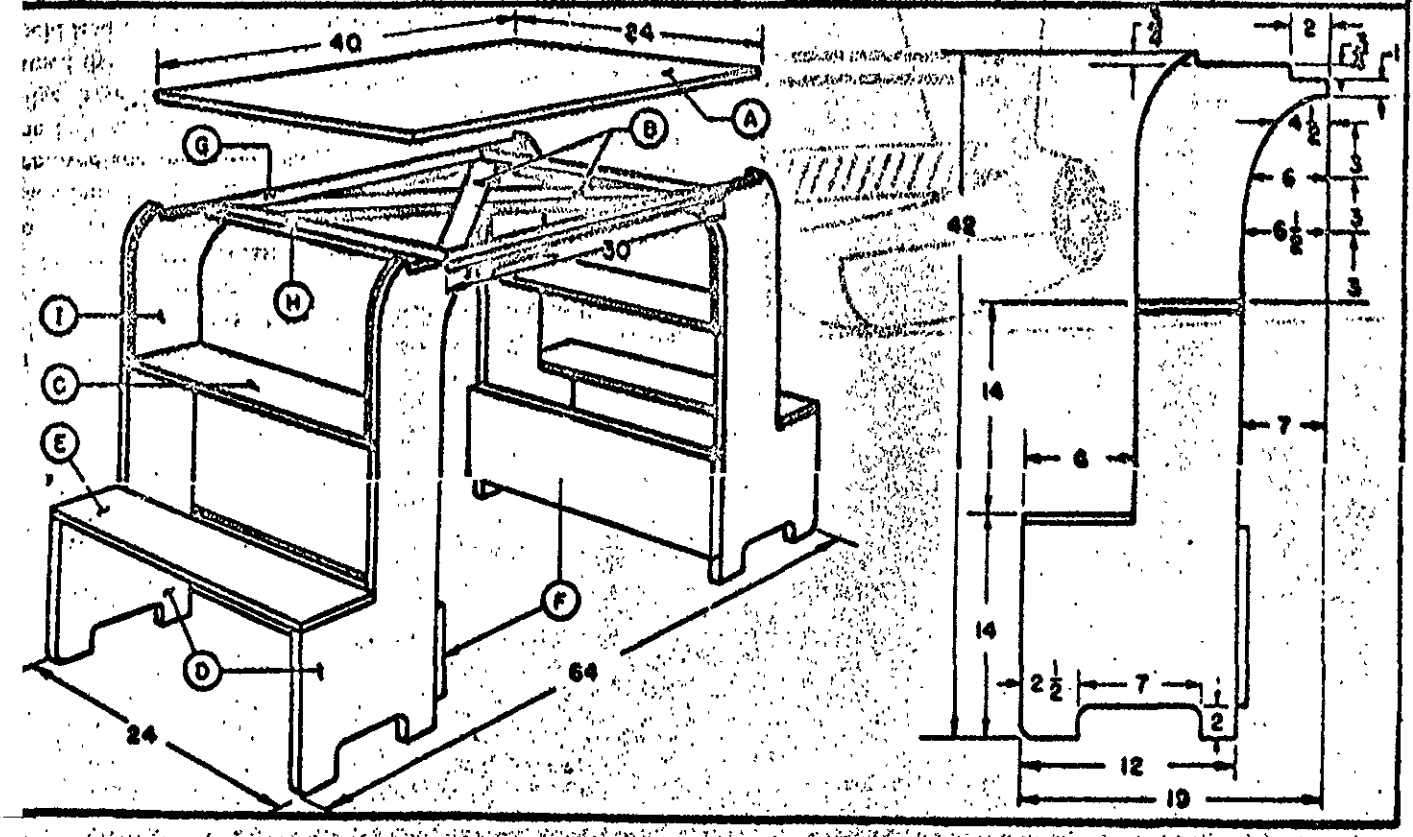
IDGE STAND

Some type of bridge stand is a "must" for access to the pro- ller end of the engine. The type shown here has proved very ccessful; it is light, sturdy and simple to make. Try one at ur facility. We're sure you'll find it helpful.



BILL OF MATERIAL FOR FUSELAGE BRIDGE STAND

NO	AMT	MATERIAL DESCRIPTION	
A	1	40" X 24" X 3/4"	PLYWOOD
B	2	2" X 3/4" X 31"	SPRUCE
C	2	6" X 1/4" X 23"	PLYWOOD
D	1	42" X 18" X 1/4"	PLYWOOD
E	2	6" X 1/4" X 24"	PLYWOOD
F	2	11" X 3/4" X 24"	PLYWOOD
G	2	2" X 3/4" X 30"	SPRUCE
H	2	2" X 3/4" X 24"	SPRUCE
I	2	13" X 1/4" X 14"	PLYWOOD



Seabee
Service News

REPUBLIC AVIATION CORPORATION
FARMINGDALE, LONG ISLAND, NEW YORK
• • • SERVICE DEPARTMENT • • •

DECEMBER 6 1946 No. 5

AMPHIBIOUS OPERATION

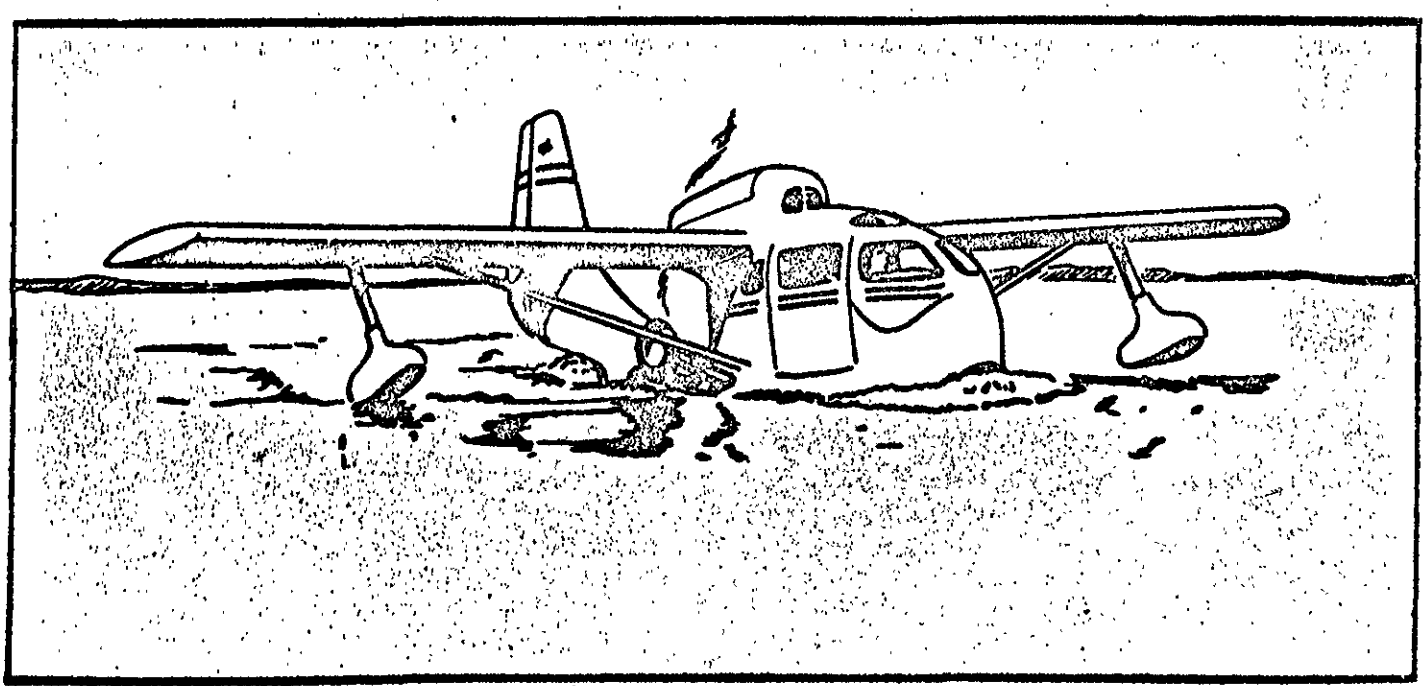
Seaplane operation, whose popularity has increased steadily since the advent of the Seabee, calls for several slight innovations in the art of flying that are not normally necessary when flying land based aircraft. Here at Republic our aim is to see that every Seabee owner enjoys to the utmost all the advantages of his new airplane. With this in mind we are attempting to set down some of the basic rules and principles involved in seaplane operation. Landplane pilots will soon discover that only a few additional fundamentals and precautions are to be observed to insure successful and carefree amphibious operations.

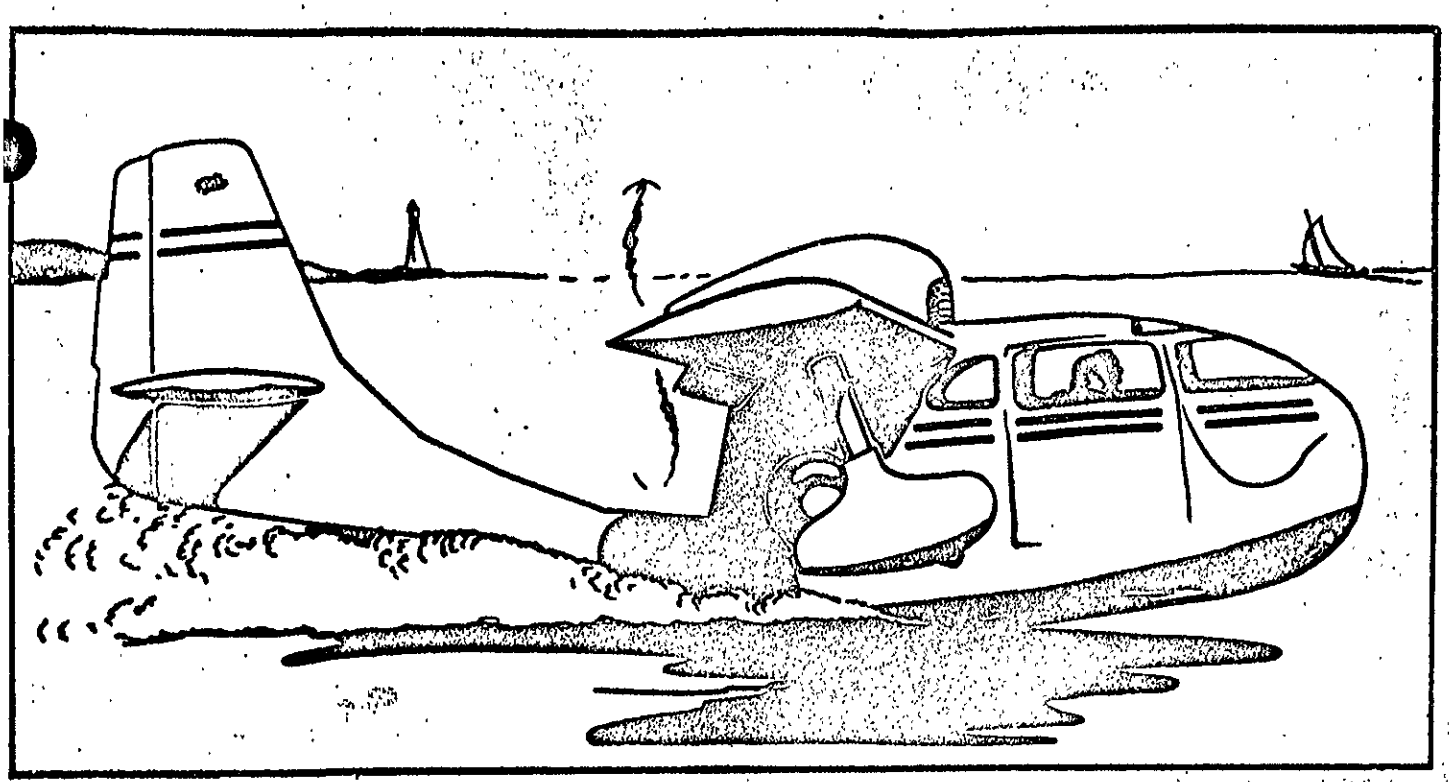
IDLING AND TAXIING

A Seabee on an airport with its engine idling will remain stationary whereas the Seabee afloat under identical conditions will be motivated by the various forces that are prevalent. Any free floating seaplane, whose engine is off or idling, will, like a weather vane, tend to head into the wind. In this position it is likely to be subject to still further movement depending upon water currents, wind velocity, and propeller thrust. Should another than an upwind position be desired it will be discovered that more propeller blast will be required to obtain and maintain this position.

Prior to taking the Seabee out the pilot should study the prevailing conditions so as to determine in advance just what the aircraft is likely to do. Careful consideration must be given in advance to the taxiing problems to be encountered unless of course the wind and water currents are light and the approach and take-off areas are wide open, and free from large waves.

Contrary to standard landplane technique it is extremely important that the control wheel be held all the way back the entire time the Seabee is being maneuvered on water. This positioning lifts the nose which reduces the spray and improves maneuverability. The only exceptions are those of actual take-off or when the seaplane is taxied at speed using considerable power.





TAKE-OFF

Before take-off it is considered desirable to warm up the engine while the airplane is still located at its ramp or float. If this is not possible the same results may be obtained by taxiing about in an open area.

When the beginning of the take-off area is reached the flaps should be fully extended. Immediately open the throttle wide and pull the control wheel back thus lifting the bow out of the water. As the forward speed increases the bow will continue to raise until a certain height is reached at which point the Seabee will tend to flatten out. When this point is reached the control wheel should be allowed to ride forward close to the neutral position. At this juncture the Seabee will immediately begin to plane and travel on a more nearly level position on the step. After the Seabee is on the step a slight back pressure on the wheel will hold it in position until take-off speed is reached, at which time slight additional back pressure on the wheel will lift the aircraft clear of the water. Always maintain the climb position after leaving the water to prevent the possibility of letting the nose drop and of flying back into the water. When safely airborne the flaps should be retracted at a slow steady rate.

Planing the aircraft at an angle flatter than described tends to wet more of the forward section of the hull, thereby increasing resistance and reducing the forward speed. This effect can generally be felt by the increased drag and a slight nosing tendency. Conversely, operation too far back on the hull-step drags the aft section of the hull in the water and will produce a noticeable increase in resistance. This latter fault is quite common with pilots just starting water operations as they very often experience an almost irresistible tendency to haul back too far on the control wheel in a vain effort to get into the air. If this occurs let the nose drop back to the proper angle and keep it there until flying speed has been attained.

A technique recommended to the pilot making his first few familiarization flights is to trim the aircraft for a very steep climb and release the controls as the Seabee starts to go on the step. It is quite likely to hit the perfect angle all by itself and actually get into the air sooner than if handled by other than a most experienced and expert pilot.

Sometimes when taking-off from glassy water, a slight but quick jerk on the controls will assist in lifting the hull out of the water once "getaway" speed has been reached. Where the water is unusually rough the nose should be held higher than is considered correct under normal conditions in order to reduce any tendency to bury. This may cause the aircraft to bounce and stall before it fully attains flying speed in which case it is necessary to hold the nose up and settle back for a further run.

LANDING PROCEDURE

Water landings can be made identical to wheel landing except for the broader safe range of attitudes from tail high to tail low, and the fact that the wheels remain up. The Seabee hydroplanes on its vee bottom and directional and lateral control is maintained as long as there is forward speed. The water rudder operates in conjunction with the air rudder.

It is extremely important that the correct type of landing for the prevailing conditions be selected. On reasonably calm water and normal wind conditions a semi-stall landing is recommended. In this case the aft and step sections of hull touch the water simultaneously resulting in a slightly faster landing than the standard three-point on wheels. If the water is smooth, still faster landings can safely be made by bringing the ship in with flying speed and letting it touch the step in full planing position. It must be remembered that any type of fast landing requires considerable skill to accomplish correctly as nosing over tendencies are likely to develop.

When landing at night or on extremely smooth glassy

water it is practically impossible to achieve depth perception with any degree of accuracy. The best method for landing under these conditions is the power stall. The technique is to glide down to a safe altitude in a normal way. A "safe" altitude would probably be about 50 ft. so that the airplane is well cleared of the water. At this point the throttle is opened somewhat and the nose pulled up so that the ship is slowly losing altitude while maintaining a IAS of about 68 MPH If the settling feels too fast, a little more power is applied . This procedure is followed until the ship touches water.

If the exact opposite condition prevails, that is very rough water particularly with no wind the same approach and landing technique should be ovserved. Here especially the descent should be as slow as possible in order to eliminate all possibilites of clipping a wave with the nose of the ship.

Regardless of the conditions involved it is considered advisable and desirable always to land with the flaps fully extended.

PORPOISING

Extensive testing has proven that it is not customary for the SEABEE to porpoise. However as it might be possible for this condition to present itself depending on a combination of aircraft speeds and water conditions it should be given consideration. Porpoising with the power on such as immediately after landing or during fast taxiing can normally be checked by the controls but any exaggerated movement of the controls should be back rather than forward. If the bow raises ,push forward very slightly and as it falls, pull back rather hard. Porpoising with power off such as during a landing can best be checked by holding back hard on the controls and any violent porpoising with power-on should always be treated by cutting the throttle and following this procedure.

MANEUVERING

The SeaBee especially when equipped with the Hartzell reversible prop is capable of pursuing any desired surface course. However, a combination of winds and tides may present itself making it necessary to revert to standard marine methods to make the desired headway.

Probably the most important basic principle involved in the water handling of seaplanes is their weathercock action. It is related to and responsible for another rule calculated to avoid difficulty under windy conditions, namely, never use power when turning into the wind. Conversely, the rule demands applying power in turning out of the wind or maintaining anything but an approximately upwind course.

Unless it is absolutely necessary, never approach a runway or narrow beach while the seaplane is being turned not out into the clear, make the turn, then come in on a straight course. This will allow you time to feel out the plane on the course you intended to follow. It also permits your obtaining the slowest and therefore the safest speed which will give positive control. It is also well to remember to do any necessary maneuvers downwind from an objective providing conditions make this possible. When coming up to a buoy or boat where there is plenty of room to leeward never attempt to steer straight for it unless the course already happens to be upwind. Instead head the Seabee to leeward and then let it weathercock around so you can then idle along until contact

is made on an easy upwind course.

Occasionally the condition arises wherein it is desired to taxi to an object some distance away and more or less directly cross-wind from the starting point. Normally this is no problem, but if strong winds and tides are present it might prove a little difficult. To overcome the capsizing tendency that would develop should a steady cross-wind course be attempted, the sailing technique of tacking should be used.

FOUL WEATHER PRECAUTIONS

In the event of foul weather it is always considered advisable to land-base your Seabee. However, should land facilities not be available, have no fears, your Seabee afloat can ride out the blow. If at all possible a location that is protected from wave action should be selected. A cove or the lee side of a point or breakwater is desirable. Head the airplane into the wind and secure it in that position with the aid of a buoy or anchor. A heavy weight makes an adequate anchor providing the bottom is rough rock, sand, or mud; but if the bottom is smooth and hard, a fluted anchor should be used. The attaching line should be secured to the bow cleat provided for that purpose. To prevent the possibility of the aircraft rolling while moored in a heavy sea, a form of sea anchor should be secured to the tie down fittings located in the wings. These are 10 to 12 quart canvas pails and are suspended so that they hang just below the water line. When the ship rolls the bucket attached to the high wing will lift out of the water and the weight of the water in the pail will exert a considerable righting force.

All control surfaces must be locked in their neutral position. This is best done in the cabin as the danger of attempting to fly with external control locks in place is eliminated. The safety belts may be used for locking the control wheel. The rudder is locked by attaching the rudder locking clamp (see Seabee News No. 4) to the brake pedals and lashing the attaching strap to the control wheel. If possible it is also desirable to attach spoiler boards to the wings.

Whenever the possibility of sand, hail, or snow storms are present extra protective measures should be taken. Coverings should be provided for the plexiglass windshield and windows, the propeller, the engine airscoop and vents and the pitot tube. They prevent weather wear and tear and guard against structural damage in high winds.

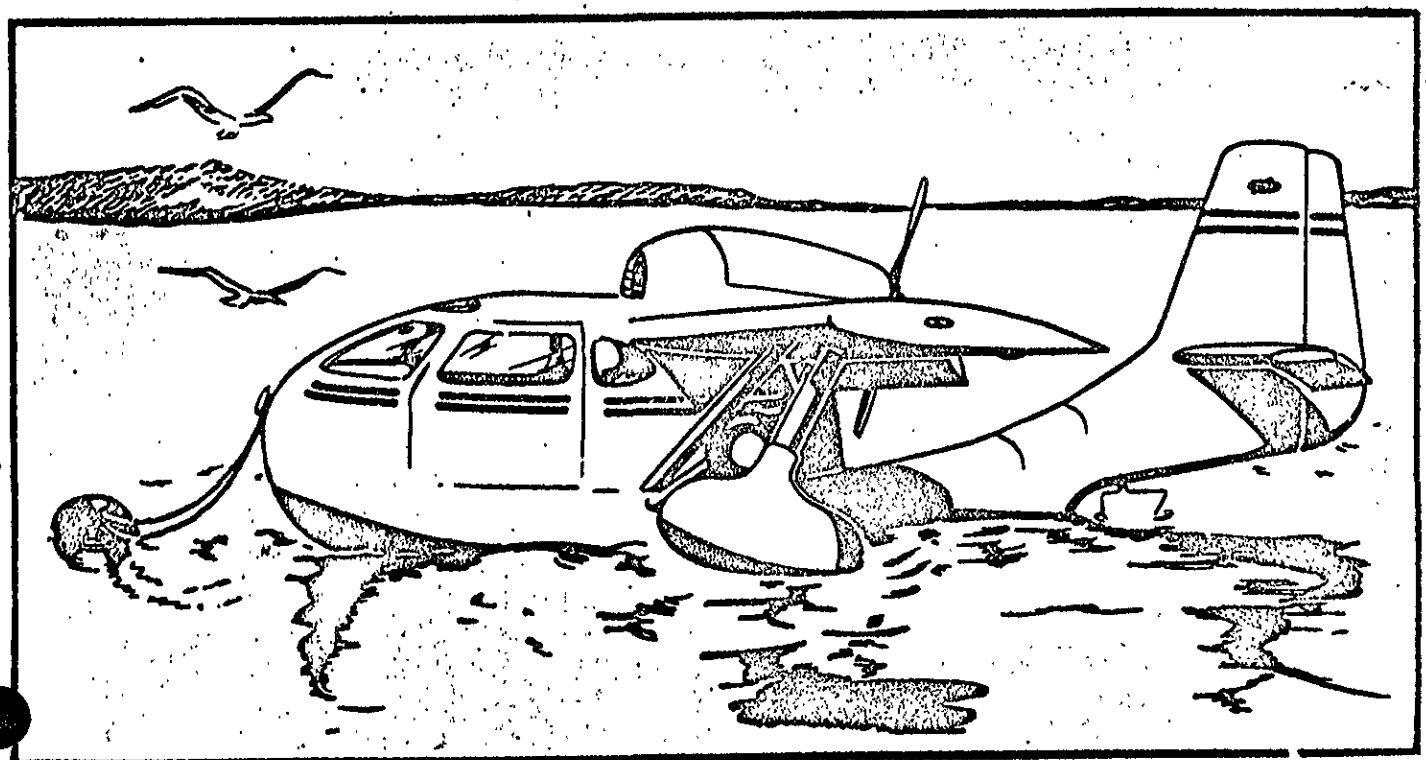
In all cases ample warning notices should be prominently displayed in the cabin. These notices should remind the pilot of all coverings, control locks, extra ballast, anchors, and any other tethering device used, as any of them neglected could cause a serious accident if flight were attempted.

RANDOM NOTES

Your Seabee should be equipped with an anchor, rope, fire extinguisher, and emergency personnel flotation gear. The removable air cushions with which your Seabee is equipped are capable of supporting an adult in water for an indefinite period of time. It is our hope that these cushions will never have to be used except for their primary purpose, that of increasing your enjoyment of the Seabee through the increased comfort they provide.

Existing civil air regulations state that if a seaplane is to be flown for hire over water, especially beyond gliding distance to shore, approved flotation gear of the "Mae West" type must be readily available for each occupant. Also a Very pistol or equivalent must be convenient to the pilot.

In the interests of good seamanship it is suggested that serious thought be given to the addition of a light weight oar and boat hook to your Seabee's equipment. In this vein the Coast Guard also suggests the addition of a police whistle, as a whistle of this type is the standard signaling device on inland waters.



Service News No 6

Dec 16, 1946

Subject- Check wing float struts

Two safety slots are provided on each float to insure failure of the strut before any wing structure is damaged in case of excessive loads on the float in rough water landings. These slots are located inside the wing contour so they can be seen only when the strut is removed A few instances of cracks emanating from the safety slots have been discovered on the airplanes of early manufacture.

It is therefore, recommended that both wing float struts be removed at the earliest opportunity or at the next 25 hour inspection and the safety slots examined closely for indications of cracks. The end of each slot should also be examined for sharp corners, which if existant should be rounded and smoothed off with a 1/8" round file. If any cracks are found, the strut should be condemned.

It is also recommended that subsequent examinations be performed at each 100 hour inspection.

W.R. Ehmann
Service Manager.

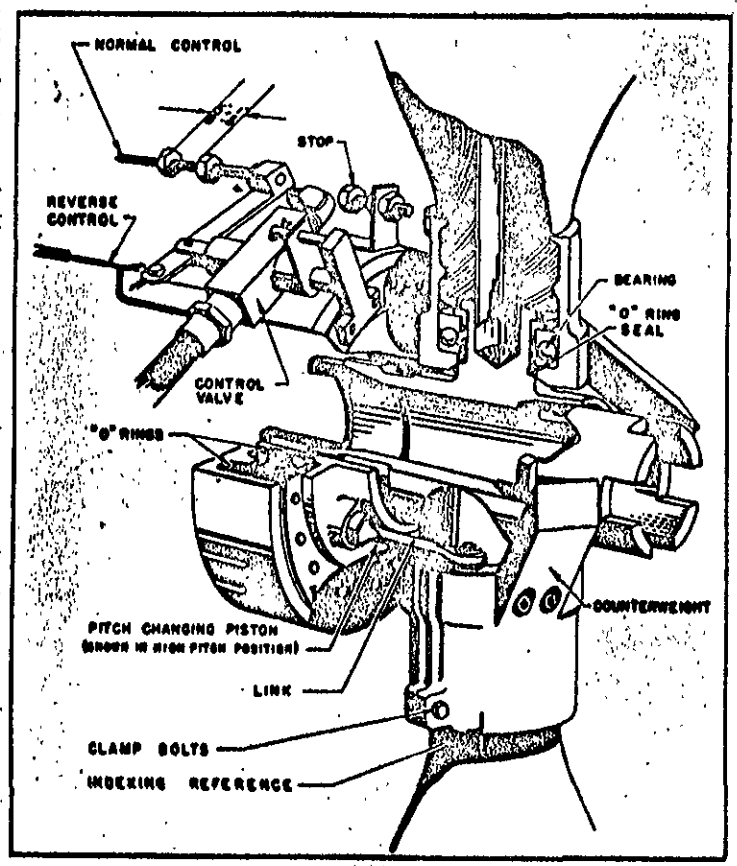
Seabee Service News

REPUBLIC AVIATION CORPORATION
FARMINGDALE, LONG ISLAND, NEW YORK
SERVICE DEPARTMENT

JANUARY 20 1947 No. 8

HARTZELL PROPELLER

The following article presents a brief description of the principle of operation, methods of control adjustments and a few trouble-shooting hints concerning the Hartzell Propeller as used on the Seabee. Although some of the information has been obtained from the Hartzell Manual which contains complete instructions for disassembly, overhaul, inspection and reassembly of the propeller, this information is intended mainly to supplement the Hartzell Manual for use on the Seabee.

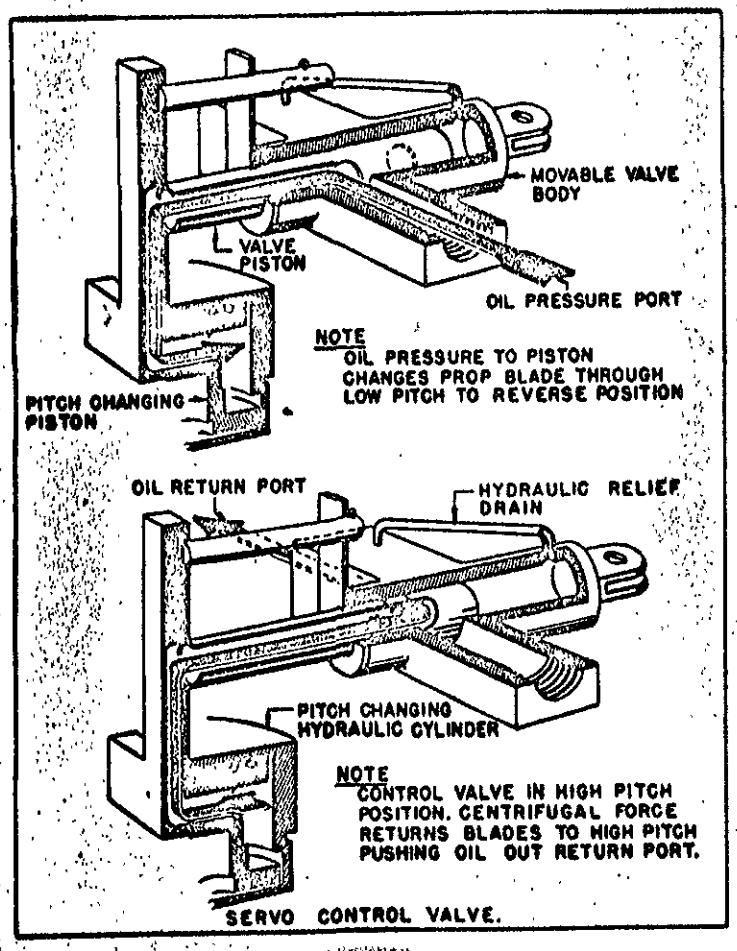


GENERAL

The Hartzell Propeller usel on the Seabee is a hydraulic controllable propeller incorporating a reverse pitch feature. The propeller operates with engine oil pressure to reduce pitch and centrifugal force of the counterweights to increase pitch. The centrifugal forces are highest when the propeller is in full reverse pitch. The aerodynamic forces on the blades also contribute to the operation of the ptopeller. If the operation of these three forces is unbalanced by introducing excessive friction or binding of the blades when a change of pitch is required, the propeller will not function properly.

SERVO CONTROL VALVE

The flow of engine oil to or from the piston of the propeller to provide any desired pitch setting is regulated by a servo valve. This valve is controlled by the pilot with a push-pull mechanism which changes the position of the valve cylinder. The position of the servo valve piston is governed by the propeller piston to which it is rigidly attached. The action of this valve is shown below. For any desired pitch setting, movement of the control changes the position of the valve cylinder pressure and return ports with respect to the servo valve piston pressure and return ports. When the propeller piston has travelled the required distance the valve piston is centered, thereby shutting off the valve cylinder pressure and return ports so that flow of oil ceases. A check valve is used in the pressure line leading to the servo valve to prevent any possibility of return flow when the centrifugal forces are higher than the oil pressure when pitch is being reduced or placed in reverse.



SERVO CONTROL VALVE.

PISTON TRAVEL

The piston-jack plate assembly is in the full forward position for high pitch and full aft for reverse pitch, the total travel being approximately 1-1/16 inches. The forwardmost position (high pitch) is obtained when the propeller piston bottoms in the cylinder. If it protrudes more than 1/16 inch (exclusive of the gasket and coverplate), the cause must be determined and corrected. The 1-1/16 inches travel is measured from this position to the shoulder of the hub. In other words, the jack plate of the piston travels rearward until it strikes the shoulder of the hub. This means that the hub position regulates the piston travel and therefore the reverse pitch blade angle.

To maintain the hub in its proper position with respect to the propeller cylinder, shims are used between the engine thrust plate and the propeller cone. Once these shims are properly determined there should be no need to change them even if the propeller is replaced provided the original cone is used; therefore they should remain with the engine. On a new engine the amount of shims to be used must be determined when the propeller is installed so that 1-1/16 inches piston travel is obtained from the full high pitch position.

Blades

The propeller blades are set for $18^{0} \pm 1/2^{0}$ when the piston is in the full forward (high pitch) position. This angle is measured at blade station 30 (marked with a red line) with respect to the face of the propeller shaft nut. The 1-1/16 inches piston travel automatically sets the blades in the correct reverse pitch position which is approximately $14\frac{1}{2}^{0}$ giving a total travel of about 33^{0}. The low pitch (high RPM) position is set manually on each airplane by adjusting the controls so that the desired high RPM is obtained with the conckpit control in the full forward position.

It is essential to proper functioning of the propeller that the blades are absolutely free to rotate. This can best be checked by disconnecting the link going to the hub from the jack plateof the piston by removing the lockwire and bolt. When these are removed, the blades are free. If the blades do not turn freely even after being lubricated with AN-G-15 or other approved type grease, the blade clamp bolts should be checked as per instructions in the Hartzell Manual against the guide tube. The clamps shou be just tight enough to prevent the blade from rotating when a torque of 2000 inch lbs is applied to the blade. However, it should be remembered tha the blade binding could also be a result of too heavy a grease, lack of grease or a faulty bearing. Loosening of the clamps must be done with great care as too loose a clamp will result in slippage of the blade which will change its pitch with respect to the hub position.

Reverse Control

The reverse control used to gegulate servo control valve consists of a heavy wire in a casing. When adjusting the propeller controls this control must be always checked first to be certain that it is the correct forward position. With the cockpit handle locked in its forwardmost position, the propeller servo control valve arm must be snug against its stop. The controls should move freely and the valve should move without any indication of play or slackness at the cockpit handle. Should any handle movement be noted without a corresponding movement of the valve body, the control should be thoroughly inspected for loose or broken clamps especially at the forward end (behind the upholstery) and aft end (rear valve).

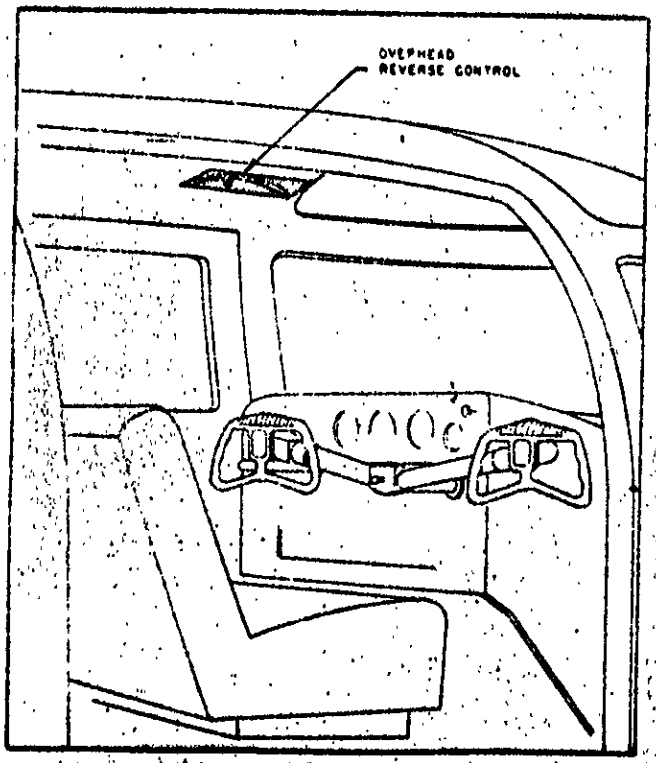
High-Low Control

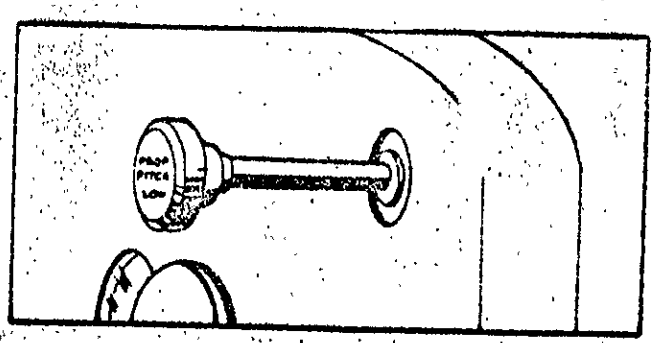
The high-low control used to regulate the propeller servo control valve consists of a wire wound cable in a casing. This type of control permits the necessary bends from the instrument panel to the roof to be made with a minimum of internal friction. At the end of the control, the cable continues beyond the wound wire through two bolts, one of which is threaded into the other. The cable is then swaged into the aft bolt which attaches to the arm of the propeller servo control valve. The purpose of the threads is to take up the slack of the cable with respect to the wound wire by increasing the space between the bolt heads. The head on the forward bolt acts as the high pitch stop when it butts against the control casing. This control requires approximately two inches movement to permit the full RPM range to be obtained. Therefore the casing must be properly located and clamped so that 2300 ± 25 RPM at full throttle can be obtained when the cockpit handle is forward against the instrument panel. As the final objective is to obtain 2500 RPM at 70 RPM climb with full throttle and with landing gear and flaps down, the 2300 RPM figure may vary slightly from one airplane to another. The low pitch bolt stop is provided only as a

safety precaution in case of a control cable failure to prevent over-speeding of the engine and loss of power. As a ground check, place propeller in high pitch at full throttle . If RPM drops below 1800, satisfactory operation is indicated but is still subject to flight checks.

A number of methods of adjusting the controls can be used, however it is believed the following is the easiest

Continued →





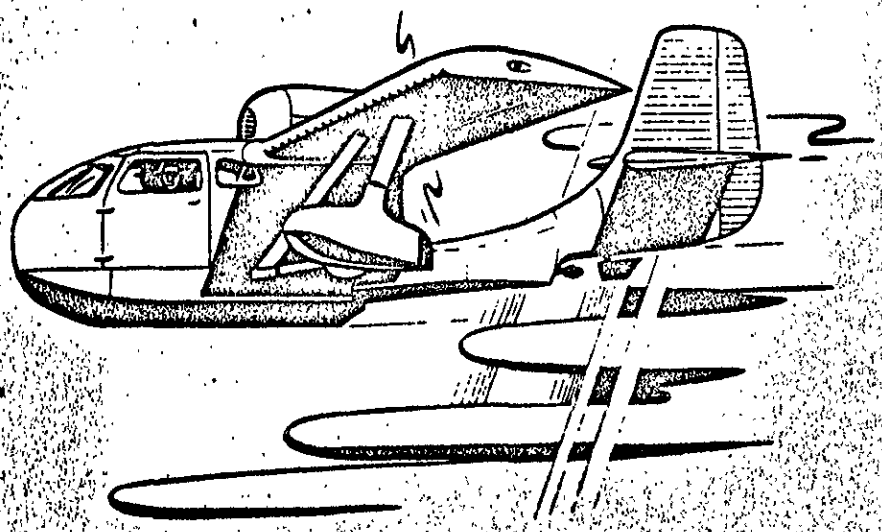
and requires a minimum of experimenting:

1. Pull cockpit high-low control full OUT.
2. Check reverse control to insure it is full forward and locked.
3. Push propeller piston to full forward (high pitch) position. The cylinder should protrude 1/16 inch at this position.
4. Check reverse pitch control at servo control valve arm to be sure it is against its stop.
5. Place servo control valve in the mid position of its travel. Valve piston should be ½ inch from its stop..
6. Loosen clamps holding the control casing and attach rear bolt on control cable to the servo control valve arm.
7. Tighten control casing clamps temporarily.
8. Back off on the low pitch (high rpm) stop bolt.
9. Start and warm up engine.
10. At full throttle, move cockpit prop control handle back and forth until the 2300 rpm position is located.
11. Without changing the prop control handle position, shut off engine.
12. Adjust low pitch (high rpm) stop bolt until it touches the servo control valve arm. Lock bolt in place.
13. Loosen control casing clamps.
14. Push cockpit prop control handle full IN against instrument panel.
15. Slide prop control casing fore or aft in the clamps until the servo valve arm just touches the low pitch (high rpm) stop bolt.
16. Clamp control casing firmly.
17. Start engine again and recheck setting for 2300 ± 25 rpm.
18. Make test flight and check for 2500 to 2550 rpm at point of take off just as wheels leave the ground.
19. To check for proper cruise setting, set prop control to full high pitch and throttle at 25 inches Hg If propeller is working properly, rpm will be 2200, or less.

If any changes in the maximum rpm are necessary, they can be made by adjusting the low pitch (high rpm) position 3/16 inch for each 100 rpm. This can be accomplished by first measuring the present length of the stop bolt from its bracket, adjusting the length as required, loosening the control casing clamps and sliding the casing until it touches the stop when the cockpit handle is full IN and then retightening the clamps.

When final adjustments are made, check all clamps for tightness to insure against control slippage. Any rubber-type clamps should be replaced with plain metal clamps as the rubber may be conducive to slippage when saturated with oil. Also check to see that the control does not bend when it strikes the low pitch (high rpm) stop.

As another precautionary note, when greasing the propeller be sure to place the same number of shots of grease in each blade to avoid throwing out the balance. For satisfactory performance, the propeller should be greased about every 10 hours of operation so that the blades rotate freely.



January 3, 1947 No. 9

INFLATION OF OLEO STRUT

When it is necessary to inflat the oleo strut of your Seabee and a mechanical compressor is not available, use a compressed air bottle with a regulator and gage. This bottle may be filled with any of the following gases:

1. Dry Compressed Air
2. Bottled Nitrogen
3. Bottled Dry CO_2

CAUTION: Do Not Use Oxygen, Acetylene, or any combustible gas as a violent explosion may result.

For further information concerning servicing of the oleo strut, refer to Seabee Service News No. 3 dated November 27, 1946.

W. H. Ehmann
Service Manager

January 13, 1947 No. 10

INSPECTION OF FLEXIBLE CONTROLS

Brass ferrules have been added by the control manufacturer to the wire wound push-pull controls on most airplanes as an added safety precaution to prevent the split metal sleeve at the instrument panel from opening which would permit the casing to slide out when the control was actuated. When ferrules were not available, AN742D3 clamps were installed, however it is believed a few airplanes may have been delivered with neither.

It is recommended that you examine the Parking, Battery, Mixture and Carburetor Heat Controls for the brass ferrule or clamp. If neither has been installed, it is advised that AN742Ds clamp (3/16 ID) be placed at the edge of the sleeves.

Airplane No.238 and subsequent have been rechecked at the factory for this condition.

NOTE: This condition does not affect the throttle control.

W. H. Ehmann
Service Manager

Service News no. 11

Jan. 13, 1947

Subject-exhaust fumes

Several Seabees recently manufactured were noted by company test pilots to have traces of exhaust fumes in the cabin. These and all subsequent airplanes have been corrected by sealing all openings in the baggage compartment which are in the vicinty of the firewall with compound EC870, EC612 or EC712, made by Minnesota Mining and Manufacturing co., Detroit, Michigan

Should any traces of exhaust fumes be noticed in your Seabee, it is advised that you examine the baggage compartment and seal off any openings about the cross ties, screws, etc
all surfaces should be washed with naptha or thinner prior to application of sealing compound in order to insure adhesion.

If the above compound is not available any similar material will suffice.

W.H. Ehmann
Service Manager

January 21, 1947 No. 12

FUEL PUMP OPERATION IN COLD WEATHER

Recently there have been a number of reports that in cold weather Seabee engines failed to continue running after the fuel in the carburetor bowl was consumed. In a few of the original cases the fault was traced to loose fuel line connections, strainer bowls or strainer drains which permitted air to be sucked into the system instead of fuel from the cell. This, however, has not been the case on airplanes which recently have experienced starting difficulty, as thorough examinations disclosed no loose connections.

After considerable testing and accumulation of data, we are quite certain that in most instances the trouble has been due to congealed oil which causes lag of the pump linkage and diaphragm thereby preventing the diaphragm from operating thru its normal range until the oil has warmed sufficiently. In one case immediately after the engine stopped after about a half minute of running, the pumps were removed, cleaned of congealed oil and reinstalled. The carburetor bowl was primed and the engine made a normal start and continued to run satisfactorily even though no preheat was used. In another case an engine which failed to continue running after a satisfactory start in sub-freezing weather was placed in a heated hangar overnight after which the engine started and continued running satisfactorily. In all cases where the pumps have failed to draw fuel from the tank, it has been possible to run the engine by disconnecting the fuel line and sucking gas from a container in the baggage compartment which reduces the draught by about one half. After two or three minutes of operation which would permit the engine oil to warm up, the fuel line was reconnected and the engine continued operation on its regular fuel system.

Should your Seabee have trouble starting in cold weather, it is recommended that the following steps be taken after making certain that all line connections are tight.

1. Check carburetor bowl to be certain that it contains sufficent fuel.
2. Service engine with SAE 20 oil for temperatures below 40° F or 10W oil for temperatures below zero.
3. Remove fuel pumps, clean linkage of congealed oil and reinstall.

February 21, 1947 No. 12

FUEL PUMP OPERATION IN COLD WEATHER (CONT.)

4. If still unsatisfactory or if circumstances do not permit above steps, disconnect fuel line in baggage compartment and attempt to start by drawing fuel from a container.

5. Examine fuel pumps for punctured diaphragm of for foreign matter in check valves if none of the above steps succeed in eliminating the trouble.

It has also been found helpful in some cases to shut off the emergency fuel cock just as the engine stops. This will hold a column of fuel in the system so that when an attempt is made the following morning, more fuel will be available. The starting procedure in this case would be to start and run the engine for ten to fifteen seconds before opening the fuel cock.

The above recommendations are made based on the assumption that the engine starts satisfactorily and runs on the fuel in the carburetor bowl which normally lasts 20 to 30 seconds. If it is impossible to start engine, check to see that the carburetor bowl has fuel. If it has, proceed with a regular engine and ignition check.

As a last hint, be sure to drain any water from the fuel cell (aft of step) and the fuel strainer (R. H. Wing) to prevent freezing and engine malfunctioning.

W. H. Ehmann
Service Manager

Service News no 13

Jan 28, 1947

Subject: Hartzell Hydro-Selective propeller

The following information was received from the Hartzell Propeller Co and is being distributed for the information of all concerned

Subject: replacement of rivets in the blade tipping

1 Rivets which break off or come out of the tipping should be replaced immediately This can be done in the field All rivets, whether they be 3/32 or 1/8 diameter brass or copper should be replaced with 1/8 annealed copper, having a 7/32 diameter flat head.

2 if a 1/8 inch rivet is to be replaced, remove the broken rivet by

a) drill 1/8" into head using 1/16" drill
b) Cut out head with 1/4" countersink (82°)
c) Punch out old rivet with 1/8" punch

Prepare hole for new rivet by redimpling metal tipping with dimpling punch (80° included angle). Insert rivet from flat side of blade. Cut rivet off leaving 3/16" to 1/4" extending beyond metal. Head rivet with bucking iron and hammer Use very light tapping strokes.

3 If a 3/32 rivet is to be replaced the procedure is identical to the above except the rivet hole must be drilled out to 1/8" diameter Redimple the metal and insert the rivet as noted above

4 The rivet heads should be filed or sanded off smooth.

5 Soldering is optional If the rivet head is well formed and filed off there is no reason to solder, as it would all be filed off any way.

6. If rivets cannot be obtained locally, please write Hartzell propeller Co. vor a supply (Piqua, Ohio)

Note: "Harzite" blade material is a special plastic composition through and through. If the varnish finish is worn off or if stones nick the surface the blade need not be refinished immediately as water will not affect the material.

Seabee
Service News

REPUBLIC AVIATION CORPORATION
FARMINGDALE, LONG ISLAND, NEW YORK
SERVICE DEPARTMENT

February 17, 1947 No. 15

SPECIAL ENGINE FAN INSPECTION AT FIRST 5 HOURS

According to recent reports, a few Seabee engines have dropped their cooling fans, resulting in some damage inside the nacelle and an unnecessary loss of valuable flying time awaiting repair. Should this occur during flight, the danger is readily apparent, and it is recommended that the following procedure be observed carefully.

Investigation here at the factory revealed some of the fan capscrews loosening after a few hours operation. This has been attributed to the fan "hanging-up" on the mating surface of its adapter during original installation. After a few hours of operation, the fan tends to seat itself, leaving the capscrews loose. It is assumed some of these fall out and the balance shear off.

To combat this situation, whenever cooling fans have been removed they are to be reinstalled in the following manner:

1. Draw up all eight capscrews evenly by taking only two turns on each one, moving around the circle of bolts until the fan is seated firmly and the screws torqued to 15 to 20 foot pounds.

2. Do not bend safety tabs until after a ground run up of at least 5 minutes duration.

3. Re-torque capscrews to 15 to 20 foot pounds and bend up two tabs of each safety washer.

CAUTION

Under no circumstances should tabs be rebent because of the possibility of cracking.

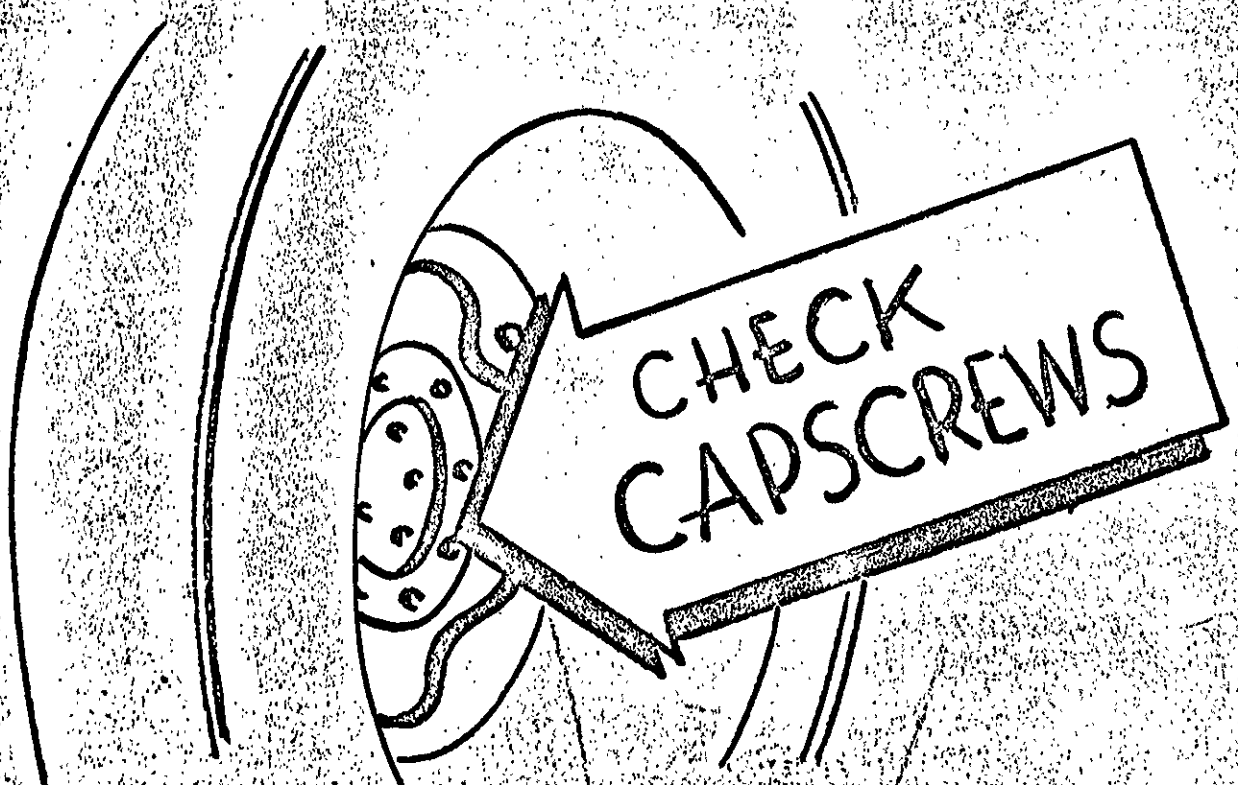
The following inspection is to be performed 5 hours after each installation of the fan and at every regular 25 hour check.

Remove the grill from front of engine cowl and carefully inspect the 8 capscrews comprising the intermediate bolt circle. (See illustration.) Check for broken lock tabs or tabs which do not firmly grip the screw heads. Of the four tabs at each screw head, two should be in firm engagement

SPECIAL ENGINE FAN INSPECTION AT FIRST 5 HOURS (CONT.)

and two should be flat. If there is any looseness in any screw, break off the two holding tabs to prevent their being used again. Tighten the screws to a torque of 15 to 20 foot-pounds and anchor the screw head by bending up the two unused tabs. Under no circumstances should tabs be rebent because of the possibility of cracking and subsequent failure. New locking tabs may be ordered from Aircooled Motors or Republic by part number Franklin #14816.

W. H. Ehmann
Service Manager



Sea Bee Service News

Republic Aviation Corporation

16

February 13, 1947

Subject: Warning light system.

Bells, horns and lights may help you to remember your landing gear but nothing can take the place of one work- THINK.

Another case of a wheels donw landing on water has occurred with appreciable damage to the airplane. Fortunately ,no serious personal injury has occurred with the SeaBee and its safety record is outstanding but under no circumstances is it worth taking a chance.

Before you fly and before you let someone else fly your SeaBee be certain to understand your warning light system. Visually check your gear in flight. It takes only a second and may save your airplane. No airplane-not even a SeaBee-can be landed on water with the wheels down at normal landing speeds without serious consequence. We can offer but one piece of advice and that is-- THINK.

Seabee
Service News

REPUBLIC AVIATION CORPORATION
FARMINGDALE, LONG ISLAND, NEW YORK
SERVICE DEPARTMENT

March 25, 1947 No. 17

IMPROVED MEANS FOR SERVICING ELEVATOR TRIM TAB GEAR BOX

It is recommended that an access hole be added in the horizontal stabilizer for the elevator trim tab gear box on those Seabees which were delivered without this feature. Seabee Serial No. 237 thru 576 had a 1-1/4 inch diameter plug button in bottom of each horizontal stabilizer to provide access for lubrication of the trim tab gear boxes. Seabee Serial No. 577 and subsequent airplanes will have handholes in these locations so that the gear boxes may not only be lubricated but also will be readily accessible for repairs and replacement if necessary. We recommend that the large type handholes be added although we are giving below the location and material necessary for each type.

The large handholes require a door and frame for each stabilizer. These may be made in accordance with instructions on Figure 1 and installation of the frame and door may be accomplished as shown on figure 2.

Instructions for installation of the plug buttons is shown on figure 3. These plug buttons may be ordered as spares item 1379, list price three cents apiece.

W. H. Ehmann
Service Manager

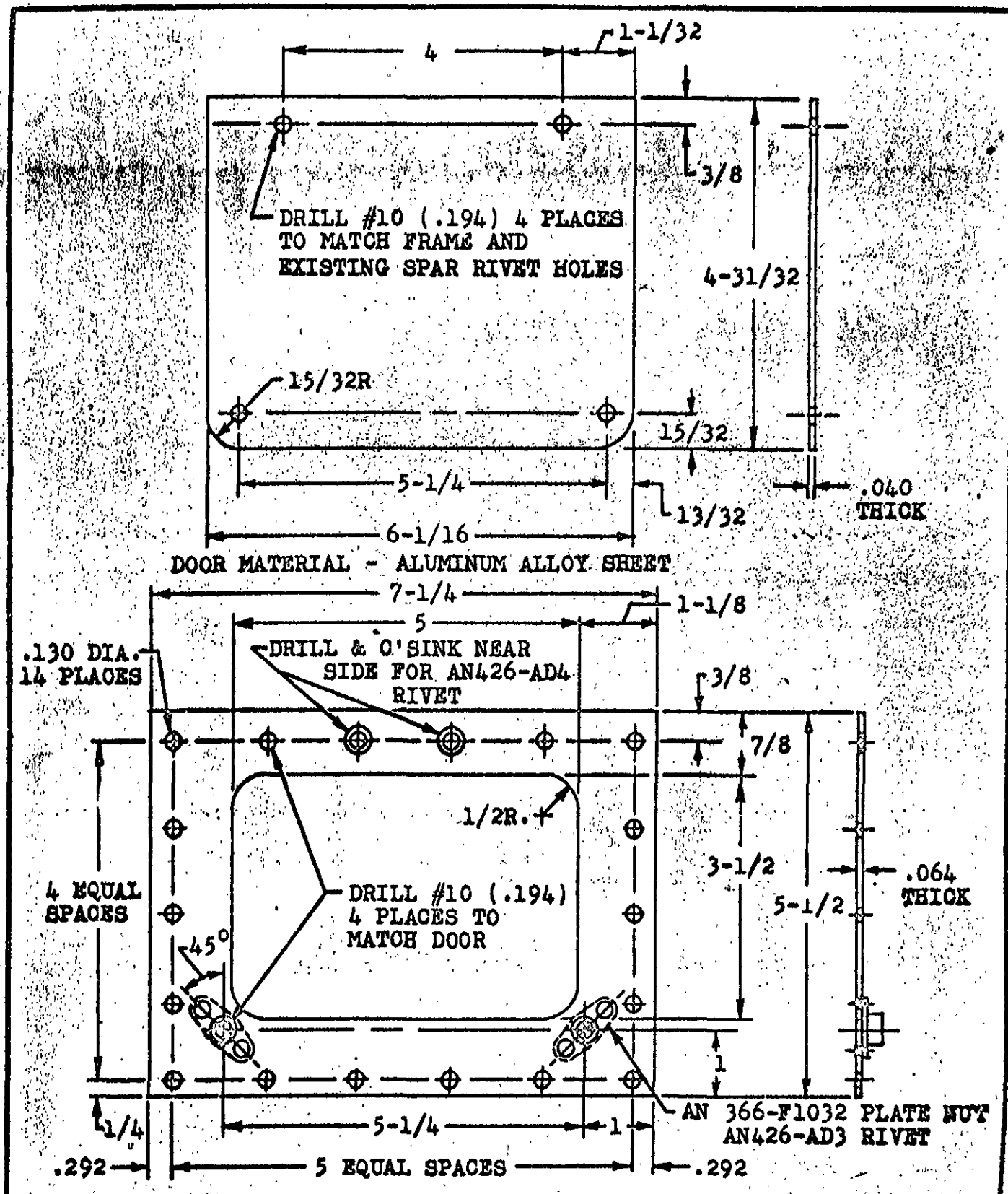
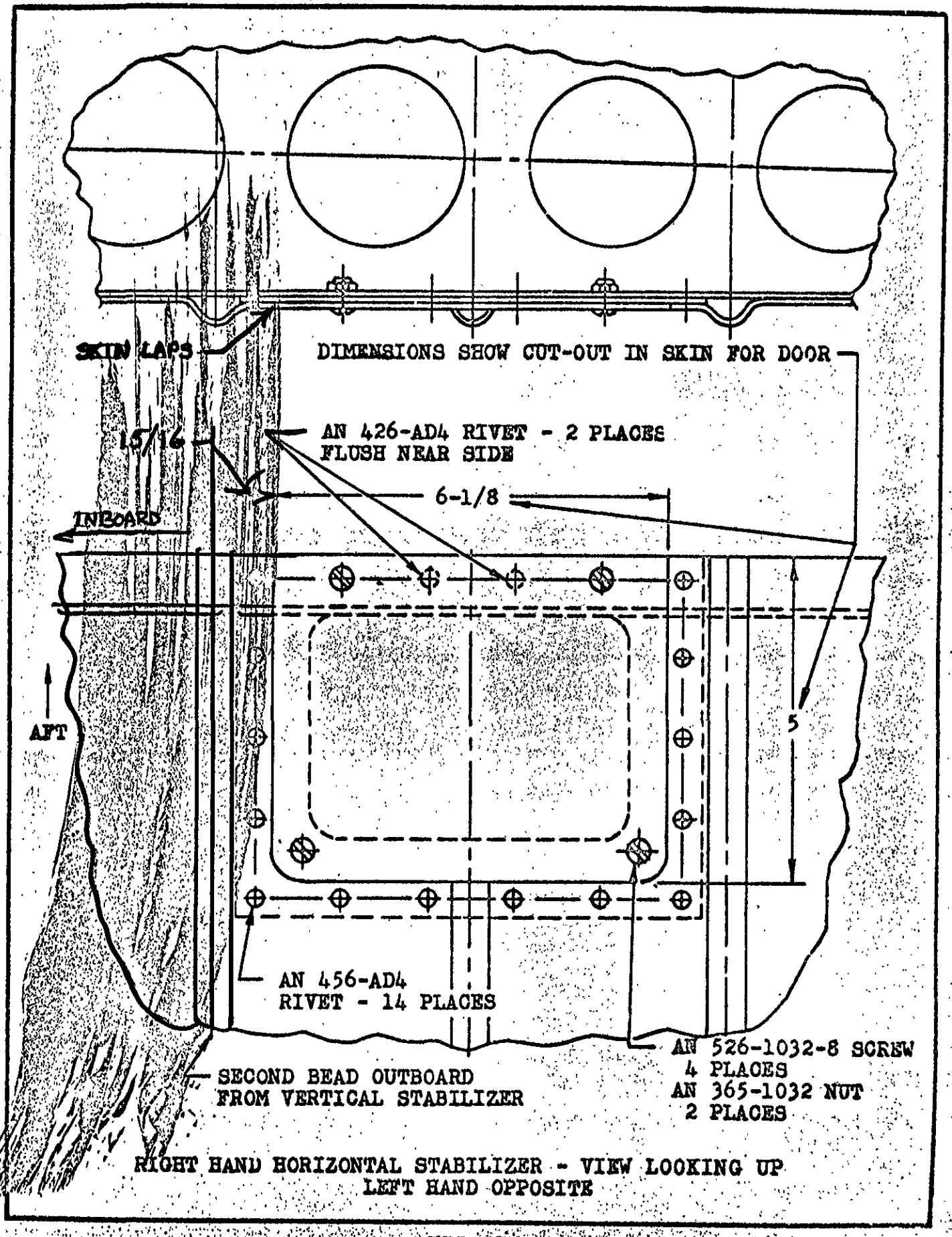
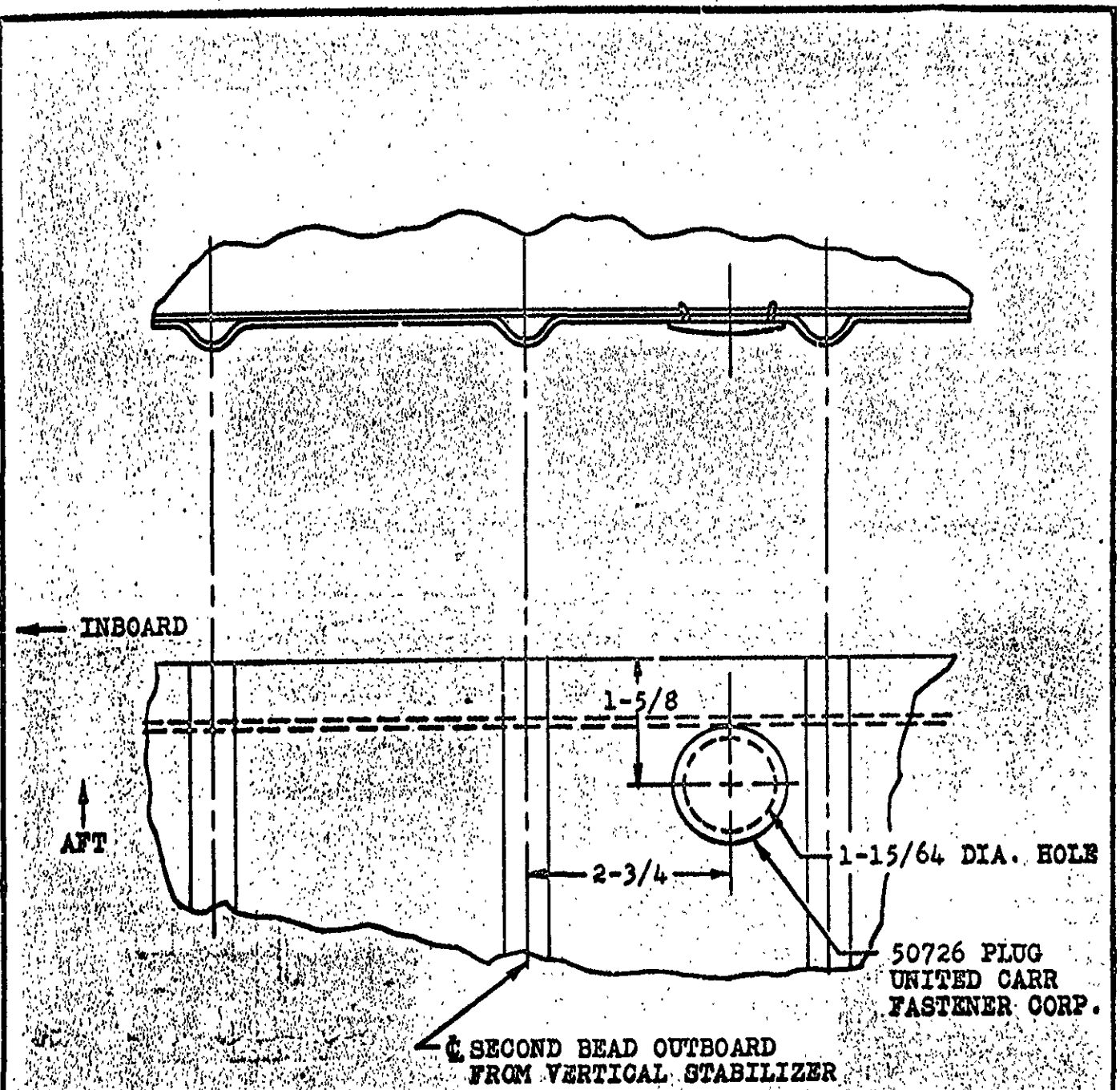

4
1-1/32
3/8
DRILL #10 (.194) 4 PLACES
TO MATCH FRAME AND
EXISTING SPAR RIVET HOLES
4-31/32
15/32R
15/32
5-1/4
13/32
.040
THICK
6-1/16
DOOR MATERIAL - ALUMINUM ALLOY SHEET
7-1/4
1-1/8
5
.130 DIA.
14 PLACES
DRILL & C'SINK NEAR
SIDE FOR AN426-AD4
RIVET
3/8
7/8
1/2R.
3-1/2
.064
THICK
5-1/2
4 EQUAL
SPACES
DRILL #10 (.194)
4 PLACES TO
MATCH DOOR
45°
1
1/4
5-1/4
1
AN 366-F1032 PLATE NUT
AN426-AD3 RIVET
.292
5 EQUAL SPACES
.292
FRAME MATERIAL - ALUMINUM ALLOY SHEET

FIG. 1.



RIGHT HAND HORIZONTAL STABILIZER - VIEW LOOKING UP
LEFT HAND OPPOSITE

FIG. 2



RIGHT HAND HORIZONTAL STABILIZER - VEIW LOOKING UP
LEFT HAND OPPOSITE

FIG. 3

March 31, 1947 No. 18

CARBURETOR HEAT OPERATION

The Carburetor Heat Control should be either fully On of fully OFF. Do not use an intermediate position as excessive loss of engine RPM may result.

Flight tests have shown that a loss of as much as 700 RPM may be experienced of the control is opened only half to three-quarters of the full travel whereas with the control fully ON the RPM loss is only 150 to 250.

The danger of excessive RPM loss, especially on take-off is readily apparent. As the power developed by the engine is a function of the RPM, a loss of 500 to 700 RPM may result in sufficient loss of power to prevent a normal take-off. It is therefore advised that all take-offs, except under abnormal conditions, be made with the Carburetor Heat fully OFF.

Do not use Carburetor Heat unless absolutely necessary. The Franklin engine does not require carburetor heat except under severe atmospheric conditions.

W. H. Ehmann
Service Manager

Seabee Service News

REPUBLIC AVIATION CORPORATION
FARMINGDALE, LONG ISLAND, NEW YORK
SERVICE DEPARTMENT

April 2, 1947 No. 19

TAIL WHEEL SHOCK ABSORBER ADJUSTABLE LINK TUBE

Beginning with Seabee No.525 the link tube which connects the tail wheel shock absorber piston to the yoke has been modified by having three sets of holes provided for adjustments of the spindle angle.

For best taxiing and swiveling action, the vertical centerline of the spindle should be between an angle perpendicular to the ground and a 5° angle of trail when the airplane is standing in the normal static position.

When adjusting the link tube, it will be necessary to remove the bolts partially from the rear collar so that the piston stop ring can be removed and permit the piston to be brought back far enough to remove the pin at the forward end of the tube. When adjusting the length be certain that both bolts are always parallel to the horizontal, so that free pivoting will occur during delection of the tail wheel mechanism. It is recommended that you examine this linkage to become acquainted with it and to make certain that both pins are horizontal.

If excessive trail is noted due to permanent set or cold flow of the rubber shock discs, it is advised that the discs be replaced or that extra rubber discs be added if a complete replacement set is not available.

W. H. Ehmann
Service Manager

Seabee News No. 20

April 9, 1947

Subject: Full Reverse thrust

As you all know, the first several hundred Seabees are restricted to 1750 RPM in reverse to prevent failure of the engine reverse thrust bearing Recently, Aircooled Motors has incorporated in a change which permits full thrust (2500 RPM) in reverse.

In order to permit as many owners as possible to get full advantage of the engine in reverse thrust, Aircooled Motros modified their engines with an "interim" fix as soon as manufacturing problems would permit. This modification became effective with their engine, serial No.23281 and continued thru No. 23500. At engine 23501, a permenent production installation was incorporated and will be on all subsequent engines.

Due to the "interim" fix, it is necessary to modify the method of mounting the propeller actuating cylinder so that the hydraulic loads could be isolated from the thrust loads. This in turn required that four of the six mounting holes on the propeller cylinder be counterbored on the inside surface to provide "O" ring oil seals. However, due to design changes made possible on the engine when retooling for a new production run, the need for counterboring the propeller cylinder holes was eliminated for engine NO. 23501 and all subsequent engines.

This of course presents an interchangeability problem in the field when replacing either engines or propellers To reduce the problem to its simplest terms, any engine with Serial numbers between 23281 and 23500 inclusive, must have a propeller cylinder with the counterbored holes

The problem may appear a bit more complicated because of the large (10 inch) and small (7 inch) diameter propeller cylinders, both of which have been used with engines in this series. However, these are interchangeable within the group provided the top cowl of the airplane has been cut away to clear the large diameter cylinder.

FULL REVERSE THRUST (Cont.)

No attempt has been made to list the airplane serial numbers affected because the engines, of a necessity, are installed in airplanes in the order in which they are received.

The following table has been prepared to help all concerned:

Group	Engine Serial No.	Propellers
I	23008 to 23280 Incl. (1750 RPM limitation in reverse)	1. Small diameter cylinder without counterbored holes.
II	23281 to 23500 Incl. "Interim" fix	1. Small diamter cylinder with counterbored holes. 2. Large diameter cylinders with counterbored holes.
III	23501 and up Production fix	1. Large cylinder without counterbored holes. 2. Small diameter cylinder without counterbored holes.

Small cylinders with counterbored holes can be used on Group I or III engines and large cylinders on Group III engines provided a spacer is used to fill up the counterbore. Two AN960-10 washers drilled out for the 5/16 diameter stud can be used in place of the spacer.

Whenever it is necessary to change a propeller on a Group II "Interim" fix engine, it is advised that whenever possible the prop cylinder and piston be left in place and that only the hub assembly, all of which are physically interchangeable, be replaced. This is due to the fact that any spare cylinders will have to be counterbored specially for spare parts while the cylinder assembly on the engine is already counterbored.

For the above reasons it is essential that whenever a spare propeller assembly is ordered, the engine serial number on which the propeller is to be installed must also be forwarded with the order.

W. H. Ehmann
Service Manager

Seabee Service News

REPUBLIC AVIATION CORPORATION
FARMINGDALE, LONG ISLAND, NEW YORK
SERVICE DEPARTMENT

April 14, 1947 No. 21

SPLIT IGNITION SYSTEM

As a further step in the evolution of the Seabee, Republic announces important changes in the ignition system effective on all Seabees delivered with engine No. 23501 and up.

A split ignition system now operates one bank of spark plugs off a Bendix Scintilla Magneto (replacing the Eisemann formerly used) and the other bank of spark plugs off an Autolite coil and distributor fed by the battery.

With this system the magneto is set permanently for 32 degrees advance but the distributor is set for 2 degrees advance when starting and, by centrifugal weights, automatically goes to 32 degrees advance so that full advance is obtained at approximately 2100 R.P.M.

Better starting, lower idling speed and increased safety are among the advantages secured by the new system.

As the magneto has no impulse coil, the engine starts on the battery. This results in a hotter starting spark and consequently easier starting. Also, a higher retard is obtained on starting which is an advantage. After starting, the engine runs on magneto thru idle speed until the magneto and distributor synchronize at 32 degrees advance. If, due to electrical system trouble, the battery circuit must be switched off, the distributor will run off the generator above idle speeds.

W. H. Ehmann
Service Manager

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Seabee Service News

REPUBLIC AVIATION CORPORATION
FARMINGDALE, LONG ISLAND, NEW YORK
SERVICE DEPARTMENT

July 2, 1947 No. 23A

This sheet replaces No. 23 dated April 24, 1947

POWER SETTINGS

In order to help Seabee owners obtain maximum fuel economy and best performance, a cruise onctrol chart has been prepared to show the proper settings that may be used for high or low speed cruising at various fuel consumption and altitudes.

When changing power settings, if the RPM drops below the given figure, it shows that the propeller is working exceptionally well. However, if the RPM is higher than the given figure, it indicates possible malfunctioning of the propeller, probably binding blades which prevents the blades from rotating to the full high pitch position. To avoid propeller binding, grease the propeller frequently with a grease approved in the Hartzell Manual.

It is important to select the best mixture for any given power setting; when flying over 4000 feet altitude the mixture control should be leaned out carefully for best engine performance since at the higher altitudes the mixture setting is extremely sensitive. A change of 1/16 inch in the control settings may mean the difference between a smooth or rough engine.

W. H. Ehmann
Service Manager

CRUISE CONTROL CHART

See Note 3 / FUEL CONSUMPTION AND POWER SETTING / ALTITUDE	MAX CONT POWER 5.8 MI/GAL		HI SPEED CRUISE 6.5 MI/GAL		LOW SPEED CRUISE 7.5 MI/GAL Approx. 75% Power		MAX RANGE 8.5 MI/GAL	
	MP	RPM	MP	RPM	MP	RPM	MP	RPM
Sea Level	28	2500	27	2350	25.5	2200	23.5	2000
2000			26	2450	24.5	2300	22	2100
4000					23.5	2400	21.5	2200
6000					22.5	2500	21	2300
8000					21	2500	20	2350

Note (1) Fuel consumption shown is for airplane of 3150 lbs. gross weight; better consumption will be experienced for lower gross weight.

Note (2) Estimate fuel used in full throttle climb at average consumption of 20 gallons per hour.

Note (3) Each column gives progressively increased range at increasing penalty to cruising speed.

MP - Manifold pressure in inches of mercury.

Seabee
Service News

REPUBLIC AVIATION CORPORATION
FARMINGDALE, LONG ISLAND, NEW YORK
SERVICE DEPARTMENT

May 1, 1947 No. 24

SEABEE WIRING DIAGRAMS

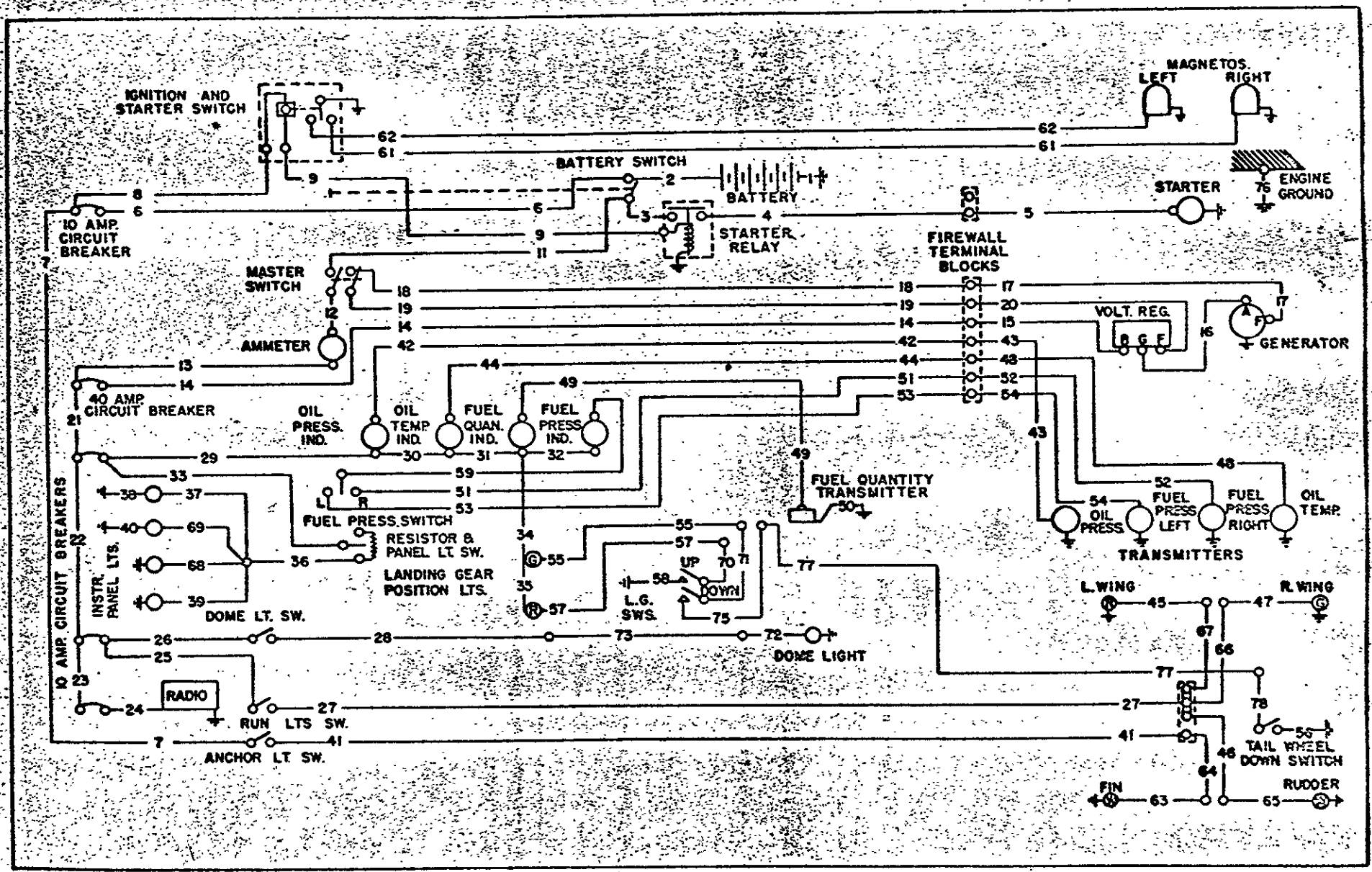
These wiring diagrams apply to the Seabees which have been delivered to date. Seabees Serial Numbers 5 thru 425 inclusive were equipped with a Stewart Warner type instrument panel. This panel has electrical oil pressure, temperature fuel pressure transmitters as well as electrical indicators. These indicators have to be supplied by the aircraft electrical supply. These airplanes also have a two magneto ignition system as shown on the diagram.

Seabees Serial Numbers 426 thru 487 inclusive with the exception of 480 also have a two magneto ignition system but were equipped with an Autolite instrument panel which required no tee-in to aircraft electrical supply except for the fuel quantity indicator and transmitter.

Seabees Serial Numbers 480, 488 and up have a split ignition system as shown on the diagram. This system is explained in Seabee Service News No. 21. This group of Seabees are also equipped with the Autolite instrument panel.

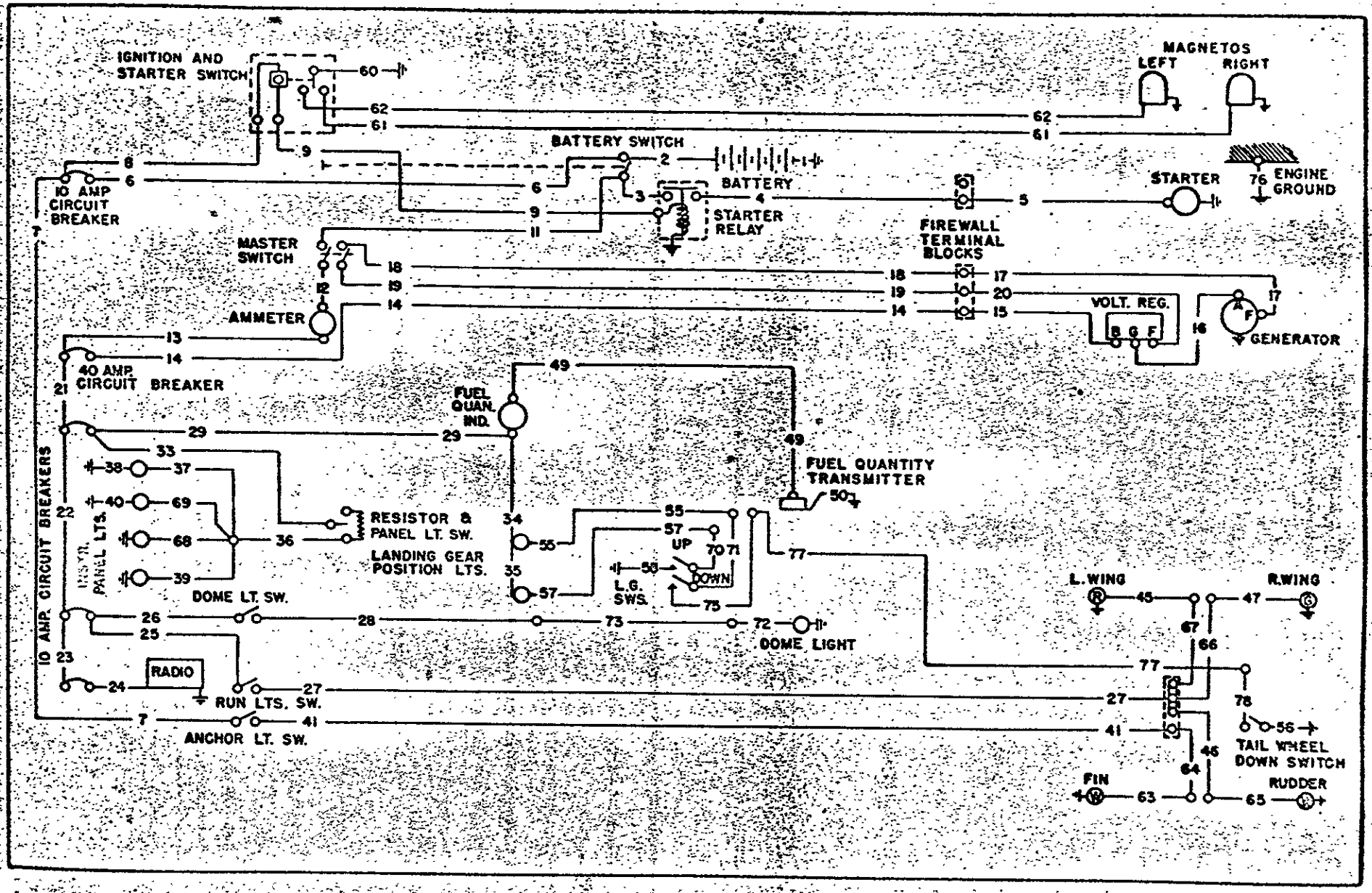
In the future when any electrical changes are made new diagrams will be distributed showing these changes for the applicable group of airplanes affected.

W. H. Ehmann
Service Manager



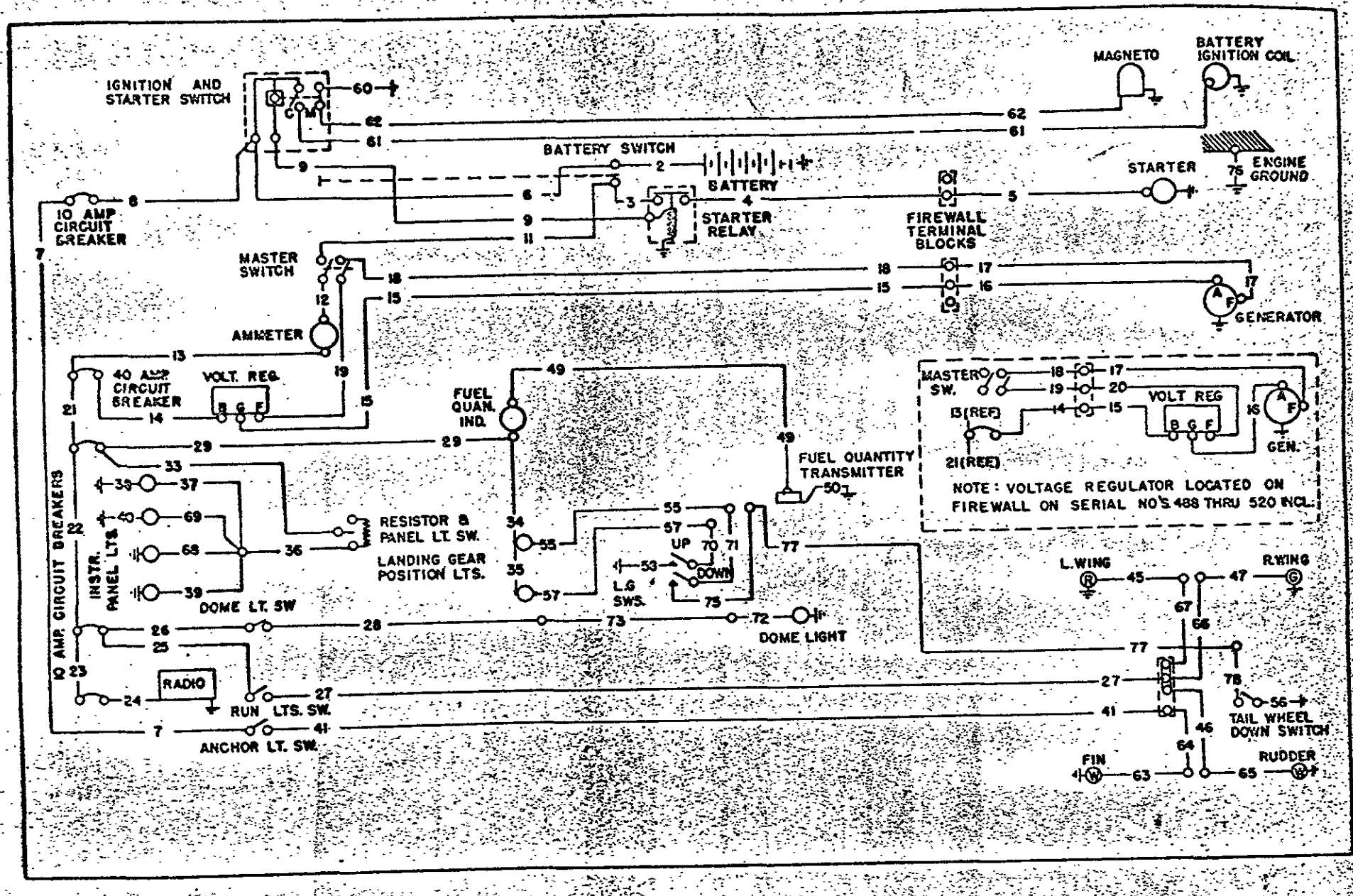
WIRING DIAGRAM

Seabee Serial Nos: 5 thru 425 incl.



WIRING DIAGRAM

Seabee Serial Nos: 426 thru 487 incl; except 480



WIRING DIAGRAM

Seabee Serial Nos: 480, 488 and up.

SEABEE SERVICE NEWS

REPUBLIC AVIATION CORPORATION

FARMINGDALE, NEW YORK

SERVICE DEPARTMENT

25

May 6, 1947

MAIN LANDING GEAR CLEVIS FITTING

Several cases of failure of the clevis fitting of the top of the main landing gear actuating cylinder have been reported. This failure may occur when a landing is made without the main landing gear being in the fully locked down position. On such landings excessive back pressures are built up in the hydraulic cylinder when the gear is forced into the retracted position with a result that the clevis is abnormally overloaded and may fail.

The clevis has been redesigned so that it will absorb higher loads of this type and consequently tend to prevent any mechanical failure. However, if a landing is made without the main gear down and locked, failure of this clevis may still occur as it has been designed to be the weakest link of the retracting mechanism to prevent more serious damage to other portions of the linkage.

The new type clevis has been incorporated in Seabees Nos. 200 and up. It is recommended that if present Seabee owners wish to take advantage of the increased strength of the new type clevis, it may be purchased as Spare Part No. 1482 at a list price of $1.42.

W. H. Ehmann
Service Manager

May 6, 1947 No. 26

INSPECTION OF ELEVATOR AND RUDDER FAIRLEADS IN TAIL BOOM

During the 25 hour inspection when checking cables for tension and fraying as called for in the Owner's Manual, the fairleads for the elevator and rudder cables especially in the tail boom, should be inspected to insure that these fairleads have not worn and are still preventing the cables from rubbing on metal edges. If wear of the fairleads is encountered the clearance holes in the metal may be elongated to a 5/8 inch maximum to remedy this condition.

TAIL WHEEL CORROSION

Due to lack of aluminum alloy tail wheels, it was necessary to use magnesium alloy tail wheels made by Goodyear on a few airplanes below serial number 100. It is advised that owners of airplanes in this group examine their tail wheels and if it is of magnesium alloy, particular care should be taken to wash the wheel after salt water operation.

W. H. Ehmann
Service Manager

(60)

May 19, 1947 No. 27

PROPELLER BLADE INSPECTION

The following inspection procedure is being distributed at the request of the Hartzell Propeller Company.

HARTZELL PROPELLER COMPANY

BULLETIN #1

SUBJECT: Inspection of Propeller Blades for Damage

1. In view of the severe service the Hartzell Propeller receives when the "Seabee" is taxying on the water it is very important that the blades be carefully examined at preflight inspection or at least every five hours for water erosion and damage due to objects or solid water striking the blades. Particularly important is the detection of any transverse cracks near the tip which might be caused by solid water or other objects striking the tips.

2. Water damage may be minimized by operating in low pitch with flaps down, and at a speed which will result in minimum spray when possible

David Biermann
General Manager

It is strongly recommended that this inspection be performed as specified.

W. H. Ehmann
Service Manager

(61)

June 30, 1947 No. 28

TOUCHING-UP SEABEE PAINT

All touch-up on the Seabee should be done in accordance with the following procedure:

Areas to be touched-up must be thoroughly cleaned with toluene. Small scratches need not be primed prior to the application of the finish coat; however, all other areas must be primed.

Areas exhibiting peeling must be stripped, cleaned with toleune, etched for five minutes with metal-prep, washed with water, allowed to dry and then primed before the application of the finish coat.

DRAIN YOUR TAIL BOOM

Many Seabee owners have been neglecting to drain the tail boom, possibly because they are not aware of the fact that the two screw head plugs located at the extreme left and right hand lower side of the front of the tail boom are drain plugs. The front of the tail boom is where the tail wheel assembly is attached.

It is very important to drain the tail boom especially when the airplane has been exposed to heavy rains or spray from water operations becuase rain can enter it at the upper aft end through the various openings between tail surfaces. An appreciable amount of water in the boom will make the airplane undesirably tail heavy.

W. H. Ehmann
Service Manager

June 3, 1947 No. 29

SEABEE PERFORMANCE AT HIGH ALTITUDES

The loading and performance of the Seabee must be given serious consideration in preparation for take-offs at higher altitudes, especially when relatively high outside air temperatures are anticipated.

A good indication of the performance you may expect from your Seabee may be noted in the Rate of Climb Charts in your "C.A.A. Approved Airplane Flight Manual for the Republic Model RC-3" which is included in your Seabee. Note carefully the adverse effects of higher temperatures. As an example, the length of take-off at 6000 ft. to clear a 50 ft. obstacle with a 0° fair temperature is 3840 ft. while at a temperature of 100°F the take-off distance is 7320 ft.

REVERSING THE PROPELLER PITCH

There is an apparent misinterpertation of the meaning of the word "idle" when referring to engine speed while reversing the pitch of the propeller. In this case, "idle" means approximately 1000 R.P.M. in order to have the sufficient engine oil pressure for proper operation of the propeller.

W. H. Ehmann
Service Manager

Seabee Service News

REPUBLIC AVIATION CORPORATION
FARMINGDALE, LONG ISLAND, NEW YORK
SERVICE DEPARTMENT

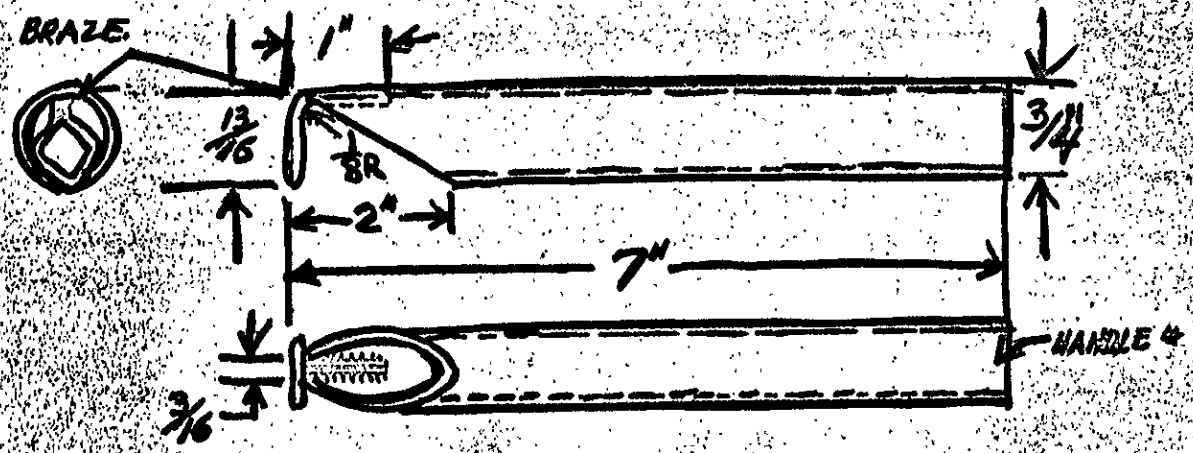
June 13, 1947 No. 30A

Please Destroy
Service News No. 30

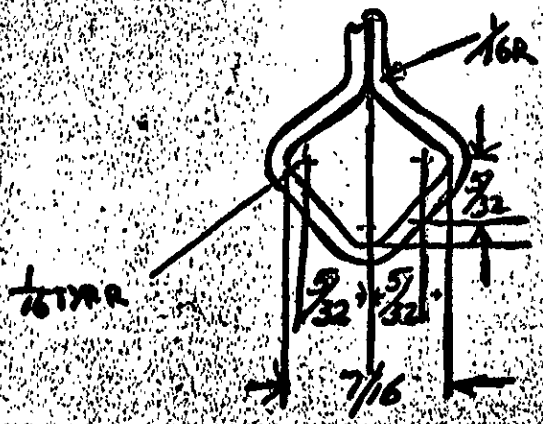
WINDOW INSTALLATION TOOL

A number of requests have been received for information concerning a tool which can be used for installing the rubber locking strip of the window molding. Details for construction are given below. It is advised that each distributor and delaer make up one for his own use so that it will be available when a window change will have to be made.

W. H. Ehmann
Service Manager



NOTES.
1. USE .035 OR HEAVIER.
2. BREAK ALL SHARP EDGES



SEABEE SERVICE NEWS
Republic Aviation Corporation
Farmingdale, New York
Service Department

June 6, 1947 No. 31

CHECK TAIL WHEEL HYDRAULIC LINES

It is recommended that the tail wheel hydraulic lines installation in the baggage compartment be checked immediately at the location where they pass through the top of the hull, just aft of the gas tank compartment on the extreme right hand side. Access is gained through the baggage compartment. Inspect the small angle clips which are attached with two rivets each for cracks or breakage. Also inspect the hydraulic lines for chafing on the edges of the holes through which they pass. Broken clips will result in chafing of the hydraulic lines which will ultimately result in failure of the hydraulic system.

The fix being incorporated at the plant consists of replacing the existing type aluminum alloy angle clips with steel Tinnerman angles and new clamps. All parts are standard and consist of the following: (4) AN442-AD4 Rivets, (2) Tinnerman A3264-8-C-3 Angle, (2) Tinnerman A3046-4 Clamp, (2) AN526-832-8 Screw, (2) AN960-8 Washer, and (2) AN365-832 Nut.

In addition, rubber grommets are being installed in the holes through which the hydraulic lines pass. These are standard (2) AN931-4-12 Grommets with a 90° section cut off only from the top lip of each grommet to clear the overlapping clip. The grommets may be split to effect installation.

One other fix is being incorporated in production which consists of two additional clamps forward of the subject location, but is not practical in the field with the gas tank installed and need not be effected.

Broken clips and chafed lines should be replaced immediately with the new type parts. It is strongly recommended that the rubber grommets be installed immediately and that a frequent inspection be made of the clamps until they are replaced with a stronger type.

W. H. Ehmann
Service Manager

June 3, 1947 No. 32

PROCEDURE FOR JACKING SEABEE AFTER KEEL LANDING

When jacking the Seabee either for a normal landing gear hydraulic check or when lifting the airplane after a keel landing, it has been found that a standard garage type hydraulic jack, the kind which mounts on four full castering wheels, is the most satisfactory.

First the jack is placed under the keel at the bulkhead just forward of the tail wheel. The tail is jacked up high enough to permit a tail hull stand to be placed in position.

The jack is then placed under the keel at the bulkhead just aft of the landing gear and raised until the hull stand can be slipped into place. One or two men can be used to steady the wings. When the Seabee is on its keel it will be necessary to jack the keel near the bow and slide blocks under until the airplane is raised sufficiently to get the jack under the keel at the landing gear bulkhead.

The hull stands as shown in Service News No. 3 are to be used. Some Distributors have found that by adding four casters to each stand it is considerably easier to move about the hangar. The additional height also permits the gear to be retracted without deflating the oleos.

W. H. Ehmann
Service Manager

June 16, 1947 No. 33

PILOTS CHECK LIST

In the past there have been a number of instances of pilots bringing their airplanes in for a wter-landing with the landing gear in the extended position. Severe damage to the airplane was the result in almost every case of either the accident of the slavage operations which followed. Though to this time there have been no major injuries incurred through accidents falling in this category every means of preventing such an occurrance should be exercised.

For several months Republic has had the matter of increasing the warning system to include some element in addition to the landing-gear position light under advisement. An audio system was considered and rejected due to the potential confusion existing in relation to the differences in land and amphibious operations.

Accompanying this notice is a simplified decal check list which can be easily and quickly applied to your instrument panel for ready use. Forming the habit of referring to this list prior to making your approach will insure you against joining the list of those who "forgot".

THINK

Apply the check list to the instrument panel immediately beneath and between the airspeed and bank and turn indicators. Soak the decal in water for approximately 2 minutes then slide the face into position on the panel.

W. H. Ehmann
Service Manager

June 19, 1947 No. 34

THROTTLE CONTROL CLAMP ON PORT FUEL PUMP

It is recommended that all Seabee owners check the throttle control clamp mounted on the port side of the fuel pump to insure that the throttle control casing is held rigidly. Two instances have brought to our attention where the control casing apparently took on a permanent set after a period of time and permitted the throttle control to slide back and forth, thus varying the carburetor setting in flight. If this condition is found to exist, it is advised that friction tape be wound around the control to insure that clamping action is retained. It is also suggested that this item be checked at each 25 hour inspection.

W. H. Ehmann
Service Manager

July 17, 1947 No. 36

BLADE EROSION

Hartzell Propeller Company has advised that they have developed an armored tipping for the outer 8 inches of the blade. This can be installed on any blade at the Hartzell factory. They advise that the standard price for the tipping alone is $6.25 per blade while refinishing the entire blade if necessary costs an additional $3.00.

It is important that the blades be retipped before the water errodes the plastic blade as the damage is then often beyond repair. Therefore it is recommended that the blades be checked periodically so that corrective action can be taken if necessary.

A number of distributors have propeller blades and hub assemblies which can be rented while the original propeller is undergoing repair. This assembly can be exchanged on an airplane in a matter of twenty minutes thereby eliminating the need for keeping the Seabee idle.

MAINTENANCE TIPS

To prevent water from entering the blade assembly and causing corrosion and propeller malfunctioning, it is recommended that the propeller be placed in the horizontal position whenever the airplane is moored out of doors.

It is also recommended that at each preflight the propeller be cycled into full reverse pitch four or five times. If the airplane is not being used daily, the engine should be run and the propeller operated preferably twice a week and at least once a week to keep the parts operating satisfactorily.

It has been determined from service experience that the propeller will give better performance if greased every ten hours or more often if the airplane is not used daily.

W. H. Ehmann
Service Manager

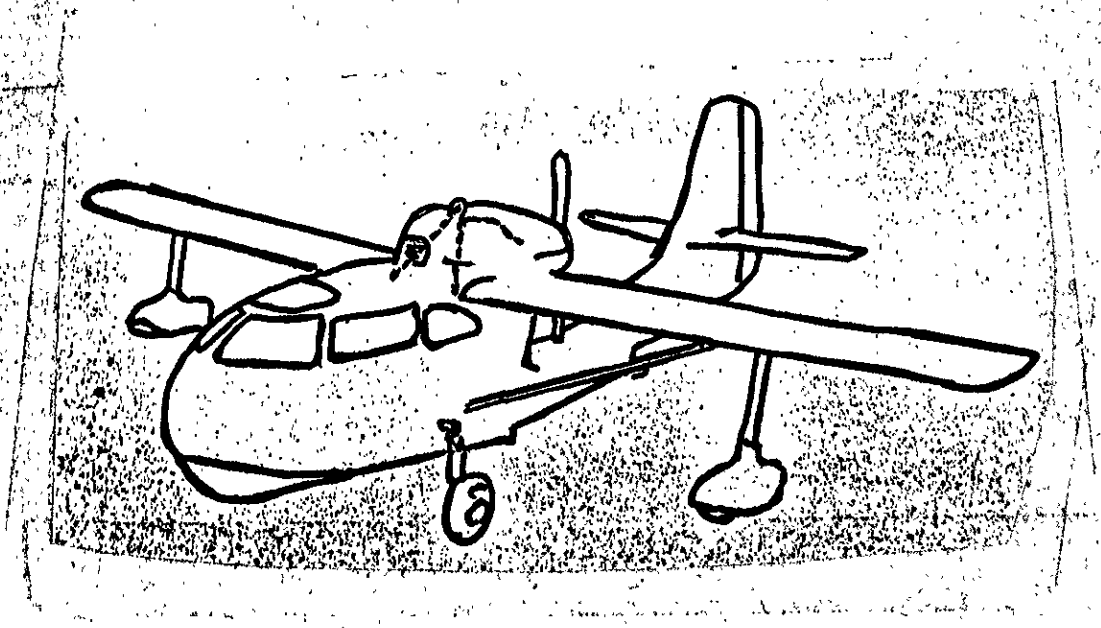
July 18, 1947 No. 37

SEABEE HOIST SLING

Because of the number of requests from Seabee owners, a hoist sling has been designed for a 4G full gross loading and C.A.A. approval obtained for installation in the Seabee. This sling is a semi-permanent installation as it is attached to internal structure except for the shackle which protrudes from the top of the forward engine cowl. Two tie rods anchor the shackle to the forward cross-tie while a third rod picks up an engine case bolt thereby stabilizing the assembly. A canvas cover prevents tain or water spray from entering the hole in the cowl.

Kits containing all necessary parts and instructions may be ordered under Spare Parts, Item 1528, Hoist Sling Kit, for a list price of $42.83. Based on several installations made at the factory, it is estimated that the installation of this sling will require approximately 16 man-hours.

W. H. Ehmann
Service Manager



July 23, 1947 No. 38

PATCHING SEABEE SEAT BLADDERS

The B. F. Goodrich Company, who manufacture the seat bladders for the Seabee, have outlined a repair procedure given below. The A-208-B cement which they recommend be used may be procured direct from B. F. Goodrich, Akron, Ohio.

"1. Cut disc from Koroseal film sheet (material seat bladders are made of) approximately 1/2" larger than the hole or tear to be repaired.

2. Cement both the surface to be repaired and the side of the patch to be applied with two coats of A-208-B cement. Let dry 5 minutes between each coat.

3. Apply patch, press patch and surface of bladder together by placing weight enough on it to hold in place for several hours while cement is drying."

While testing this procedure it was found that the cement made the patching disc wrinkle and curl up so that it was practically impossible to apply it; therefore, the patch was finally successfully applied using cement only on the surface of the bladder.

W. H. Ehmann
Service Manager

July 23, 1947 No. 39

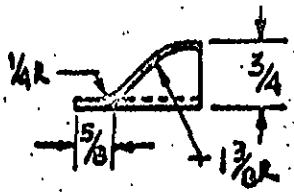
INSTALLATION OF LOUVERS IN BAGGAGE COMPARTMENT TO PROVIDE ADDITIONAL COOLING

An installation of louvers for the baggage compartment has been designed to provide additional cooling for the cabin by exhausting the heat in the baggage compartment. This installation consists of the addition of a louver on either side at the forward part of the baggage compartment and a screen covering an opening on either side of the aft end of the baggage compartment. As no production parts are available for kits for this modification, we are including details for making the necessary parts as well as installation instructions.

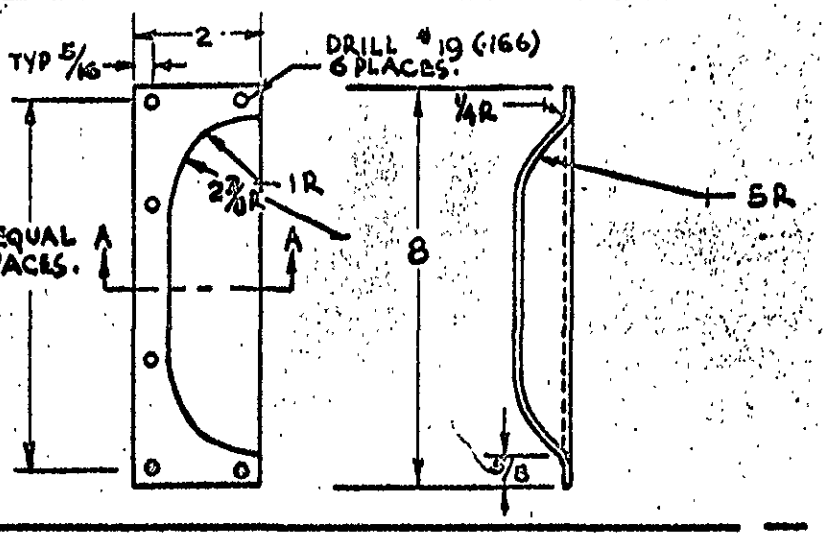
Although no parts are available for this installation, flight tests have shown a reduction of 15 to 25 degrees Fahrenheit in the baggage compartment.

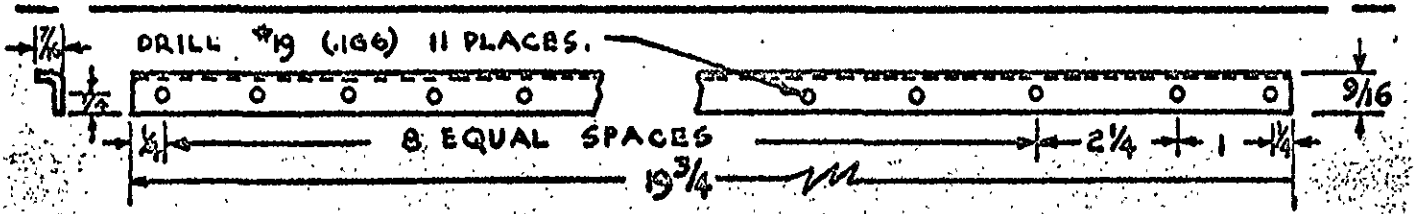
W. H. Ehmann
Service Manager

LOUVRE DETAIL
.051 ALCLAD SHT.

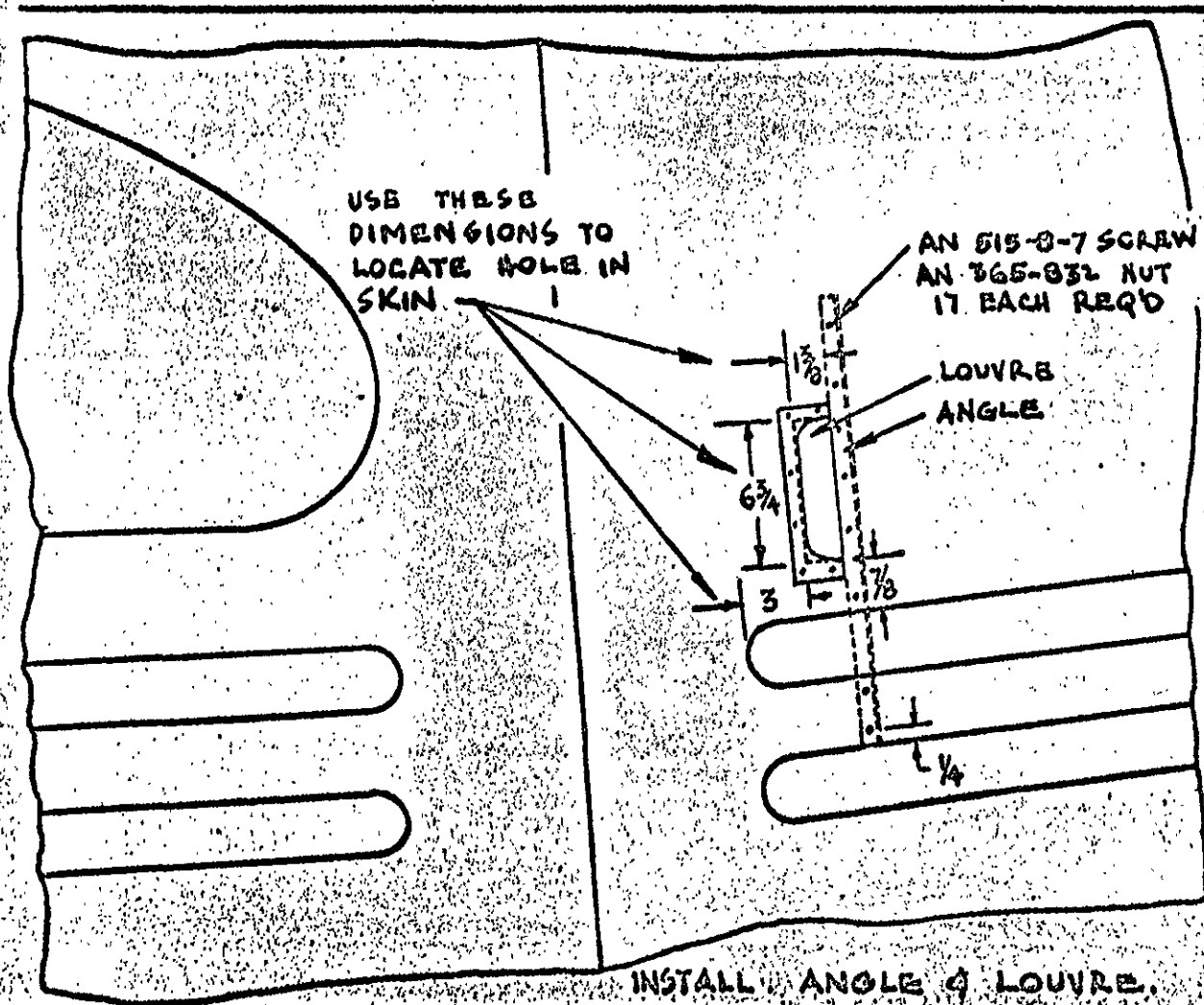


SECTION A-A

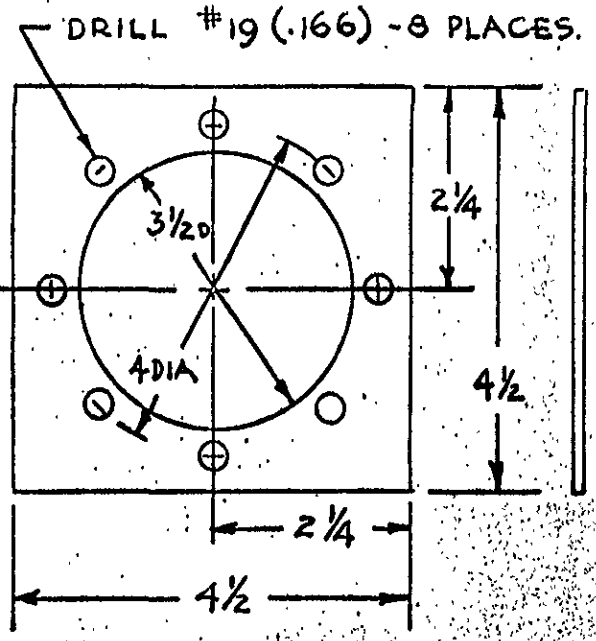




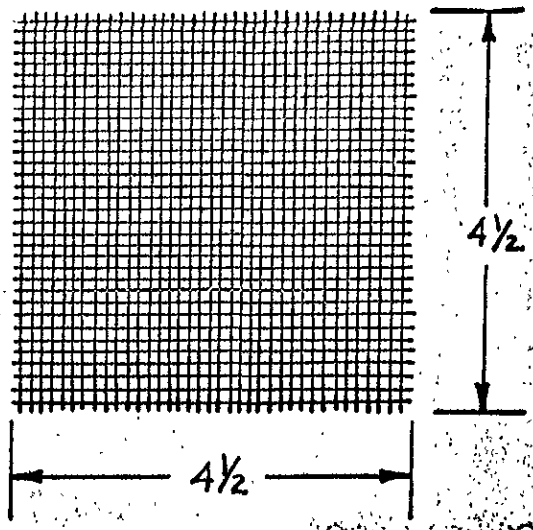
.051 ALCLAD - ANGLE LEFT HAND SHOWN - RT. HAND OPPOSITE



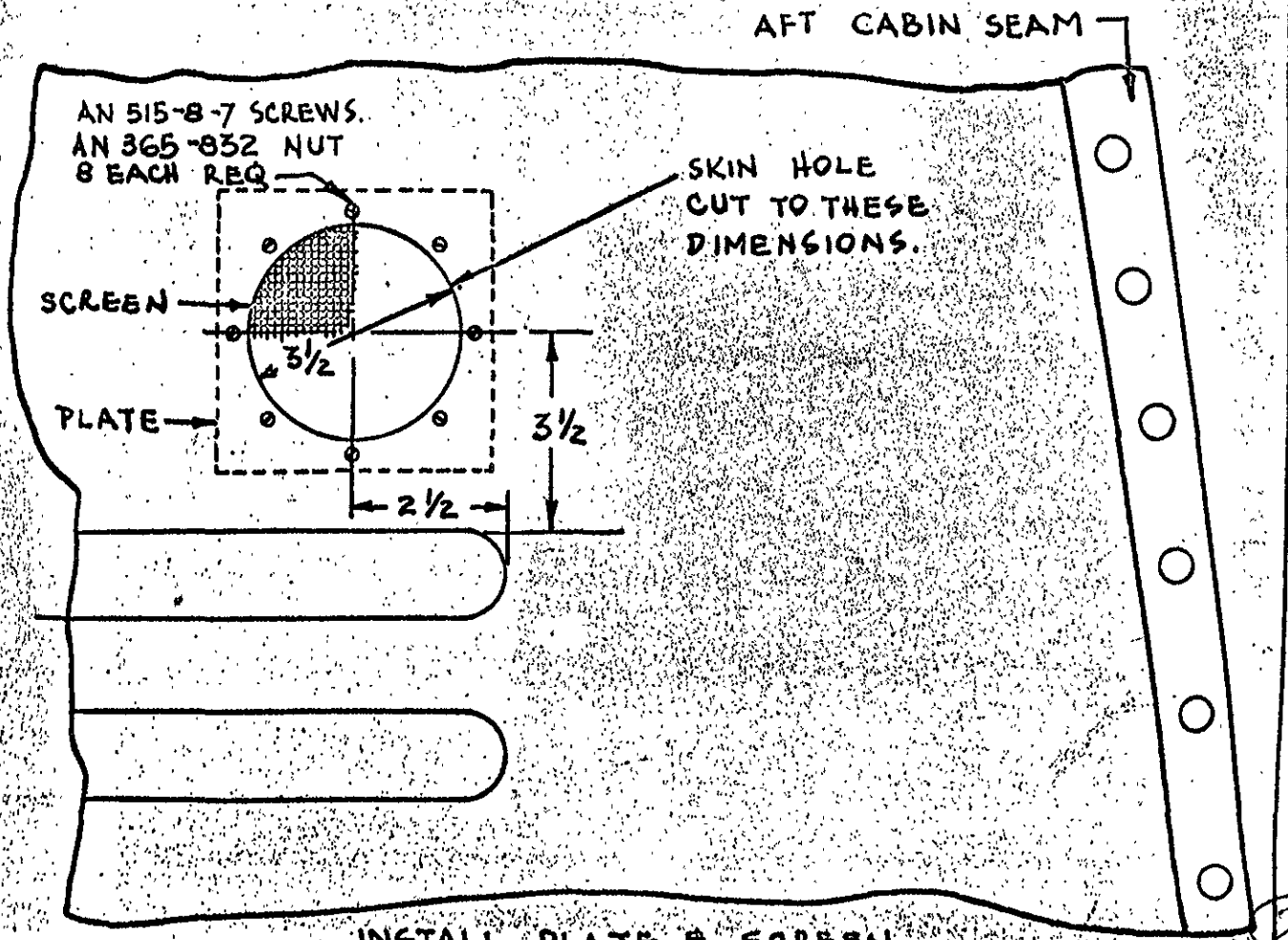
INSTALL ANGLE & LOUVRE.



MATERIAL .040 ALCLAD SHEET.
2 REQ'D
PLATE.



⅛ MESH-WIRE. 015 TO .020
2 REQ'D
SCREEN.



INSTALL. PLATE & SCREEN.

July 25, 1947 No. 40

TAPING OF FUEL LINE

In order to avoid any direct contact between the fuel line at the intake side of the left fuel pump and the throttle control casing, it is recommended that this fuel line be taped for a length of 1-1/2 inches on the low side of the bend and coated with shellac.

REMOVAL OF FUEL STRAINER BLAST TUBE

It has been found that the fuel strainer blast tube may be deleted. This has been done on the latest productions Seabees. Due to a few isolated cases of the fuel strainer blast tube chafing the fuel strainer, it is recommended that the blast tube be removed at your convenience to obviate the possibility of chafing the strainer.

W. H. Ehmann
Service Manager

SeaBee Service News
Republic Aircraft Corporation.

July 28, 1947

No. 41

Subject: Airspeed Calibration.

On SeaBees with the pitot tube on the cabin roof instead of on the outboard end of the wing, it has been found that the airspeed indicator readings are affected by opening the cabin vents because of the pitot Installation having its static side vented inside the cabin. The calibration with vents closed is in very close agreement with that obtained on earlier aircraft with the pitot tube on the wing and incorporated in the C.A.A. approved Airplane Flight Manual.

At high speed, opening the vents reduces the airspeed indicator reading by 3 M.P.H. while in the low speed range, opening all vents causes a 6 M.P.H. reduction in reading. Opening only the forward vents produces a 3 M.P.H. change.

It is recommended that owners of all SeaBees with the pitot tube on the cabin roof check their airplanes for this condition and make the necessary allowances for airspeed indicator readings when necessary.

Seabee Service News

REPUBLIC AVIATION CORPORATION
FARMINGDALE, LONG ISLAND, NEW YORK
SERVICE DEPARTMENT

No. 43

Revised
September 21, 1956
By AMERICAN AVIATION CORPORATION
Tri-City Airport
FREELAND, MICHIGAN

PROPELLER COUNTERWEIGHTS

There are three types of counterweights now in service on Hartzell Propellers, one of standard length, one extra long and one of standard length but which has been relocated and notched for clearance. These counterweights were changed in order to compensate for the greater forces required to return the propeller to high pitch when the actuating cylinder was increased in diameter from 7" to 10". A few propellers were delivered with large cylinders but with the smaller counterweight. This in conjunction with any increase in internal friction results in marginal forces to push the blades into the high pitch position in flight. However, the condition can be remedied by adding a 1/8" slug to the end of the small counterweights (only when used with a large cylinder.)

The small counterweights can be identified by measuring the longest length which is 4.500 inches. The long counterweights measure 4.650 inches. The relocated counterweights are identified by the large notch cut in the side.

It should be noted that engines serial No. 23280 and below must have the small (7") cylinder with the 4.50" counterweight as the hydraulic and counterweight forces will damage the washer-type reverse thrust bearing. Later engines which have a ball-type thrust bearing can have any combination of propeller.

To clarify the permissible combinations, the following list is presented. First identify the group into which the airplane falls by the engine serial number. Then, determine which propeller cylinder and counterweight combination exists.

1. Engine 23001 to 23280 inclusive:
(Except those modified to permit full reverse thrust)

Must have Hartzell Model HC-12x20-2 propeller: 7" diameter cylinder with standard (4.50") counterweights. The larger cylinder or longer, or notched counterweights, cannot be used. This group of airplanes is restricted to 1750 RPM in reverse.

2. Engines 23281 and up:
(Also those of Group 1 which have been modified at overhaul to permit full reverse thrust.)

(Full reverse RPM of 2500 is permitted with combinations "a", "d" and "e" only.)

(a) Model HC-12x20-2: 7" diameter cylinder with standard (4.50") counterweights only. (Long or notched counterweights cannot be used with 7" cylinder.)

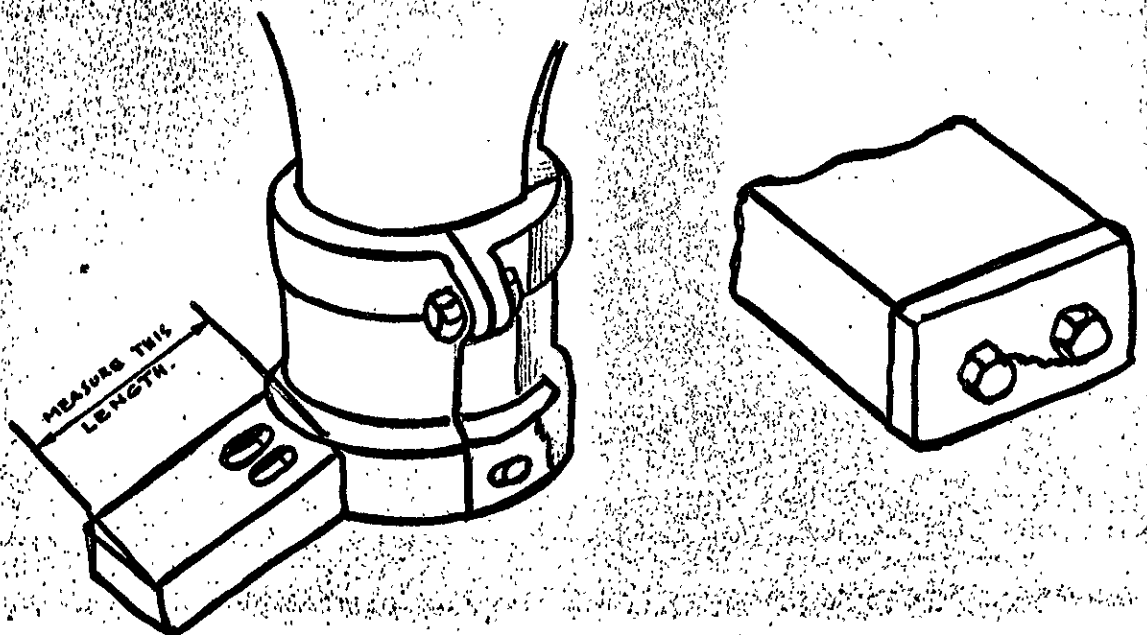
(b) Model HC-12x20-3: 10" diameter cylinder with long (4.650") counterweights. (Engines in this group using long counterweights must be restricted to 2300 RPM in reverse.)

(c) Model HC-12x20-3B: 10" diameter cylinder with standard (4.50") counterweights must be converted to the -3A model by adding slugs to these counterweights. (Reverse RPM must then be restricted to 2300.) A Service Bulletin will be prepared by Hartzell on this item in the near future.

(d) Model HC-12x20-3C: 10" diameter cylinder with relocated (notched) counterweights.

(e) Model HC-12x20-3E: 10" diameter cylinder with relocated (notched) counterweights.

The 1/8" slugs which are to be added to 2 (c) above, can be procured from the Hartzell Propeller Company, Piqua, Ohio at no charge. They have offered to modify any propeller requiring slugs at their factory free of charge. The Hartzell model numbers above have just recently been agreed upon by CAA and Hartzell, so all propellers do not have that identification at present.



September 8, 1947 No. 44

CHECK FUEL, OIL AND HYDRAULIC LINES UNDER BAGGAGE COMPARTMENT FLOOR

Due to the proximity to each other of the fuel, oil, and hydraulic lines as well as electrical wiring on the right hand side of the baggage compartment under the wooden baggage compartment floor, it is recommended that at the earliest opportunity the floor be removed and the lines and wiring carefully checked for chafing and excessive vibration. This inspection should be made not later than the next 25-hour inspection and should be included in each periodic inspection thereafter.

On Seabee Serial No. 425 and subsequent airplanes, the two lines running down the forward side of the vertical stiffener and then forward through the lower right hand corner of the baggage compartment wall are fuel lines from the fuel pumps to the fuel pumps to the fuel pressure gages. The line running down the aft side of the same vertical stiffener and following the smae route as the fuel lines is an engine oil line running to the oil pressure gage. The two lines running fore and aft along the bottom are hydraulic lines to the tail wheel. The remaining item is a conduit of wires running across the lower end of the baggage compartment wall from right to left. Check all these items for possible chafing and excessive vibration. It is advisable to run the engine while making a vibration check.

W. H. Ehmann
Service Manager

SeaBee Service News

Republic Aviation Corporation

September 9, 1947

No. 45

Subject: Wing Float strut braces

The design of the wing float strut is adequate for normal usage. However, for unusually heavy loads a brace has been developed which will double the ability of the strut to take excessive side loads such as are imposed during drift or rough water landings. This brace, which attaches to the wing lift strut fitting and the bottom of the float strut, is designed so that two rivets will shear before a heavy side load could damage the lift strut fitting. As this brace also increases the strenght of the float strut in a fore-aft direction, it is necessary to add a reinforcing angle to the rear spar at the inboard end so that an adequate margin of safety is provided between the ultimate strength of the float strut and the point at which the rear spar may crimp. As this change doubles the strength of the float strut, it is strongly urged that the installation be made on all SeaBees.

This change involves installing a brace between the bolt holding the lift strut to the wing and the upper of the three bolts holding float to the float strut. A spacer with two large disc washers is inserted inside the float strut to keep it from collapsing under load.

An angle is bolted to the forward lower side of the rear spar. To install this angle, it is only necessary to lower the flap for access.

The parts required can be procured from your distributor in a kit (spares item 1570) at the factory cost of net no discount.

The installation on both wings can be accomplished in approximately six man-hours.

September 15, 1947 No. 46

DO NOT OVER-INFLATE SEAT BACK BLADDERS

An appreciable number of seat back bladder leaks have resulted from over-inflation due to temperature rise and high altitude which causes expansion of the contained air. Therefore, if the bladders are pumped up to capacity there is no room for expansion and bladder failures are the ultimate result.

It is recommended that the bladders be pumped up to about one-half capacity for best service endurance. Under no circumstances should they be inflated to the point where the air in the bladders is under pressure.

W. H. Ehmann
Service Manager

(51.)

September 24, 1947 No. 47

HEATER KIT ANNOUNCEMENT - ITEM 1492

With cold weather approaching, we have received numerous requests for cabin heaters. Heater kits will be available for delivery starting approximately November 15th, providing a firm purchase order has been received at Republic through your Distributor prior to October 15th.

This heater kit, Spares Item 1492, lists at $193.44, and requires approximately twenty-four manhours to install. The heater unit consists of a heater and blower assembly installed in the nose forward of the instrument panel. The kit also contains all necessary electrical and fuel system parts, plus the hardware and brackets for installation. Complete installation instructions are packed with each kit. Installation of the heater kit permits removal of twenty (20) pounds of ballast from the airplane.

Orders for heater kits will be filled in order of receipt of Distributor's purchase orders, so place your order promptly.

W. H. Ehmann
Service Manager

September 30, 1947 No. 48

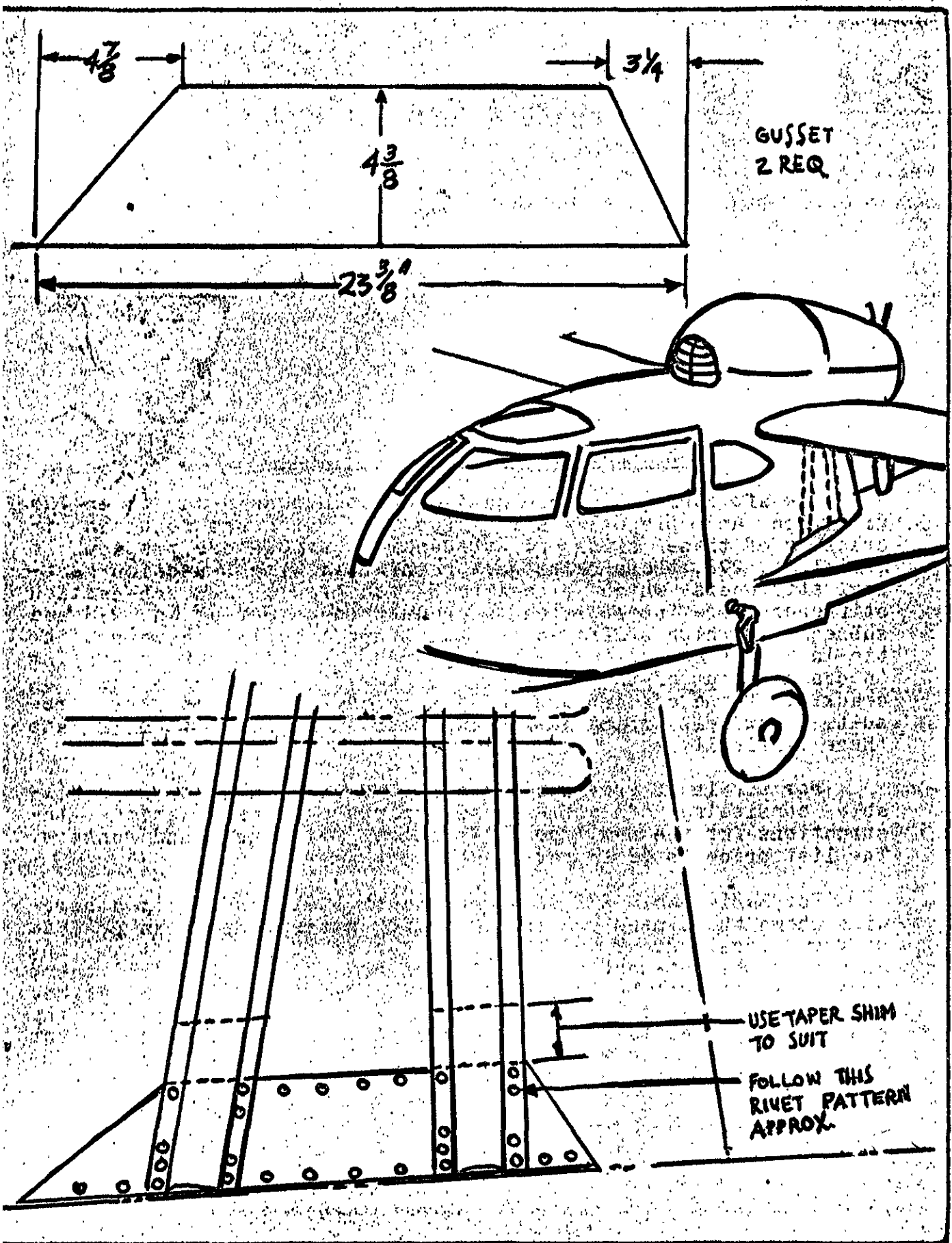
REINFORCEMENT OF AFT CABIN SKINS

The aft cabin skins are subjected to stresses due to engine vibration and propeller air buffeting which has resulted in cracking of these skins and stiffeners. On Seabees previous to Serial No. 278, these skins were reinforced with Z-section vertical stiffeners which proved to be too light. New hat-section stiffeners were incorporated in production on Serial No. 278 and subsequent which stiffened the skins appreciably. However, the tie-in to the angles to the hull proved insufficient, resulting in cracking out of the lower ends of the stiffeners as well as cracking of the aft cabin skins just above the angles. As a result, a new reinforcing gusset has been developed to eliminate these difficulties.

For airplanes previous to Serial No. 278, a kit is available consisting of all necessary parts and installation instructions for the new type hat-section stiffeners and gussets. The list price is $8.15 per kit.

For Serial No. 278 and subsequent, a sketch provided herewith shows the dimensions of the simple gusset which can be made up from local stock and shows the manner of installation. Inasmuch as the hat-section stiffeners are not joggled for these gussets which must be inserted between the stiffeners and skins, it will be necessary to add tapered shims immediately above the gussets in order to prevent creasing the aft cabin skins. Each shim should be held with at least two rivets to prevent its rotation out of place.

W. H. Ehmann
Service Manager


4 7/8
3 1/4
4 3/8
GUSSET
2 REQ
23 3/8"
USE TAPER SHIM
TO SUIT
FOLLOW THIS
RIVET PATTERN
APPROX.

October 13, 1947 No. 49

C.A.A. MANUAL AND PLACARD REVISION

Attached hereto are pages 2a. and 2b. which are published as a revision to the present page 2a. of the C.A.A. Approved Airplane Flight Manual which was issued to you at the time of delivery of your Seabee. Please remove page 2a. of this manual and insert the pages attached hereto.

It will be noted that the revision to the manual was necessitated by the data made available to you in Service News No. 43 "Propeller Counterweights." If upon inspection, it was determined that the propeller cylinder and counterweight combination with which your Seabee is equipped places the assembly into catagory "b" or "c" (Service News No. 43), the Operating Placard on the instrument panel will have to be changed to conform to the -3 Plate (Page 2b, revised pages of C.A.A. Flight Manual).

A reproduction of the -3 Plate is made available herewith and, where applicable, should be cut-out and pasted to the panel of the airplane to supercede the decal that was on the panel at delivery. This should be done immediately.

In the event a decal of the -3 Plate is desired, a request for the same should be made thru your distributor to whom they will be supplied at no charge.

WARNING

REVERSING PROPELLER IN FLIGHT PROHIBITED

MAX. RPM 2300 IN REVERSE PITCH

OPERATE REVERSE LEVER IN LOW PITCH ONLY

(CUT OUT ABOVE ONLY)

WARNING

REVERSING PROPELLER IN FLIGHT PROHIBITED

MAX. RPM 2300 IN REVERSE PITCH

OPERATE REVERSE LEVER IN LOW PITCH ONLY

-3 PLATE

Bote: Same as -2 plate except being applicable to airplanes with the following propeller hub and counterweight conditions:

(a) HC-12x20-3 hubs
10" cylinder with 4.650" counterweights (2,300 RPM)

(b) HC-12x20-3A hubs
10" cylinder with 4.50" counterweights to which have been added the 1/8" slugs (2,300 RPM)

F. BAGGAGE PLACARD

BAGGAGE COMPARTMENT LIMIT
200 LBS.

DO NOT PILE ABOVE BOTTOM EDGE OF DOOR FRAME

FOR LOADING INSTRUCTIONS SEE OPERATING MANUAL

G. STALLING SPEEDS (SEE TABLE 5)

TABLE 5 STALLING SPEEDS

	FLAPS	GEAR	CATEGORY	
			NORMAL	UTILITY
Power off Stall	Up	Up	61 mph TIAS	53 mph TIAS
Power off stall	Down	Down	58 mph TIAS	47 mph TIAS

November 6, 1947 No. 50

SEABEE APPROVED FOR USE ON SKIS

Approval has been obtained from the C. A. A. for operating the Seabee on skis in the United States and from the Department of Transport in Canada.

There are two types of skis which are available. Skis manufactured by the Federal Aircraft Works, 3456 North Mississippi Drive, Minneapolis 12, Minnesota are approved for use in the United States by the C. A. A., and in Canada the Department of Transport. Skis manufactured by Northwest Industries Limited, Municipal Airport, P. O. Box 517, Edmonton, Alberta, Canada have been approved for use by the Department of Transport in Canada only. C. A. A. acceptance tests for use in the United States have not been conducted to date.

Republic is not handling the sale of ski kits. Contact the ski manufacturers directly for kits and installation instructions.

Skis on the Seabee are not to be retracted in flight. Therefore, a locking clamp should be installed on the landing gear control lever on the Powerpak to prevent inadvertent retraction. Also, a warning placard should be installed on the instrument panel.

W. H. Ehmann
Service Manager

December 11, 1947 No. 51

CORROSION PREVENTION TREATMENT FOR CABIN DOORS

Recently several instances of Seabee cabin doors showing signs of corrosion were brought to our attention and the condition was subsequently investigated as to cause and cure by our research laboratory.

This corrosion is related to the fact that under unusual atmospheric conditions condensation may occur between the inner and outer shells of the spotwelded doors.

In view of the above it is recommended that all Seabee owners inspect their airplanes to assure themselves of the inclusion of 1/4" holes in the lower rear corner of each door in conformance with the accompanying illustration.

In order to further insure the airplane against the possibility of the deterimental effects of condensation the following prodedure may be adopted after accomplishing the above.

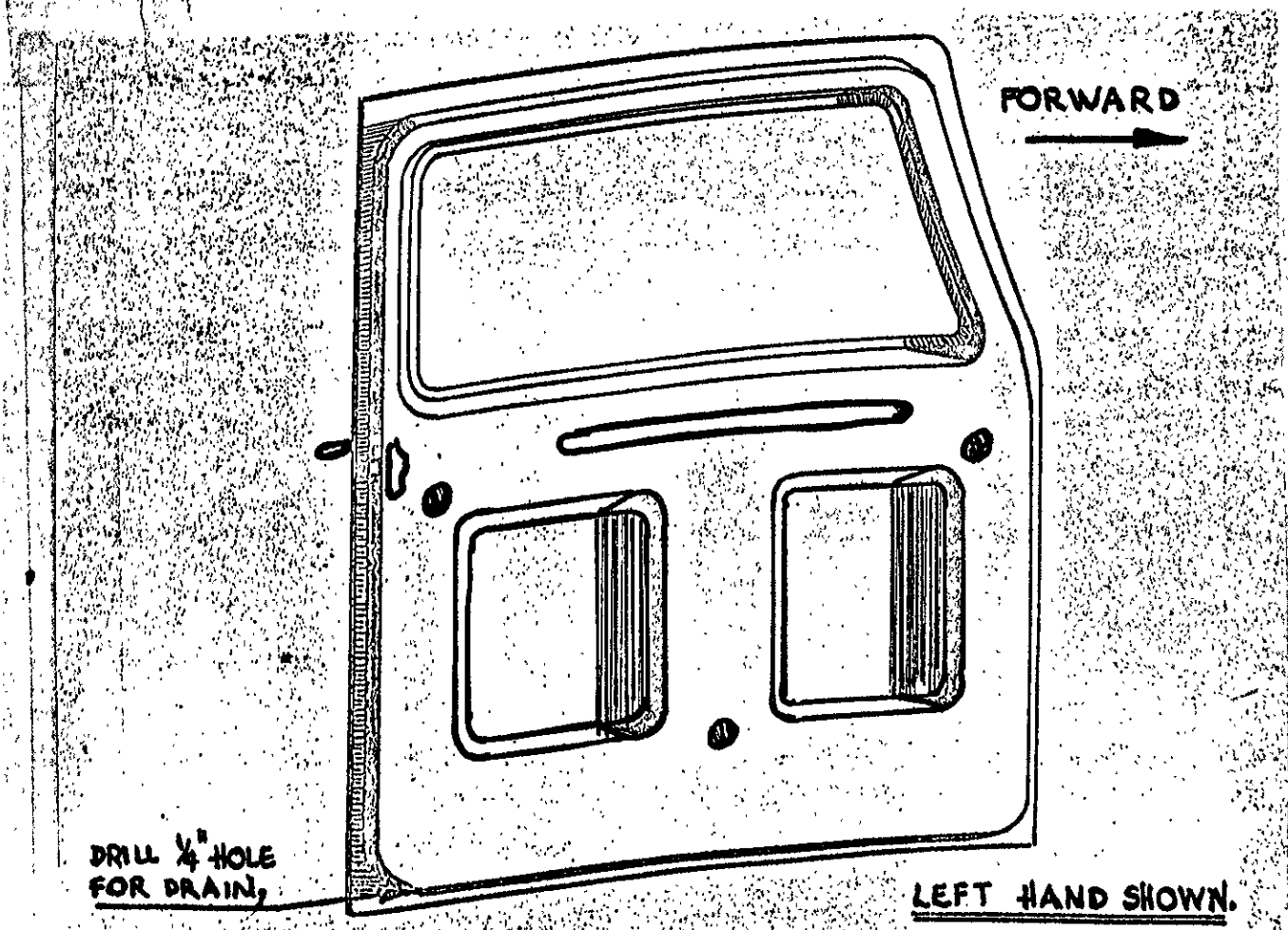
1. Remove the door to be treated from the airplane by pulling the hinge pins.
2. Remove the upholstery from the door.
3. Fashion a plug from ordinary cork to seal temporarily the drain hole.
4. Mix a solution of 2-1/2 lbs. of Sodium Dichromate with 1-1/2 gals. of warm water. (Standard commercial quality Sodium Dichromate retails at approximately 10 cents per pound.)
5. Position the door with the outer shell down and pour the solution into the doors thru the (2) 1-13/32" holes in the inner shells. Fill the door slowly to the saturation point and permit to soak for approximately 1/2 hour.
6. Remove the plug from the drain hole and partially raise door to an upright position permitting the excess solution to drain for a minimum of 12 hours.

7. When dry replace the upholstery and reassemble door to cabin.

Repeat the above process for each of the 3 doors.

NOTE: The solution will cause a stain if it comes in contact with any visible surface. However, in the event such contact does inadvertently occur it will have no ill effect on the metal and can be painted over.

W. H. Ehmann
Service Manager



November 24, 1947 No. 52

DEFECTIVE FIRE EXTINGUISHERS

We have been advised by the Pyrene Manufacuring Company that due to defective material used in the production of some of their Pyrene hand extinguishers during 1946 and the early part of this year, some units haven proven inoperative.

Adjustment will be made after examination of any new extinguishers which are found mechanically defective. If necessary to make any such returns we suggest you advise the Pyrene Manufacuring Company, Service Department, Newark 8, New Jersey by letter, when and how such shipments are returned.

W. H. Ehmann
Service Manager

December 12, 1947 No. 53

LIFE PRESERVER SEAT CUSHIONS

You are aware of the fact that the back cushions of both the front and rear seats of the Seabee are life preservers and are easily removable if the occasion arises when their use is found necessary.

It has come to our attention, however, that although it has been general knowledge to the pilot, passengers have not always been advised of this very important fact.

It is therefore recommended that a placard be conspicuously placed in the cockpit drawing attention to the dual use of the cushions or that each be marked "LIFE PRESERVER" at a clearly visible location.

W. H. Ehmann
Service Manager

January 29, 1948 No. 54

LANDING GEAR CLEVIS FITTING INSPECTION AND ADJUSTMENT

Attention is directed to the fact that landings which are made when the main landing gear is not in a completely down and locked position might result in a partial failure of the adjustable clevis fitting connecting the main landing gear actuating cylinder piston to the torque arm.

It is recommended that at the next 25 hour and subsequent 100 hour inspections, this fitting be inspected and if found cracked, elongated or otherwise defective, should be replaced. (Refer to Service News No. 25.)

It is further recommended that as a precautionary measure, the plane be jacked up and the operation of the gear be checked to be sure that the green position light does not come on until the gear is in a down and locked position. If it is not operating correctly, the clevis mentioned above should be adjusted to give the proper throw.

A check should also be made of the hydraulic piston travel adjustment in order to prevent the possibility of the piston bottoming in the cylinder and thereby restricting further motion of the gear toward a full uplocked or downlocked position. This can be accomplished by actuating the gear, while the airplane is on jacks, until it is determined that the gear is in the fully locked position desired and the pump handle is solid. Measure the length of the exposed piston shaft. Remove the clevis pin and measure shaft length when completely bottomed. An overtravel of one or two threads on the shaft end is sufficient. Check both up and down positions as above.

Notwithstanding the above, it is always a good idea to give the pump a few extra strokes to be positive!

Janaury 29, 1948 No. 54

PROPELLER - FLAP OPERATION

"Pouring the coal" to the engine, while the propeller is in reverse pitch, in order to brake the speed, should be confined to such times as the flaps are in the retracted (UP) position. The use of reverse and full flaps results in overstressing the flap hinge-to-wing attachment points and subsequent cracking of the rear spar flange. Three cases of the above have been reported to date.

The above spar failure is not to be confused with the buckling of that detail which occurs when the wing panel is over-loaded, such as colliding with an obstacle or dragging a float.

A hard and fast rule to adopt is to retract the flaps immediately after "touch-down" and leave them there until the ship is at the end of the strip prior to the next take-off.

January 29, 1948

No. 54

CORRECTION TO SEABEE SERVICE NEWS NO. 42

Item (a) under paragraph 2 should read:
"Strona HT-1 (Z-801 Grease)"

Item (c) under paragraph 2 should read:
"Strona LT-1 (Z815 Grease)"

STOP THOSE OIL LEAKS!

Oil leaking past the propeller "O" ring seal No. AN-6227-10 will be eliminated if operators will work the propeller through its reverse action at least during each check-out prior to flight and at intervals if the plant is hangared for any length of time. This will prevent the seal from assuming a set condition which permits the by-pass of oil. If it is found necessary to replace the seal owing to a "flattened" condition, the Hartzell Propeller Company recommends that an AN-6227-11 seal be used in order to provide a tighter fit.

ATTENTION DISTRIBUTORS!

Our mailing list covering Seabee Service News and Bulletins has been revised and the number sent to you in the future will comprise one for each plane recorded for your area, one for each dealer and two additional for your use.

We cannot adequately stress the importance of forwarding Service Information to owners and will be pleased to have you call on us if you have any question regarding the above. In any event we would appreciate receiving a copy of the latest list of known Seabee amphibians in your area.

W. H. Ehmann
Service Manager

April 13, 1948 No. 55

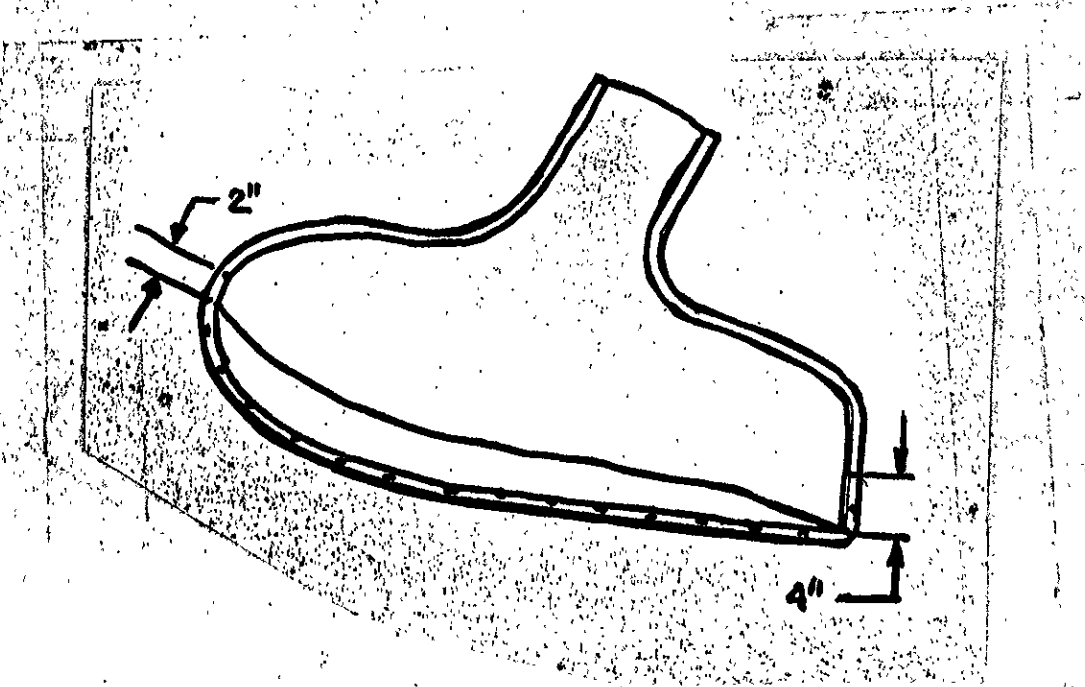
SEAM WELDED WING FLOATS

A few failures of the Wing Float Seam Welded Flanges have been reported to us which have undoubtedly been caused by inordinately hard landings in water or when the Seabee has landed under abnormal and unsafe operating conditions not considered in its design. These resulted in sudden changes in water loads on the floats which flexed the welded seams and eventually permitted them to separate.

It is recommended that if your Seabee has been subjected to either of the above conditions, an inspection be made and any open seams repaired with AN456-AD4 rivets, using a one-half inch pitch extending one inch beyond the ends of the split after applying Zinc Chromate Compound in the crack.

As a precautionary measure and in order to eliminate the possibility of future failures of these assemblies from the same causes AN456-AD4 rivets, with a two inch pitch, may be placed as indicated in the sketch shown below.

W. H. Ehmann
Service Manager



February 23, 1949 Service News No. 56

HYDRAULIC AND FUEL LINE INSPECTION

Inadequate inspection of the hydraulic and fuel lines has resulted in accidents which would have been avoidable if normal care had been exercised in checking their condition as called for in regular inspection procedures.

Especially critical is the condition of those fuel lines adjacent to the carburetor which might through excessive vibration, chafe an engine accessories. This presents a definite fire hazard if corrective action is delayed.

It is recommended that a thorough inspection of all hydraulic and fuel lines be made immediately and at every subsequent twenty-five hour period and that if any are found chafing or in close proximity to another part, the affected section of tubing be protected with friction tape and coated with shellac.

W. H. Ehmann
Service Manager

If you have sold your airplane, please forward this Service News to the present owner.

May 19, 1950

Service News No. 57

PROPELLER CONTROL CABLE LUBRICATION AND ADJUSTMENT

A number of instances have been recorded where malfunctioning of the propeller has occurred as a result of the bending or breaking of the Propeller Control wire inside the flexible cable. According to reports, these failures usually occur at a point where the wire enters the most forward hollow threaded bolt of the two used in the installation.

This condition can result from either lack of lubrication causing the flexible cable to bind or by excessive pinch between the Lever and the Low Pitch Stop Bolt when the control is in the high rpm position. Any unnecessary pressure between the arm and the stop will cause the cable to bend and for that reason the instructions contained in Service News No. 8, which states that the Servo Valve Arm should just touch the Low Pitch (high rpm) Stop Bolt, should be followed and that adjustment maintained.

Attention is drawn to the fact that both the 25 and 50 hour inspection procedures for the Seabee call for oiling and checking the engine controls and that binding of any controls should be discovered when going through the required warm-up routine as outlined in the Seabee Owner's Manual. One never-failing method of keeping the propeller Pitch Control adequately oiled is to "wipe" the oil dip stick across the cable every time the engine oil is checked.

IT IS IMPOSSIBLE TO ITEMIZE EVERY MOVABLE PART OR SURFACE WHICH AT SOME TIME MIGHT REQUIRE THE APPLICATION OF OIL OR GREASE. OPERATORS MUST REALIZE THAT THE PERFORMANCE OF THEIR PLANE DEPENDS TO A GREAT EXTENT ON THEIR PERSONAL RECOGNITION OF THE NEED FOR LUBRICATION AND MUST USE IT AS REQUIRED.

W. H. Ehmann
Service Manager

If you have sold your airplane, please forward this Bulletin to the present owner.

(97)

5. If necessary to obtain this reading, slowly bleed the air valve, rocking the SeaBee at intervals until the desired dimension has been reached.

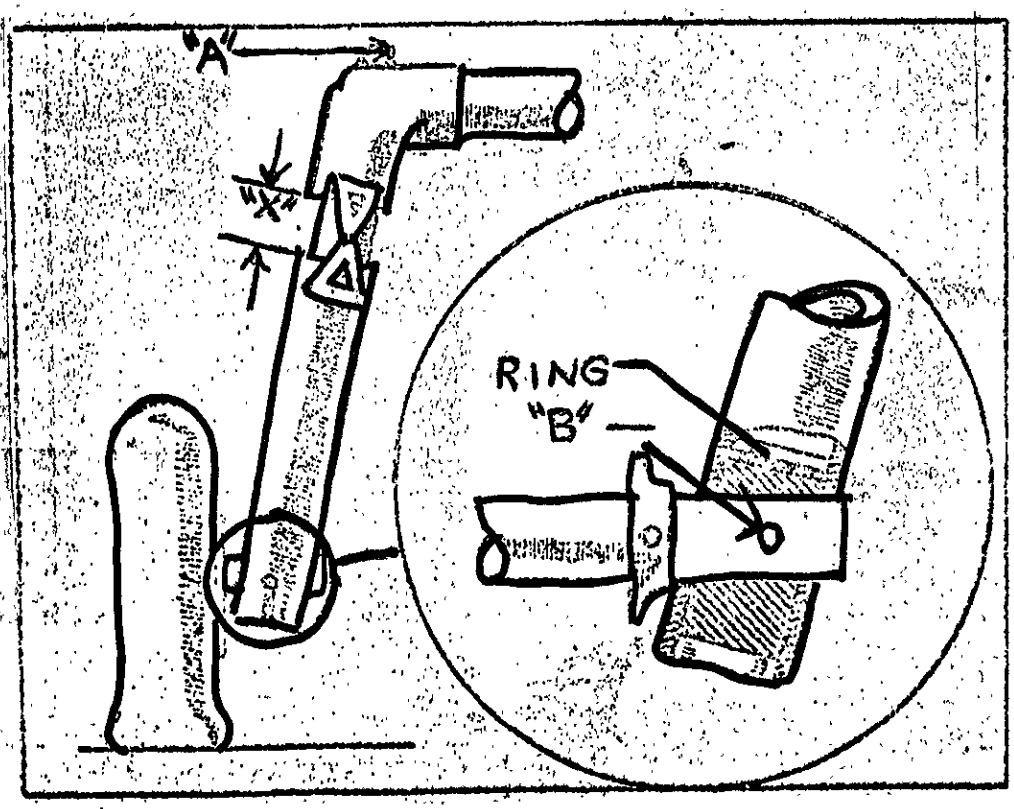
6. Should the gas tanks be full but the airplane otherwise empty inflate to approximately 190-200 psi. Bleed air pressure, rocking aircraft at intervals until the"X" dimension is 5"$\pm \frac{1}{4}$.

7. To service the gear on a jacked-up plane, the strut should be inflated to 53 psi $\pm$ 5. This should indicate full extension or 10-7/16"$\pm \frac{1}{4}$.

Removal of Wheel axle

The proper method of removing the axle from the strut is related to the other phases of strut servicing in that the air must be completely removed from the strut before the axle itself is touched. The air valve body must not only be loosened, but must be removed when sufficient air has escaped to safely permit this. This is necessary because even with the air valve in the open position there still remains enough trapped air to push down on the lower sealing ring as the axle is removed. This force although slight could injure the mechanic performing this operation.

When the air pressure has been removed from the strut, loosen and remove the bolt (B) in the lower portion of the strut and extract the axle. As an added safety precaution, a soft metal mandrel should be used to tap the axle out of the strut.



Hartzell Propeller Company

Sept. 15, 1947

Bulletin No. 3

Subject: Waterproof greases recommended for Model HC-12x20 Prop.

1. Experience has brought to light the fact that water sometimes gets into the propeller blade clamp assembly, particularly on SeaBee installations. This water will mix with certain types of grease and cause them to become hard and chalky in consistency. This may result in poor operation of the propeller, as the blades may become tight on the pilot tubes.

2. A number of greases have been tested for water resistance, tackiness, lubricating properties when mixed with water, and viscosity under various temperatures. The following greases are recommended in the order of listing:

(a) Stroma HT-1(Z-801 Grease)
Union Oil Co. of California

(b) Lubriplate 630 AA
Fiske Brothers, Toledo, Ohio.

(c) Stroma LT-1 (Z-815 Grease)
Union Oil Co. of California.

(d) Lubricate 707
Fiske brothers, Toledo, Ohio.

(e) Mobilgrease Aero
Lo-Hi PD-535-K
Secony Vacuum Oil Co.

3. Other grease previously recommended in the service manual are deficient as to water and should not be used.

4. If the airplane is left out of doors in the rain, the propeller should be horizontal to avoid water getting into the blade clamps.

MANDATORY CHANGE

December 18, 1946

Service Bulletin No. 1

MODIFICATION FIREWALL TERMINAL BLOCK

Reason for Change: To prevent short circuiting of terminal studs on the firewall.

Airplanes Affected: Republic Serial Nos. 5 thru 174 incl. Serial Nos. 175 and up have already had this change accomplished in production.

Description of Change:

This change involves removing each stud from the terminal block on the firewall, enlarging the stud holes, installing a bushing and reinstalling the stud and shall be accomplished as follows:

1. Open top engine cowl and remove right hand side cowl.
2. Disconnect wires from one terminal and remove stud.
3. Open up existing hole by drilling thru with No. "O" (.316) drill.
4. Insert 17F82080-1 Bushing from bottom side. Refer to Fig.1.
5. Reinstall terminal stud and reconnect wires, omitting the AN960-10 washer.
6. Repeat the above process for all seven terminal studs.
7. Replace cowling.
8. Check electrical circuits for operation and make suitable entry in airplane log book.

Parts Required: Parts may be obtained thru your local dealer or distributor at no charge and will be installed free of charge on all airplanes within warranty at the time of modification.

Service Bulletin Kit No. 1 consists of the following:

Quantity	Part Number	Part Name
7	17F82080-1	Vushing

Time Required:

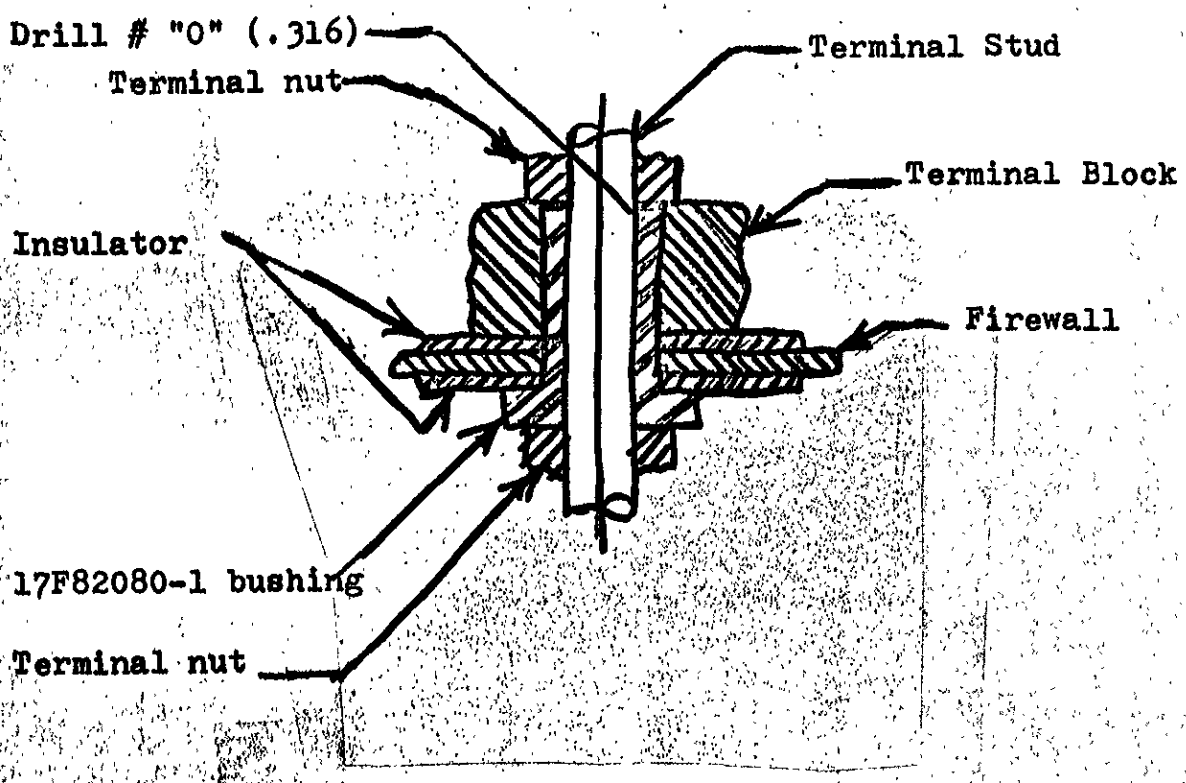
Approximately 2 manhours are required to accomplish this change.

W. H. Ehmann
Service Manager

104

Model RC-3 SEABEE

Firewall Terminal Block Modification



Section Through Terminal Stud

MANDATORY CHANGE

December 31, 1946

Service Bulletin No. 3

INSTALLATION OF NO SMOKING PLACARD

Reason for Change: C. A. A. Requirement.

Airplanes Affected: Republic Seabee Serial Nos. 66 through 239 inclusive. Serial numbers prior to 66 and above Serial No. 240 have already had this change accomplished in production.

Description of Change:

This change involves placing a "No Smoking" decalcomania in the airplane and shall be accomplished as follows:

1. Place the "No Smoking" decalcomania in a conspicuous position in the airplane.

Parts Required:

Quantity	Part Name
1	"No Smoking" decalcomania

W. H. Ehmann
Service Manager

If you have sold your airplane, please forward this Bulletin to the present owner.

Service Bulletin No. 4

REPLACEMENT OF AFT ENGINE LORD MOUNT

Reason for Change: To prevent shearing of rubber bonding on conical halves of the mount resulting from engine static load imposed on them.

Airplanes Affected: Republic Serial Nos. 5 thru 189 Incl. Serial Nos. 190 and up have already had this change accomplished in production.

Description of Change:

This change involves replacement of the present Lord mount assembly with J-2860-5 Lord Engine Mount Assembly and shall be accomplished as follows:

1. Raise top engine cowl.

2. Jack or hoist the aft section of the engine, preferably at propeller shaft housing, high enough to relieve the static load on the mount and align the bolt holes in the engine support bracket with the hole in the mounting flange on the engine. This will make it possible to remove the mounting bolt and will produce proper alignment betweem the mounting bracket and the engine flange for installing the new assembly.

3. Remove the mount bolt, nuts, and washers. Slide the two halves of the mounting brackets aft, and remove the mount assembly which consists of two conical bonded rubber halves and straight metal spacer.

4. Install the new J-2860-5 Mount Assembly consisting of two conical bonded rubber halves, which in appearance are the same as those removed, and the spacer. Before installing the spacer, the rubber spacer ring should be assembled on the spacer by pulling it over the end and sliding it to the center. Install the left hand cone in the engine flange, apex of cone facing inboard, move the left hand mounting bracket flange forward and over this half and start the bolt through the flange and cone. From the right hand side, install the spacer over the bolt and insert the other cone, apex facing inboard. Slide the bolt through the entire assembly. Move the right hand engine bracket forward, backing out on the bolt to allow the bracket flange to side into position and push the bolt thru the entire assembly. Assemble the washer and nut on the bolt. This bolt should be torqued 38 to 42 foot pounds. This completes the change. Refer to Figure 1.

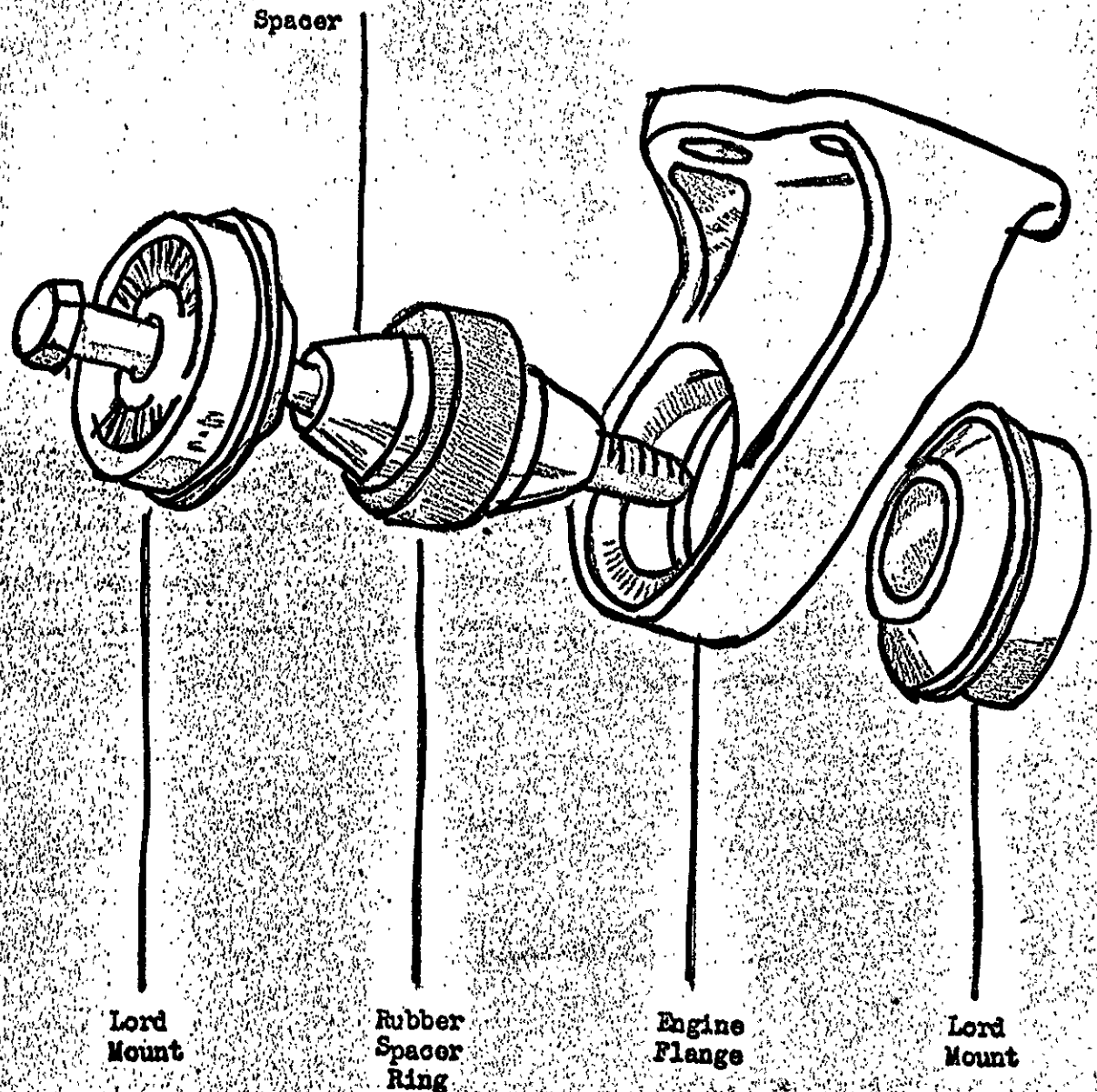
5. Make suitable entry in log book.

Parts required: Parts for this change may be obtained thru your local dealer or distributor at no charge provided removed parts are promptly returned to Republic Aviation Corp. suitably marked as to serial number of airplane.

Service bulletin kit no. 4 consists of the following:

1 ea. J-2860-5 Lord engine mount assembly

Time required: approx. 1 man hour is required to accomplish this change.


Spacer
Lord Mount
Rubber Spacer Ring
Engine Flange
Lord Mount

MANDATORY CHANGE

January 16, 1947
Page 1 of 4 pages

Service Bulletin No. 6

INSPECTION OF RIVETS - ELEVATOR CONTROL COLUMN
(This Service Bulletin has C.A.A. Approval)

Reason for Inspection:

Some Seabess have been delivered with four 5/32 diameter rivets and some with four 3/16 diameter rivets at the forward end of the elevator control push-pull tube. Although with the 5/32 rivets ample margin of safety exists for flight, it is possible to shear these rivets if some unusual stress, such as a heavy vertical load which places excessive torque on the rivets, is exerted on one of the control wheels. Should this occur and not be noticed, a dangerous condition will exist. To prevent this from occurring, the part in question must be inspected as outlined below.

Airplanes Affected:

All Republic Serial Numbers between 5 and 234 inclusive should be inspected. Serial No. 235 and subsequent airplanes have been modified at the factory.

Description of Inspection

Inspect the rivet heads attaching the forked fitting at the forward end of the push-pull tube in front of the instrument panel. If 3/16 rivets have been used the rivet head diameter is .390" (25/64). If 5/32 rivets have been used the rivet head diameter is .312" (5/16). It is recommended that a pair of outside calipers or dividers be set for .390 and used to check the rivet head diameter.

To inspect rivets for looseness, move the control wheel vertically (being certain not to exert too much force) and watch the connection between the push-pull tube and the forked fitting for signs of relative movement.

Action Required:

If the installation has been made with four 3/16 diameter rivets and no looseness is apparent, it can be considered safe to continue flights with no further action. If the rivets appear loose, the tube should be removed and the rivets or control column replaced as per attached instructions before the next flight.

If you have sold your airplane, please forward this Bulletin to the present owner.

(106)

If the installation has been made with four 5/32 diameter rivets and no looseness is apparent, the assembly may be reworked as per attached instructions or flights continued and the Service Department, Republic Aviation Corporation notified so that a replacement part can be forwarded immediately; however, preflight inspections should be made and the modification should be accomplished as soon as possible. If the rivets are loose, the tube should be removed and the rivets or control column replaced as per attached instructions before the next flight.

The rework calls for six 3/16 diameter rivets in place of the original four as an added safety precaution.

Parts Required:

Should it be necessary to replace the control tube, order the following from your local dealer or distributor and it will be furnished at no cost to you, provided the replaced control tube is promptly returned to Republic Aviation Corporation. The installation will be made free of charge on all airplanes within warranty at the time of the modification.

Service Bulletin Kit No. 6 consists of the following:

Quan.	Part No.	Part Name
1	1218	Tube Assy. - Cont. Wheel, Horizontal

W. H. Ehmann
Service Manager

REMOVAL, REWORK AND REINSTALLATION OF ELEVATOR CONTROL TUBE ASSEMBLY

A. REMOVAL

1. Remove co-pilot's control wheel assembly.
2. Remove top of dust cover fairing on pilot's control wheel yoke.
3. Unsafety and disconnect chain on pilot' side of control yoke and clear sprocket on torque shaft assembly.
4. Remove three (3) AN502-416-8 fillister head screws that secure yoke to push-pull tube.
5. Remove yoke and pilot's control wheel assembly.
6. Remove two (2) 1/4" clevis head bolts at forward end of push-pull tube.
7. Remove torque tube connection from universal socket on forward end.
8. Remove push-pull tube assembly by pulling it forward thru instrument panel.

B. REWORK (Only if entire modification is accomplished in field.)

NOTE: Before riveting, place tape over bushings on fork collar to prevent same from being shaken out.

1. Remove torque tube shaft inside of push-pull tube by removing pin and sprocket on aft end of assembly and pulling torque tube shaft out forward end of tube.

2. Four (4) rivets holding the forked fitting on forward end of push-pull tube, if found to be 5/32", will be replaced with six (6) 3/16" rivets, AN456-AD6-6. If four (4) 3/16" rivets are already installed two (2) additional 3/16" rivets may be added (one on each side evenly spaced.

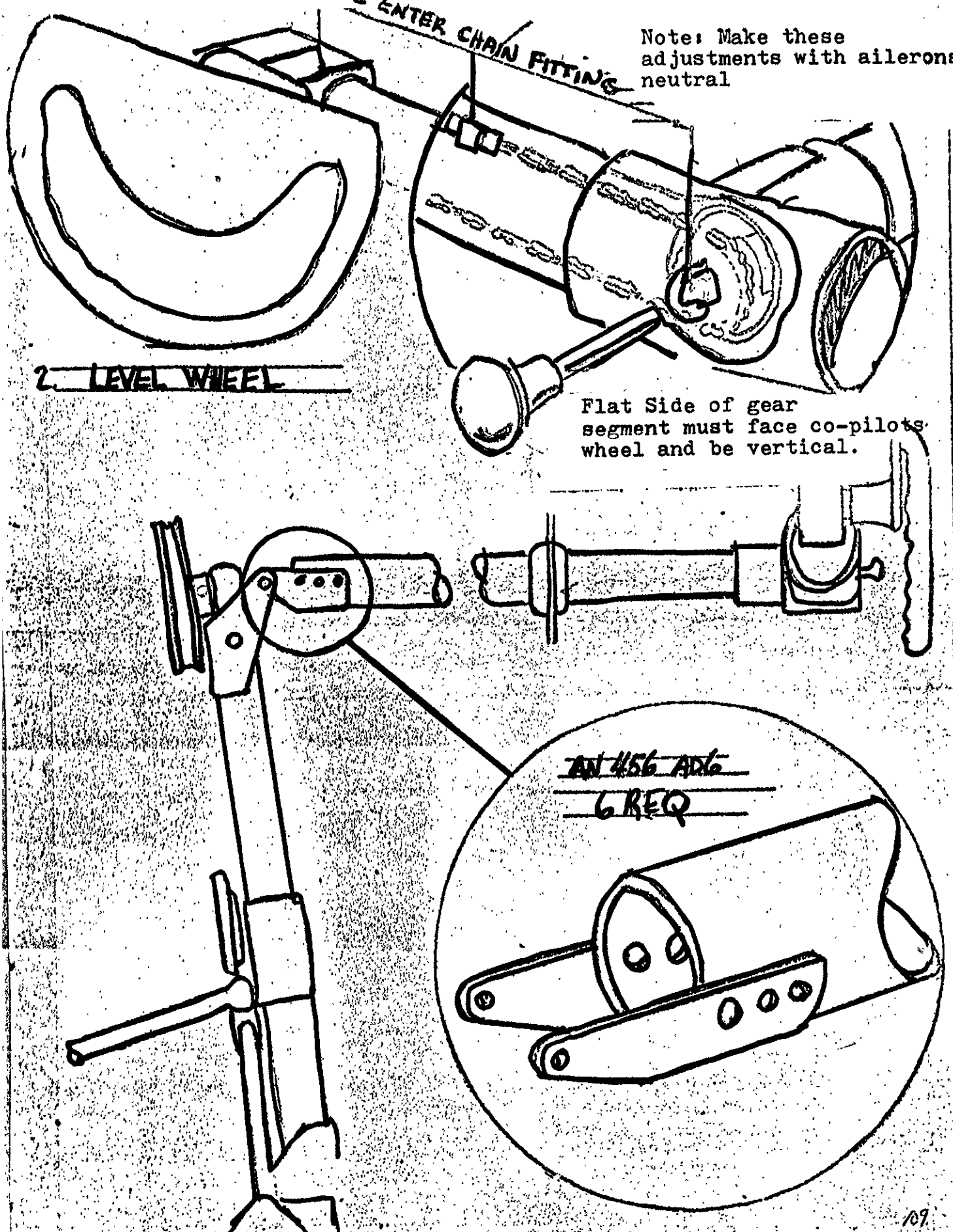
3. Check for satisfactorily formed rivet heads, then reassemble torque shaft and sprocket.

C. REINSTALLATION

1. Install reworked push-pull tube assembly thru instrument panel from forward side.
2. With ailerons in neutral set half moon on rear sprocket of tube assembly in vertical position(to match co-pilot assembly when installed.)
3. Insert universal square into mating socket of pulley.
4. Install two (2) 1/4" clevis bolts, shear nuts and safety (tighten snug then back off one castellation).
5. Install yoke with three (3) AN502 screws and pilot's control wheel. Connect chain making sure wheel is horizontal and ailerons are in neutral. Check for proper aileron travel in both directions and correct tension of chain (tight with free movement of wheel.)
6. Safety chain and fasten dust cover and reinstall co-pilot's wheel and pin.

D. Make proper entry in log.

If you have sold your airplane, please forward this bulletin to the present owner.


CENTER CHAIN FITTING
Note: Make these adjustments with ailerons neutral
2 LEVEL WHEEL
Flat Side of gear segment must face co-pilots wheel and be vertical.
AN 456 AD6
6 REQ

MANDATORY

February 5, 1947 Service Bulletin No. 7

INSTALLATION IMPROVED FUEL STRAINER DRAIN

Reason for Change: To provide a strainer drain which is leakproof, air tight and which does not require safetying.

Airplanes Affected: Republic Serial Nos. 5 thru 250 inclusive. Serial Nos. 251 and up have already had this change accomplished in production.

Description of Change:

This change involves removing present fuel strainer drain cock or plug and installing new drain with adaptor and shall be accomplished as follows:

1. Remove existing drain cock or plug from the fuel strainer located near the right hand wing fairing.
2. Install Adaptor 17P65058-1 in the strainer and install W7600-1/8 Drain Cock in end of adaptor. Use seal-lube when installing these parts.
3. Make suitable entry in log book.

Parts Required: Parts may be obtained through your local dealer or distributor, at no charge.

Service Bulletin Kit No. 7 consists of the following:

Quan.	Part No.	Part Name
1	17P65058-1	Adaptor
1	W7600-1/8	Drain Cock

W. H. Ehmann
Service Manager

If you have sold your airplane, please forward this Bulletin to the present owner.

Service Bulletin No.8

INSTALLATION TAIL WHEEL SIGNAL LIGHT SWITCH

Reason for Change: This change is not imperative but is recommended in order to provide a switch on the tailwheel so that landing gear green light will not be on unless both main gear and tailwheel are down and locked.

Airplanes Affected: Republic Serial Nos. 5 thru 150 incl. Serial Nos. 151 and up have already had this change accomplished in production.

Description of Change:

This change involves removing existing ground jumper from the main gear down switch; installing wires from this switch to tailwheel mechanism; installing new switch at tailwheel and shall be accomplished as follows:

1. Remove cushions from rear seats.
2. Remove access hole cover plate from right hand side of floor under back seat for access to the landing gear down signal switch.
3. Remove wide tunnel section from center of floor at aft end of cabin for access to wires.
4. Remove landing gear down switch located just beneath the cabin floor to left of access hole.
5. Referring to Fig. 1, remove grounding strap #143 from the main landing gear down switch (17F82013-1) and attach wire #75 to the switch in place of the grounding strap just removed. Install switch.
6. Install wires #75, #77 and #78 following the routing of existing wiring to aft end of airplane (refer to Fig. 5). Use 17F82041-2 sleeves to cover wire terminals (where one wire joins the next). Existing clamps in the region of wire #78 which pass thru the compartment just forward of the tail wheel bulkhead from Tinnerman A2981-S-2 to A2981-S-3 if necessary. The existing clamps may be too small.
7. Increase cut-out in frame assembly at hull station 221.31 to provide necessary clearance for tailwheel signal switch as shown in Figure 2.

8. Remove the lower tail wheel actuating link assembly 17F42101 and drill out two upper 3/16" rivets, saving the spacers between the links. Use extreme care not to elongate holes. Locate the new tail wheel signal switch bracket 17F82078 on the forward side of the link assembly with the offset to the right and attach with two AN3-11A steel bolts, original bushings between links, AN960-10 washers and AN365-1032 nuts. Refer to figure 3 for bracket installation.

NOTE: Some of the earlier airplanes had a .260 spacer between the links instead of a .322 spacer. In this case use an extra AN960-10 washer between the nut and the link.

9. Install new Switch Assembly 17F82013-3 to bracket just installed, removing paint under nuts for electric ground. Reinstall link assembly and connect wire #78 to upper terminal screw. With links in down locked position, adjust switch to "make" contact with .005" feeler between upper link and stop on lower link. Refer to Figure 4.

NOTE: Master switch and battery switch must be "ON" (closed) to check tail wheel signal switch adjustment.

10. Check the installation for proper operation and reinstall parts removed to gain necessary access. Make suitable entry in log book.

Parts Required:

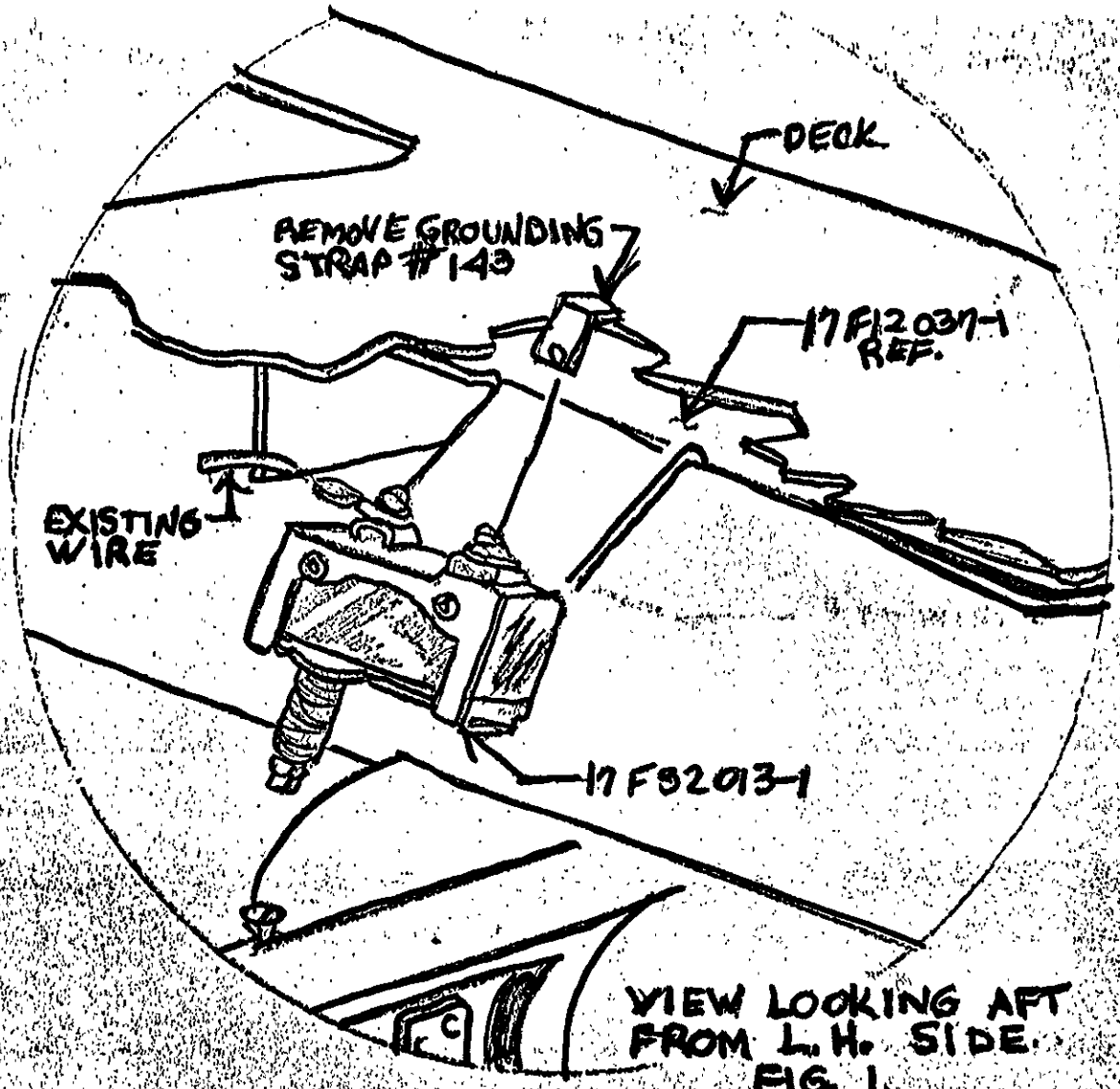
Kit Spares Item No. 1489 **consists of the following:**

Quan.	Part Number	Part Name
1	17F82001	Wire #75
1	17F82001	Wire #77
1	17F82001	Wire #78
1	17F82013-3	Switch Assembly
2	17F82041-2	Sleeve
1	17F82078-1	Bracket
2	AN3-11A	Bolt
2	AN365-1032	Nut
4	AN960-10	Washer
4	A2081-S-3	Clamp (Tinnerman)

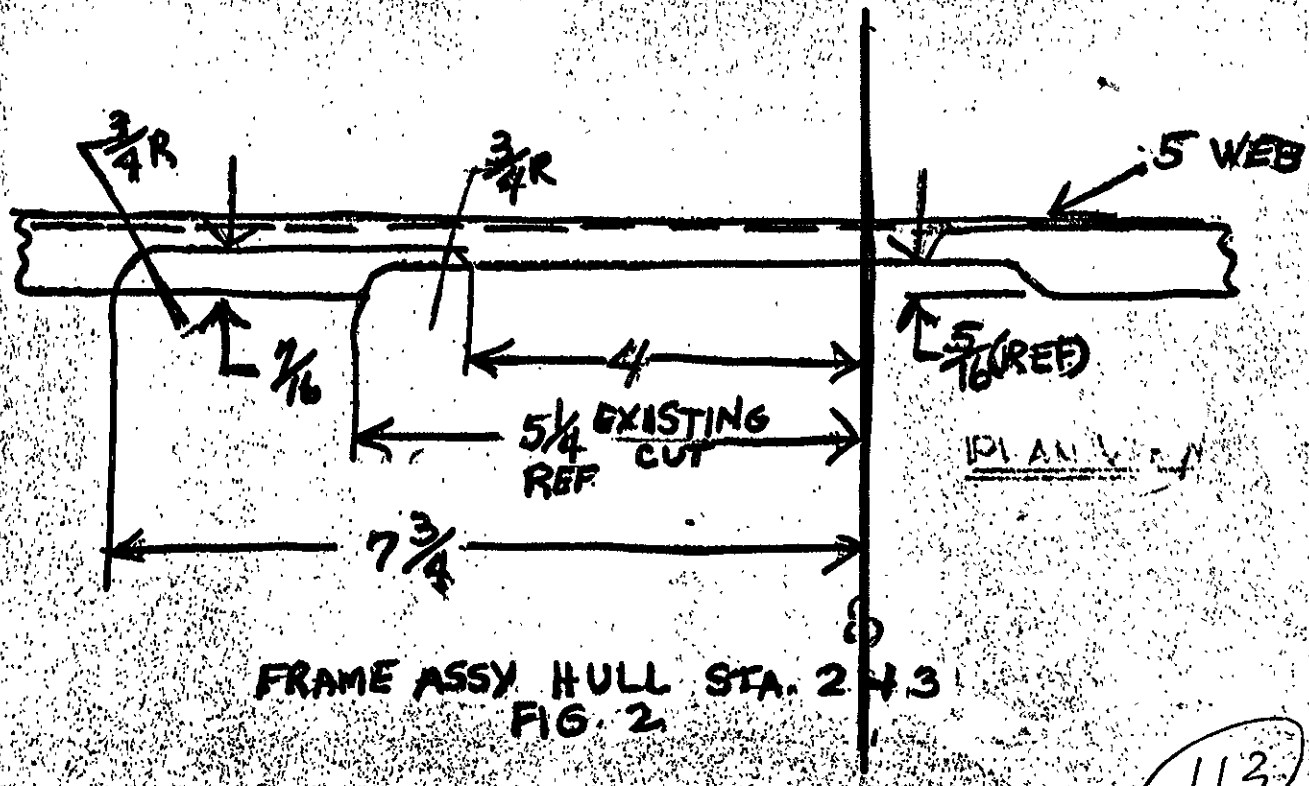
Time Required:

4 manhours are required to accomplish this change.

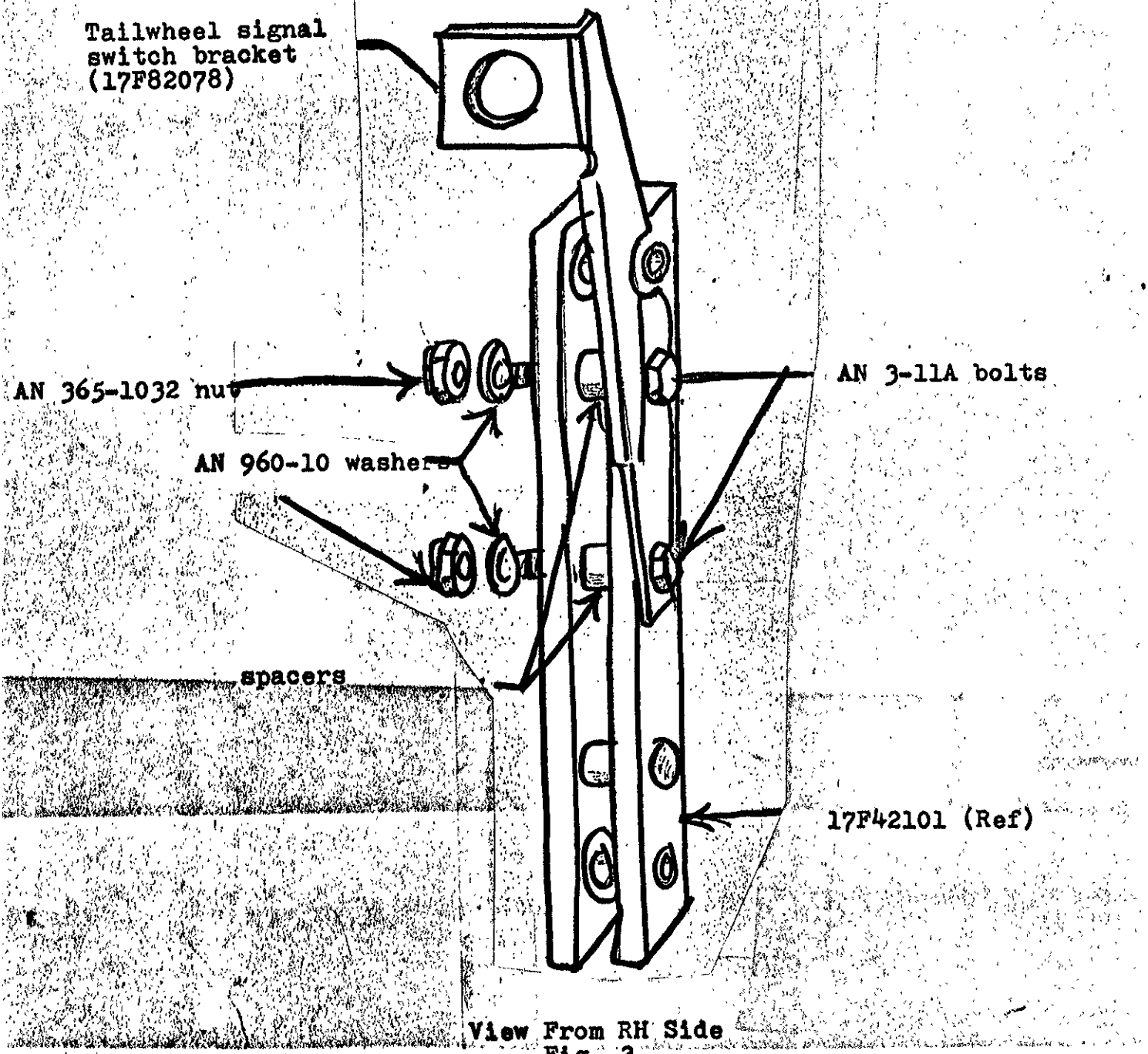
W. H. Ehmann
Service Manager



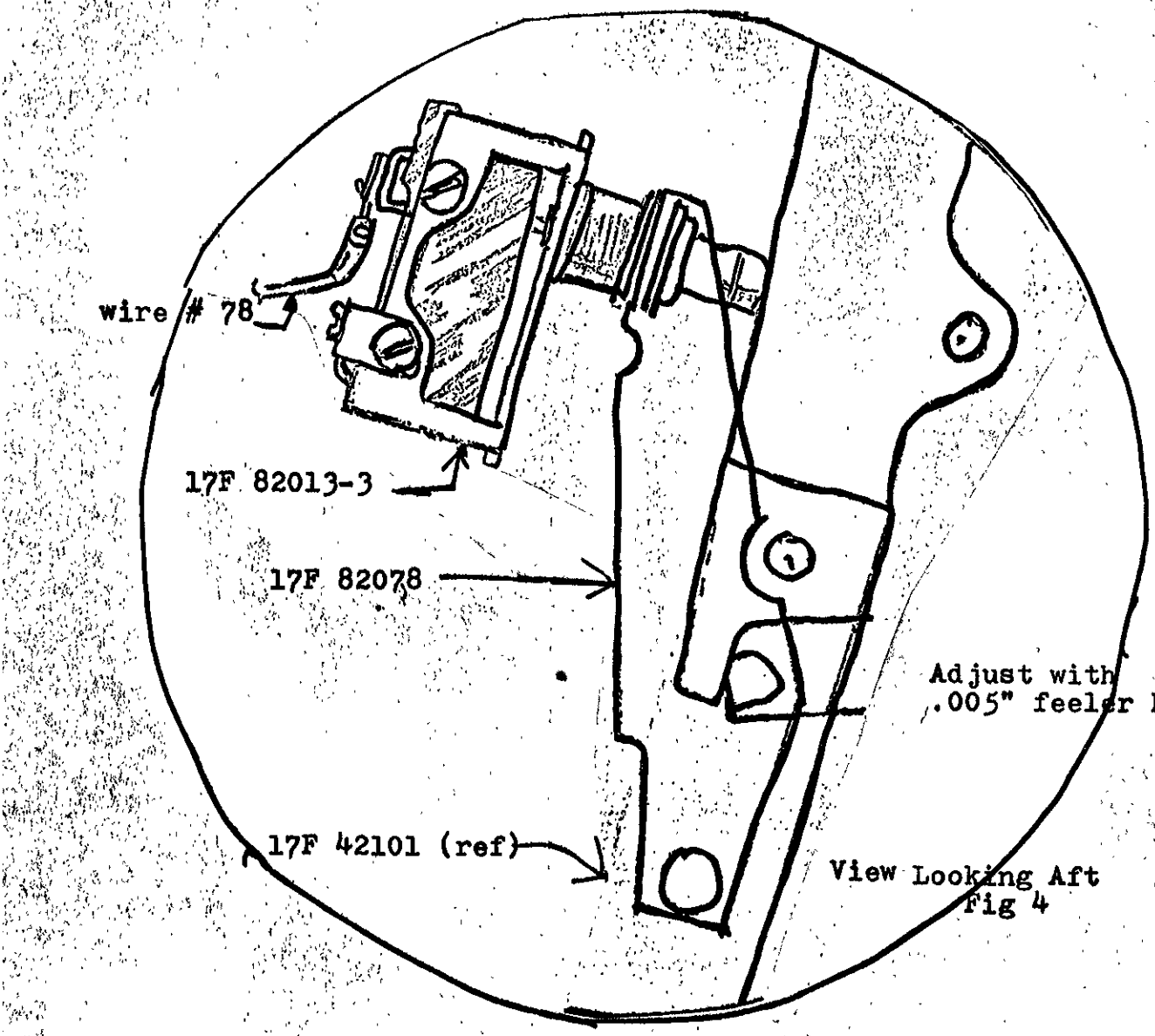
VIEW LOOKING AFT FROM L.H. SIDE.
FIG. 1.

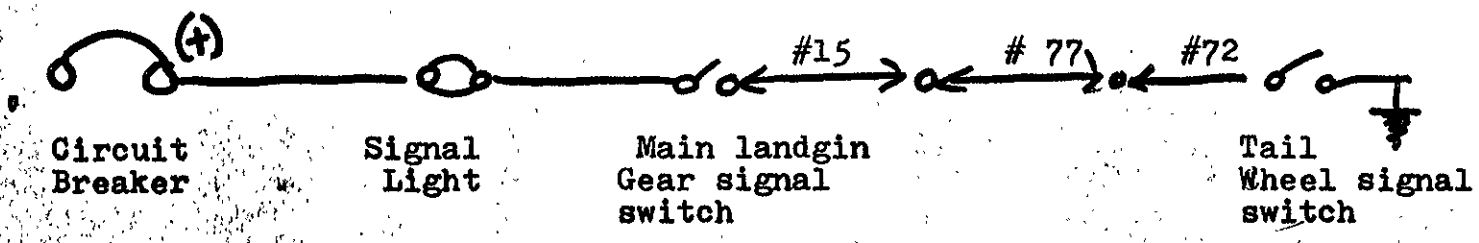


FRAME ASSY HULL STA. 243
FIG. 2



View From RH Side
Fig. 3





Tail Wheel Signal Switch Wiring Diagram

Fig. 5

Service Bulletin No. 9

REWORK OF STARTER TERMINAL JUNCTION COVER ASSEMBLY

Reason for Change: To prevent the possibility of a short circuit occurring if the cover becomes dented.

Airplanes Affected: Republic Serial Nos. 5 thru 130 incl. Serial Nos. 131 and up have already had this change accomplished in production.

Description of Change:

This change involves removing the starter terminal junction cover located forward on the firewall and bending it to give sufficient clearance; the rework shall be accomplished as follows:

NOTE: It is recommended that this change be accomplished the next time the engine side cowl is removed for any maintenance or inspection.

1. Remove top and right hand side cowl.
2. Remove starter terminal junction cover and rework as shown on Figure 1 by bending.
3. Replace junction cover, top and right hand side cowl and make suitable entry in log book.

Parts Required: None.

W. H. Ehmann
Service Manager

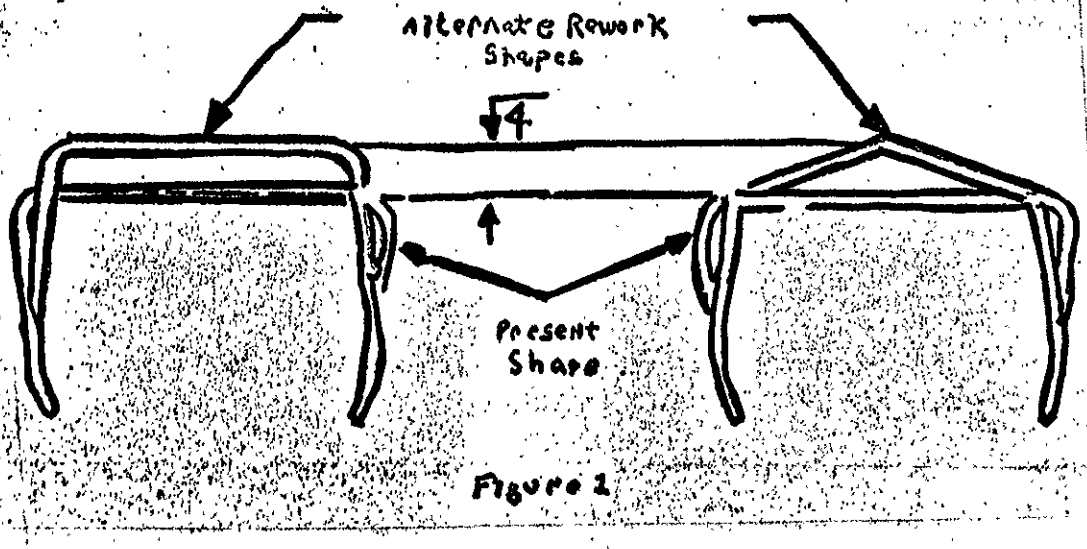


Figure 1

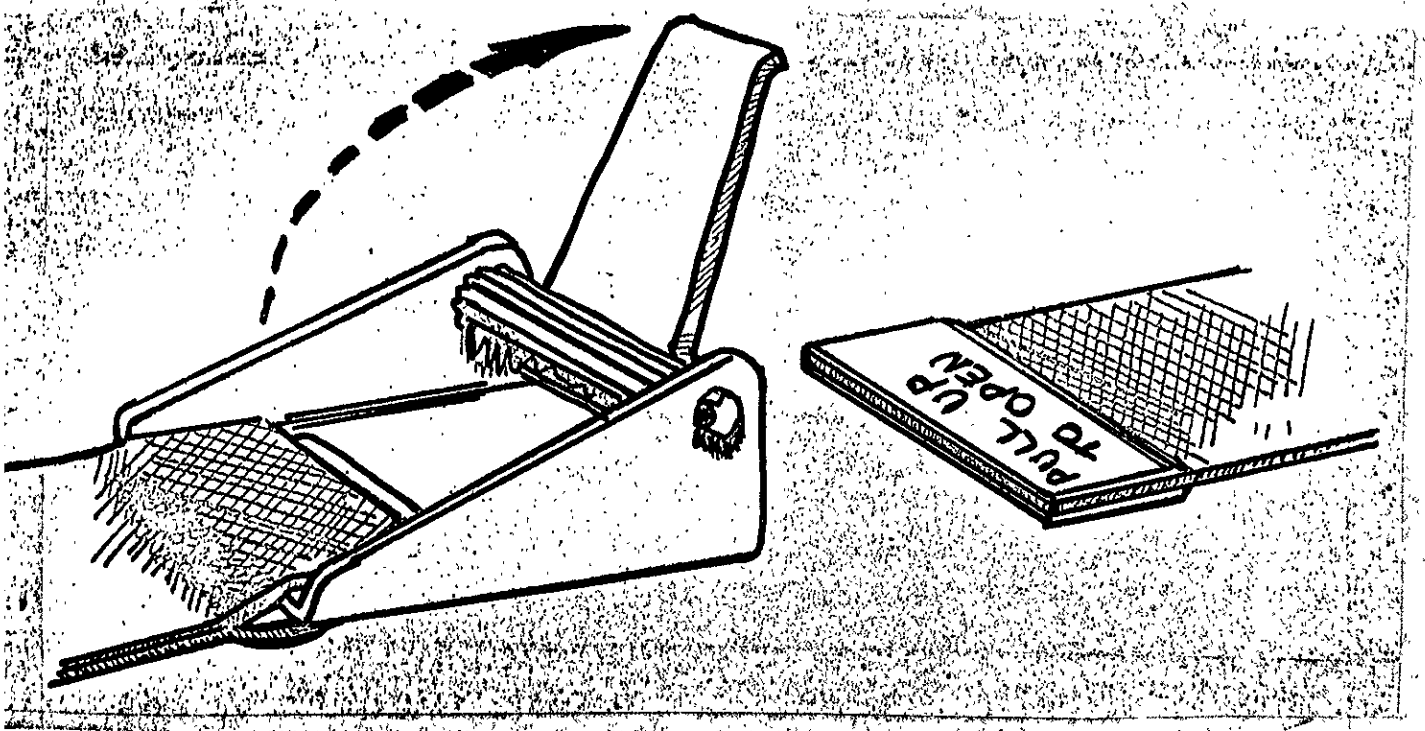
ADDITION OF RELEASE INSTRUCTION ON AIR ASSOCIATES' SAFETY BELT

Reason for Change: To place the correct releasing instructions on each safety belt. If a load of 4 to 5 "G" has been placed on the buckle of these belts, it is extremely difficult to open the buckle by pulling up on its release lever even after this load has been reduced to 1 "G". However, the belt may readily be released by gripping the loose end of the belt and pulling upwards.

Airplanes Affected: Republic Serial Nos. 5 thru 435 incl. which have the Air Associates' Belt No. M265-50-C3; this is a C.A.A. approved belt. Serial Nos. 436 and up have already had this change accomplished in production.

Description of Change: This change involves painting on the loose end of all Air Associates' No. M265-50-C3 belts "PULL UP TO OPEN". Refer to illustration of type of belt affected since alternate types of safety belts have been used on the Seabee.

W. H. Ehmann
Service Manager



MANDATORY

March 10, 1947
Page 1 of 3 pages

Service Bulletin No. 11

INSPECTION AND REINFORCEMENT OF MIXTURE CONTROL SUPPORT FLANGE ON AIR FILTER HOUSING

Reason for Change:

Due to three present failures the following modification is being made to prevent the mixture control support flange on air filter housing from breaking loose due to vibration and causing mixture control to go into idle cut off. Such a failure in flight could cause a forced landing.

Airplanes Affected:

Republic Serial Nos. 5 thru 303, 305 thru 367, 369 thru 398, 400 thru 445, 448 and 449, 451 thru 454, 456 thru 459, 461 thru 466, 469 and 470, 472, 474, 479, and 482. Serial Nos. 304, 368, 399, 446, 447, 450, 455, 460, 467, 468, 471, 473, 475, 476, 477, 478, 480, 481, 483 and up have already had this change accomplished in production.

Description of Inspection and Change:

The flange on the air filter housing which holds the mixture control support should be inspected immediately for any evidence of cracking. If cracked, it should be inspected before every flight until the following change is accomplished. This change should be accomplished as soon as possible and not later than the next 25 hour inspection; it involves adding a reinforcing piece to the flange and shall be accomplished as follows:

1. Remove right hand side cowl if desired for greater accessibility.
2. Remove fuel strainer blast tube.
3. Detach mixture control from support at filter duct.
4. Remove air filter unit.
5. Drill out the two rivets holding the channel support to flange on side of air filter housing.
6. Make up a reinforcing piece from .064 aluminum alloy sheet approximately as shown on Fig. 1. Attach this reinforcing piece to the air filter housing with four No. 8 screws or bolts and self-locking nuts. Be sure that all chips resulting from drilling are cleaned out of the air filter housing.

(11F)

7. Attach mixture control support to reinforcement and flange on air filter housing with two No. 6 flush screws and self-locking nuts.

8. Reassemble mixture control to support, replace air filter unit, blast tube and cowling. Make suitable entry in log book.

9. Check mixture control for proper travel.

Cost and Time Required:

Approximately 3 manhours are required to accomplish this change. This change is to incorporated on airplanes still within the warranty period at no charge to the owners.

Parts Required:

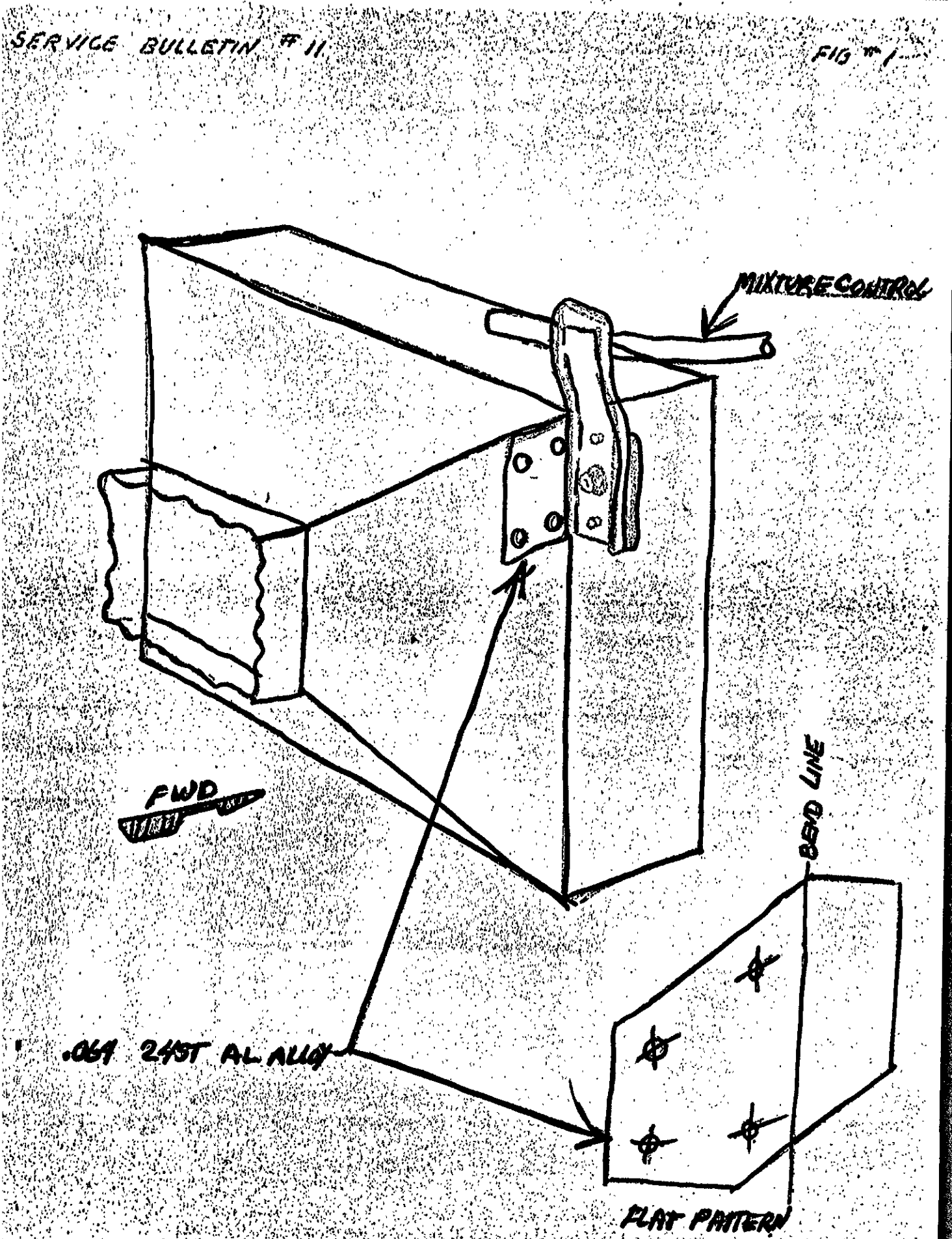
Quan.		
1 pc.	.064 Alum. Alloy	2 x 3-1/2
2 pcs.	AN510-6-8	Flat Hd. Screw or equivalent
4 pcs.	AN526-832-8	Screw or Equivalanet
2 pcs.	AN365-640	Self-Locking Nut
4 pcs.	AN365-832	Self-Locking Nut
2 pcs.	AN960-6	Washer
4 pcs.	AN960-8	Washer

W. H. Ehmann
Service Manager

If you have sold your airplane, please forward this Bulletin to the present owner.

SERVICE BULLETIN # 11

FIG # 1



INSPECTION AND ADDITION OF RELIEF HOLES AT FLOAT STRUT SAFETY SLOTS

1. Add 1/2" and 1" diameter relief holes as shown on Figure 1 being certain not to lengthen existing slots. Either a drill or a file may be used. Also be certain that the edges of the holes are smooth and free from all nicks or new marks, burrs or file marks.
2. Reinstall strut and float and make suitable entry in log book.

W. H. Ehmann
Service Manager

If you have sold your airplane, please forward this bulletin to the present owner.

Service Bulletin No. 13

INSTALLATION OF RESTRICTOR FITTING ON ENGINE FOR OIL PRESSURE GAUGE LINE

Reason for Change:

To provide a restrictor at the beginning of the oil pressure gauge line so that if the line breaks engine will be lost at a slow rate.

Airplanes Affected:

Republic Serial Nos. 426 thru 484 incl. with the following exceptions which have already had this change accomplished in production: 446, 447, 452, 455, 460, 468, 471, 473, 475, 480, 481, and 483.

Description of Change:

This change involves removing existing oil pressure gauge line elbow on the engine, installing new elbow incorporating restrictor and shall be accomplished as follows:

1. Open top engine cowl.
2. Disconnect oil pressure gauge line from elbow on top aft end of engine leaving the reducer fitting in place.
3. Install new elboe SK 17-84052-4 and rebend oil pressure line if necessary.
4. Close top engine cowl and make suitable entry in log book.

W. H. Ehmann
Service Manager

If you have sold your airplane, please forward this bulletin to present owner.

(12)

Service bulletin

Seabee

MANDATORY CHANGE

REPUBLIC AVIATION CORPORATION FARMINGDALE, LONG ISLAND, NEW YORK

March 31, 1947
Page 1 of 2 pages

Service Bulletin No. 14

INSTALLATION ELEVATOR CABLE GUIDE

Reason for Change: To prevent the lower elevator cable in the tail boom from catching on the elevator bob weight.

Airplanes Affected: Republic Serial Nos. 5 thru 500 incl. Serial Nos. 501 and up have already had this change accomplished in production.

Description of Change:

This change involves disconnecting lower elevator control cable in the tail boom, installing cable guide and reconnecting cable and shall be accomplished as follows:

1. Open aft handhole on left hand side of tail boom.
2. Disconnect lower elevator control cable at forward end of turnbuckle accessible from the handhole.
3. Elevator Cable Guide SK-17-14052-2 is to be located as shown on figure 1. This is to be attached to the cross channel with the existing bolts holding the two inboard rudder pulley brackets. As only one hand may be used, it will be necessary to hold the nut while tightening the bolts by jamming a wrench against the structure.
4. Pass lower elevator control cable thru the guide and reconnect turnbuckle putting sufficient tension on the cable. Proper cable tension is 20 ± 5 lbs. Safety wire turnbuckle .
5. Check operation of elevators, close handhole and make suitable entry in log book.

Parts Required: Parts may be obtained thru your local dealer or distributor at no charge and will be installed free of charge on all airplanes within warranty at the time of the modification.

Service Bulletin Kit No. 14 consists of the following:

Quan.	Part No.	Part Name
1	SK-17-14052-2	Guide

Time Required: Approximately 2 manhours are required to accomplish this change.

W. H. Ehmann
Service Manager

If you have sold your airplane, please forward this bulletin to the present owner.

123

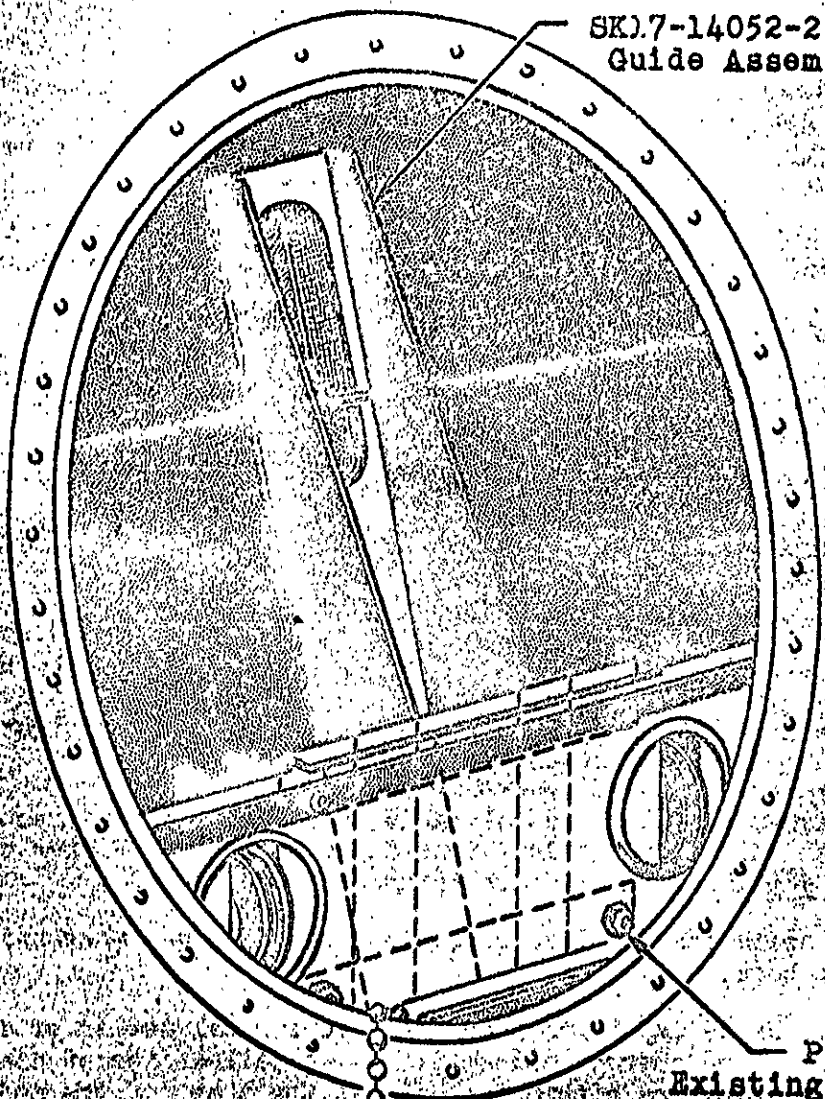


Fig. 1

(12)

IMMEDIATE ACTION - MANDATORY

April 8, 1947
Page 1 of 1

Service Bulletin No. 15

CHECK OF RADIO FILTER

Reason for Change: Some radio filters were defective and might cause a short circuit.

Airplanes Affected: Seabees Serial Nos. 488 thru 602 incl. Serial Nos. 603 have already had this modification accomplished in production.

Description of Change:

This change involves inspecting to see if radio filter mounted on left rear engine baffle is in a steel box measuring 4 inches by 2 inches. If filter is in this type box remove box and proceed as outlined below. Other type filters in smaller boxes have been used. These are not affected.

1. If coil of filter is bolted to top of box and condenser is glued in place, this filter may be used if a clamp is installed around the condenser and the clamp is fastened to the box with a screw or bolt. Use a 1-1/8 diamter clamp. This rework must be accomplished before the filter is replaced in the circuit.

2. If the coil of the filter is not bolted in place, request a replacement filter and do not use the old filter.

Parts Required: Parts will be furnished at no charge.

Quantity	Part Number	Part Name
1	SK-17-83053-1	Filter Assembly

W. H. Ehmann
Service Manager

Seabee Service Bulletin No. 16

October 2, 1947

Subject: Heater installation on all model SeaBees

Reason for change: To provide a heater

Description of change:

This change involves installing a heater unit, necessary ducts, fuel lines, controls and wiring, and shall be accomplished as follows:

1. Remove left hand bow window, instrument panel crown and front seats.

2. Remove 20 pounds from bow ballast. (Use 5 AN3-21A bolts in kit to replace existing long bolts.

3. Place shelf 17F87057-1 in location shown on drawing 17F87050. Top of shelf should be 9" above cabin floor. Using pilot holes in shelf as guides, drill eleven (11 #18 holes (.169). Fasten shelf in place with (9) AN 525-836-7 screws, AN 365-836 nuts and (2) AN 507-836-7 screws and AN 365-836 nuts as shown on drawing 17F87050 using 3M cement around holes.

4. Cut holes in cabin side skin as shown in View C-C of drawing 17F87050 centerline of this hole is to be 6-13/16" above cabin floor.

5. Cut hole in partition as shown in View A-A of drawing 17F87050.

6. Place Waste Pipe 17F87058-1 over exhaust piper of heater so that the two pipes overlap one inch and diagonal cut off of pipe is as shown on View B-B of drawing 17F87050. Drill a 5/16 inch hole thru the two pipes using an edge distance of ½ inch. Fasten waste pipe to heater exhaust pipe using an AN 393-53 pin and AN 380-2-1 cotter pin as shown on View B-B of drawing 17F 87050.

7. Place shroud 17F87058-2 over waste pipe so that flange of shroud is against heater and diagonal cut off of shroud as shown on View B-B of drawing 17F87050. Using holes in flange of shroud as guides, drill four # 30 (.128) holes in case of heater being sure not to drill too deeply into heater. Attach shroud to heater with four (4) S-598-8-4 screws using Prestite tape as a seal.

8. Install one knife disconnect 31770 on the three leads coming from the heater relay box as shown on drawing 17F82054. These leads are black, black with yellow tracer and black with red tracer. Inside the relay box remove the black with blue tracer wire which has a free end from Terminal No. 5. Leave connected the black with blue tracer wire which goes to the blower motor.

9. Attach Bracket 17F87054-1 to blower as shown on drawing 17F87050 using (4) S-589-8-4- screws.

10. Place duct 17F87053-1 as shown on drawing 17F87050 on outlet end of heater. Using holes in duct as guides drill tow (2) # 32 (.116) holes in case of heater. Attach duct to heater with two (2) S-589-8-4 screws.

11. Place heater and blower assembly on shelf in position as shown on drawing 17F87050. Bracket at aft end of assembly is to be attached to shelf with two AN 526-832-8 screws. Front end of heater is to be held in place with clamp 17F87055-1. This is to be fastened to shelf

with two (2) AN 526-832-8 screws.

12. Fasten end of heater duct to partition using a S-326-6 x ½ clip. Drill # 32 (.116) holes thru clamp, duct and partition and fasten clip in place with two (2) S-589-8-4 screws as shown on drawing 17F87050.

13. Place shield 17F87059-1 over end of waste pipe on outside of cabin skin as shown on drawing 17F87050. Using holes in flange of this shield as guide drill seven (7) # 18 (.169) holes. Fasten shield in place with seven (7) AN 525-836-7 screws and AN 365-836 nuts.

14. Remove leading edge fillet of cowl and left hand side engine cowl.

15. Remove present plug fitting on left hand side of carburetor from fuel pressure take-off point and replace this with a 17F84011-1 Elbow as shown on drawing 17F87051. Attach an AN 856-A4A-20 hose to elbow.

16. Assemble valve no. 450 in position shown in detail "B" of drawing 17F 87051 on angle 17F87063-1 with two (2) AN 3-12A bolts, AN 960-10L washers and AN 365-1032 nuts.

17. Place assembly in place on aft left hand cowl support as shown on 17F. 87051. Using holes in angle as guide drill two (2) # 10 (.194) holes in cowl support and fasten assembly in place with two (2) AN3-4A bolts and AN 36-1032 nuts. Connect free end of hose installed under paragraph 15 to aft part of valve and place an AN 822-4D elbow in forward port.

18. Drop upholstery from cabin roof along the left hand side. Drill 3/8" diameter hole and 7/16" diameter hole in frame as shown on detail "A" of drawing 17F87051.

19. Locate S-9796L-3 Clamp as shown on detail "b" of drawing 17F87051. Drill two (2) # 18 (.169) holes thru clamp and flange of cowl support. Fasten clamp in place with two (2) AN 526-632-7 screws, AN 365-632 nuts.

20. Install 3A701 Push-Pull control thru 3/8" hole drilled under 18. Control is to be routed aft to the valve installed under 16 passing thru existing engine control clamps and opening in firewall as shown on drawing 17F87051. Attach end of control to arm on valve with a 3A665-1/8 swivel and AN 960-4161 washer. Check push-pull control for proper operation and travel.

21. Connect one end of 17F87051-4 tube to elbow on valve installed under 17. Pass the end of the tube aft from the inside of the cabin thru the existing hole and fairlead in the firewall to the valve. If necessary open up hole in the firewall and relocate bolts holding fairlead to obtain required spacs. Tube is to pick up existing engine control clamps on firewall.

22. Route tube forward along left side of roof to 7/16" diameter hole drilled under 18. Pass tube thru this hole and down along left hand door post as shown on drawing 17F87051. Fasten tube to roof of cabin and door post with six (6) AN 742-B6C clamps, AN 525-10-10 screws and AN 365-1032 nuts. Drill # 10 (.195) holes for these screws. Cut AN 931-4-7 grommet screws one side and install this around the tube in the 7/16" diameter hole.

23. Re-seal holes in firewall where fuel line and control pass thru using prestite tape provided and 3M cement.

24. Place an AN 822-4D elbow in the opening of the solenoid valve on the heater. Connect an AN 856-A4A-24 hose to this elbow. Connect other end of this heat to tuve installed under 21 and 22 using an AN 815-4D union,

25. Reinstall engine grill, left hand side and top engine cowl and replace cabin roof upholstery.

26. Attach AN 3023-1 Switch to Switch bracket 17F87052-1 using (2) AN 526-632-7 screws. Connect 17F82054 wires Nos. 102, 104, 105, 106 and 107 to this switch as shown on drawing 17F82054.

27. Place switch and bracket assembly in position shown on drawing 17F87050. Using holes in bracket as guides drill two (2) # 18 (.169)holes in door post. Fasten assembly in place with two (2) AN 526-832-9 screws and AN 365-832 nuts.

28. Place circuit breaker AN 3161-P-15 under the instrument panel shelf in approximate position as shown on drawing 17F87050. Using two mounting holes as guides drill two (2) # 18 (.169) holes in the shelf and fasten circuit breaker in place with two (2) AN 526-632-7 screws.

29. Referring to drawing 17F82054 make the following wire connections:

(a) Connect one end of wire # 101 to same terminal post of position and dome light circuit breaker that wire # 22 and # 23 are already connected to. Connect other end of wire # 101 to circuit breaker installed under 28.

(b)Connect free end of wire # 104 and one end of wire # 103 t free terminal post of circuit breaker installed under 28.

(c)Connect free ends of wires # 102, # 103 and # 105 respectivly to black wire, blackwire with red tracer and black wire with yellow tracer using sleeves 17F82054. Sleeves should be fastened in place over the quick disconnects with sewing cord at one end. Refer to drawing 17F82054.

(d)Tape wires together and to surrounding structure. Any wires existing or newly installed, which are close to the heater should be held away from the heater with suitalbe clamps.

Note: Some blower supplies have 6 volt motors. Therefore two parallel 1 ohm 75 watt resistors must be installed in series with the black with blue tracer lead from blower terminal # 5. These resistors are to be installed on the shelf next to the heater with AN 526-832-9 screws, AN 960-8 washers and AN 365-832 nuts.

30. Install decalomania 17F87061-1 in position shown on view D-D of drawing 17F87051.

31. Reinstall left hand bow window and ront seats.

32. Start engine and check operation of heater unit.

33. The use of a Stewart-Warner heater in the SeaBee causes a natural deflection in compass headings. The deflection occurs only when the blower is in operation and can be compensated by either of the two following methods:

(a) Calibrate the compass with both blower-on and blower-off conditions and attach a correction card for each to the instrument panel for ready flight reference.

(b) When making true compass headings in cross-country flight switch to blower-off position momentarily.

34. Make suitable entry in log book.

Note: C.A.A approval of this heater installation is based on a fire extinguisher being installed in the airplane, Item 1265A

Parts Required:

The following parts required will be furnished in kit form as Spares Item 1492.

Part Number	Description	No. Per set
17F87050-1	Heater Installation including the following	1
	Stewart-Warner No. 977-B-1 Heater	1
	Stewart-Warner No. 992-B Blower Assy.	1
	17F87050 Rev. "B" Bluepring	1
	2 oz. Tube Cement	1
	17F87052-1 Plate	1
	AN 3027-1 Switch	1
	Attaching Hardware for Plate & Switch	
	AN 526-832-9 Screws	2
	AN 526-632-7 Screws	2
	AN 365-832 Nuts	2
	17F87053-1 Duct Assembly	1
	Attaching Hardware for Duct Assy.	
	S-326-6 x 1/2 Angle clip	1
	S-589-8-4 Screw	4
	17F87054-1 Bracket	1
	Attaching Hardware for Bracket	
	S-589-8-4 Screws	4
	AN 526-832-8 Screws	2
	17F87055-1 Clamp	1
	Attaching Hardware for Clamp	
	AN 526-8-32-8 Screws	2
	17F87057-1 Shelf	1

ATTACHING HARDWARE FOR SHELF

AN 525-836-7 Screws	9
AN 365-836 Nuts	11
AN 507-836-7 Screws	2
17F87058-1 Waste Pipe	1

Attaching Hardware for Waste Pipe

AN 393-53 Pin	1
AN 380-2-1 Cotter pin	1
17F87058-2 Shroud	1

Attaching Hardware for Shroud

S-589-8-4 Screws	4
5/8 x 10 2D-58E Prestite Tape	
17F87059-1 Shield Assembly	1

Attaching Hardware for Shield

AN 525-836-7 Screws	7
AN 365-836 Nuts	7
AN 3161-P-15 Circuit Breaker	1

Attaching Hardware for Circuit Breaker

AN 526-632-7 Screws	2

Hardware for Holding Ballast in place

AN 3-21A Bolts	5

17F87051-1 Fuel System Installation Including the following

17F87061-1 Decal	1
17F87051 Rev. "A" Blueprint	1

CONTINUED →

Part Number	DESCRIPTION	No. Per Set
	1 17F84011-1 Elbow	
	1 AN856-A4A-24 Hose	
	1 AN856-A4A-20 Hose	
	1 AN822-4D Elbow	
	1 AN815-4D Union	
	1 3A701 Control (Red Knob)	
	1 #450 Electrol Valve Assembly	
	Attaching Hardware for Valve	
	1 AN822-4D Elbow	
	1 3A665-1/8 Swivel	
	1 AN960-416L Washer	
	2 AN3-12A Bolt	
	2 AN365-1032 Nut	
	2 AN960-10L Washer	
	1 17F87051-4 Tube Assembly	
	Attaching Hardware for Tube	
	2 AN818-4D Nut	
	2 AN819-4Z Sleeve	
	6 AN742-D6C Clamp	
	6 AN525-10-10 Screw	
	6 AN365-1032 Nut	
	2 AN931-4-7 Grommet	
	17F87063-1 Angle	
	Attaching Hardware for Angle	
	1 AN3-4A Bolt	
	1 AN365-1032 Nut	
	1 S-9796-3L Clamp	
	Attaching Hardware for Clamp	
	2 AN526-632-7 Screw	
	2 AN365-632 Nut	
17F82054-1	Wiring Harness; including the following:	
	3 #31770 Terminals (AMP	
	3 17F82041-2 Sleeve	
	1 17F82054 Wire #101 incl. #31398 Terminals	
	1 17F82054 Wire #102 incl. #31398 & 31770 Terminals	
	1 17F82054 Wire #103 incl. #31398 & 31770 Terminals	
	1 17F82054 Wire #104 incl. #31398 Terminals	
	1 17F82054 Wire #105 incl. #31398 & 31770 Terminals	
	1 17F82054 Wire #106 incl. #31398 Terminals	
	1 17F82054 Wire #107 incl. #31398 Terminals	

Part Number	Description	No. per Set
	1 17F82054 Rev. "A" Blueprint	
	NOTE: The following is be included only with 6 volt heater and blower assemblies.	
	2 1 ohm 75 Watt Resistors	
	4 Resistor Clips	
	2 ft. #10 AWG Wire	
	Attaching Hardware for Resistors	
	4 AN526-832-9 Screws	
	4 AN365-832 Nuts	
	4 AN960-8 Washers	

Drawings Required: The following required drawings will be furnished in the kit:

17F82054 - Wiring Diagram - Cabin Heater
17F87050 - Heater Installation - Cabin
17F87051 - Heater Fuel System Installation

Time Required: Approximately 24 manhours are required to accomplish this change.

W. H. Ehmann
Service Manager

Service Bulletin No. 17

INSTALLATION STEERABLE TAIL WHEEL

Reason for Change: To provide greater ease of taxiing under cross-wind conditions.

Airplanes Affected: Republic Serial Nos. 5 thru 875. Serial Nos. 876 and up have already had this change accomplished in production.

Description of Change:

This change involves the following steps:

A. Tail Wheel Disassembly.
B. Yoke Rework.
C. Collar Rework.
D. Fork Rework.
E. Tail Wheel Assembly.
F. Tail Wheel Installation.
G. Bulkhead Pulley Bracket Installation.
H. Standpipe Installation.
I. Rigging.

NOTE: On Seabee Serial Nos. 5 thru 125 which have the old type steel welded yoke and/or the old type shock absorber with the welded or machined type aft collar (new type collar is a forging with Part No. 17F42041-1 stamped on the face of the left ear), it will be necessary to replace these either with Yoke Assembly - Steerable Tail Wheel Part No. 1543 and/or Shock Absorber - Steerable Tail Wheel Part No. 1544. These parts will be required in addition to the conversion kit.

A. DISASSEMBLE TAIL WHEEL

1. Place cradle under tail wheel bulkhead so that tail wheel is raised off the ground.

2. Remove tail wheel fork and yoke assemblies by removing the bolt holding the yoke to the aft shock absorber collar and the bolt holding the yoke to the piston of the shock absorber. Cut the tail wheel lock cable at any convenient point.

3. Disassemble the yoke and fork assembly. Discard the spindle and hardware. Remove the lock pin and spring from the yoke assembly.

4. It is recommended that the complete tail wheel lock cable and handle in the cockpit be removed.

B. YOKE REWORK

1. Rework the yoke assembly in accordance with Figure 1. It will be noted that this rework consists of removing the top portion of the yoke which was previously used to support the lock pin aft pulley. It is suggested that this material be removed with a hacksaw and then file smooth to existing flat counterbore. Be sure to cover needle bearings to prevent chips, etc. from getting on them.

2. Place Cam Assembly 17F42180-1 on top of yoke so that center of holes in cam and yoke line up within +.005 inches. Using pilot holes in cam as guides drill five holes #26 (.147) 3/4 inch deep into yoke enlarging pilot holes in cam at same time. Tap holes in yoke and cam #10-24-5/8 inch deep (NC-2). Countersink holes on top of cam .372 inch diameter by 82°. Attach cam to yoke using five AN505C10-8 screws. Stake these screws in place. The top surface of the cam plate must be smooth after staking the screws. Refer to Figure 1.

C. COLLAR REWORK

1. Rework aft shock absorber collar in accordance with Figure 2. This work can be accomplished with collar in place. This rework consists of removing the inboard ear on the collar. This ear may be removed with a hacksaw and filing smooth. Also note that a #22 (.157) 5/8 inch deep hole must be drilled and tapped #10-32-1/2 inch deep (NF-3) into side of collar.

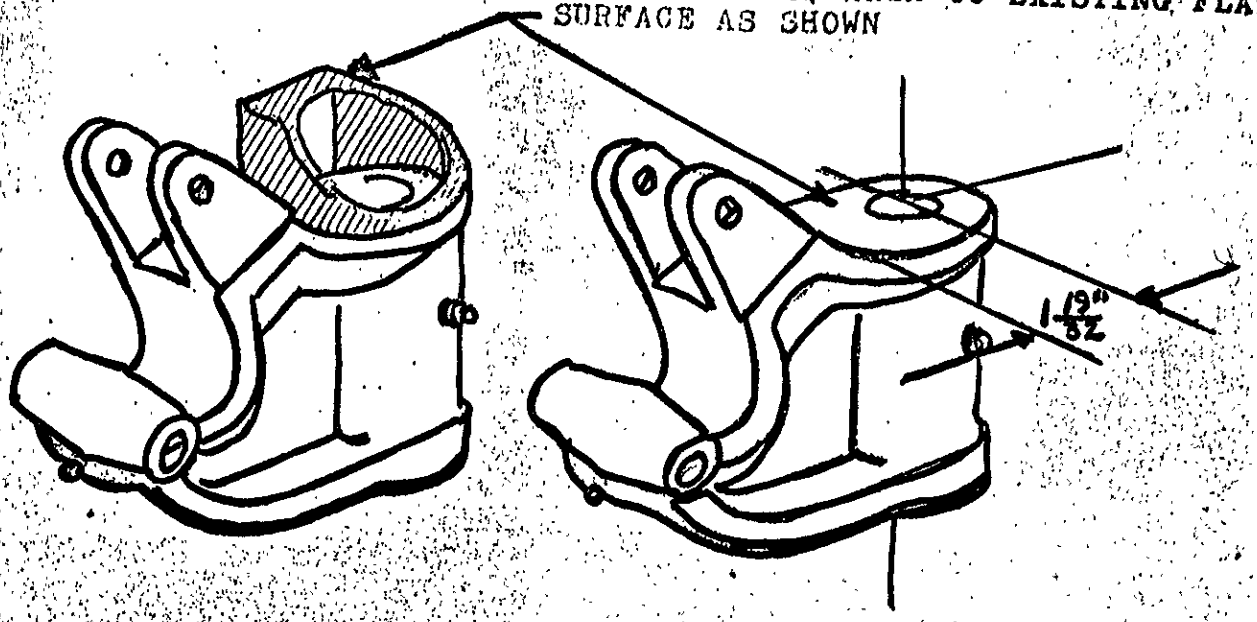
2. Place Wedge 17F42276-1 on outboard side of ear on collar as shown in Figure 2 so that centers of pilot hole in wedge and hole in ear line up. Using full size #12 (.189) hole in wedge as guide drill #12 (.189) thru ear on collar. Countersink hole on inboard side of ear 82° by 1/32 inch deep as shwon. Attach wedge to ear with 17F42277-1 pin, staking pin on inboard side and filing smooth if necessary. Using pliot hole in wedge as guide drill and ream 1/4 (.250) thru wedge and ear normal to outboard surface of wedge.

D. FORK REWORK

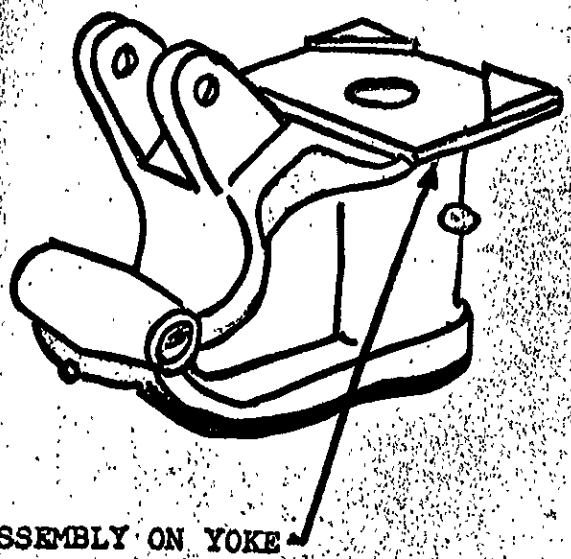
1. Rework fork in accordance with Figure 3. Note that this rework consists of cutting two notches in top of fork. These notches are to be cut so that pin

NOTE:

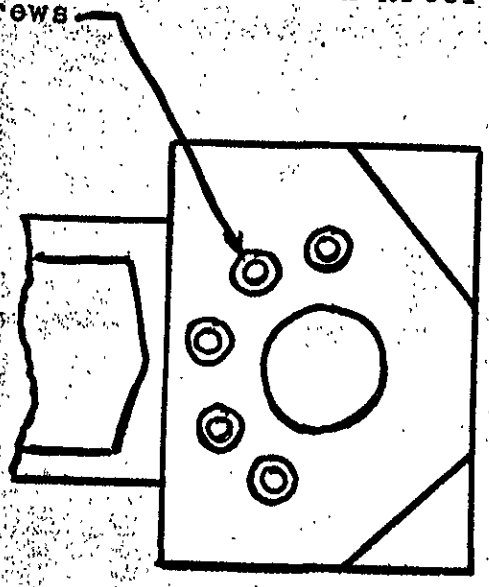
REMOVE SHADED AREA TO EXISTING FLAT SURFACE AS SHOWN



Drill #26 (.147)-3/4 Deep in Yoke and Cam - Tap #10-24-5/8 Deep (NC-2)
C'Sink .372 Dia x 82°
5 Holes Equal Spaces as Shown
AN 505-C10-8 Screws (5)
Stake In Place - Surface of Cam Plate Must Be Smooth After Staking Screws



CAM ASSEMBLY ON YOKE



CAM ASSEMBLY ATTACHMENT

FIGURE 1

YOKE REWORK

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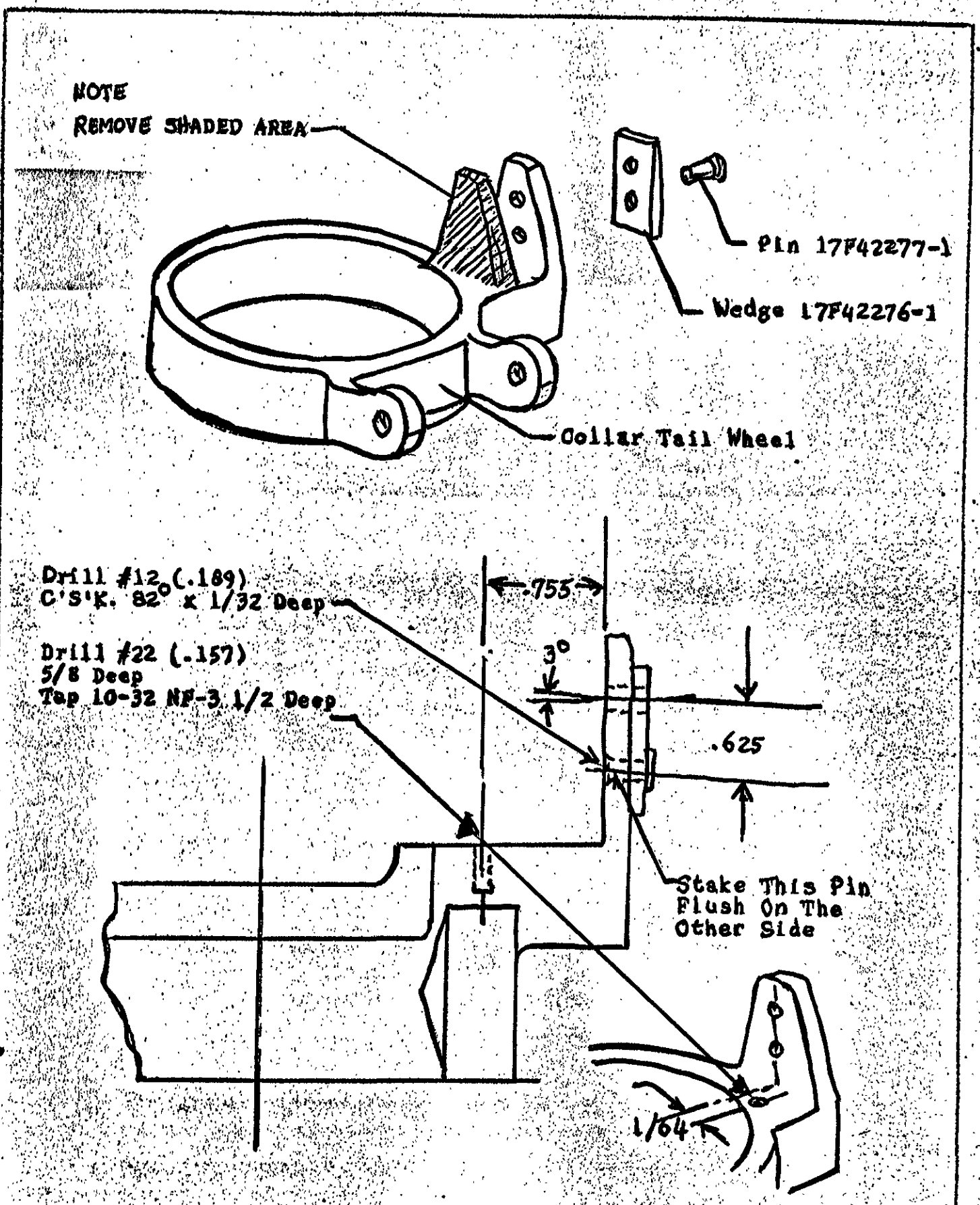

FIGURE 2

COLLAR REWORK

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assembled in Spindle 17F42178-1 just fits into them. It is recommended that these notches be made by drilling 1/4 inch holes at dimension shown, opening hole with hacksaw and filing to proper width.

2. Assemble fork on spindle using two NAS143-24 washers, AN7502-24 nut and AN380-5-10 cotter pin as shown on Figure 4. This nut must be torqued as tightly as possible (3000 inch lbs. min.) Do not back off to obtain cotter pin hole alignment.

TAIL WHEEL ASSEMBLY

1. Referring to Figure 5 assemble yoke and quadrant assemblies on Fork and Spindle assemblies as follows:

a. Place 17F42152-1 washer over spindle.
b. Place yoke assembly over spindle.
c. Place Quadrant Assembly 17F42093-1 with Bushing Assembly 17F42175-1 over spindle.
d. Place Washer 17F42198-1 over spindle.
e. Place two Spring Washers 17F42045-2 over spindle.
f. Fasten assembly together with two AN960-C1016 washers, one AN310-10 nut and AN380-C4-4 cotter pin tightening nut sufficiently to resist a 20# to 25# side load applied at the bottom of the fork.
g. Apply AN-G-15 or equivalent waterproof grease at lubricating fittings on yoke.
h. Assemble old wheel, tire, etc. on this assembly.

TAIL WHEEL INSTALLATION

1. Reassemble Yoke and Fork Assembly onto the aft collar and piston of the shock absorber as follows referring to Figure 10.

a. Pass Bolt 17F42268-1 thru ears on collar and yoke from right side.
b. On left side place Bearing 17F42269-1 over Bolt and Bracket Assembly 17F42272-1 over bearing.
c. Fasten bolt with AN320-6 nut and AN381-12 cotter pin.
d. Fasten yoke to piston of shock absorber with original hardware.

NOTE: Be sure bolts thru both ends of shock absorber piston run horizontal to ground.

BULKHEAD PULLEY BRACKET INSTALLATION

1. Make up drilling template to use for installing pulley bracket at Sta. 230.5 as shown in Figure 6. This template may be used to drill holes thru bulkhead due to lack of visibility. Use a piece of 21-3/4 x 2-9/16 x 1/8 Aluminum for this. If a large number of ships are to be reworked with the same template, it is recommended that steel be used. While making template check it against the bracket, pulley and cable assembly for alignment of holes.

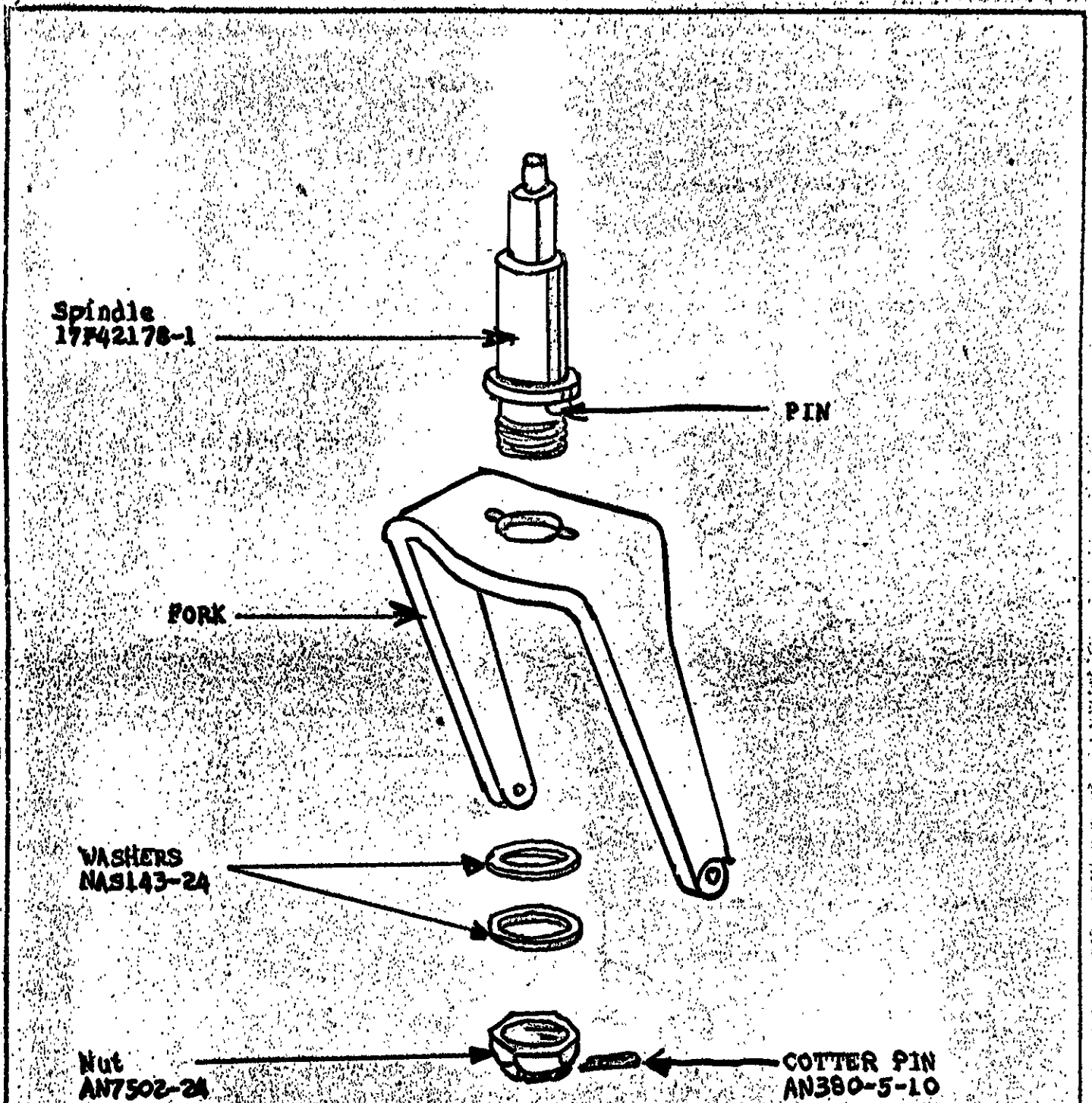
Spindle
17F42178-1
PIN
FORK
WASHERS
NAS143-24
Nut
AN7502-24
COTTER PIN
AN380-5-10

FIGURE 4

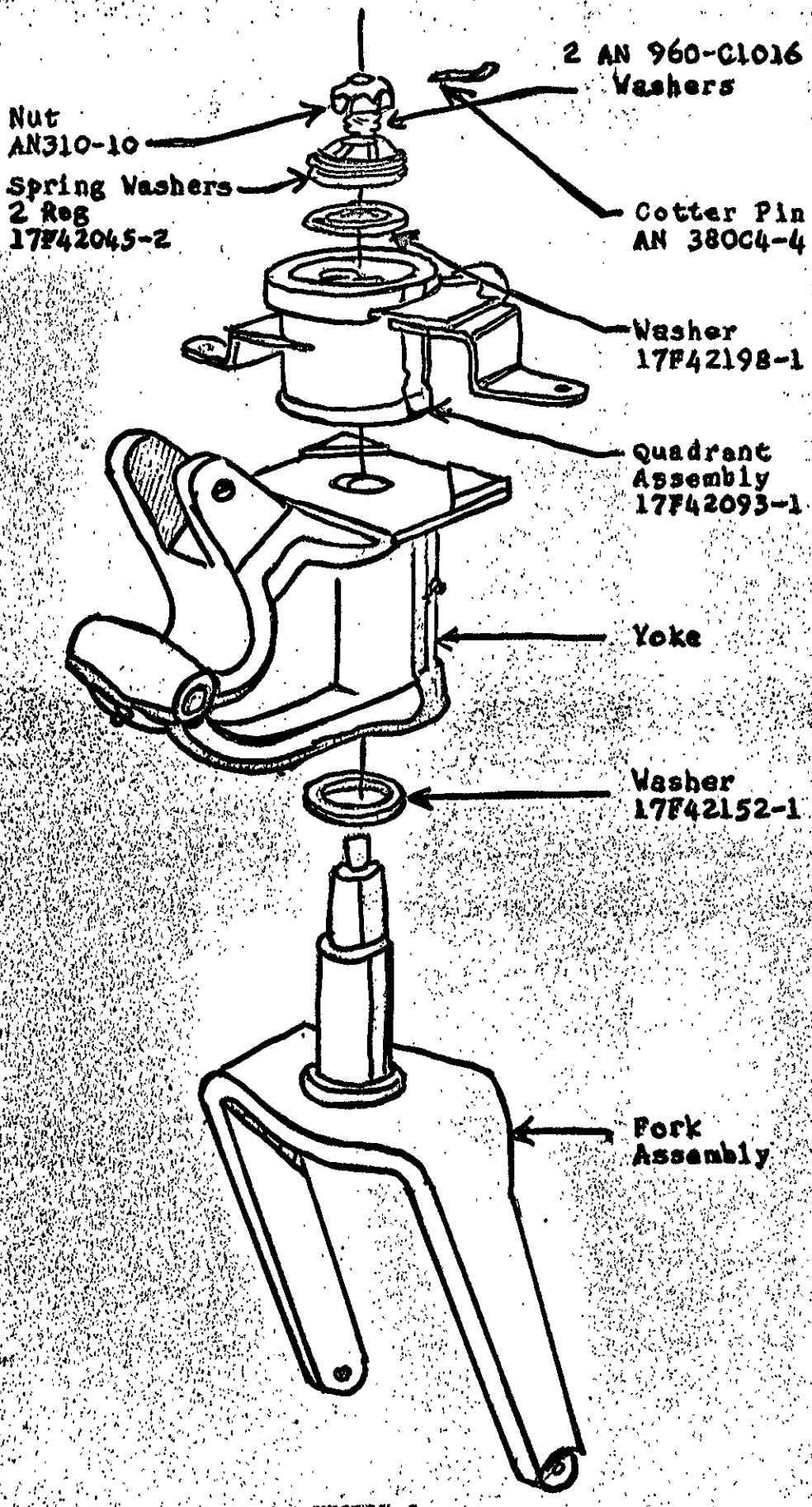
2 AN 960-C1016
Washers
Nut
AN310-10
Spring Washers
2 Req
17F42045-2
Cotter Pin
AN 380C4-4
Washer
17F42198-1
Quadrant
Assembly
17F42093-1
Yoke
Washer
17F42152-1
Fork
Assembly

FIGURE 5

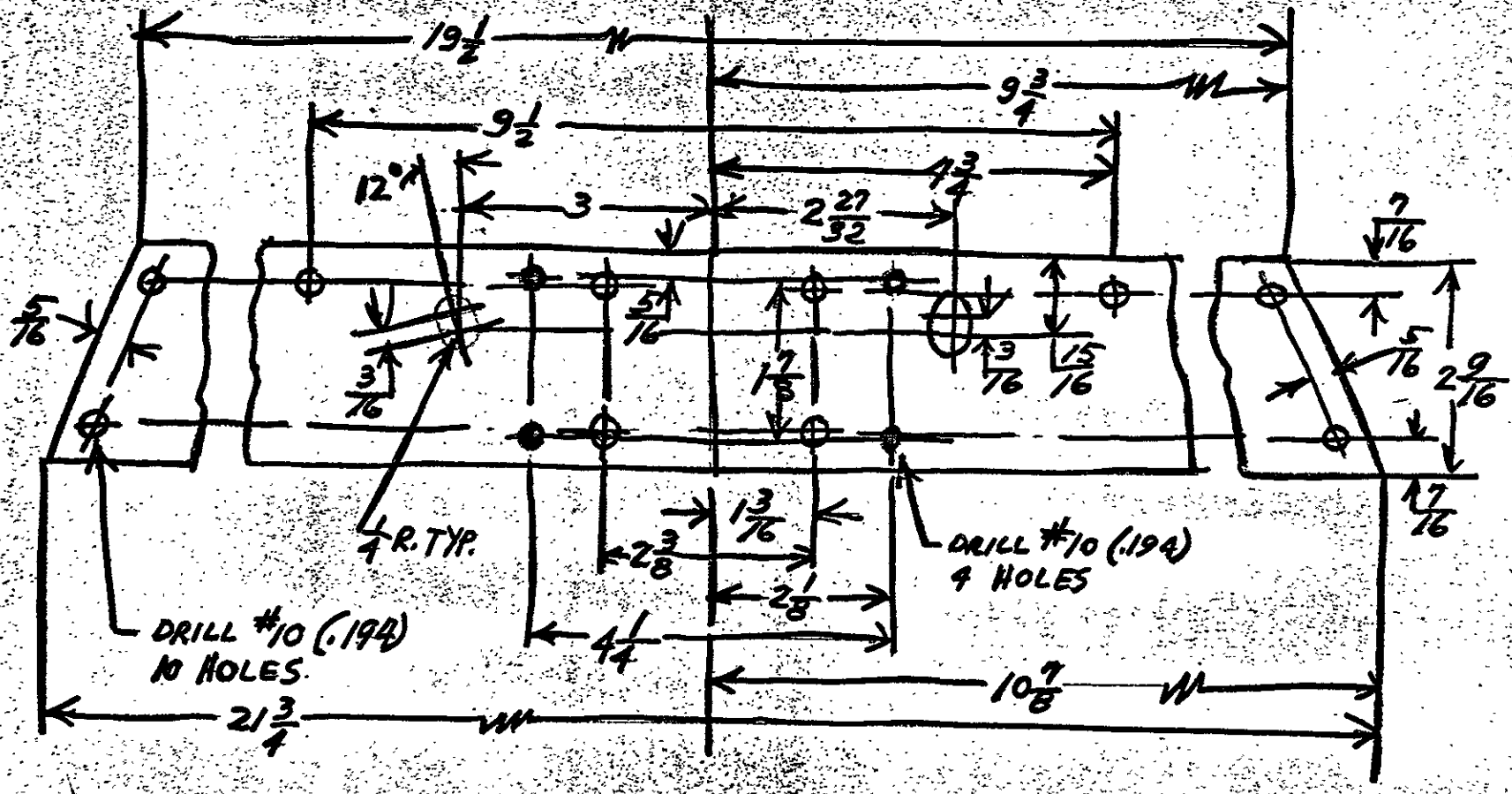
19 1/2
9 3/4
9 1/2
12°
3
2 27/32
1 3/4
2 1/16
5/16
5/16
3/16
1 7/8
3/16
15/16
2 9/16
1/4 R. TYP.
1 3/16
2 3/8
2 1/8
4 1/4
DRILL #10 (.194)
4 HOLES
DRILL #10 (.194)
10 HOLES.
10 7/8
21 3/4
1 7/16

FIGURE 6

- 9 -

2. Open handholes in tail boom to obtain access to bulkhead Sta. 230.5. This is the bulkhead directly above the aft end of the tail wheel shock absorber tube. Remove bracket holding pulley for old tail wheel lock. This bracket is on aft side of bulkhead.

3. Disconnect rudder and water rudder control cables at rudder cross tubes in cabin. Then remove bolts holding cables to link at point shown on Figure 8. Pass aft cables thru bulkhead Sta. 230.5. This will necessitate removal of the fairlead at this point.

4. Place drilling template in place on aft side of bulkhead Sta. 230.5 referring to Figure 7 holding it in place with four bolts at existing fairlead holes and drill ten #10 (.194) holes thru bulkhead using template as guide. Also drill two 1/2 inch diameter holes thru bulkhead using elongated holes in template as guides. Use a rotary or rat-tail file to open these holes up to full elongated size. Remove template.

5. Place Pulley Bracket complete with pulleys and cables in place against aft side of bulkhead Sta. 230.5 and after threading cables thru holes attach channel of bracket assembly to bulkhead with ten AN3-4A bolts, AN365-1032 nuts and AN960-10 washers.

6. Clamp a left and right Link 17M42280-1 on either side of original links as shown on Figure 8 and drill #12 (.189) holes thru original links using holes in new link as guides. Fasten new links to old links with AN393-21 pin, AN960-10 washer and AN380-2-2 cotter pin.

7. Thread rudder and water rudder control cables thru proper holes in bulkhead Sta. 230.5 and replace fairleads previously removed using original hardware. It may be necessary to trim outside edges of these fairleads so that they will fit in place. Reconnect these cables at correct turnbuckles and check for 25# ± 5# cable tension.

8. Reinstall reworked links as shown in Figure 8 using AN24-14 bolt, AN320-4 nut and AN960-416 washer and AN380-2-2 cotter pin for each link. Reconnect cables at crosstube in cabin.

9. Attach each forward end of new steerable tail wheel control cables to links using an AN155-16L barrel, AN165-16L eye terminal, AN23-10 bolt, AN320-3 nut and AN380-2-2 cotter pin. Refer to Figure 8.

H. STANDPIPE INSTALLATION

1. Install Standpipe 17F14040-3 and Plate 17F14040-5 as follows referring to Figure 9:

   a. Place Plate 17F14040-5 against flange of Standpipe 17F-14040-3 and check alignment of plate nuts on flange of standpipe with pilot holes in plate. Open up pilot holes in plate with a #10 (.194) drill being sure to compensate for any misalignment.

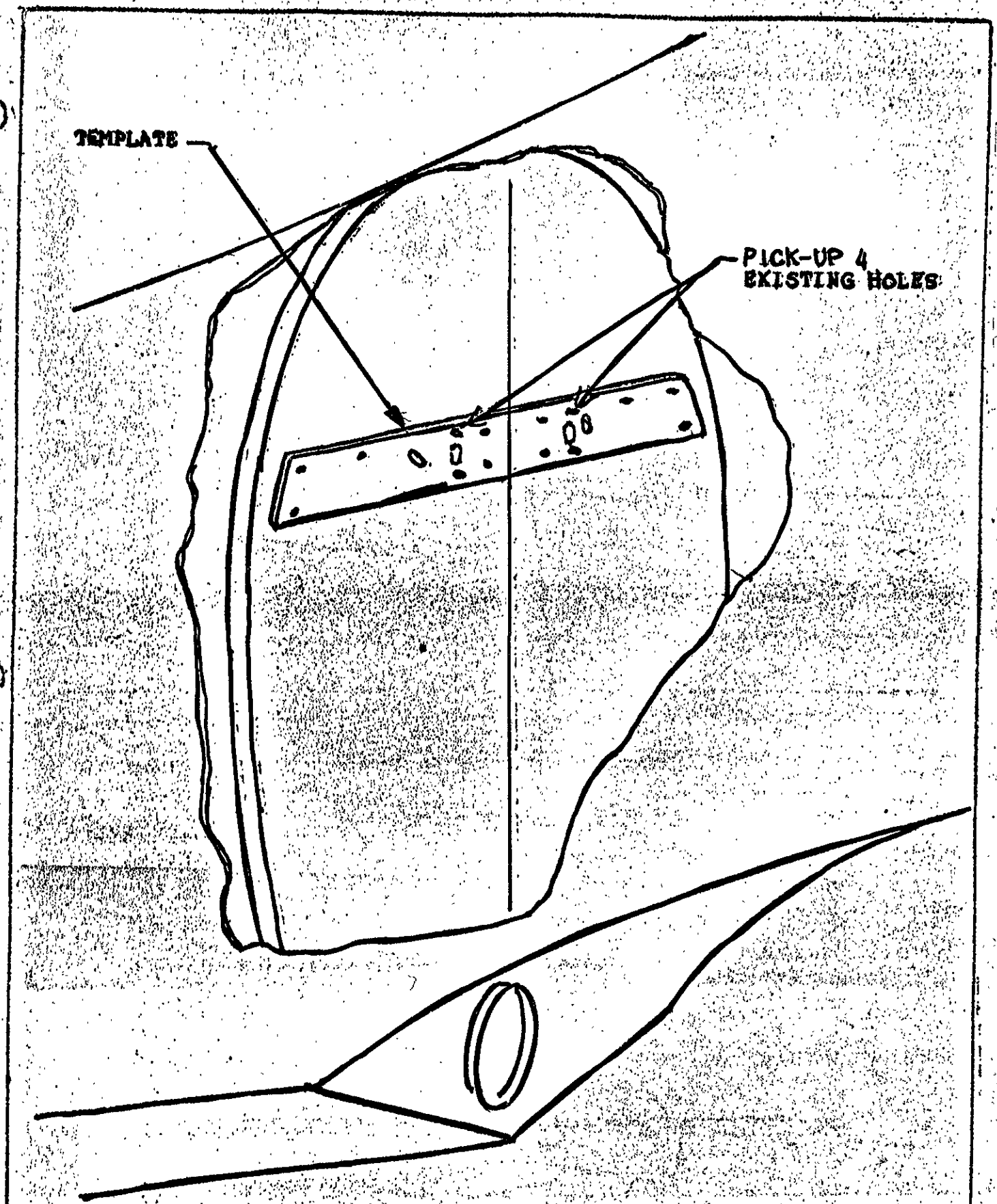

FIGURE 7

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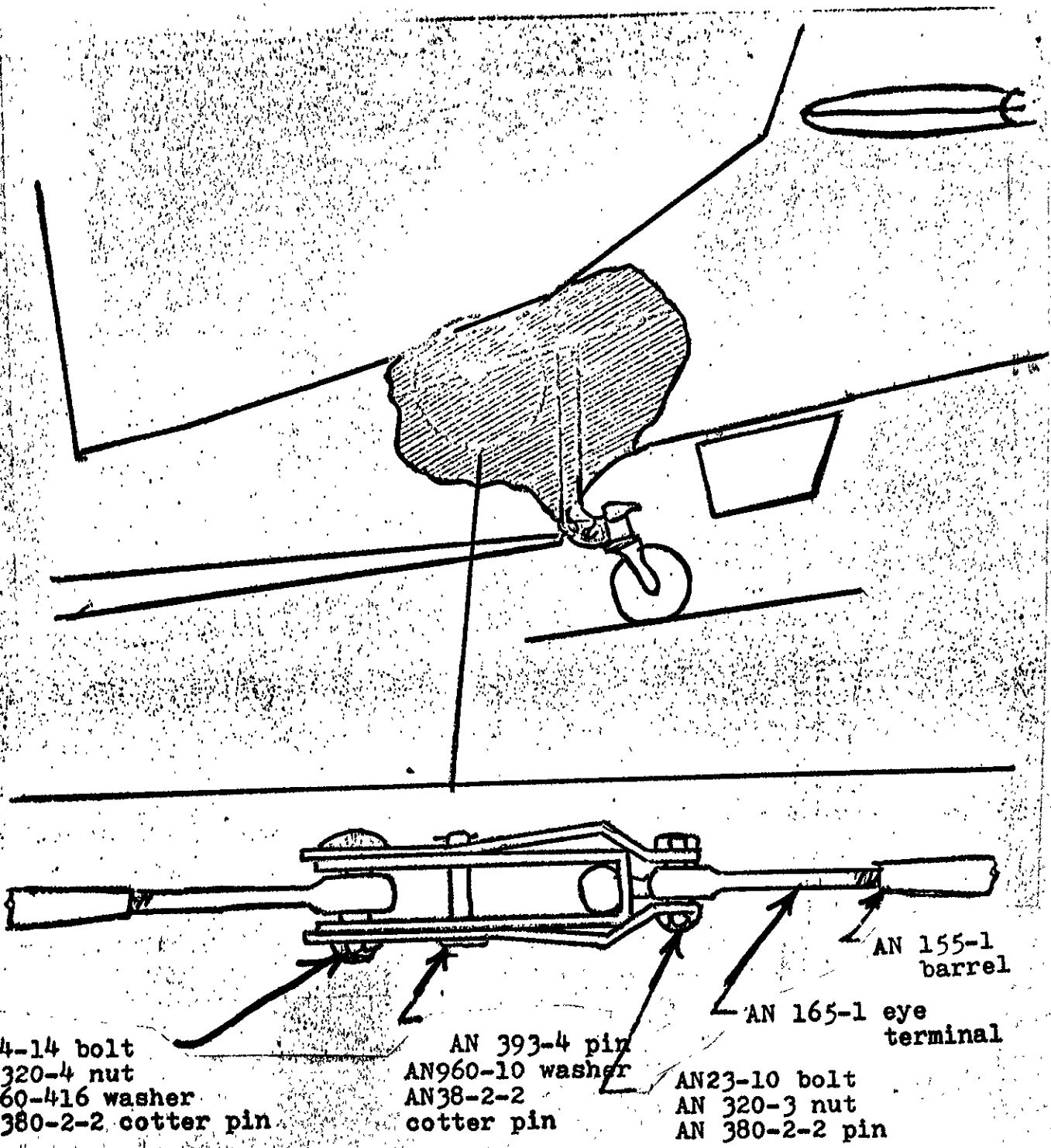
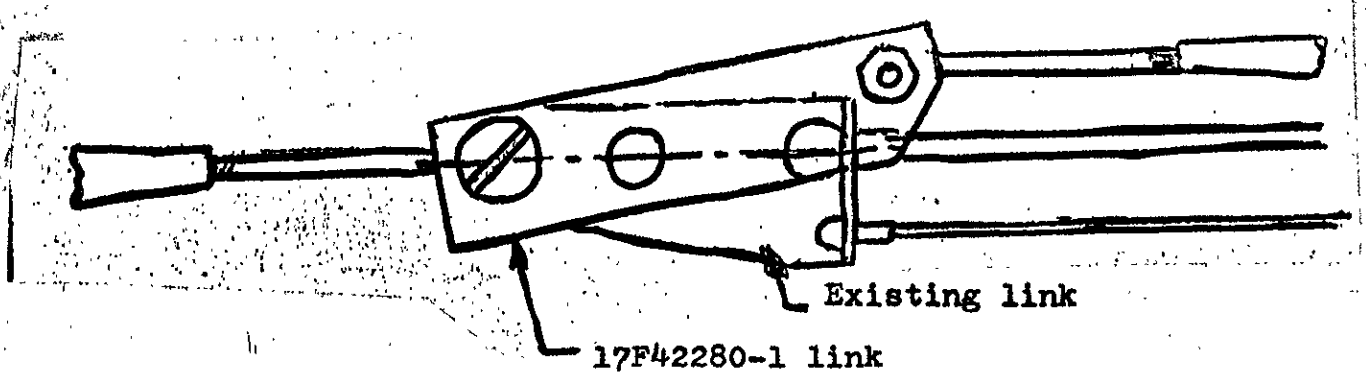

AN 155-1
barrel
AN 165-1 eye
terminal
AN24-14 bolt
AN 320-4 nut
AN960-416 washer
AN 380-2-2 cotter pin
AN 393-4 pin
AN960-10 washer
AN38-2-2
cotter pin
AN23-10 bolt
AN 320-3 nut
AN 380-2-2 pin


Existing link
17F42280-1 link

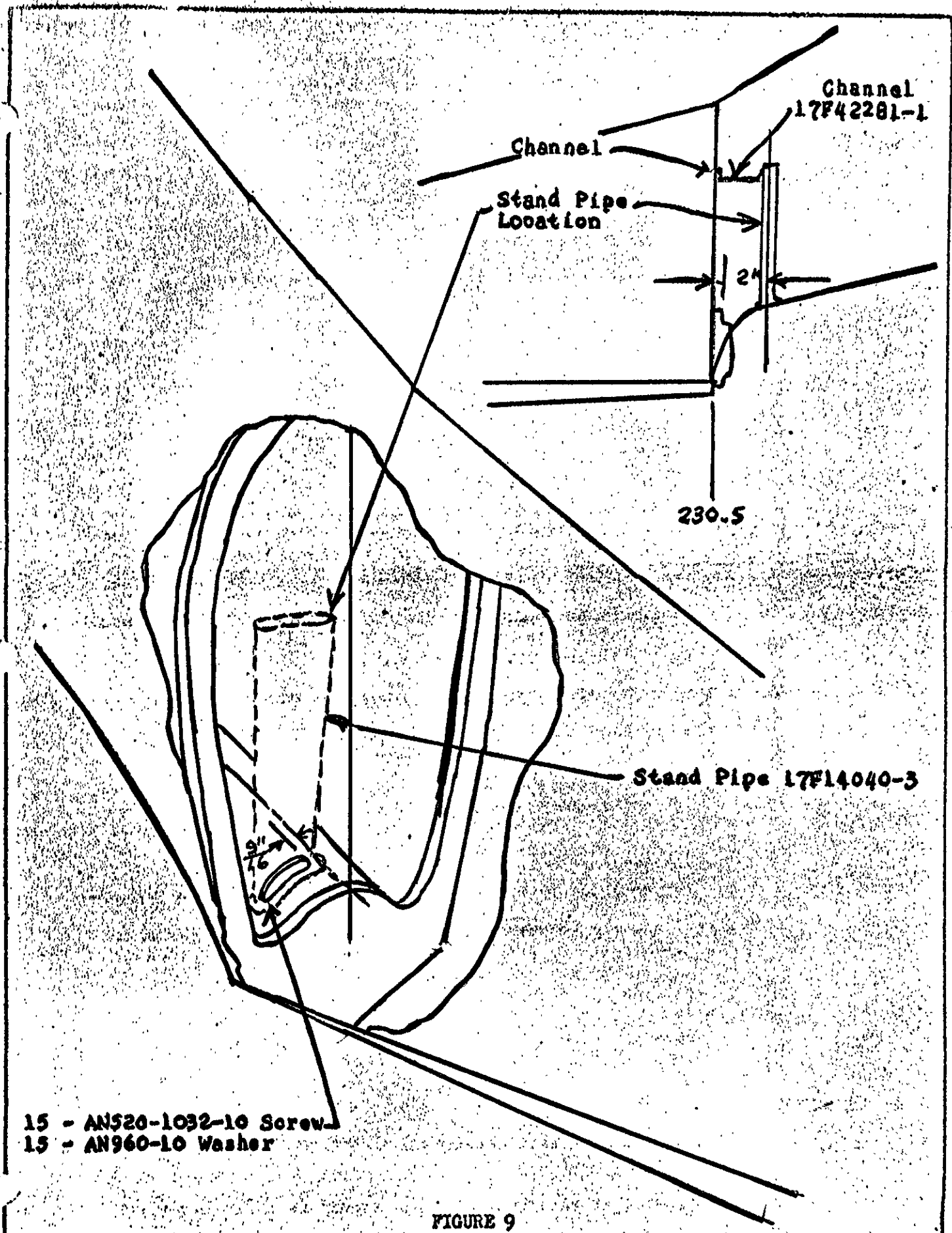

Channel
17F42281-1
Channel
Stand Pipe
Location
2"
230.5
Stand Pipe 17F14040-3
9"
16
15 - AN520-1032-10 Screw
15 - AN960-10 Washer

FIGURE 9

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b. Draw a line on the hull 2 inches aft of the aft surface of the tail wheel shock absorber bearing.

c. Place plate so that inboard edge of hole in it is 9/16 inches to the right of the vertical centerline of the airplane. The long centerline of the elongated hole in the plate should be on the line drawn under (b) above. Scribe hole to be cut in hull using hole in plate as guide. Cut hole in hull.

d. Using holes in plate as guide, drill fifteen (15) #10 (.194) holes thru hull.

e. Install Channel 17F42281-1 in place as shown picking up two existing bolts thru bulkhead Sta. 230.5.

f. Install two Bumpers 17F42267-1 as follows referring to Figure 11:

(1) Position of bumpers on right side of tail boom is to be determined by tail wheel fork in retracted and full swivel position. Mark location of interference with fork on tail boom.

(2) Place bumpers at points of interference and using holes in bumpers as guides drill four #19 (.166) holes for each bumper.

NOTE: If bumper overlaps skin splice locate bumpers so that no holes are drilled in skin splice. If necessary use only two attaching holes.

(3) Install each bumper with four AN526-832-12 screws, AN365-832 nuts and AN960-8 washers.

g. Install standpipe and plate using fifteen AN520-1032-10 screws and AN960-10 washers first applying ample amount of UL-10161 (or equivalent) sealing compound between the plate and hull.

h. Attach top of standpipe to channel so that edges of standpipe match edges of aft leg of channels using an AN23-8A bolt, AN365-1032 nut and AN960-10 washer. Use a #10 (.194) drill thru top of standpipe for this bolt.

i. Pass aft ends of steerable tail wheel control cables down thru the standpipe.

I. RIGGING

1. Assemble steerable tail wheel control cables and pulleys as follows referring to Figure 10:

a. Pass right hand control cable around an AN210-3A pulley.

b. Assemble pulley to Bracket 17F42274-1 with an AN24-22 bolt.

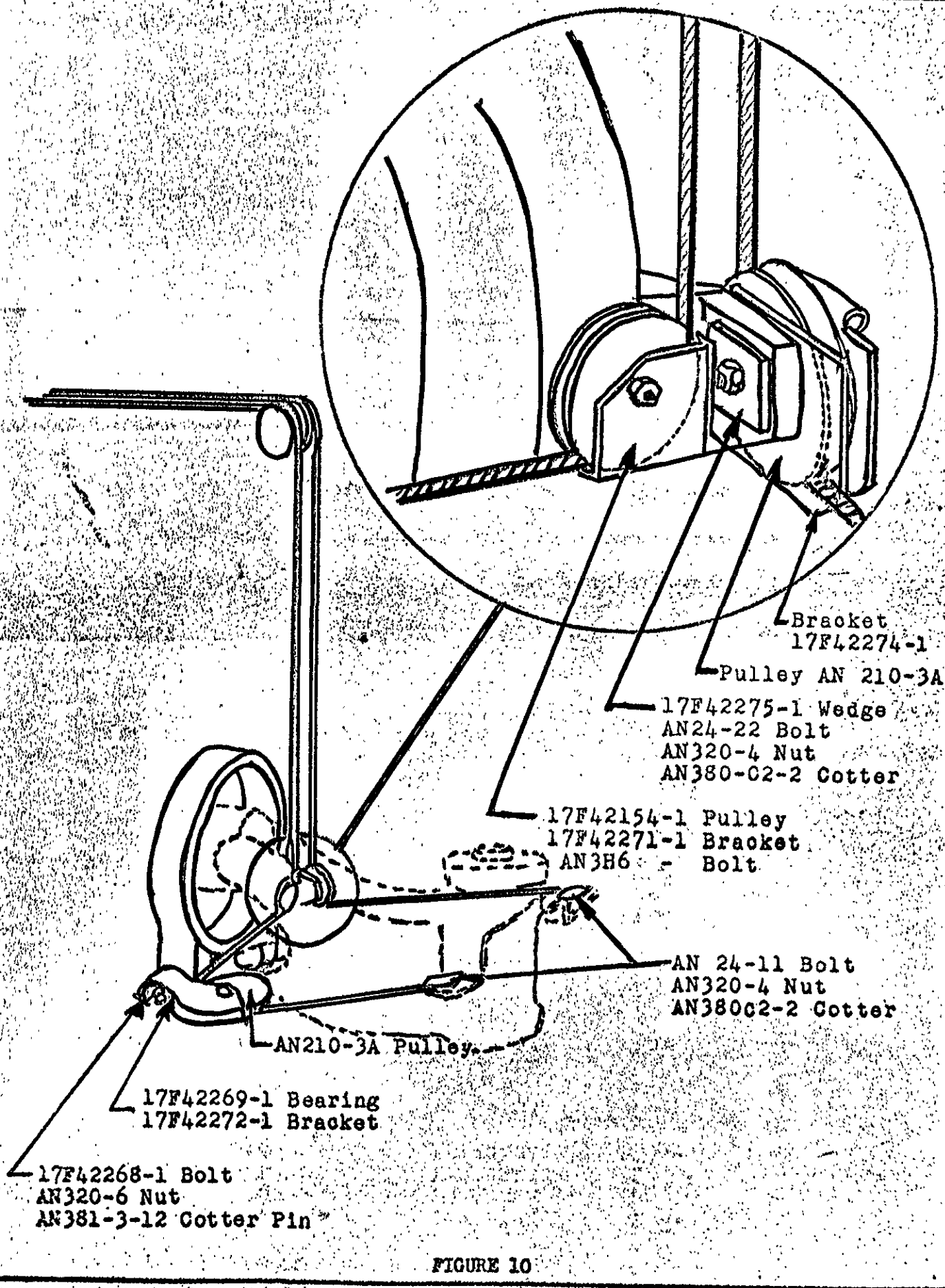

FIGURE 10

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c. Fasten pulley and bracket assembly to ear on aft shock absorber collar with Wedge 17F42275-1 and an AN320-4 nut and AN380C2-2 pin.

d. Pass left hand control cable around Pulley 17F42154-1 and assemble this on collar with Bracket 17F42271-1, AN3H6 bolt and AN936-B10.

e. Pass left hand control cable around an AN210-3A pulley and fasten this pulley to bracket installed under paragraph F, 1b. with an AN24-14 bolt, AN320-4 nut and AN380C2-2 cotter pin.

f. Attach right and left hand cables to right and left hand ears on quadrant with AN24-11 bolt, AN320-4 nut and AN380C2-2 cotter pin. Set cables for 8 lbs. tension. Lockwire all turnbuckles.

2. Check hydraulic operation of tail wheel.

3. Check operation and travel of rudder and water rudder.

4. Remove hull cradle.

5. Place Decal 17F88024-2 on instrument panel.

Parts Required:

Parts may be obtained thru your local distributor or deal dealer.

Service Bulletin Kit No. 17 consists of the following:

Quan.	Part No.	Part Name
* 1	17F12010-5	Channel
* 1	17F12010-6	Bracket
* 1	17F12010-7	Bracket
* 1	17F12010-8	Bracket
* 1	17F12010-9	Bracket
1	17F14040-3	Standpipe Weld Assy.
1	17F14040-5	Plate
2	17F42045-2	Washer
**1	17F42093-1	Quadrant Assy.
1	17F42152-1	Washer
1	17F42154-1	Pulley
**1	17F42175-1	Bushing

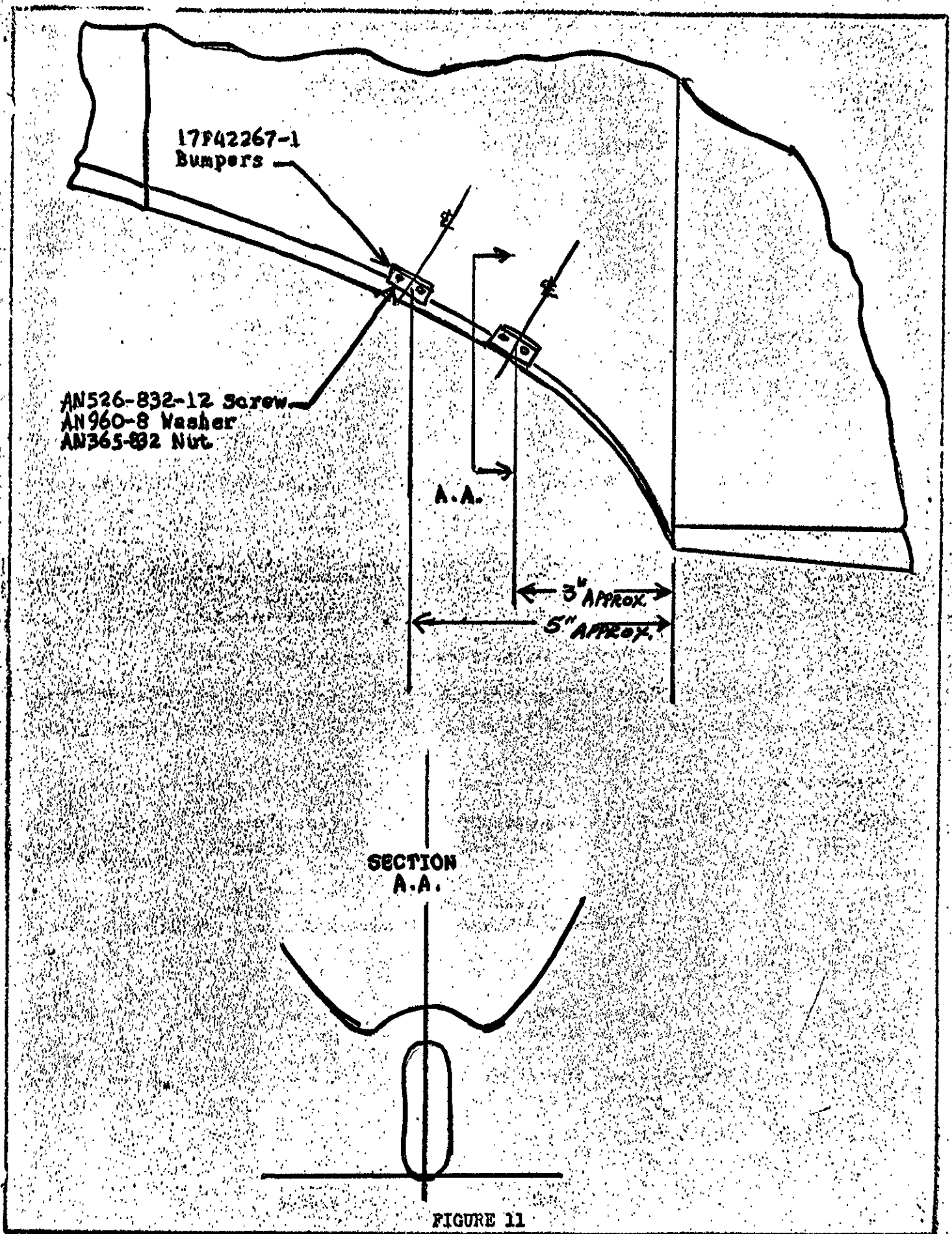

17F42267-1
Bumpers
AN526-832-12 Screw
AN960-8 Washer
AN365-832 Nut
A.A.
3" Approx.
5" Approx.
SECTION
A.A.

FIGURE 11

	Quan.	Part Number	Part Name
***	1	17F42178-1	Spindle
	1	17F42180-1	Cam Assembly
	1	17F42198-1	Washer
***	1	17F42222-1	Pin
	2	17F42267-1	Bumpers
	1	17F42268-1	Bolt
	1	17F42269-1	Bearing
	1	17F42271-1	Bracket
	1	17F42272-1	Bracket Assy.
	1	17F42274-1	Bracket
	1	17F42275-1	Wedge
	1	17F42276-1	Wedge
	1	17F42277-1	Pin
*	1	17F42279-1	Cable Assy.
*	1	17F42279-2	Cable Assy.
	2L/2R	17F42280-1	Link
	1	17F42281-1	Channel
	1	17F88024-2	Decalcomania
	1	AN3H6	Bolt
	10	AN3-4A	Bolt
	1	AN23-8A	Bolt
	2	AN23-10	Bolt
	2	AN24-11	Bolt
	3	AN24-14	Bolt
*	2	AN24-15	Bolt
	1	AN24-22	Bolt
	2	AN155-16L	Barrell
	2	AN165-16L	Eye Terminal
*	2	AN210-3A	Pulley
	2	AN210-3A	Pulley
	1	AN310-10	Nut
	2	AN320-3	Nut
*	2	AN320-4	Nut
	6	AN320-4	Nut
	1	AN320-6	Nut
	8	AN365-832	Nut
	11	AN365-1032	Nut
*	6	AN380-2-2	Cotter Pin
	6	AN380-2-2	Cotter Pin
	1	AN380-5-10	Cotter Pin
	4	AN380C2-2	Cotter Pin
	1	AN380C4-4	Cotter Pin
	1	AN381-3-12	Cotter Pin
*	4	AN392-21	Pin
*	2	AN393-21	Pin
	5	AN505C10-8	Screw
	15	AN520-1032-10	Screw
*	8	AN526-832-12	Screw
	1	AN936-B10	Washer
	8	AN960-8	Washer
	28	AN960-10	Washer
*	2	AN960-416	Washer
	2	AN960-416	Washer
	2	AN960-C1016	Washer
	1	AN7502-24	Nut
	2	NAS143-24	Washer

* These parts make up the bracket, pulley and cable assembly.

** Quadrant and Bushing are delivered assembled.

*** Spindle and Pin are delivered assembled.

Tools Required: Mechanics standard handtools plus the following:

Right Angle or "Gooseneck" Drill
#26 (.147) Drill
#22 (.157) Drill
#19 (.166) Drill
#12 (.189)Drill
#10 (.194) Drill
1/4 (.250) Drill
#10-24 NC-2 Tap
#10-32 NF-3 Tap
82° .372 inch Diameter Countersink

Time Required: Approximately 16 manhours are required for modifying existing parts and 32 manhours for installation of kit.

Weight and Balance:

	Weight	Arm.	Moment
Non-Steerable T.W. Total Weight	38.5	225.06	8658
Steerable T.W. Total Weight	41.9	235.73	9877
Additional Ballast Necessary	7.0	4.5	32

Make suitable entry in log book.

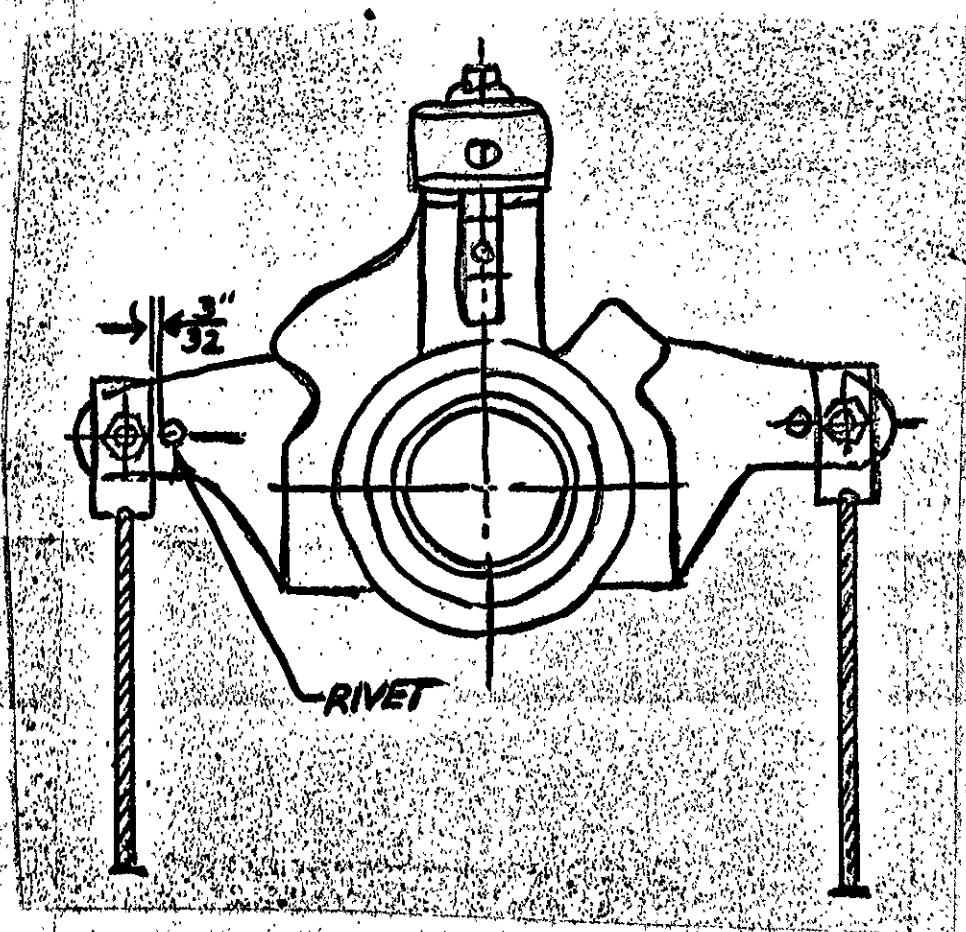
W. H. Ehmann
Service Manager

Supplement No. 1, Service Bulletin no. 17

July 1, 1947

Installation Steerable Tail wheel

To prevent steerable tail wheel control cable terminals from swivelling one hundred and eighty degrees on the quadrant when the tail wheel is retracted, rivets are placed along-side the terminals. If the cable terminals swivel there is danger of breaking the cables. Some of the early quadrants shipped in kits did not have these rivets installed. Please inspect these quadrants and if the rivets are not evident, install a rivet, screw or bolt so that there is 3/32 inch clearance between the inboard edge of ther terminal and the edge of the head of the rivet, screw or bolt.



SUPPLEMENT NO. 2
Service Bulletin No. 17
October 16, 1947

INSTALLATION STEERABLE TAIL WHEEL

It was recently brought to our attention that in instances where the Steerable Tail Wheel cable tension was not, at all times, rigorously maintained at specified limits the danger of resultant slack in these cables causing fouling was existant. In order to offset any possibility of this fouling, the following modification should be incorporated in the installation at the earliest possible date and not later than the next 25 hour inspection.

1. Make an overlay of the sketch of the horn (Figure 1) as shown on the reverse side of this supplement.

2. Use the overlay as a pattern to fabricate 2 pieces of this detail from .091 gauge aluminum plate.

3. Remove the quadrant arms from the tail wheel quadrant assembly after disconnecting the cable clips from the quadrant arms.

4. Drill out the stop-rivet from the arms.

5. Fit the horns to the arms as shown in Figure 1. Clamp into place. Drill out corresponding holes for attachment in the horn, using the arms as a template.

   (a) Drill "F" (.257) for clip attachment.
   (b) Drill #30 (.187) for rivet hole.

6. Rivet the horns to arms using an AN441-4-5 rivet.

7. Remove clamps and reassemble arms to the quadrant.

8. Spread the cable clips to fit over the horn and arm and attach with AN24-11 bolts.

9. Make suitable notation of compliance in the Aircarft Log.

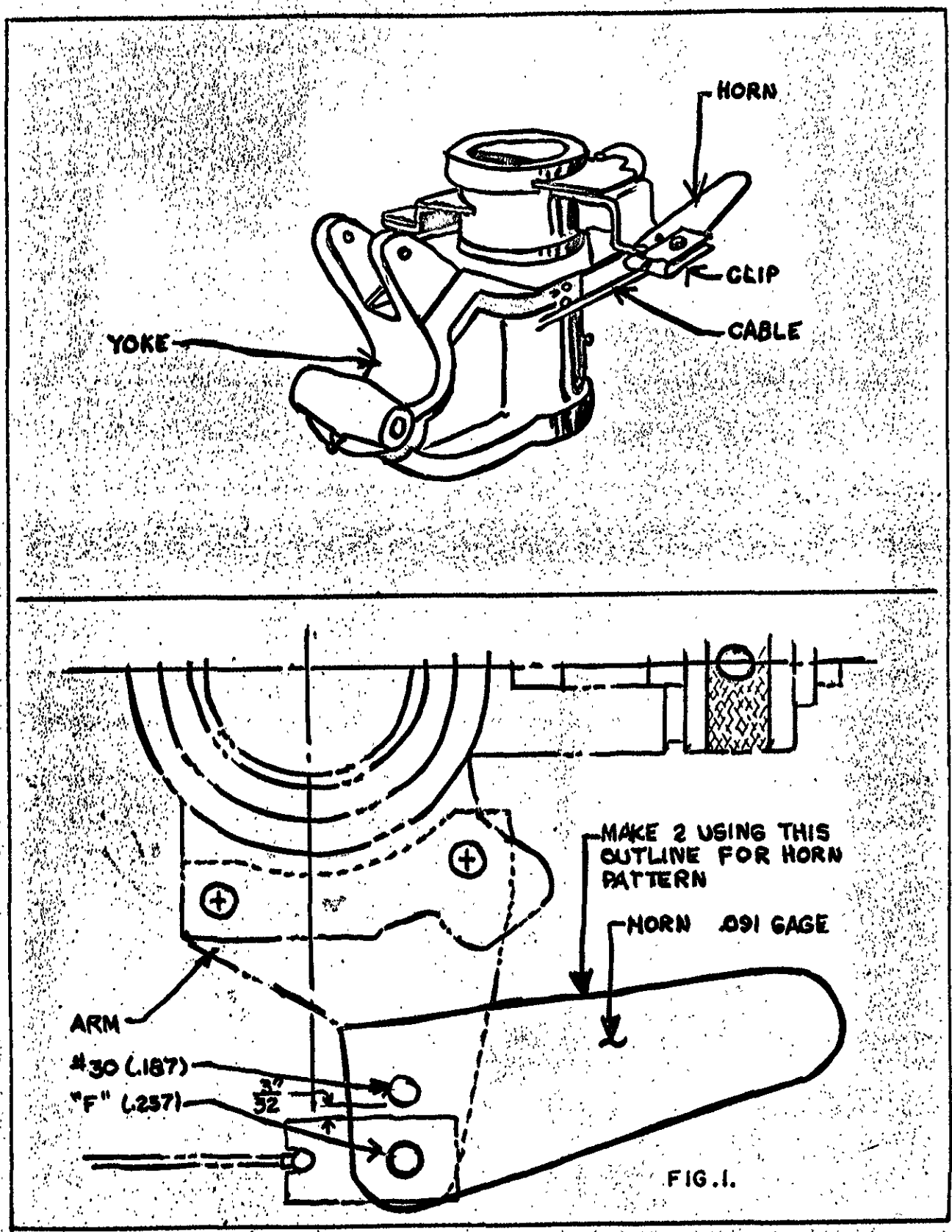

HORN
CLIP
CABLE
YOKE
MAKE 2 USING THIS OUTLINE FOR HORN PATTERN
HORN .091 GAGE
ARM
#30 (.187)
"F" (.257)
3/32

FIG. 1.

Service Bulletin No. 18

Subject: Service Bulletin #18 - "Installation of Anti-Swirl Vanes in Carburetor Air Duct"

Reason for Change: To prevent excessive R.P.M. drop off when carburetor heat is used. The addition of the anti-swirl vanes straightens the flow of air to the carburetor thereby preventing and excessively rich mixture when carburetor heat is used. This is a Mandatory Change and should be incorporated before icing conditions are encountered.

Airplanes Affected: Republic Serial Nos. 5 thru 1035 inclusive except the following which have already been modified at the factory: 767, 915, 948, 949, 957, 959 thru 999 inclusive, 1004 thru 1010 inclusive, 1014, 1019 thru 1025 inclusive. Serial No. 1036 and up have been modified at the factory prior to delivery

Description of Change: This change involves removing the carburetor, installing the anti-swirl vanes in the air duct below the carburetor and reinstalling the carburetor.

1. Open top engine cowl.

2. Disconnect upper and lower carburetor flange studs, fuel lines and mixture and throttle controls at carburetor.

3. Since upper studs are threaded into the intake mainfold, it is necessary to hoist up aft end of engine which will withdraw these studs from the upper carburetor flange and permit removal of carburetor. Therefore, hoist aft end of engine to clear carburetor flange studs and remove carburetor. If a hoist is not available, 2 x 4 wood planking and an automobile jack can be used to jack up the rear of the engine.

4. Locate anti-swirl vanes as indicated in Figur 1, drill #10 (.193) holes through air intake duct to match holes in vanes and attach vanes with AN3-3A bolts, AN960-10L washers and AN365-1032 nuts provided. Washers and nuts are to be on the outside of the air intake duct.

NOTE: Be sure to install vane with shorter leg in proper location.

5. Clean out all drill chips from the air intake duct. Check operation of heat control valve.

6. Reinstall carburetor and attach fuel lines and mixture and throttle controls at carburetor.

7. Run up engine and operate carburetor heat control. Under normal conditions the drop off should not exceed 275 R. P. M. with heat control in any position.

Parts Required: Parts may be obtained through your local dealer or distributor at no charge.

Service Bulletin Kit No. 18 consists of the following:

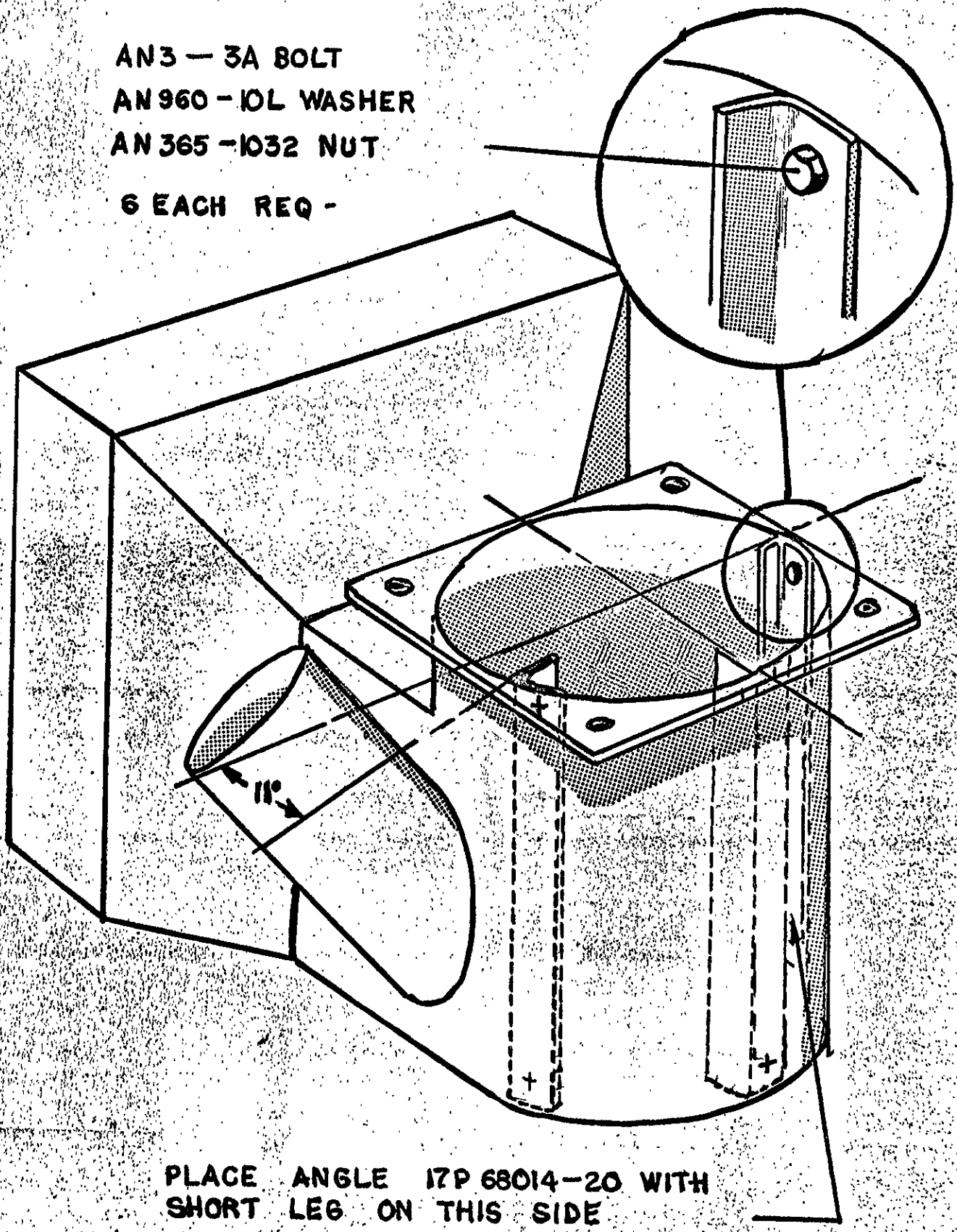
Quantity	Part Number	Part Name
2	17P68014-18	Angle
1	17P68014-20	Angle
6	AN3-3A	Bolts
6	AN960-10L	Washer
6	AN365-1032	Nuts

Time Required: Approximately 4 manhours are required to accomplish this change.

W. H. Ehmann
Service Manager

AN3 — 3A BOLT
AN960 - 10L WASHER
AN365 - 1032 NUT

6 EACH REQ -



PLACE ANGLE 17P 68014-20 WITH SHORT LEG ON THIS SIDE

Service Bulletin No. 19

Subject: Installation Wing Float Strut Braces

Reason for Change: The design of the wing float strut is adequate for normal usage. However, a brace has been developed which will double the ability of the strut to take side loads such as are imposed during drift or rough water landings. This brace, which attaches to the wing lift strut fitting and the bottom of the float strut, is designed so that two rivets will shear before a heavy side load could damage the lift strut fitting. As this brace also increases the strength of the float strut in a fore-aft direction, it is necessary to add a reinforcing angle to the rear spar at the inboard end so that an adequate margin of safety is provided between the ultimate strength of the float strut and the point at which the rear spar may crimp.

Description of Change: This change involves installing a brace between the bolt holding the lift strut to the wing and the upper of the thru bolts holding the float to the float strut. A spacer with two large disc washers is inserted inside the float strut to keep it from collapsing under load. Also, an angle is bolted to the forward lower side of the rear spar at the inboard end. The change shall be accomplished as follows:

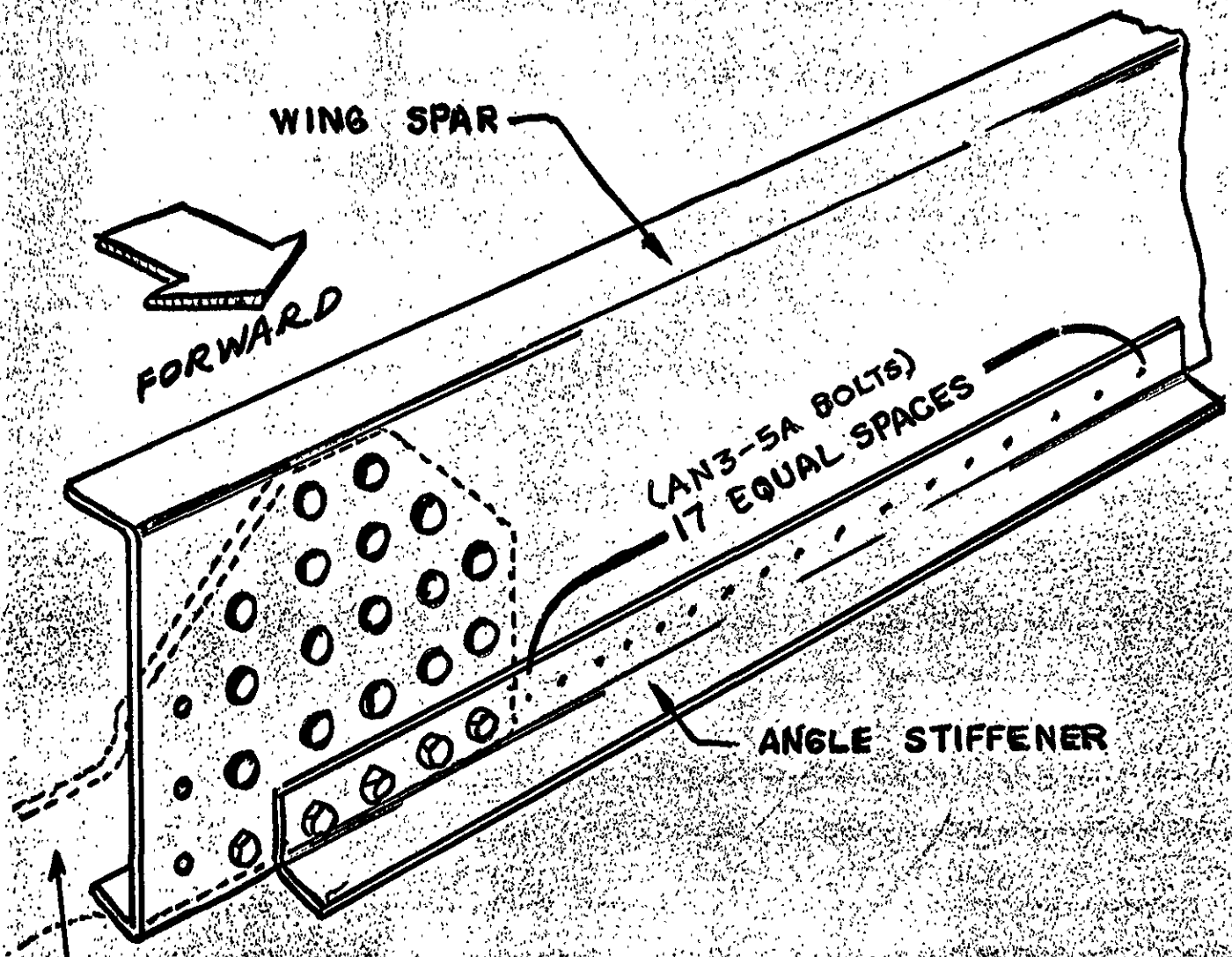
Installation Wing Reinforcing Angle:

1. Place flaps in partially down position.

2. Remove four outboard bolts from fitting on inboard end of rear spar, leaving inboard end bolts as is.

3. Place 17W21028-1L angle in position shown on Figure 1. This is on the forward bottom side of the aft wing spar. Insert angle thru spar lightening hole. Install second from inboard end bolt thru existing hole in angle and clamp outer end of angle in position.

4. Mark location of seventeen holes to be drilled in spar web as shown on Figure 1 and drill thru web and angle with a #10 (.193) drill. Install AN3-5A bolts, AN365-1032 nuts and AN960-10 washers.



NOTE RIGHT WING ONLY

CUT OUTBOARD END OF ANGLE STIFFENER TO CLEAR EXISTING STIFFENER

WING ATTACHMENT FITTING

FIG. 1.

5. Drill three 1/4" (.250) holes thru angle at inboard end using holes in spar as guides. Reinstall original 1/4" bolts, nuts and washers.

6. Install 17W21028-1R angle in same manner on right wing except that it will be necessary to cut a piece off the outboard end of the angle to clear existing stiffener inside the wing.

Installation Float Strut Brace

7. Install Float Strut Brace Assembly 17W22013-1L, Spacer 17W22011-1 and Lug 17W22010-1 as follows on the left wing referring to Figure 2.

   a. Remove wing float.

   b. Attach Strut Brace Assembly 17W22013-1L to forward side of wing lift strut fitting using same bolt which attaches lift strut to fitting.

   c. Reinstall wing float, first placing Spacer 17W22011-1 and two Washers 17W2201L-1 over spacer in upper attaching hole in strut as shown on Figure 2 (a).

   d. Put Lug 17W22010-1 in place as shown. Using pilot holes in lug as guides drill thru lug at end of strut with a #20 (.161) drill first being sure that there is at least 1/8 inch flat at the two locations shown on Figure 2 (b). Attach lug to strut with two AN441-5-7P rivets.

8. Repeat above installation on right side.

9. Make suitable entry in log books.

Parts Required:

Service Bulletin Kit No. 19 (Spare Parts Item 1570) consists of the following:

Quantity	Part Number	Part Name
1L-1R	17W21028-1	Angle
2	17W22010-1	Lug
2	17W22011-1	Spacer
4	17W22012-1	Washer
1L-1R	17W22013-1	Strut
34	AN3-5A	Bolt
34	AN365-1032	Nut
4	AN441-5-7P	Rivet
34	AN960-10	Washer

Time Required: Approximately 6 man-hours are required to accomplish this change.

W. H. Ehmann
Service Manager

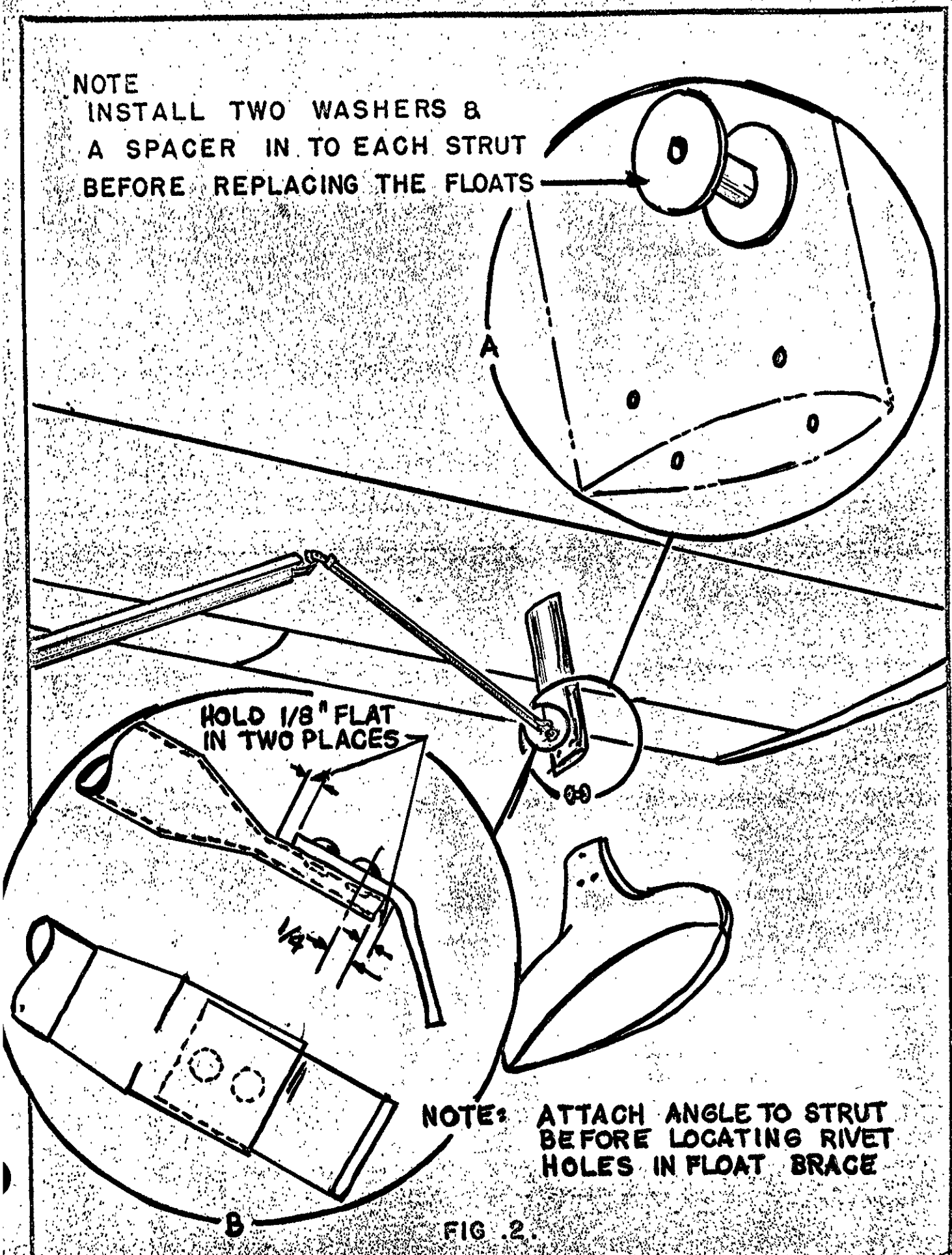

NOTE
INSTALL TWO WASHERS &
A SPACER IN TO EACH STRUT
BEFORE REPLACING THE FLOATS
A
HOLD 1/8" FLAT
IN TWO PLACES
1/4"
B
NOTE: ATTACH ANGLE TO STRUT
BEFORE LOCATING RIVET
HOLES IN FLOAT BRACE

FIG. 2.

October 10, 1947

Service Bulletin No. 20

MANDATORY INSPECTION

INSPECTION OF TRIM TAB HORN AND ROD ATTACHMENT

Reason for Change:

An investigation of several recent reports of excessive vibration or buffeting in flight disclosed a wearing or elongation of the trim tab horn attaching hole which permitted play in the tab and resulted in the unsatisfactory flight characteristics such as elevator chatter.

This condition, in those airplanes investigated, seems related to a matter of insufficient lubrication. Since the rod attachment is a normal item in the pre-flight inspection, it is recommended that the tab hole and clevis pin be liberally and frequently oiled.

The following inspection should be performed immediately and thereafter at each subsequent 25 hour inspection.

Airplanes Affected: All RC-3 Seabee Airplanes.

Description of Inspection:

Hold control rod forward of the attaching clevis fitting and check trim tab for play at the attachment. A maximum of 1/8" play is permissible when measured vertically at the trailing edge of the trim tab.

In the event the hole is found to have worn, permitting excessive play between the control rod and tab, the following repair should be accomplished:

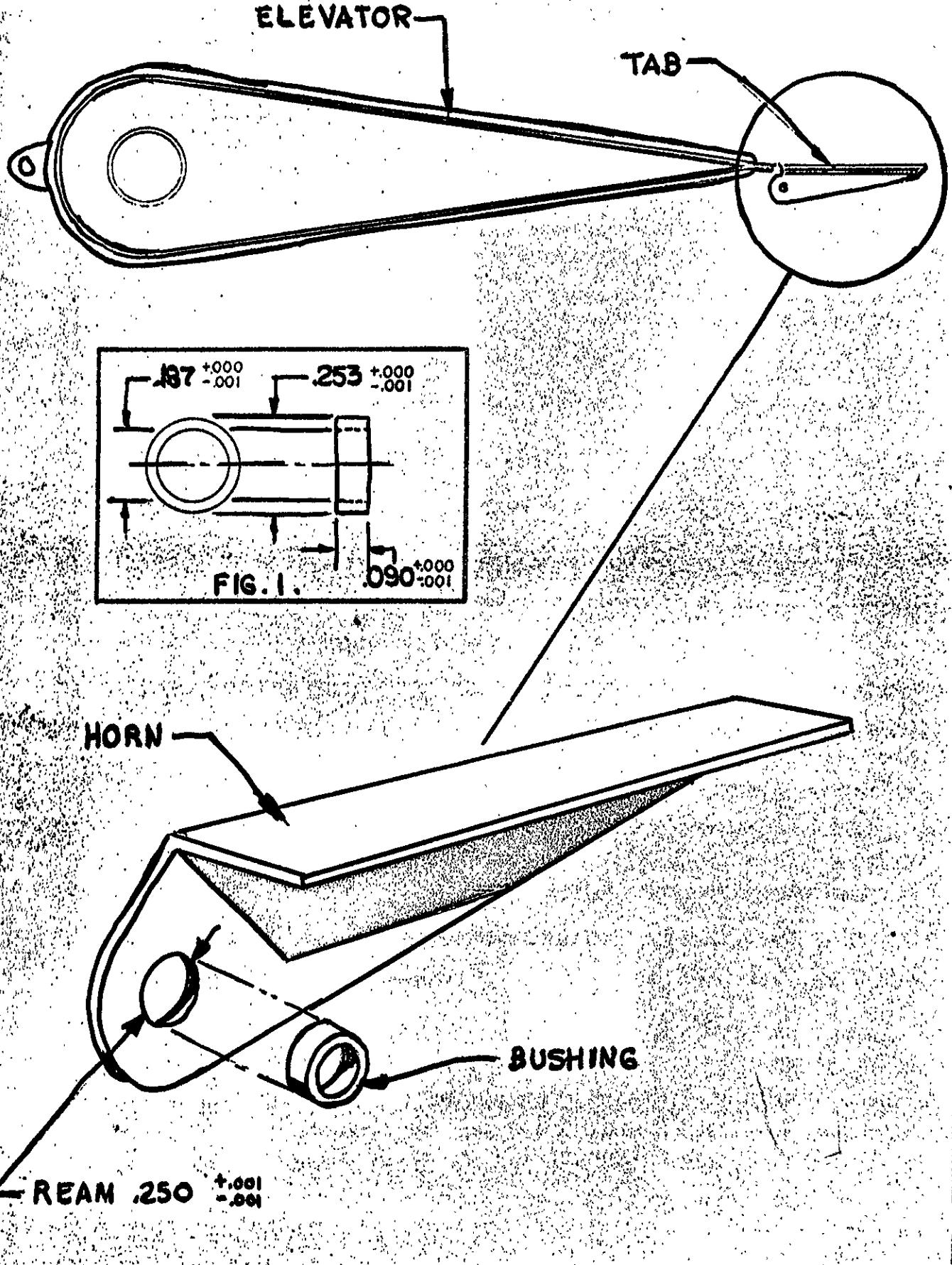
Installation of Bushing:

NOTE: A sketch of the bushing (see Figure 1) is reproduced to expedite immediate repair. If facilities are not at hand to accomplish this, these bushings will be available to you thru your distributor at no charge.

1. Remove the cotter key and pin from the clevis fitting.
2. Enlarge hole in the tab to 15/64".
3. Ream to .250 + .001
   - .001
4. Use a pair of parallel pliers or a suitable clamp to press the bushing into the hole.
5. Reassemble and lubricate the attachment.
6. Make suitable notation of compliance in the Aircraft Log Book.

W. H. Ehmann
Service Manager

(161)


ELEVATOR
TAB
.187 +.000 -.001
.253 +.000 -.001
.090 +.000 -.001
FIG. 1.
HORN
BUSHING
REAM .250 +.001 -.001

October 14, 1947
Page 1 of 2 pages

Service Bulletin No. 21

INSTALLATION OF PROPELLER SAFETY SPRING

Reason for Change:

To install a safety spring to prevent the propeller from inadvertently going into reverse pitch in the event of failure of the reverse control wire.

Airplanes Affected: Seabees Serial Nos. 5 and all subsequent airplanes

Description of Change:

1. Unlatch and lift top engine cowl.
2. Drill hole with No. 51 drill in each of two locations shown on Figure 1.
3. Install SK-18837-1 spring.
4. Due to variations in the internal friction of the propeller control valve, it is suggested that the reverse control wire be temporarily disconnected, after the safety spring is installed and running the engine with the propeller pitch control in both high and low pitch to check the effectiveness of the safety spring in preventing the propeller from going into reverse pitch.
5. Reconnect the reverse control wire.
6. Make complete ground check of propeller operating controls.

Parts Required: To be obtained from your distributor at no charge.

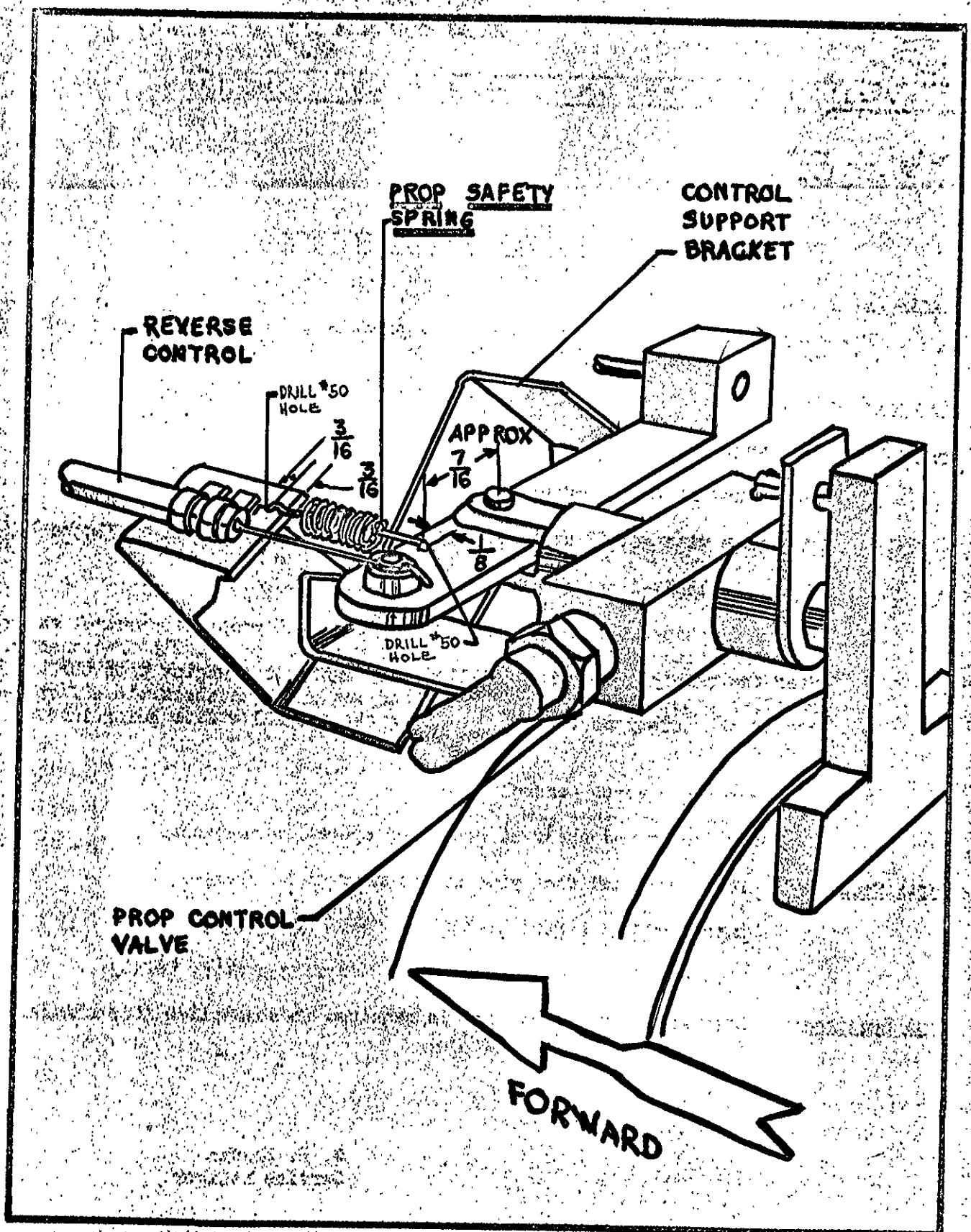
Quantity	Part Number	Part Name
1	SK-18837-1	Spring-Prop. Safety

Time Required: Approximately 1/2 manhour is required to accomplish this change. No labor allowance is given.

W. H. Ehmann
Service Manager

If you have sold your airplane, please forward this Bulletin to the present owner.

(1023)


PROP SAFETY SPRING
CONTROL SUPPORT BRACKET
REVERSE CONTROL
DRILL #50 HOLE
3/16
3/16
APPROX 7/16
1/8
DRILL #50 HOLE
PROP CONTROL VALVE
FORWARD

Service bulletin

MANDATORY

Seabee

UBLIC AVIATION CORPORATION FARMINGDALE, LONG ISLAND, NEW YORK

Service Bulletin No. 22

MODIFICATION OF THE ELECTROL INC. HYDRAULIC POWER-PAK ACTUATING HANDLE AND FULCRUM FASTENERS

Reason for Change: To provide increased security for pump handle attachment.

Airplanes Affected: All Republic RC-3 airplanes.

Description of Change:

The modification to the Electrol Inc. hydraulic power-pak involves replacing four (4) elastic stop nuts with aircraft castle type nuts and cotter pins. Three of the affected bolts are not drilled to permit the use of cotter pins, in consequence it will be necessary to do either of the following:

a. Remove undrilled bolts and replace with (2) AN24-17 and (1) AN24-13 bolts.

b. Drill the bolts now installed to permit use of cotter pins. Use a #48 (.076) drill.

Accomplish as follows:

1. Open anchor compartment hatch and remove anchor and bag to permit access to hull compartment.
2. Remove the cover from the access hole which is located forward of the pilot's seat, at approximately Station 48.
3. Consult the accompanying illustration and remove the nuts and bolts as indicated.
4. Accomplish bolt change or rework as outlined above.
5. Replace bolts and fasten with (3) AN310-4 nuts.

   NOTE: In tightening the nuts on the (3) AN24 bolts care should be exercised to prevent overtightening and subsequent binding of these hinge points.

6. Remove the elastic stop nut attaching the fulcrum-adapter (eye bolt) and pump handle. Replace with (1) AN310-5 nut. (The Fulcrum-adapter is already drilled for cotter pin use.)
7. Safety all attachments concerned with cotter pins.
8. Replace the anchor and access hole components.
9. Make notation indicating compliance in airplane log.

Parts Required:

Three (3)	AN310-4	Castle Nuts	
One (1)	AN310-5	Castle Nut	
Two (2)	AN24-17	Clevis Bolts	(optional)
One (1)	AN24-13	Clevis Bolt	(optional)
Four (4)	AN380-2-4	(1/16" x 1")	Cotter Pins

These parts are all standard and are procurable from most common hardware stocks.

If you have sold your airplane, please forward this bulletin to the present owner.

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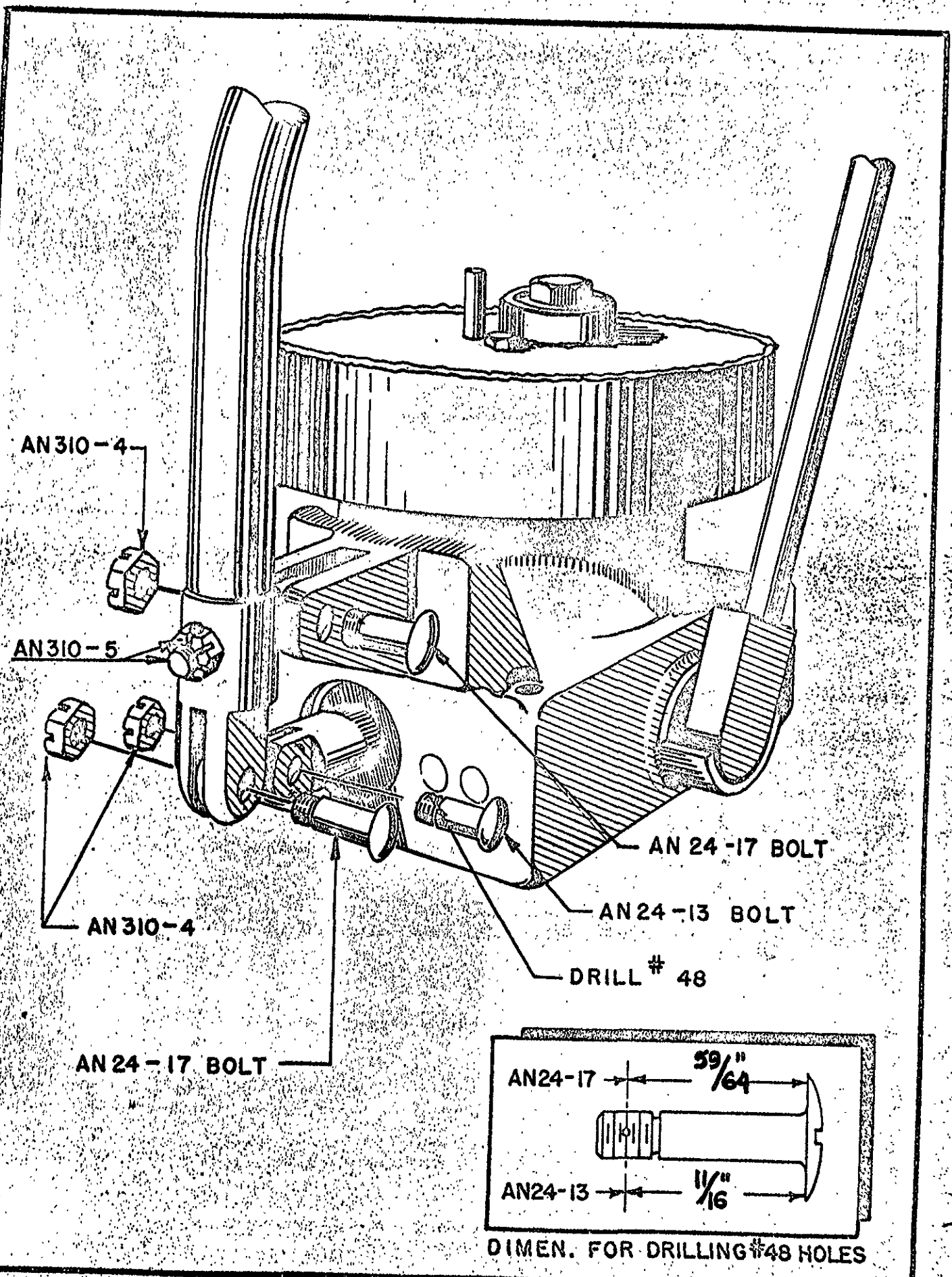

DIMEN. FOR DRILLING #48 HOLES

June 3, 1949 Service Bulletin No. 23

CHECK YOUR FUEL

In order to eliminate the possibility of power failure due to fuel starvation, operators are requested to have their fuel quantity gages periodically checked for accuracy and when using a dip stick to visually check the quantity of fuel in the tank, to do so only when the engine is inoperative.

Disregarding all standard operating procedures and the "EXTERIOR CHECK (PREFLIGHT)" instructions contained in the SEABEE OWNERS MANUAL with reference to visually checking the quantity of fuel in the tank, some operators have checked their fuel with a dip stick while the engine is running. Not only is this an improper procedure from the viewpoint of safety owing to the close proximity of the propeller but it is possible by so violating all normal rules of both airplane operation and common sense, to receive an incorrect reading due to the by-passed fuel which is returned to the tank from the engine driven pumps.

It is also possible, under certain atmospheric conditions, for fuel vapors to condense on the tank cover plate and to result in a false fuel level reading if the dip stick is inserted with the calibrated side appearing on top.

It is suggested that the enclosed decal be applied, in the vicinity of the fuel tank filler neck, which reads as follows:

"WARNING"

DO NOT CHECK FUEL WITH ENGINE RUNNING OR WITHIN FIVE MINUTES AFTER SHUTDOWN. ALWAYS INSERT STICK WITH CALIBRATED SIDE FACING GROUND."

W. H. Ehmann
Service Manager

If you have sold your airplane, please forward this Bulletin to the presnet owner.

August 30, 1949 Service Bulletin No. 24

CABLE CORROSION

It has been brought to our attention that a corroded condition of the inside strands was discovered in the course of a very rigid inspection of the control cables installed in several Seabees. It is our understanding that the outward appearance of the cables gave every indication that they were in perfect condition and that under normal circumstances they would have passed inspection without further consideration.

In view of the above, an examination of the cables, as described below, should be made immediately and at the end of each 100 hours of operation.

The cables should be disconnected and the core checked over the entire length by carefully twisting the cables opposite to the direction of winding. This will separate the strands and permit inspection for inside corrosion. If any cables are found to be internally rusted they should be replaced immediately and in any event, after inspection and before reinstallation, the protective coating of Paralketone should be renewed on all cables.

In an effort to cooperate as fully as possible with the Civil Areonautics Administration and as a guide for future action, we are requesting that you advise us if the condition noted above is found on any of the cables installed in your plane, designating the particular cable affected.

W. H. Ehmann
Service Manager

If you have sold your airplane, please forward this Bulletin to the present owner.

(168)

May 19, 1950 Service Bulletin No. 25

INSPECTION FOR CORROSION

Examinations made during several recent relicensing inspections have disclosed unusually severe corrosion at the right and left STRUT FITTINGS AT HULL STATION 103.625 by means of which the cabin, the cabin floor, the hull and the lift struts are connected. These particular fittings are covered by the Lower Wing Lift Strut Fairings and their condition may be overlooked during regular periodic inspections.

Owing to the extreme importance of these parts with reference to the safety of the airplane in flight, an immediate and thorough examination and test with a pointed instrument of the fittings should be made for evidence of surface or interior corrosion. If slight surface corrosion is found which has not, in the opinion of an accredited inspector, affected its strength the instructions noted below may be followed. If the corrosion has progressed to the extent of making it unsafe, the airplane should be grounded until new fittings (Part No. 17F11013-L or R) are procured.

While the above and subsequent recommended inspections every 25 hours are being made, it would be advisable to make a special check of the entire airplane and its accessories for corrosion; particularly those hidden parts which are normally examined only during 100 Hour and Annual Inspections.

(109)

DIRECTIONS FOR TREATMENT OF CORRODED SURFACES

After removing the paint, primers, etc., wash corroded area thoroughly with clean, fresh water after which remove all products of corrosion (metal flakes, shavings, powder, and salt crystals) from the area with a stiff bristle scrub brush, light brushing with steel brushes or light sanding (avoid use of steel wool). Wash with a solution of 7 oz. of Sodium Dichromate with 1 qt. of warm water which will neutralize the corrosion. (Standard commercial quality Sodium Dichromate retails at approximately 10 cents per pound). Allow the solution to dry on the surface after which excess chromate crystals must be brushed off.

CAUTION: Handle solution with care and if spilled on the body, wash off with water.

Finish with one coat of zinc chromate primer, and two coats of aluminized lacquer in the proportion of 1½ oz. of aluminum paste pigment to 1 pint of clear lacquer.

NOTE: The Sodium Dichromate solution will cause a stain when it comes in contact with any visible surface. However, in the event such contact does inadvertently occur the parts can be repainted without adverse effect.

W. H. Ehmann
Service Manager

If you have sold your airplane, please forward this Service Bulletin to the present owner.

(1170)

MANDATORY

Service Bulletin No. 25
Supplement No. 1
July 13, 1950

CORRODED FITTINGS

The severe corrosion found on the Right and Left Strut Fittings at Hull Station 103.625 (Part No. 17F11013-1, L/R), which was referred to in Service Bulletin No. 25 has also been noticed on the following fittings.

17W22003-1 L/R, Wing Lift Strut Lower Fitting Assembly
17W22004-1 L/R, Strut & Spar Attachment Fitting Assembly

The first is riveted inside the lower end of the Wing Lift Strut and the latter is riveted to the Front Spar, emerging through the lower surface of the wing skin to form the attachment point for Part No. 17W22002-1 (Wing Lift Strut Upper Fitting Assembly). To date, no case of corrosion of the 17W22002-1 fitting has been reported. but in view of the corrosion reported above, it is recommended that the procedure outlined below be followed with respect to this part as well as the others listed above.

A thorough inspection should be made immediately and every six months or 25 hours, whichever occurs first. This inspection should be made with the aid of a light, a mirror and a sharp pointed instrument in order to determine the condition of the fittings. Visual inspection only is not considered adequate as corrosion may exist under the surface. The section of Part No. 17W22004-1 inside the wing cannot be inspected without removing the wing skin. However, inspection of this part of the fitting is not considered necessary unless indications of corrosion are noticed on the section protruding below the skin. If inspection is necessary, the wing skin should be removed and reinstalled in accordance with the attached sketch.

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If corrosion is apparent on any of the above fittings, the instructions outlined in Service Bulletin No. 25 should be followed and, if the airworthiness of the airplane has been affected, the airplane should be grounded awaiting replacement of the corroded fittings.

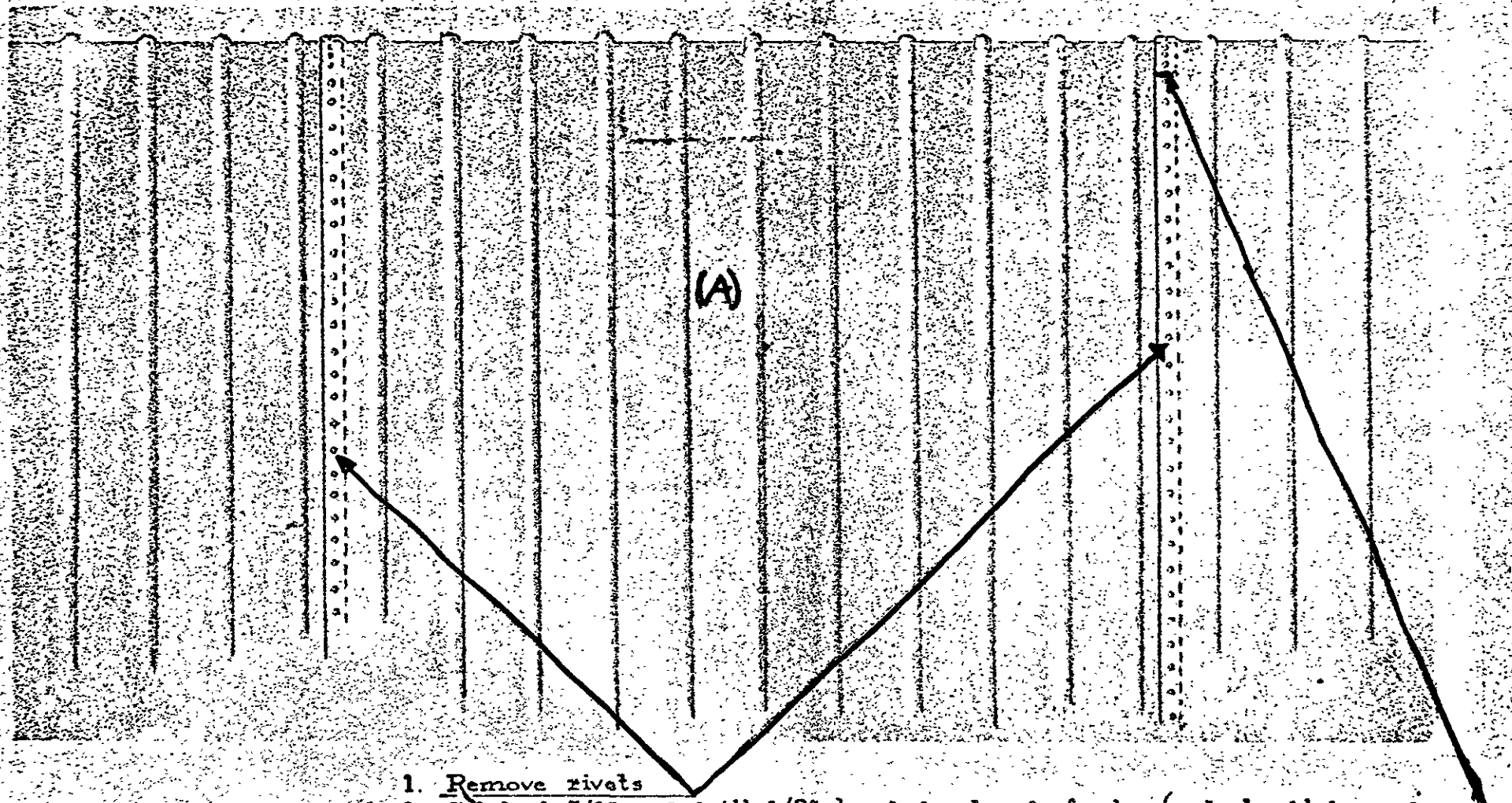
YOUR SAFETY AND THAT OF YOUR PASSENGERS DEPENDS ENTIRELY ON THE CONDITION OF THE ABOVE FITTINGS (PART NOS. 17F11013-1, 17W22002-1, 17W22003-1 and 17W22004-1).

TAKE NOTHING FOR GRANTED - INSPECT THEM AT ONCE AND MAKE SURE THAT THEY ARE AIRWORTHY.

W. H. Ehmann
Service Manager

If you have sold your airplane, please forward this bulletin to the present owner.

DIRECTIONS FOR REMOVAL OF WING SKIN IN CONNECTION WITH REPLACEMENT OF WING STRUT FITTING



1. Remove rivets
2. Cut back 5/8" and drill 1/8" stop hole at end of cut. (Cut should be made at a point two inches above center of leading edge)
3. Bend overlapping section back sufficiently to free skin section (A)
4. Roll back skin (A) until strut fitting is accessible.
5. After fitting is installed, replace lifted skin and return bent portion of adjoining skin to original position.
6. Start riveting at leading edges, bucking underneath through the still open section until the trailing edge is reached, at which point the rivets can be bucked through the lightening holes.

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