

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

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No. 3

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### 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 1 1/8 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: Intave 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.

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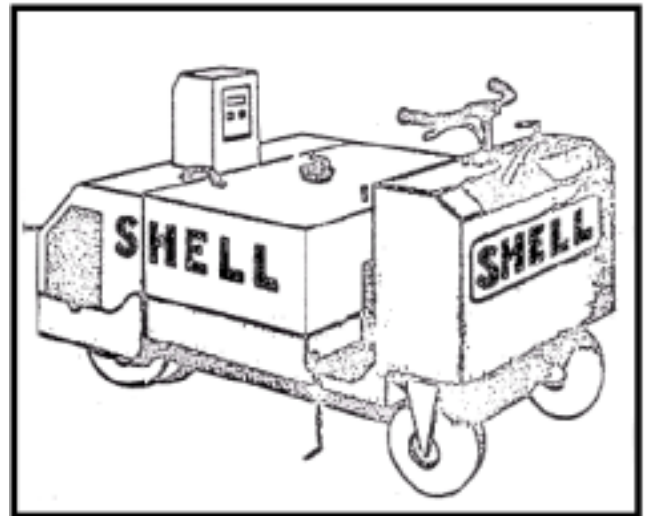
### LET'S SEE

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 surface. 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 our new devices or improvements on old ones for the benefit of the individual or the industry as a whole.

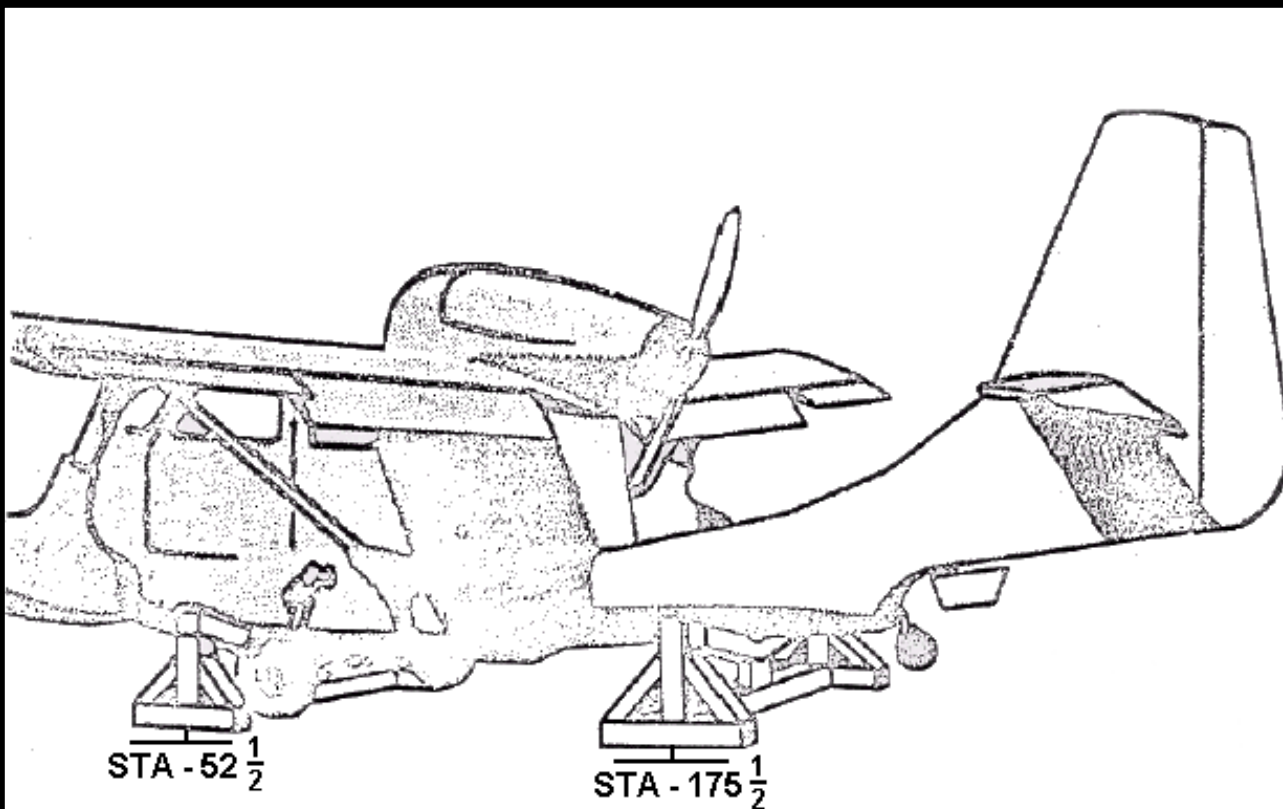
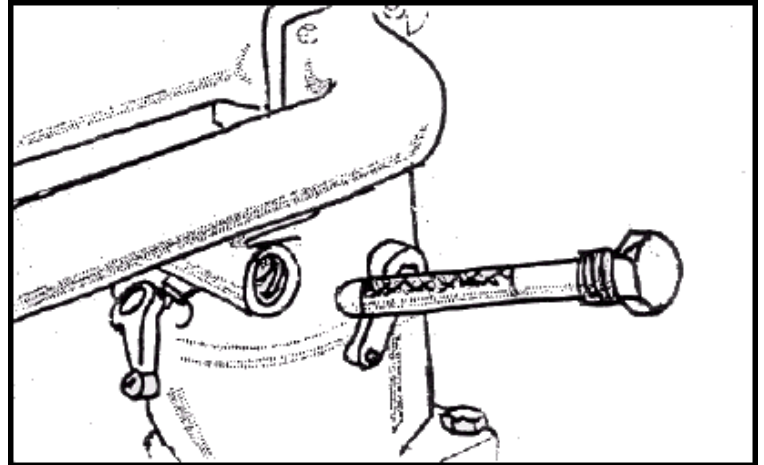
The Beaver has been especially developed by the Shell Oil Company for the servicing of light aircraft. With a tank capacity of 150 gallons, this self-powered unit will pump fuel at a maximum rate of 25 gallons per minute. Powered by a five-horsepower gasoline engine, it is capable of doing eight miles 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 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

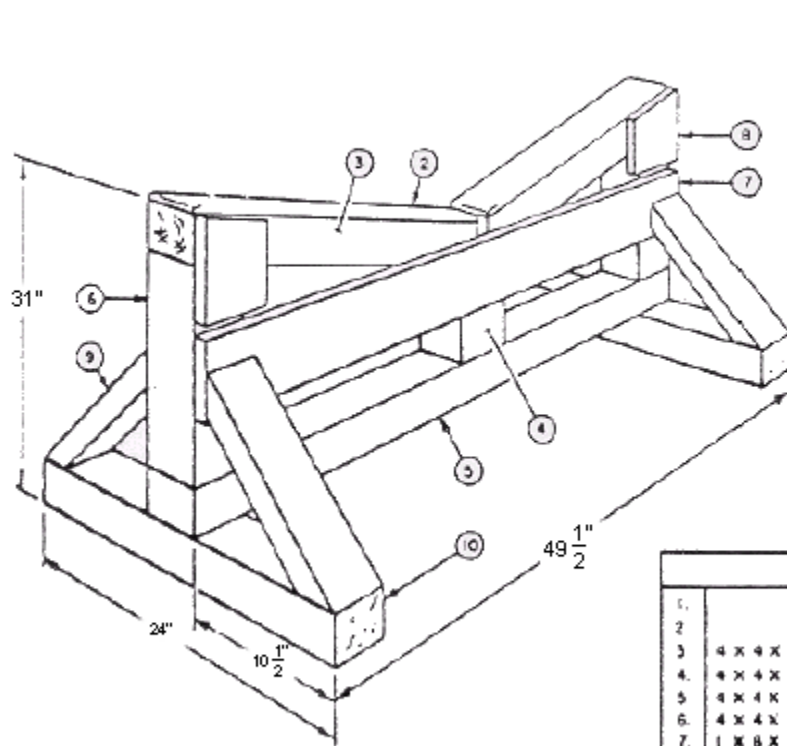
Here at Republic, we use hull stands constructed according to the specifications indicated on the opposite page. These stands are padded at the hull contact areas so as to avoid scratching and marring. As shown above, the stands are designed for use in the area at stations  $52\frac{1}{2}$  and  $175\frac{1}{2}$ .

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

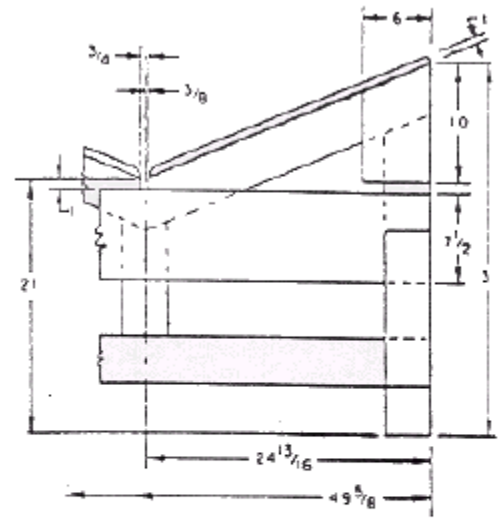
The forward stand is slid under the bow after jacking up

the Seabee at the base of the struts or under the landing gear cross tubes.

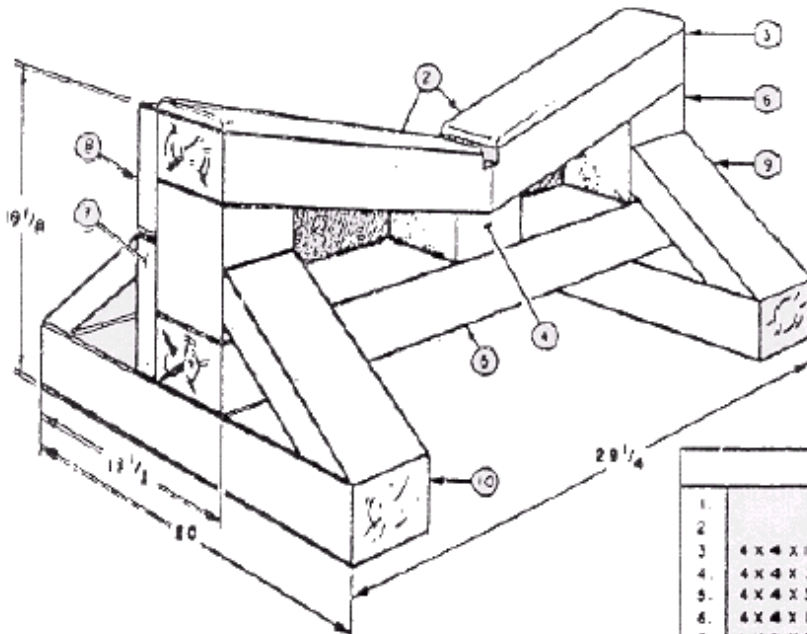
The Seabee may be lifted high enough for admission of the forward stand by overinflating the struts; after the stand is in place deflate the struts so that weight of the front end rests on the stand. If this method is used, be sure to reinflate the strut according to the requirements noted on the back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



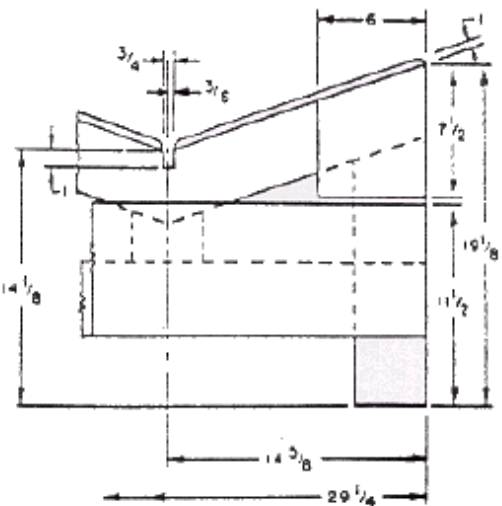
HULL STAND—STATION 175 1/2



BILL OF MATERIALS				
		NAILS	COMMERCIAL	AS REQ.
1.				
2		PADDING		
3	4 X 4 X 23 REST	PINE (OR EQUIV.)	"	2 PCS
4.	4 X 4 X 10 UPRIGHT	"	"	1 PC.
5	4 X 4 X 30 SPREADER	"	"	1 PC.
6.	4 X 4 X 20 UPRIGHT	"	"	2 PCS
7.	1 X 8 X 30 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 52 1/2



BILL OF MATERIALS				
		NAILS	COMMERCIAL	AS REQ.
1.				
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 7/16 inches.
3. Remove air valve body (A) and fill to overflowing with petroleum oil base hydraulic 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 1/2 ± 1/4 inches.

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" ± 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 7/16" ± 1/4.

### REMOVAL OF WHEEL AXLE

The proper method of removing the axle from the strut is related to the 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.

