Photo by E. M. Summerich

Author Pete Bowers tucks Story No. 2 in real close to a Cessna 170 for a flight photo.

The Story Story

By Peter M. Bowers, EAA 977

Two single seat low-wing monoplanes, identified as Story Experimentals No. 1 and 2, N-1337N and N-1338N, were completed by Tom Story at Beaverton, just west of Portland, Oreg., in 1954. Oregon, as some old timers will recall, was the last state to permit the building and flying of amateur or homebuilt airplanes before WW-II, and Beaverton was the capital of the die-hard group of enthusiasts, some of whom were actually refugees from other states who moved west so that they could fly in their own creations. As soon as the war was over activity started again from scratch in Oregon, led by George Beaugardus of Troutdale, who flew his " Little Gee Bee", a homebuilt very similar to the Story, to Washington, D. C. and back, convincing government authorities that homebuilts were practical and help-

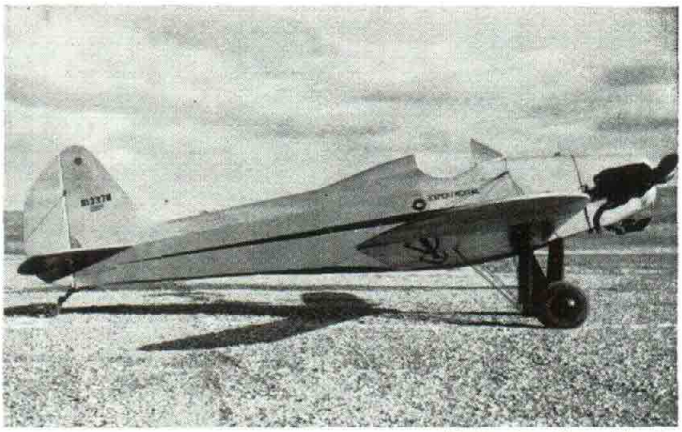

Photo by Pete Bowers

Story No. 1 with open cockpit and all-yellow paint job when owned by Bill Rainey.

ing to bring about the change of FAA policy that permitted the revival of the homebuilt movement and made the existence of EAA possible.

The two Storys differ from the average single-seat homebuilt flying today in several respects. First, they are considerably larger, with a span of 28 ft. and approximately 120 sq. ft. of wing area. While this cuts the cruising speed down to an even 100 mph compared to the 120-plus of the 20 to 22-footers powered with the same 65 hp Continental engine, the resulting low-wing loading pays off handsomely in such important handling characteristics as short take-off, good climb, and easy landing. Rate of climb with a metal propeller pitched for climb is 1000 feet per minute and it can be looped from level flight when lightly loaded. The gross weight of 800 lbs. combined with the relatively large wing area gives a wing

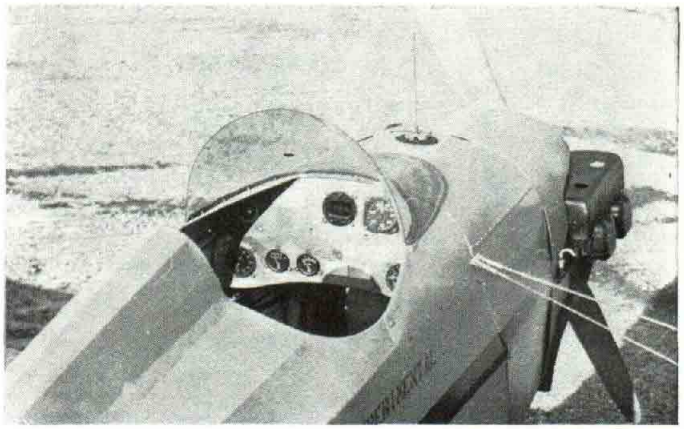

Photo by Pete Bowers

Story No. 1 windshield and cockpit details.

loading of only 6½ lbs. per sq. ft. As far as the owners of Story No. 2 can determine, it is the only bona-fide homebuilt so far approved to tow gliders. Rate of climb with a metal prop, 65 hp engine, and a Schweizer 1-26 on tow is 250-300 feet per minute.

The other main difference is in appearance and general detail configuration. Where the majority of today's low wingers are either cantilever or use struts on top of the wing, the Story goes back to the Buhl Bull Pup and Aeronca C-3 of 1931 for wire bracing. The manner of carrying the lower wires to the landing gear goes clear back to early WW-I. Actually, the whole layout is based

Photo by Ken Hovik

Story No. 1 with modified cockpit and change to ivory and maroon coloring. Ship has since been repainted cream and vermillion. Co-owner Rex Richards in cockpit.

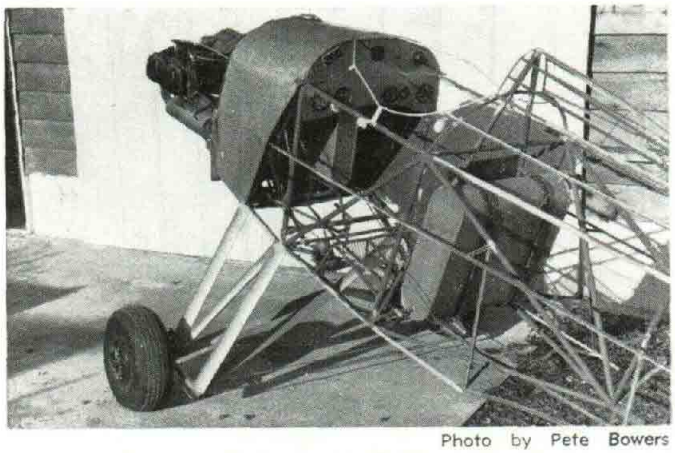

Photo by Pete Bowers

Uncovered fuselage of Story No. 2, showing fuel tank locations.

on the prewar Les Long "Wimpy", which was also the pattern for Beaugardus' "Gee Bee". Apparently Tom Story ran into a shortage of streamline wires during construction, for some are streamlined and some are round.

The rigid landing gear with 6.00 x 6 wheels and mechanical brakes is a source of wonder to many pilots, who become concerned over the problem of landing a "hot" little single seater without shock absorbers and with those relatively hard tires. It's no problem at all — thanks to the light wing loading and long span. The Story can be landed like a feather dead stick by practically anyone who can fly a "Cub" — all right, a Cessna 140 since there aren't enough J-3's around now to use as a standard of comparison. Rigidity of the gear for wing bracing purposes is maintained by welded steel tube

Photo by Pete Bowers

Landing gear and engine cowl details of Story No. 2 with original silver finish.

triangle superstructure behind the main landing gear legs and is backed up by two cross wires behind the wheel axles. These make dandy grass cutters and are another source of concern to pilots who think that their low position would hinder takeoffs and landings.

Other than these ancient features, construction of the Storys is conventional. The fuselage is steel tube with a reduction to three-longeron form in an inverted triangle behind the cockpit. Whether or not this saved much weight is debatable because it became necessary to add superstructure and steel channel fairing strips to fill out the fuselage contours. The main 10-gallon fuel tank, located right behind the firewall, is a masterpiece of contouring and fits in between the tubes and down between the pilot's legs. An auxiliary 8-gallon tank is in the bottom of the fuselage behind the seat and its contents can be transferred to the main tank through a wobble pump. Since the Storys are used mainly for local flying by their present owners the auxiliary tanks have been removed.

The wings are all wood. Ribs are bandsawed from 3/32 in. aircraft mahogany plywood and fitted with slotted cap strips. In order to make a neat wing-fuselage intersection, the trailing edge of the root rib is reflexed sharply upward. The ailerons are of the Frieze type and occupy about ¾ the span of each wing. They are extremely effective, almost too much so, and are very light because of the area ahead of the hinge line. The resulting rate of roll for the airplane is terrific. Aileron control through the stall is excellent because of the straight-chord wing (See John Thorp's article, April SPORT AVIATION) and

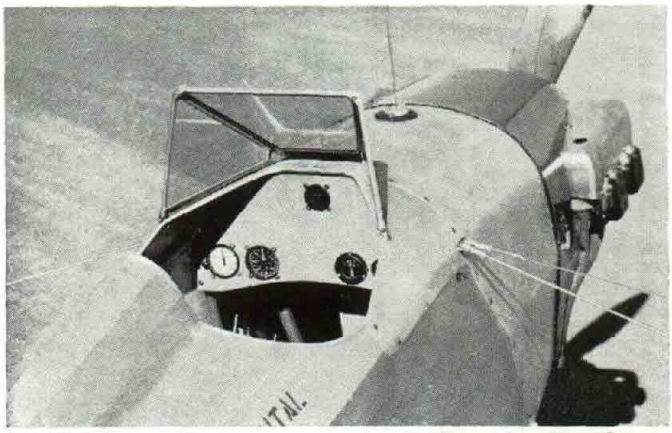

Photo by Pete Bowers

Cockpit and windshield details of Story No. 2.

the large degree of wash-out that can be rigged in easily with the flying wires.

Tail surfaces are welded steel tubing with steel channel for ribs and the fin is built integral with the fuselage. Right and left stabilizers are separate structures and bracing is by wire. One of the most admirable features of the Story design is the long tail moment arm compared to other homebuilts regardless of size. This gives excellent control and damping and completely eliminates the porpoising tendencies that are characteristic of some of the close-coupled jobs. This also helps to eliminate most of the frantic rudder activity that takes place during landings in many homebuilts.

As originally built, both Storys were open cockpit, No. 1 with a one-piece curved plexiglass windshield and

Continued on Page 29

Photo by Pete Bowers

Story No. 2 in new black and orange coloring. These colors agreed upon by owners only because they were available at no cost. Sunburst and striping pattern put on by different partners, each of whom wanted his own personal arrangement.

THE STORY STORY . . .

Continued from Page 5

No. 2 with a three-sided flat glass frame taken from a PT-17 or a PT-19. Cockpit details also differed in instrument panel layout and in the fact that the throttle was on the left side on No. 1 and on the right side on No. 2. The purchaser of No. 1, Bill Rainey, modified it by building up the turtledeck behind the cockpit and adding a simple flat-wrap curved canopy hinged on one side. The present owners leave this off most of the time since it seriously restricts the headroom. No. 2 retains the original built-up steel tube headrest, but certain softies among the present owners added a tubular frame with flat plexiglass side panels and hinged it to the top of the flat windshield. The rear portion of this hinged canopy frame is contoured to fit over the head rest.

No. 2 was sold to Dick Andress of Portland, who sold it to a Seattle group consisting of Cecil Hendricks, Harold

Photo by Pete Bowers

Comparison with Tom Richl (in cockpit) and Dave Gauthier (at prop) show that the Storys are not as small as the average single-seat homebuilt.

Clark, and the author in 1947. This sale turned out to be typical, with the license expiring a few weeks later and the ship needing a recover. Consequently, the group, organized as "The Story Flying Club", had to take in a fourth member to finance the dope and fabric and didn't get operating until early in 1958. When No. 1 was brought to Seattle by Rex Richards and Jim Clark in July, 1959, the owners of No. 2 tried to get them to call themselves "The Second Story Flying Club", but they didn't go for the idea. The fuselage that was started for a third Story, along with some ribs and wires, has been obtained by Paul Weaver, also of Seattle, who will complete it with certain modifications found to be desirable from experience with No.'s 1 and 2, notably improved cockpit arrangement and a cleaned-up landing gear.

For all their old-fashioned features and oversize dimensions, the two Storys have proved that there are many considerations other than good looks, small size, and speed that are of importance to homebuilts. These made a great impression on the author and influenced the design of his EAA contest entry, which is a ship with the Story's size, general proportions, and basic structural features. The major changes are low-cost all-wood construction and minor refinements of line and equipment. Beyond that, there just isn't much room for improvement in the Story design even though its prototype appeared over 25 years ago. ●

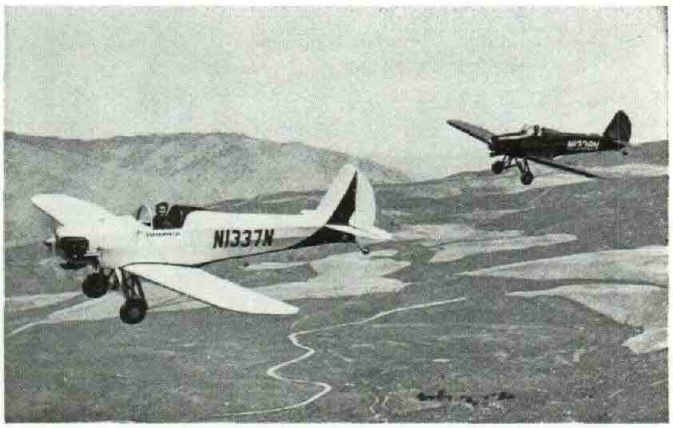

Photo by Ken Hovik

Rex Richards and Pete Bowers do a little tail chasing in Story Specials No. 1 and 2 (N1337N and N1338N).

LANDING GEARS . . .

Continued from Page 13

speed. The kinetic energy to be absorbed by the landing gear is therefore $\frac{1}{2}mv^2$ where v is the vertical velocity and m is the plane's mass, or weight. In a normal landing gear the tire will deflect about one-fourth of the shock leg stroke so deflection and stroke can be combined into one value, h. Then:

$\frac{1}{2}mv^2 = n\ m\ g\ h$, where n is a load factor.

Therefore;

$$ng = \frac{\frac{1}{2}mv^2}{mh} = \frac{v^2}{2h}$$

So if h is reduced it is possible to increase n. Of course, a pilot with a sensitive sitting muscle will do a lot to alleviate the problem!"—**Gorges Jacquemin**

From all the above pointers, any amateur designer should now be able to make a considered choice about his landing gear struts and, fellows, isn't it really thrilling to see how much information **Sport Aviation** is able to gather by calling upon the practical and engineering experience scattered among many thousands of members? To add frosting to this little cake, we should mention that member Art Bell, an FAA Maintenance Agent in Grand Rapids, Mich., calls to our attention the fact that in the May, 1955 issue of **Aero Digest** there is an article on pp. 48-50, by Ken Coward, giving the mathematical computations used in determining the best dimensions for spring steel landing gear legs. Ken is vice-president of Bee Aviation Associates, developers of the Wee Bee, Honey Bee and Queen Bee. ●

SKYHOPPER PLANS

NOW SINGLE OR TWO PLACE

-- $50.00 -

MONEY BACK OFFER

Build the world known "SKYHOPPER" from clear, simplified and easy to read drawings. All ribs and fittings are drawn full size and may be used directly as templates in fabricating parts. Approximately 300 sq. ft. of drawings supplied.

SKYHOPPER AIRPLANES, INC.

3500 Enville Place Los Angeles 16, Calif.

SPECIAL OFFER
Inboard, Three-View, Photos and Data
$2.00

Write for descriptive literature.