SkyStar AIRCRAFT CORPORATION

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SERVICE LETTER #48

DATE: August 22, 1995

SUBJECT: Welded landing gear

APPLICABILITY: All taildraggers with welded landing gears

COMPLIANCE: As required

FROM: SkyStar Aircraft Engineering Department

The purpose of this service letter is to give you information regarding the design and proper handling of the welded tube landing gear. It has been our experience that incorrect handling of the aircraft on the ground (especially during landing) and poor maintenance have led to failures in a few of these gears in the field.

Figure 1 shows two examples of landing gear failures. The top photo shows a gear which experienced a failure upon landing when the top horizontal tube failed just outboard of the bungee cords. It is believed that this particular gear, which had thousands of cycles on it, began to experience fatigue around the bungees and a small crack began to form. Moisture may have also been a factor as the fatigue crack was exposed and susceptible to corrosion.

The bottom photo is a gear which failed after the pilot landed the aircraft while still in a crab (not advisable to do in a taildragger). As the side loads from the landing were imposed on the gear, the brace buckled. It is possible that this brace was not quite straight which would have significantly reduced its load carrying capabilities. Previous hard (and misaligned) landings may have also caused the tube to be less effective in withstanding the imposed side loads. Damage like this may not be uncommon because we have seen a tendency of new Kitfox pilots to try to align the aircraft with the centerline of the runway on final approach using the side of the cowl as a reference. The cowl, however, does not extend straight forward from the side of the fuselage, and

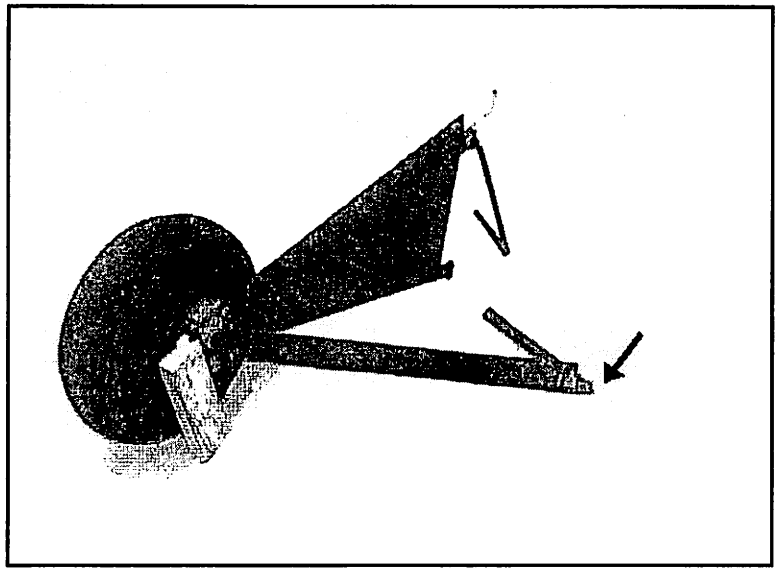
using it as a reference will place the aircraft at an angle of up to 20° to the runway.

Prior to your next flight, we strongly recommend that you inspect your landing gear carefully. Figure 2 gives some general guidelines for this inspection. Begin by looking at all of the welded joints to insure there are no signs of fatigue. Next, make certain all structural members are straight, there are no dents in any members, and the bungee cords and the safety cable are not wearing or chafing on the gear members. The condition of the bungee should also be checked, and it should be replaced annually.

You should inspect the landing gear for both fatigue and bending during each pre-flight inspection of the aircraft. Also, try to keep the landing gear clean. Residue from the engine exhaust may tend to build up on the gear, which can be corrosive to the gear itself. It is also much easier to detect potential problems when inspecting a clean gear.

With the failure shown in the top photo of Figure 1, it may be seen that the safety cable would not be effective in this type of failure. Because of this, you may wish to relocate the safety cable to the position shown in Figure 2. This would prevent the gear from collapsing if the structural member were to fail, as well as in the event of a broken bungee.

Finally, you may wish to obtain a copy of *How To Fly A Kitfox* by Edward S. Downs if you haven't already done so and review Chapter 13, Landing. Using the information presented in this chapter should help you make landings which will reduce the likelihood of landing gear problems. For those builders who are still working toward your first flight in your aircraft, we encourage you to spend some time becoming proficient in tailwheel aircraft, especially a Kitfox, if you aren't already prior to your first flight. SkyStar offers a familiarization flight training program here at the factory which will allow you to become comfortable with the aircraft. Call our Customer Service department for more information about this program.



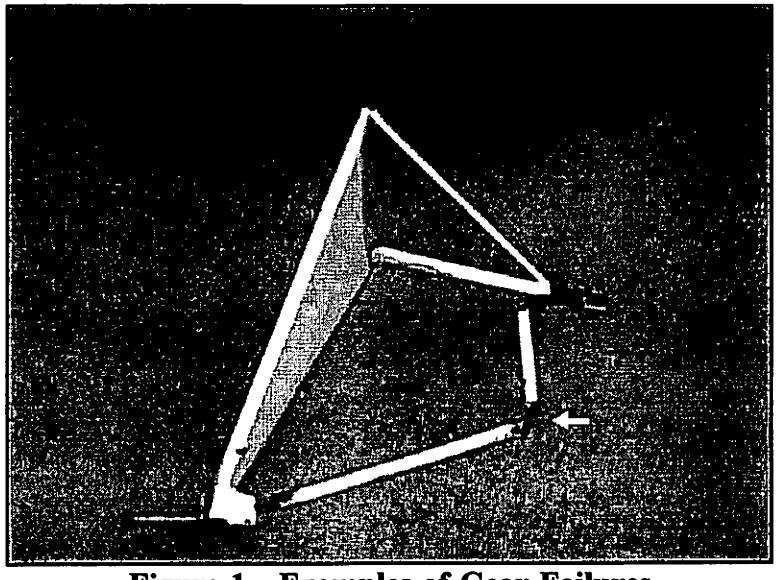


Figure 1 - Examples of Gear Failures

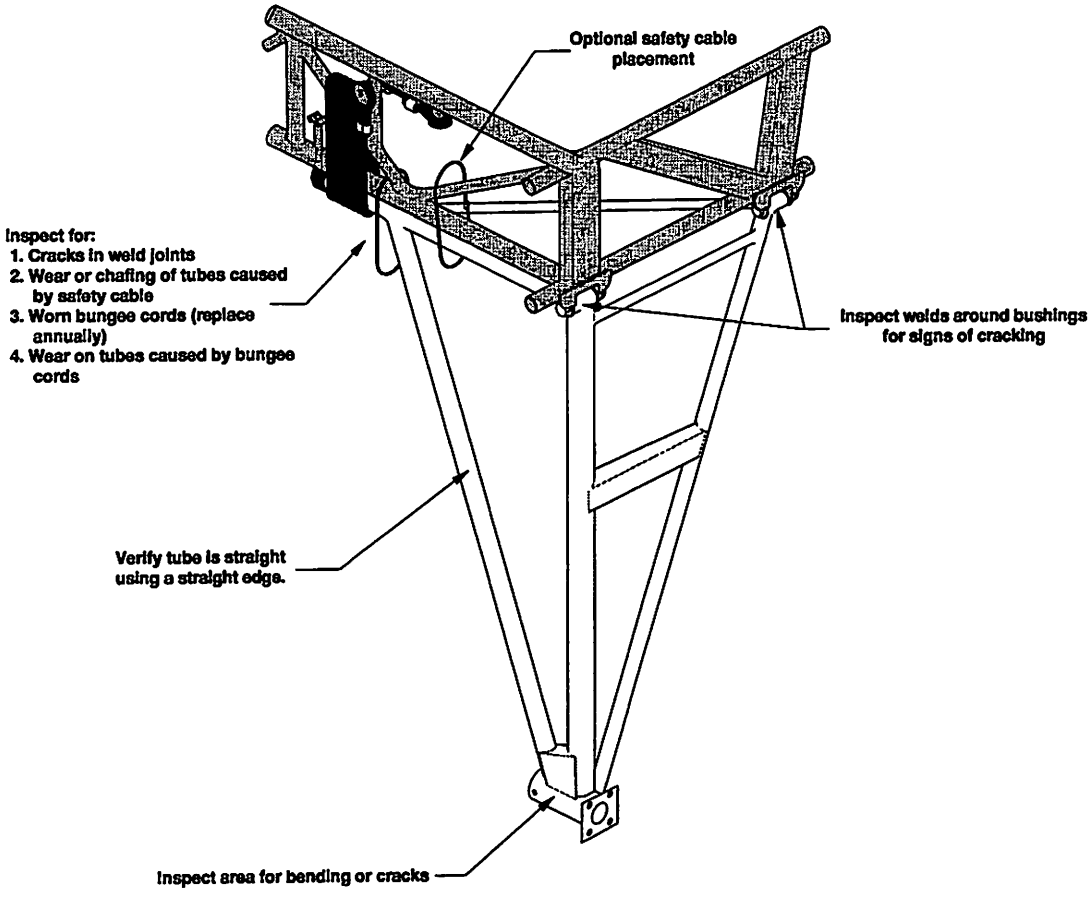


Figure 2 - Landing Gear Inspection