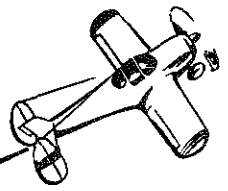
Ercoupe BULLETIN

ERCOUPE SERVICE BULLETIN No. 7

SUBJECT: Directions for load testing aileron control system



Introduction:

Our factory final inspection check of production airplanes has just revealed one having a defective part (number 415-52129 Shaft Assembly Control Column) in the aileron control system, due to a machining error. The pilot left the airplane and descended by parachute. The factory has load tested the 87 airplanes located on our flying field and has not found another defective part.

In order to make certain that no airplanes in service have a defective part the following load test on the aileron control system must be made *before the airplane is again flown,* for each Ercoupe serial number 113 through 1306, with the exception of the following serial numbered airplanes that have been tested at the Erco factory.

Serial No.	*NC No.*	*Serial No.*	*NC No.*	*Serial No.*	*NC No.*
146	86973	1251	93928	1191	93868
909	93586	1254	93931	1209	93886
1028	93705	1256	93933	1211	93888
1083	93760	1259	93936	1212	93889
1122	93799	1260	93937	1215	93892
1127	93804	1261	93938	1218	93895
1142	93819	1161	93838	1220	93897
1143	93820	1163	93840	1221	93898
1152	93829	1164	93841	1223	93900
1158	93835	1167	93844	1226	93903
1193	93870	1169	93846	1227	93904
1196	93873	1170	93847	1229	93906
1199	93876	1172	93849	1230	93907
1200	93877	1173	93850	1232	93909
1202	93879	1176	93853	1233	93910
1203	93880	1178	93855	1235	93912
1204	93881	1179	93856	1236	93913
1205	93882	1181	93858	1238	93915
1206	92883	1182	93859	1239	93916
1208	93885	1184	93861	1241	93918
1242	93919	1185	93862	1264	93941
1244	93921	1187	93864	1265	93942
1245	93922	1188	93865	1267	93944
1250	93927	1190	93867	1268	93945
1269	93946	1285	93962	1294	93971
1270	93947	1287	93964	1299	93976
1276	93953	1288	93965	1300	93977
1277	93954	1291	93968	1303	93980
1279	93956	1292	93969	1304	93981

Equipment Required:

(a) 100 pound spring scale with padded hook
(b) Four 1" boards about 6" x 8"
(c) Two Clamps

TEST:

1. Clamp both ailerons even with center section of wing by means of boards and clamps, as shown in Figure 1. (The boards can be bolted together by means of 3/16" bolts if no clamps are available.)

2. Rotate the control wheels with medium hand force to determine the feel of the system and note any slack that may exist. Also note that the position of the control wheel spoke in neutral position should be substantially vertical. If a substantial amount of slack exists, tighten taper pins attaching the Universal joints. If slack is found to exist in the control quadrant replace the present bolt with an oversize bolt.

3. Push in the throttle and the hand brake levers to give clearance for test. Place the scale hook around the spoke of left control wheel just inside the rim and use sufficient padding to avoid damage to control wheel, as shown in Figure 2. The wheel should be pulled out from instrument panel just far enough to clear throttle and hand brake levers. Pull scale to right, keeping it at right angles to the spoke of the control wheel, until the scale reads 94 pounds. (Two men may be required.) By the time the full load has been applied the scale will be close to a vertical position, as shown in Figure 3. Do not exceed 94 pounds, because this is merely a proof test and a higher load might damage the control system. As soon as the 94 pound value has been reached slack off gradually until the load is entirely relieved.

4. Rotate the control wheel slightly in both directions to determine neutral position again. The spoke should be in substantially the same position as it was before the load was applied. If it is more than about 5° different from its original neutral position the vertical torque member inside the control column (Part No. 415-52129) should be replaced by a new one. If the wheel is in substantially the same position continue the test as indicated below.

5. Apply load to right wheel in opposite manner (pulling toward left).

6. Rotate control wheels by hand again to determine the neutral position as in item 4, and also if there has been an appreciable increase in slack. A slight amount may be expected because of the effect of the high load on the cable loops. If excessive slack is found it may be necessary to re-adjust the turnbuckles in the chain and cable assembly and possibly to retighten the taper pins attaching the Universal joints.

7. If the control system feels satisfactory with the ailerons free after this test, both with the nose wheel on the ground and with the tail depressed to free it, the system is suitable for continued use.

Enclosed you will find copies of the form to be filled in and returned to Engineering and Research Corporation for each airplane tested.

It is imperative that you give this matter your immediate attention.

Attach. Figures 1, 2, and 3.

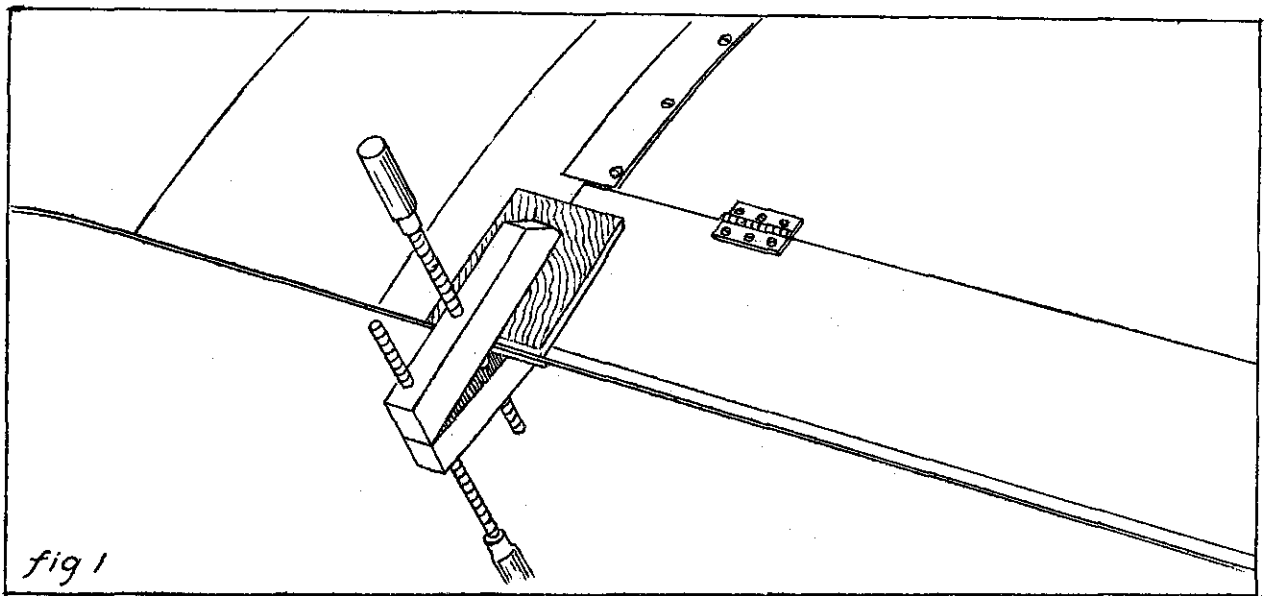


fig 1

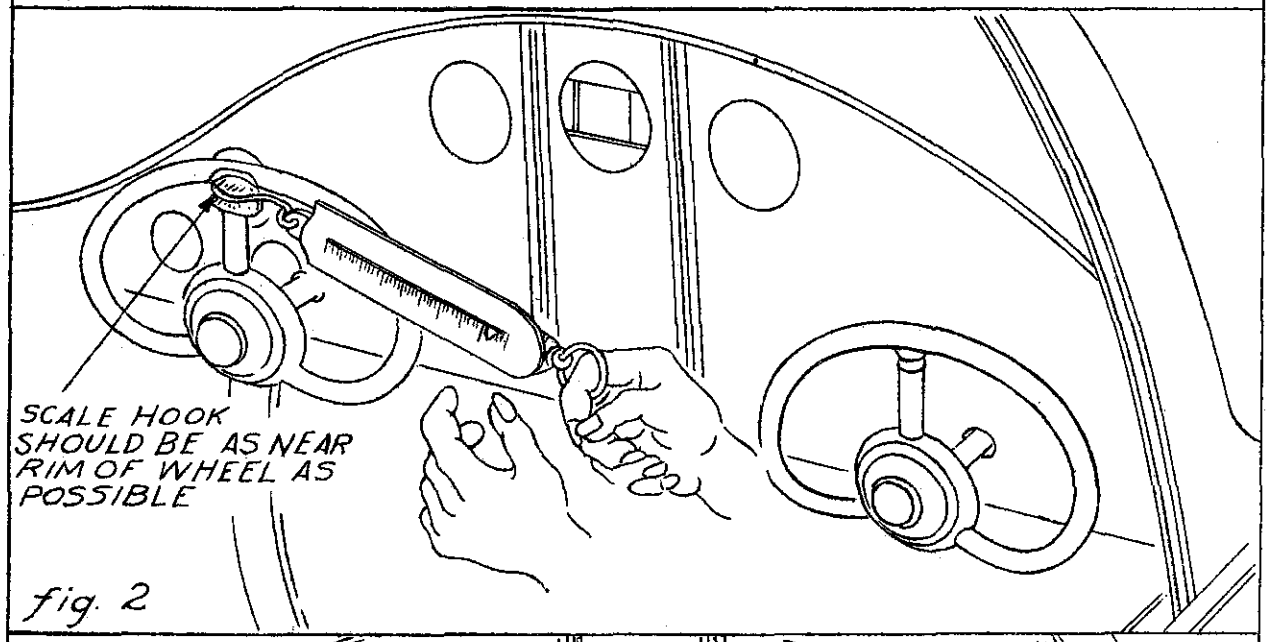


fig. 2

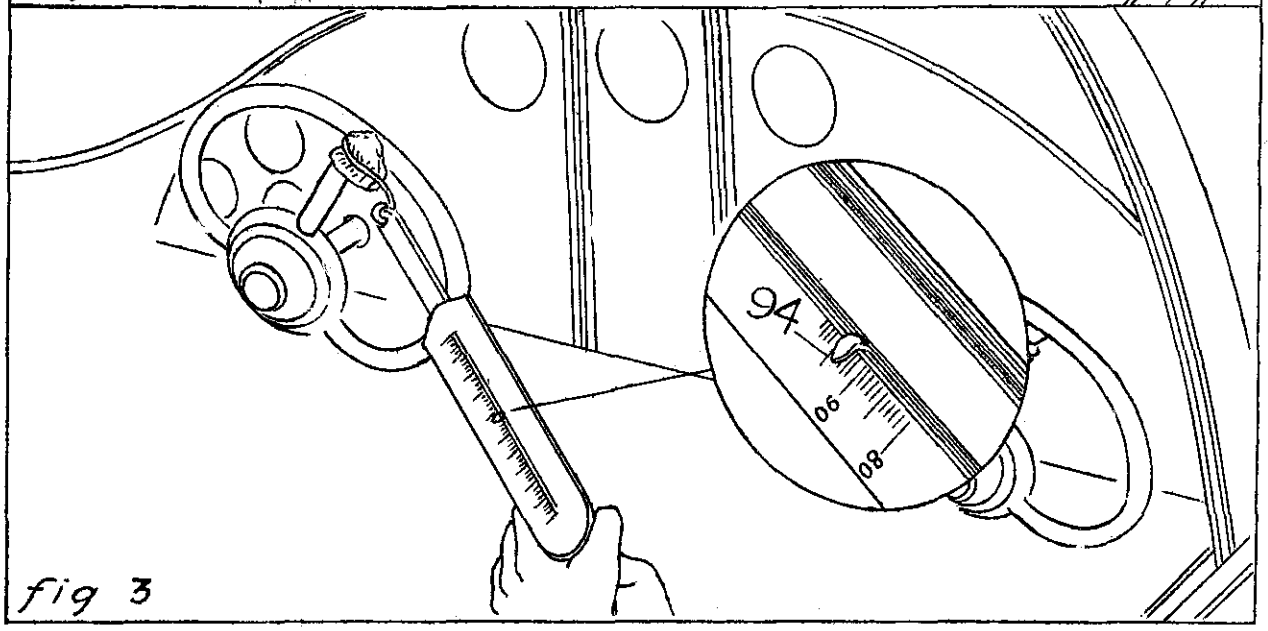


fig 3