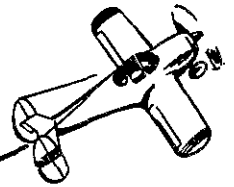


Ercoupe MEMORANDUM

ERCOUPE
SERVICE
MEMORANDUM

No. **43**

**SUBJECT: Modification of Aluminum Tanks
and Fuel System Lines**



(Effective on Ercoupe Serial Numbers 2623 to 3467, incl.)

1. There have been two minor modifications in the tanks and fuel system lines since the change from Template to Aluminum gasoline tanks, which occurred on Ercoupe Serial No. 2623. The first fuel system was installed in Ercoupes No. 2623 to No. 3220, inclusive. The intermediate system was installed in Ercoupes No. 3221 to No. 3467, incl. The improved system, now in use was installed in Ercoupes No. 3468 and subsequent. Since the tanks and lines used in the latest system will be the only replacements available, it is desirable to modernize the other two systems when any major replacements are required. This will provide the best fuel system and eliminates the necessity of carrying large varieties of parts. However, the procedure for using a stock tank by installation of special lines and reducers is given below for those who do not desire to make a complete change.

2. While complying with this memorandum, use Parker Sealube (6PE), or its equivalent, on all fittings; do not tighten fittings until all lines have been installed. Tape and shellac lines at any point where they may rub. The right wing tank does not have to be modified in any way. The "Shut-off Valve to Firewall Tube Assembly" (carburetor supply) (415-48166) is interchangeable with "Tube Assembly" 415-48163. If it is necessary to replace the old Tube Assembly, order "Shut-off Valve to Firewall Tube Assembly" (415-48166), two washers (AN960-A916L) and nut (AN924-6D).

1. Modification of the First System: (Ref. Page 3, Fig. 1) (Serial Nos. 2623 to 3220, incl.)

a. If only the improved "Fuselage Tank" (415-48145) is to be used, install this tank, and install replacement lines as follows: (Refer. ERCO Drawing 415-48178).

- (1) Connect "Fuselage Tank to Reducer Tube Assy." (overflow) (415-48133) to fuselage tank, left hand rear fitting.
- (2) Attach Reducer (AN919-6D) to this line.
- (3) Connect "Reducer to Bulkhead Elbow Service Tube Assy." (415-48175) to above reducer and original bulkhead elbow (AN833-4D) at Frame "B".

- (4) Attach "Fuselage Tank to Firewall Tube Assembly" (pump pressure) (415-48167) to fuselage tank, right hand rear fitting, and assemble to firewall and make secure with nut (AN924-4D).
- (5) Tighten all fittings securely.
- (6) Reconnect hoses on forward side of firewall.

b. If only the improved "Left Wing Tank" (415-48147L) is to be used, install this tank, and complete modification as follows: (Ref. ERCO Drawing 415-48178).

- (1) Install Cap (AN820-6D) on left wing tank overflow fitting to close off the unused hole.

c. If both the improved "Fuselage Tank" (415-48145) and the improved "Left Wing Tank" (415-48147L) are to be used, install these tanks, and install replacement lines as follows: (Ref. Page 5, Fig. 3.)

- (1) Connect "Fuselage Tank to Union Tube Assembly" (overflow) (415-48133) to back of fuselage tank, left hand fitting.
- (2) Attach Union (AN815-6D) to this line.
- (3) Drill or cut a 27/32" diameter hole in Frame "B", 5" above the left longitudinal (415-31007). This hole should be in the center of this section.
- (4) Connect "Union to Left Wing Tank Tube Assembly" (overflow) (415-48134) after passing line through new hole. Install elastic grommet (AN931-8-13) in the hole.
- (5) Connect interconnecting tube (415-48109) to new left tank and install cap (AN820-4D) on tee after removing old overflow line.
- (6) Connect "Fuselage Tank to Firewall Tube Assy." (Pump pressure) (415-48167) to fuselage tank on right hand rear fitting, and assemble to firewall using washer (AN960-A716L) on each side of firewall and make secure with nut (AN924-4D).

- (7) Tighten all fuel system fittings securely.
- (8) Reconnect hose at forward side of fire-wall.
- (9) To keep the left map compartment assembly from touching the overflow line, fasten Map Compartment Mounting Clip (415-53209) to the third screw forward of Frame "C" in the upper side of the left fillet. Attach map compartment assembly to clip with Sheet Metal Round Head Screw (AN530-46).

2. Modification of Intermediate System: (Ref. Page 4, Fig. 2.) (Serial Nos. 3221 to 3647, incl.)

a. If only the improved "Fuselage Tank" (415-48145) is to be used, install this tank, and install replacement lines as follows: (Ref. ERCO Drawing 415-48179):

- (1) Connect "Fuselage Tank to Reducer Tube Assy." (overflow) (415-48133) to back of fuselage tank, left hand fitting.
- (2) Attach Reducer (AN919-6D) to this line.
- (3) Connect "Reducer to Left Wing Tank Service Tube Assy." (overflow) (415-48176), after passing line through hole in Frame "B".
- (4) Connect "Fuselage Tank to Firewall Tube Assy." (pump pressure) (415-48167), to fuselage tank and assemble to firewall using washer (AN 960-A716L) on each side of firewall and make secure with nut (AN924-4D).
- (5) Tighten all fuel system fittings securely.
- (6) Reconnect hose to forward side of fire-wall.

b. If only the improved "Left Wing Tank" (415-48147L) is to be used, install this tank, and install replacement lines as follows: (Ref. ERCO Drawing 415-48180).

- (1) Connect "Fuselage Tank to Reducer Service Tube Assy." (overflow) (415-48177) to fuselage tank.
- (2) Attach reducer (AN919-6D) to this line.
- (3) Drill or cut a 27/32" diameter hole in Frame "B", 5" above the left longitudinal (415-31007). This hole should be in the center of this section.

- (4) Connect "Reducer to Left Wing Tank Tube Assy." (overflow) (415-48134), after passing line through new hole. Install elastic grommet (AN931-8-13) in the hole.
- (5) Connect interconnecting tube to new tank.
- (6) Tighten all fuel system fittings securely.
- (7) To keep the left map compartment assembly from touching the overflow line, fasten Clip (415-53209) to the third screw forward of Frame "C" in the upper side of the left fillet. Attach map compartment assembly to clip with Sheet Metal Screw (AN530-46).

c. If both the improved "Fuselage Tank" (415-48145) and the improved "Left Wing Tank" (415-48147L) are to be used, install these tanks, and install replacement lines as follows: (Ref. Page 5, Fig. 3).

- (1) Connect "Fuselage Tank to Union Tube Assy." (overflow) (415-48133) to back of fuselage tank, left hand fitting.
- (2) Attach Union (AN815-6D) to this line.
- (3) Drill or cut a 27/32" diameter hole in Frame "B", 5" above the left longitudinal (415-31007). This hole should be in the center of this section.
- (4) Connect "Union to Left Wing Tank Tube Assy." (overflow) (415-48134), after passing line through new hole. Install elastic grommet (AN931-8-13) in the hole.
- (5) Connect "Fuselage Tank to Firewall Tube Assy." (pump pressure) (415-48167) to fuselage tank and assemble to firewall, using washer (AN960-A716L) on each side of firewall and make secure with nut (AN924-4D).
- (6) Connect interconnecting tube to new wing tank.
- (7) Tighten all fuel line fittings securely.
- (8) Reconnect hose on forward side of fire-wall.
- (9) To keep the left map compartment assembly from touching the overflow line, fasten clip (415-53209) to the third screw forward of Frame "C" in the upper side of the left fillet. Attach map compartment assembly to clip with sheet metal screw (AN530-46).

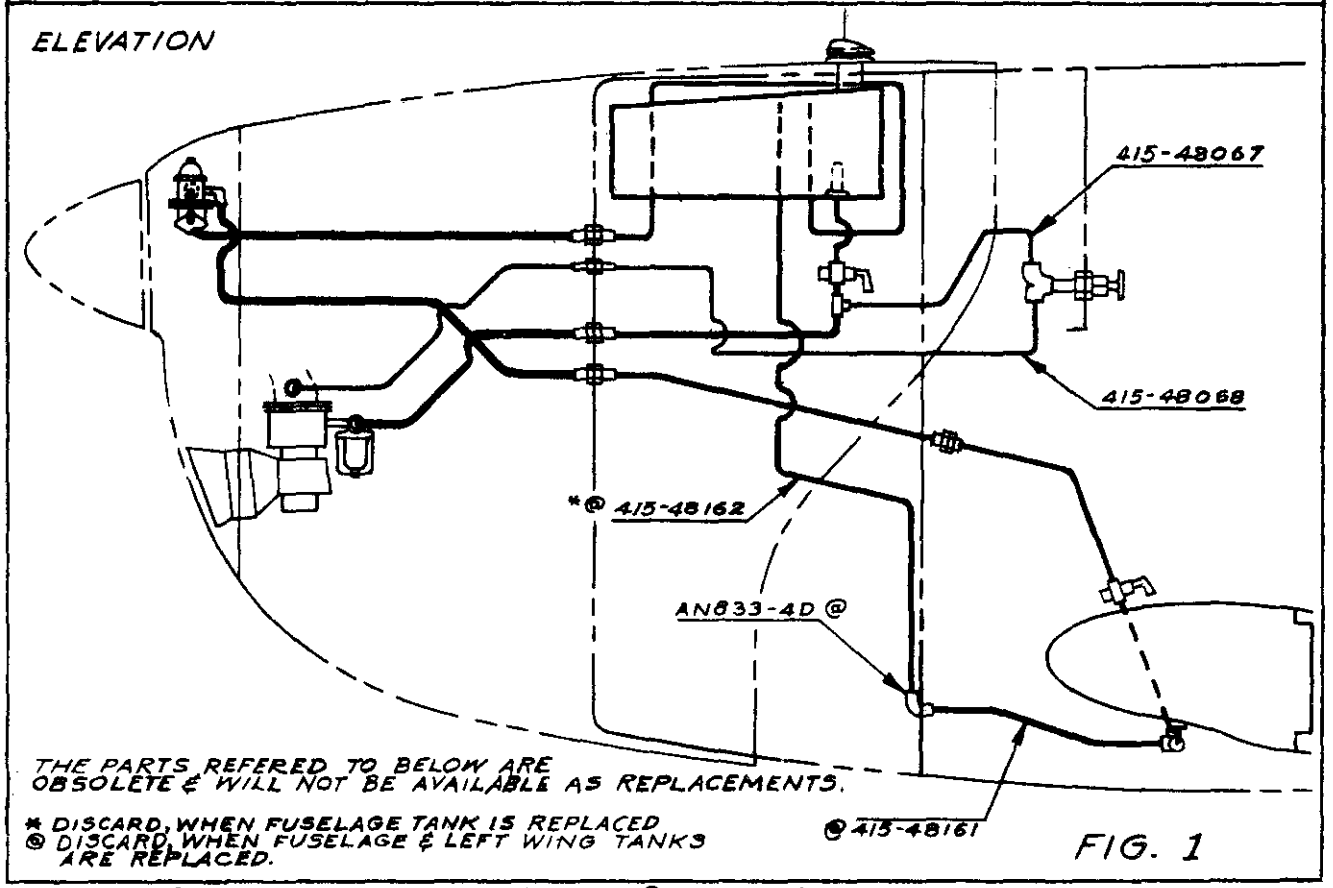
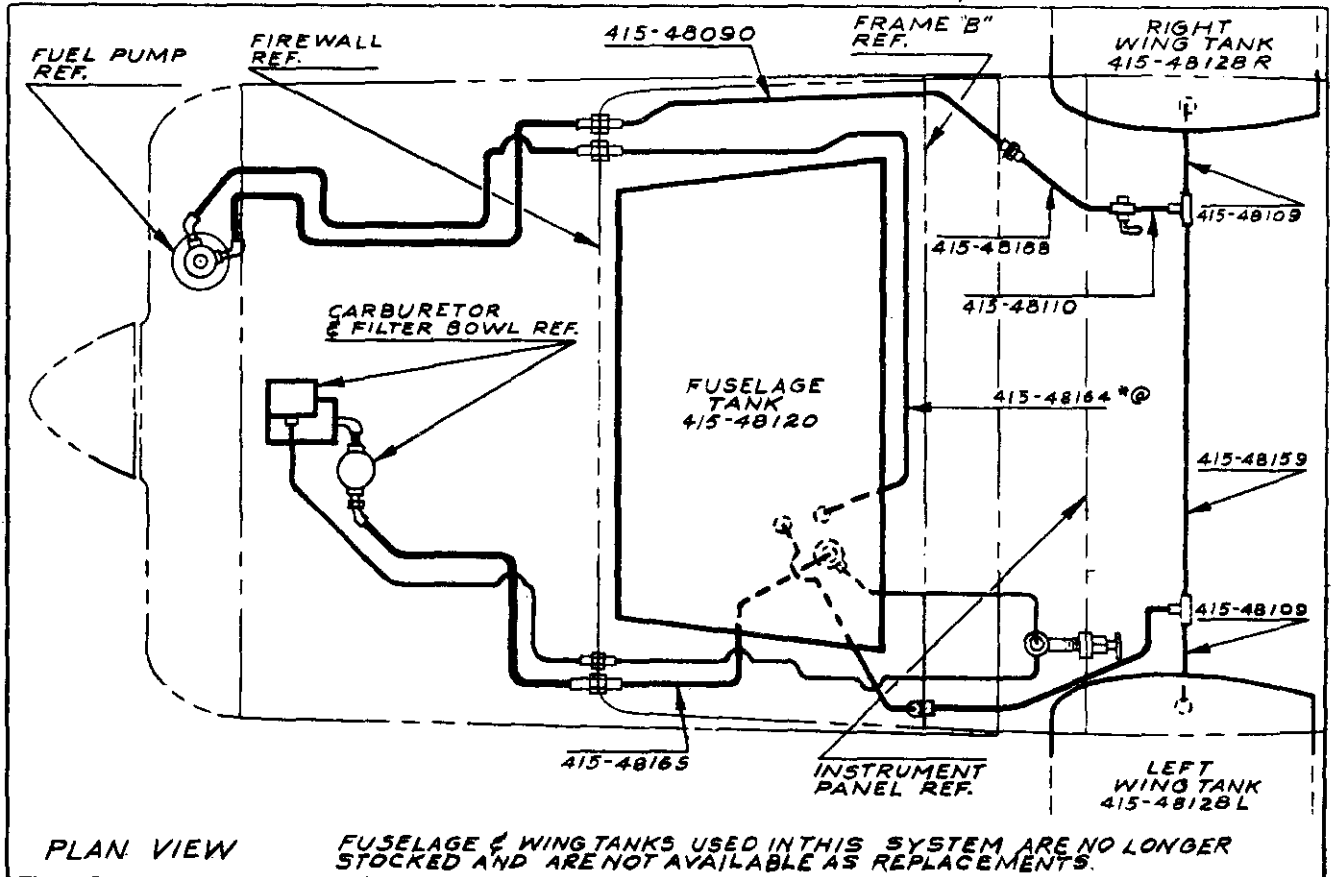


FIG. 1

FIRST SYSTEM-ERCOUPES 2623 TO 3220, INCL.
SCHEMATIC DIAGRAM (SEE ERCOUPE INSTALLATION DRAWING No. 415-48176 FOR DETAILS & PARTS)

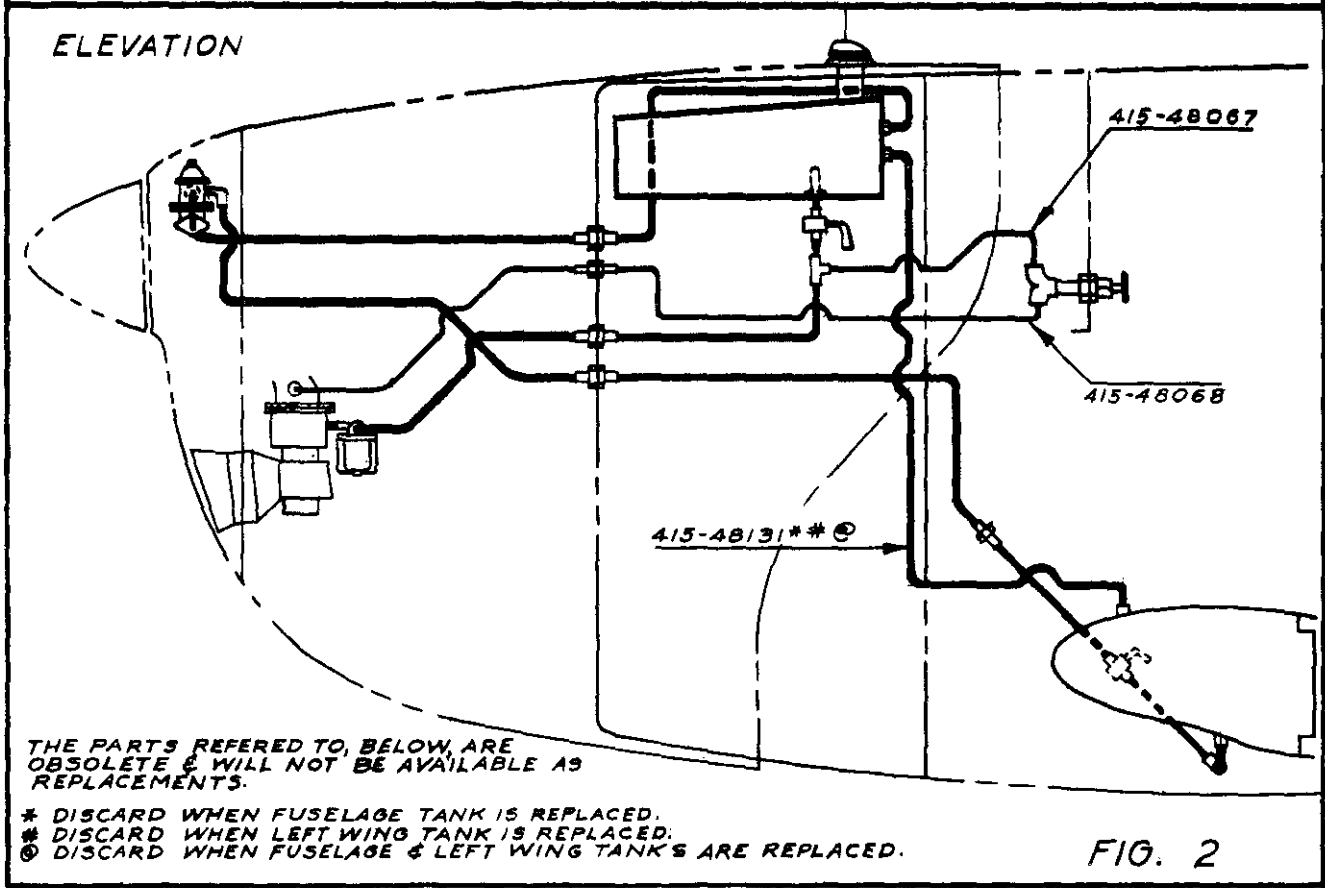
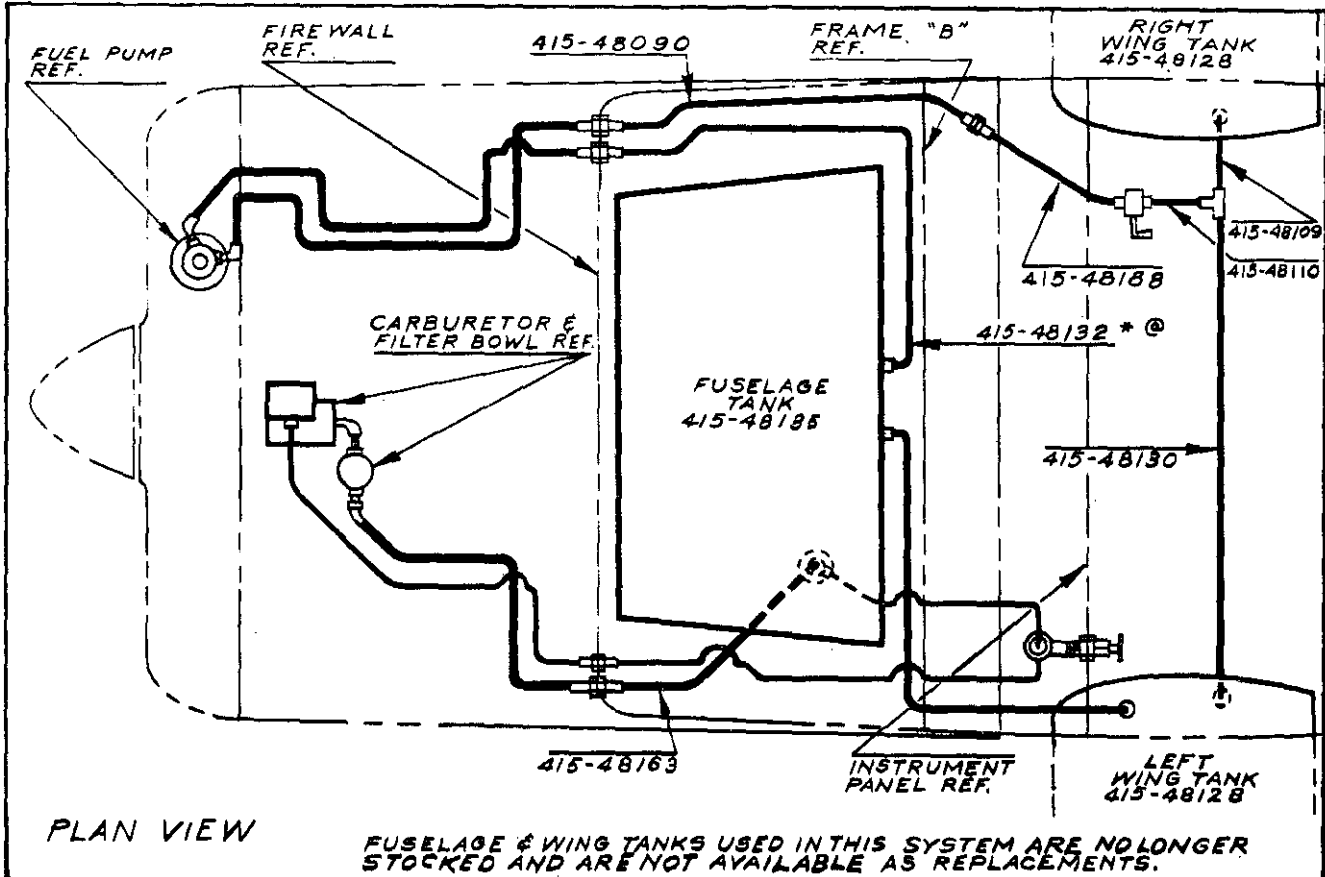


FIG. 2

INTERMEDIATE SYSTEM-ERCOUPES 3221 TO 3467, INCL.
SCHEMATIC (SEE ERCOUPE INSTALLATION DRAWING No. 415-48179 & 415-48180
DIAGRAM FOR DETAILS & PARTS REQUIRED)

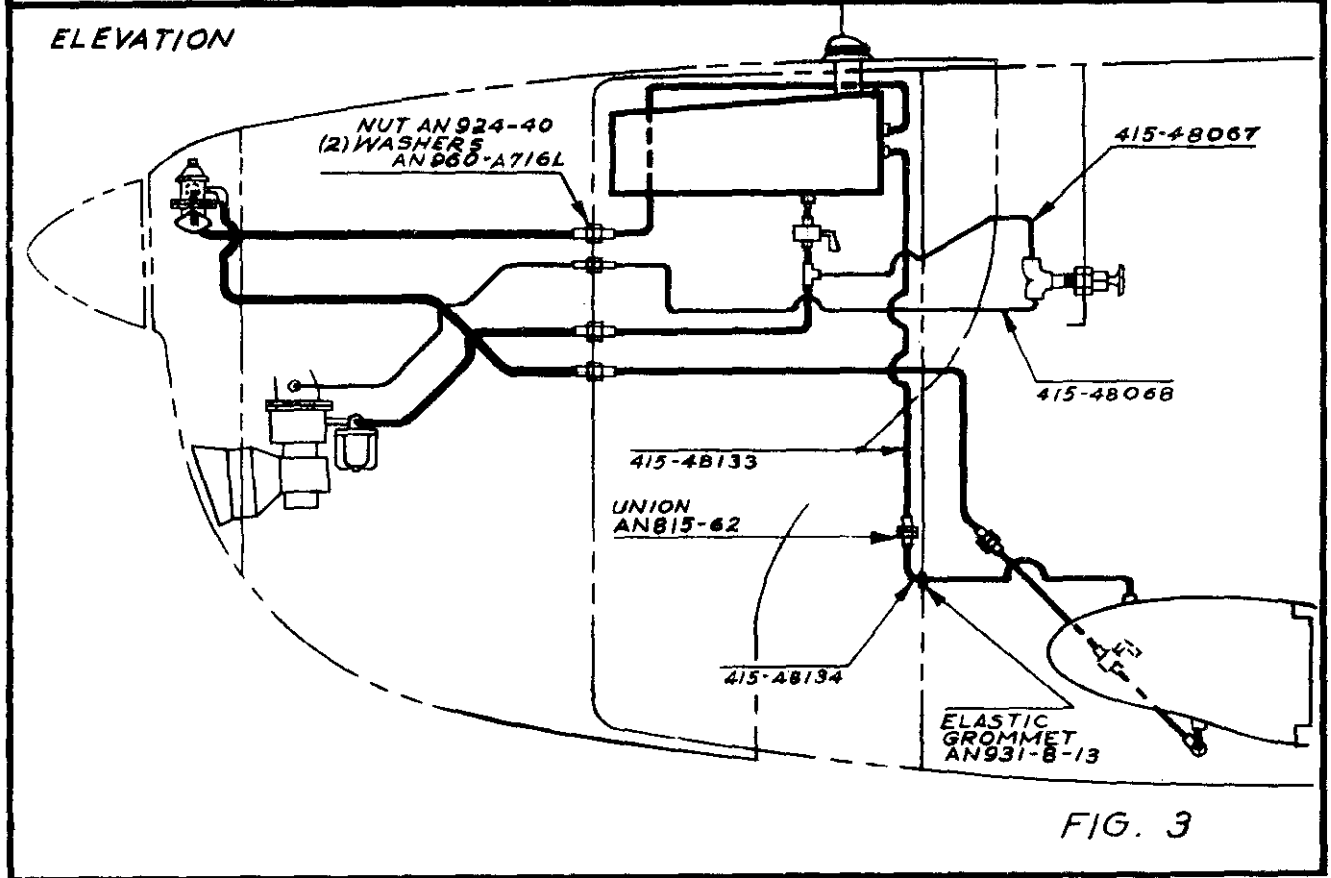
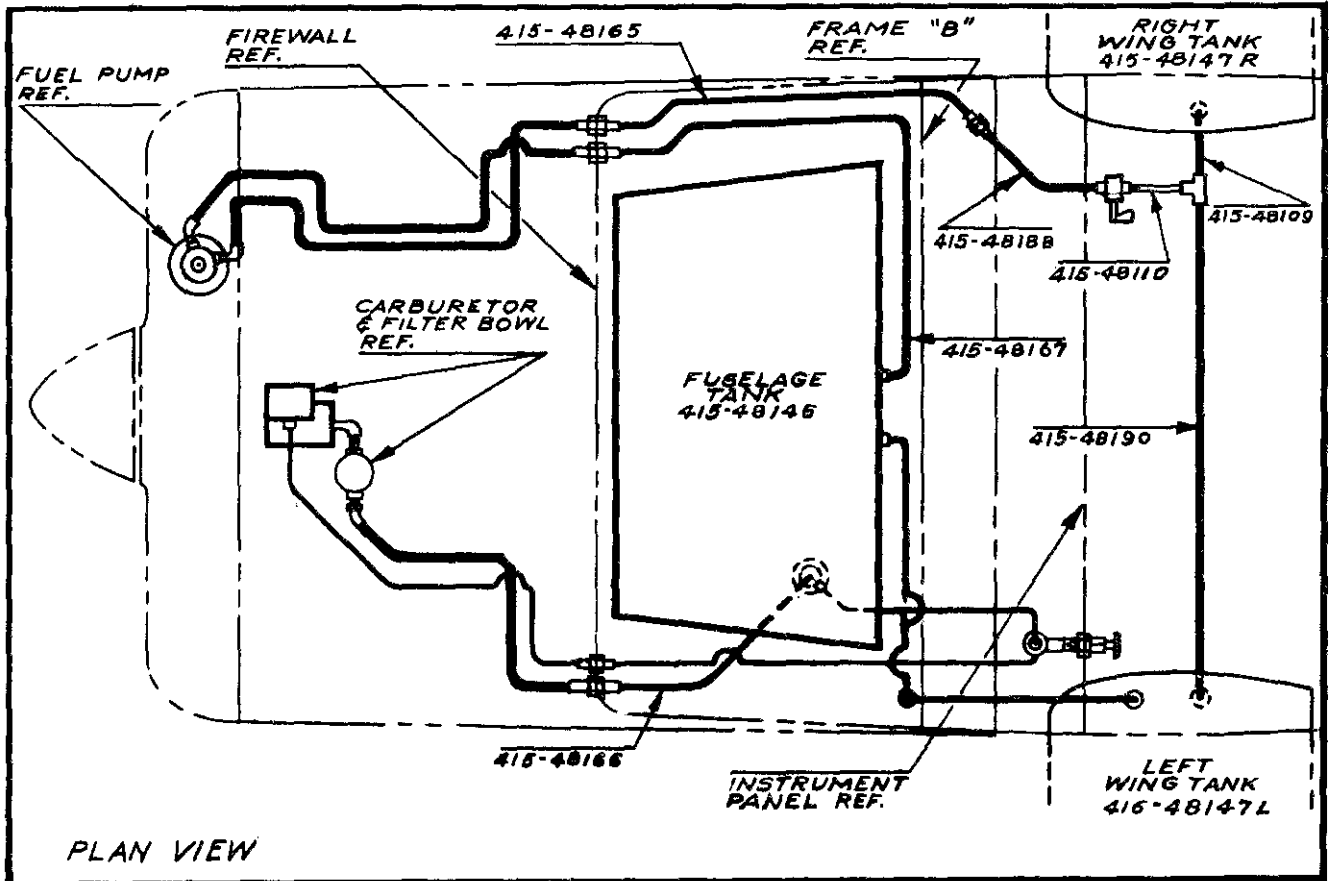
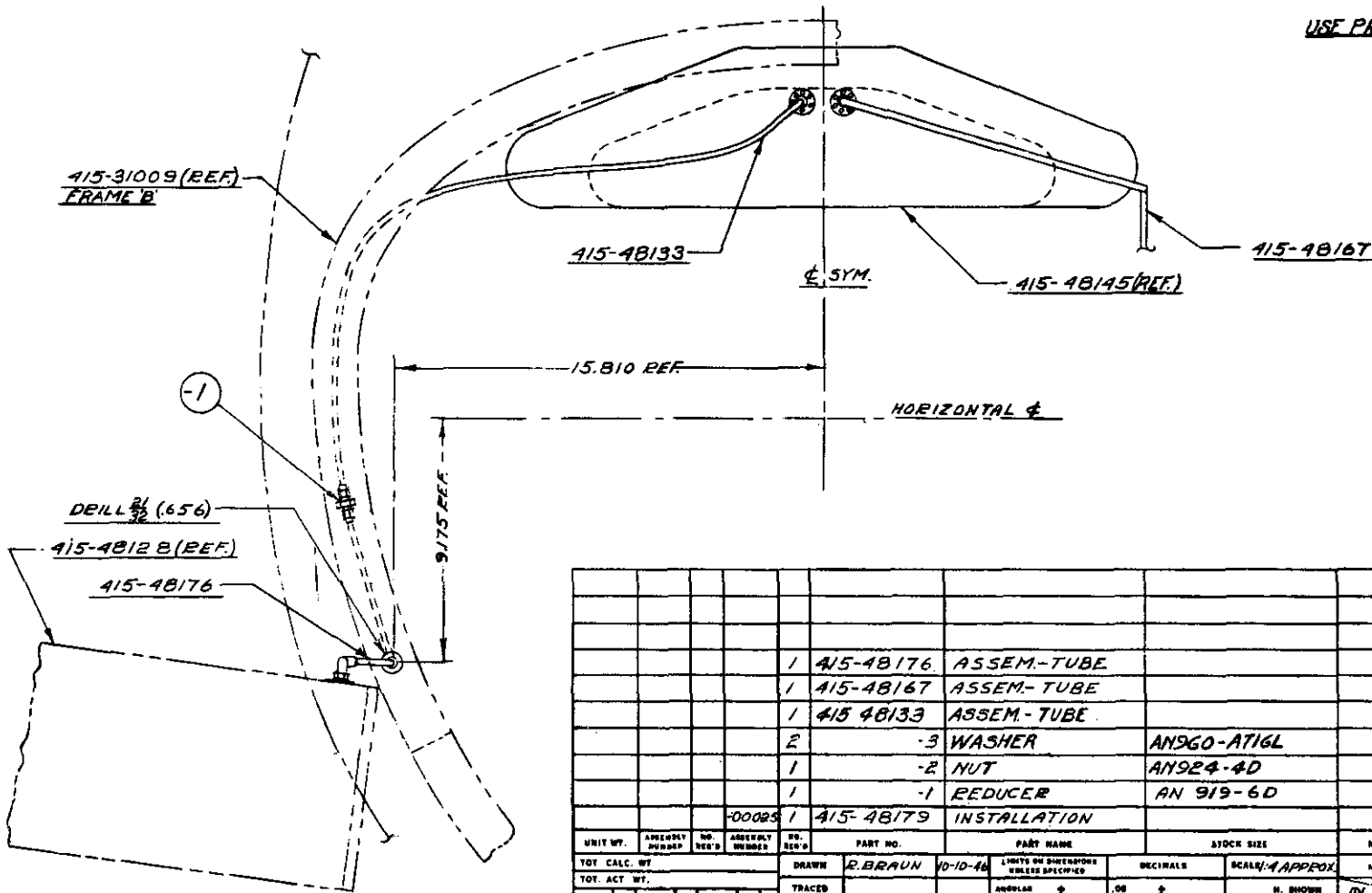


FIG. 3

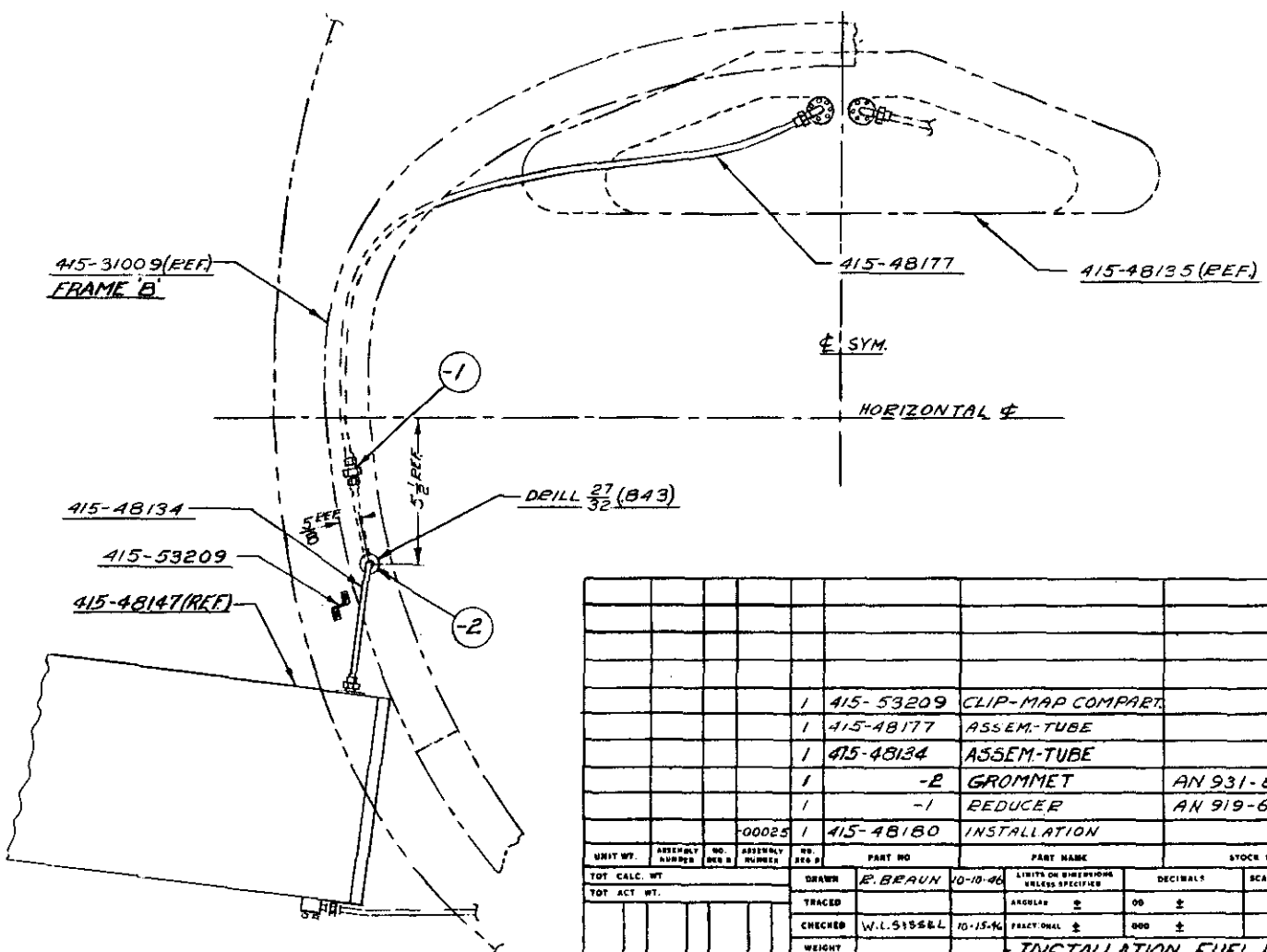
IMPROVED SYSTEM-ERCOUPES 346B & SUBSEQUENT
SCHEMATIC
DIAGRAM

USE PARTS LISTED BELOW



UNIT WT.	ASSEMBLY NO.	NO. REQ'D	ASSEMBLY NUMBER	DR. NO.	PART NO.	PART NAME	STOCK SIZE	MATERIAL	GOVT. MAT. SPEC.	COMM. MAT. SPEC.	1/2 IN. 1000 LBS.				
					1	415-48176	ASSEM-TUBE								
					1	415-48167	ASSEM-TUBE								
					1	415-48133	ASSEM-TUBE								
					2	-3	WASHER	AN960-AT16L							
					1	-2	NUT	AN924-4D							
					1	-1	REDUCER	AN 919-6D							
					1	415-48179	INSTALLATION								
TOT. CALC. WT.				DRAWN		E. BRAUN	10-10-46	LIMITS ON DIMENSIONS UNLESS SPECIFIED		DECIMALS		SCALE: APPROX.		NOTE: BREAK ALL SHARP CORNERS REMOVE ALL BURRS	
TOT. ACT. WT.				TRACED				ANGULAR	±	.08	±	H. SHOWN		FINISH SYMBOLS	
				CHECKED		W.L. CISSEL	10-15-46	FRACTIONAL	±	.000	±	H. OPPOSITE		<input type="checkbox"/> ROUGH FINISH <input type="checkbox"/> HAND FINISH <input type="checkbox"/> SMOOTH MACHINE <input type="checkbox"/> ROUGH GRIND <input type="checkbox"/> SMOOTH GRIND	
				WEIGHT		INSTALLATION-FUEL LINES									
				STNGC.		FUSELAGE TANK REPLACEMENT									
				PROJECT ENGINEER		REF. SERIAL NO. 3221 TO 3467									
				APPROVED		ENGINEERING AND RESEARCH CORP.									
				CUSTOMER		RIVERDALE, MARYLAND									
				SUPERSEDES		415-48179									
				MODEL		415-C									

USE PARTS LISTED BELOW



UNIT WT.	ASSEMBLY NUMBER	NO. REQ'D	ASSEMBLY NUMBER	NO. REQ'D	PART NO.	PART NAME	STOCK SIZE	MATERIAL	GOVT. MAT. SPEC.	COMM. MAT. SPEC.	T. T. IN 1000 LBS.
					1	415-53209	CLIP-MAP COMPART.				
					1	415-48177	ASSEM-TUBE				
					1	415-48134	ASSEM-TUBE				
					1	-2	GROMMET	AN 931-B-13			
					1	-1	REDUCER	AN 919-6D			
					1	415-48180	INSTALLATION				
					00025						
TOT. CALC. WT.											
TOT. ACT. WT.											
DRAWN		E. BRAUN		10-10-46		LIMITS ON DIMENSIONS UNLESS SPECIFIED		DECIMALS		SCALE: 1/4" APPROX.	
TRACED						ANGULAR		00 ±		N SHOWN	
CHECKED		W.L. SISELL		10-15-46		FRACTIONAL		000 ±		N OPPOSITE	
WEIGHT											
STRUCT											
PROJECT ENGINEER		H. J. ...		10-15-46							
APPROVED											
CUSTOMER											
<p>INSTALLATION-FUEL LINES LEFT WING TANK REPLACEMENT EFF. SERIAL NO. 3221 TO 3467</p>								<p>NOTE: BREAK ALL SHARP CORNERS REMOVE ALL BURRS</p>			
<p>FINISH SYMBOLS</p> <p>ROUGH MACHINE ROUGH GRIND SMOOTH MACHINE SMOOTH GRIND</p>								<p>FINISH SYMBOLS</p> <p>ROUGH MACHINE ROUGH GRIND SMOOTH MACHINE SMOOTH GRIND</p>			
<p>HEAT TREAT</p>								<p>FINISH</p>			
<p>MODEL</p>								<p>415-C</p>			
<p>SUPERSEDES</p>								<p>415-48180</p>			
<p>ENGINEERING AND RESEARCH CORP. RIVERDALE, MARYLAND</p>											