

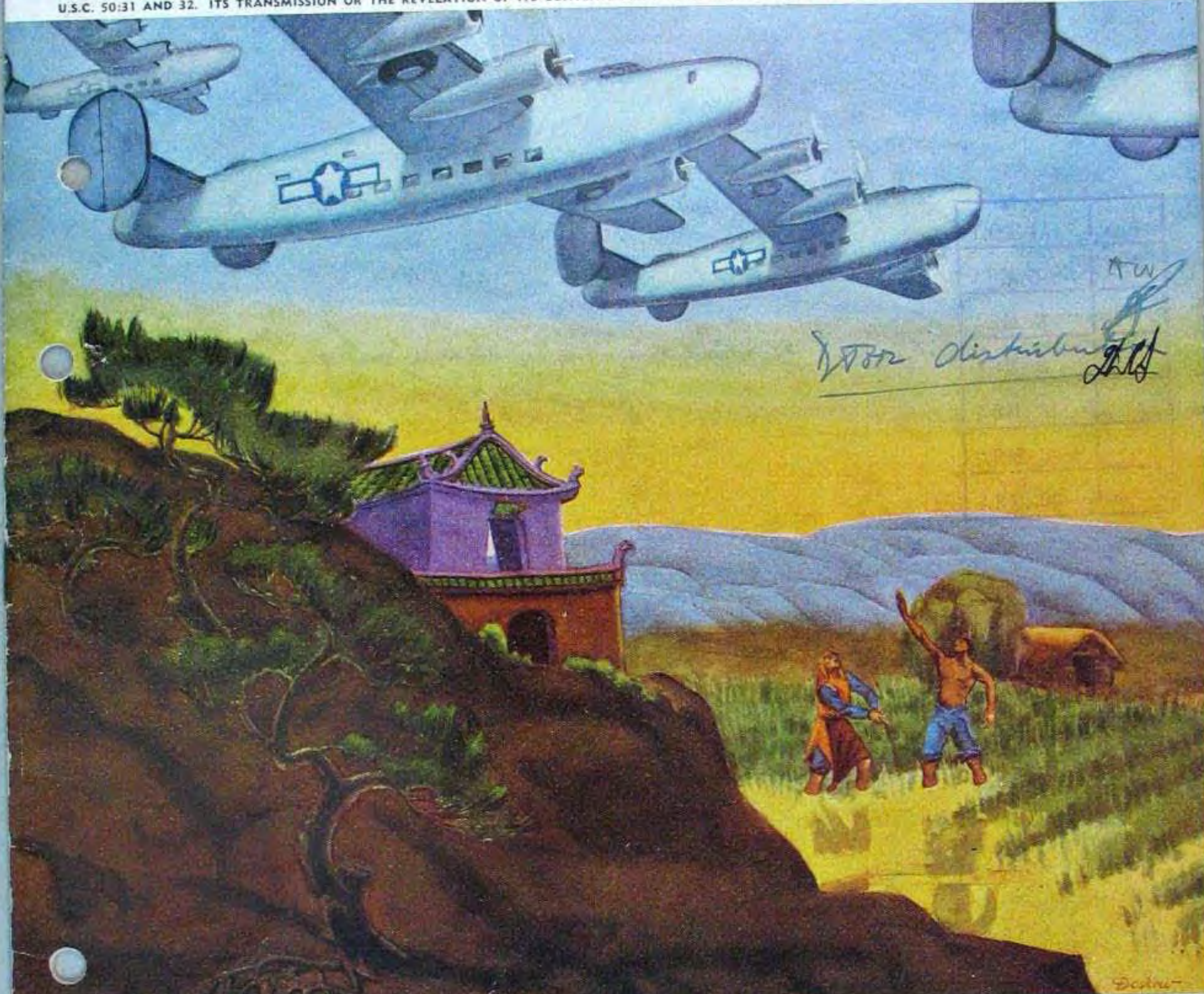


See p. 292

FIELD SERVICE BULLETIN

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SERVICE DEPARTMENT
CONSOLIDATED VULTEE AIRCRAFT CORPORATION
San Diego, California, U.S.A.



FIELD SERVICE BULLETIN

Published Semi-Monthly by SERVICE DEPARTMENT

CONSOLIDATED VULTEE AIRCRAFT CORPORATION

General Office San Diego, California, U. S. A.

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Bomb IDENTIFICATION Ins

A BOMB loading identification placard is installed on the forward fuselage station 6.0, left of the bomb bay door on B-24D airplanes.

The bomb identification placard (32A3072) which consists of a dial mounted between two side plates. The dial was designed to simulate the bomb identification placard on B-24D airplanes.



Figure 1. Bomb Loading Identification Placard Installed in Bomb Bay.

Bomb Loading IDENTIFICATION PLACARD Installed

EFFECTIVE POINTS OF CHANGE

	MODEL	SERIAL No.	MCR No.
San Diego	B-24L	44-41649	193D
Douglas	B-24J	Unscheduled	193D
Ford	B-24M	Unscheduled	193D
Ft. Worth	B-24J	42-51013	193D
	C-87	Unaffected	.....
N. A. A.	B-24J	44-28061	193D

This information is as accurate as can be established at the present time. The points of change may later be advanced or retarded in production.

A BOMB loading identification placard has been installed on the forward side of the bulkhead at station 6.0, left of the bomb bay catwalk, on B-24 type airplanes.

The bomb identification placard is a dial assembly (32A3072) which consists of a cellulose acetate disc mounted between two stiffening plates (figure 1). The dial was designed to simplify the reading of the bomb

rack station index information and to include other data such as purpose and actual weight of each type of bomb. When the disc is rotated to the bomb classification desired, all pertinent information concerning that particular type of bomb is exposed through two slots in the forward stiffening plate.

Installation of the bomb loading identification placard resulted in a weight increase of 1.8 pounds.



Refer Check list No W1B13
 at p. 1. Notes - Item 2A15 - Flush Static Vents

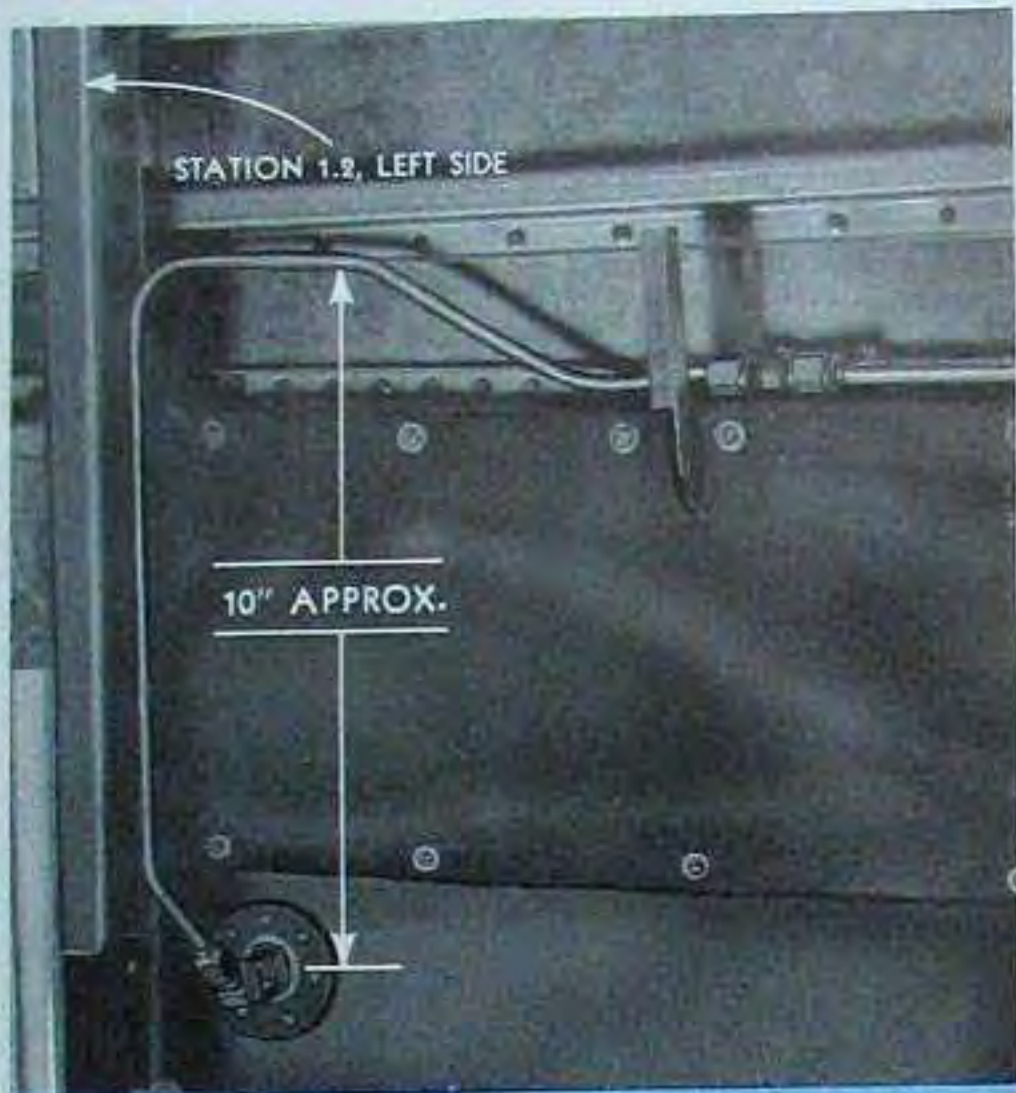


Figure 2. New Routing of Static Air Pressure Tube

STATIC AIR PRESSURE TUBES REROUTED

EFFECTIVE POINTS OF CHANGE

	MODEL	SERIAL No.	MCR No.
San Diego	B-24L	44-41549	585D
Douglas	B-24J	Unaffected	-----
Ford	B-24M	Unscheduled	585D
Ft. Worth	B-24J	Unscheduled	585D
	C-87	Unscheduled	387
N. A. A.	B-24N	Unscheduled	585D

This information is as accurate as can be established at the present time. The points of change may later be advanced or retarded in production.

THE tubes leading from the static air pressure openings on B-24 type airplanes have been rerouted to prevent moisture from entering the static lines thereby causing erroneous indications of the altimeter, air-speed indicator, and rate-of-climb indicator.

The revised tubes (refer to 32F36100) have been provided with a 10" rise, as illustrated in figure 2. This rise in the tubes is sufficient to keep water out of the static lines; however, the static and pressure lines should be drained periodically to remove any condensed moisture. (Refer to Field Service Bulletin, Volume 2, No. 14, page 200).

Rerouting of the static air pressure tubes is not scheduled for incorporation on aircraft in service.

CAST-IN VANES REPLACE RIVETED VANES in Carburetor Air Duct

EFFECTIVE POINTS OF CHANGE

	MODEL	SERIAL No.	MCR No.
San Diego	B-24L	44-41499	445A
Douglas	B-24J	Unaffected	-----
Ford	B-24M	44-49252	445A
Ft. Worth	B-24J	Unscheduled	445A
	C-87	Unaffected	-----
N. A. A.	B-24G	44-28061	445A

This information is as accurate as can be established at the present time. The points of change may later be advanced or retarded in production.

A CAST aluminum carburetor air duct (32P1583), incorporating cast-in vanes, has replaced the former riveted vane ducts installed on B-24 type airplanes (figure 3). Cast aluminum construction eliminates the use of rivets and is superior in strength to the riveted vanes.

The cast-in vanes are capable of withstanding higher vibrational loads and will eliminate the possibility of broken parts and rivets dropping into the blower section of the engine with consequent damage to aircraft and equipment.

Installation of the cast aluminum carburetor air ducts does not effect an appreciable weight change.

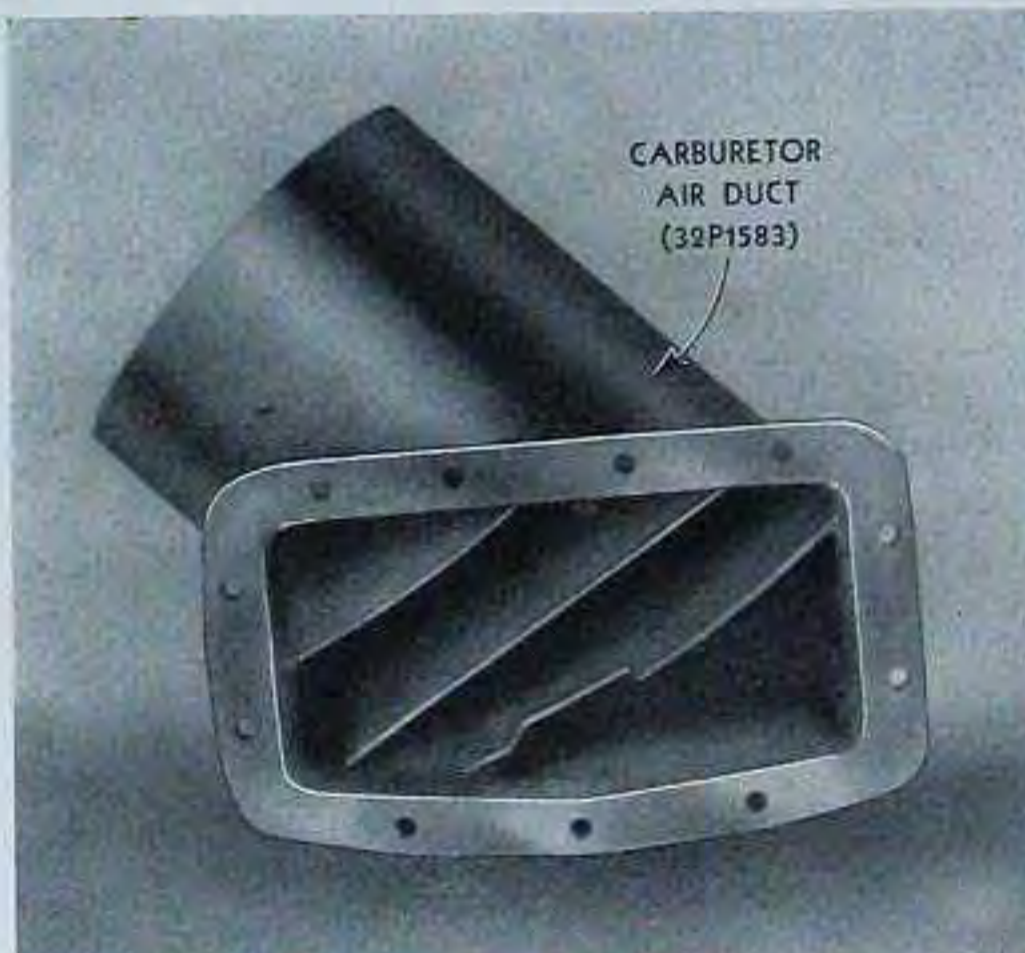


Figure 3. Cast-In Vane Carburetor Air Duct, Rear View



Figure 4.

HEATING ELEVAT

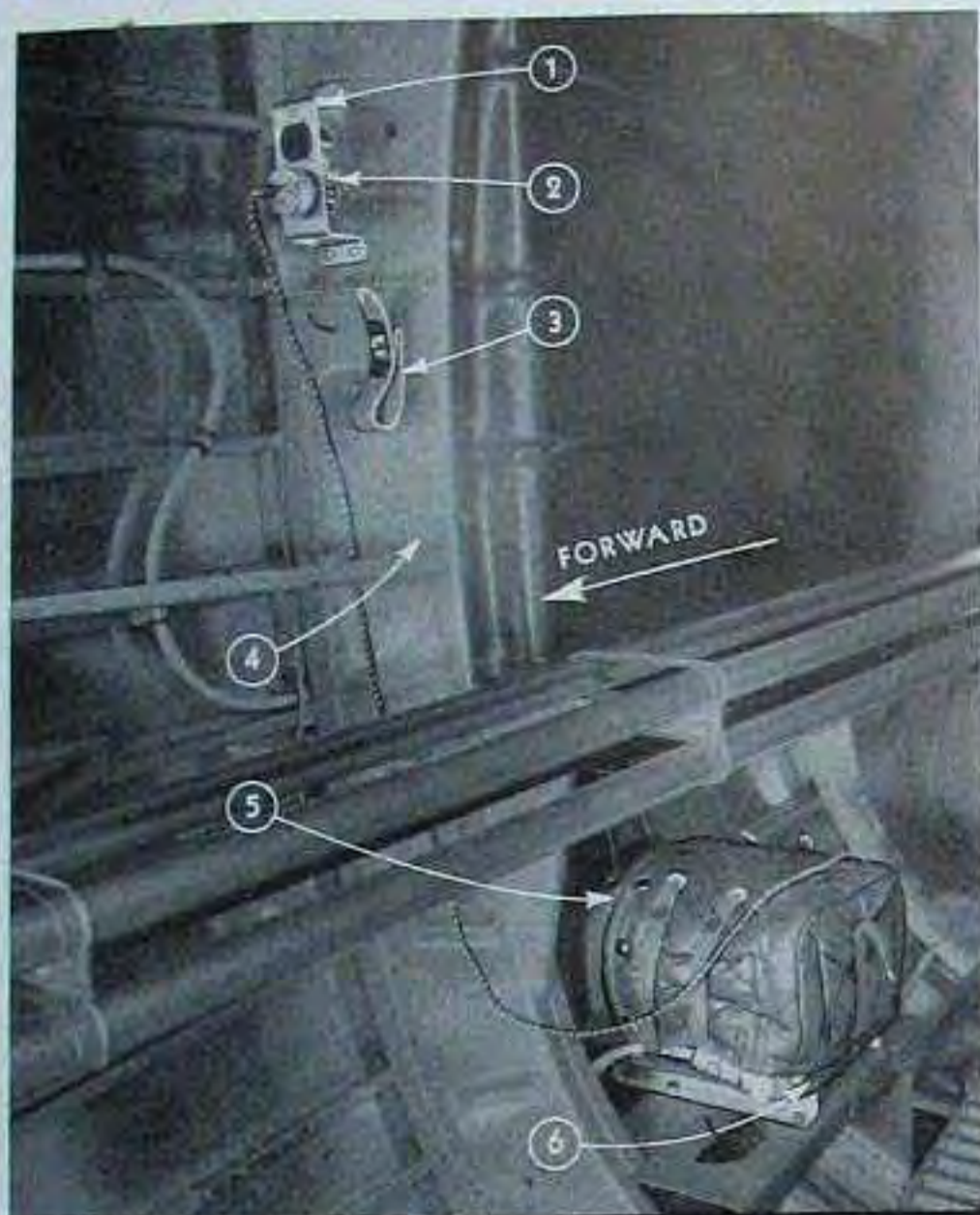
EFFECTIVE POINTS OF CHANGE

San Diego	-----
Douglas	-----
Ford	-----
Ft. Worth	-----

N. A. A.

This information is as accurate as can be established at the present time. The points of change may later be advanced or retarded in production.

A HEATING vator service vent malfunctioning at freezing temperatures.



LEGEND

- 1. Bracket (32E4701)
- 2. Electric Receptacle (Hubbel No. 7540)
- 3. Cord Stowage Strap (Q5740-K8-10)
- 4. Station 8.0
- 5. Cover (G. E. No. PJ-1B1)
- 6. Base Pad (G. E. No. PJ-1C1)

Figure 4. Servo Motor Heating Pad Installed

HEATING PAD INSTALLED on ELEVATOR SERVO MOTOR

EFFECTIVE POINTS OF CHANGE

	MODEL	SERIAL No.	MCR No.
San Diego	B-24L	44-41449	575A
Douglas	B-24J	Unaffected	.....
Ford	B-24J	42-95504	603B-3
Ft. Worth	B-24J	Unaffected	.....
	C-87	Unaffected	.....
N. A. A.	B-24J	42-78475	603

This information is as accurate as can be established at the present time. The points of change may later be advanced or retarded in production.

A HEATING pad unit has been installed on the elevator servo motor of B-24 type airplanes to prevent malfunctioning of the unit during operation in freezing temperatures. An electric receptacle has been

added near the servo motor to provide a source of power for the heating pad. Refer to drawing 32E3903.

The heating pad installation (figure 4) consists of a cover (5), base pad (6), and six mounting spacers. An electric cord is supplied with the heating pad. An electric receptacle (2) has been installed on the right forward face of the bulkhead at station 8.0. An electric harness has been installed to connect the receptacle with the tail turret power switch box where a 2 ampere fuse is installed for the heating circuit. A strap (3), installed below the electric receptacle, provides safe and convenient stowage for the electric cord.

Installation and operation of the heating pad are described in Technical Order No. AN-1160AA-1, page 98.

* * *

HOSE REVISED IN MAIN FUEL CELL VENT SYSTEM

EFFECTIVE POINTS OF CHANGE

	MODEL	SERIAL No.	MCR No.
San Diego	B-24L	44-41449	263H
Douglas	B-24E	41-28568	263H
Ford	B-24M	44-49002	263H
Fort Worth	B-24J	44-44149	263H
	C-87	Unaffected	.....
N.A.A.	B-24J	44-28161	263H

This information is as accurate as can be established at the present time. The points of change may later be advanced or retarded in production.

THE bellows type hose in the main fuel cell vent system has been replaced by a type of hose that is superior in tensile strength, cold resistance, and aromatic fuels resistance.

The new bellows hose (32G2144-6,-7) includes straight sections, approximately 1 1/2" long, at both ends. This provides a greater clamping area thus lessening the possibility of improper seating of the clamp. The straight section at each end of the hose is colored a bright red in order that the hose may be identified readily in service and in spares stocks.

The revised hose is compounded from stockinette-covered synthetic rubber. It has been found that fabric reinforcement of the flexible vent hose is essential in order to prevent rupture of the hose when subjected to tension and pressure loadings. This hose satisfactorily overcomes all difficulties experienced with the former hose (32G1067-2,-3) since tests indicate that it will withstand a pressure of 5 p.s.i. for a longer period of time and will allow a five percent extension or reduction in length without leakage when subjected to a temperature of -65° F.



B-24

DEMAND OXYGEN SYSTEM PANELS IMPROVED

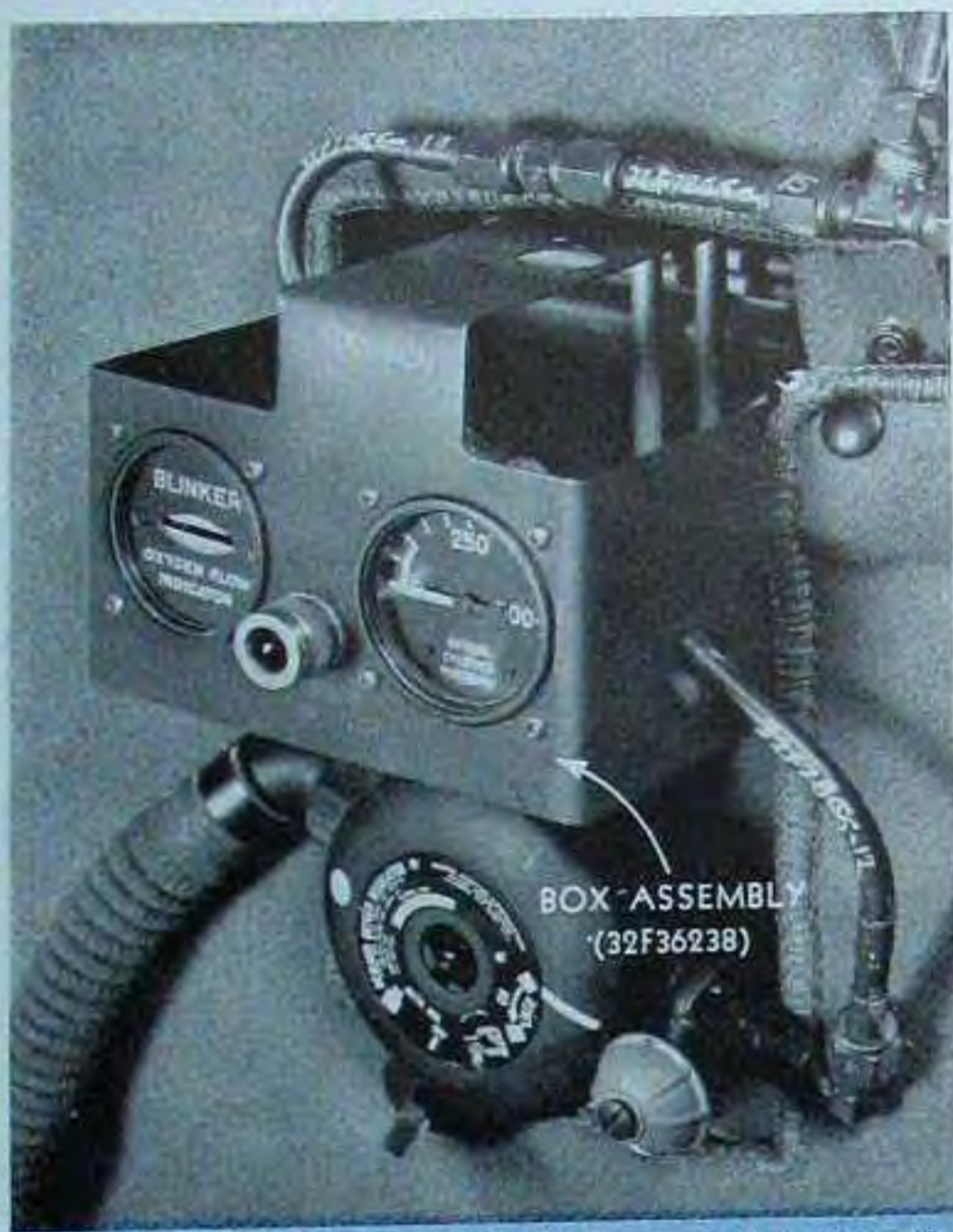


Figure 5. Typical Installation of Improved Box Assembly

EFFECTIVE POINTS OF CHANGE

	MODEL	SERIAL No.	MCR No.
San Diego	B-24L	44-41649	132P
Douglas	B-24J	Unscheduled	132P
Ford	B-24H	42-94795	132P
Ft. Worth	B-24J	44-44149	132P
	C-87	43-30607	82A
N. A. A.	B-24G	44-28161	132P

This information is as accurate as can be established at the present time. The points of change may later be advanced or retarded in production.

AN IMPROVED box assembly for the demand oxygen system panels has been installed on B-24 type airplanes.

The new box assembly (32F36238), installed under 32F36239, is made of alclad sheet and has been designed with maximum allowable cutouts (figure 5). These cutouts provide greater accessibility for the removal and inspection of instruments and fittings without the necessity of dismantling the panels.



Auxiliary Power Unit GROUNDED

EFFECTIVE POINTS OF CHANGE

	MODEL	SERIAL No.	MCR No.
San Diego	B-24L	44-41549	42B
Douglas	B-24J	Unaffected	.....
Ford	B-24M	44-49751	42B
Ft. Worth	B-24J	44-44349	42B
	C-87	Unaffected	.....
N. A. A.	B-24G	42-78050	42B

This information is as accurate as can be established at the present time. The points of change may later be advanced or retarded in production.

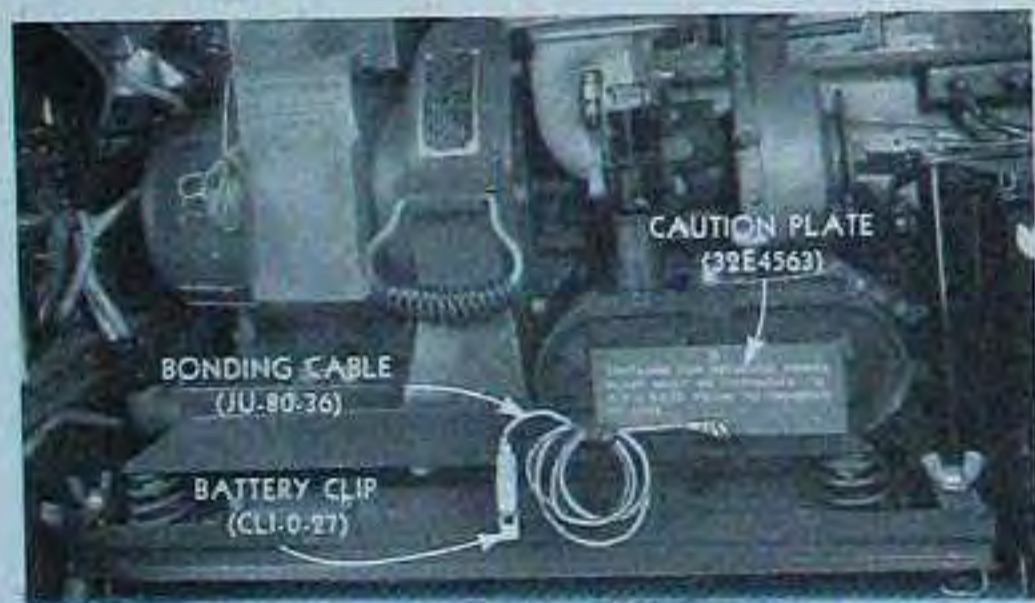


Figure 6. Auxiliary Power Unit Grounded to Base

A BONDING CABLE (CVAC Part No. JU-80-36) and a battery clip (CVAC Part No. CLI-0-27) have been installed on the auxiliary power unit of B-24 type airplanes as a precautionary measure to prevent possible fire which could be caused by an accumulation of static electricity in the power unit.

The unit, located on the left side of the fuselage forward of the bulkhead at station 4.0, is grounded by attaching the battery clip to the base of the unit prior to refilling the fuel tank (figure 6).

A new cautionary plate (32E4563) has been installed on the unit to inform personnel of the grounding procedure before refilling the fuel tank of the auxiliary power unit.

Reference: Technical Order No. 01-1-45.

October 15, 1944

Fillers

IN WIN
DRAIN

PREMATURE d
cell manifolds in
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access doors at win

Installation of a
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fuel cell manifold,
synthetic rubber m
has been installed
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EFFECT

San Diego
Douglas
Ford
Ft. Worth
N. A. A.

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No. 01-5E-48. I
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Improper rig
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engines, must c
the mixture con



Fillers Installed

IN WING MANIFOLD DRAIN OPENINGS

PREMATURE deterioration of the No. 2 main fuel cell manifolds in the wing has necessitated covering the No. 2 cell manifold drain openings in the manifold access doors at wing station 2, left and right.

Installation of a filler block (32W2252) in the opening (figure 7), prevents air from circulating around the fuel cell manifold, thus retarding deterioration of the synthetic rubber manifold. A retainer plate (32W2253) has been installed on the outside of the access door to hold the filler block in position.

EFFECTIVE POINTS OF CHANGE

	MODEL	SERIAL No.	MCR No.
San Diego	B-24L	44-41649	409G
Douglas	B-24J	Unscheduled	409G
Ford	B-24M	44-49751	409G
Ft. Worth	B-24J	Unaffected	.....
	C-87	Unaffected	.....
N. A. A.	B-24G	42-78045	409G

This information is as accurate as can be established at the present time. The points of change may later be advanced or retarded in production.

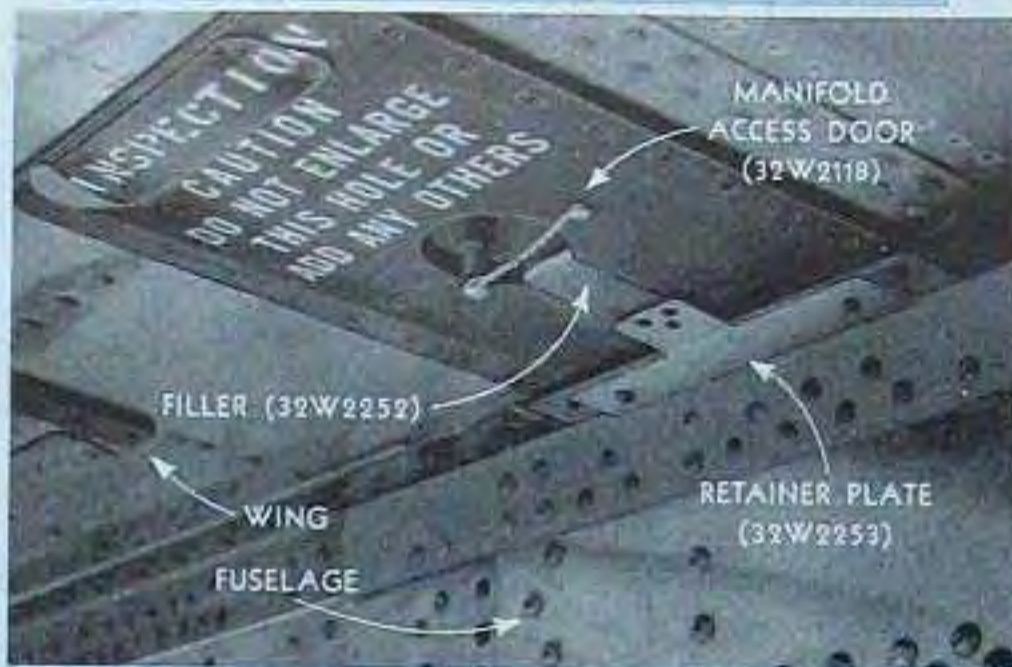


Figure 7.



Carburetor MIXTURE CONTROL RIGGING CHECKED

The Technical Order further directs the painting of a red band across the carburetor mixture control quadrant, centered at the auto lean position, after the controls have been re-rigged. This band, the exact width of the control levers (figure 8), serves to notify the pilot of properly rigged carburetor mixture controls.

EFFECTIVE POINTS OF CHANGE

	MODEL	SERIAL No.	MCR No.
San Diego	B-24L	44-41649	386D
Douglas	B-24J	Unscheduled	386D
Ford	B-24M	Unscheduled	386D
Ft. Worth	B-24J	Unscheduled	386D
	C-87	Unaffected	.....
N. A. A.	B-24G	42-78244	386D

This information is as accurate as can be established at the present time. The points of change may later be advanced or retarded in production.

THE mixture control linkage of B-24 type airplanes will be inspected to comply with Technical Order No. 01-5E-48. In the event the mixture control selectors on the carburetors do not coincide with the mixture control levers on the pilot's pedestal, the linkage should be disassembled and re-rigged.

Improper rigging of the carburetor mixture controls can cause malfunction of the engine due to the lean metering of fuel. The mixture control selectors on the carburetors, when in the auto lean position on all four engines, must coincide with the auto lean position of the mixture control levers on the pilot's pedestal.

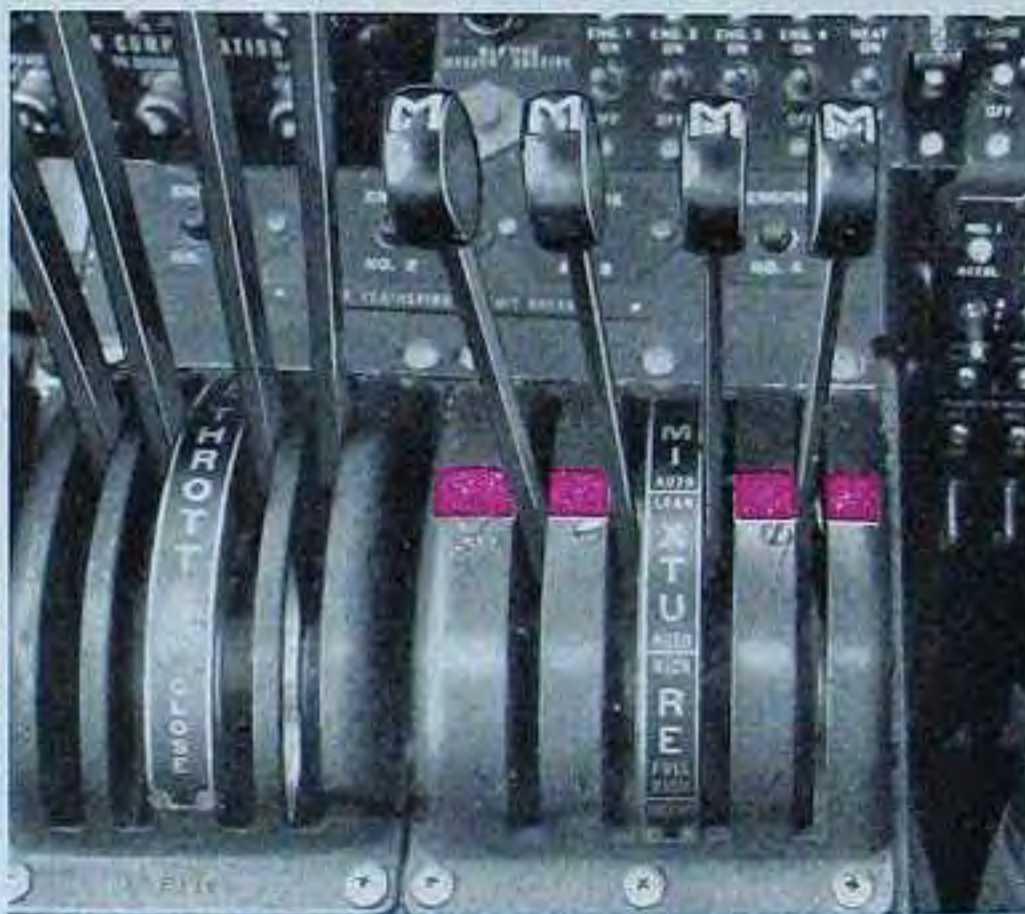


Figure 8. Mixture Control Quadrant Mark at Auto Lean Position

Aileron System Modified ON B-24 TYPE

EFFECTIVE POINTS OF CHANGE

	MODEL	SERIAL No.	MCR No.
San Diego	B-24L	44-41449	407-1, -3, 457A-1, A-2
Douglas	B-24H	Unaffected	Above MCR's
Ford	B-24M	44-49751	407-1, -3
	B-24M	Unaffected	457A-1, A-2
Ft. Worth	B-24J	44-44049	407-1, -3
	B-24J	Unaffected	457A-1, A-2
	C-87	Unaffected	Above MCR's
N. A. A.	B-24G	42-78075	407-1, -3
		42-78155	457A-1, A-2

This information is as accurate as can be established at the present time. The points of change may later be advanced or retarded in production.

THE aileron and aileron tab control systems have been modified so as to incorporate a tab in the left aileron and to provide for the installation of bell cranks in place of aileron gear boxes. (Refer to figure 9.)

Left Aileron Tab Installed MCR 457A-2

A TAB (19) (32W1315L) has been added to the left aileron (20) (32W573-4L) to improve the effectiveness of the aileron tab system. The need for more tab surface has developed as a result of the increase in gross weight and engine power, and the addition of auxiliary wing fuel cells. The single aileron tab installation was suitable for the B-24 airplane of 41,000 lbs. gross weight (original B-24 specification).

Tab Controls Modified MCR 457A-1

THE control system for the aileron tabs has been revised so as to provide control cables for the left tab and to incorporate a revised control mechanism for both tabs.

Control cables for the left aileron tab (11), (12), (21) and (22) have been added and are connected to the right aileron tab cables (7), (8), (26), and (27) near station 3.0 on the right wing. A connector (4) splices the tab cables in the wing to the tab cables (9) and (10) in the fuselage.

Aileron tab cable stops (23), located in the right forward bomb bay are adjusted to allow a 10° up and down movement of the tabs.

The control mechanisms (32C4546) (refer to inset) for the aileron tabs have been changed to provide a 15°

servo action of the tabs when the ailerons are deflected 20° (aileron deflection limit 20° up, 20° down). The former tab control mechanism (32W586) did not provide servo action. The universal joint has been removed from the revised tab control mechanisms.

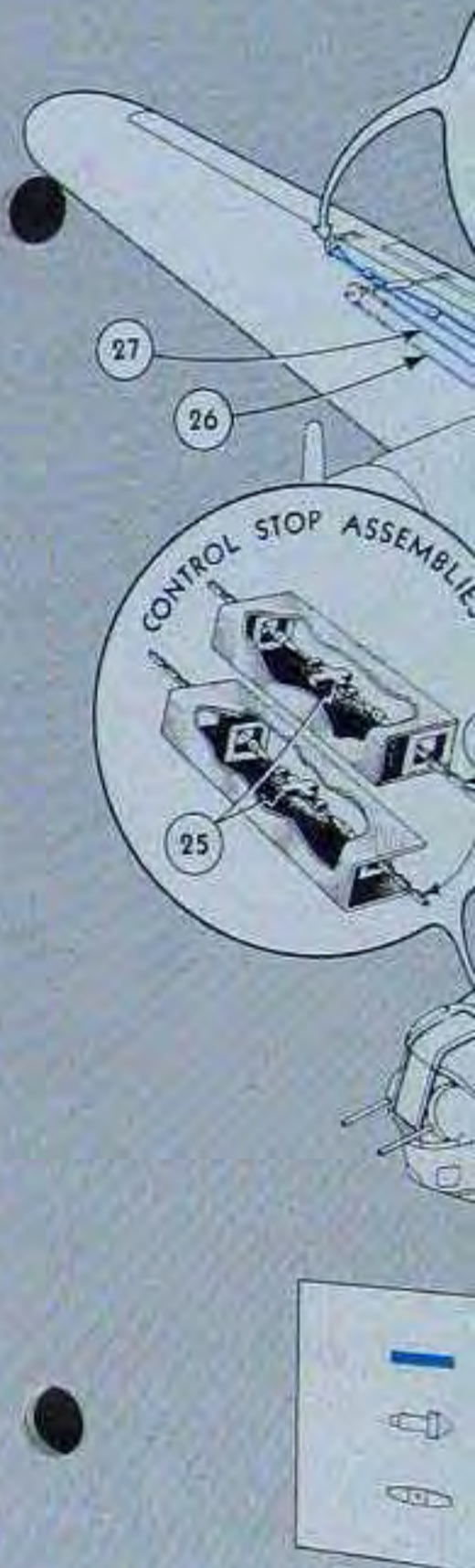
Bell Cranks Installed MCR 407-1

A SINGLE point aileron control unit (refer to inset) has been installed at each aileron. Aileron gear boxes have been replaced by bell cranks.

LEGEND

1. Bellcrank (32C4245)
2. Push-Pull Tube Assembly (32C4375)
3. Aileron Horn (32W1611)
4. Tab Cable Connector (29F2166)
5. Aileron Cable Assembly—Right Aileron Up (32C4298-30)
Cable Fitting Code Color—White
6. Aileron Cable Assembly—Right Aileron Down (32C4298-28)
Cable Fitting Code Color—White and Black
7. Aileron Tab Cable Assembly—Left Wing Down (32C4303-50)
Cable Fitting Code Color—White
8. Aileron Tab Cable Assembly—Left Wing Up (32C4303-52)
Cable Fitting Code Color—White and Black
9. Aileron Tab Cable Assembly—Left Wing Up (32C4303-42)
Cable Fitting Code Color—White and Black
10. Aileron Tab Cable Assembly—Left Wing Down (32C4303-44)
Cable Fitting Code Color—White
11. Aileron Tab Cable Assembly—Left Wing Down (32C4303-46)
Cable Fitting Code Color—White
12. Aileron Tab Cable Assembly—Left Wing Up (32C4303-48)
Cable Fitting Code Color—White and Black
13. Aileron Cable Assembly—Left Aileron Down (32C4298-6)
Cable Fitting Code Color—White and Black
14. Aileron Cable Assembly—Left Aileron Up (32C4298-8)
Cable Fitting Code Color—White
15. Screw Assembly (32C4540)
16. Screw Guard and Link Assembly (32C4545)
17. Push-Pull Tube Assembly (32C4544)
18. Tab Horn (32C4543)
19. Aileron Tab—Left (32W1315-L)
20. Aileron Assembly—Left (32W573-4L)
21. Aileron Tab Cable Assembly—Left Wing Down (32C4303-26)
Cable Fitting Code Color—White
22. Aileron Tab Cable Assembly—Left Wing Up (32C4303-27)
Cable Fitting Code Color—White and Black
23. Aileron Tab Cable Stops (28C1051)
24. Aileron Control Chain Assembly (32C025-34)
25. Control Stop (32C026-7)
26. Aileron Tab Cable Assembly—Left Wing Up (32C4303-27)
Cable Fitting Code Color—White and Black
27. Aileron Tab Cable Assembly—Left Wing Down (32C4303-26)
Cable Fitting Code Color—White

The revised installation (1) and aileron horn point control installation simplifies installation bell crank installation cables to obtain a frequently, the maximum control wheel has been the aileron control of the pilot's and copilot.



B-24 TYPE AIRPLANES

The revised installation provides a single bell crank (1) and aileron horn (3) for each aileron. The single point control installation reduces operating friction and simplifies installation of the aileron control system. The bell crank installation requires less movement of control cables to obtain a full deflection of the ailerons. Consequently, the maximum turning limit of the pilot's aileron control wheel has been reduced. A revised aileron control stop assembly (refer to inset) has been installed in the aileron control chain assembly (24) which connects the pilot's and copilot's control columns.

Aileron cable assemblies (5), (6), (13), and (14) in the wing have been changed to conform with the revised installation.

Structure Changed MCR 407-3

INCORPORATION of the single horn installation on the ailerons has necessitated a change of the aileron structure to distribute the concentrated load of the single control horn.

The outer wing panel rear spar has been changed to accommodate the bell crank installation. Slots cut in the rear spar allow passage of the bell crank and cables. Reinforcing angles have been added adjacent to the slots to maintain the required strength of the spar.

The fittings on each cable are marked with an identifying color in accordance with specification AN9197 (refer to legend, figure 9).

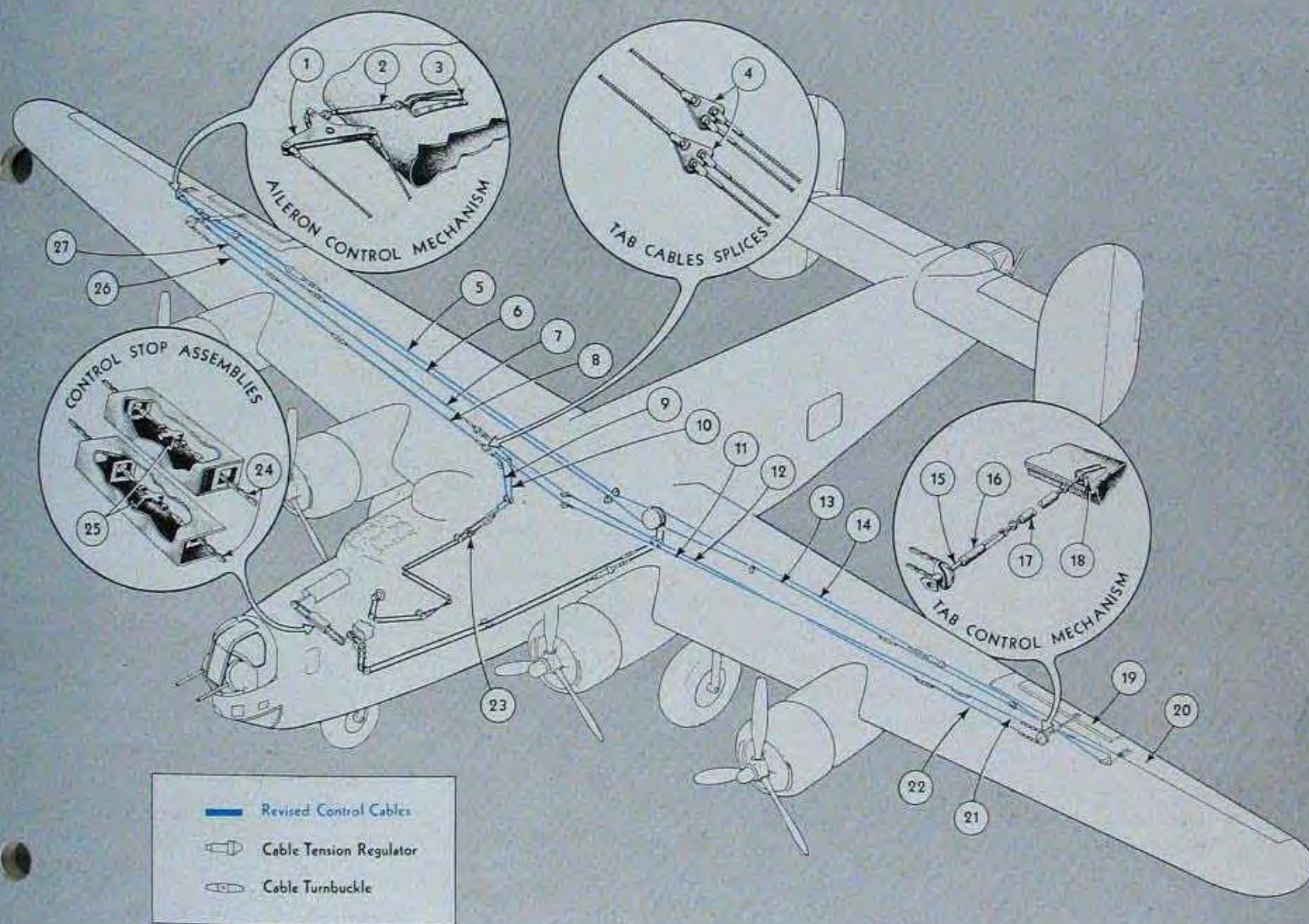


Figure 9. Revised Aileron and Aileron Tab Control Systems



Rheostat

REPLACES TOGGLE SWITCH on NAVIGATOR'S CHART TABLE



Figure 10. Rheostat for Navigator's Table Light at Station 1.0, Looking Aft

RESPECTIVE POINTS OF CHANGE			
	MODEL	SERIAL No.	MCR No.
See 32302	B-25L	49-41649	988-1
Damage	B-244	41-28616	988-1
Prod.	B-25M	Unscheduled	988-1
Pr. 7/24/44	A-24	Unaffected	.....
	C-87	Unaffected	.....
N.A.C.E.	B-24G	42-78235	988-1

This information is as accurate as can be established at present. The points of change may later be changed or recorded in production.

A TYPE D-1 rheostat (AN3155-25-50) has been installed in the A-11 lamp assembly on the navigator's chart table in order to provide a means for dimming the navigator's light. Instructions, painted with a fluorescent material on the light rheostat panel (figure 10), indicate to the navigator the proper direction for dimming the light.

The former A-11 lamp assembly, controlled by a toggle switch (AN3015), lighted the entire nose of the airplane causing danger of detection by enemy aircraft at night. The reflection from the navigator's table to the celestial dome caused a glare which had a tendency to impair the vision of the pilot and the copilot during night flying.

Addition of the rheostat does not affect the wiring circuit. The resultant weight increase is negligible.

Service Bulletin No. 32-3A-423 has been issued to replace the toggle switch with a type D-1 rheostat on delivered airplanes.

STINSON DIVISION

GENERATOR SWITCH GUARD INSTALLED ON L-5B AIRPLANES



THE Air Service Command has requested the installation of a guard on the generator switch located on the main switch box assembly on L-5B airplanes beginning with A.A.F. Serial No. 44-16753. Installation of the guard will eliminate the possibility of the switch being inadvertently turned *off* and left in the *off* position while the airplane is in flight.

The switch guard (AN3028-2) fits over the switch and is hinged at the top. In addition, an escutcheon plate (76-64136), which indicates the *off* and *on* positions of the generator switch, was installed as part of the guard assembly since the *off* and *on* markings on the guard were partly covered by the guard hold-down screws.

To operate the generator switch, it is now necessary to pull the generator switch guard out and down.

GENERATOR SWITCH GUARD INSTALLED ON AT-19 AIRPLANE



A GUARD (AN3028-2) has been installed over the generator switch located on the front auxiliary switch panel of AT-19 airplanes. Installation of the guard prevents accidentally turning the switch *off* and leaving it in the *off* position while the airplane is in flight. An escutcheon plate (77-64125), installed with the guard, indicates the *off* and *on* positions of the switch. To operate the switch, it is necessary to push the generator switch guard *up*.

Production installation of the switch guard began with AT-19 airplane, British Serial No. FB-708.

Bloc
MCR 387A
Blo
MCR 128F
MCR 387B
MCR 443A
MCR 447M
MCR 474D
BI
MCR 52A
MCR 150B
MCR 180B
MCR 183A



M. C. R.

MASTER CHANGE RECORD

Block No. B-24L—10-CO

MCR 387A Exhaust Tail Pipe—Copper gasket removed from nozzle box.

Block No. B-24L—15-CO

MCR 128F Heat Anti-Icing — Improvements in heat distribution in empennage.

MCR 387B Exhaust Tail Pipe — Attaching bolts changed in nozzle box.

MCR 443A Carburetor Screens Removed—Were carried as loose equipment.

MCR 447M Propeller Tool Kit—Removed.

MCR 474D Fuel Cell Filler Cap—United Motor Products Cap No. 10026 installed.

Block No. B-24L—20-CO

MCR 52A Fuel Transfer System—Drain lines added to vents of fuel transfer pump.

MCR 150B Fuel Booster Pump — Water drains added.

MCR 180B P-1 Generator — Connectors at stub firewall and generator taped in accordance with T. O. No. 01-1-48.

MCR 183A Electric Wiring Identification—Wire identification added every 15" on electrical cable.

MCR 275C Radio Compass—Four-frequency band radio AN/ARN-7 replaces SCR 269G.

MCR 316D Cruise Control Data Charts—Corrected for use with B-22 turbo-superchargers.

MCR 346E Localizer Receiver—RC-103 required to provide additional resistance in accordance with A. C. drawing H44G2687.

MCR 381D Radio Noise Condensers—Radio noise filters installed in electrical circuit for windshield alcohol pumps in order to reduce noise in radio reception.

MCR 417N Forty-four Inch Ball Turret—Emergency hoisting mechanism strengthened.

MCR 454-2 Control Surface Lock System—Material change and relocation of elevator stop block.

MCR 469A Pilots' Escape Hatch—Rivets replace spotwelds.

MCR 557C Anti-Icing Pump—Weldon pump installed to conform with AN specification.

MCR 622 Fuel Hose—Protection added to outboard engine hose in area of inboard nacelle.

* * *



Restricted

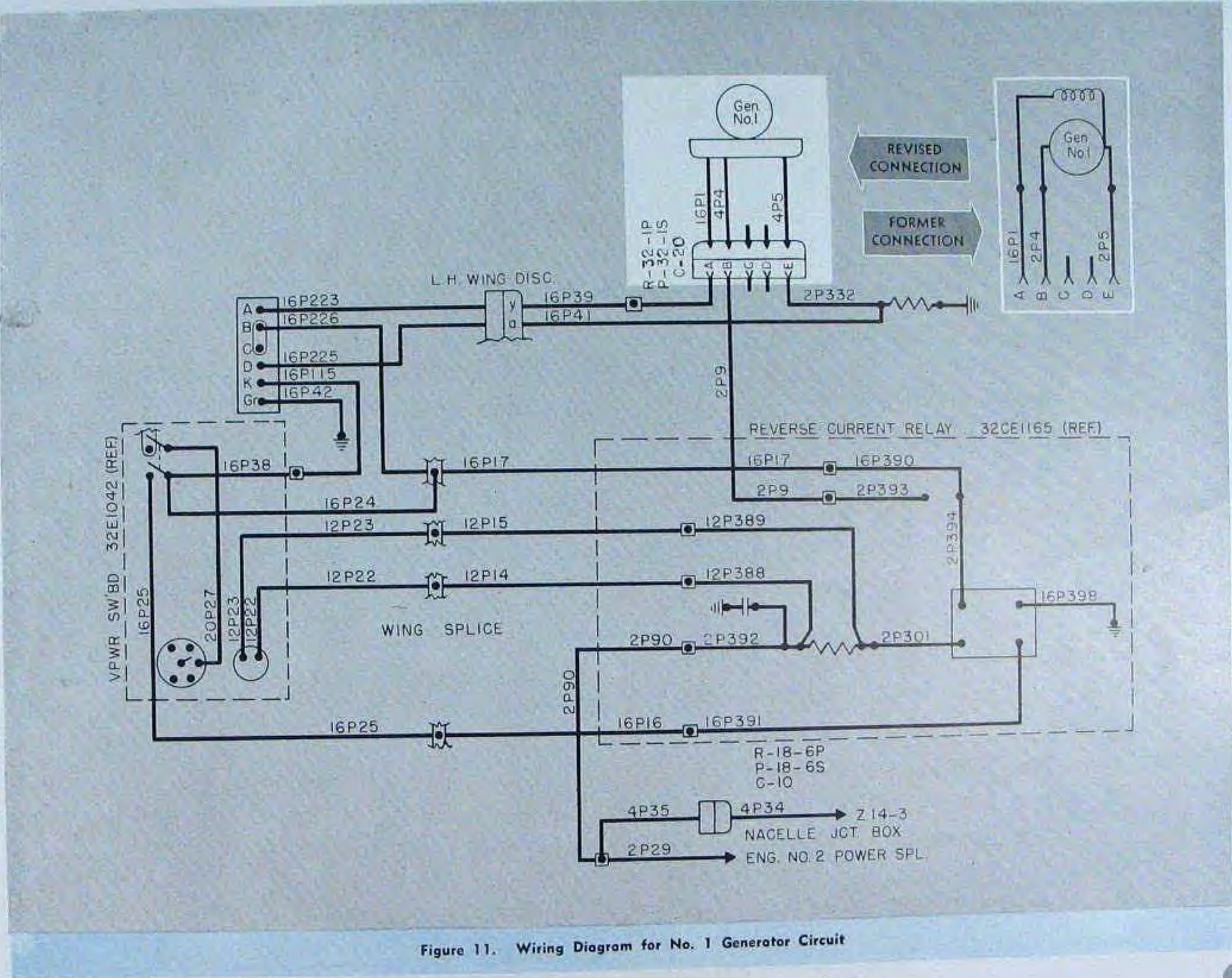


Figure 11. Wiring Diagram for No. 1 Generator Circuit

Restricted

The generator frame with six plate assembly, finished and baked since the windin frame.

The generator by six stud bolts with a splined s of absorbing tor

Three kidney and the commut air to flow thro excessive heat rise addition, these s the assembly w life requirements.

The ventilatio air blast cover an

A few periodi operation of the which could poss of the new type bearings are lubr placement of the regular overhaul

Care should be cover, brushes, and

tured by the Le (figure 12) is in except that they sistor (RES-8-66 generator, and fo the 200 ampere made in wiring si tor (figure 11).



Types

Type O-1 Generator Installed IN C-87 AIRPLANES



THE type P-1 (200 ampere) generator has been replaced with type O-1 (100 ampere) generator on C-87 airplanes beginning with A.A.F. Serial No. 44-39265.

The type O-1 generator, manufactured by the Leece-Neville Co. of Cleveland, Ohio, (figure 12) is interchangeable with the P-1 generator except that they require different type resistors. Resistor (RES-8-60-FW) is used with the 100 ampere generator, and resistor (RES-8-50-FW) is used with the 200 ampere generator. Necessary changes were made in wiring sizes to accommodate the smaller generator (figure 11).

The field frame of the O-1 generator consists of a frame with six pole shoes and six windings. The complete assembly, with pole shoes and windings, is varnished and baked, thus necessitating servicing as a unit since the windings cannot be disassembled from the frame.

The generator is attached to the accessory drive case by six stud bolts and nuts. The drive shaft is equipped with a splined shaft coupling which provides a means of absorbing torsional vibration of the engine.

Three kidney-shaped slots through the laminations and the commutator permit a larger volume of cooling air to flow through the armature, thus preventing excessive heat rise during operation of the generator. In addition, these slots serve to lighten the construction of the assembly without impairing strength and service life requirements.

The ventilation tube (figure 12) is connected at the air blast cover and leads to a suitable air intake duct.

A few periodic checks will insure continued normal operation of the O-1 generator and will prevent failures which could possibly be caused by neglect. Lubrication of the new type generator is not required since the ball bearings are lubricated and sealed at the factory. Replacement of these bearings is recommended only at the regular overhaul period.

Care should be taken to avoid damaging the air blast cover, brushes, and insulation when servicing the genera-

tor. The inside of the armature and the hollow armature shaft should be blown out with dry compressed air. The exterior of the unit and the slots between the commutator bars should be wiped with a clean cloth, slightly dampened with carbon tetrachloride or similar solvent.

The weight of the O-1 generator is 32 pounds; the weight of the P-1 generator is 45 pounds. The 13 pounds saving per generator, plus the reduced weight of the wiring, effects a weight saving of approximately 55 pounds per airplane.

Approximately 25 man-hours are required to install the O-1 generator.

References: MCR 201B; Drawing of Electrical Load Schedule 32CR-1029.

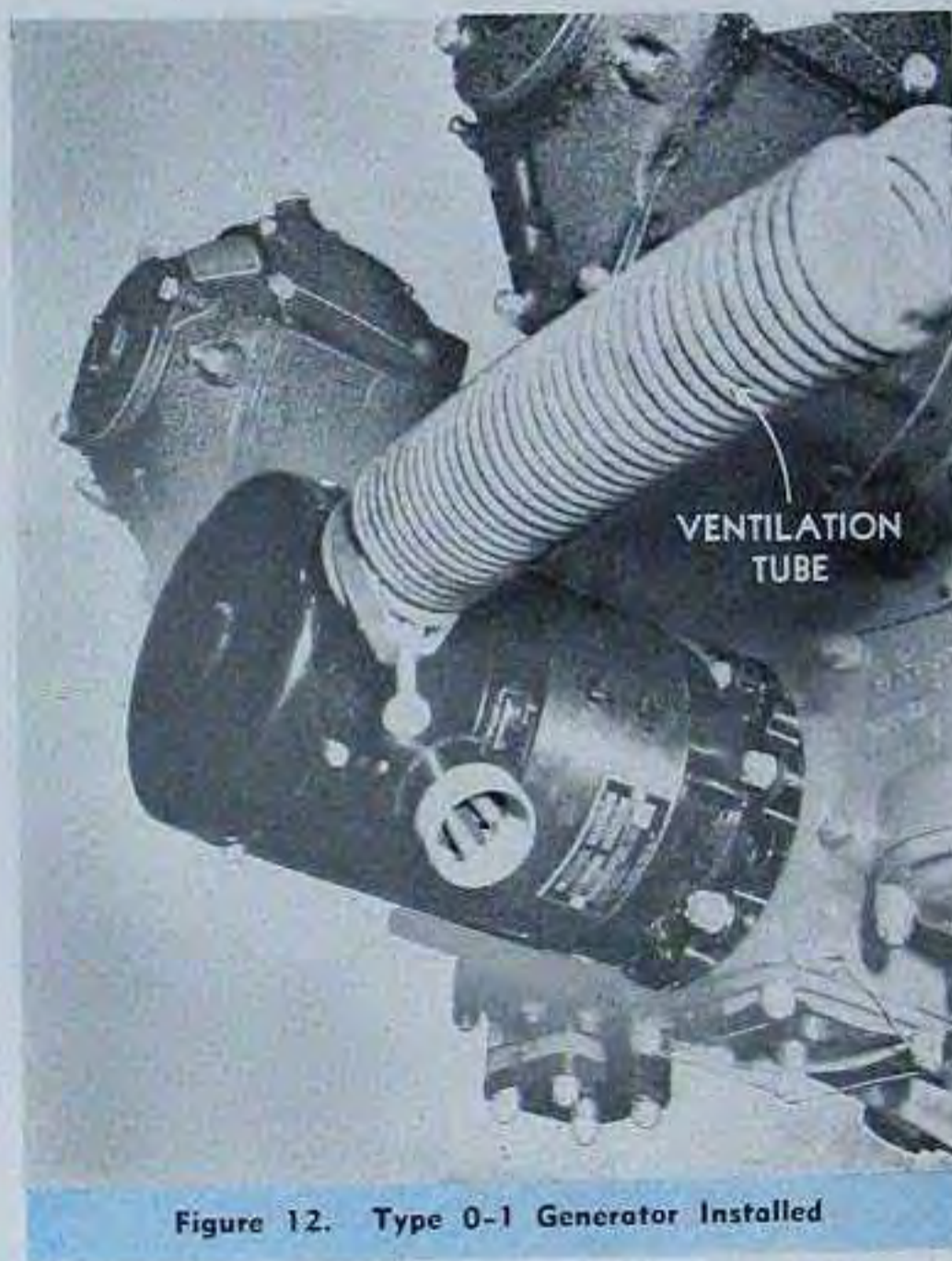


Figure 12. Type O-1 Generator Installed



Figure 13. Redesigned Bombardier's Window Installed.

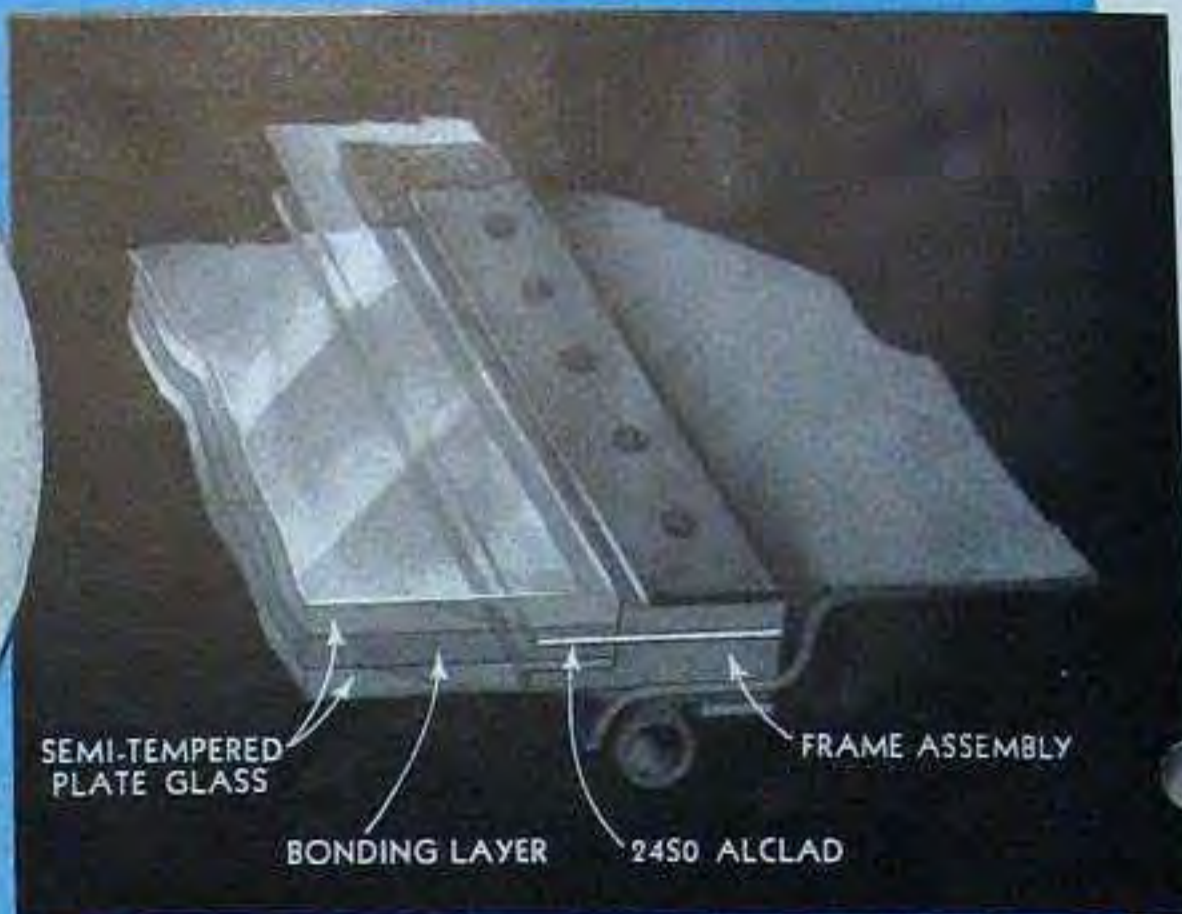


Figure 14. Cutaway View of Bombardier's Window.

Bombardier's Window Redesigned



A REDESIGNED bombardier's window installation will be incorporated on the following PBYS-5A airplanes of Contract NOa(s)-464, manufactured at the New Orleans Division; Bureau Serial Nos. 46596, 46598, 46601, 46603, 46604, 46609, 46611, 46613, 46615, 46617, 46624, and on. This change will be incorporated, also, on PBYS-5A airplanes of Contract NOa(s)-259 beginning with Bureau Serial No. 63993.

A plane, four-sided window with two parallel sides (figure 13) replaces the former rectangular window. Installation of this trapezoidal-type window and backing door necessitated removal of the sliding shutter and accompanying mechanism, and the rectangular window and backing door.

The new glass (figure 14) is of three-ply laminated construction; the two outer plies are semi-tempered plate glass, 3/16" thick; the inner ply, or bonding layer, is Vinyl plastic, 3/16" thick. The frame construction of the glass is of Vinyl plastic, reinforced with a strip of 2450 alclad which extends back into the

structure of the frame and forward between the laminations of the glass.

The nose lines of the airplane have been altered by the removal of the bow hull bump. The cork bumper, formerly installed on the bow, has been replaced with a drop-hammered metal part which duplicates the former contour lines. This modification was accomplished to prevent the possibility of water leaks due to deterioration of the cork bumper.

Further advantages gained by the revised bombardier's window installation are as follows:

1. Elimination of many parts, thereby releasing critical materials and reducing the man-hours necessary for fabrication.
2. Prevention of water leaks by utilizing the extended Vinyl as a seal. This also eliminates the possibility of leaks in the shutter retracting well.
3. The smaller frontal area results in cleaner bow lines.

Incorporation of the new bombardier's window decreases the weight empty of the airplane by 4.22 pounds; however, this decrease in weight does not affect the flight characteristics of the airplane.

FOR B

MAIN



Function: Tightening nut and four-inch hex nut. It should be square drive (426620).
Reference: pages 166 and

A.A.F. ST-00



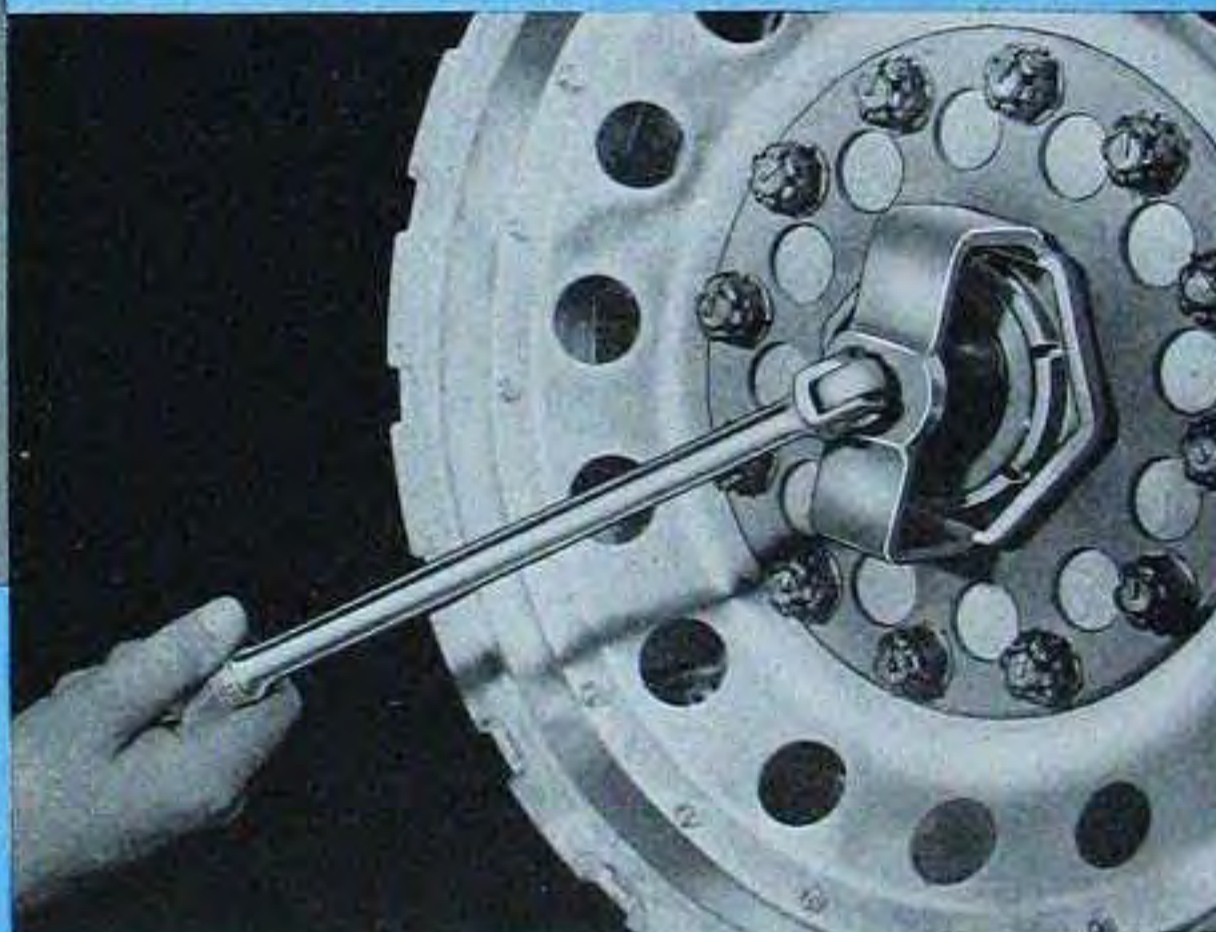
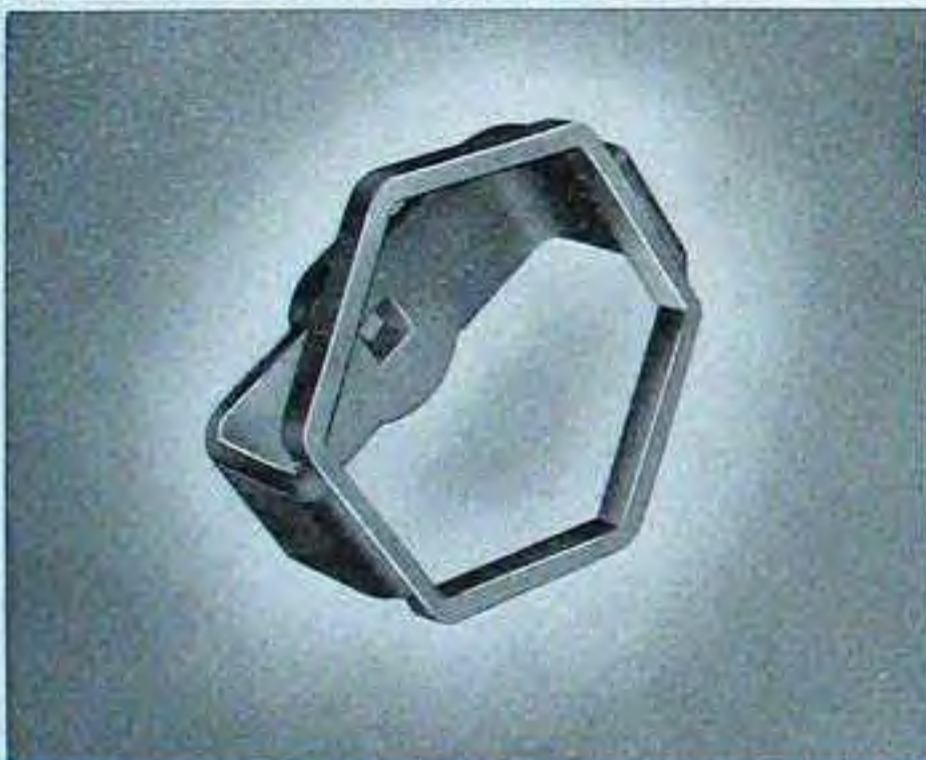
Special Tools Developed FOR B-24 and PB4Y TYPE AIRPLANES

Figure 15.
END CAP LOCKNUT WRENCH FOR
MAIN LANDING GEAR CYLINDER (ST-00057)



Function: This tool is used to remove or install the main landing gear hydraulic actuating cylinder end cap locknut. It is an impact type wrench and fits over the locknut. A sharp blow on the handle loosens or tightens the locknut. Reference: Technical Order No. 01-SEC-2, pages 388, 389, and 390.

Figure 16.
FOUR-INCH HEXAGONAL WRENCH FOR
MAIN LANDING GEAR AXLE NUT (ST-00001)



Function: This tool fits over the wheel retaining nut and is used to remove or install the four-inch hexagonal main landing gear hub nut. It should be used with a one-half inch square drive hinge handle (A. A. F. No. 426620).

Reference: Technical Order No. 01-SEC-2, pages 166 and 167.

A quantity of these tools has been purchased by the Procurement Division of the A.A.F. ST-00057 will be used by service squadrons and major overhaul depots; ST-00001 will be used by operational and service squadrons and major overhaul depots.



CONSOLIDATED VULTEE AIRCRAFT CORPORATION

San Diego, California, U.S.A.



PRINTED IN U. S. A.