GOVERNMENT AIRCRAFT FACTORIES
Nomad

SERVICE BULLETIN

SUBJECT: REPOSITIONING OF MAIN LANDING GEAR INDICATION AND LIMIT MICROSWITCHES (MODIFICATION N101 N22 SERIES, N101-24 N24 SERIES)

1. Planning Information

A. Effectivity

(1) Aircraft Affected

All Nomad N22-Series and N24-Series aircraft whose log books do not already record the embodiment of Mod N101 and Mod N101-24 respectively, or compliance with Service Bulletin NMD-32-11.

Pre-certification implementation of the intent of this service bulletin is recorded in the airframe log book as Mod N101 (N22-Series) Mod N101-24 (N24-Series).

(2) Spares Affected

Nil.

B. Reason

In the existing position, the main landing gear indication and limit microswitches are difficult to adjust and maintain in adjustment, can be subject to slight movement in flight, and are exposed to mud and water thrown up by the wheels.

C. Description

The main landing gear indication and limit microswitches are removed from the pod structures and relocated in the stub wing.

D. Compliance

Incorporation of this modification is recommended at operator's convenience.

E. Approval

The modification detailed herein has been approved pursuant to Air Navigation Regulation 40 and conforms with the type certification requirements.

F. Manpower

14 manhours.

G. Material - Price and Availability

The parts required to incorporate the modification detailed in this service bulletin are available as kit P/N NMD-32-11-1 from the operator's local distributor. Distributors are to place a purchase order on G.A.F. through the normal procurement procedure. This kit will be available ex-factory from September 1981 at $A1084 each. This price remains effective for 90 days from the date of this bulletin.

H. Tooling - Price and Availability

None required.

J. Weight and Balance

Negligible effect.

K. References

MM - Maintenance Manual.
IPC - Illustrated Parts Catalogue.
WDM - Wiring Diagram Manual.

L. Publications Affected

Maintenance Manual.
Illustrated Parts Catalogue.
Wiring Diagram Manual.

2. Accomplishment Instructions

A. Jack up the aircraft (Ref MM 7-00-00), disconnect the battery, earth the aircraft and trip the landing gear ACT and CONT circuit breakers.

B. Remove the pod to stub wing fairing assembly (Ref IPC 53-16-01, Fig 2) and stub wing access panel (Ref IPC 53-30-01, Fig 1, Item 13).

C. Locate and secure the anchor nuts for the microswitch mounting brackets.

(1) Mark the positions of the 5.0 mm diameter holes on the stub wing rib at BL42.75 (inboard rib of main gear screw actuator bay) as shown in Figure 1.

(2) Drill the 5.0 mm diameter holes, A on Figure 1.

(3) Temporarily bolt the microswitch mounting brackets to the stub wing rib, using one bolt through hole A, ensuring that the slot in the mounting bracket is centred over the hole.

(4) Rotate the mounting bracket until the other two slots are centred over the positions marked in step (1). If necessary, move the bracket to the mean position.

(5) Drill the remaining 5.0 mm diameter holes (Ref Figure 1) and remove the microswitch mounting brackets.

(6) Drill the 2.45 mm diameter rivet holes for the anchor nuts in the positions shown in Figure 1.

(7) Deburr and countersink the holes in the stub wing rib and rivet the anchor nuts P/N MS21059-L3 to the rib using countersunk head Cherry rivets P/N CCR264 SS-3-2.

(8) Remove all swarf from the rework area.

D. Rework the main gear screw actuator extension housing.

CAUTION: DO NOT EXCEED 0.1 IN DEPTH OF HOLE TO BE DRILLED AT STEP (1), OR DAMAGE TO THE SCREW ACTUATOR MAY RESULT.

(1) Centre pop and then drill hole 0.1 inch deep using No.30 (.128 inches diameter) drill in position as shown in Figure 2.

(2) Remove all swarf from the screw actuator bay.

NOTE: When the housing extension is reworked in situ, the main gear screw actuators are no longer interchangeable and become either a left-hand or a right-hand assembly.

E. Fit the bracket and saddle to the main gear screw actuator housing extension.

(1) Wet assemble bracket P/N 1A/N-40-885 and saddle P/N 1/N-40-886 to the housing extension of the screw actuator in the left-hand stub wing using a suitable jointing compound, bolts P/N AN3-4A and washers P/N AN960D10.

(2) Locate the bracket and saddle in the correct position (Ref Figure 3) with dowel plate P/N 1/N-40-889.

NOTE: Do not fully tighten securing bolts or rivet dowel plate to bracket at this stage.

(3) Repeat steps (1) and (2) when wet assembling bracket P/N 1B/N-40-885, saddle P/N 1/N-40-886 and dowel plate P/N 1/N-40-889 to the main gear screw actuator housing extension in the right-hand stub wing.

F. Fit microswitch striker bolts P/N 1/N-40-888 and nuts P/N MS 35650-302, in the fully extended position, to brackets P/N 1A/N-40-885 and P/N 1B/N-40-885 (Ref Figure 3). These brackets are mounted on the main gear screw actuator housing extension in the left-hand stub wing and right-hand stub wing respectively.

G. Secure microswitch mounting brackets P/N 1A/N-40-887 and 1B/N-40-887 to the right-hand stub wing rib using bolts P/N AN3-4A and washers P/N AN960D10. Ensure that the bracket mounting holes are centrally located but do not fully tighten bolts at this stage.

H. Disconnect cable assembly P/N 1/N-81-299 from the main landing gear indication and limit switches only, in the main gear pods. Discard the existing earth conductors, identified D18A22N and D20A22N and remove the cable assembly securing clips and PVC tubing. Separate conductors identified G5A22 and G6B22 from the cable assembly then sheath the cable assembly with 5 mm inside diameter PVC tubing. Re-route the cable assembly along the left-hand and right-hand stub wing ribs (Ref Figure 4). Re-identify the cable assembly as P/N 1/N-81-587 for N22 series aircraft and P/N 101/N-81-587 for N24 series aircraft.

J. Remove the landing gear indication and limit microswitches from the main gear pods, drill two 3.7 mm diameter holes in the new mounting brackets to suit the microswitches and secure the switches to the brackets (Ref Figure 4) using screws P/N MS35206-238, washers P/N AN960-PD6 and nuts P/N MS21083-N06.

K. Connect cable assembly in stub wing to microswitches (Ref WDM 32-30-00 and 32-60-00). Using the new earth conductors D18A22N and D20A22N and terminal lugs from cable kit P/N CK/N-81-587/AC, connect one end of the earth conductors to the microswitches. Secure the other end under the microswitch mounting bracket attachment bolt (Ref Figure 4) with washer P/N AN960-10L and lock washer P/N MS35338-138. When the connections to the microswitches are completed, seal the terminals with Ellison's sealing compound and refit microswitch coverplate.

L. Enclose conductors G5A22 and G6B22 in PVC tubing, 3mm inside diameter and re-connect conductors to TB 21 (Ref WDM 32-30-00). Secure PVC tubing using clips P/N MS21919DF3 and attaching parts shown on Figure 5.

M. Remove and discard the following parts, associated with the indication and limit microswitches from the left-hand pod.

Item P/N	Title	Qty
1/N-40-832	L/G Microswitch operating assy - LH (Bolted to LH upper drag strut)	1
MS21044N3	Nut, self-locking	2
AN960-D10	Washer, flat	2
AN3-7	Bolt	2
1L/N-11-697	Lower microswitch angle	1
1L/N-11-698	Lower microswitch angle	1
1D/N-11-697	Switch operating lever	2
AN960D4	Washer	1
MS20392-1C57	Straight pin	1
MS24665-132	Cotter pin	1

N. Remove and discard the following parts, associated with the indication microswitches, from the right-hand pod.

Item P/N	Title	Qty
1/N-40-833	L/G Microswitch operating assy - RH (Bolted to RH upper drag strut)	1
MS21044N3	Nut, self-locking	2
AN960-D10	Washer, flat	2
AN3-7	Bolt	2
1L/N-11-697	Lower microswitch angle	1
1D/N-11-697	Switch operating lever	1
AN960D4	Washer	1
MS20392-1C31	Straight pin	1
MS24665-132	Cotter pin	1

P. Align the heads of the lower striker bolts with the down microswitch plungers by moving the microswitch mounting bracket in the vertical plane.

Q. Connect an external 27.5V DC supply to the aircraft, set the battery switch to ON, the LDG GEAR switch to UP and set the landing gear ACT circuit breaker.

R. Using the landing gear CONT circuit breaker as a switch, inch up the landing gear until the striker bolts can be aligned with the up microswitch plungers.

S. Align the heads of the upper striker bolts with the up microswitch plungers by moving the microswitch mounting bracket in the vertical plane.

T. If there is any radial variation in alignment between the down microswitch and its striker bolt and the up microswitch and its striker bolt, rotate striker bolt bracket to the mean position.

U. Tighten the bolts P/N AN3-4A, left loose in Para 2G, to secure the microswitch mounting brackets.

V. Tighten the bolts P/N AN3-4A, left loose in Para 2E, to secure bracket and saddle to screw jack housing extension. Locate the dowel plates P/N 1/N-40-889 on aft side of brackets and drill and rivet to brackets using rivets P/N MS20470 AD3-4.

W. Adjust the up and down limit microswitches (Ref MM 32-30-11).

X. Adjust the up and down indication microswitches (Ref MM 32-60-00).

Y. Lower the landing gear, the set battery switch to OFF, trip the landing gear circuit breakers and remove the external 27.5V DC supply.

Z. Refit the left-hand and right-hand pod to stub wing fairing assemblies (Ref IPC 53-16-01, Fig 2) and the stub wing access panels (Ref IPC 53-30-01, Fig 1, Item 13).

AA. Lower the aircraft (Ref MM 7-00-00).

AB. Remove the earth from aircraft, reconnect the battery and set the ACT and CONT circuit breakers.

3. Material Information

A. Parts Required Per Aircraft

(1) One kit P/N NMD-32-11-1 is required for each N22 and N24 series aircraft.

(2) Each kit P/N NMD-32-11-1 comprises the following items:

Item P/N	Title	Qty
MS21059-L3	Nut, anchor	12
CCR264SS-3-2	Rivet, countersunk, Cherry	24
1A/N-40-885	Bracket	1
1B/N-40-885	Bracket	1
1/N-40-886	Saddle	2
AN3-4A	Bolt	16
AN960-D10	Washer	16
1/N-40-889	Plate, dowel	2
1/N-40-888	Bolt, special	6
MS35650-302	Nut	6
1A/N-40-887	Bracket	2
1B/N-40-887	Bracket	1
1C/N-40-887	Bracket	1
TM 2S6	Tiemount	6
MS3367-5-9	Strap	6
AGS 2050-530 BS	Rivet	6
CK/N-81-587/AC	Cable kit AC	1
31889	Lug, terminal	2
MS 35338-138	Lockwasher	2
AN 960-10L	Washer	2
MS21083-N06	Nut	8
AN960-PD6	Washer	8
MS35206-238	Screw	4
MS35206-328	Screw	4
	P.V.C. Sleeve 3.0 mm inside dia	2 ft
MS 21919 DF-3	Clip	6
MS 20470 AD3-4	Rivet	4

(3) Ellison's sealing compound or suitable alternative used to seal the main landing gear microswitches, is to be obtained from the operator's stock or local sources.

B. Parts Modified and Re-identified by the Operator

(1) N22 Series Aircraft

New P/N	Title	Old P/N
1/N-81-587	Cable Assembly - Landing Gear	1/N-81-299

(2) N24 Series Aircraft

New P/N	Title	Old P/N
101/N-81-587	Cable Assembly - Landing Gear	101/N-81-299

C. Parts Required to Modify Spares

None.

D. Removed Parts

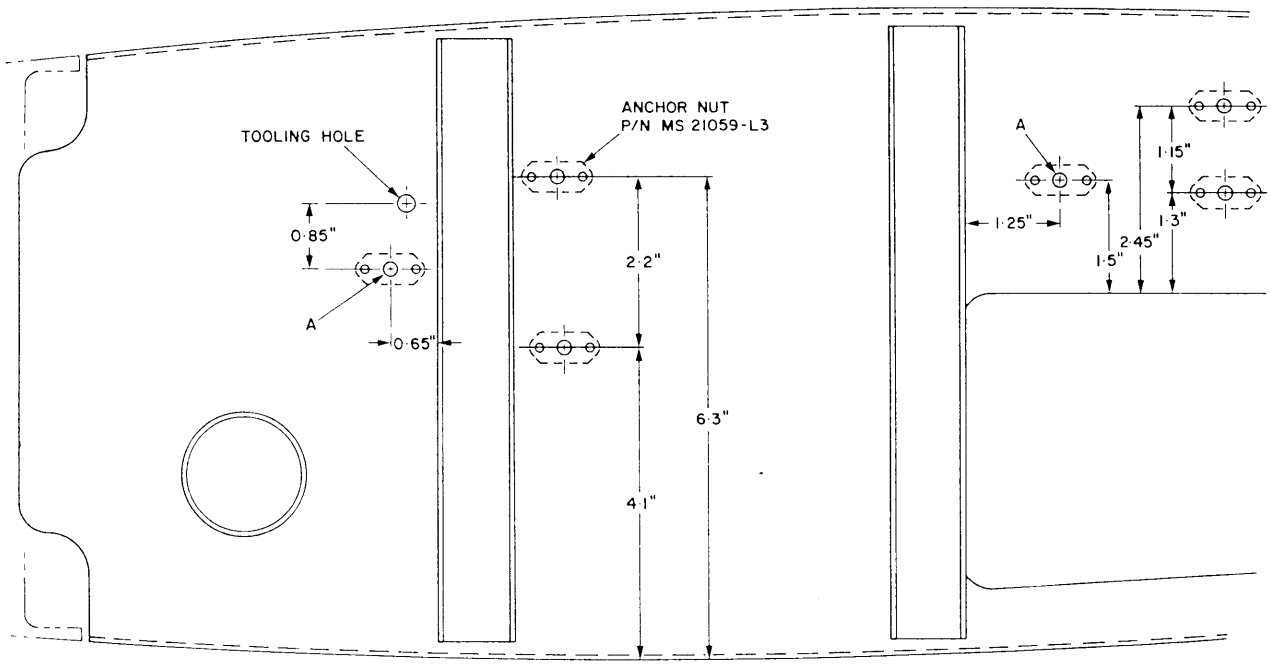
Item P/N	Title	Qty	Recommended Disposition
1/N-40-832 *	L/G Microswitch operating assy - LH	1	Scrap
1/N-40-833 *	L/G Microswitch operating assy - RH	1	Scrap
MS21044N3	Nut, Self-locking	4	Scrap
AN960D10	Washer, flat	4	Scrap
AN3-7	Bolt, Machine	4	Scrap
1L/N-11-697	Lower microswitch angle	2	Scrap
1L/N-11-698	Lower microswitch angle	1	Scrap
1D/N-11-697	Switch operating lever	3	Scrap
AN960D4	Washer	2	Scrap
MS 20392-1C57	Straight pin	1	Scrap
MS 20392-1C31	Straight pin	1	Scrap
NS 24665-132	Cotter pin	2	Scrap

* The IPC descriptions of these items are incorrect and will be changed at the next revision.

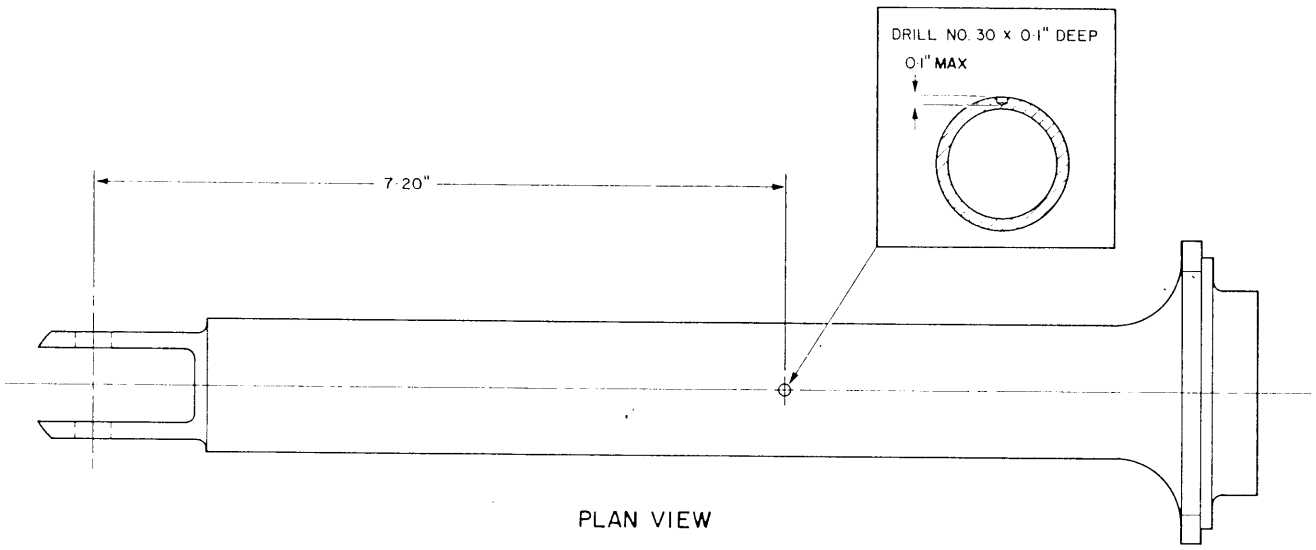
E. Special Tools and Equipment Required

None.

4. Record compliance with S/B NMD-32-11 in the airframe log book.

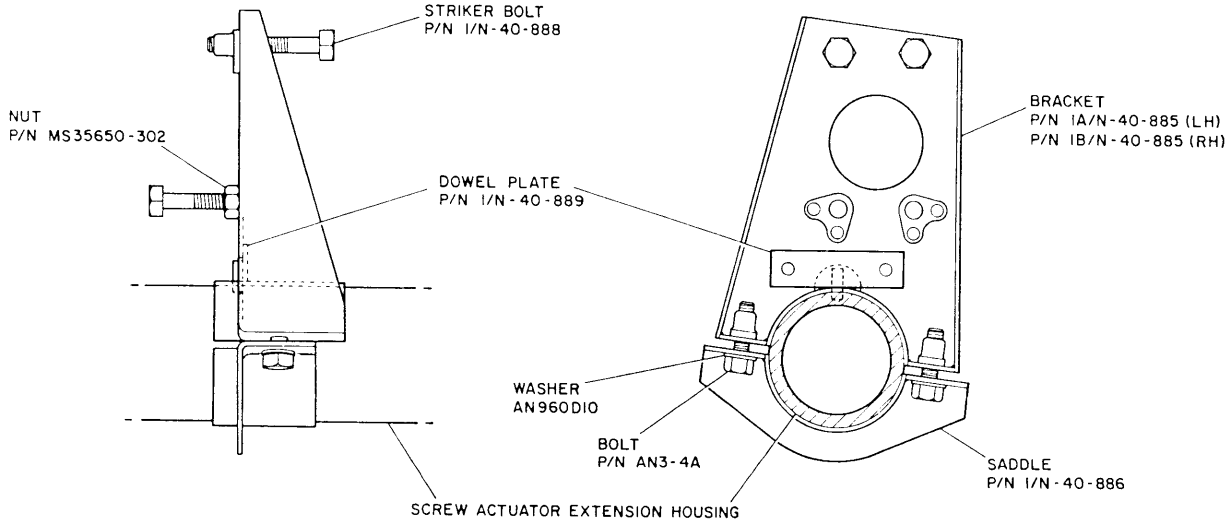


Rework of Inboard Rib of LH Screw Actuator Bay
Figure 1

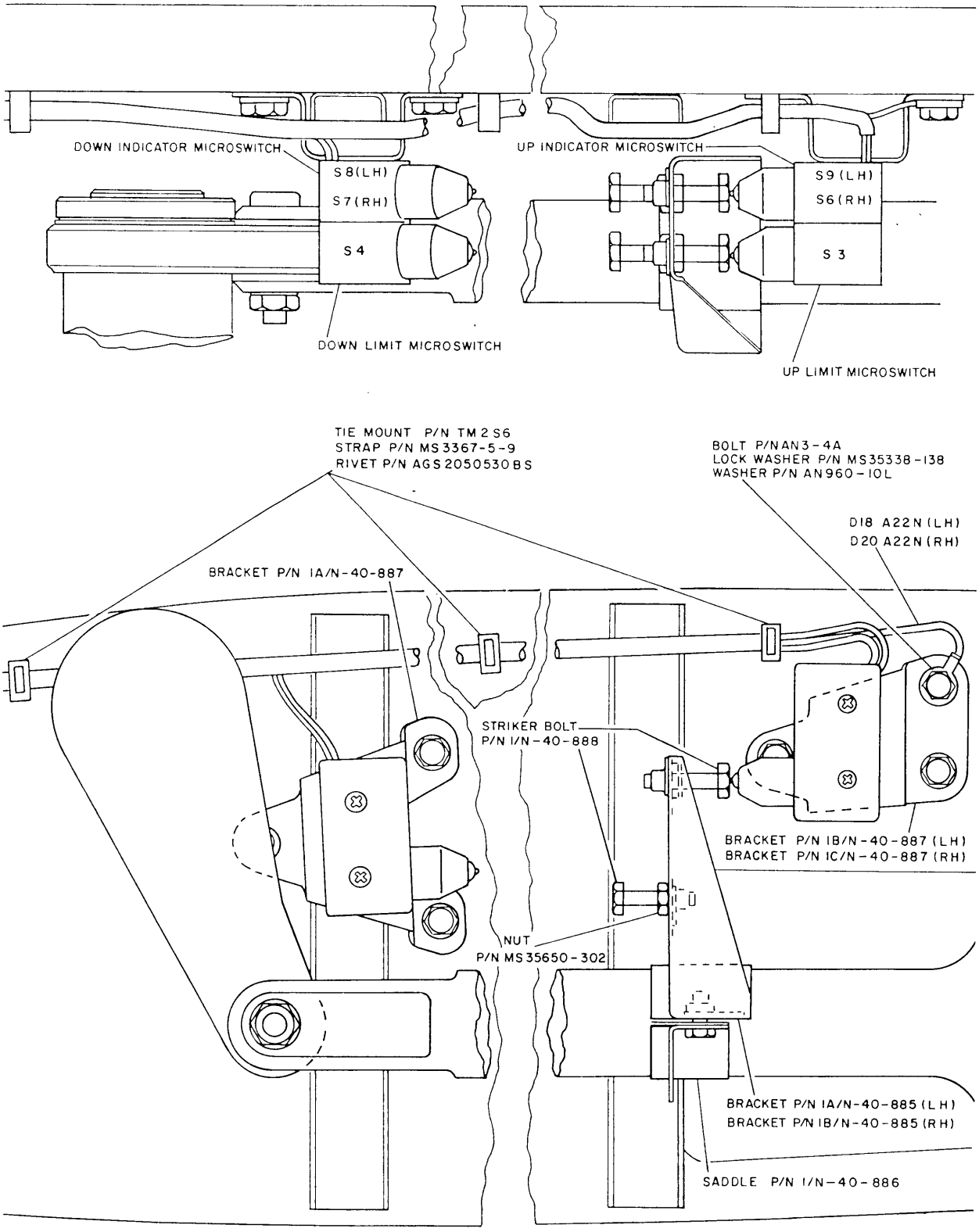


PLAN VIEW

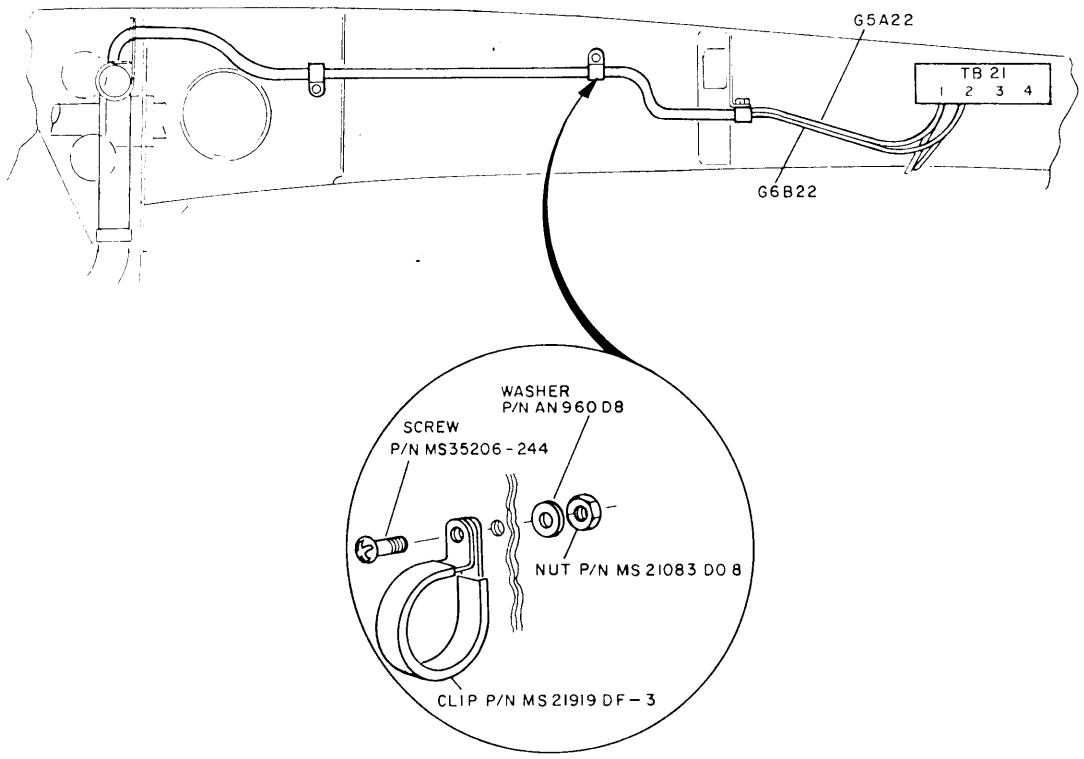
Rework of Screw Actuator Extension Housing
Figure 2



Installation of Mod N101 and Mod N101-24
on Screw Actuator Extension Housing
Figure 3



Installation of Mod N101 and
N101-24 in Stub Wing
Figure 4



Rework of Wiring in Wheel Pod
Figure 5