

# NORMAL

MWO effective date 1 October 1979 and completion date 31 March 1983

MWO 55-1520-210-30-48

## DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER

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### INSTALLATION OF ALTIMETER SET, ELECTRONIC AN/APN-209 IN UH-1H HELICOPTERS REDESIGNATED TO UH-1V (MEDIVAC)

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Headquarters, Department of the Army, Washington, D. C.

23 July 1980

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#### REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA Form 2028-2 located in the back of this manual, direct to Commander, US Army Troop Support and Aviation Materiel Readiness Command, ATTN: DRSTS-MTPS, 4300 Goodfellow Blvd., St. Louis, MO 63120. A reply will be furnished directly to you.

**1. Purpose of Modification.** The purpose of this modification is to install the AN/APN-209 radar altimeter set and is required to achieve compatibility with other equipment with which it will be operated. After compliance with this modification, the aircraft will be redesignated as UH-1V (MEDIVAC), Data plates, historical records, property books and accounts will be changed at this time,

**2. Priority Classification.** This modification is classified as NORMAL.

**a. Equipment in Use (Including Equipment in Supply or Maintenance Activities Below Depot Level and Equipment in Administrative Storage).** Equipment in use will be modified as soon as practicable but no later than the scheduled completion date. Equipment not modified after expiration of MWO completion date will be reported as NORM/NOT READY in accordance with applicable Army regulations,

**b. Equipment in Wholesale Depot Supply or Maintenance Activities.** All MWOS, to include MWOS which have been incorporated into DMWR, will be accomplished on serviceable materiel prior to issue and/or subsequent to scheduled completion date. Operational project stock stored at the depots will be modified concurrently with depot stock. The MWO will be applied to unserviceable materiel during scheduled depot maintenance as applicable,

**c. Prepositioned Stock.** Equipment which is repositioned will be modified during cyclic maintenance and will be consistent with TM 38-450.

**3. End Item or System to be Modified.** The following aircraft will be modified:

Nomenclature	National Stock Number	Model	Serial Number
Helicopter	1520-00-087-7637	UH-1H	66-00821, 66-00831 66-00954, 66-01050 66-01104, 66-01105 66-01111, 66-16119

Nomenclature	National Stock Number	Model	Serial Number
			66-16150, 66-16228
			66-16272, 66-16296
			66-16316, 66-16355
			66-16446, 66-16475
			66-16484, 66-16513
			66-16525, 66-16538
			66-16609, 66-16620
			66-16639, 66-16659
			66-16704, 66-16717
			66-16740, 66-16827
			66-16868, 66-16877
			66-16894, 66-16997
			66-17024, 66-17030
			66-17060, 66-17100
			67-17146, 67-17189
			67-17198, 67-17202
			67-17258, 67-17315
			67-17337, 67-17406
			67-17459, 67-17523
			67-17526, 67-17527
			67-17534, 67-17535
			67-17547, 67-17598
			67-17645, 67-17661
			67-17808, 67-17813
			67-17814, 67-19492
			67-19534, 68-15227
			68-15444, 68-15461
			68-15492, 68-15526
			68-15529, 68-15532
			68-15543, 68-15688
			68-15743, 68-16165
			68-16174, 68-16187
			68-16261, 68-16289
			68-16349, 68-16415
			68-16417, 68-16553
			68-16616, 69-15016
			69-15081, 69-15180
			69-15240, 69-15247
			69-15267, 69-15268
			69-15298, 69-15323
			69-15330, 69-15331
			69-15332, 69-15339
			69-15341, 69-15408
			69-15439, 69-15509
			69-15518, 69-15636
			69-15730, 69-15813
			69-15814, 69-15818
			69-15848, 69-15854
			69-15860, 69-15924
			69-15926, 69-15928
			69-15929, 69-15930
			69-15931, 69-16728
			70-15711, 70-15754

N O R M A L

MWO 55-1520-210-30-48

Change No. 13

DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER

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INSTALLATION OF ALTIMETER SET  
ELECTRONIC AN/APN-209 IN UH-1H HELICOPTERS

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Headquarters, Department of the Army, Washington, D. C.  
1 March 1993

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DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

MWO 55-1520-210-30-48, 23 July 1980, is changed as follows:

Page 1. Change title to read as stated above.

Page 2, paragraph 1. Delete the second and third sentence.

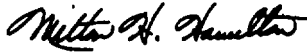
Page 1, paragraph 3. Add the following serial numbers to list of aircraft to be modified in proper numerical order:

68-15259	69-15852	70-16137	71-20059	73-21857
68-15520	69-15900	70-16222	71-20118	74-22295
69-15263	69-15914	70-16227	71-20203	74-22317
69-15345	69-15919	70-16237	71-20225	74-22358
69-15347	69-15922	70-16243	71-20255	74-22376
69-15102	69-15924	70-16249	71-20258	74-22392
69-15162	69-15926	70-16251	71-20280	74-22394
69-15269	69-21570	70-16276	71-20287	74-22419
69-15362	70-15708	70-16358	71-20253	74-22427
69-15447	70-15784	70-16363	72-21513	74-22446
69-15699	70-15787	70-16388	72-21571	74-22450
69-15717	70-15789	70-16407	72-21583	74-22455
69-15758	70-15799	70-16439	72-21624	74-22457
69-15790	70-15855	70-16440	72-22158	74-22466
69-15814	70-15872	70-16446	73-21743	74-22524
69-15847	70-15873	70-16461	73-21766	74-22543
69-15849	70-15929	70-15798	73-21770	76-22672

Page 34. Deleted Paragraph 14b.

By Order of the Secretary of the Army:

Official:



MILTON H. HAMILTON  
Administrative Assistant to the  
Secretary of the Army  
04252

GORDON R. SULLIVAN  
General, United States Army  
Chief of Staff

DISTRIBUTION :

To be distributed in accordance with DA Form 12-31-E, block no. 1282, requirements for MWO 55-1520-210-30-48.

N O R M A L

MWO 55-1520-210-30-48  
CHANGE NO. 12

DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER

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INSTALLATION OF ALTIMETER SET  
ELECTRONIC AN/APN-209 IN UH-1H HELICOPTERS  
REDESIGNED TO UH-1V (MEDEVAC)

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Headquarters, Department of the Army, Washington, D.C.  
28 February 1992

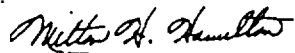
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MWO 55-1520-210-30-48, 23 July 1980, is changed as follows:

**Page 1, Paragraph 3.** Add the following numbers to list of aircraft to be modified: 66-00836, 67-17454, 69-15862 and 74-22398.

By Order of the Secretary of the Army:

Official:



MILTON H. HAMILTON  
Administrative Assistant to the  
Secretary of the Army

01739

GORDON R. SULLIVAN  
General, United States Army  
Chief of Staff

DISTRIBUTION:

To be distributed in accordance with DA Form 12-31-E, block no. 1282, AVUM and AVIM maintenance requirements for MWO 55-1520-210-30-48.

Change 12 1/(2 blank)



**NORMAL**

**MWO 55-1520-210-30-48  
CHANGE NO. 11**

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**DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER**

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INSTALLATION OF ALTIMETER SET  
ELECTRONIC AN/APN-209 IN UH-1H HELICOPTERS  
REDESIGNATED TO UH-1V (MEDEVAC)

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**Headquarters, Department of the Army, Washington, D.C. 30 May 1990**

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MWO 55-1520-210-30-48, 23 July 1980, is changed as follows:

Page 1, NOTE at top of page is changed to read: "MWO effective date 1 October 1979 and completion date 1 October 1992".

Page 1, Paragraph 3. Delete the following number from list of aircraft to be modified: 69-16663.

Page 1, Paragraph 3. Add the following numbers to list of aircraft to be modified: 68-16503, 69-15853, 69-15932 and 70-16229.

Page 34, Paragraph 14a is superseded as follows:

- a. TM 38-750 to read: DA PAM 738-751.
- b. TB 746-93-2 to read: TM 55-1500-345-23.
- c. Delete DA Form 2408-9 (Equipment Control Record).

**By Order of the Secretary of the Army:**

**CARL E. VUONO**  
General, United States Army  
Chief of Staff

**Official:**

**WILLIAM J. MEEHAN II**  
Brigadier General, United States Army  
The Adjutant General

**DISTRIBUTION:**

To be distributed in accordance with DA Form 12-31, MWO Maintenance requirements for UH-1V Helicopter, Utility.

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\*U.S. GOVERNMENT PRINTING OFFICE: 1990 - 754-030/25612

**PIN: 048418-011**



**NORMAL**

**MWO 55-1520-210-30-48  
CHANGE NO. 10**

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**DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER**

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INSTALLATION OF ALTIMETER SET  
ELECTRONIC AN/APN-209 IN UH-1H HELICOPTERS  
REDESIGNATED TO UH-1V (MEDEVAC)

---

**Headquarters, Department of the Army, Washington, D. C.**

17 JUNE 1988

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MWO 55-1520-210-30-48, 23 July 1980, is changed as follows:

Page 1, paragraph 3. Delete the following numbers from list of aircraft to be modified:

68-15140  
68-15188  
68-15840  
70-15285

**By Order of the Secretary of the Army:**

**CARL E. VUONO**  
**General, United States Army**  
**Chief of Staff**

**Official:**

**R. L. DILWORTH**  
**Brigadier General, United States Army**  
**The Adjutant General**

**DISTRIBUTION:**

To be distributed in accordance with DA Form 12-31, MWO Maintenance requirements for UH-1V Helicopter, Utility.

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NORMAL

MWO 55-1520-210-30-48

CHANGE NO.9

DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER

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INSTALLATION OF ALTIMETER SET  
ELECTRONIC AN/APN-209 IN UH-1H HELICOPTERS  
REDESIGNATED TO UH-1V (MEDEVAC)

---

Headquarters, Department of the Army, Washington, D.C.

1 March 1988

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MWO 55-1520-210-30-48, 23 July 1980, is changed as follows:

Page 1. Note at top of page is changed to read, "MWO effective date 1 October 1979 and completion date 1 October 1988".

Page 1, paragraph 3. Add the following numbers to list of aircraft to be modified in proper numerical order:

65-12849	68-15474	70-15866
66-00934	68-15590	70-16239
66-01040	68-15655	70-16244
66-01062	68-15690	70-16269
66-16198	68-15769	70-16343
66-16209	68-15840	70-16408
66-16345	68-16083	70-16470
66-16403	68-16087	71-20030
66-16439	68-16128	71-20056
66-16755	68-16187	71-20219
66-16827	68-16289	71-20246
66-16857	68-16324	71-20319
66-16875		72-21564
66-16899	68-16476	72-21631
66-17044	68-16513	72-21645
66-17114	68-16594	73-21669
67-17304	68-16603	73-21744
67-17633	69-15216	73-21771
67-17779	69-15237	73-21828
67-18568	69-15953	73-21830
68-15140	69-16663	73-21834
68-15188	70-15285	73-22122
68-15308	70-15741	74-22297
68-15331	70-15815	74-22369
68-15409		
68-15411		

Page 4. Paragraph 6a is superseded as follows:

a. Time Compliance Schedule. MWO effective date 1 October 1979 and completion date 1 October 1988.

Page 34, paragraph 14. Add the following note above step b:

**NOTE**

Exclude serial numbers added by this Change No. 9 from compliance with step b below. (Do not revise logbook and data plate to UH-1V for the serial numbers specified' in Change 9).

**By Order of the Secretary of the Army:**

**CARL E. VUONO**  
**General, United States Army**  
**Chief of Staff**

**Official:**

**R. L. DILWORTH**  
**Brigadier General, United States Army**  
**The Adjutant General**

**DISTRIBUTION:**

To be distributed in accordance with DA Form 12-31, MWO Requirements for UH-1V Helicopter, Utility.

**DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER**

INSTALLATION OF ALTIMETER SET  
ELECTRONIC AN/APN-209 IN UH-1H HELICOPTERS  
REDESIGNATED TO UH-1V (MEDEVAC)

Headquarters, Department of the Army, Washington, D.C.

1 December 1987

MWO 55-1520-210-30-48, 23 July 1980, is changed as follows:

Page 1. Note at "top of page is changed to read, "MWO effective date 1 October 1979 and completion date 1 October 1988".

Page 1, paragraph 3. Add the following numbers to list of aircraft to be modified in proper numerical order:

65-12849	68-15474	70-15866
66-00934	68-15590	70-16239
66-01040	68-15655	70-16244
66-16198	68-15690	70-16269
66-16209	68-15769	70-16343
66-16345	68-15840	70-16408
66-16403	68-16083	70-16470
66-16439	68-16087	71-20030
66-16795	68-16128	71-20056
66-16827	68-16187	71-20219
66-16857	68-16289	71-20246
66-16875	68-16324	71-20319
66-16899	68-16338	72-21564
66-17044	68-16476	72-21631
66-17114	68-16513	72-21645
67-17304	68-16594	73-21669
67-17633	68-16603	73-21744
67-17779	69-15216	73-21771
67-18568	69-15237	73-21828
68-15140	69-15953	73-21830
68-15188	69-16663	73-21834
68-15308	70-15285	73-22122
68-15331	70-15741	74-22297
68-15409	70-15815	74-22369
68-15411		

**MWO 55-1520-210-30-48**

Page 4. Paragraph 6a is superseded as follows:

a. Time Compliance Schedule. MWO effective date 1 October 1979 and completion date 1 October 1988.

Page 34, paragraph 14. Add the following note above step b:

**NOTE**

Exclude serial numbers added by this Change No. 8 from compliance with step b below. (Do not revise logbook and data plate to UH-1V for the serial numbers specified in Change 8).

**By Order of the Secretary of the Army:**

**CARL E. VUONO**  
**General, United States Army**  
**Chief of Staff**

**Official:**

**R. L. DILWORTH**  
**Brigadier General, United States Army**  
**The Adjutant General**

**DISTRIBUTION:**

To be distributed in accordance with DA Form 12-31, MWO Maintenance requirements for UH-1V Helicopter, Utility.

**NORMAL**

**MWO 55-1520-210-30-48**

**CHANGE NO. 7**

**DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER**

---

INSTALLATION OF ALTIMETER SET  
ELECTRONIC AN/APN-209 IN UH-1H HELICOPTERS  
REDESIGNATED TO UH-1V (MEDEVAC)

---

**Headquarters, Department of the Army, Washington, D. C.**

12 August 1985

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MWO 55-1520-210-30-48, 23 July 1980, is changed as follows:

Page 1. Note at top of page is changed to read, "MWO effective date 1 October 1979 and completion date 30 September 1987."

Page 1, paragraph 3. Add serial number 69-15946 to list of aircraft to be modified in proper numerical order.

Page 1, paragraph 3. Delete serial number 69-15308.

Page 4. Paragraph 6a is superseded as follows:

a. Time Compliance Schedule. MWO effective date 1 October 1979 and completion date 30 September 1987.

By **Order of the Secretary of the Army:**

**JOHN A. WICKHAM. JR.**  
General, United States Army  
Chief of Staff

Official:

**DONALD J. DELANDRO**  
Brigadier General, United States Army  
The Adjutant General

**DISTRIBUTION:**

To be distributed in accordance with DA Form 12-31A, Direct and General Support Maintenance requirements for Electronic Equipment Configuration: UH-1V.





**NORMAL**

**MWO 55-1520-210-30-48  
Change No. 6**

**DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER**

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INSTALLATION OF ALTIMETER SET,  
ELECTRONIC AN/APN-209 IN UH-1H HELICOPTERS  
REDESIGNATED TO UH-1V (MEDEVAC)

---

**Headquarters, Department of the Army, Washington, D.C.**

1 February 1984

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MWO 55-1520-210-30-48, 23 July 1980, is changed as follows:

Title is changed as shown above.

Page 1, paragraph 3. Add serial numbers 68-16229, 69-15308, 71-20332, 72-21589, and 73-21691 to list of aircraft to be modified in proper numerical sequence.

**By Order of the Secretary of the Army:**

**JOHN A. WICKHAM, JR.**  
General, United States Army  
Chief of Staff

**Official:**

**ROBERT M. JOYCE**  
Major General, United States Army  
The Adjutant General

**DISTRIBUTION:**

To be distributed in accordance with DA Form 12-31, MWO requirements for UH-1D/H, EH-1H aircraft.



**NORMAL**

**MWO 55-1520-210-30-48**

**Change No. 5**

**DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER**

---

INSTALLATION OF ALTIMETER SET,  
ELECTRONIC AN/APN-209 IN UH-1H HELICOPTERS  
REDESIGNATED TO UH-1V (MEDIVAC)

---

**Headquarters, Department of the Army, Washington, D.C.**

16 August 1983

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MWO 55-1520-210-30-48, 23 July 1980, is changed as follows:

Page 1. Note at top of page is changed to read, "MWO effective date 1 October 1979 and completion date 30 September 1984."

Page 4. Paragraph 6a is superseded as follows:

Time Compliance Schedule. MWO effective date 1 October 1979 and completion date 30 September 1984.

**By Order of the Secretary of the Army:**

**JOHN A. WICKHAM, JR.**  
General, United States Army  
Chief of Staff

**Official:**

**ROBERT M. JOYCE**  
Major General, United States Army  
The Adjutant General

**DISTRIBUTION:**

To be distributed in accordance with DA Form 12-31, MWO requirements for UH-1D/H, EH-1H aircraft.



**NORMAL**

**Change No. 4**

**DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER**

---

INSTALLATION OF ALTIMETER SET  
ELECTRONIC AN/APN 209 IN UH-1H HELICOPTERS  
REDESIGNATED TO UH-1V (MEDEVAC)

---

**Headquarters, Department of the Army, Washington, D. C.**

20 May 1983

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MWO 55-1520-210-30-48, 28 July 1980, is changed as follows:

Page 1, para 3. Add Serial Numbers 66-17120 and 66-16829 to list of aircraft to be modified in proper numerical order.

**By Order of the Secretary of the Army:**

**E. C. MEYER**  
**General, United States Army**  
**Chief of Staff**

**Official:**

**ROBERT M. JOYCE**  
**Major General, United States Army**  
**The Adjutant General**

**DISTRIBUTION:**

To be distributed in accordance with DA Form 12-31, MWO requirements for UH-1D/H and EH-1H aircraft.



NORMAL

Change No. 3

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**DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER**

---

INSTALLATION OF ALTIMETER SET  
ELECTRONIC AN/APN-209 IN UH-1H HELICOPTERS  
REDESIGNATED TO UH-1V (MEDEVAC)

---

Headquarters, Department of the Army, Washington, D.C.

10 May 1982

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MWO 55-1520-210-30-48, 23 July 1980, is changed as follows:

Page 1, para. 3. Add Serial Number 66-0853 to list of aircraft to be modified in proper numerical order.

Page 1, para. 3. Delete Serial Numbers 66-1127,69-15474,69-15915, and 69-16581.

**By Order of the Secretary of the Army:**

**E. C. MEYER**  
**General, United States Army**  
**Chief of Staff**

**Official:**

**ROBERT M. JOYCE**  
**Brigadier General, United States Army**  
**The Adjutant General**

**DISTRIBUTION:**

To be distributed in accordance with DA Form 12-31, MWO Requirements for UH-1D/H and EH-1H aircraft.





NORMAL

MWO 55-1520-210-3048

Change No. 2

**DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER**

---

INSTALLATION OF ALTIMETER SET  
ELECTRONIC AN/APN-209 IN UH-1H HELICOPTERS  
REDESIGNATED TO UH-1V (MEDEVAC)

---

Headquarters, Department of the Army, Washington, D. C.

14 July 1981

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MWO 55-1520-210-3048, 23 July 1980, is changed as follows:

Page 1. Correct title to read (MEDEVAC) in lieu of (MEDIVAC).

Para 3. End Item or System to be modified add serial numbers 66-1087, 66-16969, 68-15678, 68-16252, 70-16422.

By Order of the secretary of the Army

**E. C. MEYER**  
General, United States Army  
Chief of Staff

Official:

**ROBERT M. JOYCE**  
Brigadier General, United States Army  
The Adjutant General

DISTRIBUTION:

To be distributed in accordance with DA Form 12-31, MWO Requirements for UH-1D/H & EH-1H aircraft.



**URGENT**

MWO 55-1520-210-30-48

Change No. 1

**DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER**

INSTALLATION OF ALTIMETER SET,  
ELECTRONIC AN/APN-209 IN UH-1H HELICOPTERS  
REDESIGNATED TO UH-1V (MEDIVAC)

Headquarters, Department of the Army, Washington, D. C.

17 November 1980

MWO 55-1520-210-30-48, 23 July 1980, is changed as follows:

Page 1. Paragraph 3, List of Serial Numbers is superseded as follows:

3. End Item or System to be Modified. The following aircraft will be modified:

Nomenclature	National Stock Number	Model	Serial Number		
Helicopter	1520-00-087-7637	UH-1H	66-0873	66-16243	66-16609
			66-0890	66-16252	66-16620
			66-0941	66-16272	66-16633
			66-0954	66-16291	66-16639
			66-1018	66-16296	66-16678
			66-1046	66-16316	66-16680
			66-1050	66-16328	66-16717
			66-1052	66-16355	66-16729
			66-1068	66-16366	66-16757
			66-1086	66-16372	66-16821
			66-1104	66-16387	66-16827
			66-1105	66-16395	66-16836
			66-1127	66-16415	66-16868
			66-1193	66-16419	66-16877
			66-16005	66-16431	66-16879
			66-16013	66-16446	66-16894
			66-16034	66-16456	66-16896
			66-16108	66-16475	66-16965
			66-16119	66-16478	66-16971
			66-16143	66-16484	66-16972
			66-16155	66-16506	66-16998
			66-16187	66-16508	66-17004
			66-16201	66-16513	66-17013
			66-16228	66-16525	66-17024
			66-16239	66-16538	66-17030

**MWO 55-1520-210-30-48**  
**Change 1**

Nomenclature	National Stock Number	Model	Serial Number
		66-17054	68-15550
		66-17081	68-15592
		66-17089	68-15593
		66-17091	68-15622
		66-17099	68-15688
		66-17100	68-15743
		66-17111	68-15749
		66-17144	68-15754
		67-17146	68-15773
		67-17189	68-16077
		67-17198	68-16084
		67-17200	68-16138
		67-17216	68-16165
		67-17220	68-16174
		67-17236	68-16187
		67-17258	68-16235
		67-17268	68-16261
		67-17289	68-16263
		67-17292	68-16321
		67-17334	68-16349
		67-17406	68-16355
		67-17414	68-16415
		67-17416	68-16417
		67-17455	68-16421
		67-17523	68-16446
		67-17526	68-16507
		67-17527	68-16519
		67-17534	68-16553
		67-17535	68-16563
		67-17540	68-16596
		67-17547	69-15002
		67-17599	69-15016
		67-17637	69-15053
		67-17645	69-15062
		67-17661	69-15081
		67-17725	69-15102
		67-17781	69-15144
		67-17808	69-15171
		67-17810	69-15180
		67-17813	69-15208
		67-17814	69-15219
		67-19494	69-15229
		67-19521	69-15247
		67-19534	69-15249
		68-15214	69-15253
		68-15227	69-15267
		68-15431	69-15268
		68-15444	69-15271
		68-15461	69-15282
		68-15492	69-15294
		68-15526	69-15298
		68-15532	69-15322
		68-15543	69-15323
			69-15326
			69-15330
			69-15331
			69-15332
			69-15339
			69-15341
			69-15370
			69-15408
			69-15425
			69-15469
			69-15474
			69-16581
			69-15518
			69-15636
			69-15683
			69-15545
			69-15719
			69-15730
			69-15758
			69-15790
			69-15814
			69-15818
			69-15844
			69-15845
			69-15848
			69-15854
			69-15913
			69-15915
			69-15924
			69-15926
			69-15928
			69-15920
			69-15930
			69-15931
			69-16652
			69-16719
			69-16727
			70-15711
			70-15754
			70-15860
			70-15209
			70-16209
			70-16224
			70-16225
			70-16238
			70-16248
			70-16249
			70-16259
			70-16262
			70-16266
			70-16280
			70-16309
			70-16360

Nomenclature	National Stock Number	Model	Serial Number
		70-16361	71-20177
		70-16364	71-20206
		70-16368	71-20214
		70-16370	71-20223
		70-16371	71-20228
		70-16372	71-20247
		70-16373	71-20271
		70-16378	71-20280
		70-16379	71-20284
		70-16380	71-20285
		70-16381	71-20294
		70-16382	71-20300
		70-16383	71-20301
		70-16385	71-20302
		70-16386	71-20303
		70-16387	71-20305
		70-16389	71-20306
		70-16390	71-20307
		70-16391	71-20315
		70-16392	72-21508
		70-16393	72-21517
		70-16394	72-21533
		70-16437	72-21547
		70-16439	72-21559
		70-16440	72-21629
		70-16464	72-21638
		70-16465	73-21664
		70-16468	73-21666
		71-20009	73-21689
		71-20018	73-21717
		71-20023	73-21718
		71-20024	73-21719
		71-20026	73-21720
		71-20050	73-21732
		71-20063	73-21745
		71-20088	73-21748
		71-20105	73-21756
		71-20156	73-21763
		71-20159	73-21765
		71-20164	73-21767
			73-21778
			73-21791
			73-21807
			73-21820
			73-21832
			73-21859
			73-22066
			73-22067
			73-22080
			73-22091
			73-22097
			74-22298
			74-22299
			74-22311
			74-22312
			74-22341
			74-22354
			74-22366
			74-22372
			74-22373
			74-22376
			74-22377
			74-22378
			74-22407
			74-22421
			74-22425
			74-22428
			74-22430
			74-22431
			74-22432
			74-22433
			74-22442
			74-22447
			74-22463
			74-22468
			74-22472
			74-22473
			74-22482
			74-22498
			74-22542

Page 15. After paragraph 10d.(2)(e). The Caution note is superseded as follows:

**CAUTION**

Before applying power to the receiver-transmitter height indicator RT-1115/APN-209, make certain that the transmitter RF connector J4 is connected. Failure to do so may result in damage to the transmitter module in the receiver-transmitter height indicator.

**MWO 55-15.0-210-30-48**  
**Change 1**

Page 16. Paragraph 12a. "+12.3" is changed. to read "+13.1".

Page 16. Paragraph 12c. "320 inch pounds" is changed to read "340 inch pounds".

Page 34. Paragraph 12c. "12.3 pounds" is changed to read "13.1 pounds".

Page 34. Paragraph 12e. "3.2 pounds" is changed to read "3.4".

**By Order of the Secretary of the Army:**

**Official:**

**E. C. MEYER**  
**General, United States Army**  
**Chief of Staff**

**J. C. PENNINGTON**  
**Major General, United States Army**  
**The Adjutant General**

**DISTRIBUTION:**

To be distributed in accordance with DA Form 12-31, MWO Requirements for UH-1D/H and EH-1H aircraft.

Nomenclature	National Stock Number	Model	Serial Number
			70-15860, 70-16209
			70-16224, 70-16225
			70-16238, 70-16240
			70-16248, 70-15249
			70-16259, 70-16266
			70-16280, 70-16368
			70-16369, 70-16371
			70-16372, 70-16373
			70-16378, 70-16379
			70-16380, 70-16381
			70-16382, 70-16383
			70-16385, 70-16387
			70-16388, 70-16389
			70-16390, 70-16391
			70-16392, 70-16393
			70-16464, 71-20023
			71-20024, 71-20050
			71-20063, 71-20088
			71-20105, 71-20159
			71-20164, 71-20177
			71-20214, 71-20280
			71-20284, 71-20285
			71-20300, 71-20301
			71-20302, 71-20303
			71-20305, 71-20306
			71-20307, 71-20315
			72-21508, 72-21517
			72-21533, 72-21547
			72-21559, 72-21565
			72-21629, 72-21638
			73-21664, 73-21666
			73-21689, 73-21717
			73-21718, 73-21719
			73-21720, 73-21727
			73-21732, 73-21756
			73-21763, 73-21765
			73-21767, 73-21791
			73-21807, 73-21820
			73-21832, 73-21859
			73-22066, 73-22067
			73-22080, 73-22091
			74-22298, 74-22299
			74-22311, 74-22312
			74-22341, 74-22354
			74-22366, 74-22372
			74-22373, 74-22376
			74-22377, 74-22407
			74-22442, 74-22447
			74-22463, 74-22482
			74-22498, 74-22542

**NOTE**

**Verification kit was installed on UH-1H Serial Number 69-15341**

**4. Modules (Components, Assemblies, Subassemblies, Boards and Cards) to be Modified.** Not applicable.

**5. Part (s) to be Modified.** Not applicable.

**6. Application.**

**a. Time Compliance Date.** MWO effective date 1 October 1979 and completion date 31 March 1983.

**b. Level of Maintenance.** Aviation Intermediate Maintenance (AVIM).

**c. Applied By.**

(1) Aircraft Structural Repairer, MOS68G.

(2) Aircraft Electrician, MOS68F.

(3) Utility Helicopter Repairer, MOS67N.

**d. Time Required.**

(1) For completion of MWO application to one end item.

(a) Total of 50 work hours.

(b) Total of 40 hours downtime for one end item.

(2) For completion of one assembly or component. Not applicable.

(3) For completion of one part. Not applicable.

**e. MWOs to be Applied Prior to or Concurrently with this MWO.** The following modification work order must be accomplished prior to this modification work order as applicable by model year. MWO 55-1500-219-30-8.

**7. Technical Publications Affected/Changed as a Result of this MWO.**

TM 11-1520-210-20	TM 11-1520-210 -20-1
TM 11-1520-210-34-1	TM 11-1520-210-35
TM 11-1520-210-20P	TM 11-1520-210-20P-1
TM 11-1520-210-34P	TM 11-1520-210-34P-1
TM 55-1520-210-10	TM 55-1520-210-23
TM 55-1520-210-23P	

**8. Supply Kits, Parts and Disposition.**

**a. Kits Required to Accomplish MWO.**

National Stock Number	Nomenclature	Part Number	Quantity
1560-01-064-4577	Kit, modification, radar altimeter consisting of the following parts:	1560-UH1-897	1
Note 1	Cover Assembly, Antenna	1560-UH1-892-1	1
Note 1	Cover Assembly, Antenna	1560-UH1-892-2	1
5340-00-598-8251	Bracket	AN743-12	3
Note 1	Bracket Extension	1560-UH1-904	1
592500-914-3505	Circuit Breaker	MS22073-2	1



National Stock Number	Nomenclature	Part Number	Quantity
Note 1	Cable Assembly Cover	1560-UH1-910	2
Note 2	Clamp	MS21919DG3	4
Note 3	Clamp	MS21919DG5	2
Note 4	Clamp	MS21919DG17	1
Note 5	Clamp	MS21919DG18	2
Note 6	Coax Cable Assembly	1560-UH1-898	1
Note 6	Coax Cable Assembly	1560-UH1-911	1
5999-00-901-3239	Contact	MS24254-20P	4
5999-00-812-2082	Contact	MS24255-20S	4
Note 1	Decal COMPASS	1560-UH1-901-4	1
Note 1	Decal DG	1560-UH1-901-3	1
Note 1	Decal OPERATING LIMITS	1560-UH1-908-1	1
Note 1	Decal TB13	1560-UH1-912-2	1
Note 1	Decal 11 thru 1	1560-UH1-912-1	1
Note 1	Decal CODE HOLD ON	1560-UH1-901-1	1
Note 1	Decal CAUTION	1560-UH1-903	1
Note 1	Decal MAG	1560-UH1-901-2	1
Note 1	Decal Marker Beacon	1560-UH1-899	1
Note 1	Decal K100	1560-UH1-900-1	1
Note 1	Doubler Plate	1560-UH1-888	1
Note 1	Gasket Antenna	1560-UH1-909	2
Note 1	Instrument Spacer	1560-UH1-886	1
Note 1	Instrument Spacer	1560-UH1-887	1
Note 1	Placard APN-209	1560-UH1-900-2	1
5945-00-226-5241	Relay	MS27401-1	1
5310-00-982-6814	Nut	MS21044-C08	7
5310-00-982-4999	Nut	MS21044-C04	6
Note 1	Nut, Plain Blind Rivet	MS27130-CR88	1
5310-00-208-4736	Nut, Instrument	NAS487-15	7
5305-00-054-6676	Screw	MS51957-51	2
5305-00-054-5648	Screw	MS51957-14	4
Note 1	Decal OPERATING LIMITS	1560-UH1-908-2	1
5305-00-054-6659	Screw	MS51957-35	3
5305-00-054-6660	Screw	MS51957-36	1
5305-00-054-6662	Screw	MS51957-38	4
5305-00-054-6671	Screw	MS51957-46	5
5305-00-889-2991	Screw	MS24693-C48	24
5305-00-519-6590	Screw	MS51957-126	4
Note 1	Spacer	1560-UH1-907	2
5365-00-662-3100	Spacer	NAS43DD3-64	3
5365-00-684-3303	Spacer	NAS43DD3-34	4
Note 1	Template	1560-UH1-889-1	1
Note 1	Template	1560-UH1-889-2	1
Note 1	Template	1560-UH1-890-1	1
Note 1	Template	1560-UH1-890-2	1
5310-00-880-5978	Washer	MS15795-807	4
5310-00-782-1349	Washer	MS15795-804	4
Note 8	Wire Harness Assembly	1560-UH1-S95	1
Note 9	Washer	AN935-10L	2
3439-00-460-1733	Solder Sleeve	D-142-50	2
Note 10	Washer	AN96OD-10L	2
5305-00-059-3663	Screw	MS51958-67	1
5305-00-059-3661	Screw	MS51958-65	7

**MWO 55-1520-210-30-48**

National Stock Number	Nomenclature	Part Number	Quantity
5305-00-059-3666	Screw	MS51958-70	2
5305-00-059-3664	Screw	MS51958-68	5
5310-00-176-6333	Nut	MS17830-08C	4
Note 11	Nut	MS35650-106	1
5310-00-208-9255	Nut	MS21044-C3	15
5310-00-809-8546	Washer	MS27183-8	5
5310-00-619-1148	Washer	MS15795-808	32
5310-00-167-0834	Washer	AN960-10L	2
5340-00-204-8966	Terminal Lug	MS25036-102	10
5940-00-143-4771	Terminal Lug	MS25036-103	9
6940-00-557-1629	Terminal Lug	MS25036-149	10
Note 12	Terminal Board Assembly	1560-UH1-914	1
5310-00-595-6211	Washer	MS15795-803	2
6310-00-722-5998	Washer	MS15795-805	1
5310-00-807-1472	Nut	MS21042L06	1
5305-00-054-5649	Screw	MS51957-15	2
5940-00-411-7796	Cover, Terminal Board	MS18029-1S-4	1
Note 1	Decal (TB101)	1560-UH1-912-4	1
Note 1	Decal (1234)	1560-UH1-912-3	1

NOTE 1: Non-maintenance significant

NOTE 2: For spare part support, use NSN 5340-00-052-9552.

NOTE 3: For spare part support, use NSN 5340-00-105-8328.

NOTE 4: For spare part support, use NSN 5940-00-989-4574.

NOTE 6: For spare part support, use NSN 5340-00-993-1470.

NOTE 6: CERCOM supported item.

NOTE 7: Not applicable.

NOTE 8: For spare part support, assemble from NSN 5935.00-430-6306, NSN 5935-00-365-9160, NSN 5935-00-368-0449, NSN 5970-00-812-2967, NSN 5940-01-010-1571, NSN 6145-01-004-7663, NSN 5935-00-443-9313, NSN 5935-00-261-6872, NSN 6145-00-608-5484, and NSN 6145-00-754-8057,

NOTE 9: For spare part support, use NSN 5310-00-045-3296.

NOTE 10: For spare part support, use NSN 5310-00-167-0753.

NOTE 11: For spare part support use NSN 5310-00-410-3025.

NOTE 12: For spare part support, assemble from NSN 5970-00-812-2967, NSN 6145-00-054-8057, NSN 5310-00-722-598, NSN 5310-00-807-1472, NSN 5940-00-204-8966, NSN 5940-00-577-3807, NSN 5940-00-132-2769, and NSN 5961-01-037-0111

**b. Size and Weight of Kits.** The weight and cube data for the packaged kit is listed below.

Weight	Dimensions	Cube
8 lb	18 x 18 x 2	2.25

**c. Distribution and Issue Instructions.** US Forces. Kits to accomplish this modification will not be requisitioned by user/field activities. Requisitioning of kits and application/compliance with this MWO will be accomplished only by depot/overhaul facilities or Hq TSARCOM sponsored project sites. User activities will accomplish this MWO when authorized by a negotiated Memorandum of Understanding (MOU) with Hq SARCOM (AR 750-10).

**d. Bulk and Consumable Materials.** The following materials are not furnished with the kit and will be requisitioned to comply with this modification.

National Stock Number	Nomenclature	Qty	Part Number	Supply Code
6810-00-238-8119	Naphtha, Aliphatic	AR	TT-N-95 Type 2	
4020-00-202-1924	Twine, Fibrous	AR	MIL-T-713	S9I
3439-00-224-3567	Solder, Tin Alloy	AR	QQ-S-571SN60	S9G
5970-00-812-2969	Insulation, Sleeving	AR	RNF-100, Type 1, 1/8 inch	
6145-00-553-1897	Wire, Electrical	AR	MIL-W-16878, Type B22	

**e. Parts Disposition.**Not applicable.



**f. Parts Requisition.** The following items are not furnished with the kit but must be on site at time of kit installation. These items should be requisitioned.

Nomenclature	Part Number	Quantity	Source
Receiver-Transmitter	RT-1115/APN-209	1	B16
Height Indicator			
Height Indicator	ID-1917/APN-209	1	B16
Antenna	AS-2595/APN-194(V)	2	B16

**9. Special Tools; Jigs; Test, Measurement and Diagnostic Equipment (TMDE); and Fixtures Required.** Not applicable.

#### 10. Modification Procedures.

**a. Preparation.** Prepare the aircraft for safe ground maintenance and proceed with the following instructions for modification.

#### NOTE

***Items removed to gain access to work area shall be tagged for identification and protected from damage until reinstalled. Retain all hardware of removed parts for reinstallation unless otherwise specified.***

#### NOTE

***Refer to TM 11-1520-210-20 and TM 56-1520-210-23 for parts or equipment removal and installation instructions. Refer to TM 55-1520-210-23P for detailed parts. Refer to TM 55-1500-323-25 for aircraft electrical and electronic wiring installation practices.***

(1) Extend searchlight.

(2) Disconnect and remove battery.

(3) Remove vertical plate located immediately aft of battery.

(4) At nose compartment, accomplish the following.

(a) Remove receiver-transmitter RT-742/ARC-51.

(b) Remove receiver R-1388/ARN-82 (if installed).

(c) Remove receiver-transmitter RT-348/ARC-54 (if installed).

(d) Remove receiver-transmitter RT-823/ARC-131 (if installed).

(e) Remove vertical gyro MD-1.

(f) Remove main and spare inverters.

(g) Remove end bolts securing static air manifold to roof of nose compartment. Manifold is located between hinges of nose compartment door. Retain attaching hardware for reinstallation at a later time.

#### NOTE

***Do not remove lines from manifold.***

(h) Disconnect P3 from J3. Connectors are located aft of the static air manifold (copilot's side). Remove screws securing connector J3 to mounting bracket. Retain hardware for reinstallation.

#### NOTE

***If MWO 55-1520-210-50/3 (Dual VOR with Glideslope) has been applied, do not perform steps (i) and (j) below. TB13 has been relocated to the new position by MWO 55-1520-210-50/3.***

(i) Remove screws attaching TB13 to rear of copilot's instrument panel. TB13 will be reinstalled in a new location in a later step. Remove and discard TB13 decals. Do not remove wires from TB13.

(j) Remove clamp securing TB13 wire harness to instrument panel (figure 1). Retain clamp and hardware. Clamp will be repositioned in a later step.

(k) Disconnect static air lines from pilot and copilot vertical speed indicators and pilot and copilot barometric altimeters.

**NOTE**

***Insure that no foreign material enters static air openings.***

(l) Remove clamp and attaching hardware (located one inch left of engine EXH TEMP gauge) at rear of instrument panel. Retain for reinstallation.

(5) Remove four access plates on underside of helicopter at FS30 (LBL 10 and 21, RBL 4 and 21).

(6) Remove pilot and copilot doors.

(7) Inside cabin, accomplish the following:

(a) Remove windshield center post cover.

(b) Open overhead right circuit breaker panel.

(c) Remove clock and light from pilot's instrument panel.

(d) Remove vertical speed indicator and barometric altimeter from pilot's instrument panel. Remove post light from barometric altimeter location and retain for use with relocated VSI.

(e) If counter drum pointer altimeters are installed (AAU-31/A and/or AAU-32/A), remove and discard wedges installed between instrument panel altimeter face as altimeters are removed from panel.

**NOTE**

***Do not remove any wires when accomplishing steps (f) and (g). All switches, controls and lights can be removed through back of instrument panel.***

(f) Remove marker beacon indicator lamp, HIGH-LOW SENSING switch (if installed), and ON-OFF/VOLUME switch. Remove all marker beacon decals. Remove cargo hold light and retain for reinstallation.

(g) Remove IFF Mode 4 light (if AN/APR-39 is installed), IFF Code Hold switch, compass slaving switch, and IFF Caution light (if installed on panel). Remove all IFF and compass slaving decals. Remove Operating Limits decal and Engine Caution decal.

(h) Remove vertical speed indicator and altimeter from copilot's instrument panel. Remove post light from VSI location and retain for use with relocated VSI.

**b. Mechanical Rework.** Perform modification to instrument panel as follows.

**NOTE**

***If MWO 66-1520-210-50/3 has been complied with, proceed to step (2).***

(1) For TB13 relocation, drill two No. 30 (0.128 inch diameter) holes as shown in figure 1. Countersink holes at front side 100 degrees, 0.225 inch deep.

**NOTE**

***Cover pedestal area with tarpaulin or similar covering to keep metal particles out of radio control panel. Clean and remove metal particles from all reworked areas on instrument panel.***

(2) At copilot's instrument panel, accomplish the following (figure 2, sheet 1).

(a) Prepare template locations for RT-115/APN-209 and vertical speed indicator by cleaning instrument panel with naphtha (TT-N-95, Type 2) or equivalent. Wipe areas with clean, dry cloth to remove dampness and residue.

(b) Remove liner from template (1560-UH1-889-2). Position template marks (existing hole) over original mounting holes for barometric altimeter. Press template firmly in place, leaving no air bubbles. Using sharp blade, cut around inner border of template (outline for RT-115/APN-209). Remove cutout material.

(c) Drill four No. 16 (0.177 inch diameter) holes through marked corner holes in template.

(d) Cut out the portion of instrument panel outlined by inner border of template (step (b) above). (Panel cutout can be accomplished utilizing a drill and heavy file.)

(e) Locate and mark the center of new location for vertical speed indicator (VSI) as shown in figure 2, sheet 1.

(f) Remove liner from template (1560-UH1-890-2). Position template mark (center line) over VSI center as marked in step (e). Press template firmly in place, leaving no air bubbles. Using sharp blade, cut around inner border of template (outline for VSI). Remove cutout material.

(g) Locate and drill No. 30 (0.129 inch diameter) holes through marked corner holes in template.

(i) Cut out the portion of instrument panel outlined by inner border of template (step (f) above).

(3) At pilot's instrument panel, accomplish the following (figure 2, sheet 2).

(a) Prepare template locations for ID-1917/APN-209 and VSI by cleaning instrument panel with naphtha (TT-N-95, Type 2) or equivalent. Wipe areas with a clean, dry cloth to remove dampness and residue.

(b) Remove liner from template (1560-UH1-889-1). Align template marks (existing hole) over original mounting holes for pressure altimeter. Press template firmly in place, leaving no air bubbles.

(c) Using sharp blade, cut around inner border of template (outline of ID-1917/APN-209). Remove cutout material.

(d) Drill one No. 12 (0.189 inch diameter) hole at upper right corner of template (as marked). Countersink 100 degrees by 0.063 inch deep.

(e) Drill three No. 16 (0.177 inch diameter) holes at marked corner holes in template.

(f) Cut out portion of instrument panel outlined by inner border of template (step (c) above).

(g) Locate and drill No. 30 (0.129 inch diameter) hole for VSI (relocation) post light wire.

(h) Locate and mark center of new location for vertical speed indicator (VSI) as shown in figure 2, sheet 2.

(i) Remove liner from VSI template (1560-UH1-890-1). Align template centerline with marked centerline on instrument panel. Press firmly in place, leaving no air bubbles. Using sharp blade, cut around inner border of template (outline for VSI). Remove cutout material.

(j) Drill three No. 16 (0.177 inch diameter) holes through marked corner holes in template. If required, drill No. 30 (0.129 inch diameter) hole for barometric altimeter (relocation) post light wire.

(k) Cut out the portion of instrument panel outlined by inner border of template (step (i) above).

(l) Locate and drill 0.469 inch diameter hole for marker beacon light relocation (figure 2, sheet 2).

(m) Locate and drill 0.453 inch diameter hole for HIGH-LOW SENSING switch.

(n) Locate and drill 0.406 inch diameter hole for ON-OFF/VOLUME switch. Drill 0.125 inch diameter hole approximately 1/2 inch from 0.406 inch diameter hole to allow for tab on ON-OFF/VOLUME switch (figure 2, sheet 2).

(4) At center of instrument panel, use doubler plate (1560-UH1-888) as template to accomplish the following, (Refer to figure 2, sheet 3, when accomplishing individual steps.)

#### NOTE

***Instrument panel stiffener (205-070-948-25) may be prevent on some helicopter. If installed, remove bottom portion as shown in View A-A.***

(a) Position doubler plate on instrument panel at location shown. Drill No. 17 (0.173 inch diameter) holes at upper left and lower right corner holes. Install cleco fasteners.

(b) Mark instrument panel through existing holes in doubler plate. Scribe outline for clock relocation (figure 2, sheet 3, Work Statement, steps 1 through 4).

(c) Remove doubler plate. Drill holes in instrument panel, as marked, and cut opening for clock.

(d) If required, enlarge instrument panel opening for Code Hold switch, compass slaving switch, and clock light in order that shaft on switches extends far enough through doubler plate for attachment.

(e) Reinstall doubler plate on instrument panel, using hardware shown in figure 2, sheet 4.

(f) If AN/APR-39 is installed (MWO 55-1520-210-50-6), relocate the IFF MODE 4 light as shown in figure 2, sheet 3 (Work Statement, step 6).

(g) If the IFF CAUTION light is located on instrument panel, relocate as shown in figure 2, sheet 3 (Work Statement, step 7).

(5) Remove all remaining template material from instrument panel reworked areas. Clean adhesive from reworked areas.

c. Installation of Components.

(1) Reinstall TB13, if required (see NOTE following paragraph 10a(4)(h)) at new location shown in figure 1 using existing hardware. TB13 must be rotated 180 degrees to be installed in new position. Reposition TB13 wire harness clamp as shown in figure 1.

**NOTE**

***Do not remove wires from TB13 terminals during reinstallation.***

(2) Place TB13 decals (1560-UH1-912-1 and 1560-UH1-912-2) at locations shown in figure 1, if required. (See NOTE following paragraph 10a(4)(h).)

(3) Install extension bracket (1560-UH1-904) at original location of connector J3 (figure 4). Use four screws (MS51957-14), four washers (MS15795-804), and four nuts (MS21044-C04).

(4) Install relay K100 (MS27401-1) on vertical wall (FS23) at forward right corner of pedestal as follows (figure 5).

(a) Remove fourth rivet from top of existing rivet row (RBL 6).

(b) Using relay K100 as a template, position lower mounting hole of relay over rivet hole (step (a) above).

(c) Align relay with vertical rivet row and mark wall through upper mounting hole.

(d) Drill two No. 16 (0.177 inch diameter) holes through wall.

(e) Install relay K100 using two screws (MS51957-51), two spacers (1560-UH1-907), two nuts (MS21044-C08), and four washers (MS51795-808) (if required to clear defrost heater linkage).

(f) Place decal (1560-UH1-900-1) on wall above relay K100.

(5) At copilot's instrument panel, install the following (figure 2, sheet 1).

(a) Instrument spacer (1560-UH1-887) and receiver-transmitter height indicator RT-1115/APN-209 (including attaching hardware per figure 2, sheet 1).

**NOTE**

***Insure correct installation of instrument spacer by referring to View A-A and color coded dot.***

(b) Relocate barometric altimeter to original VSI location, using existing hardware.

**NOTE**

***If altimeter AAU-8/A is installed, place post lights in position and secure.***

(c) Place VSI post lights in position and secure using existing hardware. Relocate VSI to new position.



- (6) At center of instrument panel, install the following at doubler plate (figure 2, sheet 4),
- (a) Relocate clock and post light using existing hardware.
  - (b) Relocate IFF Code Hold switch and compass slaving switch.
  - (c) Relocate IFF Mode 4 light (if AN/APR-39 is installed).
  - (d) Relocate IFF caution light (if installed).
  - (e) Secure stiffener as shown (if installed).
  - (f) Relocate wire harness clamp using existing hardware (figure 2, sheets 3 and 4).
- (7) At pilot's instrument panel, install the following (figure 2, sheet 2).
- (a) Instrument spacer (1560-UH1-886) and indicator ID-1917/APN-209.

**NOTE**

***Insure correct installation of instrument spacer by referring to View A-A and color coded dot.***

- (b) Install decal 1560-UH1-899. Relocate marker beacon controls (figure 2, detail A, sheet 2).
- (c) Relocate barometric altimeter to original VSI location, using existing hardware. (If AAU-8/A altimeter is installed position post lights before installing altimeter.) Secure post lights using existing hardware.
- (d) Relocate post lights and VSI to original clock location. Use existing hardware,
- (8) Install instrument panel decals (1560-UH1-899, 1560-UH1-901-1, 1560-UH1-901-2, 1560-UH1-901-3, 1560-UH1-901-4, 1560-UH1-903, and 1560-UH1-908) as required as shown in figure 2, sheet 4. Use naphtha (TT-N-95, Type 2) to clean instrument panel prior to installing decals.
- (9) Install wire harness (1560-UH1-895) as follows (figure 6).
  - (a) Position that end of wire harness with connectors P1 and P2 assembled at instrument panel location of RT-1115/APN-209. Mate connectors P1 and P2 to J1 and J2.

**NOTE**

***Leave sufficient slack in wire harness to permit removal of RT-1115/APN-209 and gain access to P1 and P2 through front instrument panel.***

- (b) Route wire harness downward and inboard aft of TB1 to junction with main wire bundle running vertically (BL 0). Tie temporarily to main wire bundle.
- (10) At junction with main wire bundle, break out wires as follows.
  - (a) Locate following wires (with connector PI (ID-1917/APN-209) assembled), and route to location of height indicator ID-1917/APN-209 on pilot's instrument panel: APN-209-13A22, 14A22, 15A22, 16A22, 17A22, 18A22, 19A22, 20A22, 23A22, 24A22, 7B22, 8B22N, 34A22, 35A22, L211E22N, and L215C22.
  - (b) Route wires outboard following existing wire bundle leading to indicator ID-998/ASN. Tie wires temporarily to existing wire bundles. Further route wires to instrument panel locations of ID-1917/APN-209. Mate connector P1 to J1.

**NOTE**

***Position wire harness to leave sufficient slack for removal of ID-1917/APN-209 with P1 attached. Access to P1 is gained through front instrument panel cut out.***

- (c) At breakout point (step (10) above), locate wires L212B22 and L215C22, Route wires downward along main wire bundle to TB100. Cut wires to length and install two terminal lugs (MS25036-102). Connect wire L212B22 to terminal 8. Connect wire L215C22 to terminal 3.
- (d) At breakout point, locate the following wires and cut to length for connection to ground stud located on crossbrace (WL 36) inboard from TB1: L211D22N, L211E22N, APN-209-8A22N and APN-209-8B22N. Install four terminal lugs (MS25036-103) and connect to ground stud.

**NOTE**

***On some helicopter, ground stud may not be installed.  
See figure 3 for instalhation procedures.***

(e) At breakout point, locate following wires and route downward along main wire bundle (BL 0) to point opposite relay K100: APN-209-1A22, 20A22, 36A22, 36B22, 1B22 and 20B22. Further route wires to location of relay K100. Tie wires temporarily to existing wire bundle.

(f) Cut wires to length for connection to relay K100.

(g) Splice wire APN-209-36A22 to wires APN209-36C22 and APN209-36F22 using solder sleeve (D-142-50) (See figure 9).

**NOTE**

***If heat gun is not available, refer to TM 55-1500-323-25  
for alternate method of spicing.***

(h) Splice wires APN209-36D22 and APN209-36E22 to wire APN209-36F22 using solder sleeve (D-142-50) (See figure 9).

(i) Install approximately 3/4 inch of insulation sleeving (RNF-100, 1/8 inch) on following wires and solder to relay K100 as indicated.

Wire Number	Connection
APN-209-1B22	1
APN-209-36E22	2
APN-209-1A22	3
APN-209-36C22	4
APN-209-36D22	5
APN-209-20A22	6
APN-209-36B22	7
APN-209-20B22	8

(j) At breakout point (step (10) above), locate wires APN-209-1B22 and APN-209-20B22. Route upward along the main wire bundle to point where existing wire bundle breaks out to connector J3. Follow existing wire bundle to connector J3. Tie wires temporarily to existing wire bundle and cut to length. Install two contacts (MS24255-20S) on wires and insert in connector J3 as follows.

Wire Number	Connector
APN-209-1B22	K
APN-209-20B22	L

Reinstall J3 on extension bracket (1560-UH1-904) using existing hardware (figure 4).

(k) Locate wires APN-209-1C22 and APN-209-20C22. These wires are not tied into the main wire harness (1560-UH1-895). Install two contacts (MS24254-20P) on wires and insert in connector P3 as indicated.

Wire Number	Connector
APN-209-1C22	K
APN-209-20C22	L

Mate connector P3 to J3.

(l) Route wires APN-209-1C22 and APN-209-20C22 to TB13 following existing wire bundle. Tie wires to existing bundle and cut to length. Install two terminal lugs (MS25036-102) on wires and connect to TB13 as indicated.

Wire Number	Terminal
ANP-209-1C22	9
APN-209-20C22	4

(11) Locate wires APN-209-7A22, 7B22, 36A22, and 36B22. Route wires upward along windshield center post. Further route wire APN-209-36B22 to pilot's instrument panel lights ON-OFF switch (part of R-4). Route wire APN-209-36A22 to INSTRUMENT PANEL LIGHTS circuit breaker. Route wires APN-209-7A22 and 7B22 to right dc circuit breaker panel. Tie wires temporarily to existing wire bundles.

(a) Cut wires APN-209-36A22 and 36B22 to length. Install terminal lug (MS25036-149) on APN-209-36A22. Connect wire APN-209-36A22 to load side of INSTRUMENT PANEL LIGHTS circuit breaker.

(b) Install APN-209 placard (1560-UH1-900-2) on CB panel.

(c) Install APN-209 circuit breaker (MS22073-2) in right overhead dc circuit breaker panel. (See figure 8 for preferred location.)

(d) Cut wires APN-209-7A22 and 7B22 to length and install two terminal lugs (MS25036-149). Connect both wires to load side of APN-209 circuit breaker.



(e) Install terminal board (TB101) assembly (1560-UH1-914) as follows:

1. Mark outside wall of right dc circuit breaker panel using dimensions shown in figure 10. Using terminal board as a template, mark locations for mounting holes. Remove terminal board.

2. Drill two mounting holes, using a No. 30 (0.1285 inch dia.) drill.

3. Install terminal board on inside wall with terminal 3 (wire APN209-37A22 attached) toward rear of helicopter. Use two screws (MS51957-15), two washers (MS15795-803), and two nuts (MS21044-C04).

4. At the PILOT INST LTG switch (R4) on the overhead console, unsolder existing wire W14A20 from switch terminal. Pull wire W14A20 to length and install terminal lug (MS25036-102). Connect wire W14A20 to terminal 2 (anode lug of diode) of TB 101 using washer (MS15795-805) and nut (MS21042-L06) (see figure 11).

5. Route wire APN209-37A22 from TB 101 to the PILOT INST LTG switch. Solder wires APN209-37A22 and APN209-36B22 (previously routed to switch) to terminal formerly occupied by wire W14A20.

6. Place decals TB 101 (1560-UH1-912-4) and 1234 (1560-UH1-912-3) at locations shown in figure 10.

7. Install terminal board cover (MS18029-1S-4) on TB 101.

(12) Install antenna AS-2595/194(V) on underside of helicopter at LBL 18 as follows (figure 7).

(a) Assemble gasket (1560-UH1-909) and antenna AS-2595/194(V) on cover assembly (1560-UH1-892-2) using 12 screws (MS24693-C48). Note that attachment holes are spaced such that antenna will fit in only one configuration.

(b) Install retaining cable assemble (1560-UH1-910) on cover assembly at existing hole. Secure other end of retaining cable to existing hole in vertical frame member (LBL 19, FS 35). Use hardware as shown in figure 7. Antenna cover assembly will be installed on aircraft skin in later step.

(13) Install antenna AS-2595/194(V) on underside of helicopter at RBL 18 as follows (figure 7).

(a) Assemble gasket (1560-UH1-909) and antenna AS-2595/194(V) on cover assembly (1560-UH1-892-1) using 12 screws (MS24693-C48).

(b) Install retaining cable assembly (1560-UH1-910) on antenna cover assembly at existing hole. Install other end of retaining cable assembly using existing hole in vertical frame member (RBL 22, FS 35). Use hardware as shown in figure 7. Antenna cover assembly will be installed on aircraft skin in later step.

(14) Install coaxial cable assembly (1560-UH1-898) as follows (figure 6, sheet 4).

(a) Mate connector P1501 with J1501 on antenna AS-2595/194(V) (copilot side).

(b) Route cable forward and inboard following existing coaxial cable RN5280A through lightening holes. Further route cable upward through opening in hose compartment floor to junction with wire bundle running vertically. Follow existing wire bundle to point where wire harness (1560-UH1-895) breaks out.

(c) Follow wire harness to instrument panel location of RT-1115/APN-209. Mate connector P4 to J4 on RT-1115/APN-209. Tie cable temporarily to existing wire bundles.

#### NOTE

***Coaxial cable must be positioned to provide sufficient slack at each end for the following. Removal of RT-1116/APN-209 to gain access to connectors. Removal of antenna cover assembly to gain access to connector P1501.***

(15) Install coaxial cable assembly (1560-UH1-911) as follows (figure 6, sheet 3).

(a) Mate connector P1501 with J1501 on antenna AS-2595/APN-194 (pilot side).

(b) Route cable forward through bulkhead opening (FS 24) and inboard through lightening hole.

(c) Further route cable upward through opening in nose compartment floor, and follow existing coaxial cable (APN-209-22A) to RT-1115/APN-209 on copilot's instrument panel. Mate connector P3 to J3. Tie temporarily to existing wire bundle. Position coaxial cable in accordance with NOTE paragraph (14)(c) above.

(16) Install cable clamps and hardware by referring to figure 6, sheets 1 through 4. Use existing clamps where possible.

**d. Completion.** Complete modification as follows.

(1) Perform the following continuity check, using multimeter TS-352/U or equivalent. Disconnect connectors as necessary.

From	To	Reading (OHMS)
RT-1115/APN-209 (P1)		
Pin 3	Aircraft ground	0
Pin 5	Aircraft ground	0
Pin 7	K100, Pin 3	0
Pin 9	APN-209, 2 AMP circuit breaker	0
Pin 10	TB100, Term 8	0
RT-1115/APN-209 (P2)	ID-1917/APN-209(PI)	0
Pin 1	Pin 10	0
Pin 2	Pin 9	0
Pin 3	Pin 15	0
Pin 4	Pin 11	0
Pin 5	Pin 3	0
Pin 6	Pin 4	0
Pin 8	Pin 16	0
Pin 10	Pin 20	0
Pin 11	Pin 5	0
Pin 12	Pin 19	0
Pin 13	Pin 21	0
ID-1917/APN-209 (P1)		
Pin 2	Aircraft ground	0
Pin 18	Aircraft ground	0
Pin 1	APN-209 2A circuit breaker	0
Pin 17	TB 100, Term 3	0
Pin 6	K100, Pin 6	0
K100, Pin 1	Instrument panel disconnect J3 - Pin K	0
Pin 2	Instrument panel lights (5A circuit breaker)	0
Pin 4	Instrument panel lights (5A circuit breaker)	0
Pin 5	Instrument panel lights (5A circuit breaker)	0
Pin 7	ON/OFF Switch P/O Pilot's Instrument Panel Dimmer Control (R4)	0
Pin 8	Pin L (Instrument Panel Disconnect) J3	0
Instrument Panel disconnect P3 Pin K	TB13, Term 9	0
Instrument Panel disconnect P3 Pin L	TB13, Term 4	0
Receiver Ant. Cable	Receiver Ant. Cable Center	0

From	To	Reading (OHMS)
(APN-209-21A Center Pin of P3	Pin of P1501	
Receiver Ant. Cable (APN-209-21A) Outside Portion of P3	Receiver Ant. Cable Center Pin of P1501	Infinity
Transmit Ant. Cable (APN-209-22A) Center Pin of P4	Transmit Ant. Cable Center Pin of P1501	0
Transmit Ant. Cable (APN-209-22A) Outside Portion of P4	Transmit Ant. Cable Center Pin of P1501	Infinity

(2) Perform a functional check of the AN/APN-209 as follows.

(a) Reinstall terminal board covers on TB100 and TB13.

(b) Secure overhead dc circuit breaker panel access doors.

(c) Reinstall battery.

(d) Verify that all antennas have been properly installed and that the associated cables are connected. Install antenna cover assemblies (1560-UH1-892-1) on pilot's side and (1560-UH1-892-2) on copilot's side using existing hardware (figure 7).

(e) Mate all connectors used to perform continuity check.

#### CAUTION

***Before applying power to the receiver-transmitter height indicator RT-1115/APN-209, make certain that the transmitter RF connector J3 is connected. Failure to do so may result in damage to the transmitter module in the receiver-transmitter height indicator.***

(f) Check to see that all controls are undamaged. Manually check, before power application, that all controls are in the OFF position. Check to make certain that the equipment has been securely mounted in the proper location. Reconnect static air lines to pilot and copilot VSIs and barometric altimeters. Perform pitot static check.

(g) Connect an auxiliary power source to the helicopter. Energize APN-209, INSTRUMENT PANEL LIGHTS, PILOT 5-VOLT LIGHTS, AND COPILOT 5-VOLT LIGHTS circuit breakers.

#### NOTE

***The following tests apply to both indicators (RT-1115 and ID-1917). Accomplish steps (4)(h) through (5) below, using controls on each indicator. If indicator do not function as specified, check by substitution of component. If malfunction still exists, refer to the appropriate technical manual for substitution of interfacing components not part of this system. Refer to TM 11-5841 -284-23&P for operators, organizational, and direct support maintenance instructions for the components of the altimeter set.***

(h) Initial operation. Turn the equipment on by adjusting the LO SET control knob to 0 feet. The indicator pointers shall be driven behind the NO TRACK mask above 1500 feet. The OFF flag shall remain in view, and the digital display and warning lamps on the indicator shall not be illuminated. The lamps and digital display may flash momentarily when power is first applied. Set the LO warning index to 100 feet.

**(3) Track indications.** Both units shall indicate a track condition within two minutes from the time the unit is turned on. If necessary, a pointer or digital display zero adjustment may be made after the equipment stabilizes. These adjustments may be made with a jeweler's screwdriver through the small holes in the right side of the indicator RT-1115/APN-209. The upper hole is for pointer display adjustment. The lower hole is for digital display adjustment. Track indications shall be as follows.

- (a) OFF flag not in view.
- (b) Indicator pointer reading  $0 \pm 3$  feet.
- (c) Digital display -0, 0 to 3 feet.
- (d) LO warning lamp on indicator lighted.
- (e) HI warning lamp on indicator OFF.

**(4) PUSH-TO-TEST operation.** Set the HI limit warning bug to 800 feet. Depress and hold the HI SET control knob on the unit. The unit shall indicate track. The indicator pointer shall read  $1000 \pm 100$  feet. The digital display shall read  $1000 \pm 100$  feet. The HI warning light on the indicator shall be on.

**(6) Dimming tests**

(a) Set the LO altitude index to 100 feet, and set the output of the 5-volt supply to zero volt (open circuit breaker), Reduce dimming control and verify that both the digital display and the LO warning lamp dims. Both displays should be barely visible. Shade the front indicator if necessary to verify that the displays are still lighted.

(b) Rotate pilot instrument light rheostat to OFF position. An audible "click" should be heard from relay K100. Both displays should be fully illuminated.

(c) Energize 5-volt circuit breakers.

(d) Rotate instrument light rheostat slowly, fully clockwise, while observing the face of the indicators. The dials shall be evenly lit as voltage is increased. Verify that at least one bulb (integral lighting) is lit in each upper corner of the displays.

(e) Turn both LO-SET knobs to the OFF position.

(6) Inspect all wire bundles and remove all temporary ties. Lace and/or tie wire bundles in accordance with TM 55-1500-323-15. Secure bundles using existing cable clamps and existing holes where possible.

(7) Close or replace all access doors and plates opened or removed.

(8) Replace all components or assemblies removed for access.

**11. Calibration Requirements.** Not applicable.

**12. Weight and Balance Data.** Weight and balance change as a result of this MWO is as follows.

**a. Change in Basic Weight.** +12.3.

**b. Moment Arm.** 26 inches.

**c. Change in Basic Moment.** 320 inch pounds.

**d. Chart "A" Entries (DD Form 365A, Basic Weight Checklist).**

Compartment	Item	Weight (pounds)	Arm (inches)	Moment/100 (inch pounds)
B	Indicator RT-1115/APN-209	4.4	24	1.1
B	Indicator ID-1917/APN-209	2.8	24	0.7
B	Antenna Assembly AS-2595/APN-194	1.4	32	0.4
B	Antenna Assembly AS-26961APN-194	1.4	32	0.4
B	Wiring Harness	3.1	26	0.8



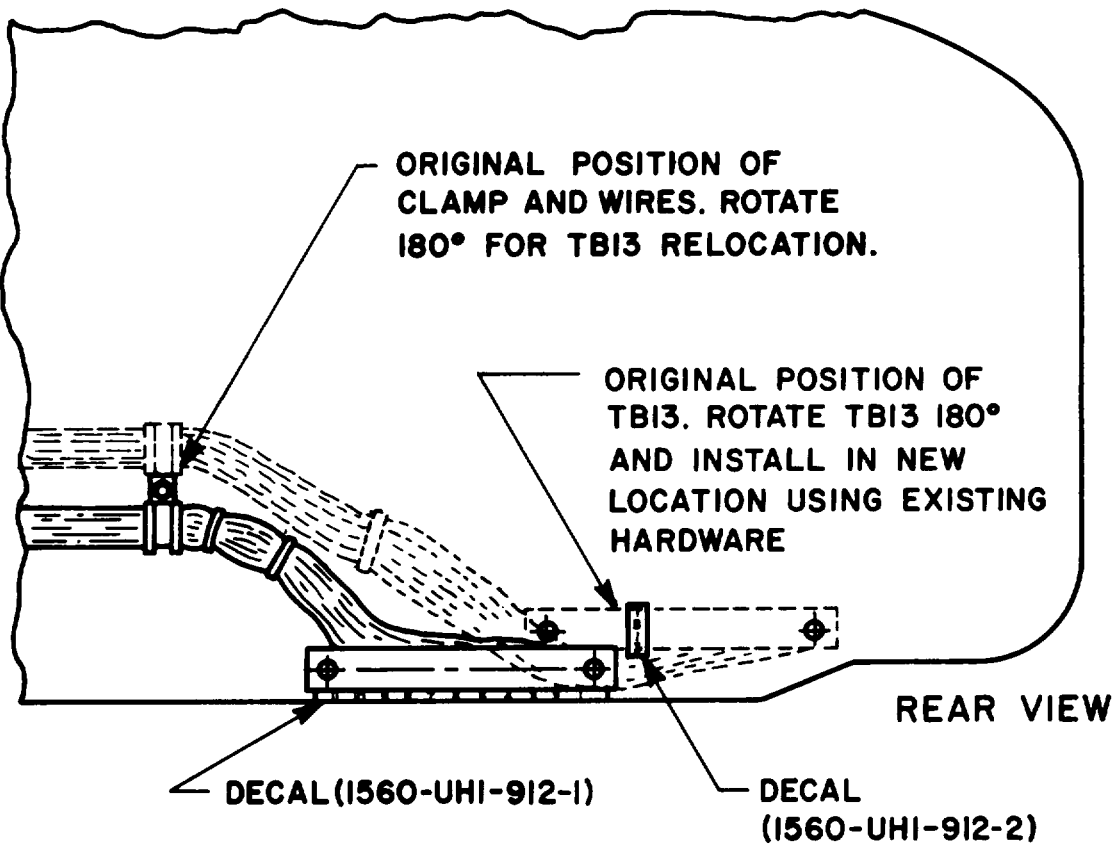
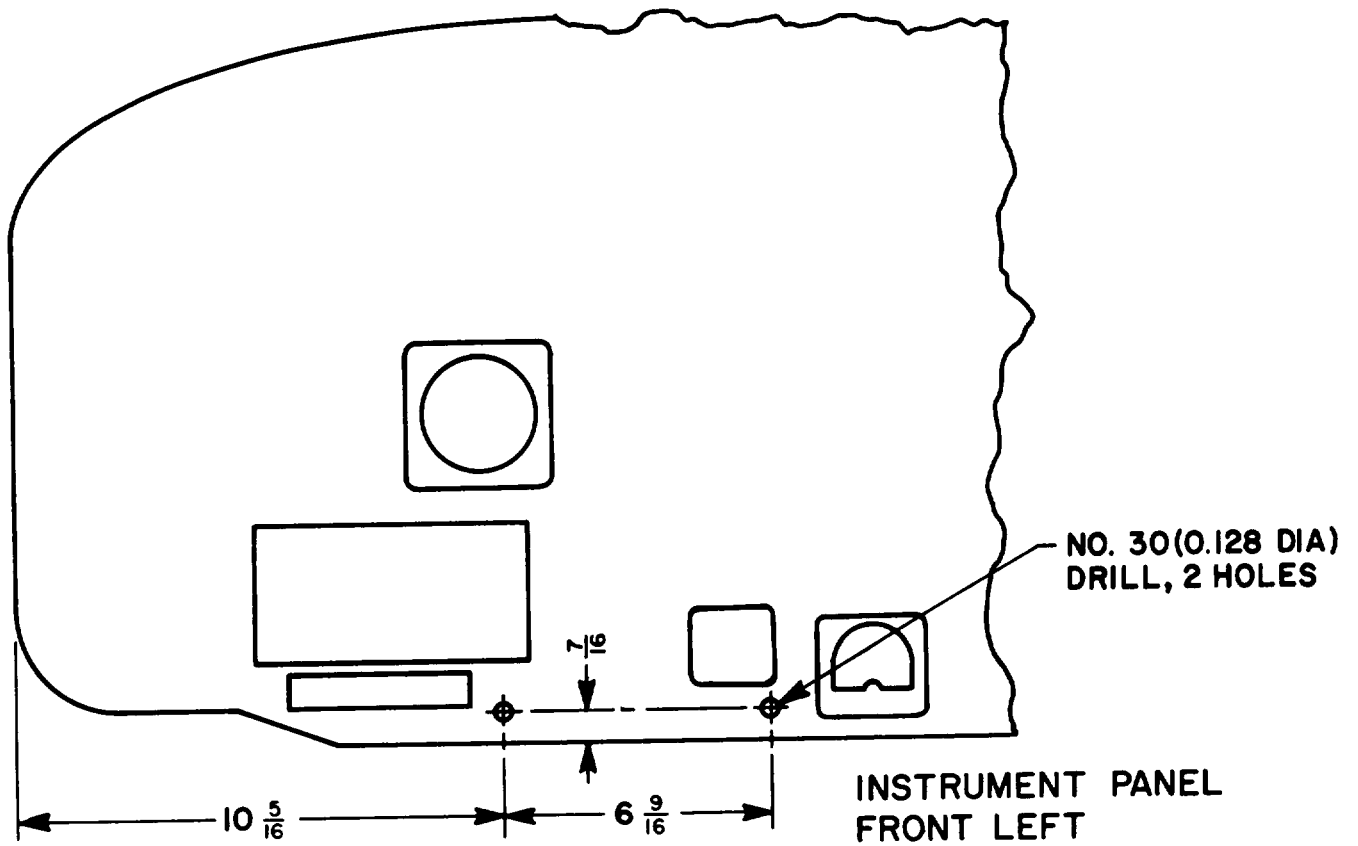


Figure 1. Relocation of TB13

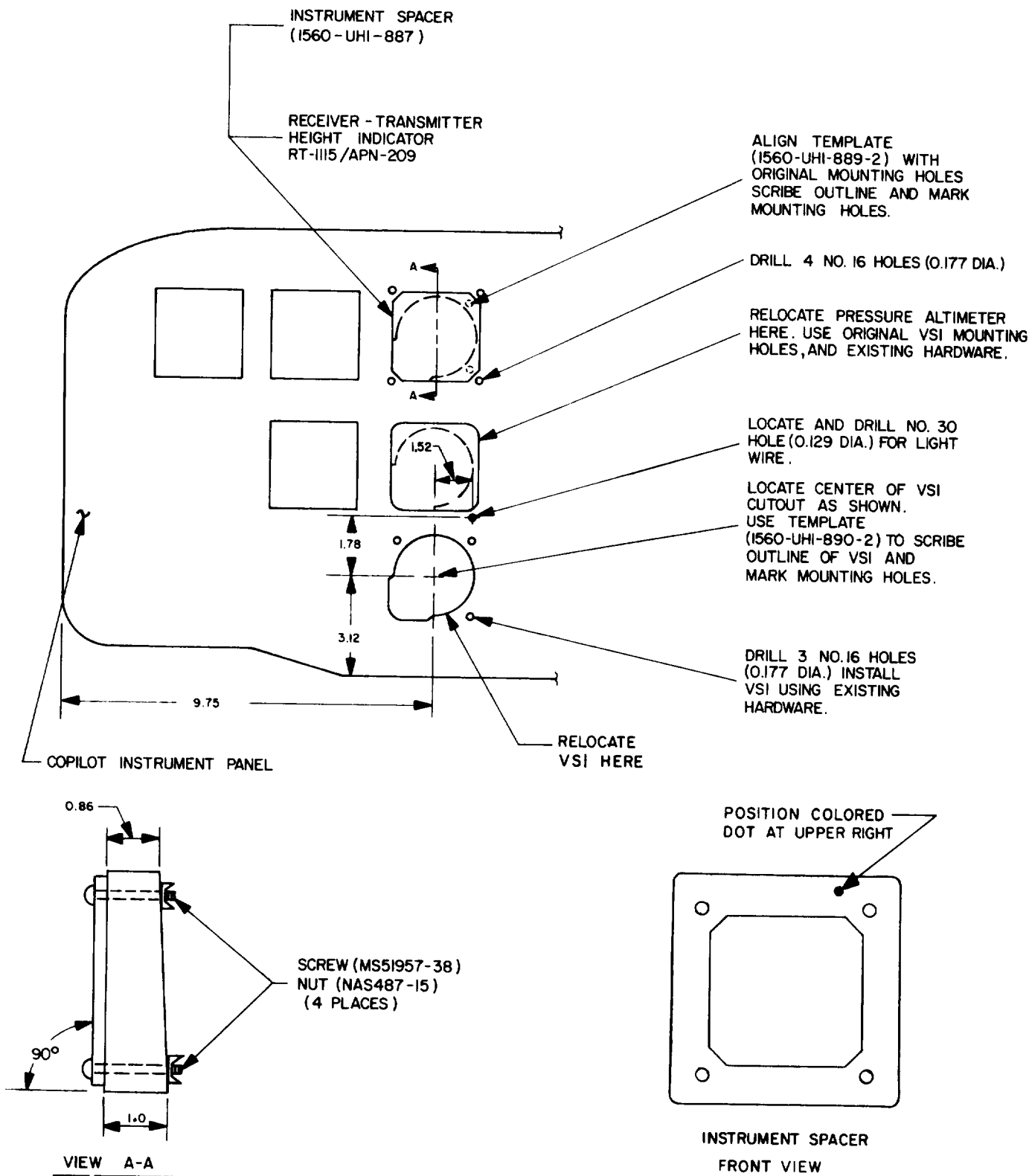


Figure 2. Instrument Panel Modification (Sheet 1 of 4)

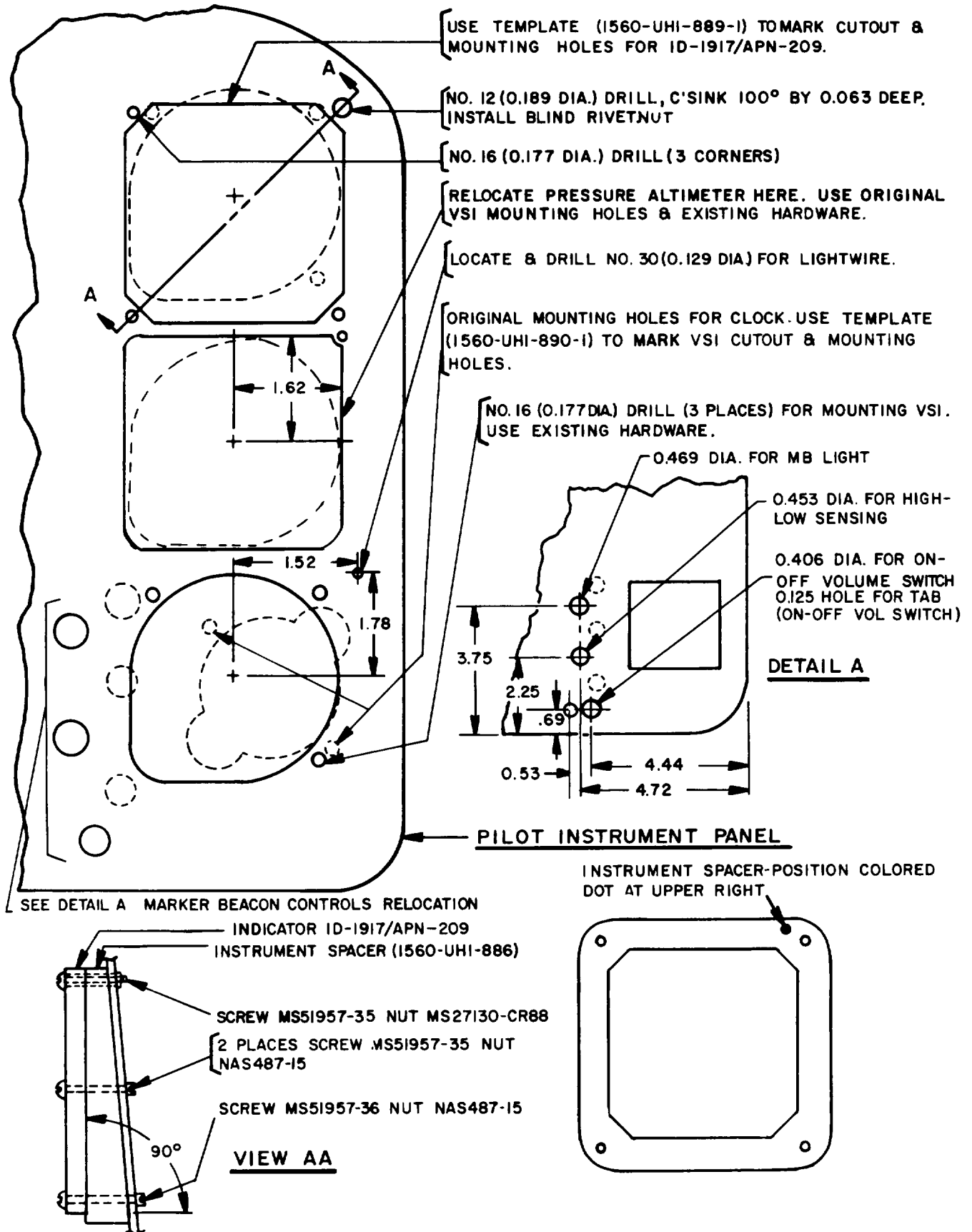
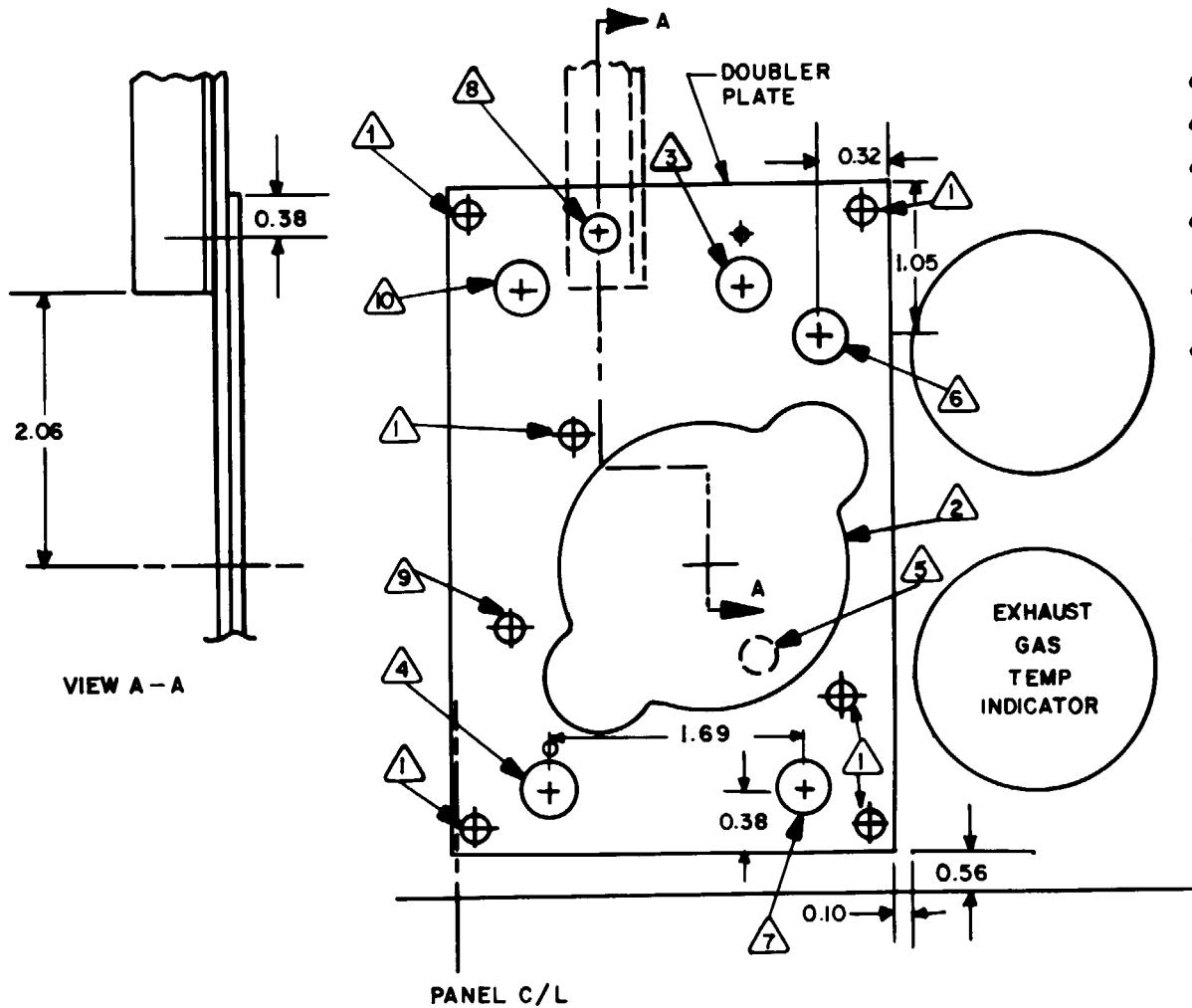


Figure 2. Instrument Panel Modification (Sheet 2 of 4)

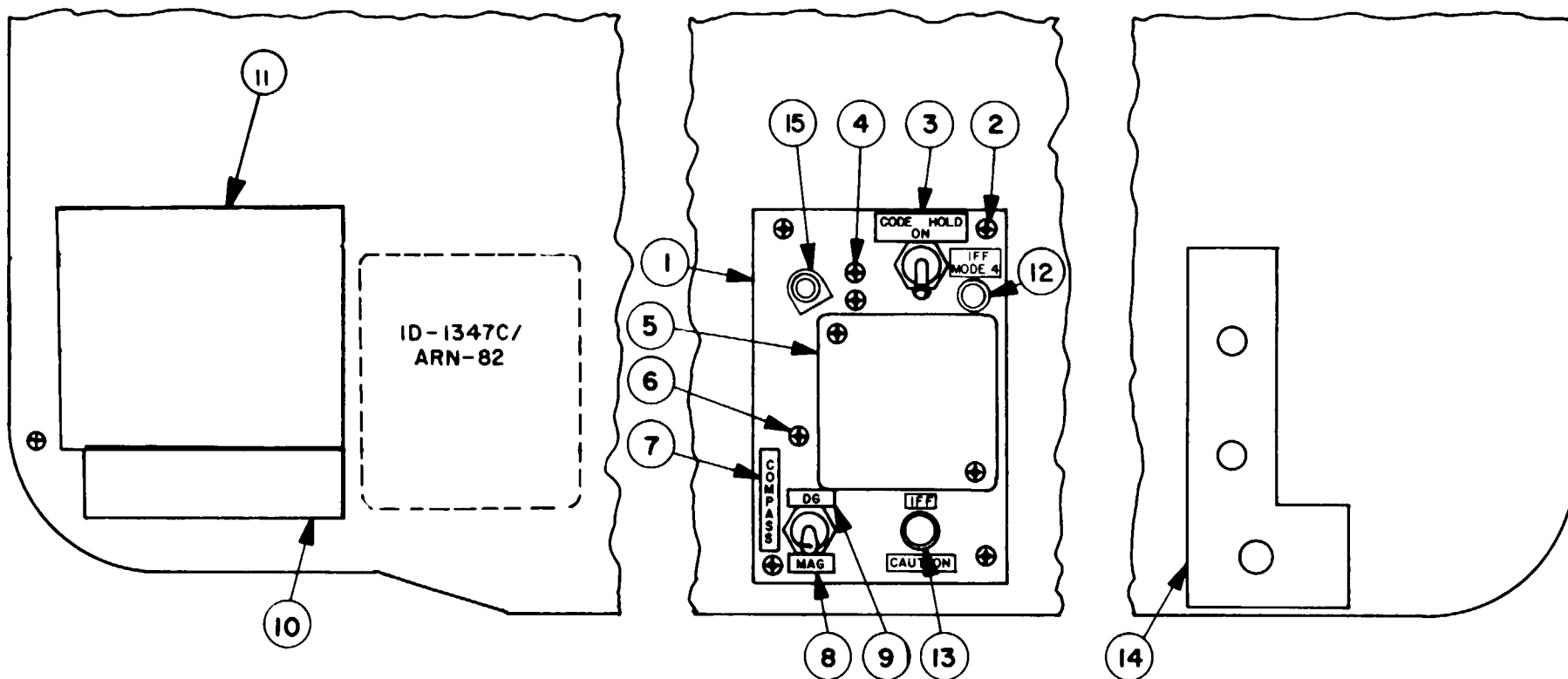


### WORK STATEMENTS

USE DOUBLER PLATE AS TEMPLATE  
(CUT THRU APR-39 DOUBLER PLATE  
IF INSTALLED)

- ① DRILL NO. 17 (0.173 DIA.) HOLES (6 PLACES)
- ② CUTOUT FOR CLOCK RELOCATION
- ③ DRILL 0.484 DIA. AND 0.125 DIA. HOLES FOR CODE HOLD LIGHT
- ④ DRILL 0.484 DIA. NO. 0.125 DIA. HOLES FOR COMPASS SLAVING SWITCH
- ⑤ EXISTING WIRE HARNESS CLAMP RELOCATE TO ⑨
- ⑥ IF APR-39 IS INSTALLED, DRILL 0.484 DIA. HOLE FOR IFF MODE 4 LIGHT (THRU DOUBLER PLATE AND PANEL)
- ⑦ IF IFF CAUTION LIGHT IS INSTALLED, DRILL 0.484 DIA. HOLE THRU DOUBLER AND PANEL
- ⑧ IF STIFFENER (205-070-948-25) IS INSTALLED, REMOVE BOTTOM PORTION (SEE VIEW A-A). DRILL NO. 16 (0.177 DIA.) HOLE THRU DOUBLER, PANEL, AND STIFFENER
- ⑨ DRILL NO. 16 (0.177 DIA.) HOLE.
- ⑩ DRILL NO. 7 (0.201 DIA.) HOLE FOR POST LIGHT

Figure 2. Instrument Panel Modification (Sheet 3 of 4)



LEGEND

- |   |  |   |
|---|--|---|
| ① DOUBLER PLATE, (I560-UHI-888).  | ⑥ SCREW (MS35207-273), FOR WIRE HARNESS CLAMP-EXISTING.  | ⑫ IFF MODE 4 LIGHT, (IF APR-39 IS INSTALLED). |
| ② INSTALL 4 PLACES; SCREW (MS51957-126), WASHER (MS27183-8), NUT (MS21044-C08).       | ⑦ DECAL, (I560-UHI-901-4).   | ⑬ IFF CAUTION LIGHT, (IF INSTALLED).          |
| ③ DECAL, (I560-UHI-901-1).  | ⑧ DECAL, (I560-UHI-901-2).   | ⑭ DECAL, (I560-UHI-899)                       |
| ④ SCREW (MS51957-46), WASHER (MS27183-8), NUT (MS21044-C08), IF STIFFENER IS PRESENT. | ⑨ DECAL, (I560-UHI-901-3).   | ⑮ POST LIGHT-RELOCATED                        |
| ⑤ CLOCK (USE EXISTING HARDWARE).  | ⑩ DECAL, (I560-UHI-903).   |   |
|   | ⑪ DECAL, (I560-UHI-908 -1 NOSE MOUNTED PITOT TUBE OR DECAL (I560-UHI-908-2, ROOF MOUNTED PITOT TUBE) |   |

Figure 2. Instrument Panel Modification (Sheet 4 of 4)

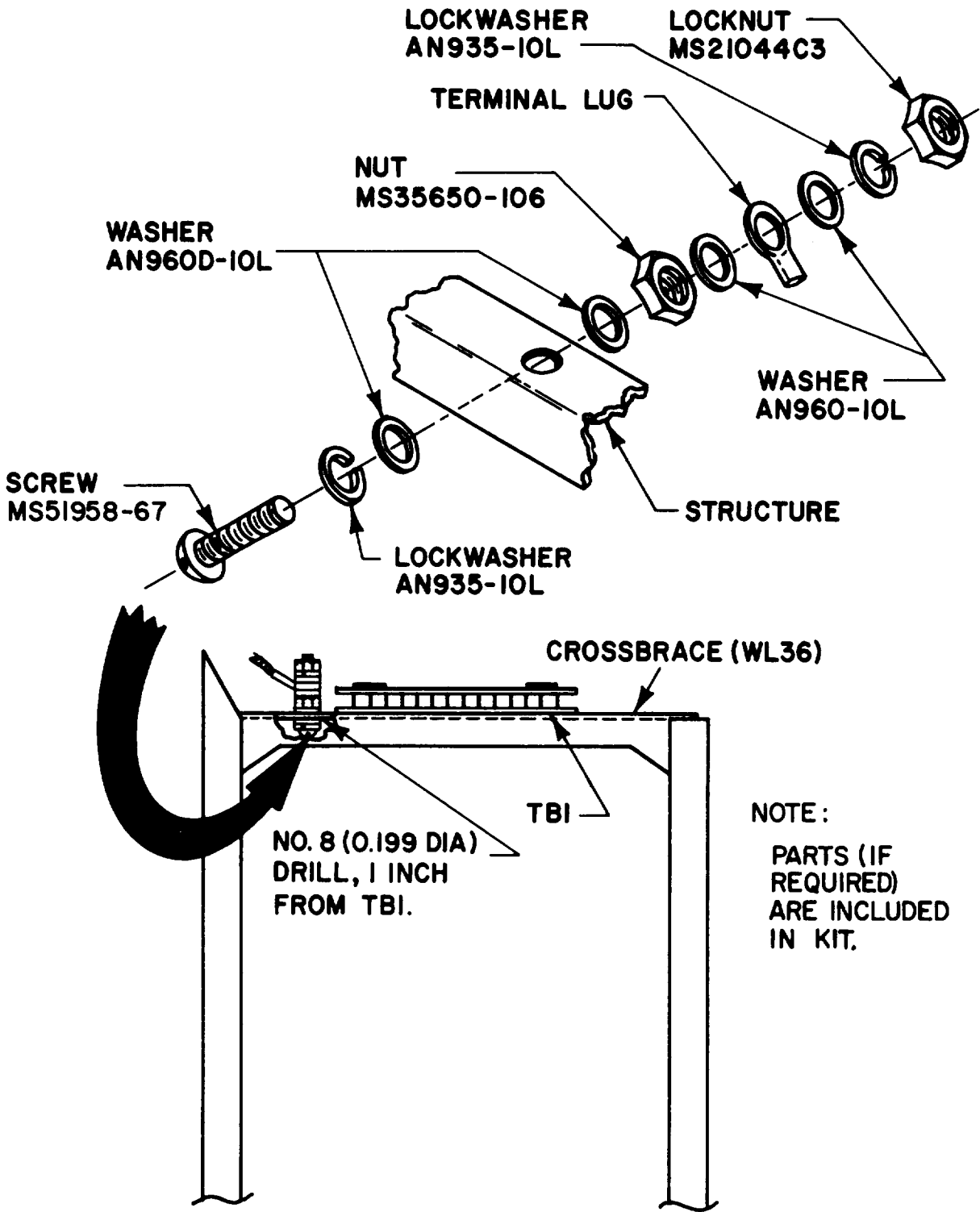


Figure 3. Installation of Ground Stud

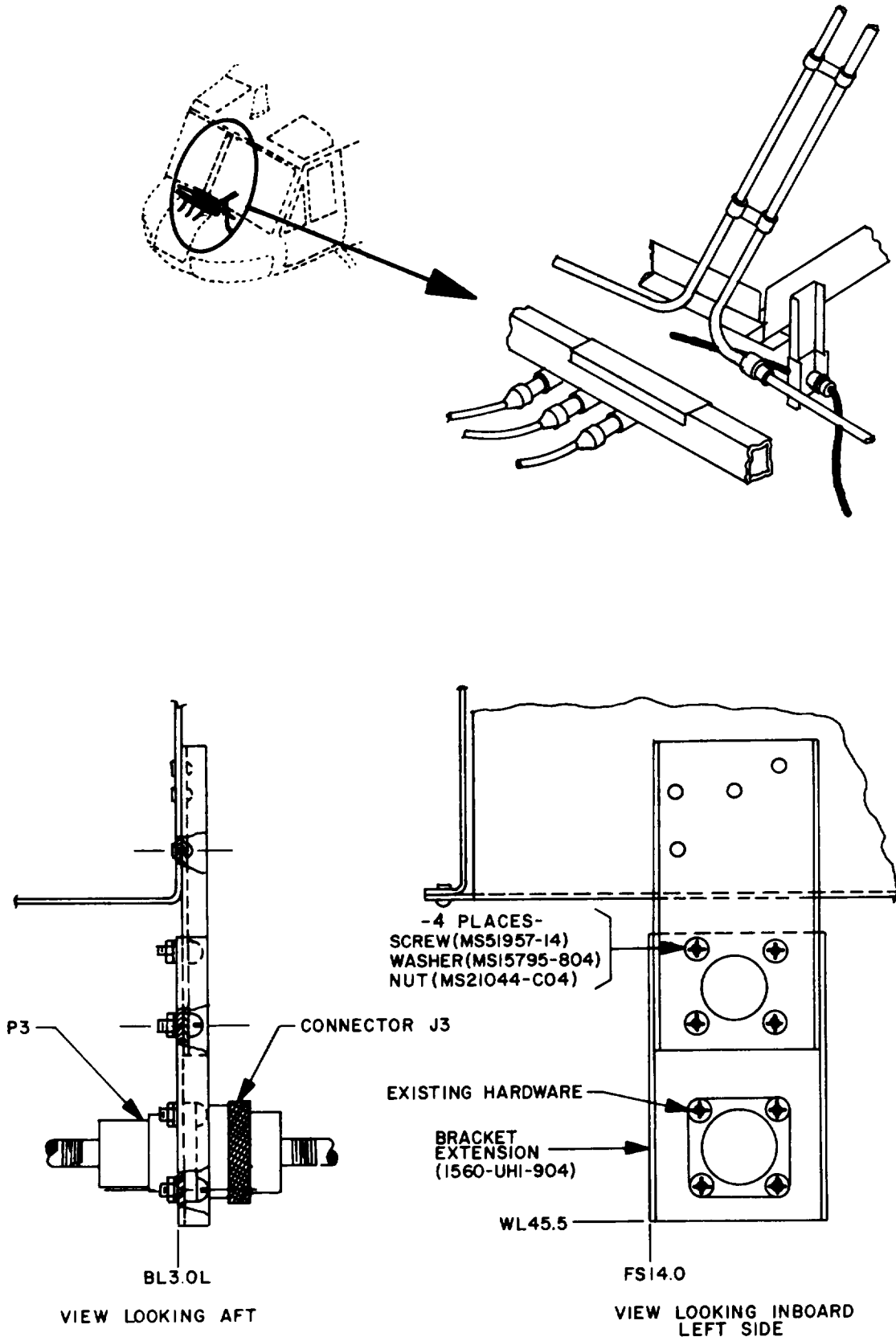


Figure 4. Installation of Bracket Extension

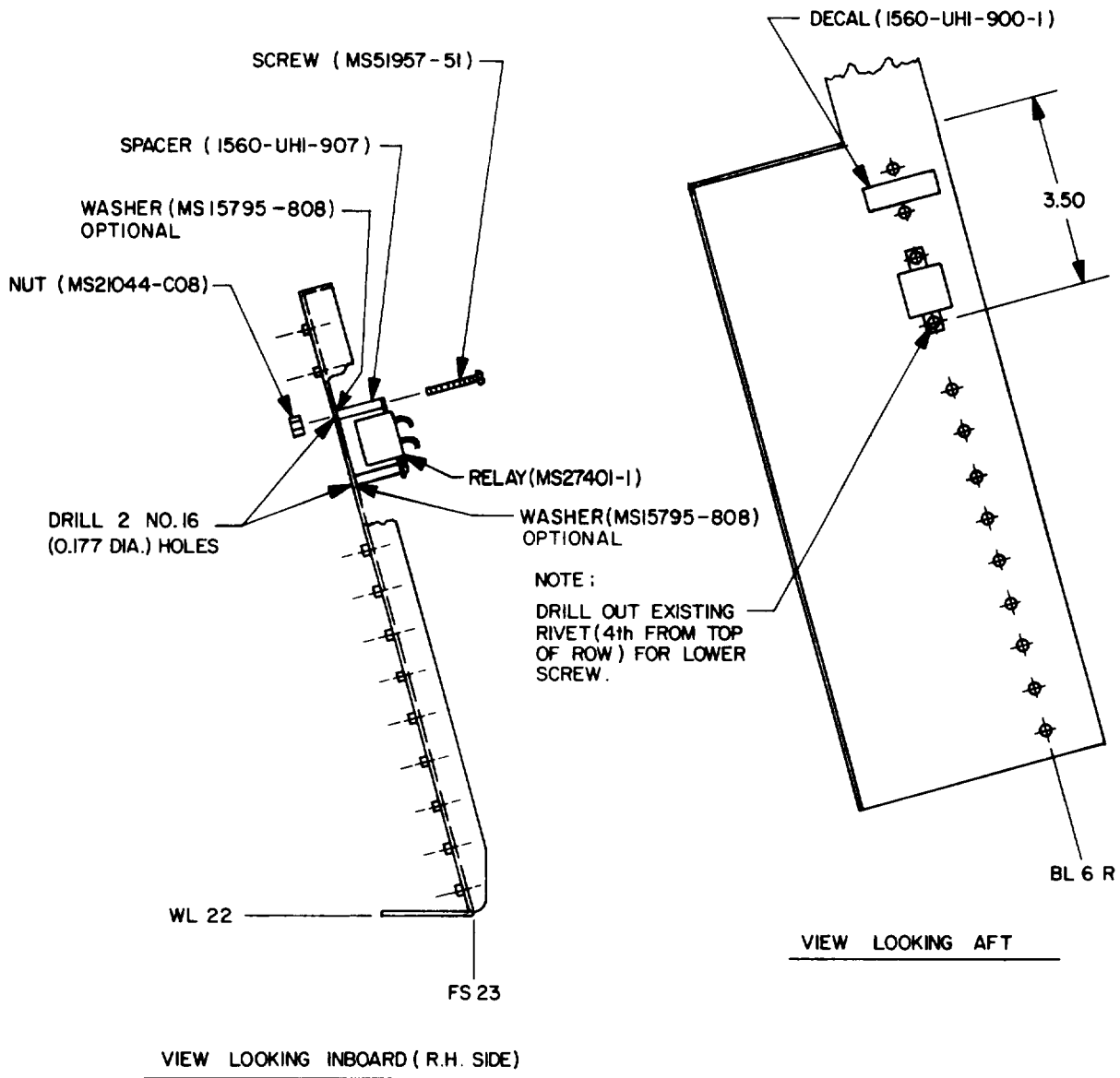


Figure 5. Installation of Relay K-100



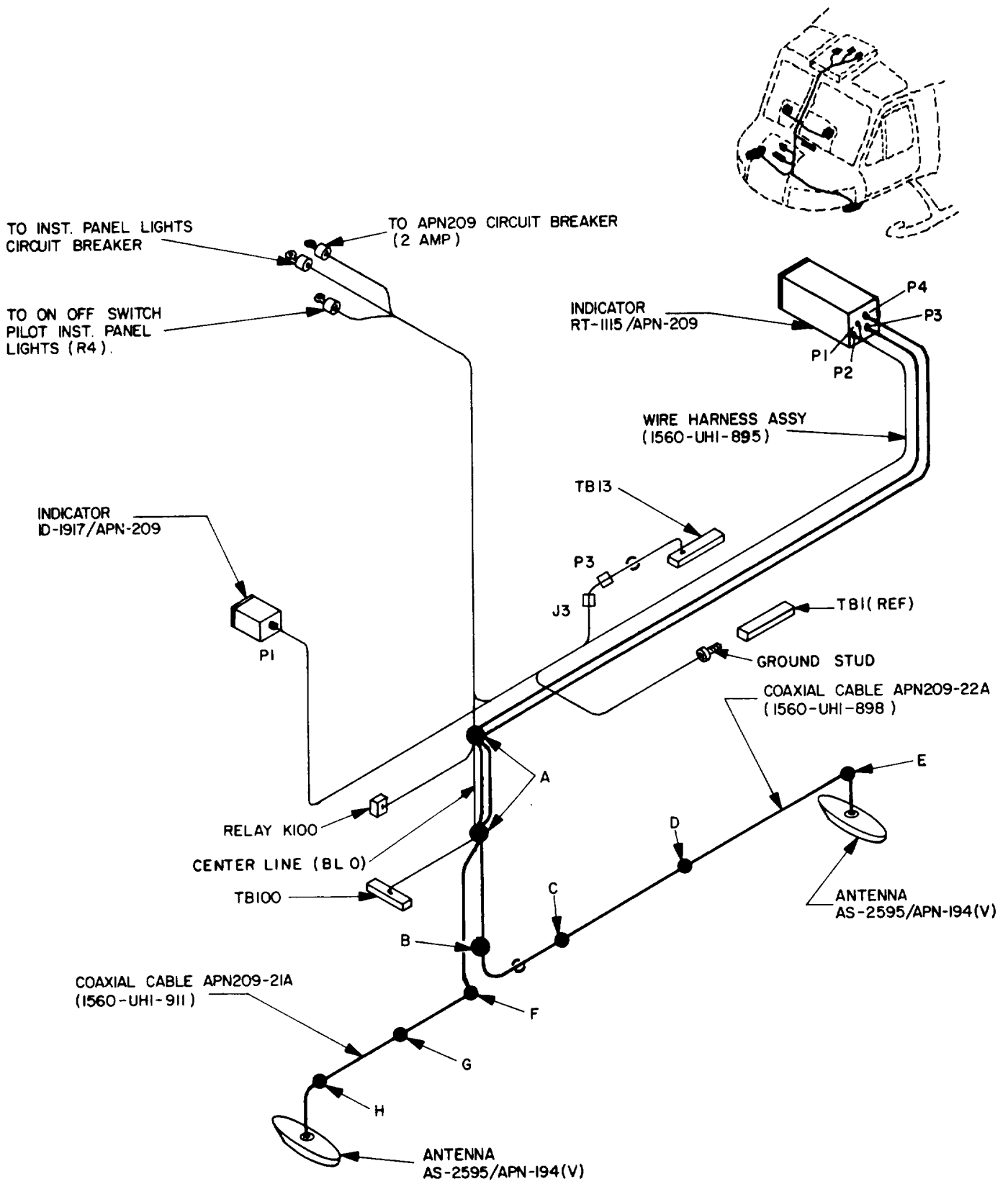


Figure 6. Cable Installation Detail (Sheet 1 of 4)

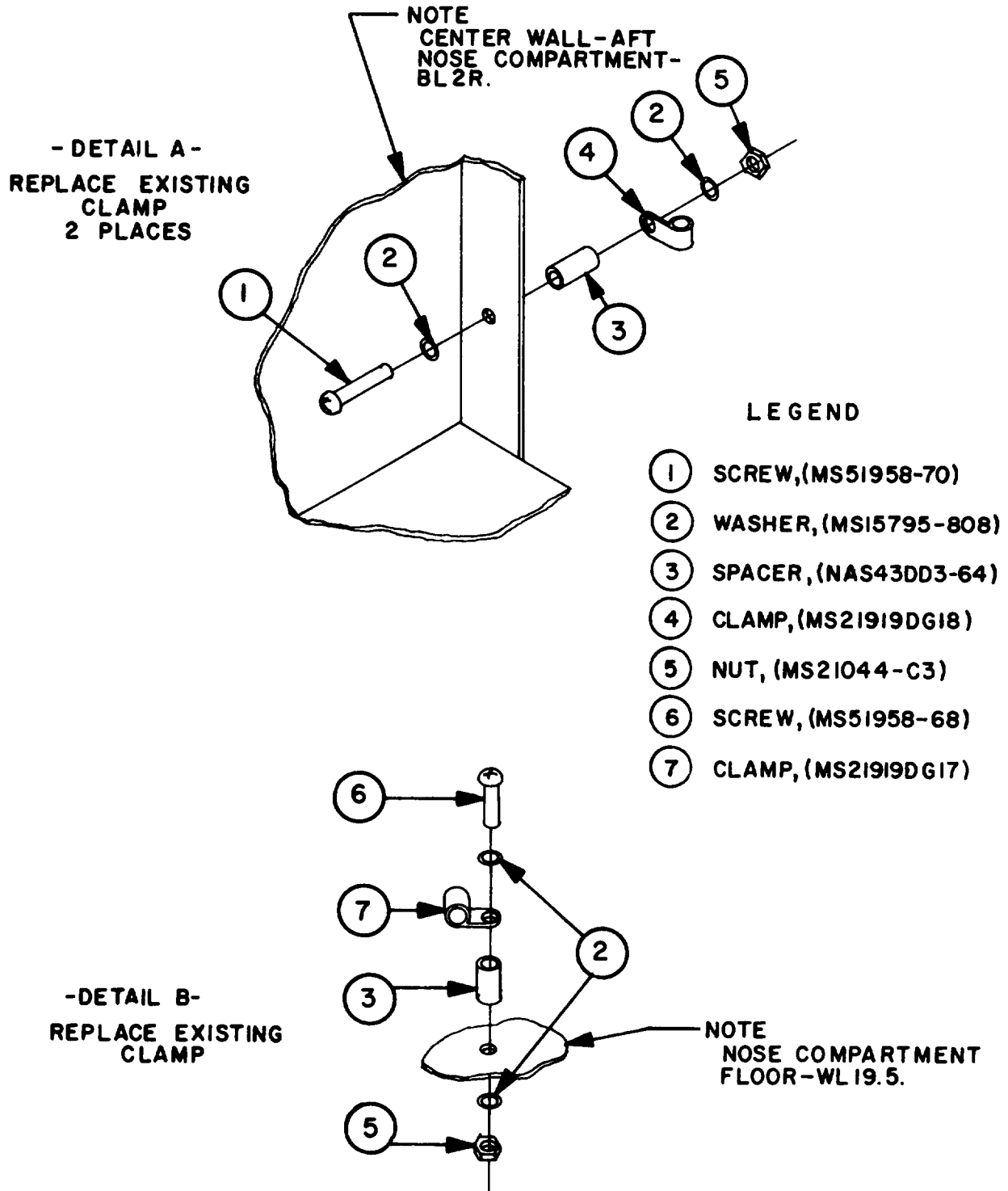


Figure 6. Cable Installation Detail (Sheet 2 Of 4)

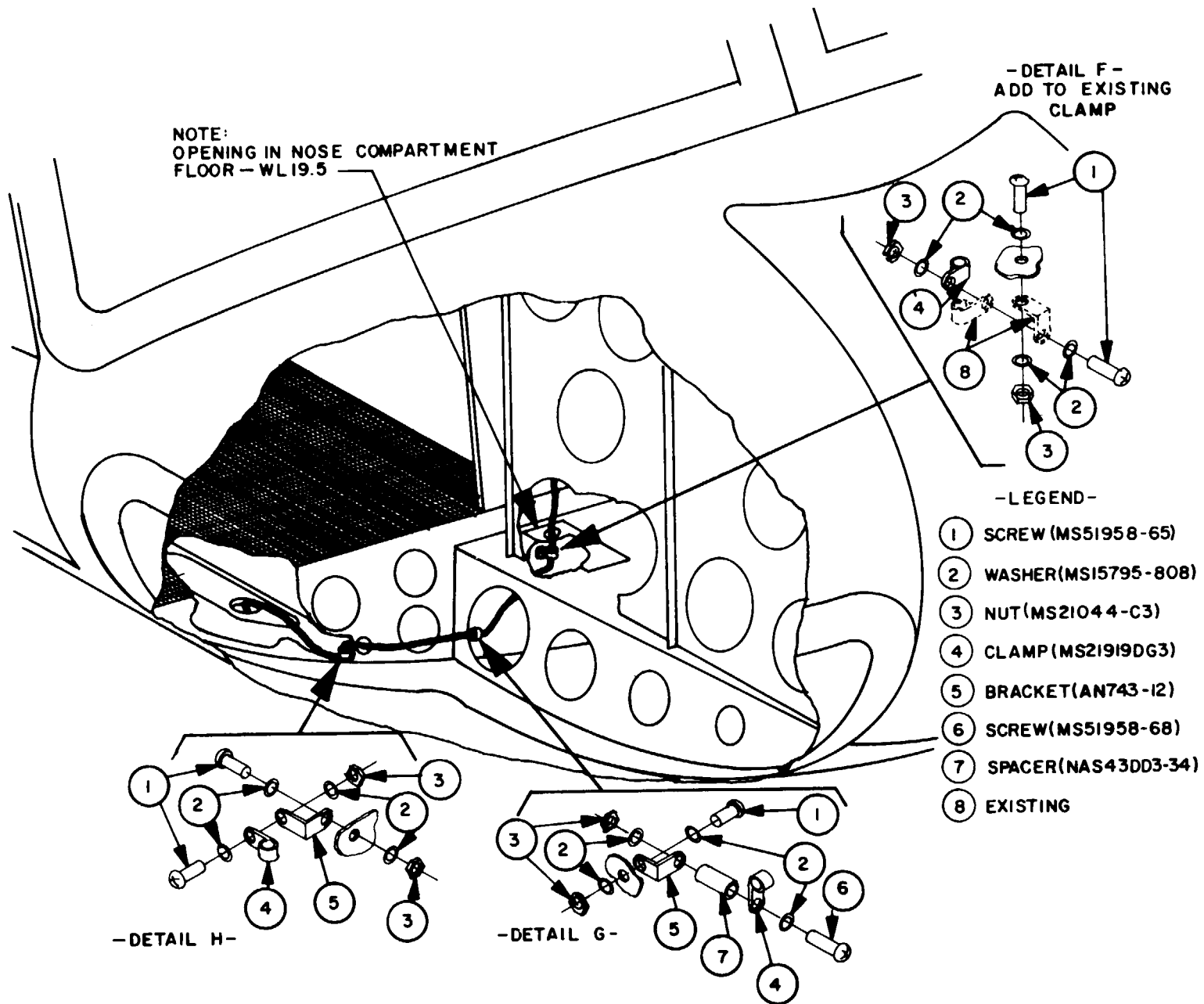


Figure 6. Cable Installation Detail (Sheet 3 of 4)

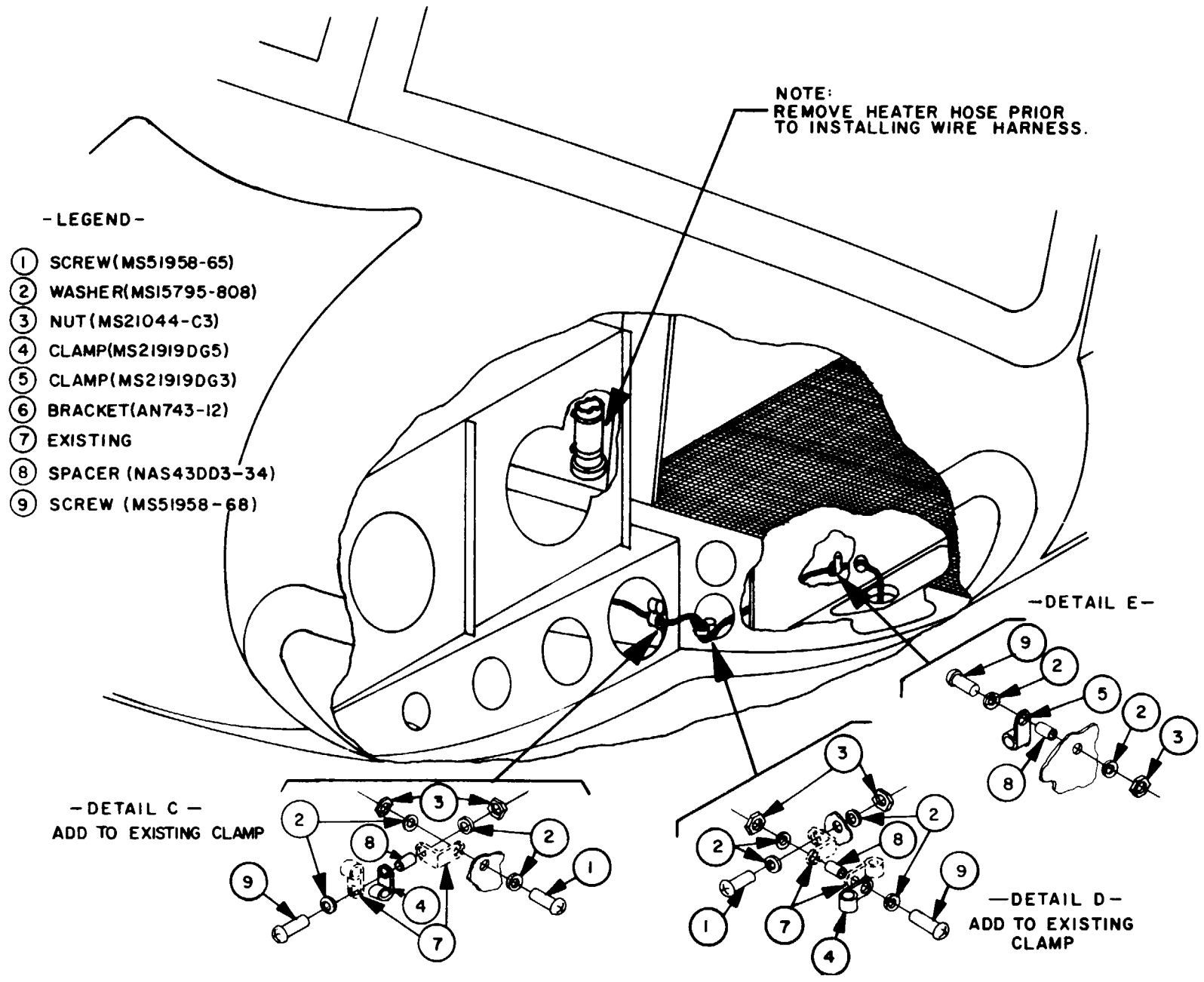


Figure 6. Cable Installation Detail (Sheet 4 of 4)

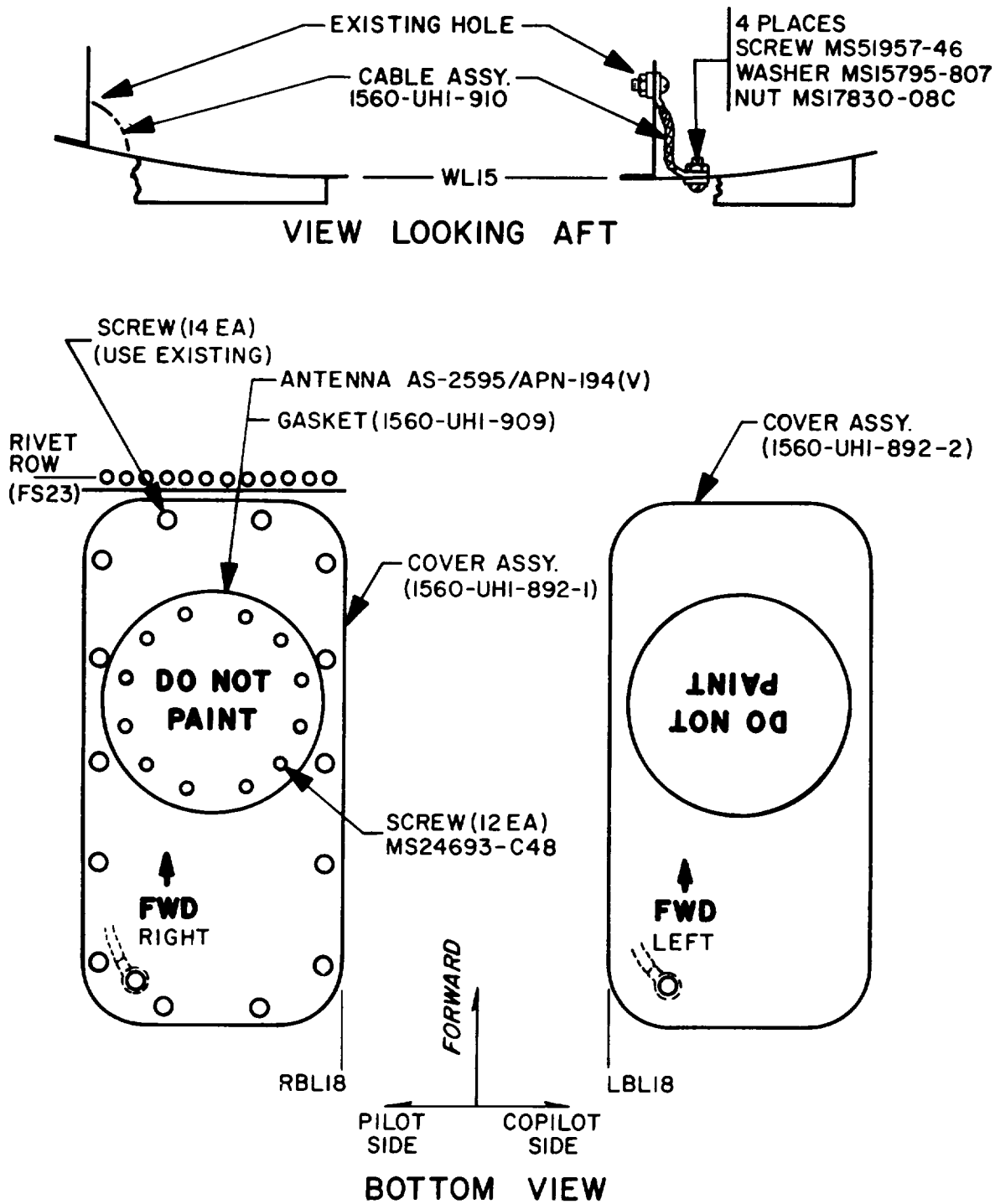


Figure 7. Antenna Installation AS-Z595/APN-194(V)

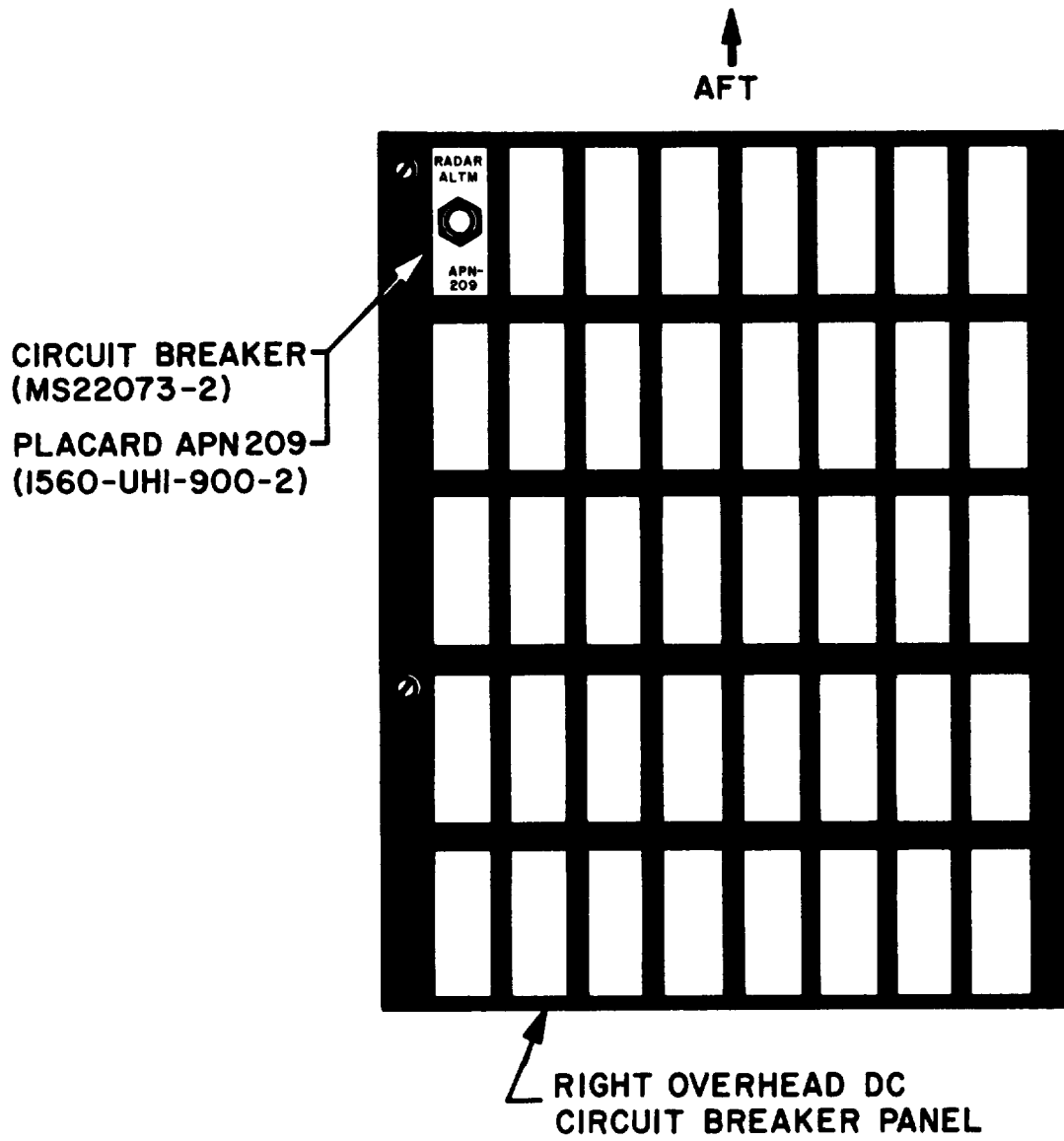


Figure 8. DC Circuit Breaker Installation - Typical

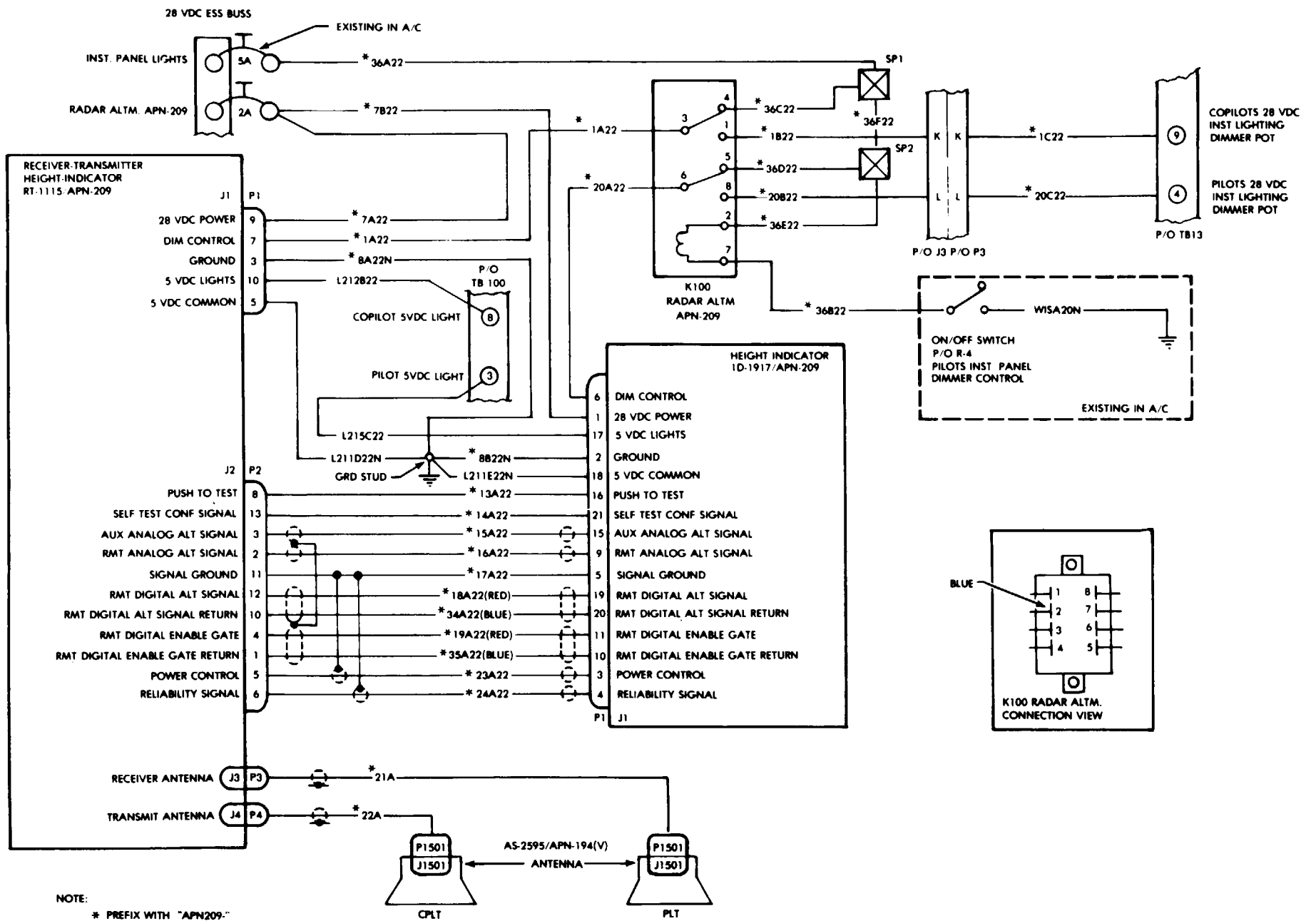


Figure 9. AN/APN-209 Wiring Diagram.

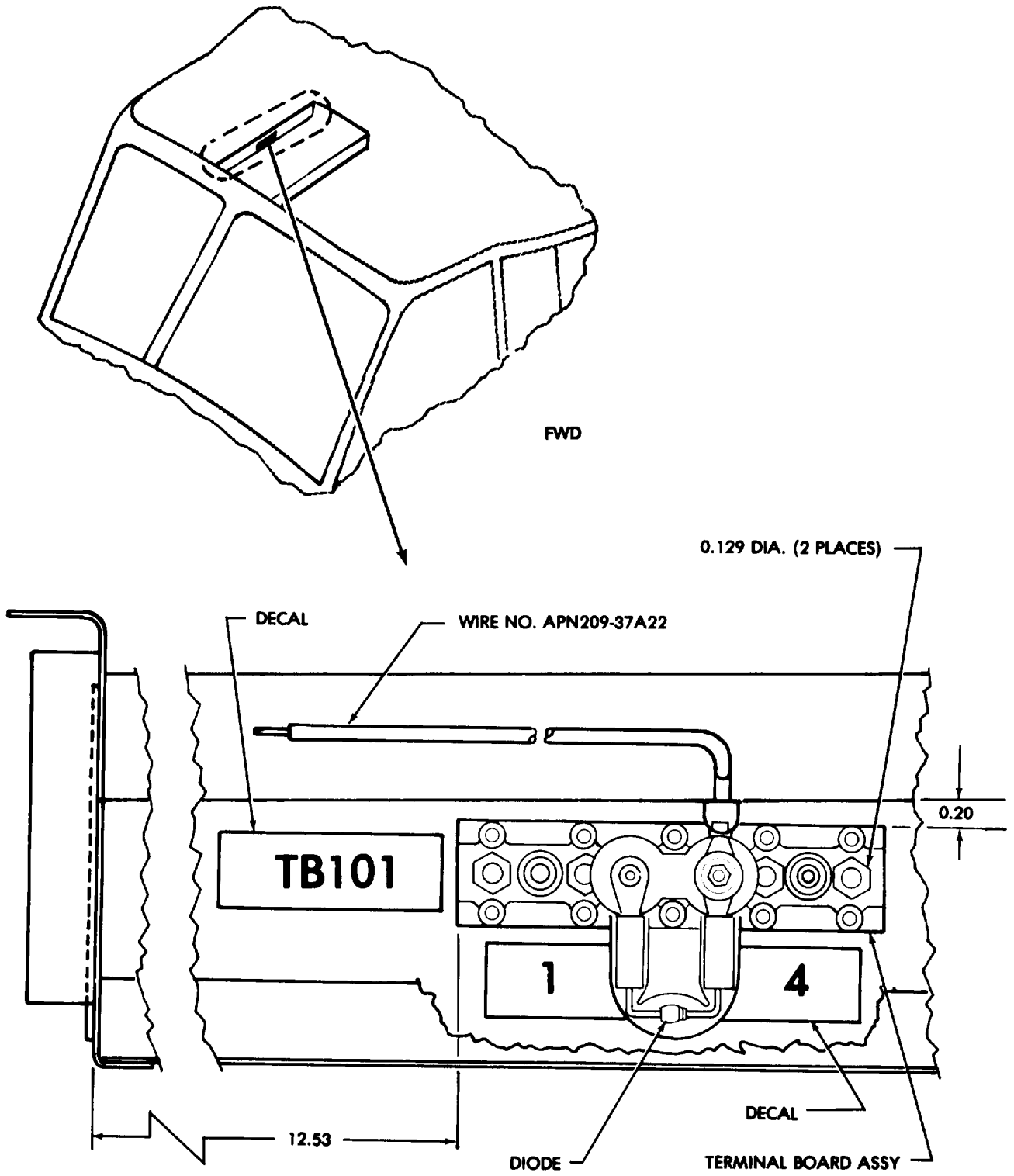


Figure 10. Installation of TerminalBoardTB101 Assembly.



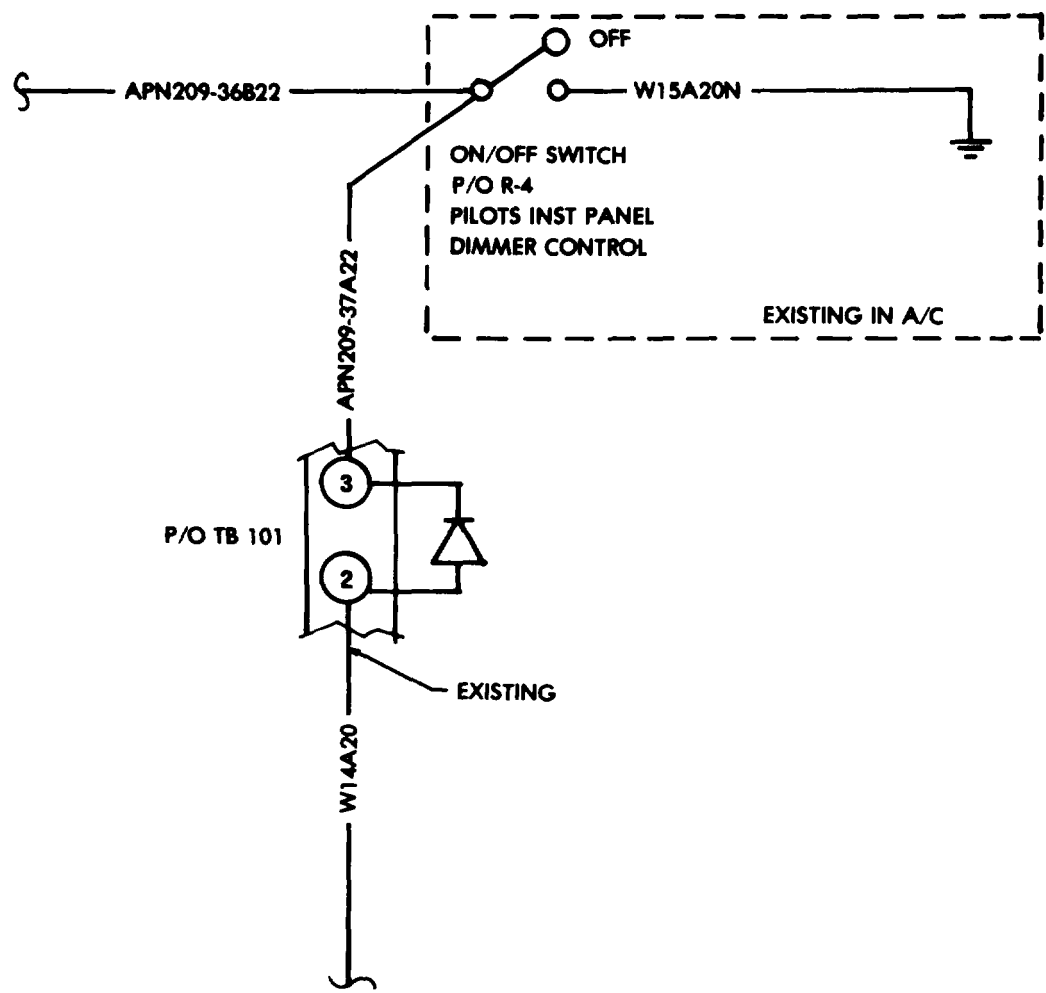


Figure 11. Interface Wiring TB101.

**e. Chart "C" Entries (DD Form 365C, Basic Weight and Balance Record).**

Description	Weight (Added)	Moment/100 (inch pounds)
MWO 55-1520-210-30-48	12.3 pounds	3.2

**13. Quality Assurance Requirement.** Inspection of complete MWO application for full compliance with the technical requirements of the instructions will be accomplished by qualified personnel in accordance with an approved prescribed inspection system. The inspection, in effect will be determined on the basis of instructions issued at the site of work; i.e., Army Org/DS/GS, Army Depot, Contractor, etc.

**14. Recording and Reporting of the Modification.**

a. Record accomplishment of the modification in accordance with the procedures prescribed in TM 38-750. The following forms are applicable: DA Form 2407 (Maintenance Request), DA Form 2408-5 (Equipment Modification Record - Aircraft), DA Form 2408-13 (Aircraft Inspection and Maintenance Record), DA Form 2408-15 (Aircraft Historical Record), DA Form 2408-9 (Equipment Control Record), and DA Form 2408-17 (Aircraft Inventory Record). After completing the DA Form 2407, mail the NMP Copy (Copy 2) to Commander, US Army Troop Support and Aviation Materiel Readiness Command (TSARCOM), ATTN: DRSTS - MDO, 4300 Goodfellow Blvd., St. Louis, MO 63120. If the application is accomplished by field personnel under a negotiated MOU and requires reimbursement, mail the Control Copy (Copy 3) to Commander, US Army Depot System Command (DESCOM), ATTN: DRSDS-PM, Chambersburg, PA 17201. Procurement Request Order Number (PRON), Memorandum of Understanding (MOU) Number and fiscal station code will be annotated in Block 35. If application is accomplished by depot or contractor teams, Copy 3 will not be submitted to DESCOM and may be disposed of in accordance with TM 38-750.

b. Log book forms shall be revised to reflect UH-1V, NSN 1520-01-043-4949, as required. Aircraft data plate shall be removed and the series symbol "H" obliterated. Using a 3/16 inch steel stamp, add series symbol "V" and reinstall data plate. Change helicopter model designation in accordance with TB 746-93-2.

c. Revise property books as required.

**15. Product Improvement Proposal (PIP) Number.** PIP Number 1-76-01-0802 is authority for this MWO.

**By Order of the Secretary of the Army:**

**E. C. MEYER**  
*General, United States Army*  
*Chief of Staff*

**Official:**

**J. C. PENNINGTON**  
*Major General United States Army*  
*The Adjutant General*

**DISTRIBUTION:**

To be distributed in accordance with DA Form 12-31, MWO Requirements for UH-1D/H and EH-1H aircraft.



# SOMETHING WRONG WITH THIS MANUAL?

THEN... JOT DOWN THE DOPE ABOUT IT ON THIS FORM. TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

FROM: (YOUR UNIT'S COMPLETE ADDRESS)  
 PFC JOHN DOE  
 COA, 3<sup>d</sup> ENGINEER BN  
 FT. LEONARD WOOD MO 63108

DATE

PUBLICATION NUMBER

MWO 55-1520-210-30-48

DATE

23 Jul 80

TITLE

Installation of Altimeter Set,  
 Electronic AN/APN-209 in UH-1H

BE EXACT... PIN-POINT WHERE IT IS

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.
6	2-1 a		
81		4-3	
125	line 20		

In line 6 of paragraph 2-1a the manual states the engine has 6 cylinders. The engine on my set only has 4 cylinders. Change the manual to show 4 cylinders.

Callout 16 on figure 4-3 is pointing at a bolt. In the key to fig. 4-3, item 16 is called a shim. Please correct one or the other.

Ordered a gasket, item 19 on figure B-16 by NSN 2910-00-762-3001. I got a gasket but it doesn't fit. Supply says I got what I ordered, so the NSN is wrong. Please give me a good NSN.

SAMPLE

TEAR ALONG DOTTED LINE

TYPED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

JOHN DOE, PFC (268) 317-7111

SIGN HERE:

John Doe

DA FORM 2028-2  
 1 AUG 74

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR MANUAL "FIND," MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.  
 DRSTS-M Overprint 1, 1 Nov 78

FILL IN YOUR  
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Materiel Readiness Command  
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REVERSE OF DA FORM 2026-2





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# SOMETHING WRONG WITH THIS MANUAL?

FROM: (YOUR UNIT'S COMPLETE ADDRESS)

DATE

PUBLICATION NUMBER

MWO 55-1520-210-30-48

DATE

23 Jul 80

TITLE

Installation of Altimeter Set,  
Electronic AN/APN-209 in UH-1H

BE EXACT... PIN-POINT WHERE IT IS

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PAGE NO.

PARA-GRAPH

FIGURE NO.

TABLE NO.

TEAR ALONG DOTTED LINE

TYPED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE:

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FOLD BACK

TEAR ALONG DOTTED LINE

# The Metric System and Equivalents

## Linear Measure

1 centimeter = 10 millimeters = .39 inch  
 1 decimeter = 10 centimeters = 3.94 inches  
 1 meter = 10 decimeters = 39.37 inches  
 1 dekameter = 10 meters = 32.8 feet  
 1 hectometer = 10 dekameters = 328.08 feet  
 1 kilometer = 10 hectometers = 3,280.8 feet

## Weights

1 centigram = 10 milligrams = .15 grain  
 1 decigram = 10 centigrams = 1.54 grains  
 1 gram = 10 decigram = .035 ounce  
 1 dekagram = 10 grams = .35 ounce  
 1 hectogram = 10 dekagrams = 3.52 ounces  
 1 kilogram = 10 hectograms = 2.2 pounds  
 1 quintal = 100 kilograms = 220.46 pounds  
 1 metric ton = 10 quintals = 1.1 short tons

## Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce  
 1 deciliter = 10 centiliters = 3.38 fl. ounces  
 1 liter = 10 deciliters = 33.81 fl. ounces  
 1 dekaliter = 10 liters = 2.64 gallons  
 1 hectoliter = 10 dekaliters = 26.42 gallons  
 1 kiloliter = 10 hectoliters = 264.18 gallons

## Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch  
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches  
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet  
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet  
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres  
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

## Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch  
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches  
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

## Approximate Conversion Factors

To change	To	Multiply by	To change	To	Multiply by
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.365	metric tons	short tons	1.102
pound-inches	newton-meters	.11375			

## Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C
----	------------------------	----------------------------	---------------------	----

**PIN: 046418-000**