#### NORMAL

MWO effective date 1 October 1980 and completion date 30 September 1990

MWO 55-1520-241-30-2

CHANGE NO. 3

# DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER

REWIRING OF THE ANTI-COLLISION/ NAVIGATION LIGHT CIRCUIT CH-47B AND CH-47C HELICOPTERS

# Headquarters, Department of the Army, Washington, D. C. 25 January 1988

MWO 55-1520-241-30-2, 12 January 1981, is changed as follows:

Page 2. Paragraph 3. The column "Serial Number" effectivity is superseded as follows:

#### Serial Number

CH-47B	66-19098 thru 66-19141
	67-18432 thru 67-18492
CH-47C	67-18494 thru 67-18551
	68-15811 thru 68-15868
	68-15990 thru 68-16021
	69-17101 thru 69-17126
	70-15000 thru 70-15034
	71-20945 thru 71-20955
	74-22271 thru 74-22294
	76-22673 thru 76-22684
	79-23394 thru 79-23401
	85-24734 thru 85-24744

## 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 CH-47B and CH-47C Helicopters, Cargo Transport.

#### DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER

## REWIRING OF THE ANTI-COLLISION/ NAVIGATION LIGHT CIRCUIT (CH-47A, CH-47B AND CH-47C HELICOPTERS)

# Headquarters, Department of the Army, Washington, D. C. 25 January 1987

MWO 55-1520-241-30-2, 12 January 1981, is changed as follows:

Page 1. At top of page, change statement to read, "MWO effective date 1 October 1980 and completion date 30 September 1990.

Page 1. Reporting of Errors, lines 5 and 6, change "US Army Troop Support and Aviation Materiel Readiness Command, ATTN: DRSTS-MTT" to "US Army Aviation Systems Command, ATTN: AMSAV-MPSD." Line 7, change "63120" to "63120-1798."

Page 1. Paragraph 2c, last line, change "TM 38-450" to "DA Pam 738-751."

Page 2. Paragraph 3. The column "Serial Number" effectivity is superseded as follows"

	Serial Number		Serial Number
CH-47A	61-02424	CH-47C	67-18494
	62-02136		67-18551
	64-13165		68-15811
	65-07967		69-17101
	65-08023		70-15000
CH-47B	66-19098		71-20945
	66-19141		71-20955
	67-18432		74-22271
	67-18492		74-22294
			76-22673
			76-22684
			79-23394
			79-23401
			85-24734 thru
			85-24744

Page 2. Paragraph 6a, change "MWO effective date 1 October 1980 and completion date 31 March 1982" to "MWO effective date 1 October 1980 and completion date 30 September 1990.

<sup>\*</sup>Supersedes Change 1, 30 June 1983

Page 4. Paragraph 14a, last line, change "DA Form 2407-15 (Aircraft Historical Record)" to "DA Form 2407-5 (Equipment Modification Record)."

# By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR. 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 CH-47A, CH-47B, and CH-47C Helicopter, Cargo Transport.

#### NORMAL

MWO effective date 1 October 1980 and completion date 31 March 1982

MWO 55-1520-241-30-2

#### DEPARTMENT OF THE ARMY MODIFICATION WORK ORDER

REWIRING OF THE ANTI-COLLISION/ NAVIGATION LIGHT CIRCUIT (CH-47A, CH-47B AND CH-47C HELICOPTERS)

Headquarters, Department of the Army, Washington, D. C. 12 January 1981

#### REPORTING 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-MTT, 4300 Goodfellow Blvd., St. Louis, Missouri 63120. A reply will be furnished directly to you.

- 1. Purpose of Modification. The purpose of this modification is to rewire the anti-collision/navigation light circuit to receive power from the DC primary bus instead of the DC secondary bus. This permits these lights to operate during rotor coast down as required by AR 95-1.
- 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 MWO which have been incorporated into DMWR, will be accomplished on serviceable material prior to issue and/or subsequent to scheduled completion date. Operational project stock stored at the depots will be modified concurrently with depot stock. Issue of unmodified material is prohibited. The MWO will be applied to unserviceable material during scheduled depot maintenance.
- c. Prepositioned Stock. Equipment which is prepositioned 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 in .accordance with instructions contained in paragraph 10.

Nomenclature	National Stock Number	Model	Serial Number
Helicopter, Cargo Transport	1520-00-633-6836	CH-47A	64-13108 thru 64-13165 65-7967 thru 65-8023 66-074 thru 66-124 66-19000 thru 66-19097
Helicopter, Cargo Transport	1520-00-990-2941	CH-47B	66-19098 thru 66-19141 67-18432 thru 67-18492
Helicopter, Cargo Transport	1520-00-871-7308	CH-47C	67-18494 thru 67-18551 68-15811 thru 68-15868 68-15990 thru 68-16021 69-17101 thru 69-17126 70-15000 thru 70-15034 71-20945 thru 71-20955 74-22271 thru 74-22294 76-22673 thru 76-22684 79-23394 thru 79-23401

- 4. Modules (Components, Assemblies, Subassemblies, Boards and Cards) to be Modified The following items whether installed or in stock, will be modified. This modification affects aircraft configuration of the overhead panel wiring.
- 5. Parts to be Modified. Not applicable.
- 6. Application.
  - a. Time Compliance Schedule. MWO effective date 1 October 1980 and completion date 31 March 1982.
  - b. Level of Maintenance. AVIM.
  - c. Applied By. Aircraft Electrician MOS 68F.
  - d. Time Required.
    - (1) Time for completion of MWO application to one end item.
      - (a) Total of 1.5 hours using a crew of one.
      - (b) Total of 1.5 hours downtime for one end item.
    - (2) Time for completion of one assembly or component. Not applicable.
  - e. MWOs to be Applied Prior to or Concurrently with this MWO. Not applicable.

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

TM 55-1520-227-10-1	TM 55-1520-227-23-3
TM 55-1520-227-CL-1	TM 55-1520-209-10
TM 55-1520-227-10-2	TM 55-1520-209-CL
TM 55-1520-227-CL-2	TM 55-1520-209-23-3

- 8. Supply Kits/Parts and Disposition.
  - a. Kits/Parts required to accomplish MWO. Not applicable.
  - b. Distribution and Issue Instructions. Not applicable.
  - c. Parts Disposition. Not applicable.
- d. Bulk and Consumable Materials. The following material required to comply with this modification, may be requisitioned.

National Stock Number	Nomenclature	Part Number	Quantity	Source
6145-00-578-7513	Wire	AN10	3 ft.	B16
5940-00-143-4794	Terminal Lug	MS25036-112	4	B16
*5940-00-840-0139	#20 Wire Splice	MS25181-1	2	B16

<sup>\*</sup>Used on CH-47A only.

- 9. Special Tools; Jigs; Test, Measurement and Diagnostic Equipment (TMDE); and Fixtures Required. Not applicable.
- 10. Modification Procedures (Authority ECP A-E0004). Prepare the aircraft for safe ground maintenance. Turn off all electrical power to aircraft before rework. Disconnect battery.
  - a. Modification of CH-47A Helicopter (Figures 1 and 2).
    - (1) Remove bus bar for modification.
    - (2) Cut bus bar between item 21 and item 22.
    - (3) Install bus bars.
    - (4) Disconnect wire P60A10 from item 19 and connect to item 24.
- (5) Remove AN10 feeder wire from item 19 to item 13. Manufacture new feeder wire AN10 and route from item 13 to item 22.
  - (6) Add an AN10 feeder wire between item 7 and item 19.
- (7) Check to ensure operation of the anti-collision lights and navigation lights with battery connected, battery switch ON, and light switch ON.

- b. Modification of CH-47B and CH-47C Helicopters (Figures 3 and 4).
  - (1) Remove bus bar for modification.
  - (2) Cut bus bar between CB140 and CB1044.
  - (3) Install bus bars.
  - (4) Disconnect wire P60A10 from CB142 and connect to CB1042.
- (5) Remove feeder wire AN10 from CB144 to CB152. Manufacture new feeder wire AN10 and route from CB152 to CB1044.
  - (6) Add feeder wire AN10 between CB1000 and CB144.
- (7) Check to ensure operation of the anti-collision lights and navigation lights with battery connected, battery switch ON, and light switch ON.
- 11. Calibration Requirements. Not applicable.
- 12. Weight and Balance Data. Weight and balance are not significantly affected.
- 13. Quality Assurance Requirements. Inspection of completed MWO application for full compliance with the technical requirements of the instructions will be done by qualified personnel in accordance with an approved prescribed inspection system. The inspection system in effect will be determined on the basis of instructions issued at the site of work, i.e., Army AVUM/AVIM, Army Depot, Contractor, etc.
- 14. Recording and Reporting of the Modification.
- a. Records and Reports Forms. Record accomplishment of this modification in accordance with the procedures prescribed in TM 38-750. The following forms are applicable: DA Form 2407 (Maintenance Request), DA Form 2408-13 (Aircraft Inspection and Maintenance Record), and DA Form 2407-15 (Aircraft Historical Record).
- b. Completion of DA Form 2407, Maintenance Request. Reporting of MWO application will be accomplished as required by TM 38-750. After completing the DA Form 2407 (Figure 5), mail the NMP Copy (Copy 2) to Commander, US Army Troop Support and Aviation Materiel Readiness Command, ATTN: DRSTS-MEM, 4300 Goodfellow Blvd., St. Louis, Missouri 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, Pennsylvania 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.
- 15. Product Improvement Proposal (PIP) Number. Not applicable.

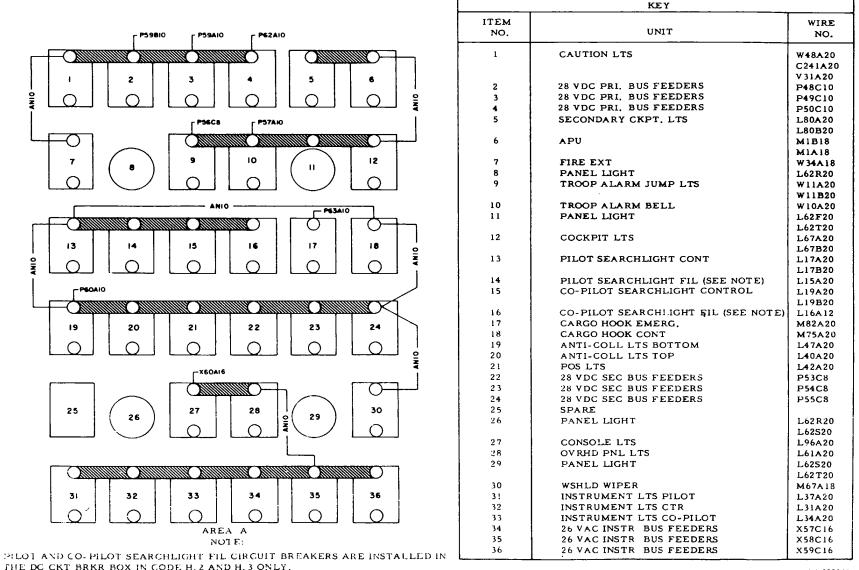


Figure 1. Overhead panel wiring chart, area, A CH-47A.

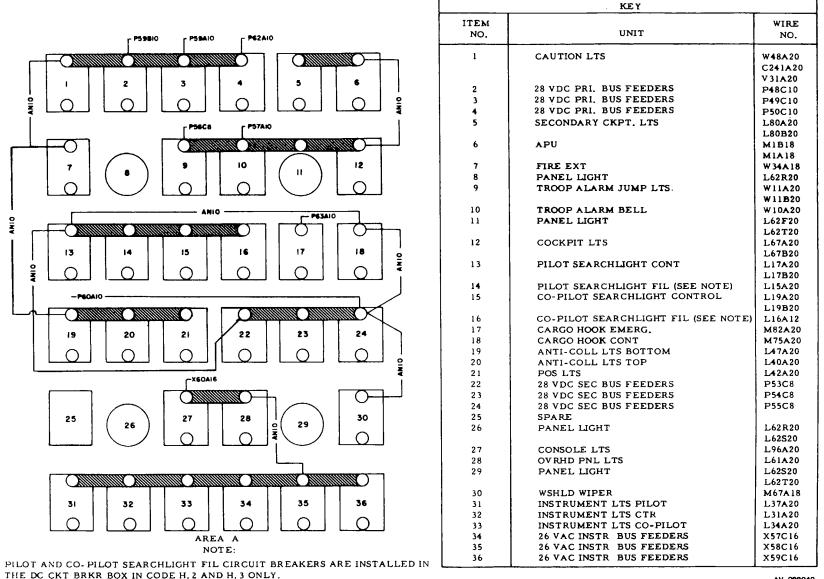


Figure 2. Modified overhead panel wiring chart, area A,CH-47A.

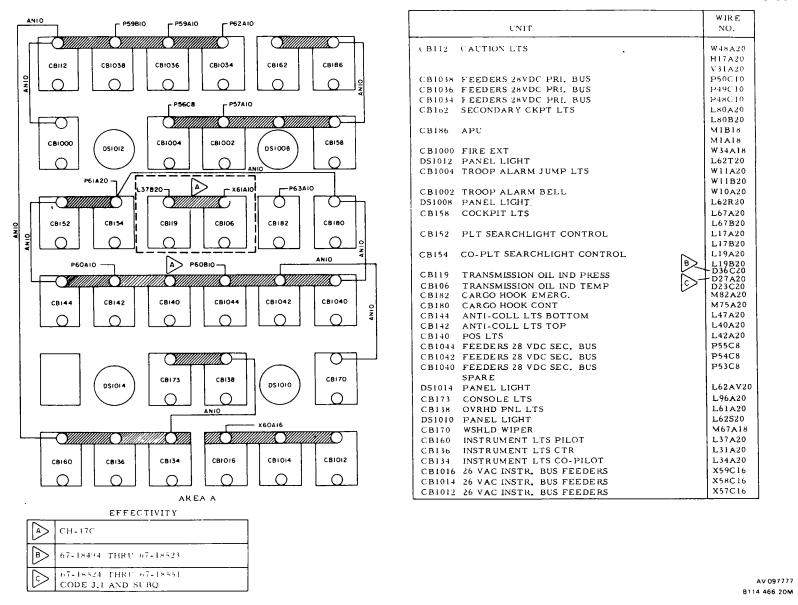


Figure 3. Overhead panel wiring chart, area A, CH-47B and CH-47c; -

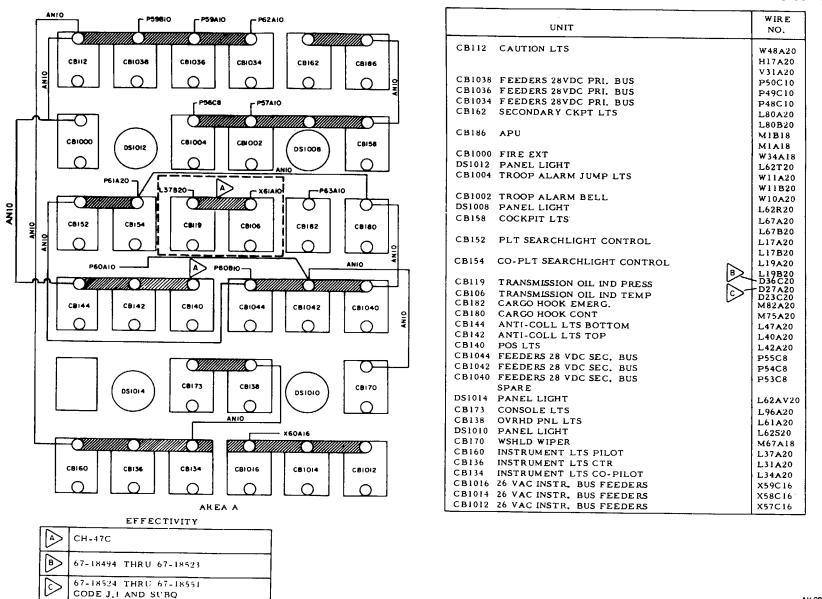


Figure 4. Modified overhead panel wiring chart, area A, CH-47B and CH-47C.

MAINTENANCE R For use of this form, see TM 38-750 is Office of the Deputy Chief of Staf	; the proposent agency	See reverse of file copy for codes and additional data.	PAGE NO.	tin or haden			
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Figure 5. Maintenance Request Single MWO Multiserial-Numbered Item

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 CH-47A and CH-47B/C aircraft.

**☆U.S. GOVERNMENT PRINTING OFFICE: 1981-765-035/87** 

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TRAR ALONG PERFORATRO 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 = 3.2808.8 feet

#### Weights

1 centigram = 10 milligrams = .15 gram 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

#### **Cubic Measure**

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

#### Square measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. in.
1 sq. decimeter = 100 sq. centimeters = 15.5 inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 feet
1 sq. dekameter (are) = 100 sq. meters = 1.076.4 sq. ft.
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres

#### Liquid Measure

1 sq. kılometer = 100 hectometers = .386 sq. miles

1 dekaliter = 10 liters = 2.64 gallons 1 hectoliter = 10 dekaliters = 26.42 gallons 1 kiloliter = 10 hectoliters = 264.18 gallons 1 liter = 10 deciliters = 33.81 fl. ounces 1 centiliter = 10 milliliters = .34 fl. ounce 1 deciliter = 10 centiliters = 3 38 fl. ounces 1 metric ton = 10 quintals = 1.1 short tons

# **Approximate Conversion Factors**

To change	То	Multiply by	To change	То	Multiply by
inches	centimeters	2.540	ounce inches	newton-meters	.0070062
feet	meters	.305	centimeters	ınches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
sq. inches	sq. centimeters	6.451	kılometers	miles	.621
sq. feet	sq. meters	.093	sq. centimeters	sq. inches	.155
sq. yards	sq. meters	.836	sq. meters	sq. yards	10.764
sq. miles	sq. kılometers	2.590	sq. kilometers	sq. miles	1.196
acres	sq. hectometers	.405	sq. hectometers	acres	2.471
cubic feet	cubic meters	.028	cubic meters	cubic feet	35.315
cubic yards	cubic meters	.765	milliliters	fluid ounces	.034
fluid ounces	milliliters	29.573	liters	pints	2.113
pints	liters	.472	liters	quarts	1.057
quarts	liters	.946	grams	ounces	.035
gallons	liters	3.785	kılograms	pounds	2.205
ounces	grams	28.349	metric tons	short tons	1.102
pounds	kilograms	.454	pound-feet	newton-meters	1.356
short tons	metric tons	.907	•		
pound inches	newton-meters	.11296			

#### Temperature (Exact)