

# URGENT

\*TB 1-1520-210-20-35

## DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

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### ONE-TIME AND RECURRING INSPECTION OF OIL DEBRIS DETECTION SYSTEM (ODDS) SELF-SEALING QUICK-DISCONNECT OIL FITTING ON ALL UH-1 SERIES AIRCRAFT

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

20 December 1997

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#### NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR  
SUPERSEDED

#### 1. Priority Classification. URGENT.

**a. Aircraft in Use.** Upon receipt of this TB the condition status symbol of the cited aircraft will be changed to a **red horizontal dash**. The **red horizontal dash** may be cleared when the inspection of paragraph 8. below is completed. The affected aircraft shall be inspected as soon as practical but no later than the task/inspection suspense date. Failure to comply with the requirements of this TB within the time frame will cause the status symbol to be upgraded to a **red X**.

**b. Aircraft in Depot Maintenance.** Aircraft will not be released until compliance with this TB has been completed.

**c. Aircraft Undergoing Maintenance.** Same as paragraph 1.a.

**d. Aircraft in Transit.**

(1) **Surface/Air Shipment.** Within 20 hours or 30 days of arrival.

(2) **Ferry Status.** Same as paragraph 1.a.

**e. Maintenance Trainers (Category A and B).** N/A.

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\*This TB supersedes USAATCOM Aviation Safety Action Message 291908Z, SEP 97, UH-1-97-ASAM-06.

f. **Component/Parts in Stock Including War Reserves at All Levels (Depot and Others).** N/A.

2. **Task/Inspection Suspense Date.** Within 20 hours or 30 days from receipt of original message or this TB, whichever is received first.

3. **Reporting Compliance Suspense Date.** No later than 20 Oct 97 per paragraph 14.a. of this TB.

4. **Summary of Problem.**

a. ATCOM has received field reports citing failure of the Self-Sealing Break-Away Coupling connecting the Oil Line from the Engine Scavenge Pump to the ODDS Lubriclone Fitter. The pins in the connector are designed to shear in a crash sequence, but are wearing away prematurely. The pins fail when the wear becomes excessive. The internal valve closes and shuts off the oil flow. Pressure in the Oil Line increases and the hose has failed under certain circumstances. Most of the wear on the pins can be attributed to normal aircraft vibration and side loading caused by the slight misalignment of the 90-Degree Coupling Half at the Lubriclone Filter. Periodic inspection of these couplings is needed to prevent a failure during flight.

b. There is currently a shortage of 90-Degree Coupling Halves in supply. For the purpose of complying with this message only, the use of a solid 90-Degree Tube Elbow is authorized to temporarily replace 90-Degree Coupling Halves that fail the inspection. The solid 90-Degree Tube Elbow shall immediately be replaced when a serviceable 90-Degree Coupling Half is obtained and installed.

c. **For Manpower/Downtime and Funding Impacts,** See Paragraph 12.

d. **The Purpose of this TB** is to require an inspection of the couplings, to establish a recurring inspection to prevent future failures, and to provide a temporary solution to the supply shortage.

5. **End Items to be Inspected.** All UH-1H/V series aircraft equipped with ODDS.

6. **Assembly Components to be Inspected.** N/A.

7. **Parts to be Inspected.**

NOMENCLATURE	PART NUMBER	NSN
Coupling Half, 90-Degree	2Z2645	4730-01-322-4962
Coupling Half, Straight	2Z2646	4730-01-322-9863

8. **Inspection Procedures.**

a. Gain access to left side engine compartment. Locate the Oil Line (figure 98, item 172A) running from the Engine to the ODDS Lubriclone Filter (left side of Engine on the firewall). Locate the Break-Away Oil Coupling (90-degree and straight halves) at the ODDS Lubriclone Filter.

b. Loosen the B-nut on the Oil Line (figure 98, item 172A) and disconnect the Oil Line at The Straight Coupling Half. Temporarily cap Oil Line to prevent contamination.

c. Measure the wear on the break-away pins using a feeler gage as follows:

**NOTE**

When attempting to measure the gap do not rock coupling halves back and forth. Apply an even pressure so that a consistent reading is obtained.

(1) Apply pressure to Coupling Halves (as if to push them together). Measure and record the break-away joint gap at each pin position with the couplings fully compressed.

(2) Apply opposite pressure to the coupling halves (as if to pull them apart). Again measure and record the break-away joint gap at each pin position with the coupling fully extended.

(3) Calculate the difference in these measurements at each pin position.

d. If the difference is 0.085 inches or less, at all locations, the coupling is serviceable. Reinstall the Oil Line. Pay close attention to alignment of the 90-Degree Coupling Half. If necessary, loosen the 90-Degree Coupling Half from the Lubriclone Filter and reposition it so that the least amount of side loading is placed on the Break-Away Coupling. Ensure that the clamp used to secure the Oil Line to the Lower Fuel Filter Line is positioned as close to the Break-Away Coupling-end of the Oil Line as practical to reduce vibration.

e. If the difference is greater than 0.085 inches at any of the three locations, proceed with the correction procedures of paragraph 9.

**9. Correction Procedures.**

a. Replace the 90-Degree Coupling Half with a serviceable coupling if the difference calculated in paragraph 8. is greater than 0.085 inches.

b. Reinstall the Oil Line. Pay close attention to the alignment of the 90-Degree Coupling Half. Position the 90-Degree Coupling Half so that the least amount of side loading is placed on the Break-Away Coupling. Ensure that the clamp used to secure the Oil Line to the Lower Fuel Filter line is positioned as close to the Break-Away Coupling-end of the oil line as practical to reduce vibration.

c. Repeat this inspection at each phase inspection. The inspection procedure will be added to reference 13.a. Reference 13.b. will be changed to reflect this new requirement.

d. If a replacement 90-Degree Coupling Half is not available and cannot be obtained in a timely manner through the supply system, a solid fitting may be used temporarily until a replacement is received. The status symbol of the affected aircraft shall be a horizontal red dash until the solid fitting is removed and a replacement 90-Degree Coupling Half is installed. Install a solid fitting as follows:

(1) The following parts are required:

PART NAME	PART NUMBER	QTY	NSN
Tube Elbow	AN833-12D OR MS24394D12	1	4730-00-197-2919
Hex Nut	AN924-12D	1	5310-00-199-1028
Prefomed Packing	MS29561-119	1	5330-00-835-8974

(2) Disconnect the hose from the Straight Coupling Half, and retain the coupling half for later installation.

(3) Install Tube Elbow into Lubriclone Assembly using Prefomed Packing and Nut. Do not tighten Nut.

**NOTE**

The Tube Elbow is shorter than the Break-Away Fittings, therefore, it may be necessary to reposition the Oil Line by loosening and relocating the stand-off clamps between the Oil Line and the Lower Fuel Filter Hose.

(4) Attach hose to Tube Elbow.

(5) Allow hose and Tube Elbow to align in a neutral position. Tighten nuts.

**10. Supply/Parts and Disposition.**

**a. Parts Required.** Coupling Half, 90-Degree, P/N 2Z2645, NSN 4730-01-322-4962, may be required to replace defective items. If Coupling Half, 90-Degree, P/N 2Z2645, is required and is not available, use the parts cited in paragraph 9.d.(1) until the 90-Degree Coupling Half is installed.

**b. Requisitioning Instructions.** Requisition replacement parts through normal supply channels using normal supply procedures. If requisitioning the temporary replacement Tube Elbow listed in paragraph 9.d.(1), only part numbers AN833-12D and MS24394D12 are acceptable for this application. A remote possibility exists that a different part number may be received when ordering this NSN. If you receive any other part number when ordering this NSN, do not use it for this application. All requisitions shall use project code (CC 57-59) XDH per this TB.

**NOTE**

Project code XDH is required to track and establish a data base of stock fund expenditures incurred by the field as a result of ASAM actions.

**c. Bulk and Consumable Materials.** N/A.

**d. Disposition.** Dispose of unserviceable removed parts/components using normal supply procedures.

**e. Disposition of Hazardous Material.** In accordance with Environmental Protection Agency directives as implemented by your servicing environmental coordinator (AR 200-1).

**11. Special Tools, Jigs and Fixtures Required.** N/A.

**12. Application.**

**a. Category of Maintenance.** AVUM. Aircraft downtime will be charged to AVUM maintenance.

**b. Estimated Time Required.**

(1) Total of 1 man-hour using 2 persons.

(2) Total of 1 hour downtime for one end item.

**c. Estimated Cost Impact of Stock Fund Items to the Field.** If driveshaft and bolt replacement is required.

NOMENCLATURE	PART NUMBER/NSN	QTY/AC	COST/EA	\$TOTAL
Coupling Half, 90-Degree	2Z2645/4730-01-322-4962	1	\$488.62	\$488.62

Total cost per aircraft = \$488.62

**d. TB/MWOs to be Applied prior to or concurrently with this inspection.** N/A.

**e. Publications which Require Change as a Result of this Inspection.** TM 55-1520-210-23-1 and TM 55-1520-210-PM shall be changed to reflect this TB. A copy of this TB shall be inserted in the appropriate TM as authority to implement the change until the printed change is received.

### 13. References.

- a. TM 55-1520-210-23-1.
- b. TM 55-1520-210-PM.

### 14. Recording and Reporting Requirements.

**a. Reporting Compliance Suspense Date (Aircraft).** In accordance with AR 95-1, upon entering requirements of this message on DA Form 2408-13-1 on all subject MDS aircraft, forward a priority message, datafax or E-mail to CDR, AMCOM, ATTN: AMSAM-SF-A (SOF Compliance Officer). Datafax is DSN 897-2111 or (205) 313-2111. E-mail address is <safeadm@redstone.army.mil>. The report will cite this TB number, date of entry in DA form 2408-13-1, the aircraft mission design series and serial numbers of aircraft in numerical order.

**b. Task/Inspection Reporting Suspense Date (Aircraft).** N/A.

**c. Reporting Compliance Suspense Date (Spares).** N/A.

**d. Task/Inspection Reporting Suspense Date (Spares).** N/A.

**e. The Following Forms are Applicable and are to be Completed In Accordance With DA Pamphlet 736-751, Dated 15 Jun 92.**

**(1)** DA Form 2408-5-1, Equipment Modification Record (Engine).

**(2)** DA Form 2408-13, Aircraft Status Information Record.

**(3)** DA Form 2408-13-1, Aircraft Inspection and Maintenance Record.

**(4)** DA Form 2408-13-2, Related Maintenance Actions Record.

**(5)** DA Form 2408-14, Uncorrected Fault Record. Use this form if replacement 90-Degree Coupling Half cannot be obtained through the supply system in a timely manner.

**(6)** DA Form 2408-18, Equipment Inspection List. Inspection will be tracked on this form until it is added to the phase manual. ULLS-A users will use an 800 inspection number until this inspection is added to the phase manual.

**15. Weight and Balance.** N/A.

### 16. Points of Contact.

**a.** Technical points of contact for this TB are: Mr. Ralph Vemmer, AMSAM-AR-EI-B-U, DSN 645-0663 or (205) 955-0663; datafax DSN 645-6590; E-mail <vemmer-rc@redstone.army.mil> or Mr. Steve Monaco, AMSAM-DSA-UH-U, DSN 645-0078 or (205) 955-0078; datafax DSN 645-6590; E-mail <monaco-sd@redstone.army.mil>.

**b.** Logistical point of contact for this TB is Mr. Charles Elkins, AMSAM-DSA-UH-U, DSN 645-0073 or commercial (205) 955-0073, datafax is DSN 645-6590. E-mail is <elkins-ce@redstone.army.mil>.

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c. Forms and Records point of contact for this TB is Ms. Ann Waldeck, AMSAM-MMC-RE-F DSN 876-5564 or (205) 876-5564, datafax is DSN 746-4904. E-mail is <waldeck-ab@redstone.army.mil>.

d. Safety point of contact for this TB is Mr. Robert Brock, AMSAM-SF-A, DSN 788-8632 or (205)842-8632, datafax is (205) 842-8643. E-mail is <brock-rd@redstone.army.mil>.

e. Foreign Military Sales (FMS) recipients requiring clarification of action advised by this TB should contact Mr. Ronnie W. Sammons, AMSAM-SA-CS-NF, DSN 897-0869 or (205) 313-0869. Datafax is DSN 897-0916. E-mail is <sammons-rw@redstone.army.mil>. Huntsville is GMT minus 6 hrs.

f. After hours contact the AMCOM Command Operations Center (COC) DSN 897-2066/2067 or (205) 313-2066/2067.

**17. Reporting of Errors and Recommending Improvements.** You can help improve this TB. 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) directly to: Commander, U.S. Army Aviation and Missile Command, ATTN: AMSAM-MMC-LS-LP, Redstone Arsenal, Alabama 35898-5230. A reply will be furnished to you.

You may also send in your comments electronically to our E-mail address: <is-lp@redstone.army.mil> or by datafax: Commercial (205) 842-6546 or DSN 788-6546.

By Order of the Secretary of the Army:

Official:



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Administrative Assistant to the  
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03864

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Chief of Staff

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# THE METRIC SYSTEM AND EQUIVALENTS

## WEIGHT MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches  
 1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches  
 1 Kilometer = 1000 Meters = 0.621 Miles

## WEIGHTS

Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces  
 1 Kilogram = 1000 Grams = 2.2 lb.  
 1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

## LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces  
 1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

## SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches  
 1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet  
 1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

## CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches  
 1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

## TEMPERATURE

$5/9(^{\circ}\text{F} - 32) = ^{\circ}\text{C}$   
 212° Fahrenheit is equivalent to 100° Celsius  
 90° Fahrenheit is equivalent to 32.2° Celsius  
 32° Fahrenheit is equivalent to 0° Celsius  
 $9/5^{\circ}\text{C} + 32 = ^{\circ}\text{F}$

## APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
its	Liters	0.473
arts	Liters	0.946
allons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
ers	Gallons	0.264
ms	Ounces	0.035
ograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pounds-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
ometers per Liter	Miles per Gallon	2.354
ometers per Hour	Miles per Hour	0.621





