URGENT

***TB 1–2840–229–20–29**

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

ALL UH–1 AND AH–1 SERIES HELICOPTERS WITH T53 ENGINE INSTALLED, FINAL LIFE LIMITS FOR CRITICAL ROTATING TURBINE COMPONENTS

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

30 October 2000

NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.

NOTE

This is a Safety of Flight Message/TB issued IAW AR 95–1, Chapter 6, 1 Sep 97. This message/TB has not been transmitted to units subordinate to addressees. Addressees should immediately retransmit this message/TB to all subordinate units, activities, or elements affected or concerned. The retransmittal shall reference this message/TB. Action addresses will immediately verify this transmission to CDR, AMCOM, ATTN: AMSAM–SF–A (SOF Compliance Officer).

1. Priority Classification. URGENT.

NOTE

IAW AR 95–1, paragraph 6–6.a., MACOM commanders may authorize temporary exception from SOF message requirements. Exception may only occur when combat operations or matter of life or death in civil disasters or other emergencies are so urgent that they override the consequences of continued aircraft operation.

a. Aircraft in Use. Upon receipt of this message/TB, make the following entry on the DA Form 2408–13–1. Enter a **Red HORIZONTAL DASH //–//** status symbol with the following statement: "Inspect aircraft engine historical records IAW UH–1–01–01 and AH–1–01–01 (TB 1–2840–229–20–29) prior to next flight, but NLT 30 October 2000" Clear the **RED HORIZONTAL DASH //–//** when the procedures IAW

***This TB supersedes USAAMCOM Aviation Safety Action Message 132120z OCT 20001, UH–1–01–01 AND AH–1–01–01.**

paragraphs 8 and 9 are completed. The affected aircraft shall be inspected as soon as practical but NLT 30 October 2000. Commanders who are unable to comply with the requirements of this message/TB within the timeframe specified will upgrade the affected aircraft status symbol to a **RED //X//.**

b. Aircraft in Depot Maintenance. Depot Commanders will not issue aircraft until they are in compliance with this message/TB.

c. Aircraft Undergoing Maintenance. Commanders and Facility Managers will not issue aircraft until they are in compliance with this message.

d. Aircraft in Transit.

(1) Surface/Air Shipment. Same as paragraph 1.a.

(2) Ferry Status. Inspect at final destination.

(3) Those aircraft that have a DD Form 250 and are at US Helicopters will be inspected prior to those aircraft departing for Ferry to Final Destination.

e. Maintenance Trainers (Category A and B). Same as paragraph 1.a.

f. Component/Parts in Stock at All Levels (Depot and Others) Including War Reserves. Upon receipt of this message/TB, Depot and Materiel Activity Commanders will ensure the materiel condition tags of all items in all conditions codes listed in paragraph 6 and 7 shall be annotated to read: "UH–1–01–01 and AH–1–01–01 (TB 1–2840–299–20–29), final life limits for T53 rotating components, Not Complied With".

(1) Wholesale Stock. Inspect all engines referenced in paragraph 6 that are in condition codes "A" and "B".

(2) Retail Stock. Report receipt of this message/TB IAW paragraph 14.c.(2). Upon receipt of this message/TB, commanders and facility managers maintaining retail stock at installation level and below shall contact the supported aviation unit to perform the procedures required by paragraph 8 and 9 on suspect materiel. Disposition of discrepant materiel will be IAW paragraph 10. Report compliance with this message IAW paragraph 14.d.(2).

g. Components/Parts in Work. (Depot Level and Others). Items listed in paragraphs 6 and 7 in work will not be issued until compliance with this message/TB has been completed.

2. Task/Inspection Suspense Date. Complete the inspection IAW paragraph 8 prior to next flight but NLT 30 October 2000 and report IAW paragraph 14.b..

3. Reporting Compliance Suspense Date. Report compliance IAW paragraph 14.a. NLT 3 November 2000.

4. Summary of the Problem.

a. UH–1–00–03 and AH–1–00–04 (TB 1–2840–229–20–27) assigned interim retirement lives to T53 critical rotating components, while analysis continued to determine the final retirement lives for these components. The engineering analysis is now complete on the turbine components, and final retirement lives have been determined. Additionally, UH–1–00–03 and AH–1–00–04 (TB 1–2840–229–20–27) assigned calculated time–since–new (TSN) on those components which were previously not tracked or had unknown flight time history. These calculated TSN's were based on a simplified calculation, using extremely conservative assumptions based upon the drawing release date and average hours flown, rather than a statistical analysis based on more detailed actual usage information. In most cases, the interim lives were high enough to allow use of the simplified TSN calculation procedure. Actual component data received from UH–1–00–ASAM–02 and AH–1–00–ASAM–01 (TB 1–2840–229–20–23) has shown that these

assigned TSN's were excessively conservative. Where possible, a more accurate statistical calculation has now been used to more accurately assign TSN based on actual usage or procurement history. This approach removes the excessive conservatism of the original simplified calculation. Additional analysis is required to determine the final life limits on the cold section parts. Therefore, this message/TB does not address the T53 cold section components. Final life limits for the cold section components will be addressed in a future safety message. Therefore, continue to use the interim limits from UH–1–00–03 and AH–1–00–04 (TB 1–2840–229–20–27) for components not addressed in this message/TB.

b. For Manpower/Downtime and Funding Impacts. See paragraph 12.

c. The Purpose of this Message/TB is to:

(1) Provide the final life limits for the T53 critical rotating turbine components.

(2) Revise the calculated TSN's on some of the previously untracked T53 parts to more accurately reflect the times on these components. Additionally, two new parts have been added to the list of parts that may use a calculated TSN when actual time is not known.

5. End Items to be inspected. All AH–1 and UH–1 series aircraft.

6. Assembly Components to be Inspected.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
T53–L–13B	1–000–060–22	2840–00–134–4803
T53–L–703	1–000–060–23	2840–00–621–1860

7. Parts to be Inspected.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Second PT Disc	1–140–272–04	2840–01–008–5986
First PT Disc	1–190–009–05	2840–00–925–9560
First GP Seal Disc	1–100–135–03	2840–00–925–2972
First Stage GP Disc	1–100–133–01	2840–00–924–7933
Second Stage GP Disc	1–100–063–05	2840–00–924–8521
GP Spacer	1–100–294–03	5365–00–947–6225
Second GP Seal Disc	1–100–544–03	2840–01–008–7874
First GP Seal Disc	1–100–545–03	2840–01–0009–3689
GP Spacer	1–100–546–02	5365–01–008–5952
First GP Spacer	1–100–559–01	5365–01–010–0958
PT Spacer	1–140–169–04	5365–01–008–5947

8. Inspection Procedures Conduct records review to determine the entries on the engine DA Form 2408–16 and update as follows:

NOTE

Parts that are assigned a calculated TSN and the serial number is unknown, the DA Form 2408–16 will show the part as having the same serial number as the engine in which it is installed. Annotate in the remarks section of the DA Form 2408–16 all parts that have a calculated TSN.

NOTE

TSN's generated IAW SOF UH–1–00–06 and AH–1–00–06 (TB 1–2840–229–20–28) using the turbine wheel historical records (DA Form 2408–19) are considered actual TSN's and should not be replaced with these calculated TSN's.

a. For the following parts, if the TSN was generated IAW UH–1–00–03 and AH–1–00–04 (TB 1–2840–229–20–27), change DA Form 2408–16 block 6H entries to reflect the following:

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER	CALCULATED TSN
Second Stage GP Disc	1–100–063–05	2840–00–924–8521	7150
GP Spacer	1–100–294–03	5365–00–947–6225	4650
First GP Seal Disc (No change)	1–100–545–03	2840–01–009–3689	8100
GP Spacer	1–100–546–02	5365–01–008–5952	5000
PT Spacer	1–140–169–04	5365–01–008–5947	7775
Second GP Seal Disc	1–100–544–03	2840–01–008–7874	8100
First GP Spacer	1–100–559–01	5365–01–010–0958	Condition Change

b. For the following parts, assign a calculated TSN when actual TSN information is not available from engine records and enter in DA Form 2408–16, block 6H:

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER	CALCULATED TSN
Second PT Disc	1–140–272–04	2840–01–008–5986	4125
First GP Seal Disc	1–100–135–03	2840–00–925–2972	3275

c. Update DA FOrm 2408–16, block 6J to reflect the following:

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER	FINAL LIFE LIMIT (HOURS)
Second PT Disc	1–140–272–04	2840–01–008–5986	25000
First PT Disc	1–190–009–05	2840–00–925–9560	7775
First GP Seal Disc	1–100–135–03	2840–00–925–2972	4750
First Stage GP Disc	1–100–133–01	2840–00–924–7933	3225
Second Stage GP Disc	1–100–063–05	2840–00–924–8521	8325
GP Spacer	1–100–294–03	5365–00–947–6225	7275

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER	FINAL LIFE LIMIT (HOURS)
Second GP Seal Disc	1–100–544–03	2840–01–008–7874	25000
First GP Seal Disc	1–100–545–03	2840–01–009–3689	14100
GP Spacer	1–100–546–02	5365–01–008–5952	6950
First GP Spacer	1–100–559–01	5365–01–010–0958	Condition Change
PT Spacer	1–140–169–04	5365–01–008–5947	8550

d. Utilizing the actual TSN or updated Calculated TSN, final life limits, and aircraft hours, calculate the new replacement due hours in block 6K, DA Form 2408–16. This calculation (if done correctly) should include hours flown since UH–1–00–03 and AH–1–00–04 (TB 1–2840–229–20–27) was released.

(1) If the replacement due hours (block 6K) for any component is less than current aircraft hours, the engine is considered unserviceable. Proceed to paragraph 9.

(2) If the replacement dues hours (block 6K) for all components are greater than current aircraft hours, the inspection is complete and the **RED HORIZONTAL DASH //–//** maybe signed off as completed.

9. Corrective Procedures.

a. IF the replacement due hours (block 6K) for any component is less than current aircraft hours, the engine is considered unserviceable. Change the aircraft condition status symbol to a **RED //X//.** The **RED //X//** entry shall state "Replace T53 engine IAW SOF message/TB UH–1–01–01, AH–1–01–01 (TB 1–2840–229–20–29)."

b. Maintain aircraft on a **RED //X//** condition status in flyable storage to include ground run–ups. Report aircraft on a **RED //X//** condition status as Not Mission Capable Supply (NMCS).

10. Supply/Parts and Disposition.

a. Parts Required. Items cited in paragraph 6 and 7 may be required to replace defective items.

NOTE

The only parts authorized to be requisitioned below Depot level are:

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
GP Spacer	1–100–294–03	5365–00–947–6225
GP Spacer	1–100–546–01	5365–01–008–5952
PT Spacer	1–140–169–04	5365–01–008–5497

b. Requisitioning Instructions. Requisition replacement parts using normal supply procedures. All requisitions shall use Project Code (CC 57–59) "X0A" (XRAY–ZERO–ALPHA).

NOTE

Project Code "X0A" is required to track and establish a data base of stock fund expenditures incurred by the field as a result of SOF actions.

c. Bulk and Consumable Materials. N/A.

d. Disposition. Dispose of removed parts/components using normal supply procedures. All turn–in documents must include Project Code (CC 57–59) "X0A".

e. Disposition of Hazardous Material. IAW 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.

(1) AVUM for records review and removal and reinstallation of engine.

(2) Aircraft downtime will be charged to AVUM maintenance.

b. Estimated Time Required.

(1) Total of 1.0 man–hours using 1 person to conduct the records review.

(2) Total of 28 man–hours using 2 persons to remove and reinstall the engine.

c. Estimated Cost Impact to the Field.

NOMENCLATURE	P/N	NSN	QTY.	COST EA.
Engine, Acft Turbo-shaft, T53–L–13B	1–000–060–22	2840–00–134–4803	1	$416,768.00
TOTAL COST PER UH–1 AIRCRAFT				$416,768.00

NOMENCLATURE	P/N	NSN	QTY.	COST EA.
Engine, Acft Turbo-shaft, T53–L–703	1–000–060–23	2840–00–621–1860	1	$158,215.00
TOTAL COST PER AH–1 AIRCRAFT				$158,215.00

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. TB 1–1500–341–01 shall be changed to reflect this message/TB. A copy of this message/TB shall be inserted in the appropriate TB as authority to implement the change until the printed change is received.

13. References.

a. DA PAM 738–751, 15 Mar 99.

b. TB 1–2840–229–20–23,

c. TB 1–2840–229–20–27.

d. TB 1–2840–229–20–28,

14. Recording and Reporting Requirements.

a. Reporting Compliance Suspense Date (Aircraft). Upon entering requirements of this message/TB on DA Form 2408–13–1 on all subject mission design series (MDS) aircraft, Commanders will forward a priority message, datafax or E–mail to CDR, AMCOM, ATTN: AMSAM–SF–A (SOF Compliance Officer), Redstone Arsenal, AL 35898–5000 IAW AR 95–1. Datafax number is DSN 897–2111

or commercial (256) 313–2111. E–mail address is <safeadm@redstone.army.mil>. The report will cite UH–1–01–01 and AH–1–01–01 (TB 1–1520–229–20–29), date of entry on DA Form 2408–13–1, aircraft MDS, and serial numbers of aircraft in numerical order.

b. Task/Inspection Reporting Suspense Date (Aircraft). Upon completion of inspection, units will forward a priority message to the Logistical POC in paragraph 16.b.(2). The report will cite this message/TB number, date of inspection, aircraft serial number, engine serial number and operating hours, and results of the inspection (engine pass or fail). Previous reports submitted IAW prior SOF messages/TBs do not satisfy the reporting requirement of this message/TB. Include in the report the pass/fail status of all spare/uninstalled engines. Inspection and reports will be completed NLT 14 November 2000.

c. Reporting Message/TB Receipt (Spares).

(1) Material in Wholesale Depot Storage. N/A.

(2) Material in Retail Storage. Commanders and Facility Managers will report receipt of this message/TB by email or datafax to the Logistical Point of Contact listed in paragraph 16.b.(2) NLT 3 November 2000. Provide local point of contact.

d. Task/Inspection Reporting Suspense Date (Spares).

(1) Material in Wholesale Depot Storage. N/A.

(2) Material in Retail Storage. Commanders and Facility Managers will report compliance with this message/TB to the Logistical Point of Contact in paragraph 16.b.(2) NLT 3 November 2000. Report the quantity inspected by Condition Code and the resulting condition code. Report by email or datafax and provide local point of contact.

e. The Following Forms are Applicable and are to be Completed in Accordance with DA Pamphlet 738-751, dated 15 March 1999:

NOTE

Unit Level Logistics System–Aviation (ULLS–A) users will use applicable electronic “E” forms.

(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 2408-15, Historical Record for Aircraft.

(5) DA Form 2408–16, Aircraft Component Historical Record.

(6) DA Form 2410, Component Removal and Repair/Overhaul Record (only if engine is removed/replaced).

(7) DD Form1574/DD Form 1574–1, Serviceable Tag/Label – Materiel (Color Yellow). Annotate remarks block with “Inspected serviceable IAW UH–1–01–01, AH–1–01–01 (TB 1–2840–229–20–29)”.

(8) DD Form 1577–2/DD Form 1577–3, Unserviceable (Reparable) tag/label – Materiel (Color Green). Annotate remarks block with “Unserviceable IAW UH–1–01–01, AH–1–01–01 (TB 1–2840–229–20–29).”

15. Weight and Balance. N/A.

16. Points of Contact:

a. Technical points of contact for this TB are:

(1) Primary – Mr. Mark Heitert, ASAM–RD–AE–P, DSN 897–4964 or Commercial (256) 313–4964. Datafax is DSN 897–4961 or Commercial (256) 313–4961. E–mail is <mark.heitert@redstone.army.mil>.

(2) Alternate (Engines) – Mr. Martin Ohrenberg, AMSAM–RD–AE–P, DSN 897–3887 or Commercial (256) 313–3887. Datafax is DSN 897–4961 or Commercial (256) 313–4961. E–mail is <martin.ohrenberg@redstone.army.mil>.

(3) Alternate (Airframes) – Mr. Steve Monaco, AMSAM–RD–AE–I–D–U, DSN 645–0078 or Commercial (256) 955–0078. Datafax is DSN 645–6590 or Commercial (256) 955–6590. E–mail is <steve.monaco@UH.redstone.army.mil>.

b. Logistical points of contact for this TB are:

(1) Primary – Mr. Charlie Elkins, AMSAM–DSA–UH–U, DSN 645–0073 or Commercial (256) 955–0073. Datafax is DSN 897–3762 or (256) 313–3762. E–mail is <charlie.elkins@UH.redstone.army.mil>.

(2) Alternate – Mr. Howard Reeves, AMSAM–DSA–UH–U, DSN 645–0624 or Commercial (256) 955–0624. Datafax is DSN 987–3805 or Commercial (256) 313–3805. E–mail is <howard.reeves@UH.redstone.army.mil>.

c. Wholesale Material Point of Contact (Spares) for this TB is: Ms. Cynthia Cash, AMSAM–MMC–VS–UN, DSN 897–1547 or Commercial (256) 313–1547. Datafax is DSN 897–1541 or Commercial (256) 313–1541. E–mail is <cynthia.cash@redstone.army.mil>.

d. Forms and Records point of contact for this TB is: Ms. Ann Waldeck, AMSAM–MMC–RE–FF, DSN 746–5564 or Commercial (256) 876–5564. Datafax is DSN 746–4904 or Commercial (256) 876–4904. E–mail is <ann.waldeck@redstone.army.mil>.

e. Safety points of contact for this TB are:

(1) Primary – Mr. Randall Rushing (SAIC), AMSAM–SF–A, DSN 897–2092 or (256) 313–2092. Datafax is DSN 897–2111 or Commercial (256) 313–2111. E–mail is <randall.rushing@redstone.army.mil>.

(2) Alternate – Mr. Howard Chilton, AMSAM–SF–A, DSN 897–2068 or Commercial (256) 313–2068. Datafax is DSN 897–2111 or Commercial (256) 313–2111. E–mail is <howard.chilton@redstone.army.mil>.

f. Foreign Military Sales recipients requiring clarification of action advised by this TB should contact: CW5 Joseph L. Wittstrom, Security Assistance Management, AMSAM–SA, DSN 897–0410 or Commercial (256) 313–0410. E–mail is <joseph.wittstrom@redstone.army.mil>. or Mr. Ronnie W. Sammons, AMSAM–SA–CS–NF, DSN 897–0408 or Commercial (256) 313–0408. Datafax is DSN 897–0411 or Commercial (256) 313–0411. E–mail is <ronnie.sammons@redstone.army.mil>. Huntsville, AL, is GMT minus 5 hours.

g. After hours contact the AMCOM Command Operations Center (COC) DSN 897–2066/2067 or Commercial (256) 313–2066/2067.

17. Reporting of Errors and Recommending Improvements. You can improve this TB. If you find any mistakes or if you know of a way to improve these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: Commander, US Army Aviation and Missile Command, ATTN: AMSAM–MMC–LS–LP, Redstone Arsenal, Alabama 35898–5000. A reply will be furnished to you. You may also send in your comments electronically to our E–mail address at

<ls-lp@redstone.army.mil>, or by datafax at DSN 788-6546 or commercial (256) 842-6546. Instructions for sending a DA Form 2028 by E-mail may be found at the back of most Technical Manuals.

By Order of the Secretary of the Army:

Official:

ERIC K. SHINSEKI
General, United States Army
Chief of Staff

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
0030101

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THE METRIC SYSTEM AND EQUIVALENTS

'NEAR MEASURE

. 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

'VEIGHTS

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

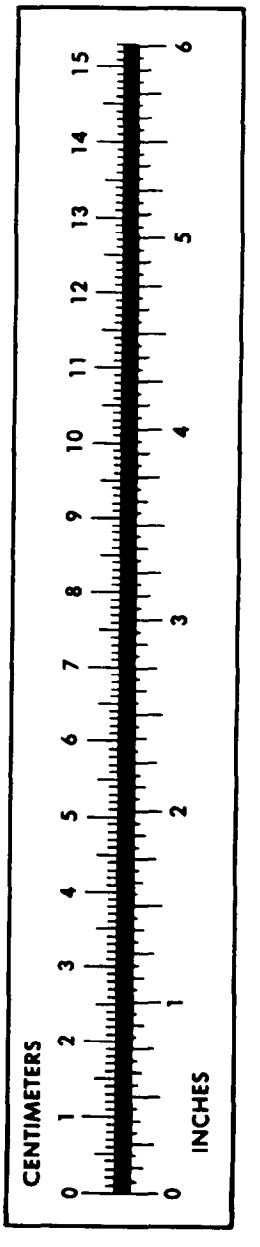
TEMPERATURE

5/9(°F - 32) = °C
212° Fahrenheit is evuivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5C° + 32 =°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
ıts	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
lometers per Liter	Miles per Gallon	2.354
meters per Hour	Miles per Hour	0.621



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