URGENT

TB 1–1520–238–20–100

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

ONE–TIME AND RECURRING INSPECTION OF FIRE EXTINGUISHER TUBES FOR CORROSION ALL AH–64 AIRCRAFT

Headquarters, Department of the Army, Washington, D. C.
11 FEBRUARY 2000

NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.

1. Priority Classification. Urgent

a. Aircraft in Use. Upon receipt of this Technical Bulletin (TB) the condition status symbol of the cited aircraft will be changed to a **red horizontal dash//–//** The **red horizontal dash//–//** entry shall state "Inspect the fire extinguisher tubes IAW TB 1–1520–238–20–100 on or before the next 250–hour phase inspection."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 next 250–hour phase inspection. 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 issued 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. Same as paragraph 1.a.

(2) Ferry Status.

(a) Same as paragraph 1.a.

(b) Those aircraft that have a DD 250 and are at Boeing will be inspected prior to ferry to final destination.

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

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

(1) Wholesale Stock.– N/A.

This TB supersedes USAAMCOM Message 271142Z Jan 00 (AH–64–00–ASAM–08).

(2) Retail Stock.– N/A.

g. Component/Parts in work (Depot level and Others)– N/A.

2. **Task/Inspection Suspense Date.** On or before the next 250–hour phase inspection, and report IAW paragraph 14.b as applicable.

3. **Reporting Compliance Suspense Date**. Report compliance IAW paragraph 14.a not later than 18 February 2000.

4. **Summary of the Problem**.

a. Reports of fire extinguisher tubes found with extensive corrosion indicate the need for inspection and replacement or repair of discrepant tubes.

b. For manpower/downtime and funding impacts, see paragraph 12.

c. The purpose of this TB is to provide inspection requirements and repair criteria for fire extinguisher tube assemblies.

5. **End Items to be inspected**. All AH–64 series aircraft.

6. **Assembly Components to be Inspected**.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Fire Extiguisher System Assembly	7–311620010	N/A

7. **Parts to be Inspected**.

a. Parts common to all AH–64 series aircraft –

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Tube Assembly	7–311620501	N/A
Tube Assembly	7–311620502	N/A
Tube Assembly	7–311620503	4710–01–172–5227
Tube Assembly	7–311620504	4710–01–172–5228
Tube Assembly	7–311620505	4710–01–172–5229
Tube Assembly	7–311620506	4710–01–172–5218
Tube Assembly	7–311620507	4710–01–174–0197
Tube Assembly	7–311620509	4710–01–172–8187
Tube Assembly	7–311620510	4710–01–172–8188
Tube Assembly	7–311620514–7	N/A

NOTE

Part Number 7–311620514–7 is used only on aircraft serial numbers 84–24234 and subsequent.

b. AH–64A parts only –

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Tube Assembly	7–311620508	N/A
Tube Assembly	7–311620511	4710–01–174–7289
Tube Assembly	7–311620512	4710–01–172–8189
Tube Assembly	7–311620513	4710–01–171–9247
Tube Assembly	7–311620514	TBD
Tube Assembly	7–311620515–1	N/A

NOTE

Part Number 7–311620508 is used only on aircraft serial numbers 82–23355 thru 90–00344.

Part Number 7–311620514 is used only on aircraft serial numbers 82–23355 thru 84–24233.

Part Number 7–311620515–1 is used only on aircraft serial numbers 90–00345 and subsequent.

c. AH–64D parts only –

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Tube Assembly	7–511620508–5	4710–01–466–6615
Tube Assembly	7–511620511–5	4710–01–H79–3864
Tube Assembly	7–511620512–5	4710–01–466–6617

8. **Inspection Procedures**.

NOTE

The following tasks apply generically to all fire extinguisher tube assemblies. The sequence of tube removal is at the discretion of the maintainer. Refer to the appropriate task in the technical manuals.

a. Remove and inspect the fire extinguisher tubes for damage –

(1) Check the tube surfaces for cracks, dents, nicks, wear, and chafing IAW reference paragraph 13.c, Task 12.33 or reference paragraph 13.a fire extinguisher system inspection.

(2) Damage that extends through the protective outer finish and does not exceed the allowable damage criteria IAW paragraph 8.a (1) can be reworked IAW paragraph 9.b.

NOTE

Do not rework until after performing corrosion inspection IAW paragraph 8.b.

(3) If the tube cannot be reworked, replace IAW paragraph 9.a.

b. Inspect the fire extinguisher tubes for corrosion –

(1) Inspect the outside of the tube and the inside near the “B nut” area for corrosion. If no corrosion is found, the tube may be reinstalled if no other rework is required IAW paragraph 8.a.

(2) If corrosion is present –

(a) Corrosion should be removed IAW paragraph 9.c to determine whether the tube can be repaired or should be replaced.

(b) If the corrosion exceeds 10 percent (.003 inch) of the tube wall thickness, replace the tube IAW paragraph 9.a.

c. If the tube surfaces meet the inspection criteria in paragraphs 8.a and 8.b, the inspection is complete.

d. The inspection criteria in paragraphs 8.a and 8.b will be added as an inspection requirement at phase numbers 2 and 4 IAW paragraph 12.e.

9. **Correction Procedures.**

a. Fire extinguisher tube assemblies that exceed the damage and/or corrosion allowed in paragraphs 8.a and 8.b will be replaced IAW reference paragraph 13.c Task 12.38 or reference paragraph 13.a fire extinguisher system removal tasks.

b. Rework procedure –

(1) Apply MIL–C–10578, corrosion chemical treatment (Turco WO#1/phosphoric acid) to the damaged surfaces, both inside and outside areas. Use an acid swabbing brush or equivalent.

WARNING

Chemicals/acids can burn eyes and skin. All personnel must wear safety goggles and gloves when using chemicals/acids. If contact is made with skin or eyes, wash chemical off with water and seek medical aid. Read and comply with chemical solvent label instructions and warnings.

(2) Allow the treatment to deoxidize for approximately 30 minutes.

(3) Rinse thoroughly with tap water an allow to air dry.

(4) Apply epoxy primer, MIL–P–23377, type 1 , class “C” or MIL–P–85582, type 1, class “C2” to all deoxidized/damaged surfaces.

(5) Allow primer to dry and reinstall tube assembly per reference paragraph 13.c Task 12.39 or reference paragraph 13.a fire extinguisher system installation tasks.

c. Corrosion removal –

CAUTION

Do not use stong solvents (MEK, trichloroethane, etc.) to clean the tube assemblies. Do not forcefully scrub the surfaces to be inspected. Protect nearby wiring and exposed parts from splashing or spillage of detergents and cleaning compounds.

NOTE

Proper cleaning of the tubing is necessary to determine the extent of corrosion damage, and to determine the appropriate corrective action.

(1) Remove built–up corrosion from tube with non–metallic abrasive mats (A–A–5804) grade “A” type 1 or finer. Solvent clean with acetone, MIL–STD–1218, or equivalent. Corroded areas inside the tube that are not accessible require tube replacement IAW paragraph 9.a.

(2) Visually inspect the cleaned area using a 5X (5 power or equivalent) magnifying glass (GG–M–95). Ensure all corrosion is removed.

(3) After all corrosion has been removed, inspect for allowable damage. Replace the tube IAW paragraph 9.a if the repair exceeds 10 percent (.003 inch) of the tube wall thickness. If damage is within allowable limits, and all corrosion has been removed, rework as needed IAW paragraph 9.b.

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

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

b. Requisitioning Instructions. Requisition replacement parts through normal supply channels using normal supply procedures. All requisitions shall use project code (CC 57–59) “XF6” (X–Ray Fox–trot Six) per this TB.

NOTE

Project code “XF6” 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.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Primer, epoxy	MIL–P–23377, type 1, class “C”	8010–01–314–6077
Polymide	MIL–P–85582, type 1, class “C2”	8010–01–292–8894
Acetone or equivalent	MIL–STD–1218	6810–00–264–8955
Treatment, chemical corrosion	MIL–C–10578, type 1	8030–00–145–0084
Abrasive mats, non–metallic	A–A–5804, grade “A”, type 1 or finer	N/A
Nut, tube, coupling	MS21921D4	4730–00–555–8203
Sleeve	MS21922–4	4730–00–289–8619
Tube, metallic	WWW–T–700/4	4710–00–683–9034

d. Disposition– N/A.

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**.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Gloves, treatment	MIL–G–36592	6515–01–150–2977
Magnifying glass	GG–M–95	6650–00–958–7408

12. **Application**.

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

b. Estimated Time Required.

(1) To inspect the tube assembly–

(a) Total of 2.5 man–hours using 1 person.

(2) To repair and/or replace the tube assembly –

(a) Total of 8 man–hours using 1 person.

(b) Total of 8 hours downtime for one end item.

c. Estimated Cost Impact to the Field.

(1) Parts common to all AH–64 series aircraft –

NOMENCLATURE	PART NO.	NSN	QTY.	COST EACH $
Tube Assembly	7–311620501	Make item	1	6.70
Tube Assembly	7–311620502	Make item	1	6.70
Tube Assembly	7–311620503	4710–01–172–5227	1	90.58
Tube Assembly	7–311620504	4710–01–172–5228	1	82.58
Tube Assembly	7–311620505	4710–01–172–5229	1	98.56
Tube Assembly	7–311620506	4710–01–172–5218	1	226.24
Tube Assembly	7–311620507	4710–01–174–0197	1	262.69
Tube Assembly	7–311620509	4710–01–172–8187	1	215.93
Tube Assembly	7–311620510	4710–01–172–8188	1	115.42
Tube Assembly	7–311620514–7	Make item	1	6.70

(2) Parts common to AH–64A only –

NOMENCLATURE	PART NO.	NSN	QTY.	COST EACH $
Tube Assembly	7–311620508	N/A	1	85.96
Tube Assembly	7–311620511	4710–01–174–7289	1	70.96
Tube Assembly	7–311620512	4710–01–172–8189	1	69.96
Tube Assembly	7–311620513	4710–01–171–9247	1	98.58
Tube Assembly	7–311620514	Make item	1	TBD
Tube Assembly	7–311620515–1	N/A	1	85.96

(3) Parts common to AH–64D only –

NOMENCLATURE	PART NO.	NSN	QTY.	COST EACH $
Tube Assembly	7–511620508–5	TBD	1	TBD
Tube Assembly	7–511620511–5	TBD	1	TBD
Tube Assembly	7–511620512–5	TBD	1	TBD

TOTAL APPROXIMATE COST PER AIRCRAFT = $1500.00

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. A copy of this TB shall be inserted into the appropriate publication as authority to implement the change until the printed change is received.

(1) TM 1–1520–Longbow/Apache IETM.

(2) TM 1–1520–238–23.

(3) TM 1–1520–238–PM.

13. **References**.

a. Interactive Electronic Technical Manual (IETM): TM 1–1520–Longbow/Apache IETM, CD No. 1, Version 3.1.2, Data 19 November 1998, CD Date 1 December 1998 or subsequent.

b. TM 1–1520–238–PM, Phased Maintenance Inspection Checklist for Army AH–64A Helicopter, 30 June 1994.

c. TM 1–1520–238–23, Aviation Unit and Intermediate Maintenance Manual for AH–64A Apache Attack Helicopter, 16 May 1994.

14. **Recording and Reporting Requirements**.

a. Upon entering requirements of this TB on DA Form 2408-13-1 on all subject MDS aircraft, forward a priority message, Datafax or E-Mail to Commander, 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 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 TB receipt (spares)–

(1) Materiel in Wholesale Depot Storage– N/A.

(2) Materiel in Retail Storage– N/A.

d. Task/Inspection reporting suspense date (spares)–

(1) Materiel in Wholesale Depot Storage– N/A.

(2) Materiel in Retail Storage– N/A.

e. The following forms are applicable and are to be completed in accordance with DA PAM 738-751,15 March 1999:

NOTE

ULLS–A users will use applicable “E” forms

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

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

(3) DA Form 2408-14–1, Uncorrected Fault Record.

(4) DA Form 2408-15, Historical Record for Aircraft.

(5) DA Form 2408–18, Equipment Inspection List. ULLS–A units will use one of their 800 in spection numbers for the fire extinguisher system inspection until the inspection is incorporated into the phase maintenance inspection manual.

(6) DD Form 1577–2/ DD Forrn 1577–3, Unserviceable (Reparable) Tag/Label– Material (Color Yellow). Annotate remarks block with " Unserviceable IAW TB 1–1520–238–20–100."

(7) DD Form 1577/DD Form 1577–1, Unserviceable (Condemned) Tag/Label– Material (Color Red).

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

16. **Points of Contact**.

a. Technical point of contact for this TB is Mr. Andy Fabery, AMSAM-RD–AR-E–I–P–A, DSN 897-4802 or commercial (256) 313-4802. Datafax is DSN 897–4923 or (256) 313–4923 E–mail is andrew.fabery@redstone.army.mil.

b. Logistical point of contact for this TB is Mr.Jim Mason, SFAE-AV-AAH-LF, DSN 897-4242 or commercial (256) 313-4343. E–mail is masonj@peoavn.redstone.army.mil.

c. 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 waldeck–ab@redstone.army .mil.

d. Safety point of contact for this TB is 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.

e. Foreign Military Sales (FMS) 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 wittstromjl@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 sammonsrw@redstone.army.mil. Huntsville, AL is GMT minus 6 hours.

f. After hours contact AMCOM Command Operations Center (COC) DSN 897-2066/7 or commercial (256) 313-2066/7.

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, AL 35898–5230. You may also submit your recommended changes by E–mail directly to ls–lp@redstone.army.mil. Instructions for sending an electronic 2028 may be found at the back of this manual. A reply will be furnished directly to you.

The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15, 16, 17, and 27.

From: "Whomever" <whomever@avma27.army.mil>
To: <mpmt%avma28@st–louis–emh7.army.mil>

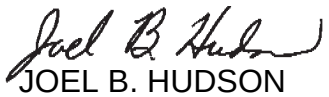
Subject: DA Form 2028

1. ***From:*** Joe Smith
2. *Unit:* home
3. ***Address:*** 4300 Park
4. ***City:*** Hometown
5. ***St:*** Al
6. ***Zip:*** 77777
7. ***Date Sent:*** 19–OCT–93
8. ***Pub no:*** 55–2840–229–23
9. ***Pub Title:*** TM
10. ***Publication Date:*** 04–JUL–85
11. *Change Number:* 7
12. *Submitter Rank:* MSG
13. ***Submitter FName:*** Joe
14. *Submitter MName:* T
15. ***Submitter LName:*** Smith
16. ***Submitter Phone:*** 123–123–1234
17. ***Problem:*** **1**
18. *Page:* 2
19. *Paragraph:* 3
20. *Line:* 4
21. *NSN:* 5
22. *Reference:* 6
23. *Figure:* 7
24. *Table:* 8
25. *Item:* 9
26. *Total:* 123
27. ***Text:***

This is the text for the problem below line 27.

By Order of the Secretary of the Army:

Official:



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

0003804

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

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RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

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

SOMETHING WRONG WITH PUBLICATION

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE

BE EXACT PIN-POINT WHERE IT IS

PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.

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

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER	SIGN HERE

TEAR ALONG PERFORATED LINE

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

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

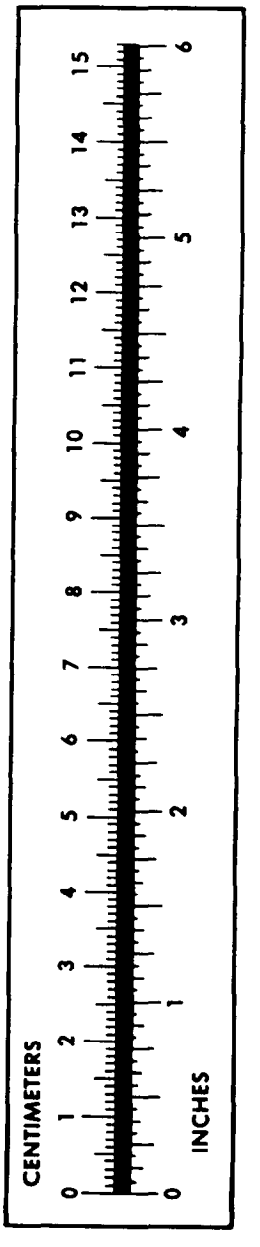
TEMPERATURE

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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