*TB 43-0002-86

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

MAINTENANCE EXPENDITURE LIMITS

FOR

FSC GROUP 43

FSC CLASS 4310

Headquarters Department of the Army, Washington, DC

30 March 1992

REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this bulletin. 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 bulletin direct to: Commander, U. S. Army Tank-Automotive Command, ATTN: AMSTA-MB, Warren, MI 48397-5000. A reply will be furnished direct to you.

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APPENDIX A. MEL FACTORS FOR FSC Class 4310 A-1

SECTION I. GENERAL

1-1. This Technical Bulletin (TB) prescribes the Maintenance Expenditure Limits (MEL) which applicable support maintenance level technical inspectors will use to determine repair eligibility or disposition when inspections are performed on equipment received for repair to a serviceable condition and return to user, transfer, or for turn-in. These limits do not apply to Department of Army (DA) directed repair programs. The materiel proponent (U.S. Army Tank-Automotive Command) is responsible for specifying the MEL percentage found in the appropriate appendix in this TB.

1-2. This TB applies to all active Army, Army National Guard and United States Army Reserve applicable support level maintenance units including Army depot activities, when performing repair-and-return-to-user service. It does not apply to unit level or programmed depot repair. A decision concerning the eligibility/suitability of materiel for depot repair or disposal is made by materiel proponents prior to programming repair. Unit level maintenance is limited by the repair authorized in the appropriate Technical Manual (TM) and need not consider dollar expenditures.

SECTION II. DETERMINING EXPENDITURE LIMITS

2-1. Procedures. A determination to ensure that the expenditure limits will not be exceeded is required each time an item is received at the applicable maintenance level or at depot level on a repair to user basis. Repair will not be broken into separate jobs to reduce total cost. Whenever cost to repair exceeds the MEL, the item must be reported for disposition or a waiver to repair must be obtained. To determine limits:

a. The MEL percentage factors identified in the appropriate appendix in the TB will be used to determine the maximum dollar amount which can be expended to return an item to a serviceable condition. The dollar amount is the limit of repair authorized. This limit is compared with the estimated cost of repair. Repair is not authorized if the estimated cost exceeds the MEL, unless a waiver is granted to exceed MEL.

b. An inspection is performed to determine the extent of the maintenance effort required for restoring the item to prescribed conditions or serviceability and determine if the item is economically repairable. The estimated repair cost is obtained during this process by computing the cost/elements which are required to repair an item to the standards specified in the appropriate TM. Procedures are in Section III of this TB.

c. The dollar expenditure limit is obtained by multiplying the appropriate percentage factor obtained in the TB by the current unit replacement price of the item being repaired. Current unit replacement prices for end items are contained in SB 710-1-1, Chapter 7. Replacement prices in the Army Master Data File (AMDF) will be used for secondary items. The average cost to repair assemblies or components may be used at direct support and general support where repairs are accomplished by batch or production line processes.

SECTION III. TECHNICAL INSPECTION

3-1. Procedures. Support maintenance organizations and activities are responsible for performing the technical inspections incident to repair or evacuation of items listed in this bulletin. Technical inspections are to be made by a qualified individual with Military Occupational Specialty (MOS) or job classification specific to the item being inspected. Inspections will be performed in accordance with equipment maintenance and serviceability standards applicable to the maintenance level performing the repair. The results of the technical inspection will:

a. Determine if the unserviceable condition is the result of other than fair wear and tear; ensure components have not been removed; and inform owning unit of need to assess liability as necessary.

b. Determine the extent of the maintenance effort required to restore the item to prescribed conditions of serviceability.

c. Classify the item as economically or not economically repairable with correct condition code.

d. Provide for verification of items with condition code P (unserviceable, materiel classified by inspection); or H (unserviceable, condemned).

3-2. Forms. Results of technical inspections will be recorded on the following appropriate forms. The appropriate form will reflect each applicable cost element and the total estimated cost of repair. The expenditure limit will be included to compare the estimated cost and to make a determination as to repair or disposition instructions on preparation of DA Form 2404 and DA Form 2407 are found in DA PAM 738-750. Instructions on preparation of DA Form 461-5 and DA Form 2590 are found in TB 43-0140 and TB 43-0217. DA Form 461-5 will be required if item listed in this TB is mounted on a transport vehicle not managed by U.S. Army Tank-Automotive Command (TACOM).

DA Form 461-5 (Vehicle Classification Inspection)
DA Form 2404 (Equipment Inspection and Maintenance Work Sheet)
DA Form 2407 (Maintenance Request)
DA Form 3590 (Request for Disposition or waiver)

SECTION IV. COMPUTATION OF REPAIR COST ESTIMATE

4-1. Repair Cost Fstimates. Repair costs are based on all costs necessary to return materiel to serviceable condition at the authorized level of maintenance which undertakes the repairs. If repairs are determined to be within the scope of support maintenance, serviceability standards applicable to the level concerned will be used to determine work required. The expense for operating maintenance (unit maintenance described in appropriate TM or commercial manual) will not be included in cost estimate when being repaired and returned to user. The repair cost estimate is derived from the total cost of the following elements.

a. Direct labor (military and civilian), excluding initial inspection costs, includes all labor which can be specifically identified with repair. Direct labor rates which apply to the total man-hours estimated are obtained as indicated by procedures in paragraph 4-2a.

b. Direct materials include all repair parts, components and assemblies directly applied during the repair program. Cost of parts will be the AMDF price, except where local repair programs are already in effect. Use an estimated cost if materiel is required from local source or needs to be fabricated. Estimate cost against the price of a like item.

c. Indirect or overhead costs include cost of operating the shop and administrative expense chargeable to the activity or operation.

d. Contractual Services. All costs for contracted services will be included whether the services will be for complete repairs or for a small portion of total repairs. Estimate will be from contract documents or expected cost.

e. Shipping and transportation costs include all costs involved in preparation and movement to repair location, and expected cost to prepare and ship back. Costs will be obtained from the bill of lading or transportation office, or will be estimated.

f. Other Charges. All costs expected to be incurred to complete repair which cannot be included in cost elements above. Estimate repair from past records or expected cost.

4-2. Procedures. Procedures to determine the total estimated cost of repair are as follows:

a. Direct Labor Costs. Apply the total estimated man-hours of direct labor to the direct labor hourly rate. The direct labor hours estimated will be based on the Maintenance Allocation Chart (MAC) or actual past experience. The direct labor hourly rate and total cost of direct labor is found by:

(1) Military - Obtain the average hourly military wage rate of the mechanic performing the repairs, and multiply by the direct man-hours of labor required. Use the current military pay scale to obtain average hourly rate.

(2) Civilian - Obtain the average hourly rate of the individuals expected to perform the repairs, and multiply by a factor of 1.29 to obtain the direct labor hourly rate (the factor compensates for holidays, allowable sick/annual leave, and government contributed benefits). Multiply the direct labor hourly rate by the direct man-hours of labor to obtain total labor cost.

b. Determine total cost of the five remaining elements in paragraph 4-1 through 4-1f above (if applicable) and add to total labor expense.

c. Obtain the MEL percentage factor from the appropriate appendix in this TB and determine if repair is authorized.

d. If repair cost is equal to or less than MEL, the item may be repaired. If greater, the item will be '-returned to customer for turn-in action or processing of a waiver to exceed the MEL.

4-3. Computation Table. A table which may be helpful in computing total repair cost estimates and MEL follows. Use of actual repair expense column may be completed to assist in future cost estimates. use only those elements applicable and available.

COMPUTATION TABLE
FSTIMATING TOTAL REPAIR COST AND MEL

ELEMENTS	ESTIMATE	ACTUAL
a. Repair Hours Required Breakdown MIL CIV		
b. MIL Avg Hr Rate x MIL Rpr Hrs		
c. Civ Hr Rate x 1.29 x Civ Rpr Hrs		
d. Materiel Cost		
e. Indirect Overhead Costs		
f. Contractual Cost		
g. Shipping/transportation Costs		
h. Other Cost		
i. Total Repair Cost b+c+d+e+f+g+h		
j. MEL Percentage Factor (from table) x Current Replacement Price MEL		
k. Is MEL greater than estimated Repair Cost? YES/NO		
l. If YES, repairs are authorized.		
m. If NO, notify customer of results and return or assist in disposition; or retain pending results of customer's request to waiver limit. All forms used in inspecting, classifying and determining maintenance limits will be provided to customer for assistance in disposal or reporting to MSC for disposition instructions. Do not include expense for operating maintenance (unit maintenance which has not been performed) when repairing on a return-to-user-basis.		

SECTION V. DISPOSITION

5-1. Procedures. Disposition of materiel is the responsibility of the using unit and the Supply Support Activity (SSA) accountability officer. Disposition of materiel by supply activities will be in accordance with procedures in DA Pam 710-2-1 and DA Pam 710-2-2. The reporting of unserviceable materiel to MSC's for disposition instructions will be in accordance with provisions in the unit supply update, instructions in this TB or other appropriate DA guidance.

a. Maintenance support units will assist SSA's or supported units, as necessary, in the evacuation of unserviceable or uneconomical repairable materiel to expedite turn-in or further evacuation.

b. When returning equipment to supported customers, all forms used in inspecting, classifying and determining maintenance expenditure limits will be provided to assist in requesting waiver, disposal or reporting to MSC for disposition instructions.

SECTION VI. WAIVERS

6-1. Procedures. A request to waiver the published MEL may be submitted by the using (owning) unit or by the supporting materiel management center through supporting maintenance channels responsible for repair to MACOM commanders for approval. MACOM commanders may exceed the published MEL when any of the conditions in AR 750-1 apply.

6-2. Approval Criteria. MACOM commanders will ensure the following in approving waivers:

a. The required repairs will not be broken into separate job estimates for the purpose of circumventing prescribed one-time repair allowances.

b. The unit or organization requesting the waiver has been unable to obtain timely replacement of the uneconomically repairable asset from the appropriate NICP.

c. An urgent operational or training requirement exists which justifies the uneconomical repair.

d. Resources are available (or can be made available) to the requisitioning organization or command to accomplish the required repairs within an acceptable period of time.

6-3. Forms. Send Request for Waiver and/or Disposition (DA Form 3590) with DA Form 2404 and DA Form 461-5 (if applicable) to Commander, U. S. Army Tank-Automotive Command, ATTN: AMSTA-FH, Warren, Ml 48397-5000. A copy of the above request must also be submitted to Commander, Army Tank-Automotive Command, ATTN: AMSTA-MV, Warren, Ml 48397-5000.

SECTION VII. REFERENCES

7-1. Department of the Army Publications. Department of the Army Publications applicable to this TB are as follows:

a. Department of Army Forms
   (1) DA Form 401-5 (Vehicle Classification Inspection)
   (2) DA Form 2404 (Equipment Inspection and Maintenance Work Sheet)
   (3) DA Form 2407 (Maintenance Request)
   (4) DA Form 3590 (Request for Disposition or Waiver)

b. Department of Army Pamphlets
   (1) DA PAM 710-2-1 (Using Unit Supply System, Manual Procedures)
   (2) DA PAM 710-2-2 (The Supply Support Activity, 55A, Supply System)
   (3) DA PAM 738-750 (The Army Maintenance Management System, TAMMS)

c. Department of Army Regulations
   (1) AR 37-60 (Pricing for Material and Supplies)
   (2) AR 700-127 (Integrated Logistic Support)
   (3) AR 750-1 (Army Materiel Maintenance Concepts and Policies)
   (4) AR -4 (Depot Materiel Maintenance and SupportlTraining Activities)

d. Department of Army Supply Bulletins
   (1) SB 700-20 (Army Adapted/Other Items Selected for Authorization/List of Reportable Items)
   (2) SB 710-1-1 (Standard Study Numbering System and Replacement Factors)

e. Department of Army Technical Bulletins

(1) TB 43-0001-35 Series (Equipment Improvement Report and Maintenance Digest)

(2) TB 43-0140 (Instructions for Preparation of Request for Disposition or Waiver (DA Form 3590) for TACOM Equipment)

(3) TB 43-0217 (Instructions for Preparation of Request for Disposition or Waiver for TACOM Construction and Material Handling Equipment)

SECTION VIII. EXPLANATION OF ABBREVIATIONS AND TERMS

8-1. Department of Army Acronyms. Department of Army Acronyms applicable to this TB are as follows:

AMDF - Army Master Data File
DA - Department of Army
MAC - Maintenance Allocation Chart
MACOM - Major Command
MEL - Maintenance Expenditure Limits
MOS - Military Occupation Specialist
MSC - Major Subordinate Command
SSA - Supply Support Activity
TACOM - U. S. Army Tank-Automotive Command
TB - Technical Bulletin
TM - Technical Manual

SECTION IX. APPENDIX

9-1. General. The appendix contains equipment listings and data for determining repair eligibility. The equipment listing contains only those end items that are known to be in the hand of troop or depot stock. These listings are not to be used as an identification list of the items assigned to the Federal Supply Class (FSC) indicated. For complete materiel identification on an applicable FSC group, refer to the appropriate Federal Supply Group Identification List (IL).

9-2. Explanation of Columns. The explanation of columns in the appendix are as follow:

a. Column (I) lists the equipment end item National Stock Number (NSN) in numerical sequence.

b. Column (2) lists the equipment end item identification item generic nomenclature, functional capability, make and model.

c. Column (3) lists the year that item was manufactured. If no date is shown, refer to the equipment data plate or equipment log book.

d. Columns (4) through (14) lists repair limitations. The limiting years in which the percentage shown at the top of columns can be applied to the end item replacement price as the authorized one-time repair expenditure.

e. One-time MEL authorized percentage extensions on fielded equipment that has exceeded life expectancy are listed in appropriate columns marked with an asterisk sign as long as the item is classified Standard A or until washed out of Army system. MEL managers in local commands should use discretion in the application of this authorized percentage MEL extension. The critical need for equipment by a particular unit must be considered plus fielding of replacement equipment being delivered in near term.

APPENDIX A
MAINTENANCE EXPENDITURE LIMITS FOR FSC CLASS 4310

NATIONAL STOCK NUMBER	ITEM IDENTIFICATION	PROD YEAR	EXPENDITURE LIMITS						
			60%	55% 25%	50% 20%	45% 10%	40% 0%	35%	30%
1	2	3 4		5	6	7	8	9	10
		11		12	13	14			
4310-00-075-7064	COMPRESSOR, AIR: DED, Trailer Mounted, 2 Wheel Pneumatic Tires, 250 cfm, 100 psi, Davey Model M250RPV	1965							
4310-00-078-2462	COMPRESSOR, AIR: DED, Trailer Mounted, 2 Wheel Pneumatic Tires, 250 cfm, 100 psi, Davey Model 6M250RPV	1968							
4310-00-136-4369	COMPRESSOR, ROTARY, AIR: DED, Wheel Mounted, Pneumatic Tires, 600 cfm, 100 psi, Davey Model 1 M600RPV	1969							
4310-00-248-3496	COMPRESSOR, AIR: DED, Trailer Mounted, 2 Wheel Pneumatic Tires, 250 cfm, 100 psi, Davey Model 9M250RPV	1969							
4310-00-256-9319	COMPRESSOR, AIR: DED, Trailer Mounted, 250 cfm, 100 psi, Davey Model, 14M250RPV	1971					*		
4310-00-471-3075	COMPRESSOR, AIR: DED, Trailer Mounted, 2 Wheel Pneumatic Tires, 250 cfm, 100 psi, Ingersoll-Rand Model RMS-250	1972					*		

AUTHORIZED MAINTENANCE EXPENDITURE LIMIT UNTIL ITEM IS REMOVED FROM THE ARMY SYSTEM

NATIONAL STOCK NUMBER	ITEM IDENTIFICATION	PROD YEAR	EXPENDITURE LIMITS 60%	55% 30%	50% 25%	45% 20%	40% 10%	35% 0%
1	2	3 4		5	6	7	8	9 1
4310-00-542-2525	COMPRESSOR, ROTARY, AIR: DED, Wheel Mounted, Pneumatic Tires, 600 cfm, 100 psi, Ingersoll-Rand Model DR-600D	1962						
4310-00-542-2526	COMPRESSOR, ROTARY, AIR: DED, Wheel Mounted, Pneumatic Tires, 600 cfm, 100 psi Winterized, Ingersoll-Rand DR-600B	1960						*
4310-00-797-3417	COMPRESSOR, ROTARY, AIR: DED, Trailer Mounted, 250 cfm, 100 psi, Ingersoll-Rand Model M21ORP	1962						*
4310-00-878-1905	COMPRESSOR, AIR: DED, Wheel Mounted, Pneumatic Tires, 600 cfm, 100,psi, Worthington Model 2016	1969					*	
43 10-00-952-7 142	COMPRESSOR, ROTARY, AIR: DED, Trailer Mounted, 2 Wheel, Pneumatic Tires, 250 cfm, 100 psi Joy Model RPV250DC-20MSI	1965						*
4310-01-053-3891	COMPRESSOR, ROTARY, AIR: DED, Trailer Mounted, Pneumatic Tires, 750 cfm, 100 psi, Sullair Model 750DP	1978					1992 1993	*
4310-01-158-3262	COMPRESSOR, AIR: DED, Trailer Mounted, 250 cfm, 100 psi, Ingersoll-Rand Model 35083880	1983				1992	1994 1996	*

*AUTHORIZED MAINTENANCE EXPENDITURE LIMIT UNTIL ITEM IS REMOVED FROM THE ARMY SYSTEM

By Order of the Secretary of the Army:

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

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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