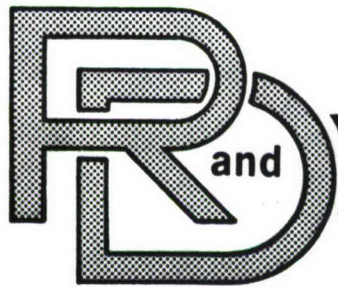


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TECHNICAL REPORT

No. 12653



FABRICATION OF T-156 TRACK BUSHING ASSEMBLIES

FINAL REPORT

JULY, 1982

U. S. ARMY

TANK - AUTOMOTIVE COMMAND

CONTRACT NO. DAAE07-81-C-4095

by C. E. LYNN

THE GOODYEAR TIRE & RUBBER CO.
P. O. BOX 288
ST MARYS, OHIO 45885

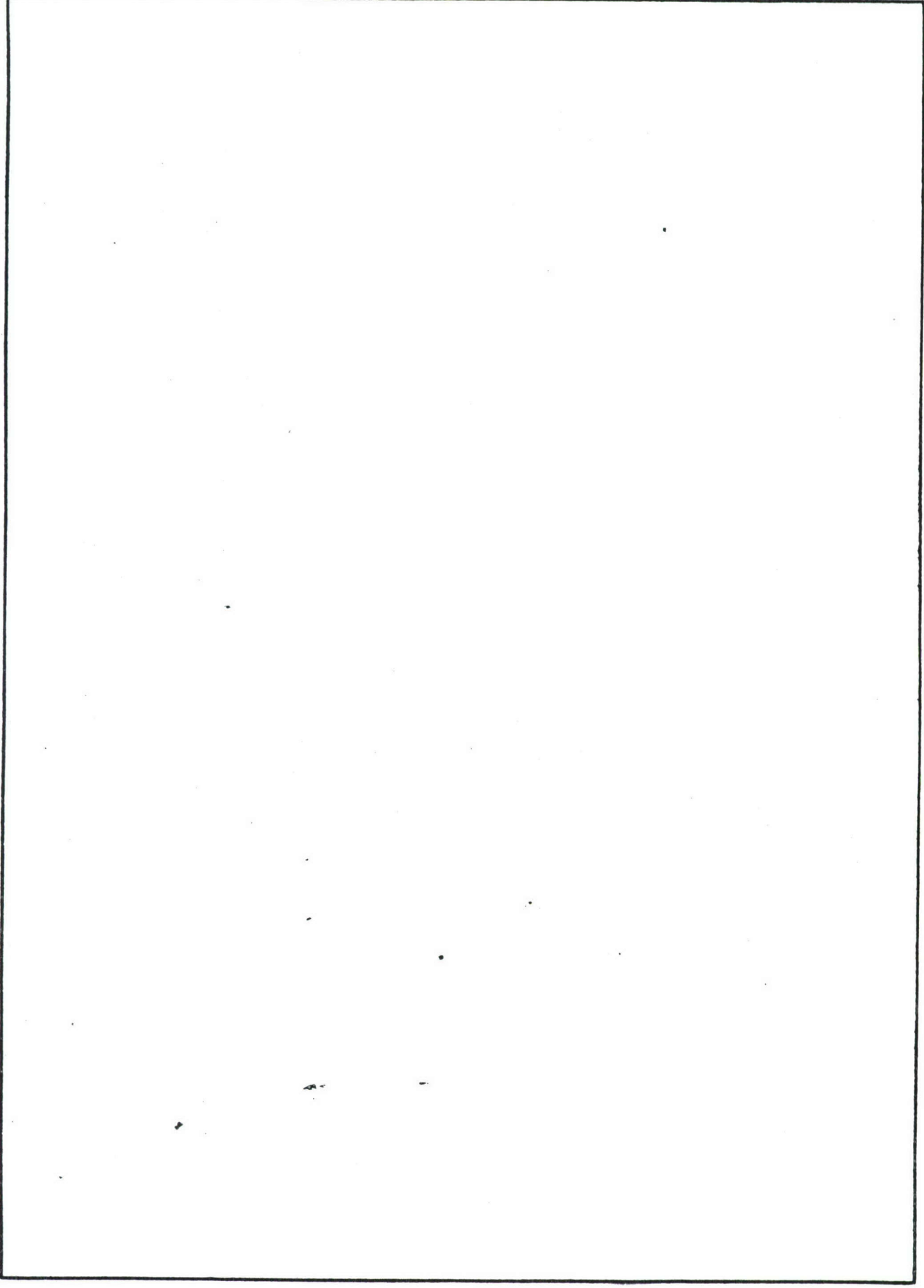
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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER 12653	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Fabrication of T-156 Track Bushing Assemblies		5. TYPE OF REPORT & PERIOD COVERED Final
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Charles E Lynn		8. CONTRACT OR GRANT NUMBER(s) DAAE07-81-C-4095
9. PERFORMING ORGANIZATION NAME AND ADDRESS The Goodyear Tire & Rubber Company P. O. Box 288 St Marys, Ohio 45885		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS DD Form 1423
11. CONTROLLING OFFICE NAME AND ADDRESS U. S. Army Tank - Automotive Command DRSTA-RCKT 6501 East Eleven Mile Road, Warren, Michigan		12. REPORT DATE July 1982
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Components Process Rubberizing		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report gives a brief description of the manufacturing process for rubberizing 1500 T-156 pins according to drawing P3-18483		



SUMMARY

The Goodyear Tire & Rubber Company, a manufacturer of component products for military tracked vehicles, rubberized 1500 T-156 track shoe pins (Ref Dwg 12274418) to a given configuration as shown on Dwg P3-18483.

Material used in the rubberization process was Goodyear's QPL rubber - SM7541 as specified on Dwg P3-18483.

Materials and processing were monitored according to Military Specification Mil-T-11891 and Goodyear's QCI - No. 25.

Manufacturing technology applicable to this part is similar to that used in the fabrication of other military track-shoe-pin bushing assemblies.

TABLE OF CONTENTS

Page No.

Summary	2
Objective	4
Description of Assembly Procedure	5
Conclusion	6
Physical Testing Results	7
Distribution Statement	8
Drawings	9

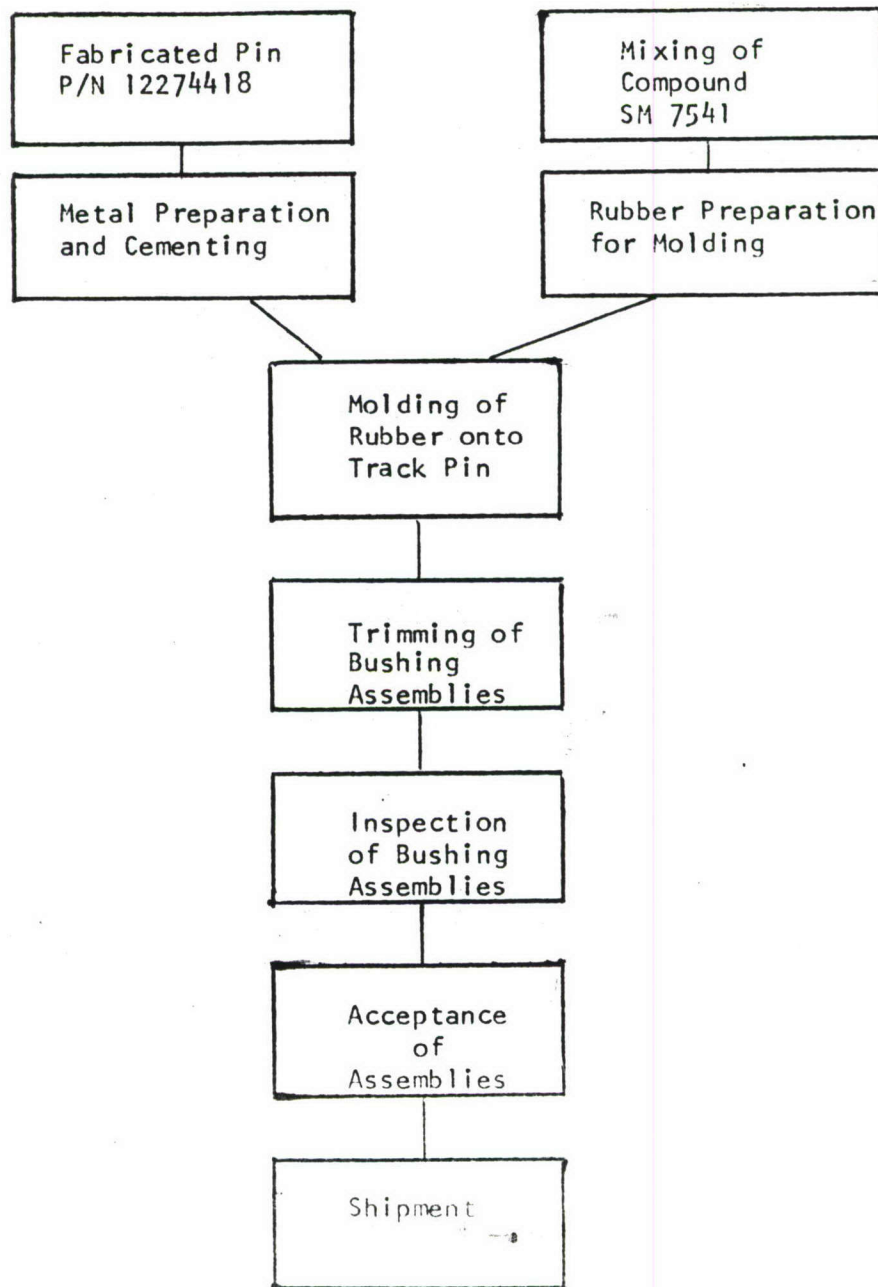
OBJECTIVE

The purpose is to identify the manufacturing processes of a T-156 track shoe bushing assembly and denote problem areas within that procedure.

An independent contractor, not an agent of the Government, shall provide the personnel, materials and manufacturing facilities to fabricate 1,500 T-156 track pins and rubberize them per drawing P3-18483.

DESCRIPTION OF ASSEMBLY PROCEDURE

The description of assembly procedures is presented in the following flow chart.



CONCLUSION

The assembly and molding process for the 1,500 T-156 track-shoe-pin bushing assemblies was accomplished at the manufacturing facilities of The Goodyear Tire and Rubber Co., St Marys Plant, St Marys, Ohio.

No particular problems were encountered in any of the various production processes.

All phases were monitored under Mil-T-11891 and Goodyear's QCI 25.

PHYSICAL TESTING RESULTS

Shot Peening Intensity Values

(Checks per MIL-S-13165 to 0.010 A to 0.020# A)

Results: 0.012 - 0.013 Range
Average Value - 0.0125

Bushing Adhesion Pull Values

(Checks per MIL-T-11891 - Outer Bushings - 33 lb/min)
- Inner Bushings - 37 lb/min)

Results: 40 - 65 Range - Inner
Average Value - 52 lb

Results: 34 - 62 Range - Outer
Average Value 50 lb

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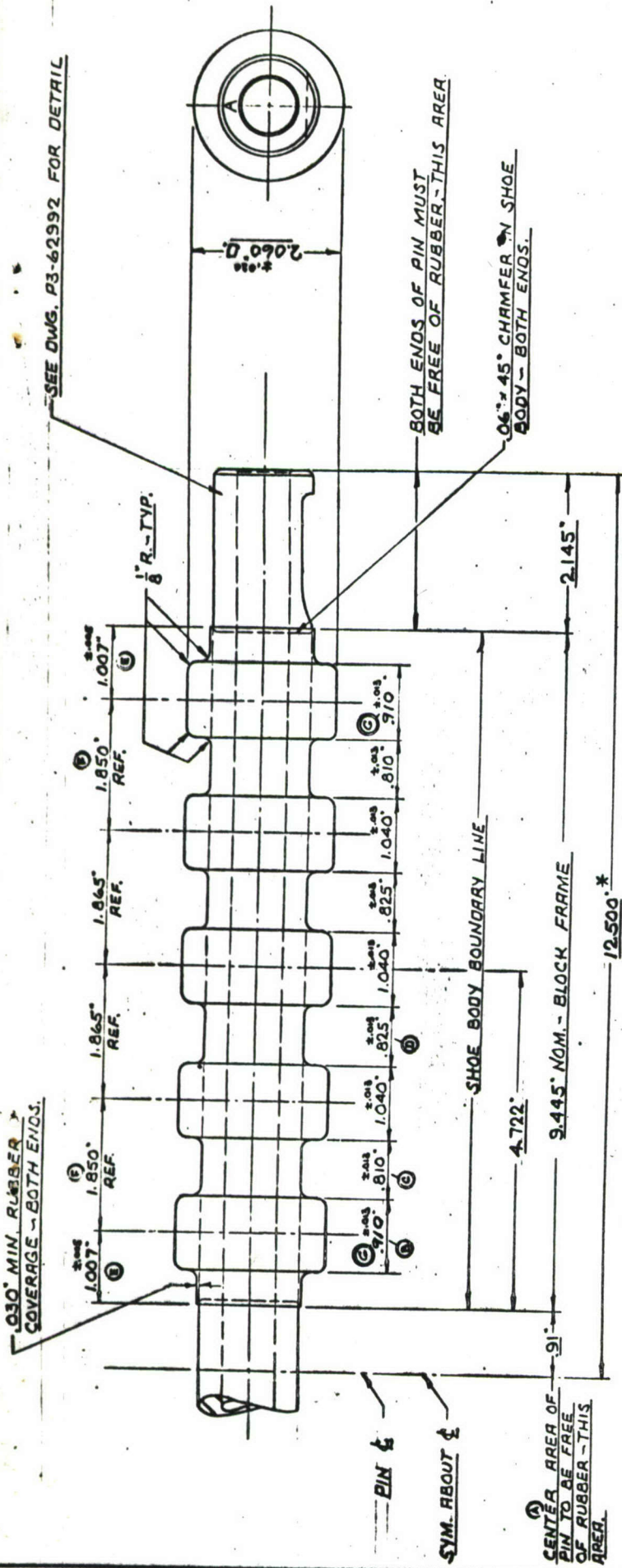
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1240 East Ninth Street
Cleveland, Ohio 44199
Attn: Ignacio Cardenas, Contracting Officer

DRAWINGS

Attachment I - Dwg No. P3-18483, Rev 3, Dated 1-20-81

Attachment II - Dwg No. 12274418, Rev C, Dated 5-12-80



BOTH ENDS OF PIN MUST BE FREE OF RUBBER - THIS AREA

06" ± 45° CHAMFER ON SHOE BODY - BOTH ENDS.

NOTE:

1. MATERIAL: RUBBER QPL - SM 7541 GOODYEAR TIRE & RUBBER Co. ST. MARYS, OHIO
2. TOLERANCE RMA STANDARD DESIGNATION "A2"
3. WORK PERFORMED UNDER CONTRACT N^o. DAAK30-79-C-0143

REV 3 1/15/81 REV 1 JUN 11-15-80

③ DIM. WAS 1.855" STATIC WIRES AND RESPECT

④ DIM. WAS 1.002" VE NOTES REMOVED

⑤ DIMS (4) WERE .853

⑥ DIM. (5) WAS 1.030"

⑦ NOTE ADDED, C.C.L. 1-15-80

ITEM	NAME	MATL	NO. DOP

TITLE: BUSHING & PIN ASSEMBLY

25" TRACK PROPOSAL

FAST NO. P-25-21 DATE: 1-2-80

DRAWN BY: KING MOULD NO.

CHECKED BY: G.C.L. DWG. NO. P3-18483

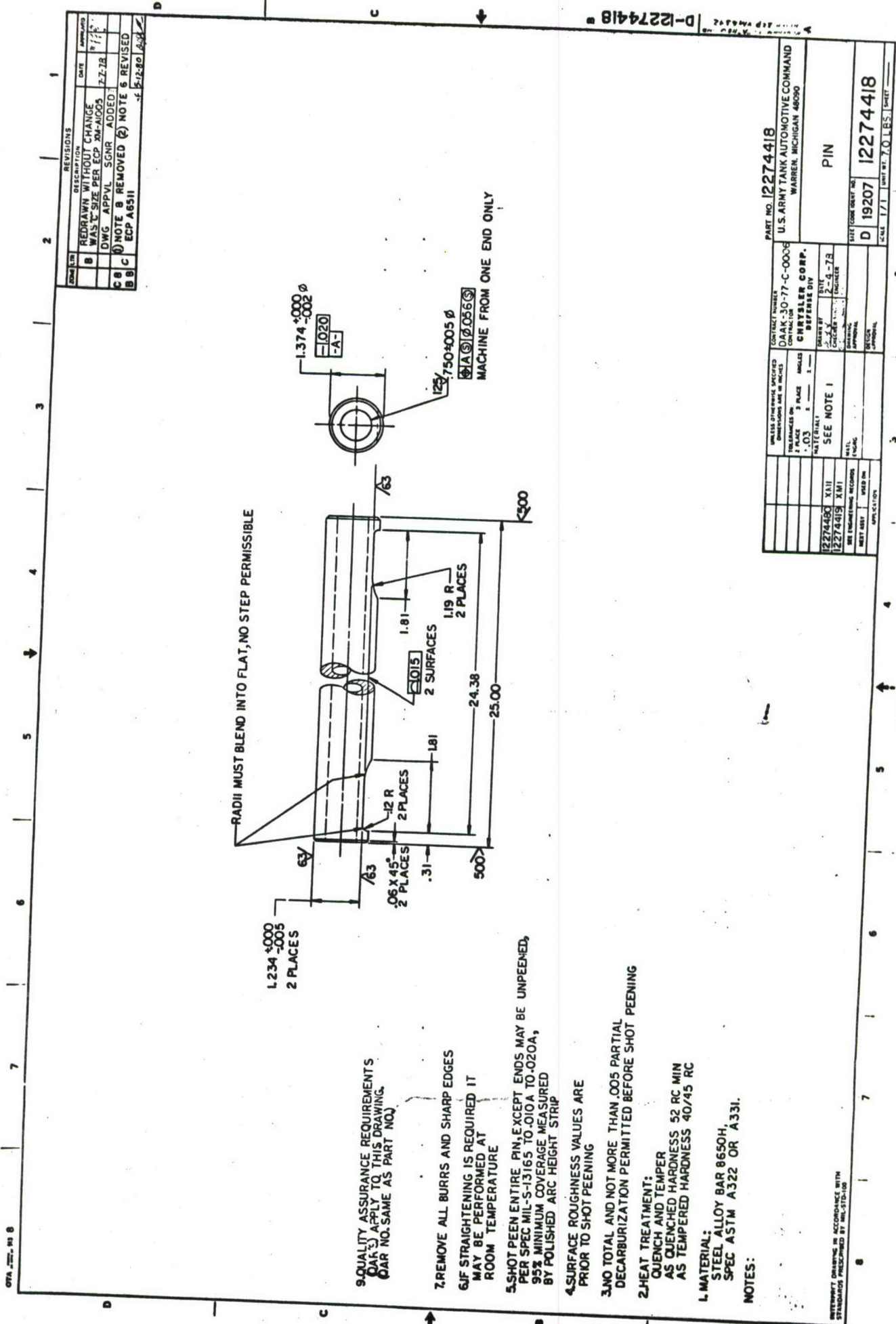
APPROVED BY: G.C.L.

TOLERANCES UNLESS SPECIFIED

UNLESS OTHERWISE SPECIFIED - DIMENSIONS ON DECIMALS UNLESS NOTED OTHERWISE

THE GOODYEAR TIRE & RUBBER COMPANY ST. MARYS, OHIO

* TOTAL PIN LENGTH 25.00"



REV	DESCRIPTION	DATE	APPROVED
B	REDRAWN WITHOUT CHANGE WAS T-SIZE PER ECP XM-AUG64	7-2-72	
C	DWG APPVL SIGNR ADDED		
D	NOTE B REMOVED (2) NOTE C REVISED		
E	ECP A6511	1-12-80	

9. QUALITY ASSURANCE REQUIREMENTS (QAR'S) APPLY TO THIS DRAWING. (QAR NO. SAME AS PART NO.)
7. REMOVE ALL BURRS AND SHARP EDGES
6. IF STRAIGHTENING IS REQUIRED IT MAY BE PERFORMED AT ROOM TEMPERATURE
5. SHOT PEEN ENTIRE PIN, EXCEPT ENDS MAY BE UNPEENED, PER SPEC MIL-S-13165 TO .010 A TO .020 A, 95% MINIMUM COVERAGE MEASURED BY POLISHED ARC HEIGHT STRIP
4. SURFACE ROUGHNESS VALUES ARE PRIOR TO SHOT PEENING
3. NO TOTAL AND NOT MORE THAN .005 PARTIAL DECARBURIZATION PERMITTED BEFORE SHOT PEENING
2. HEAT TREATMENT: QUENCH AND TEMPER AS QUENCHED HARDNESS 52 RC MIN AS TEMPERED HARDNESS 40/45 RC
1. MATERIAL: STEEL ALLOY BAR 8650H, SPEC ASTM A322 OR A331.

NOTES:

CONTRACT NUMBER DAAK-30-77-C-0008		CONTRACTOR BIRDAIR CORP.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		MATERIAL SEE NOTE 1	
1. PLACE	2. PLACE	3. PLACE	4. PLACE
.03	1	1	1
DRAWN BY JAY		CHECKED BY JAY	
DESIGNED BY JAY		APPROVED BY JAY	
PART NO. 12274418		U.S. ARMY TANK AUTOMOTIVE COMMAND WARREN, MICHIGAN 48090	
SIZE CODE (SEE FIG)		PIN	
D 19207		12274418	
SCALE 1/1		UNIT WT. LBS.	

XM-ECP
A6511

D-12274418