

AD-A163 462

WARRANTED HANDTOOLS FOR TRANSPORTATION VEHICLE
MAINTENANCE(U) AIR FORCE LOGISTICS MANAGEMENT CENTER
GUNTER AFS AL K R DALTON ET AL. OCT 85

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ABSTRACT

The objective of this study was to evaluate vehicle maintenance handtool breakage rates to determine if procuring warranted handtools would be economically beneficial. We evaluated GSA tool failure rates at 12 selected bases over a 6-month period. Using the same analytical procedure as a previous aircraft maintenance study, we found tool breakage rates in vehicle maintenance to be significantly less than in aircraft maintenance. Vehicle maintenance tool breakage data does not economically justify including transportation in the warranted handtool program.

Approved

EXECUTIVE SUMMARY

HQ USAF/LET tasked the AFLMCO to initiate a project to determine the cost effectiveness of procuring long-term warranted handtools to help eliminate reported problems with deficient, poor quality tools in vehicle maintenance.

A previous LMC study proved warranted handtools for aircraft maintenance was economically beneficial. Vehicle mechanics claimed their tools had the same problem: a high breakage rate due to poor design, weak metal, or plastic parts; loss of productivity, time, and effectiveness when tools break, and ultimately reduced morale.

This study evaluated GSA tool failure rates at 12 selected bases in 6 MAJCOMS. Data was collected over a 6-month period beginning December 1984. The field evaluation measured tool failures and losses for 309 selected high-use tools in vehicle maintenance. We then performed an analysis to determine if the use of warranted tools in vehicle maintenance would result in an economic savings to the Air Force.

The conclusion of our evaluation revealed a 3.3 percent breakage rate for GSA tools compared to the 25 percent rate found in the aircraft maintenance study. At a 4 to 1 cost ratio of warranted tools to GSA tools, the cost comparison payback rate for the 3.3 percent breakage in vehicle maintenance exceeds 30 years compared to 3.8 year payback found for aircraft maintenance. Thus, breakage rates and ultimate cost savings to the Air Force do not justify purchasing warranted handtools for vehicle maintenance.

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CHAPTER 1

THE PROBLEM

BACKGROUND

This project is similar to a previous AFLMC study, WARRANTED TOOLS FOR AIRCRAFT MAINTENANCE (6). The Aircraft Maintenance study demonstrated normal handtools procured through GSA had a high breakage rate when used in jet engine shops and recommended the use of higher quality tools with a lifetime warranty. Field tests of warranted tools showed dramatically reduced breakage rates, and a payback of under 4 years. Although the warranted tools were initially more expensive, they saved money in the long run. Vehicle mechanics at base level believe the need exists for the same quality tools in transportation. The objective of this project was to determine whether or not warranted tools would be cost effective in vehicle maintenance.

PROBLEM STATEMENT

Vehicle mechanics report experiencing high levels of tool failure with standard GSA tools. They expressed concern about the tools failing due to poor quality; some tool failures have caused personal injury. These failures and injuries have caused user frustration. When tools break and cannot be readily replaced, this lost time costs the Air Force valuable manhours.

FACTORS BEARING ON THE PROBLEM

1. ASSUMPTIONS:

- a. The primary criterion to determine implementation of warranted tools is replacement costs compared to failure rates of broken tools.
- b. The sample for the field evaluation was representative and the sample size was sufficient to form a basis for economic analysis.
- c. Bases reported all GSA tool losses and failures to the AFLMC using the monthly collection forms provided.

CHAPTER II

DEVELOPMENT

APPROACH

The objective of this project was to evaluate vehicle maintenance handtool breakage rates to determine if procuring warranted tools would be economically beneficial.

The placement of warranted tools in aircraft maintenance was determined by a field evaluation comparing 72 selected warranted tools with comparable GSA tools. Analysis of breakage rates from the evaluation gave Aircraft Maintenance a 3.8 year payback for warranted tools. We opted to perform the same analysis in our vehicle maintenance shops, but budgetary constraints would not allow us to field test warranted tools. It was more economical to evaluate the GSA tools presently being used and compare those failure rates to the data developed in the aircraft maintenance study. To determine the tools for the evaluation, we used tool-issue rates from our supply data banks and information supplied by the bases we worked with. From this data we selected 309 high-use tools (see Table 2). We determined a 6-month field evaluation at a minimum of 10 bases would be sufficient to obtain the data needed. Six MAJCOMS, MAC, TAC, SAC, AAC, PACAF, and USAFE were contacted for test bases; we began our evaluation with 12 bases (see Table 1).

Evaluation packages were sent to the 12 bases so vehicle mechanics could document tool failures. We received data on inventory, breakage and losses on the 309 high-use tools and analyzed this data for annual tool failure percentages. GSA tool failure rates in vehicle maintenance were then compared to those found in the aircraft maintenance study.

RESULTS

The evaluation revealed the percent failure rate for the 309 tools was 3.3 percent. The economic payback formula uses many factors to determine the payback period. It uses, in addition to the annual failure rate, cost of both the warranted and non-warranted items, cost of replacement transactions, method of replacement (on-base vs off-base), inflation, discounts, etc. However, it can be approximately expressed as follows: to obtain a 4 year payback, a tool must exhibit a 25% annual failure rate if the cost differential of the warranted versus non-warranted is 4 to 1. The failure rate of 3.3 percent (approximately 1/8 that of aircraft maintenance) would equate to a payback period in excess of 30 years.

There were two tool groups with failure rates of 10 and 11 percent, rates high enough to suggest taking a hard look at the quality of tools being issued in these two tool groups. These tools and failure rates are listed in Tables 3 & 4.

Although tool control procedures were not specifically addressed in this report, the .1 percent loss rate found in this study indicates present tool control methods are effective.

CHAPTER III

CONCLUSIONS

We determined a 3.3 percent failure rate for GSA tools, compared to the 25 percent found in aircraft maintenance, will not justify purchase of warranted tools. Based on a 4 to 1 cost ratio of warranted tools to GSA tools, it is not economically beneficial to purchase warranted tools in vehicle maintenance.

We did find two tool groups with relatively high failures (Tables 3 & 4). These two groups of tools need to be watched by maintenance shops and failures reported using the Material Deficiency Reporting (MDR) system. Since these tools have a high potential for abuse/misuse, vehicle maintenance supervisors should stress their proper utilization and continue to monitor breakage frequency of these tools.

CHAPTER IV

RECOMMENDATIONS

1. Recommend vehicle maintenance continue using GSA tools. Based on the data received from the field evaluation, our current tool procurement system is more cost effective than buying warranted handtools. (OPR: HQ USAF/LETN)
2. Recommend MAJCOM/LGT's publicize our findings and encourage bases to document through the Material Deficiency Reporting (MDR) system tool failure not attributed to normal wear, abuse, or misuse. We recognize GSA tools are obtained from many sources, with manufacturer, lot number, stock/part number, etc., often unavailable. MDRs however, should be submitted for each tool failure giving as much information about the item as possible. This is the only way we can ensure the item manager is notified of tool quality deficiencies. (OPR: MAJCOM LGTs)
3. Additionally, we recommend vehicle maintenance maintain the current tool control methods. Present tool control, based on loss rate data from the evaluation, seems to be working in transportation. (OPR: MAJCOM LGTs).

TABLE 1

PARTICIPATING BASES AND COMMANDS

60 HAW, Travis AFB, CA (MAC)
 317 TAW, Pope AFB, NC (MAC)
 90 SMW, F. E. Warren AFB, WY (SAC)
 44 SMW, Ellsworth AFB, SD (SAC)
 23 Trans, England AFB, TX (TAC)
 56 Trans, MacDill AFB, FL (TAC)
 347 Trans, Moody AFB, FL (TAC)
 401 TFW, Torrejon AB, SP (USAFE)
 513 TAW, RAF Mildenhall, UK (USAFE)
 313 AD, Kadena AB, JA (PACAF)
 3rd TFW, Clark AB, RP (PACAF)
 21 TFW, Elmendorf, AK (AAC)

Transportation Tool Project - Inventory Consumption Rate Summary

Stock Number	* Number Authorized	** Predicted Ann. Firs.	** Annual Inv. Consumed (%)	Nomenclature
5120002409100	649.	38.4	5.9	Adapter, Socket Wrench, 1/2" Sq Male End, 3/8" Female End
5120002409102	627.	19.6	3.1	Adapter, Socket Wrench, 3/8" Sq Male End, 1/2" Female End
5120002409109	619.	40.6	6.6	Bar, Pry 17/32" Dia., 15" to 16" lg
5120002409119	98.	4.8	0.9	Bandier Set, Tube, Hand
5120002409132	447.	2.4	0.5	Extension, Socket Wrench, Flow, 1/4" sq dr, 6" long
5120002409137	657.	20.0	3.0	Extension, Socket Wrench, 1/2" sq dr, 10" long
5120002409197	642.	10.4	1.6	Extension, Socket Wrench, 1/2" sq dr, 2" long
5120002409103	532.	6.8	1.3	Extension, Socket Wrench, 1/2" sq dr, 20" long
5120002409126	632.	17.8	2.8	Extension, Socket Wrench, 1/2" sq dr, 5" long
5120002409191	568.	20.4	3.6	Extension, Socket Wrench, 3/8" sq dr, 12" long
5120002409189	645.	0.0	0.0	Extension, Socket Wrench, 3/8" sq dr, 3" long
5120002409107	555.	9.0	1.6	Extension, Socket Wrench, 3/8" sq dr, 6" long
5120002409190	415.	0.0	0.0	Extension, Socket Wrench, 3/8" sq dr, 8" long
5120002409184	382.	21.0	5.5	Extractor, Cotter Pin, 6" long, CID A-A-385
5120003575153	349.	4.4	1.3	Extractor, Set Screws, No 1-6, 3/16-1/4", 1/4-3/4", tapered
5120002409158	630.	21.8	3.5	Finquor, Mechanical Flax, 14 7/8" reach, GGG-F-U0360
5120006618141	604.	29.4	4.9	Hammer, Hand, Machine, Ball Peen, 8 oz
51200030518243	656.	31.4	4.8	Hammer, Hand, Machine, Ball Peen, 16 oz
51200030518246	599.	38.8	6.6	Hammer, Hand, Machine, Ball Peen, 32 oz
51200030518340	474.	22.8	4.8	Hammer, Hand, Machine, Ball Peen, 4 oz
51200030518345	299.	38.0	13.1	Hammer, Hand, Screw Insert 1" Face, 9 oz
51200030518348	34.	2.4	7.1	Hammer, Tack, Magnitized, 5 oz
5120002732193	130.	8.4	6.5	Handle, Socket Wrench, Sliding Tee, 3/8" sq dr, 4 1/2" long
512000240913143	425.	0.0	0.0	Handle, Socket Wrench, 1/2" drive x 19" long, Hinged
51200023317400	542.	50.4	9.3	Handle, Socket Wrench, 1/2" drive x 9" long, Hatchet
5120002305283	675.	80.4	11.9	Handle, Socket Wrench, 1/2" drive, Brace 18" long (Speeder)
51200024091071	274.	0.0	0.0	Handle, Socket Wrench, 3/8" drive, Brace 16" long (Speeder)
5120002374164	318.	4.0	1.3	Handle, Socket Wrench, 3/8" drive, 10 1/4" long, Hatchet
51200030654013	395.	39.2	9.9	Handle, Socket Wrench, 3/8" drive, 6" long, Hatchet
51200024091364	654.	123.8	18.9	Handle, Socket Wrench, 3/8" drive, 8 1/2" long, Hinged
51200024091596	632.	21.6	4.4	Mallet, R-White, 11 oz.
5120002333307	243.	25.6	10.3	Mallet, Rubber
5120002933399	163.	0.0	0.0	Pliers, Battery Terminal, 7"
51200024091907	613.	23.2	3.8	Pliers, Brake Spring Repair, 12"
51200024091844	515.	19.4	3.0	Pliers, Curved, Round, Needle Nose, 6"
5120002308250	544.	37.4	6.0	Pliers, Duckbill, 6"
5120002308253	542.	43.0	7.4	Pliers, Retaining Ring, Ext. Brake Key
51200023082150	350.	5.0	1.7	Pliers, Retaining Ring, Ext. Flat Jaws, 0.87"-1.00"
51200024091951	392.	23.2	5.9	Pliers, Retaining Ring, Ext. Flat Jaws, 1.43" - 2.00"
51200024091953	173.	7.2	4.2	Pliers, Retaining Ring, Ext. Flat Jaws, 1.43" - 2.00"
5120002930949	144.	9.8	3.3	Pliers, Retaining Ring, Ext. Flat Jaws, 1.43" - 2.00"
51200023082120	324.	2.0	0.6	Pliers, Slip Joint, Angle Nose, Straight Jaw 10"
51200024091952	597.	64.2	11.6	Pliers, Slip Joint, Angle Nose, Straight Jaw 10"
512000230821375	600.	28.0	4.7	Pliers, Slip Joint, Angle Nose, Straight Jaw 10"
512000230821397	453.	13.6	3.0	Pliers, Slip Joint, Angle Nose, Straight Jaw 10"
512000240919492	504.	8.0	2.6	Pliers, Slip Joint, Angle Nose, Straight Jaw 10"
512000240919491	274.	33.6	12.1	Pliers, Slip Joint, Angle Nose, Straight Jaw 10"

* The number authorized indicates total tools authorized at the 12 evaluation bases.

** The predicted annual failures are the reported tool breakage/failure(s) for the 12 bases extrapolated to 12 months.

*** The annual inventory consumed percent (%) is the predicted annual breakage/failure(s) for the 12 bases compared to the total authorizations.

TABLE 2

Stock Number	Number Authorized	Predicted Ann. Flrs.	Annual Inv. Consumed (2)	Description
5120002249453	350.	2.4	0.7	Puller, Fuse, Plier Type, 1/4" - 1/2"
5120003444242	321.	0.0	0.0	Puller, Terminal, Battery Clamp
5120002437322	295.	0.8	3.0	Katchet Attachment, Socket Wrench, Rev., 1/2" sq dr
5120002271207	121.	0.0	0.0	Katchet Attachment, Socket Wrench, Rev., 1/4" sq dr
5120002270129	240.	9.2	3.8	Katchet Attachment, Socket Wrench, Rev., 3/8" sq dr
5120002246573	249.	7.4	2.6	Knover and Setter, Stud, 1/4" - 3/4"
5120002270127	290.	8.0	2.8	Screw Starter, Hand, 1/16" x 11 1/4" long, Type III
5120002433296	236.	4.4	1.9	Screw Starter, Hand, 9/32" x 5 1/4" long, Type III
5120006184409	239.	4.0	1.7	Screwdriver, Clutch Tip, 1/4" x 5" long
5120006184407	79.	10.8	13.7	Screwdriver, Clutch Tip, 1/8" x 3" long
5120006184408	79.	8.0	10.1	Screwdriver, Clutch Tip, 3/16" x 4" long
5120006184411	128.	4.0	3.1	Screwdriver, Clutch Tip, 3/32" x 3" long
5120005144910	148.	7.0	4.7	Screwdriver, Clutch Tip, 5/16" x 6" long
5120005144910	215.	6.0	2.8	Screwdriver, Clutch Tip, 9/32" x 6" long
5120002247370	492.	26.4	5.3	Screwdriver, Cross Tip, No. 1, 1" long
5120002930314	421.	48.0	11.4	Screwdriver, Flat Tip, 1/4" x 10" long
5120005968453	401.	86.2	21.5	Screwdriver, Flat Tip, 3/16" x 6" long
5120002277356	407.	94.4	14.6	Screwdriver, Flat Tip, 3/8" x 12" long, Straight sided
5120002277352	513.	74.8	23.2	Screwdriver, Flat Tip, 3/8" x 5" long, offset
5120002445232	642.	15.8	2.4	Screwdriver, Flat Tip, 7/32" x 10" long
5120002277334	519.	62.6	12.1	Screwdriver, Phillips no 2, 4" long
5120002344813	616.	85.4	13.9	Screwdriver, Phillips no 4, 8" long
5120002247375	654.	77.4	11.7	Screwdriver, Phillips no 3, 6" long
5120002344812	707.	83.0	11.7	Screwdriver, Phillips No. 2, 1 1/2" long
5120002277293	513.	16.0	3.1	Screwdriver, R & P Cross Tip, 1/4" x 4" long
5120002378173	135.	23.2	17.2	Screwdriver, R & P Cross Tip, 3/8" x 4" long
5120002378174	144.	4.8	3.3	Screwdriver, R & P, 5/16" x 6" long
5120002378172	257.	6.0	2.3	Shears, Bent Trimmers, 12" long
5110002039542	41.	0.0	0.0	Shears, Metal Cut, Hand, Straight, 10" long
5110002730128	473.	9.2	1.9	Socket, Deep Style, 1/2" sq dr, 1 1/16", 12 point
5120002437341	524.	14.6	2.8	Socket, Deep Style, 1/2" sq dr, 1 1/8", 12 point
5120002437339	465.	0.0	0.0	Socket, Deep Style, 1/2" sq dr, 1 1/2", 12 point
5120002437351	611.	20.6	3.4	Socket, Deep Style, 1/2" sq dr, 1", 12 point
5120002437340	627.	9.4	1.5	Socket, Deep Style, 1/2" sq dr, 1 1/16", 12 point
5120002437346	609.	13.2	2.2	Socket, Deep Style, 1/2" sq dr, 13/16", 12 point
5120002437343	648.	26.8	4.1	Socket, Deep Style, 1/2" sq dr, 15/16", 12 point
5120002437343	637.	9.2	1.4	Socket, Deep Style, 1/2" sq dr, 3/4", 12 point
5120002423349	670.	17.3	2.7	Socket, Deep Style, 1/2" sq dr, 5/8", 12 point
512000235393	613.	20.2	3.3	Socket, Deep Style, 1/2" sq dr, 7/8", 12 point
5120002437350	569.	6.4	1.1	Socket, Deep Style, 1/2" sq dr, 1 1/16", 12 point
5120002437342	646.	29.2	4.5	Socket, Deep Style, 1/2" sq dr, 1 1/2", 12 point
5120002437348	619.	16.4	2.6	Socket, Deep Style, 3/8" sq dr, 1 1/2", 12 point
5120002413185	652.	24.0	4.4	Socket, Deep Style, 3/8" sq dr, 1 1/16", 12 point
5120002774252	664.	0.0	0.0	Socket, Deep Style, 3/8" sq dr, 3/4", 12 point
5120002355879	669.	20.2	3.0	Socket, Deep Style, 3/8" sq dr, 3/8", 12 point
5120002771443	652.	29.8	4.6	Socket, Deep Style, 3/8" sq dr, 5/8", 12 point
5120002370018	575.	9.0	1.6	Socket, Deep Style, 3/8" sq dr, 5/8", 12 point

Stock Number	Number Authorized	Predicted Ann. Flrs.	Annual Inv. Consumed (x)	Monoculture
5120002711564	640.	20.8	3.2	Socket, Deep Style, 3/8" sq dr, 7/16", 12 point
5120002700117	637.	26.9	4.2	Socket, Deep Style, 3/8" sq dr, 7/16", 12 point
5130002218006	237.	0.0	0.0	Socket, Impact, 1/2" sq dr, 1/2", 6 point
5130002218011	239.	0.0	0.0	Socket, Impact, 1/2" sq dr, 13/16", 6 point
5130002216594	233.	3.0	1.3	Socket, Impact, 1/2" sq dr, 7/8", 6 point
5130002218009	107.	0.0	0.0	Socket, Impact, 1/2" sq dr, 11/16", 6 point
5130002218007	96.	2.4	2.5	Socket, Impact, 1/2" sq dr, 9/16", 6 point
5130002218010	107.	0.0	0.0	Socket, Impact, 1/2" sq dr, 3/4", 6 point
5130002218008	107.	2.0	1.9	Socket, Impact, 1/2" sq dr, 5/8", 6 point
5120001877113	602.	16.4	2.7	Socket, Regular Depth, 1/2" sq dr, 1 1/16", 12 point
5120001877114	656.	13.2	2.0	Socket, Regular Depth, 1/2" sq dr, 1 1/8", 12 point
5120002370084	676.	25.6	3.7	Socket, Regular Depth, 1/2" sq dr, 1/2", 12 point
5120001877227	651.	11.2	1.7	Socket, Regular Depth, 1/2" sq dr, 1", 12 point
5120002355370	681.	25.2	3.7	Socket, Regular Depth, 1/2" sq dr, 11/16", 12 point
5120001877233	692.	21.0	3.1	Socket, Regular Depth, 1/2" sq dr, 13/16", 12 point
5120001877235	645.	5.0	0.8	Socket, Regular Depth, 1/2" sq dr, 15/16", 12 point
5120001877485	661.	41.0	6.2	Socket, Regular Depth, 1/2" sq dr, 3/4", 12 point
5120002370082	652.	20.4	3.1	Socket, Regular Depth, 1/2" sq dr, 3/16", 12 point
5120001877146	559.	15.0	2.4	Socket, Regular Depth, 1/2" sq dr, 5/8", 12 point
5120001877124	632.	18.8	2.8	Socket, Regular Depth, 1/2" sq dr, 7/16", 12 point
5120001877134	692.	6.0	0.9	Socket, Regular Depth, 1/2" sq dr, 7/8", 12 point
5120001877132	672.	39.6	5.9	Socket, Regular Depth, 1/2" sq dr, 9/16", 12 point
5120002370077	673.	39.8	5.9	Socket, Regular Depth, 3/8" sq dr, 1/2", 12 point
5120002325706	679.	12.6	1.0	Socket, Regular Depth, 3/8" sq dr, 11/16", 12 point
5120002716705	690.	17.9	2.6	Socket, Regular Depth, 3/8" sq dr, 3/4", 12 point
5120002716702	658.	49.0	7.3	Socket, Regular Depth, 3/8" sq dr, 3/8", 12 point
5120002325711	560.	22.8	4.1	Socket, Regular Depth, 3/8" sq dr, 5/16", 12 point
5120002374973	694.	7.2	1.0	Socket, Regular Depth, 3/8" sq dr, 5/8", 12 point
5120002276703	666.	23.4	3.5	Socket, Regular Depth, 3/8" sq dr, 7/16", 12 point
5120002276704	638.	31.0	4.9	Socket, Regular Depth, 3/8" sq dr, 9/16", 12 point
5120006712431	527.	4.0	0.8	Socket, Spark Plug, 3/8" sq dr, 13/16", 12 point
5120001873754	358.	2.0	0.6	Socket, 14 M Spark Plug, 3/8" sq dr, 5/8", 12 point
5120002423355	619.	26.0	4.2	Socket, Mr, Univ, 3/8" sq dr, 1/2", 12 point
5120002730979	622.	20.4	3.3	Socket, Mr, Univ, 3/8" sq dr, 11/16", 12 point
5120002370980	610.	12.8	2.1	Socket, Mr, Univ, 3/8" sq dr, 3/4", 12 point
5120002355372	612.	7.2	1.2	Socket, Mr, Univ, 3/8" sq dr, 3/8", 12 point
5120002374974	613.	14.2	2.3	Socket, Mr, Univ, 3/8" sq dr, 5/8", 12 point
5120002423354	627.	12.0	1.9	Socket, Mr, Univ, 3/8" sq dr, 7/16", 12 point
5120002370978	616.	19.4	3.1	Socket, Mr, Univ, 3/8" sq dr, 9/16", 12 point
5120002874150	41.	0.0	0.0	Socket, 1/2" sq dr, 10 MM, 12 point, STD
5120002634138	36.	0.0	0.0	Socket, 1/2" sq dr, 11 MM, 12 point, STD
5120002874151	38.	0.0	0.0	Socket, 1/2" sq dr, 12 MM, 12 point, STD
5120002634137	41.	0.0	0.0	Socket, 1/2" sq dr, 13 MM, 12 point, STD
5120002874137	23.	0.0	0.0	Socket, 1/2" sq dr, 14 MM, 12 point, near
5120002634135	41.	0.0	0.0	Socket, 1/2" sq dr, 14 MM, 12 point, STD
5120002634149	39.	0.0	0.0	Socket, 1/2" sq dr, 15 MM, 12 point, STD
5120002634148	38.	0.0	0.0	Socket, 1/2" sq dr, 16 MM, 12 point, STD

Stock Number	Number Authorized	Predicted Ann. Flrs.	Annual Inv. Consumed (%)	Description
5120010206090	41.	0.0	0.0	Socket, 1/2" sq dr, 17 MM, 12 point, Deep
5120010206090	20.	0.0	0.0	Socket, 1/2" sq dr, 17 MM, 12 point, Deep
5120002634143	41.	0.0	0.0	Socket, 1/2" sq dr, 17 MM, 12 point, STD
5120002634142	27.	0.0	0.0	Socket, 1/2" sq dr, 18 MM, 12 point, STD
5120010467300	53.	0.0	0.0	Socket, 1/2" sq dr, 19 MM, 12 point, Deep
5120001401420	33.	0.0	0.0	Socket, 1/2" sq dr, 19 MM, 12 point, STD
5120010467301	39.	0.0	0.0	Socket, 1/2" sq dr, 20 MM, 12 point, Deep
5120002634141	56.	0.0	0.0	Socket, 1/2" sq dr, 20 MM, 12 point, STD
5120002634140	57.	0.0	0.0	Socket, 1/2" sq dr, 21 MM, 12 point, STD
5120010206090	41.	0.0	0.0	Socket, 1/2" sq dr, 22 MM, 12 point, Deep
5120002634139	57.	0.0	0.0	Socket, 1/2" sq dr, 22 MM, 12 point, STD
5120002634152	44.	0.0	0.0	Socket, 1/2" sq dr, 23 MM, 12 point, STD
5120002634151	57.	0.0	0.0	Socket, 1/2" sq dr, 24 MM, 12 point, STD
5120002634154	57.	0.0	0.0	Socket, 1/2" sq dr, 25 MM, 12 point, STD
5120002634153	35.	0.0	0.0	Socket, 1/2" sq dr, 26 MM, 12 point, STD
5120002634147	37.	0.0	0.0	Socket, 1/2" sq dr, 27 MM, 12 point, STD
5120002634144	38.	0.0	0.0	Socket, 1/2" sq dr, 28 MM, 12 point, STD
5120002634146	36.	0.0	0.0	Socket, 1/2" sq dr, 29 MM, 12 point, STD
5120002634145	35.	0.0	0.0	Socket, 1/2" sq dr, 30 MM, 12 point, STD
5120010206090	32.	0.0	0.0	Socket, 1/2" sq dr, 31 MM, 12 point, STD
5120010206097	38.	0.0	0.0	Socket, 1/2" sq dr, 32 MM, 12 point, STD
5120010467304	101.	0.0	0.0	Socket, 1/4" sq dr, 5 MM, 12 point, STD
5120010467305	112.	0.0	0.0	Socket, 1/4" sq dr, 6 MM, 12 point, STD
5120010467308	112.	0.0	0.0	Socket, 1/4" sq dr, 7 MM, 12 point, STD
5120010310102	112.	0.0	0.0	Socket, 1/4" sq dr, 8 MM, 12 point, STD
5120010206090	102.	0.0	0.0	Socket, 1/4" sq dr, 9 MM, 12 point, STD
5120010467303	99.	0.0	0.0	Socket, 1/4" sq dr, 10 MM, 12 point, STD
5120010206090	100.	0.0	0.0	Socket, 1/4" sq dr, 11 MM, 12 point, STD
5120010206097	101.	0.0	0.0	Socket, 1/4" sq dr, 12 MM, 12 point, STD
5120010206093	106.	0.0	0.0	Socket, 1/4" sq dr, 13 MM, 12 point, STD
5120010206096	99.	0.0	0.0	Socket, 1/4" sq dr, 14 MM, 12 point, STD
5120010206092	210.	0.0	0.0	Socket, 3/8" sq dr, 8 MM, 12 point, STD
5120010467302	206.	0.0	0.0	Socket, 3/8" sq dr, 9 MM, 12 point, STD
5120010467304	223.	0.0	0.0	Socket, 3/8" sq dr, 10 MM, 12 point, Deep
5120010206091	164.	0.0	0.0	Socket, 3/8" sq dr, 10 MM, 12 point, STD
5120010206092	227.	0.0	0.0	Socket, 3/8" sq dr, 10 MM, 12 point, Univ
5120010467307	146.	0.0	0.0	Socket, 3/8" sq dr, 11 MM, 12 point, Deep
5120010206099	228.	0.0	0.0	Socket, 3/8" sq dr, 11 MM, 12 point, STD
5120010467306	140.	0.0	0.0	Socket, 3/8" sq dr, 12 MM, 12 point, Deep
5120010206098	229.	0.0	0.0	Socket, 3/8" sq dr, 12 MM, 12 point, STD
5120010467305	87.	0.0	0.0	Socket, 3/8" sq dr, 13 MM, 12 point, Univ
5120010324613	142.	0.0	0.0	Socket, 3/8" sq dr, 13 MM, 12 point, Deep
5120010206097	225.	0.0	0.0	Socket, 3/8" sq dr, 13 MM, 12 point, STD
5120010467303	17.	0.0	0.0	Socket, 3/8" sq dr, 13 MM, 12 point, Univ
5120010467306	142.	0.0	0.0	Socket, 3/8" sq dr, 14 MM, 12 point, Deep
5120010206096	224.	0.0	0.0	Socket, 3/8" sq dr, 14 MM, 12 point, STD

Stock Number Number Authorized Predicted Ann. Flrs. Annual Inv. Consumed (t) Noncylature

512001045479	112.	0.0	0.0	0.0	Socket, 3/8" sq dr, 14 MM, 12 point, Univ
512001045479	132.	0.0	0.0	0.0	Socket, 3/8" sq dr, 15 MM, 12 point, Deep
512001045479	223.	0.0	0.0	0.0	Socket, 3/8" sq dr, 15 MM, 12 point, STN
512001045479	101.	0.0	0.0	0.0	Socket, 3/8" sq dr, 15 MM, 12 point, Univ
512001045479	120.	0.0	0.0	0.0	Socket, 3/8" sq dr, 16 MM, 12 point, Deep
512001045479	220.	0.0	0.0	0.0	Socket, 3/8" sq dr, 16 MM, 12 point, STN
512001045479	104.	0.0	0.0	0.0	Socket, 3/8" sq dr, 16 MM, 12 point, Univ
512001045479	115.	0.0	0.0	0.0	Socket, 3/8" sq dr, 17 MM, 12 point, Deep
512001045479	226.	0.0	0.0	0.0	Socket, 3/8" sq dr, 17 MM, 12 point, STN
512001045479	104.	0.0	0.0	0.0	Socket, 3/8" sq dr, 17 MM, 12 point, Univ
512001045479	126.	0.0	0.0	0.0	Socket, 3/8" sq dr, 18 MM, 12 point, Deep
512001045479	222.	0.0	0.0	0.0	Socket, 3/8" sq dr, 18 MM, 12 point, STN
512001045479	103.	0.0	0.0	0.0	Socket, 3/8" sq dr, 18 MM, 12 point, Univ
512001045479	113.	0.0	0.0	0.0	Socket, 3/8" sq dr, 19 MM, 12 point, Deep
512001045479	214.	0.0	0.0	0.0	Socket, 3/8" sq dr, 19 MM, 12 point, STN
512001045479	19.	0.0	0.0	0.0	Socket, 3/8" sq dr, 19 MM, 12 point, Univ
512001045479	207.	0.0	0.0	0.0	Socket, 3/8" sq dr, 20 MM, 12 point, STN
512001045479	203.	0.0	0.0	0.0	Socket, 3/8" sq dr, 21 MM, 12 point, STN
512001045479	199.	0.0	0.0	0.0	Socket, 3/8" sq dr, 22 MM, 12 point, STN
512001045479	338.	10.2	0.0	0.0	Socket, 3/8" sq dr, 25 MM, 12 point, STN
512001045479	154.	2.4	1.6	1.9	Tool, Brake Adjusting
512001045479	465.	2.4	1.6	1.6	Tool, Distributor Point Adjustment, (Nalco-Remy) Flexible
512001045479	560.	2.4	0.5	0.5	Tool, Distributor Magnetics, 15 1/4" - 18" 1/2" NCG-F-00300
512001045479	550.	26.0	4.0	4.0	Universal Joint, Socket Wrench, 1/2" sq dr, End
512001045479	204.	21.0	4.0	4.0	Universal Joint, Socket Wrench, 3/8" sq dr, End
512001045479	352.	11.2	5.5	5.5	Wrench Pliers, Curved Jaw/Cutter, 5 1/2" long
512001045479	10.	15.6	4.4	4.4	Wrench Pliers, Curved Jaw/Cutter, 5 1/2" long
512001045479	200.	0.0	0.0	0.0	Wrench Spinner, 2"-4 3/4", Circle Diameter
512001045479	210.	0.0	0.0	0.0	Wrench, Box/DE, 6 MM
512001045479	204.	0.0	0.0	0.0	Wrench, Box/DE, 7 MM
512001045479	204.	0.0	0.0	0.0	Wrench, Box/DE, 8 MM
512001045479	242.	3.0	1.5	1.5	Wrench, Box/DE, 9 MM
512001045479	243.	3.0	1.2	1.2	Wrench, Box/DE, 10 MM
512001045479	241.	3.0	1.2	1.2	Wrench, Box/DE, 11 MM
512001045479	242.	6.0	2.5	2.5	Wrench, Box/DE, 12 MM
512001045479	247.	6.0	2.4	2.4	Wrench, Box/DE, 13 MM
512001045479	244.	6.0	2.5	2.5	Wrench, Box/DE, 14 MM
512001045479	242.	6.0	2.5	2.5	Wrench, Box/DE, 15 MM
512001045479	216.	3.0	1.3	1.3	Wrench, Box/DE, 16 MM
512001045479	225.	0.0	0.0	0.0	Wrench, Box/DE, 17 MM
512001045479	293.	4.0	1.6	1.6	Wrench, Box/DE, 18 MM
512001045479	171.	5.4	1.9	1.9	Wrench, Box, 1 1/16" x 1 1/8", 12 point, 15 degree offset
512001045479	226.	0.0	0.0	0.0	Wrench, Box, 1 1/4" x 1 3/8", 12 point, 15 degree offset
512001045479	114.	2.4	1.1	1.1	Wrench, Box, 1 1/4" x 1 5/16", 12 point, 15 degree offset
512001045479	231.	0.0	0.0	0.0	Wrench, Box, 1 7/16" x 1 1/2", 12 point, Double offset
512001045479	231.	0.0	0.0	0.0	Wrench, Box, 1 7/16" x 1 1/2", 12 point, 15 degree offset

Inventory

Predicted
Ann. Flrs.Number
AuthorizedStock
Number

Stock Number	Number Authorized	Predicted Ann. Flrs.	Annual Inv. Consumed (2)	Inventory
512002271354	414	6.0	1.4	Wrench, Box, 1/2" x 9/16" angular offset
512002271355	444	4.0	0.9	Wrench, Box, 1/2" x 7/16" dhl offset, dhl head, 6" long
512002271356	359	2.4	0.7	Wrench, Box, 11/16" x 3/4" half-moon, 7 3/4" long
512002271357	451	2.4	0.5	Wrench, Box, 11/16" x 3/4" offset 11 3/4" long
512002271358	435	16.6	3.9	Wrench, Box, 13/16" x 7/8" angular offset, dhl hd, 14" lg
512002271359	335	5.0	1.5	Wrench, Box, 15/16" x 1" offset
512002271360	185	0.0	0.0	Wrench, Box, 3/16" x 1/4" angular offset, dhl hd, 2 3/4"
512002271361	499	4.4	0.7	Wrench, Box, 3/8" x 7/16" angular offset, dhl hd, 5/16" lg
512002271362	373	0.0	0.0	Wrench, Box, 5/16" x 3/32" angular offset, dhl hd, 5" long
512002271363	212	4.0	1.9	Wrench, Box, 5/8" x 3/4" double head
512002271364	279	0.0	0.0	Wrench, Box, 7/15" x 1/2" angular offset
512002271365	273	4.3	1.3	Wrench, Box, 7/16" x 15/16" double head
512002271366	353	2.0	0.6	Wrench, Box, 9/16" x 5/8" angular offset, dhl hd, 9 5/8" lg
512002271367	546	14.6	2.7	Wrench, Box, 9/16" x 5/8" half-moon
512002271368	593	0.0	0.0	Wrench, Comb box/NE 13/16" Box, 13/16" NE, Offset, 10 1/4" lg
512002271369	595	7.3	1.3	Wrench, Comb box/NE 3/4" Box, 3/4" NE, Offset, 8" long
512002271370	14.6	14.6	2.5	Wrench, Comb box/NE 3/8" Box, 3/8" NE, 4 3/16" long
512002271371	18.0	18.0	3.0	Wrench, Comb box/NE 5/16" Box, 5/16" NE, Offset, 3 1/4" lg
512002271372	606	13.4	1.7	Wrench, Comb box/NE 7/16" Box, 7/16" NE, 5" long
512002271373	361	4.8	1.4	Wrench, Comb box/NE, 1 1/16", 15deg offset, 14" lg, Type III
512002271374	212	2.4	1.1	Wrench, Comb box/NE, 1 1/2", 15 degren offset, 14" long
512002271375	307	2.0	0.7	Wrench, Comb box/NE, 1 1/4", 15 deg offset, 14" lg, Type III
512002271376	392	2.0	0.5	Wrench, Comb box/NE, 1 1/8", 15 deg offset, 14 1/2" long, Type III
512002271377	1.0	0.0	0.0	Wrench, Comb box/NE, 1 3/4", Packing Nut
512002271378	174	0.0	0.0	Wrench, Comb box/NE, 1 3/8", 15 degren offset
512002271379	239	0.0	0.0	Wrench, Comb box/NE, 1 5/16", 15 degren offset
512002271380	174	0.0	0.0	Wrench, Comb box/NE, 1 7/15", 15 deg offset, 18" lg
512002271381	594	6.8	1.1	Wrench, Comb box/NE, 1 2" Box, 1 2" NE, Offset, 5 1/4" long
512002271382	550	19.8	3.5	Wrench, Comb box/NE, 1 2" Box, 1 2" NE, Offset, 12 1/2" long
512002271383	624	8.4	1.4	Wrench, Comb box/NE, 1 1/16" Box, 1 1/16" NE, Offset, 7" long
512002271384	612	4.8	0.8	Wrench, Comb box/NE, 1 5/16" Box, 1 5/16" NE, Offset, 6 1/8" long
512002271385	599	12.2	2.0	Wrench, Comb box/NE, 5/8" Box, 5/8" NE, Offset, 6 1/8" long
512002271386	592	11.5	2.0	Wrench, Comb box/NE, 9/16" Box, 9/16" NE, 5 3/4" long
512002271387	83	0.0	0.0	Flare Nut, 10 x 12 PM, 6 point
512002271388	50	0.0	0.0	Flare Nut, 12 point, 1 7/8" x 9/16"
512002271389	61	0.0	0.0	Flare Nut, 12 point, 3/8" x 7/16"
512002271390	36	0.0	0.0	Flare Nut, 12 point, 5/8" x 11/16"
512002271391	87	0.0	0.0	Flare Nut, 9 x 11 MM, 5 unit
512002271392	216	6.0	2.8	Impact, PMU, 1/2" sq dr.
512002271393	38	3.0	7.9	Impact, PMU, 3/4" sq dr
512002271394	294	4.6	3.3	Impact, PMU, 3/4" sq dr
512002271395	113	0.0	0.0	OE, 1 1/16" x 1 1/4", 15 deg offset, 11 3/4" lg
512002271396	130	2.0	1.5	OE, 3/16" x 1 1/4" Fixed Double Head, 3" long
512002271397	505	24.4	4.8	OE, Adj 0 to 0.510", 4" long
512002271398	639	34.0	5.3	OE, Adj 0 to 0.947", 8" long
512002271399	614	11.0	1.9	OE, Adj 0 to 1.135", 10" long
512002271400	565	47.4	8.4	OE, Adj 0 to 1.322", 12" long

Stock Number	Number Authorized	Predicted Ann. Firs.	Annual Inv. Consumed (2)	Description
5120002633791	59.	2.0	3.4	Wrench OE, 1/2" x 1 1/2" - 15 1/2", Size 1 1/2, 655-W-431
5120001877124	412.	10.4	2.5	Wrench OE, 1/2" x 9/16" Fixed Nut 5 3/8" long
5120001448445	191.	0.0	0.0	Wrench OE, 1/4" offset, Double Head, 3" long
5120001858444	193.	4.0	2.0	Wrench OE, 1 1/32" offset, Double Head, 1 1/2" long
5120001877127	511.	4.4	0.9	Wrench OE, 3/4" x 1 1/2" - 15 1/2", 3" long
5120002772342	555.	6.0	1.1	Wrench OE, 3/8" x 7/16"
5120002772307	384.	2.0	0.5	Wrench OE, 5/16" x 3/8", 3 5/8" long
5120001948447	193.	0.0	0.0	Wrench OE, 5/16" offset, Double Head 3 1/2" long
5120001877123	489.	2.0	0.4	Wrench OE, 7/15" x 1 1/2" Fixed, Double Head, 5" long
5120001477131	476.	5.3	1.4	Wrench OE, 7/32" x 1 1/2" - 15 1/2", 3" long
5120001877125	418.	6.9	1.3	Wrench OE, 9/16" x 5/8" Fixed, Double Head, 4" long
5120001848443	31.	4.9	15.5	Wrench OE, Thin 1 5/16" x 1 3/8", 3/16" offset at 15 deg ann
51200021848564	31.	0.0	0.0	Wrench OE, Thin 1 5/16" x 1 3/8", 3/16" offset at 15 deg ann
5120002771486	516.	19.4	3.8	Wrench OE, Thin 1 5/16" x 1 3/8", 3/16" offset at 15 deg ann
5120002771484	553.	14.0	2.5	Wrench OE, Thin 1 5/16" x 1 3/8", 3/16" offset at 15 deg ann
5120002771484	254.	32.0	12.6	Wrench OE, Thin 1 5/16" x 1 3/8", 3/16" offset at 15 deg ann
5120002771484	254.	21.6	8.5	Wrench OE, Thin 1 5/16" x 1 3/8", 3/16" offset at 15 deg ann
5120002771484	43.	2.0	4.7	Wrench OE, Thin 1 5/16" x 1 3/8", 3/16" offset at 15 deg ann
5120002771484	17.	0.0	0.0	Wrench OE, Thin 1 5/16" x 1 3/8", 3/16" offset at 15 deg ann
Totals	101196.	3380.2	3.3	

Group of Tools Selected:
SCREWDRIVERS

TTP Nos. 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75

Stock Number	Number Authorized	Predicted Ann. Flrs.	Annual Inv. Consumed (%)	Nomenclature
5120006184909	239.	4.0	1.7	Screwdriver, Clutch Tip, 1/4" x 5" long
5120006184907	79.	10.8	13.7	Screwdriver, Clutch Tip, 1/4" x 3" long
5120006184908	79.	8.0	10.1	Screwdriver, Clutch Tip, 3/16" x 4" long
5120009263628	128.	4.0	3.1	Screwdriver, Clutch Tip, 3/32" x 3" long
5120006184911	148.	7.0	4.7	Screwdriver, Clutch Tip, 5/16" x 6" long
5120006184910	215.	6.0	2.8	Screwdriver, Clutch Tip, 9/32" x 6" long
5120002247370	498.	26.4	5.3	Screwdriver, Cross Tin, No. 1, 1" long
5120002930314	421.	48.0	11.4	Screwdriver, Flat Tip, 1/4" x 10" long
5120005968653	401.	86.2	21.5	Screwdriver, Flat Tip, 1/4" x 6" long
5120002277356	407.	94.4	23.2	Screwdriver, Flat Tip, 3/16" x 6" long
5120002277362	513.	74.8	14.6	Screwdriver, Flat Tip, 3/8" x 12" long, Straight sided
5120002405232	649.	15.8	2.4	Screwdriver, Flat Tip, 3/9" x 6" long, offset
5120002277334	519.	62.6	12.1	Screwdriver, Flat Tip, 7/32" x 10" long
5120002348913	616.	85.4	13.9	Screwdriver, Phillips no 2, 4" long
5120002247375	659.	77.4	11.7	Screwdriver, Phillips no 4, 8" long
5120002348912	709.	83.0	11.7	Screwdriver, Phillips no. 3, 6" long
5120002277293	513.	16.0	3.1	Screwdriver, Phillips No. 2, 1 1/2" long
5120002378173	135.	23.2	17.2	Screwdriver, R & P Cross Tip, 1/4" x 4" long
5120002378174	144.	4.8	3.3	Screwdriver, R & P Cross Tip, 3/8" x 4" long
5120002378172	257.	6.0	2.3	Screwdriver, R & P, 5/16" x 6" long
Totals	7328.	743.8	10.2	

Stock Number	Number Authorized	Predicted Ann. Flrs.	Annual Inv. Consumed (t)	Nomenclature
5120002364185	675.	80.4	11.9	Handle, Socket Wrench, 1/2" drive x 9" long, Ratchet
5120000654903	305.	39.2	9.9	Handle, Socket Wrench, 1/4" drive, 10 1/4" long, Ratchet
5120002405364	554.	123.8	18.9	Handle, Socket Wrench, 3/4" drive, 6" long, Ratchet
5120002637322	295.	8.4	3.0	Ratchet Attachment, Socket Wrench, Rev., 1/2" sq dr
5120002271207	121.	0.0	0.0	Ratchet Attachment, Socket Wrench, Rev., 1/4" sq dr
5120002274127	243.	9.2	3.8	Ratchet Attachment, Socket Wrench, Rev., 3/4" sq dr
Totals	2340.	261.4	11.0	

TABLE 4

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4. Linhardt, Robert L., Major, USAF. A Study of Handtool Control Procedures, February 1977. Air Command and Staff College paper, Air University, Maxwell AFB, Al.
5. T.O. 36-1-50. Motor Vehicle Maintenance Tool Kits by AFSC, Tool Kit Items.
6. Wheeler, Travis M., Capt; Miller, Charles E., GS-12. Warranted Tool Program Field Evaluation Report, June 1982. Air Force Logistics Management Center Project No. 780205. Gunter AFS, Al.

ABBREVIATIONS

AAC - ALASKAN AIR COMMAND
AFLMC - AIR FORCE LOGISTICS MANAGEMENT CENTER
GSA - GENERAL SERVICES ADMINISTRATION
LMC - LOGISTICS MANAGEMENT CENTER
MAC - MILITARY AIRLIFT COMMAND
MAJCOM - MAJOR AIR COMMAND
PACAF - PACIFIC AIR FORCES
SAC - STRATEGIC AIR COMMAND
TAC - TACTICAL AIR COMMAND
USAFE - UNITED STATES AIR FORCES EUROPE



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON, D.C. 20330

22 FEB 1984

REPLY TO
ATTN OF: LETN

SUBJECT: Warranted Tools

TO: AFLMC/LGT

1. Request your activity initiate a project to determine the feasibility and cost effectiveness of using warranted hand tools in vehicle maintenance activities. The project, similar to the aircraft maintenance project, should include the following:

- a. Determine what quality problems we are currently having with hand tools.
- b. What changes are needed, if any, in our current tool control procedures in AFM 77-310, Vol 2?
- c. Determine the minimum essential tools that need to be included in this program.
- d. What is the lost rate by tool type?
- e. What is the breakage rate by tool type?
- f. Use the approved DOD IG formula to determine payback for warranted tools.
- g. Other areas that you feel should be considered.

2. Recommend you solicit help from the four WEEP field activities to provide the necessary data to complete this project. Your data should be formatted and forwarded to HQ USAF/LETN in the following sequence if this project supports the use of warranty tools in vehicle maintenance:

- a. Aggregate Group Composition.
- b. Failure Rate Computation.
- c. Warranted Tool Cost Estimate.
- d. Warranted Tool Data Summary.
- e. DOD IG Formula.
- f. Aggregate Group Payback.
- g. References.

3. Please advise if more information is needed.

FOR THE CHIEF OF STAFF

JOHN A. REIDY, JR., Colonel, USAF
Chief, Vehicle & Equipment Division
Directorate of Transportation

cc: WR-ALC/MNTV
HQ USAF/LEYS

ATCH 3



DEPARTMENT OF THE AIR FORCE
AIR FORCE LOGISTICS MANAGEMENT CENTER
GUNTER AIR FORCE STATION, ALABAMA 36114

16 JAN 1984

Brigadier General John E. Griffith
Director of Transportation
Headquarters USAF (LET)
Washington DC 20330

Dear General Griffith

Our Warranted Handtool Project has proved that purchasing high-quality, industrial strength handtools will pay dividends within aircraft maintenance (Attachment 1). We also believe there are benefits to be gained from using warranted tools in other industrial areas; i.e., Transportation, Civil Engineers, etc. I tasked my staff to determine which tools on our listing could apply to transportation activities. We found at least 147 of the 222 line items in the program could apply.

The original Air Force contract allowed only jet engine shops to purchase warranted tools. In coordination with HQ USAF/LEY, we have expanded the contract to allow all aircraft, missile, and munitions maintenance activities to participate in this program. We think the next evaluation of this program should include other maintenance functions where an improved quality tool is economically justified.

There are, as always, some preliminary hurdles which must be overcome before the contract can be further expanded. The most critical is that future users of warranted tools be able to demonstrate a policy of strict tool control. The DoD/IG has closely monitored this aspect of our project from the start and insists that only those maintenance disciplines that have a reliable and auditable tool control program be included. A composite tool kit (CTK) program is a must. A second hurdle is that the bases requiring warranted handtools must be identified. We have identified 196 locations where aircraft maintenance functions require these tools, and this list could serve as a basis for your own. The third item necessary for entering this program is that anticipated quantities of needed tools be forecast in order that contracting and the suppliers agree on the lowest possible price. The forecast of yearly quantities for aircraft maintenance activities required considerable effort over a six months period.

Essentially, this program offers you important new options in the continual development of your maintenance technician's capabilities, professionalism, and morale. We are starting to receive telephone and written inquiries from the field (Attachment 2) and stand ready to work closely with your staff to establish a program which fits your needs. Our points of contact are Maj Dan King or Lt Col Walt Dzialo, AUTOVON 446-4464.

Best regards

Keith E. Burres
KEITH E. BURRES
Colonel, USAF
Commander

22

- 2 Atch
1. Point Paper
2. HQ USAF Msc

ATCH 4

END

FILMED

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DTIC