REPORT DOCUMEN

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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES): McDonnell Douglas Missile Systems Company, St. Louis, Missouri 63166

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Technology Insertion (TI)/Industrial Process Improvement (IPI) Data Base Documentation Book Volume, for OO-ALC/MANPRB (Machine Shop) Book 1 of 2. This document contains detailed information about layouts equipment and processes for this RCC (Resource Control Center).

14. SUBJECT TERMS: MAINTENANCE, DATABASE, EQUIPMENT, MANPRB, *MACHINES, *MACHINESHOP, AF, AFLC, TECHNOLOGY INSERTION

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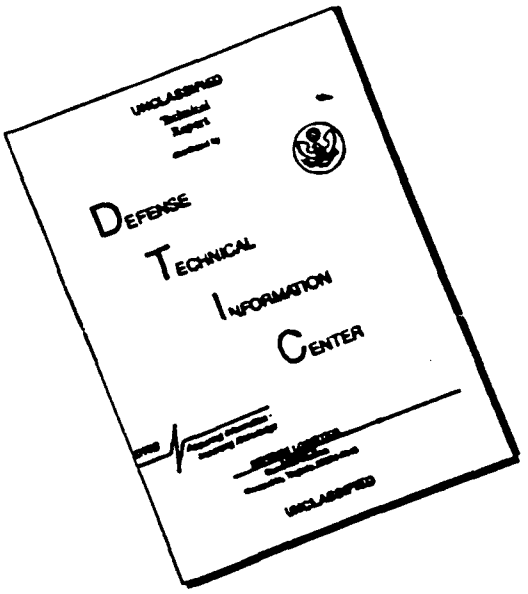

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TECHNOLOGY INSERTION-ENGINEERING SERVICES
PROCESS CHARACTERIZATION
TASK ORDER NO. 1

BOOK 1 OF 2

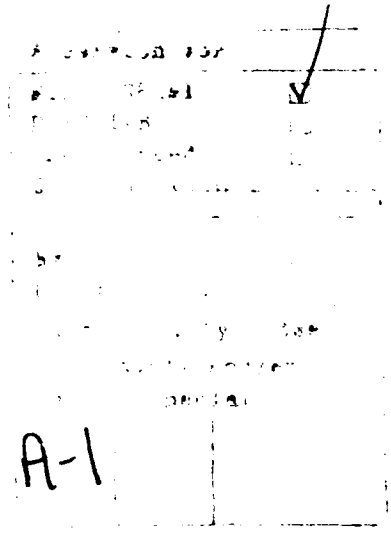
DATABASE DOCUMENTATION BOOK

OO-ALC

MANPRB

(OVERVIEW LAYOUTS)

CONTRACT SUMMARY REPORT
15 DECEMBER 1989



CONTRACT NO. F33600-88-D-0567
CDRL SEQUENCE NO. B008

MCDONNELL DOUGLAS
McDonnell Douglas Missile Systems Company
St. Louis, Missouri 63166-0516 (314) 232-0232

TECHNOLOGY INSERTION-ENGINEERING SERVICES
PROCESS CHARACTERIZATION
TASK ORDER NO. 1

DATABASE DOCUMENTATION BOOK

OO-ALC

MANPRB

CONTRACT SUMMARY REPORT
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1.0 IDENTIFICATION OF RCC

RCC MMAPRIS has been identified by the SOW of Contract F33600-88-D-0567 for Process Characterization.

DESCRIPTION OF CURRENT OPERATION

MANPRA AND MANPRB ARE RESOURCE CONTROL CENTER (RCC) UNDER MANP SECTION OF THE INDUSTRIAL PRODUCTS DIVISION (MAN) AT OO-ALC. MANPRA AND B IS LOCATED IN BUILDING 507. THESE RCC'S ARE LOCATED IN THE NORTH WEST CONER OF THIS BUILDING.

THE WORKLOAD IS PRIMARILY MISTER WORK. IT CONSISTS OF VARIOUS WHEELS, BRAKES, AND LANDING GEAR. THIS AREA IS RESPONSIBLE FOR THE MACHINING AND GRINDING OF THE VARIOUS PART AS WELL AS SOME OF THE CUP INSTILLATION ON WHEELS.

BECAUSE OF THE AGING OF THE PRODUCT MIX IT HAS CAUSED DIFFERENT AMOUNTS OF REWORK DEPENDING UPON WHAT NEEDS REPAIR AND TO WHAT EXTENT. IN GENERAL TERMS THESE PROCESS ARE SIMILAR TO THAT OF PRIVATE INDUSTRY.

PERCENT OF OTHER WORKLOAD FOR RCC

(80/20 LISTING)
RCCs

JOB TYPES	MANPGP	MANPGW	MANPNA	[redacted]	[redacted]	MANPRC	MANPWW
TEMPORARY	13.72	2.35	15.11	1.40	1.05	1.35	1.05
MANUFACTURE	0.00	0.00	0.92	0.00	4.51	2.74	12.50
PDM	1.00	0.00	22.79	0.04	0.07	4.39	22.44
ARMAMENT	0.00	0.23	1.26	0.04	0.03	4.18	2.38
HYDRAULICS	0.00	0.05	7.00	1.11	2.67	3.88	13.99
MISTER	95.28	11.37	52.92	97.41	91.69	85.96	97.69

MANPRA AND MANPRB EQUIPMENT CONSISTS OF INDIVIDUAL WORK STATIONS. AT THESE WORK STATIONS THE OPERATOR IS ASSIGNED A PIECE OF EQUIPMENT DEPENDING UPON WHAT THE OPERATORS SPECIALITY IS. THIS COULD BE A LATH, MILLING MACHINE OR SOMETHING ELSE. EACH MECHANIC IS EQUIPPED WITH THEIR OWN TOOL BOX. THIS TOOL BOX CONTAINS ALL OF THE APPROPRIATE TOOLS TO ACCOMPLISH THE GIVEN TASKS ASSIGNED TO THAT WORK STATION. THE SHOP IS ALSO EQUIPPED WITH OVER HEAD CRANES WHICH ASSISTS THE OPERATORS IN THE LOADING AND UNLOADING OF THE LARGE AWKWARD PART ONTO THEIR MACHINES.

THE STANDARD REPAIR PROCEDURE FOR PARTS COMMING INTO THE MACHINE SHOP IS AS FLOWS;

A- THE COME IN THROUGH RECIVING AND ARE THEN LOGGED INTO THE SCHEDULERS SYSTEM.

B. THE SCHEDULER AT THE BEGINNING OF EACH WEEK WORKS UP A HOT SHEET. THIS HOT SHEET IS THEN GIVED TO EACH OF THE FOREMAN.

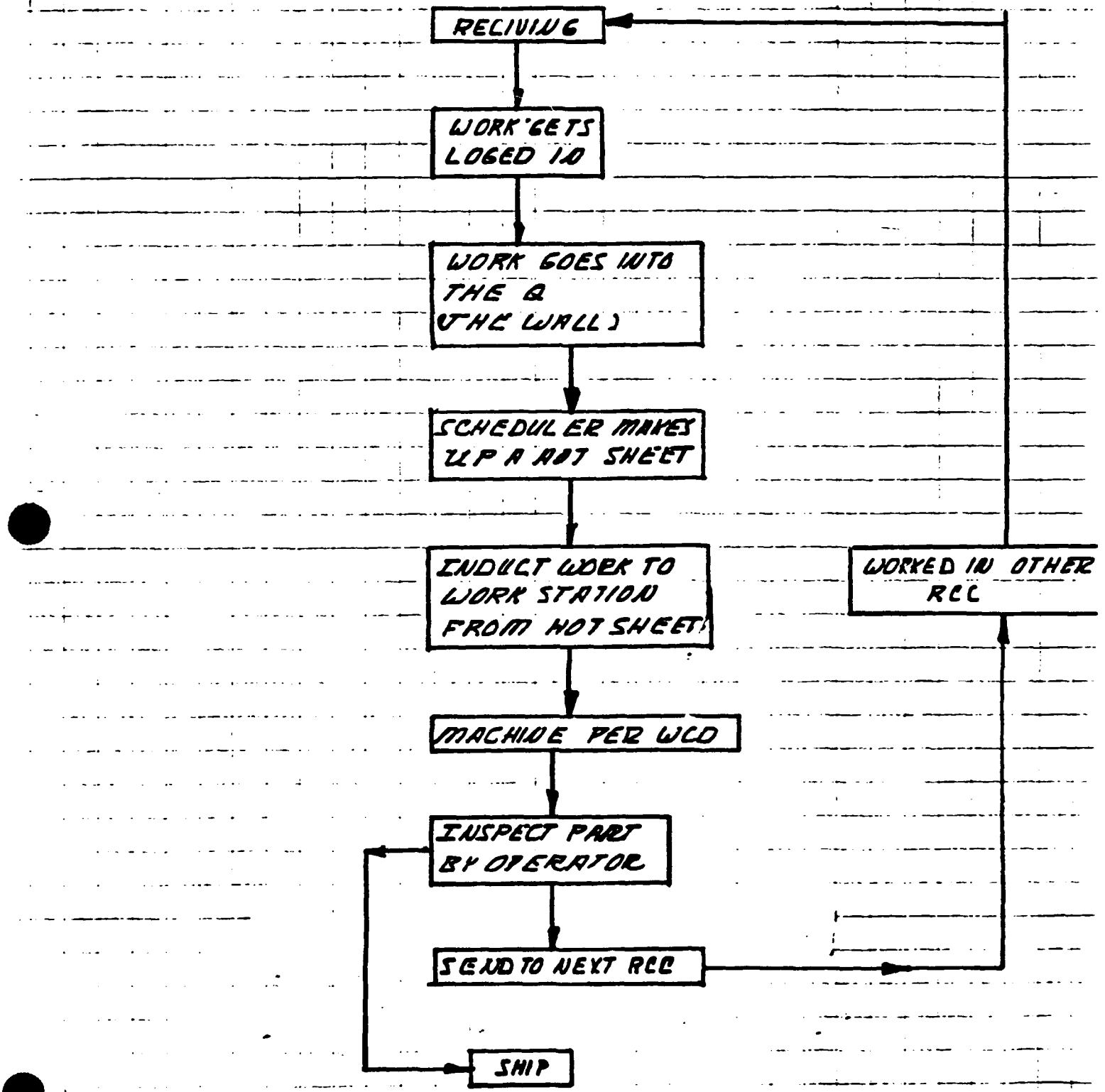
C WHEN THE MECHANIC NEEDS SOME WORK HE GOES OUT TO THE WALL TO PICK UP HIS NEXT JOB, OF COURSE HE WILL PICK UP A JOB THAT HE WANTS TO DO. NOT THE HARDEST ONE OUT THERE. HE THEN RETURNS TO HIS WORK STATION WITH THE PART.

D THE WORKER THEN PICKS UP THE 958 (WORK CONTROL DOCUMENT) AND PREFORMS ALL OF THE OPERATION CALLED OUT ON THE WCD.

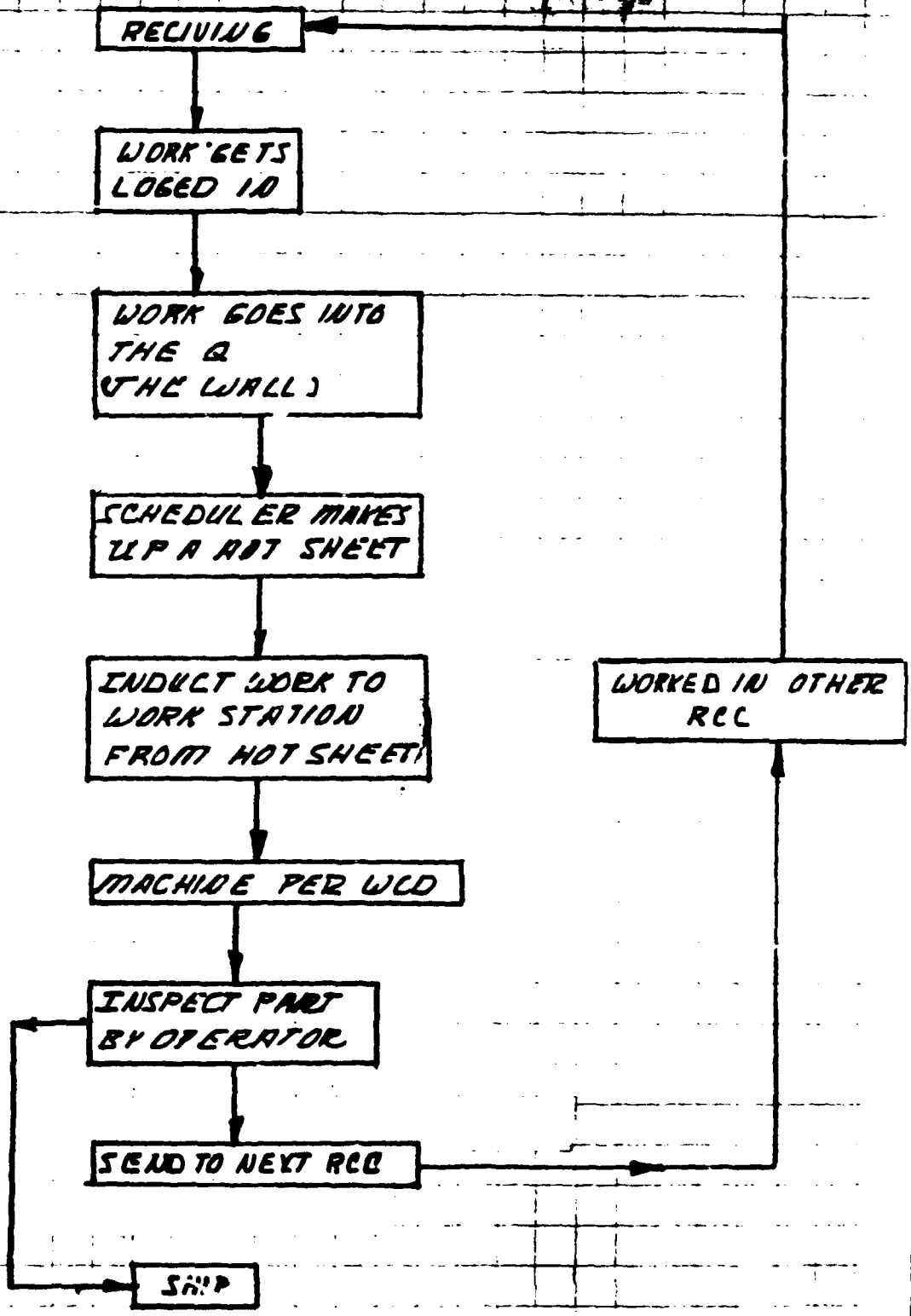
E WHEN THE OPERATOR HAS COMPLETED ALL OF THE OPERATIONS ON THE WCD. HE THEN INSPECTS THE PART. THIS MEANS THAT HE SAYS WHETHER OR NOR THE PART IS GOOD.

F SEND PART ON TO NEXT REC

WORK FLOW FOR MANPRB



WORK FLOW FOR MAINT.



THERE IS A QUICK FIX OPPORTUNITY IN THE AREA OF Bushings. AT PRESENT THE PARTS ARE SPENDING A LOT OF TIME WAITING FOR THE CORRECT Bushings To Come In. WE WOULD SUGGEST THAT SUPPLY INCREASE their VENDOR LIST SO THAT THEY CAN OBTAIN THE BUSHING WHEN THEY ARE REQUIRED. THIS WOULD IMPROVE THE THROUGH PUT OF ALL THE RECS WHICH WERE STUDIED IN TASK ORDER ONE. IT WOULD REDUCE MACHINE TOOL DOWN TIME THE REASON FOR THIS IS THAT; IF THEY DO NOT HAVE ANY Bushings they CAN NOT RUN THE PARTS THROUGH THE PROCESS.

Focus Study

At the present time there is no way available to the personel in that department for inspecting the relationships between the "Part" Features.

A coordinate measuring machine would enable the shop to more accurately inspect their work in these critical areas.

This would eliminate the costly rework at final assembly as well as decreasing the time at final assembly.

A QUICK FIX OPPORTUNITY FOR IMPROVING THROUGH PUT IN 505, 511 AND 507, WOULD BE TO IMPROVE PRODUCT SCHEDULING AND PRODUCT FLOW.

IF THESE PARTS WERE SCHEDULED IN AT THE CORRECT TIME AND IN THE CORRECT LOT SIZE. IF THESE PARTS WERE THEN DELIVERED TO THE MACHANICS ACCORDING TO THE CORRECT PRIORITY; THIS WOULD INSURE THAT THE PARTS THAT WERE NEED TO COMPLETE A PARTICULAR END ITEM WOULD BE COMPLETED ON TIME.

THIS WOULD ALSO TURN TIME WASTED, LOOKING FOR PARTS. (ONE THE MECHANIC WOULD PREFER TO DO) IN TO PRODUCTIVE PROCESSING TIME. THE THROUGH PUT WOULD BE INCREASED DO TO IMPROVED PRODUCT FLOW.

(L) THE SECOND QUICK FIX IS. INSTALL A SYSTEM THAT MONITORS THE PARTS IN THE SYSTEM. YOU NEED A SYSTEM THAT CAN TRACK ANY GIVEN PART THROUGH OUT THE COMPLETE SYSTEM. THIS SYSTEM WOULD BE ABLE TO TELL YOU HOW MANY OF WHAT PART IS AT ANY LOCATION OR IN ANY RCC IN THE SYSTEM. THIS WOULD ELIMINATE THE MANY HOURS OF TRYING TO LOCATE PARTICULAR PARTS. AT PRESENT TIME WHEN FINAL ASSEMBLY NEEDS A CERTIAN PART TO FINISH AN ASSEMBLY, THEY HAVE TO SEND SOME ONE BACK UP THE LINE TO TRY TO LOCATE ONE.

THIS IS A VERY EXPENSIVE PROCESS. ONCE THE PART IS FOUND THEY MUST FIND A SCHEDULER. AND THEN HAVE HIM PUT THIS PART ON THEIR HOT SHEET. ONCE THIS IS DONE THE PART THEN CAN BE EXPEDITED THROUGH OUT THE REST OF THE SYSTEM.

SUGGESTION

RUNNING THE SAME PART OVER AND OVER GETS VERY BORING. AS THE OPERATOR PREFORMS THESE MUNDANE TASK HE OR SHE LOOSES INTREST IN THE JOB. WHEN INTREST IS LOST THE DESIRE TO IMPROVE IN ANY WAY DECREASES.

- HAVE A CLASS AND SHOW THEM HOW THERE PARTS FIT INTO THE COMPLETE UNIT. HAVE THE PILOTS COME THROUGH THE SHOP AND TALK TO THE MECHANICS SO THAT THE MECHANICS FEEL APART OF THE AIR FORCE. WHEN A PERSON FEELS LIKE THEY ARE A PART OF A ORGANIZATION THEY WILL WORK HARDER AND HAVE MORE PRIDE IN THEIR WORK

AT THE PRESENT TIME EACH EMPLOYEE IS TRAINED ON SEVERAL PIECES OF EQUIPMENT. WITH THE PRESENT TURN OVER. I WOULD SUGGEST THAT THEY WOULD DROP THE EXPENSIVE TRAINING AND TRAIN THEM ON JUST ONE MACHINE.

IT IS NOT FINANCIALLY SOUND IDEA TO INVEST TIME AND MONEY INTO PERSONAL WHICH ARE NOT GOING TO STAY. IN THE AREA.

THE MACHINE AND GRINDING SHOPS ARE VERY WELL LAYED OUT TO ACCOMMODATE THE LOADING AND UNLOADING OF PARTS ON TO THE MACHINES.

AT THE PRESENT TIME THE WHEEL AND STRUT AREA IS LARGER THAN REQUIRED FOR THE PRESENT WORK LOAD WHICH IS GOING THROUGH THE SYSTEM.

THE MANAGEMENT OF FLOOR OPPERATIONS.

AT THE PRESENT TIME WHEN THERE IS A PROBLEM WITH A PART THAT IS NOT COVERED IN THE T.O. THEY HAVE TO CALL ENGINEERING FOR AN ANSWER. (THE OFFICES FOR M&M ENGINEERING IS APPROXIMATLY 3 to 4 MILES AWAY.) A LOT OF TIMES WHEN M&M. ENGINEERING FINALLY COME UP TO CHECK OUT THE PROBLEM; A LOT OF THE TIME THEY ASK THE FORMAN. FOR HIS INPUT ON WHAT HE WOULD DO WITH THE PART. (THERE IS NOTHING WRONG WITH THIS.) SUGGESTION.

TRAIN THE FORMAN AND GIVE THEM THE AUTHORITY TO MAKE THESE DECISION WHEN THE PROBLEM OCCURS. OR MOVE 3 ENGINEERS UP TO BUILDING 507- TO TAKE CARE OF ALL THE ENGINEERING PROBLEMS IN BUILDING 507, 505 AND 511.

THE PROBLEM IS THAT YOU HAVE ALL OF THE SET UP TIME INVESTED INTO THE PART (LOADING IT ON THE MACHINE. THERE IS ALSO THE TIME WAITING FOR SOME ONE TO MAKE THE DECISION ON WHAT TO DO WITH IT PART. (THIS IS IF THE FORMAN OR INSPECTION IS NOT ABLE TO MAKE THE DECISION). THERE IS ALSO THE TIME TO UNLOAD THE PART.

WHEN THEY DECISION IS MADE THERE IS A GOOD POSSIBILITY THAT THE PART WILL HAVE TO BE RELOADED ON TO THE MACHINE.

IF THE FORMAN WITH THE AUTHORITY TO MAKE DECISIONS, OR AN ENGINEER WAS READILY AVAILABLE TO MAKE THESE THE REQUIRE DECISION, AS THEY OCCUR, BY DOING THIS YOU COULD ELIMINATE THE TIME _____ THE PARTS SET WAITING FOR A DISPOSITION TO COME THROUGH ON THEM. IF A PART COULD BE UNDER CUT AND REPLATED THE DECISSON SHOULD BE MADE AT THAT POINT IN TIME WHILE THE PART IS STILL IN THE MACHINE. THIS WOULD ALSO ELIMINATE A SECOND SET UP.

THEY ALSO NEED TO TRACK THE SCRAP. BY DOING THIS THEY COULD DISTINGUISH BETWEEN THE DIFFERENT PROBLEMS. THIS WOULD ALLOW THEM TO TRACK EACH TYPE OF PROBLEM AND TO SEE IF THERE IS A TREND OR A LARGE REOCCURANCE ON A SPECIFIC PROBLEM ON A GIVEN PART. AT THIS POINT EACH PROBLEM COULD BE ANALYZED AND THEN YOU COULD ARRIVE AT A SOLUTION TO THE PROBLEM.

GRINDING IN 505

Alternate Equipment

Lathes

2570	0216	4126	Bambrough
2571	4150	5279	
3478	4127	5278	
0572	5719		

0581	8079	5282	Luddington
4131	0080	5288	

2574	4138	5201	Trout
2573	7493	0508	
0215	0757	0081	
5287	5280	0213	

Lucas Boring Mill

4583	4561	Bambrough
4562		

G + L

6977	7218	Luddington
7215		

Bridgeport

4192 0460 } Trout/Luddington

Technik

7211 7216 } Trout

Radial Drill

1788 2576 5529 } Trout
2577

6135 2580 } Luddington
5493

Rotary Grinder

6652 6654 } Stevens

Cylindrical Grinder

7400 7401 } Stevens

Cometa

6957 6936 } Stevens

Internals

1402 3455 } Stevens

1391 1307 1305 } McNeely
1308

Barnes Vert Hone

1402 6118 } McNeely

[illegible] [illegible]

1332 4772 [illegible] } McNeely

Moore Jig Crane

1310 1312 } McNeely

EQUIPMENT PROFILE

NAME Turner ALC 00 DATE 5-6-89 RCC GRND SHEET 1 OF 4

EQUIPMENT CODE	EQUIPMENT TYPE/DESCRIPTION	QUANTITY PER SHIFT 1st	2nd	3rd	DOWNTIME PREVENTIVE MAINT. FREQ.	SHIFT	DOWN TIME	UNSCHEDULED BREAKDOWN REPAIR TIME MTBF	MTTR	PERCENT USED FOR OTHER RCCs (e.g. TIME NOT AVAILABLE)	ENVELOP UNITS MIN / MAX	ALTERNATE EQUIPMENT CODE	SOURCE
PM 1332	SUNN_HONE Sunren Lone	1	1	0	90		1.5	965	3		1/1		
PM 4792	SUNN_LONE Sunnen Hone	1	1	0	90		1.5	164	3.7		1/1		
PM 4791	SUNN_HONE Sunnen Hone	1	1	0	90		1.5	162	2.5		1/1		
PM 5294	SUNN_HONE Sunnen Hone	1	1	0	90		1.5	299	2.4		1/1		
PM 6114	BARN_HONE Barnes Vertrle Hone	1	1	0	30		.63				1/1		
PM 1305	HLD_GRNDR I.D	1	1	0	90		1.87	38	6.1		1/1		
PM 1308	HLD_GRNDR I D	1	1	0	90		1.87	34	6.6		1/1		
PM 1307	HLD_GRNDR I D	1	1	0	90		1.87	24	6.4		1/1		
PM 1391	HLD_GRNDR I.D	1	1	0	30		3.7	30	9.4		1/1		
PM 1404	HLD_GRNDR I D	1	1	0	90		1.87	56	8.3		1/1		
PM 1317	HLD_GRNDR I D	1	1	0	90		1.87	41	6.2		1/1		
PM 1313	HLD_GRNDR Inverter	1	1	0	90		1.87	19	7.5		1/1		

EQUIPMENT PROFILE

NAME Turner ALC 33 DATE 2-6-89 RCC GRINC SHEET 2 OF 4

EQUIPMENT CODE	EQUIPMENT TYPE/DESCRIPTION	QUANTITY PER SHIFT			DOWNTIME					PERCENT USED FOR OTHER RCCs (e.g. TIME NOT AVAILABLE)	ENVELOP UNITS		ALTERNATE EQUIPMENT CODE	SOURCE
					PREVENTIVE MAINT.			UNSCHEDULED BREAKDOWN REPAIR TIME						
		1st	2nd	3rd	FREQ.	SHIFT	DOWN TIME	MTBF	MTTR		MIN	MAX		
PM 5479	HLD_GRNDR I.D.	1	1	0	90		1.87	76	3.4		1	1		
PM 5305	LDS_GRNDR Ext. Cylindrical	1	1	0	90		1.87	35	10.1		1	1		
PM 1309	SLN_GRNDR I.D	1	1	0	90		1.87	75	8.3		1	1		
PM 1403	HLD_GRNDR I.D	1	1	0	90		1.87	80	3.1		1	1		
PM 3455	HLD_GRNDR I.D.	1	1	0	90		1.87	34	5.1		1	1		
PM 1402	HLD_GRNDR I.D	1	1	0	90		1.87	52	4.6		1	1		
PM 4179	CYL_GRNDR	1	1	0	90		1.87	40	4.2		1	1		
PM 6177	DRILPRESS	1	1	0				140	5.0		1	1		
PM 7273	UNL_GRNDR Universal	1	1	0	90		2.0	20	4.0		1	1		
PM 7100	CYL_GRNDR	1	1	0	30		1.3	48	3.6		1	1		
PM 5687	SRF_GRNDR Surface Grinder	1	1	0	90		1.1	26	8.5		1			
PM 7101	CYL_GRNDR	1	1	0	30		1.3	82	5.2		1	1		

EQUIPMENT PROFILE

NAME TURNER ALC [illegible] DATE 5-6-87 RCC GRIND SHEET 3 OF 4

EQUIPMENT CODE	EQUIPMENT TYPE/DESCRIPTION	QUANTITY PER SHIFT 1st	2nd	3rd	DOWNTIME PREVENTIVE MAINT. FREQ.	SHIFT	DOWN TIME	UNSCHEDULED BREAKDOWN REPAIR TIME MTBF	MTTR	PERCENT USED FOR OTHER RCCs (e.g. TIME NOT AVAILABLE)	ENVELOP UNITS MIN / MAX	ALTERNATE EQUIPMENT CODE	SOURCE
PM 6117	LAP_MCHNE Lapping Machine	1	1	0				73	3.0		1 / 1		
PM 1149	EXT_GRNDR OD	1	1	0	30		.50	37	5.1		1 / 1		
PM 1323	THD_GRNDR Thread Grander	1	1	0	90		1.8	22	10.0		1 / 1		
PM 7249	IL G_GRNDR	1	1	0	30		1.1	48	5.1		1 / 1		
PM 5307	IL G_GRNDR	1	1	0	30		1.1	41	6.8		1		
PM 5753	AIR_DRYER Refrigerated Air Dryer	1	1	0	90		.50	721	.25		1		
PM 4194	CIN_GRNDR Cincinnati C/L grinder	1	1	0	30		.5	25	28.2		1 / 1		
PM 7317	CYL_GRNDR	1	1	0	30		2.3	31	10.8		1		
PM 6652	BLANCHARD Rotary Surface Grinder	1	1	0	30		.46	42	3.7		1		
PM 6654	BLANCHARD Rotary Surface Grinder	1	1	0	30		.46	53	2.7		1		
PM 1334	CIR_GRNDR [illegible]	1	1	0	30		.5	79	4.5		1 / 1		
PM 0211	VERI_HONE Micrometric Verticle Hone	1	1	0	90		1.2	38	6.9		1 / 1		

LSC-2000 IB

EQUIPMENT PROFILE

NAME Turner ALC OC DATE 6-8-87 RCC GRIND SHEET 4 OF 4

EQUIPMENT CODE	EQUIPMENT TYPE/DESCRIPTION	QUANTITY PER SHIFT 1st	2nd	3rd	DOWNTIME PREVENTIVE MAINT. FREQ.	SHIFT	DOWN TIME	UNSCHEDULED BREAKDOWN REPAIR TIME MTBF	MTTR	PERCENT USED FOR OTHER RCCs (e.g. TIME NOT AVAILABLE)	ENVELOP UNITS MIN / MAX	ALTERNATE EQUIPMENT CODE	SOURCE
PM 1310	I_G_GRNDR	1	1	0	30		.41	61	4.7		1 / 1		
PM 1312	I_G_GRNDR	1	1	0	30		.41	66	2.6		1 / 1		
PM 7402	VERI_HONE Barnes	1	1	0							1 / 1		
PM 6936	UNI_GRNDR Comdo	1	1	0							1 / 1		
PM 6937	UNI_GRNDR Comdo	1	1	0							1 / 1		
PM 6600	SUR_GRNDR	1	1	0							1 /		
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LSC-2000-IB

EQUIPMENT PROFILE

NAME Turner ALC [illegible] DATE [illegible] RCC Mi[illegible] SHEET 1 OF 6

EQUIPMENT CODE	EQUIPMENT TYPE/DESCRIPTION	QUANTITY PER SHIFT			DOWNTIME					PERCENT USED FOR OTHER RCCs (e.g. TIME NOT AVAILABLE)	ENVELOP UNITS		ALTERNATE EQUIPMENT CODE	SOURCE
					PREVENTIVE MAINT.			UNSCHEDULED BREAKDOWN REPAIR TIME			MIN	MAX		
		1st	2nd	3rd	FREQ.	SHIFT	DOWN TIME	MTBF	MTTR					
PM 5267	HARZ_MILL Kearney & Trecker	1	1	0	30		.42	73	10.2		1	1		
PM 5199	VERI_MILL Kearney & Trecker	1	1	0	30		.42	[illegible]	8.3		1	1		
PM 1779	RAD_DRILL Radial Drill	1	1	0	90		1.5	354	3.8		1	1		
PM 2590	ENG_LATHE [illegible]	1	1	0	30		1.0	113	7.8		1	1		
PM 2571	ENG_LATHE Axelson	1	1	0	30		1.0	208	22.0		1	1		
PM 3478	ENG_LATHE Monarch	1	1	0	30		1.0	128	17.6		1	1		
PM 0216	ENG_LATHE Monarch	1	1	0	30		1.0	228	13.4		1	1		
PM 4150	ENG_LATHE Monarch	1	1	0	30		1.0	82	7.9		1	1		
PM 4127	ENG_LATHE Monarch	1	1	0	30		1.0	127	6.2		1	1		
PM 7494	ENG_LATHE Harrison	1	1	0							1	1		
PM 5279	ENG_LATHE American	1	1	0	30		1.0	207	8.7		1	1		
PM 5278	ENG_LATHE [illegible]	1	1	0	30		1.0	118	2.6		1	1		

EQUIPMENT PROFILE

NAME Turner ALC 00 DATE 5-6-87 RCC MACHIN SHEET 2 OF 6

EQUIPMENT CODE	EQUIPMENT TYPE/DESCRIPTION	QUANTITY PER SHIFT 1st	2nd	3rd	DOWNTIME PREVENTIVE MAINT. FREQ.	SHIFT	DOWN TIME	UNSCHEDULED BREAKDOWN REPAIR TIME MTBF	MTTR	PERCENT USED FOR OTHER RCCs (e.g. TIME NOT AVAILABLE)	ENVELOP UNITS MIN / MAX	ALTERNATE EQUIPMENT CODE	SOURCE
PM 572	ENG LATHE Monarch	1	1	0	30		1.0	40	27.5		1/1		
PM 5719	ENG LATHE Century	1	1	0	30		1.0	110	7.4		1/1		
PM 7217	VERT MILL Tekniks Vertical Machining Ctr.	1	1	0	30		.29	36	3.4		1/1		
PM 4193	BGPT MILL Bridgeport	1	1	0	30		.42	178	4.3		1/1		
PM 0459	BGPT MILL Series II	1	1	0	30		.42				1/1		
PM 5493	RAD DRILL	1	1	0							1/1		
PM 2580	RAD DRILL Radial Drill	1	1	0	90		1.5	155	4.4		1/1		
PM 6135	RAD DRILL Radial Drill	1	1	0	90		1.5	784	11.5		1/1		
PM 0084	ENG LATHE Lebland	1	1	0	30		1.0	116	4.3		1/1		
PM 8079	ENG LATHE Lebland	1	1	0							1/1		
PM 0080	ENG LATHE Lebland	1	1	0	30		1.0	83	4.0		1/1		
PM 2142	ENG LATHE American	1	1	0				316	3.5		1/1		

EQUIPMENT PROFILE

NAME Turner ALC 00 DATE 5[illegible]-89 RCC MACHIN SHEET 3 OF 6

EQUIPMENT CODE	EQUIPMENT TYPE/DESCRIPTION	QUANTITY PER SHIFT			DOWNTIME					PERCENT USED FOR OTHER RCCs (e.g. TIME NOT AVAILABLE)	ENVELOP UNITS	ALTERNATE EQUIPMENT CODE	SOURCE
					PREVENTIVE MAINT.			UNSCHEDULED BREAKDOWN REPAIR TIME					
		1st	2nd	3rd	FREQ.	SHIFT	DOWN TIME	MTBF	MTTR		MIN / MAX		
PM 5288	ENG LATHE American	1	1	0	30		1.0	191	21.3		1 / 1		
PM 4131	ENG LATHE Lebland	1	1	0	30		1.0				1 / 1		
PM 5197	IG BORER Pratt & Whitney	1	1	0	30		.47	71	7.1		1 / 1		
PM 4145	SUNN HONE Sunnen Hone	1	1	0	30		1.5				1 / 1		
PM 0477	SUNN HONE Sunnen Hone	1	1	0	90		1.5	258	20.0		1 / 1		
PM 4563	BORE MILL Lucas Boring Mill	1	1	0	30		.35	28	4.8		1 / 1		
PM 4562	BORE MILL Lucas Boring Mill	1	1	0	30		.35	28	8.0		1 / 1		
PM 4561	BORE MILL Lucas Boring Mill	1	1	0	30		.35	20	4.2		1 / 1		
PM 6977	HORZ MILL G&L	1	1	0	30		.35	23	7.3		1 / 1		
PM 6584	TURN LATHE Verticle Turret Lathe	1	1	0	30		.50	46	16.6		1 / 1		
PM 7216	VERT MILL Verticle MACHINING CENTER	1	1	0	30		.29	61	6.0		1 / 1		
PM [illegible]	____ MILL Rockford Mill	1	1	0	30		.42	112	4.4		[illegible] / 1		

EQUIPMENT PROFILE

NAME Turner ALC 00 DATE 5-6-89 RCC MACHIN SHEET 4 OF 6

	EQUIPMENT CODE	EQUIPMENT TYPE/DESCRIPTION	QUANTITY PER SHIFT 1st	2nd	3rd	DOWNTIME PREVENTIVE MAINT. FREQ.	SHIFT	DOWN TIME	UNSCHEDULED BREAKDOWN REPAIR TIME MTBF	MTTR	PERCENT USED FOR OTHER RCCs (e.g. TIME NOT AVAILABLE)	ENVELOP UNITS MIN / MAX	ALTERNATE EQUIPMENT CODE	SOURCE
X	PM 0361	VERI MILL Cincinetti	1	1	0							1 / 1		
X	PM 4176	BGPT MILL Bridgeport	1	1	0				85	13.6		1 / 1		
X	PM 5268	AOKZ MILL K&T	1	1	0				174	9.9		1 / 1		
X	PM 7211	MACH CNTR Teknics	1	1	0							1 / 1		
	PM 2577	RAD DRILL Radial Drill	1	1	0	90		1.5	73	2.0		1 / 1		
	PM 5329	RAD DRILL Radial Drill	1	1	0	90		1.5	280	4.0		1 / 1		
	PM 1788	RAD DRILL Radial Dr	1	1	0	90		1.5	157	5.0		1 / 1		
	PM 2571	RAD DRILL Radial Drill	1	1	0	90		1.5	211	4.0		1 / 1		
X	PM 5494	RAD DRILL	1	1	0							1 / 1		
X	PM 5685	DRY OVEN Drying Oven	1	1	0							1 / 1		
	PM 7191	ENG LATHE Lebl[illegible]	1	1	0	30		1.0	482	16		1 / 1		
	PM [illegible]	LATHE Axelson	1	1	0	30		1.0	81	7.4		1 / 1		

EQUIPMENT PROFILE

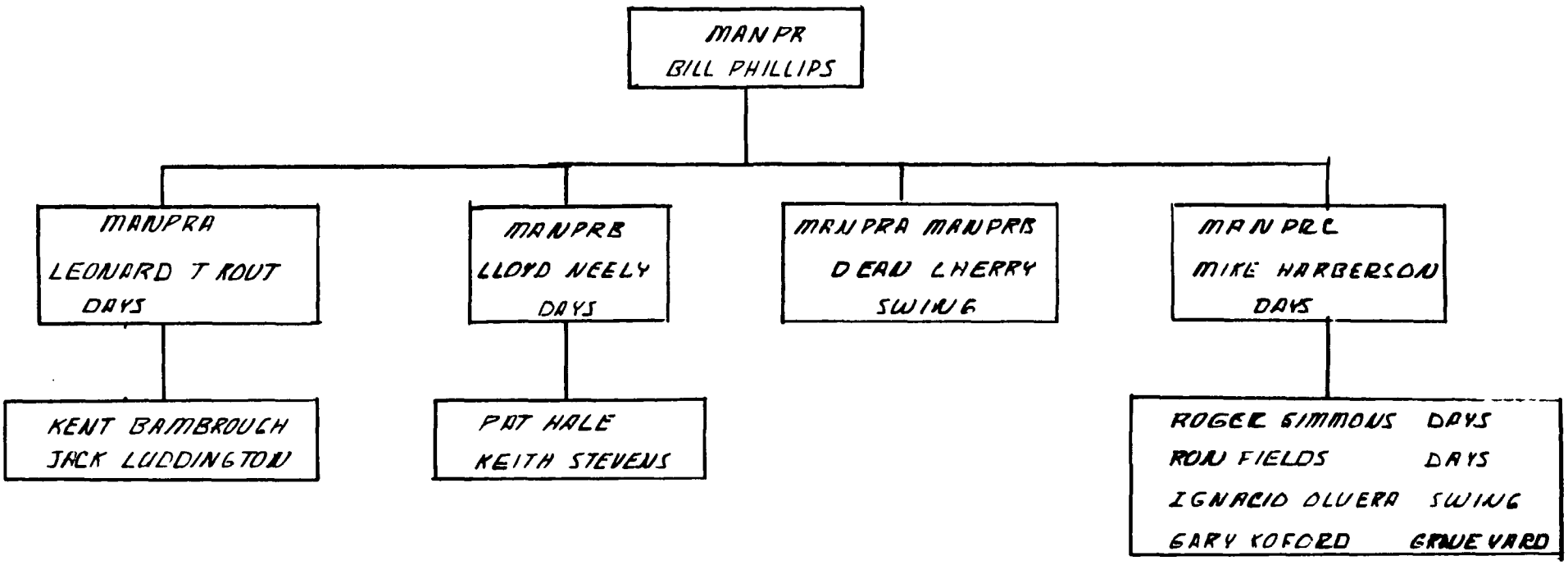
NAME Turner ALC 00 DATE 2-6-89 RCC MACHIN SHEET 5 OF 6

EQUIPMENT CODE	EQUIPMENT TYPE/DESCRIPTION	QUANTITY PER SHIFT			DOWNTIME					PERCENT USED FOR OTHER RCCs (e.g. TIME NOT AVAILABLE)	ENVELOP UNITS		ALTERNATE EQUIPMENT CODE	SOURCE
					PREVENTIVE MAINT.			UNSCHEDULED BREAKDOWN REPAIR TIME			MIN	MAX		
		1st	2nd	3rd	FREQ.	SHIFT	DOWN TIME	MTBF	MTTR					
PM 4138	ENG LATHE Leblond	1	1	0	90		1.5	20	13.0		1	1		
PM 5201	ENG LATHE Leblond	1	1	0	30		1.0				1	1		
	----------										1	1		
PM 0588	ENG LATHE Monarch	1	1	0	30		1.0				1	1		
PM 7493	ENG LATHE Harrison	1	1	0							1	1		
PM 6215	ENG LATHE Monarch	1	1	0	30		1.0	103	9.0		1	1		
PM 5287	ENG LATHE Monarch	1	1	0	30		1.0	180	3.3		1	1		
PM 5280	ENG LATHE American	1	1	0	30		1.0	58	7.0		1	1		
PM 213	ENG LATHE Monarch	1	1	0	30		1.0	86	6.0		1	1		
PM 0081	ENG LATHE Leblond	1	1	0	30		1.0	201	11		1	1		
PM 7276	CNC LATHE Clausing	1	1	0				64	6.2		1	1		
PM 0160	BCPI MILL Bridgeport	1	1	0							1	1		

EQUIPMENT PROFILE

NAME Turner ALC 00 DATE 5-6-87 RCC MACHIN SHEET 6 OF 6

EQUIPMENT CODE	EQUIPMENT TYPE/DESCRIPTION	QUANTITY PER SHIFT			DOWNTIME					PERCENT USED FOR OTHER RCCs (e.g. TIME NOT AVAILABLE)	ENVELOP UNITS		ALTERNATE EQUIPMENT CODE	SOURCE
					PREVENTIVE MAINT.			UNSCHEDULED BREAKDOWN REPAIR TIME			MIN	MAX		
		1st	2nd	3rd	FREQ.	SHIFT	DOWN TIME	MTBF	MTTR					
PM 7215	HORZ_MILL G+L	1	1	0	30		.75	26	6.4		1	1		
PM 7218	HORZ_MILL G+L	1	1	0	90		.75	38	8.3		1	1		
PM 7403	VERT_HONE	1	1	0	30		.8	37	7.8		1	1		
PM 0757	ENG_LATHE Monarch	1	1	0				670	4.0		1	1		
PM 5256	JIG_BORE Pratt & Whitney	1	1	0							1	1		
PM 6435	HORZ_HONE Barnes	1	1	0							1	1		
PM 7248	CNC_LATHE Clausing	1	1	0							1	1		
PM 0340	OAKPRESS	1	1	0							1	1		


MANPR
BILL PHILLIPS
MANPRA
LEONARD T ROUT
DAYS
MANPRB
LLOYD NEELY
DAYS
MANPRA MANPRB
DEAN CHERRY
SWING
MANPRC
MIKE HARBERSON
DAYS
KENT BAMBROUGH
JACK LUDDINGTON
PAT HALE
KEITH STEVENS
ROGER GIMMONS DAYS
RON FIELDS DAYS
IGNACIO OLVERA SWING
GARY KOFORD GRAVEYARD

MANPOWER [illegible]OHILE

NAME Turner ALC 00 DATE 5-22-89 RCC MANPRA SHEET 1 OF 1

SKILL CODE/LEVEL	JOB DESCRIPTION	QUARTER	QUANTITY AVAILABLE									MANPOWER AVAILABLE (HOURS)									ALTERNATE SKILL CODE/LEVEL
			WORK WEEK			WEEKEND			HOLIDAYS			WORK WEEK			WEEKEND			HOLIDAYS			
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
JA07	MAINTENAN	1	1	0	0	0	0	0	0	0	0	56	56	0	0	0	0	0	0	0	
		2	1	0	0																
		3	1	0	0																
		4	1	0	0																
JA08	OPERATOR	1	13	5	0																
		2	13	5	0																
		3	13	5	0																
		4	13	5	0																
JA09	MACHINIST	1	24	3	0																
		2	24	3	0																
		3	24	3	0																
		4	24	3	0																
JA10	MACHINIST	1	20	3	0																
		2	20	3	0																
		3	20	3	0																
		4	20	3	0																
JA11	MACHINIST	1	5	1	0																
		2	5	1	0																
		3	5	1	0																
		4	5	1	0																

LSC-2000-1

MANPOWER PROFILE

NAME Turner ALC 00 DATE 5-22-89 RCC MANPRO SHEET 1 OF 1

SKILL CODE/LEVEL	JOB DESCRIPTION	QUARTER	QUANTITY AVAILABLE									MANPOWER AVAILABLE (HOURS)									ALTERNATE SKILL CODE/LEVEL
			WORK WEEK			WEEKEND			HOLIDAYS			WORK WEEK			WEEKEND			HOLIDAYS			
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
JA08		1	3	1	0	0	0	0	0	0	0	56	56	0	0	0	0	0	0	0	
		2	3	1																	
		3	3	1																	
		4	3	1																	
JA09		1	10	3																	
		2	10	3																	
		3	10	3																	
		4	10	3																	
JA10		1	18	3																	
		2	18	3																	
		3	18	3																	
		4	18	3																	
JA11		1	2	1																	
		2	2	1																	
		3	2	1																	
		4	2	1																	
		1																			
		2																			
		3																			
		4																			

ESC-20001

MANPOWER PROFILE

NAME Turner ALC 00 DATE 5-23-89 RCC PRA & PRB SHEET 1 OF 1

SKILL CODE/LEVEL	JOB DESCRIPTION	QUARTER	QUANTITY AVAILABLE									MANPOWER AVAILABLE (HOURS)									ALTERNATE SKILL CODE/LEVEL
			WORK WEEK			WEEKEND			HOLIDAYS			WORK WEEK			WEEKEND			HOLIDAYS			
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
JA05	TOOL & PART	1	1	0	0	0	0	0	0	0	0	56	0	0	0	0	0	0	0	0	
		2	1																		
		3	1																		
		4	1																		
JA06	TOOLCRIB	1	1																		
		2	1																		
		3	1																		
		4	1																		
		1																			
		2																			
		3																			
		4																			
		1																			
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		3																			
		4																			
		1																			
		2																			
		3																			
		4																			

Repair Process Technologies

Based on the current state of affairs in the machine/grinding RCC's I feel that there are only 2 major issues worth addressing at this time. These issues are scheduling & quality control. Until the problems in these 2 areas are resolved it would be senseless to consider other changes to the existing repair processes.

Currently, scheduling appears to exist only on paper. Based upon personal observations & conversations with a scheduler & several operators it seems that part flow, when not controlled by the hot sheet, is left up to the discretion & initiative of the operator.

The parts on the hot sheet are items deemed to currently be in the highest demand. These parts get attention from the appropriate area supervisor who with scheduling personnel see to it that they end up in a machine as soon as possible.

When an operator finishes a run & does not have hot sheet material to work on he goes in search of parts for his machine himself. This is not how most shops do it.

Most shops have expediters or move people whose only function in life is to see to it that each machine has a fresh batch of

parts when they're needed.

However, before expediters can be effective there has to be a plan for moving parts through the shop. I'm not refering to a method of tracking parts but rather one that determines when a specific part should arrive at a given machine & how long it needs to stay there.

This should be the job of the scheduler. The information he needs to do his job (ie. set-up, run & inspection times) should appear on the WCD. It does not.

If the scheduler knew how long an operation took to set-up, run & inspect, then given the number of parts in a run, he should be able to predict when a batch of parts should be ready to come out of a machine.

This routine, if adhered to, allows not only the tracking of parts but also the prediction of their location at any time through the repair process. This is not currently possible & I don't think MRP is going to make it happen either.

I think that it should also be pointed out that no plan is going to improve your thru put unless you put ONE person in charge of machining, plating, flame spray, grinding & inspection. These 5 areas are all interrelated. A breakdown in

one area will have a direct affect on all of the other areas. The menager of these areas also needs the clout to hire/fire/relocate his personnel at will. He does not need new equipment in any of his areas except inspection where a co-ordinate measuring machine is needed. Barring an exceptionally long lead time on the C.M.M. there is no reason I can see that these areas could not be made to run under control in 6 months time.

Returning to the problems in question we come to Q.C. or inspection. One of the goals of any shop should be to produce parts that are in conformence, or catch & repair discrepent material before it gets to final assy. Discrepent parts should not make it to final assembly. This is happening here.

With the PAC program the operators are supposed to check their own work. This works fine as far as checking bore diameters or counterbore depths, etc. but it is very difficult to check positional tolerences in some cases. Consequently, it is not uncommon for parts to be moving through the R.C.C. with dimensional accuracy being controlled only by dialing in the machine. This results in rework in final assembly where the mechanics find it easier to file, grind or emery the parts into conformence rather than initiate the paper chase that Form 103's would require.

Again, this is not in line with industry standards.

Most shops have a Q.C. department that oversees a statistical process control program.

The sucess of an S.P.C. program is based on accurate knowledge of the process & the parameters that affect it. These parameters are as follows:

Tooling/Fixturing
N/C Program Control
Part Control
Operator Training
Process Deviation Documentation

For Tooling/Fixturing it is necessary to have accurate, up to date drawings so that at periodic intervals features & surfaces subject to wear can be checked. This prevents the drifting of dimensional accuracy on process parts due to flaws in tooling/fixturing. In order to do this it is necessary to mark each ~~part~~ tool/fixture with a serial number that ties it to the appropriate drawing. This number should also appear on the WCD in the block used to describe the task performed at that particular operation.

note: this is starting to happen on your latest E.C.O.'s

N/C program control refers to a system which provides documentation of revision levels of process programs. The system should make it simple for the operator to retrieve the current rev. level program for the job he needs to run. The programs should have a numbering system similar to that used on mechenical drawings & this number along with

the current rev. level identifier should appear on the WCD in the block used to describe the task performed at that particular operation.

Part control refers to the need to insure that all parts arriving at any work station are all of a uniform nature. This means that parts should be deburred & blown clean of chips so that they fit properly in the next fixture. It also means that all preceeding operations have been completed.

In order to make the above controls work it is necessary to educate the shop people in the use & function of these newly installed controls. Operators must be made aware of the fixture & N/C program information provided on the WCD & they must know where to go to retrieve these fixtures & tapes.

At this point it is now time to establish process deviation documentation. To accomplish this task a batch of parts is run through a particular operation. As each part comes off the machine all features & dimensions effected by the current operation are checked 100 %. The results are recorded & plotted on a greph. From this information can be determined the drift of dimensional accuracy & the resulting necessary frequency of inspection. This process is repeated for all operations on all parts in the S.P.C. program.

Repair Process Technologies

Flow Charts

Chart #	Description
1	Logic Flow - Ogden
2	Pert Flow - Ogden
3	Logic Flow - Industry
4	Logic Flow - Industry

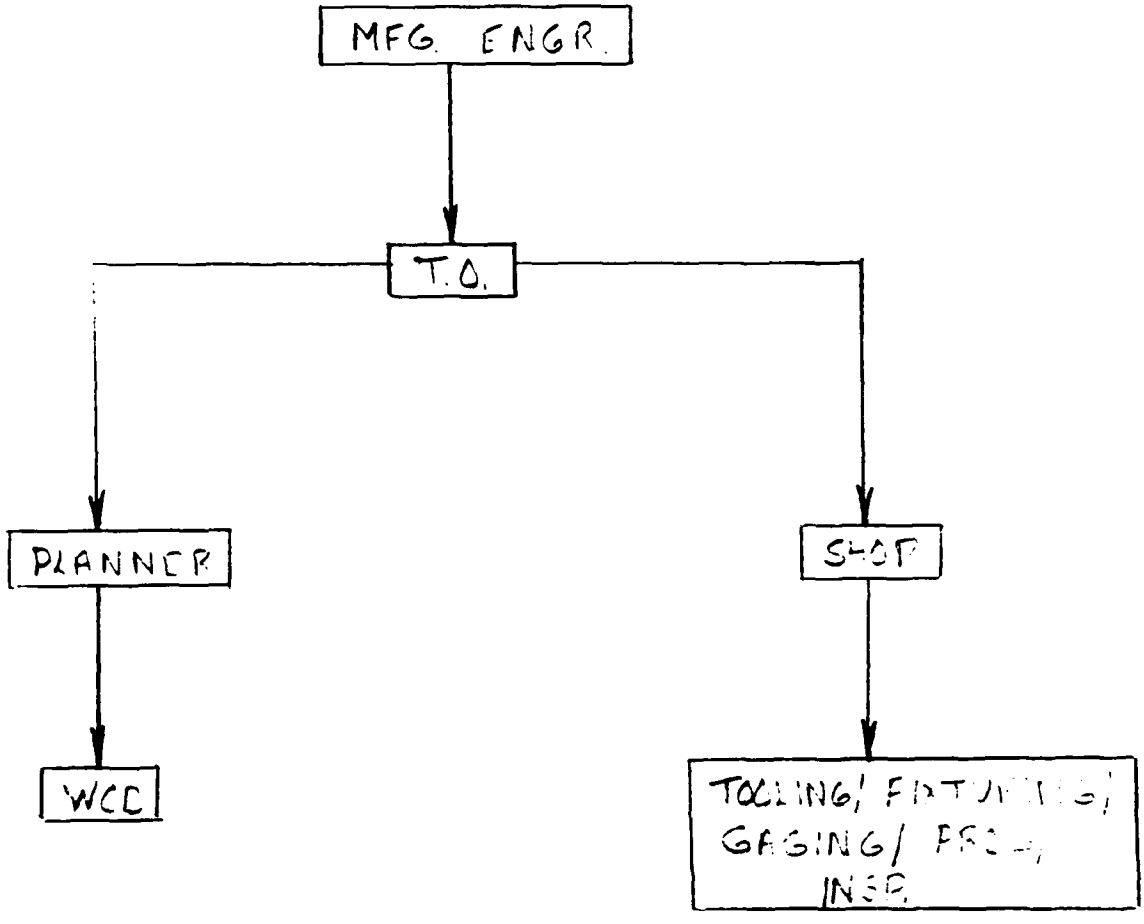

MFG. ENGR.
T.O.
PLANNER
SHOP
WCD
TOOLING/ FIXTURING/
GAGING/ PRESS/
INSP.

CHART 1

CHART 2

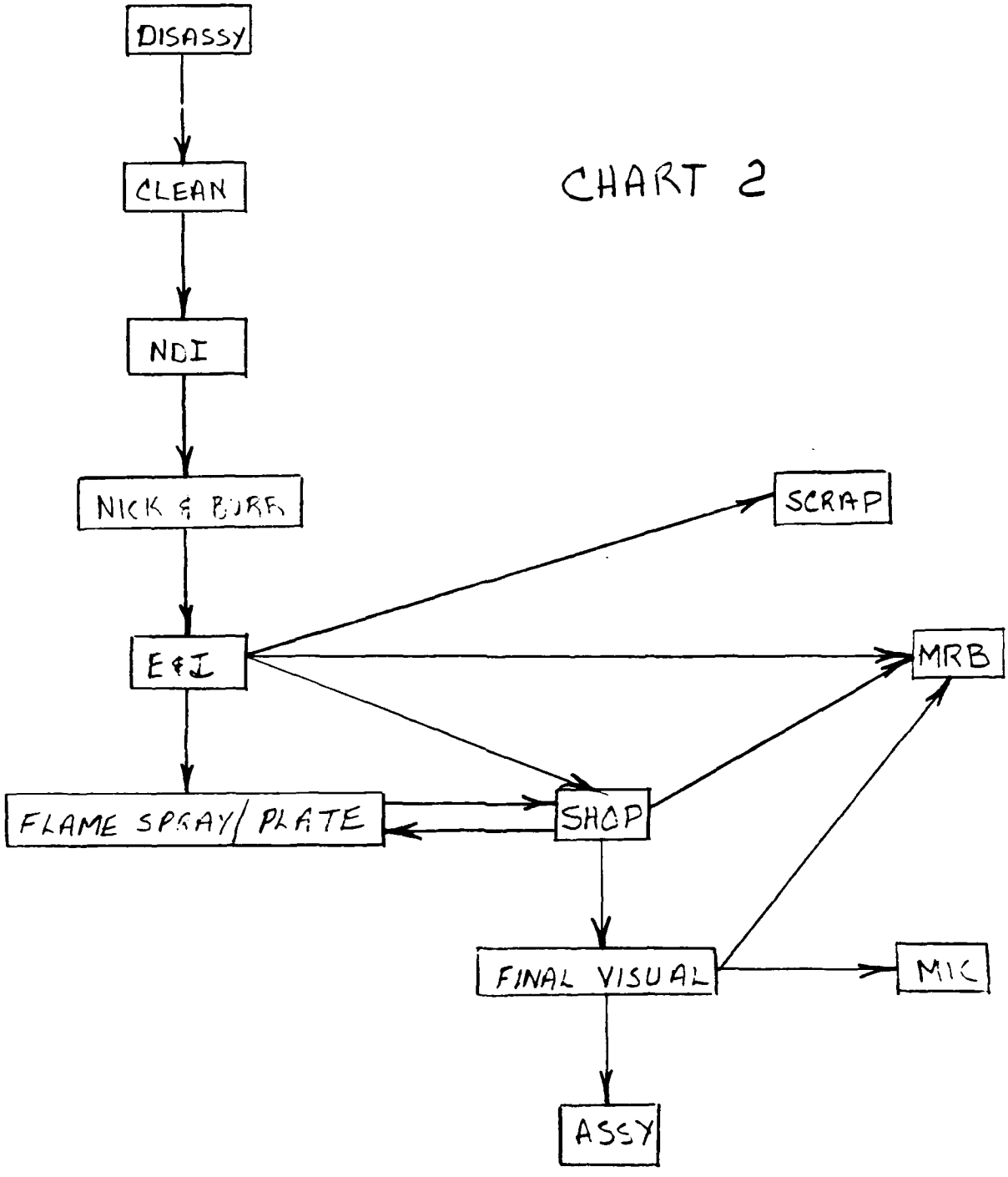
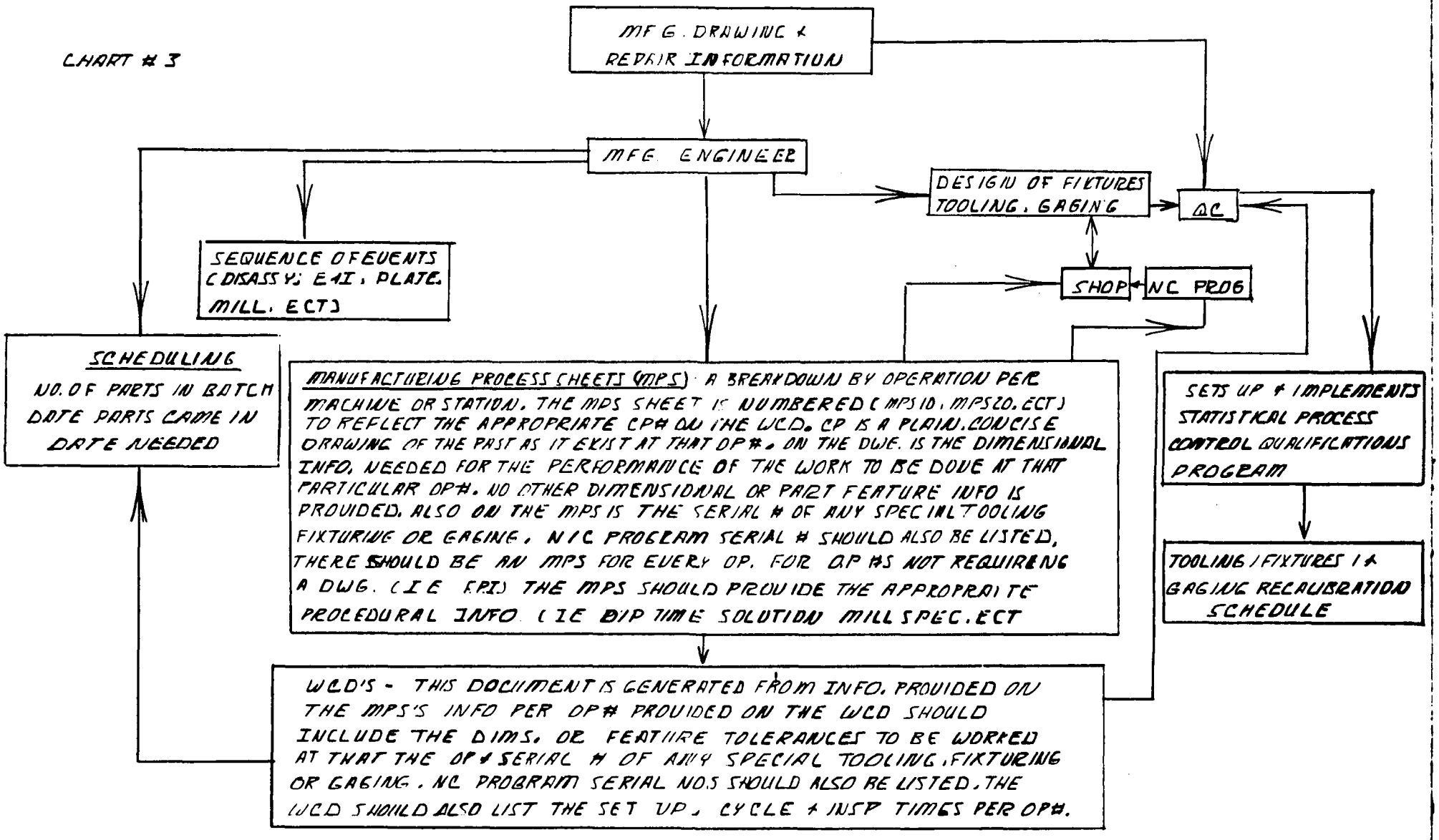

DISASSY
CLEAN
NDI
NICK & BURR
SCRAP
E&I
MRB
FLAME SPRAY/ PLATE
SHOP
FINAL VISUAL
MIC
ASSY

CHART # 3


MFG. DRAWING & REPAIR INFORMATION
MFG ENGINEER
DESIGN OF FIXTURES TOOLING, GAGING
QC
SEQUENCE OF EVENTS (DISASSY, EAI, PLATE, MILL, ECT)
SHOP
NC PROG
SCHEDULING
NO. OF PARTS IN BATCH
DATE PARTS CAME IN
DATE NEEDED
MANUFACTURING PROCESS SHEETS (MPS) A BREAKDOWN BY OPERATION PER MACHINE OR STATION. THE MPS SHEET IS NUMBERED (MPS10, MPS20, ECT) TO REFLECT THE APPROPRIATE OP# ON THE WCD. OP IS A PLAIN, CONCISE DRAWING OF THE PART AS IT EXIST AT THAT OP#, ON THE DWG. IS THE DIMENSIONAL INFO. NEEDED FOR THE PERFORMANCE OF THE WORK TO BE DONE AT THAT PARTICULAR OP#. NO OTHER DIMENSIONAL OR PART FEATURE INFO IS PROVIDED. ALSO ON THE MPS IS THE SERIAL # OF ANY SPECIAL TOOLING FIXTURING OR GAGING, N/C PROGRAM SERIAL # SHOULD ALSO BE LISTED, THERE SHOULD BE AN MPS FOR EVERY OP. FOR OP #S NOT REQUIRING A DWG. (I.E. EPI) THE MPS SHOULD PROVIDE THE APPROPRIATE PROCEDURAL INFO (I.E. DIP TIME SOLUTION MILL SPEC. ECT
SETS UP & IMPLEMENTS STATISTICAL PROCESS CONTROL QUALIFICATIONS PROGRAM
TOOLING / FIXTURES & GAGING RECALIBRATION SCHEDULE
WCD'S - THIS DOCUMENT IS GENERATED FROM INFO. PROVIDED ON THE MPS'S INFO PER OP# PROVIDED ON THE WCD SHOULD INCLUDE THE DIMS. OR FEATURE TOLERANCES TO BE WORKED AT THAT THE OP # SERIAL # OF ANY SPECIAL TOOLING, FIXTURING OR GAGING, NC PROGRAM SERIAL NOS SHOULD ALSO BE LISTED. THE WCD SHOULD ALSO LIST THE SET UP, CYCLE & INSP TIMES PER OP#.

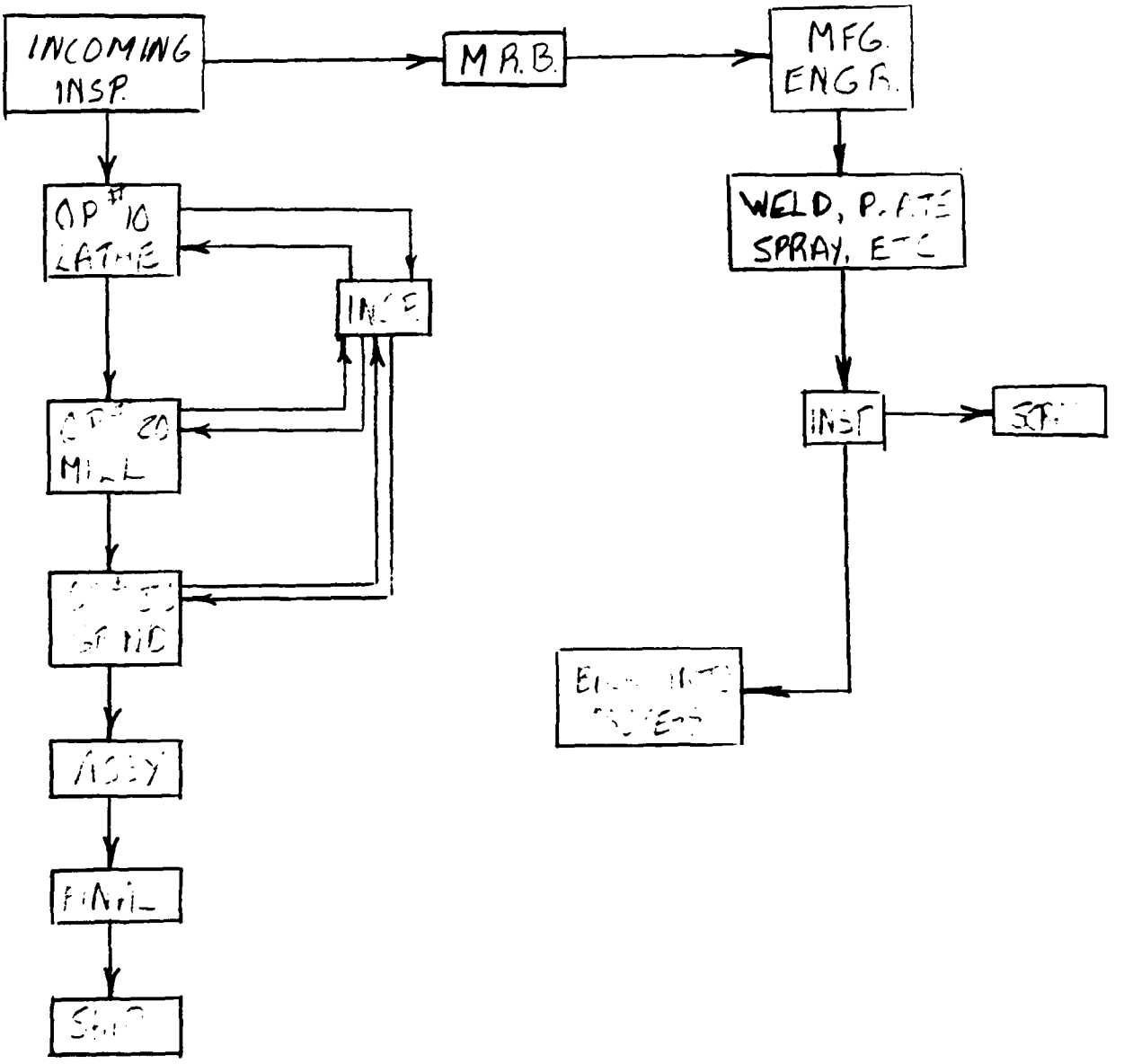

INCOMING INSP.
M.R.B.
MFG. ENG'R.
OP #10 LATHE
WELD, PAINT SPRAY, ETC
INSP
MILL
ASSY
FINAL

CHART 4

PART NO. [redacted]ART	POS. OPT.	WORK STATION
ENG. NO. 605[redacted]8	G/P -/G04	REV.
OPER. NO. 110	SH. 2 OF 10	DATE 1-24-89
OPER. NAME MILL DRILL & TAP FWD END		
PART NAME INLET FRAME	PROJECT G.E.	

QUALITY CONTROL OPERATION CHART

MASTER

REVISIONS

PREPARED BY: [signature]

APPROVED BY: [signature]

DATE

1. RECORD SERIAL NUMBERS IN ORDER OF MANUFACTURE.
2. IF WITHIN TOLERANCE, (OPERATOR) STAMP CHARACTERISTICS CODED ⊕, ⊖, ○, Ⓜ AND Ⓣ IF BEYOND TOLERANCE WRITE IN EXACT DIMENSION.

ITEM	ENG. LOC.	CHARACTERISTIC	Q.C. INFORMATION EQUIPMENT & TECHNIQUE	PAST HIST.	INSP. CODE
1					○
2	2 D-5	DIM BS 1.565 MIN	STD. MEAS. EQUIP.		2 1/10
3		SHEET #2			⊘
4		SECT CS-CS			⊘
5	2 J-15	.360-.362 Ø CK	PLUG GAGE	*	2 1/10
6	2 J-15	⌖ V T Ⓜ Z Ø .010 Ⓜ	FUNCTIONAL GAGE	*	○
7	2 F-14	.490-.480	FUNCTIONAL GAGE PIN	*	○
8	2 D-4	.400 MIN	P/N VISUAL NOTE 15		○
9	2 H-14	.015-.005 R	OPERATOR TO VERIFY TOOL BEFORE USEAGE		○
10	2 F-14	BRK SHARP EDGE	VISUAL		○
11	2 H-15	.480-.490 Ø	FUNCTIONAL GAGE PIN	*	○
12	2 H-16	63 U.O.S.	VISUAL & COMPARISON CHART		○
13	2 F-15	31°-29°	OPERATOR TO VERIFY TOOL BEFORE USEAGE		○
14	2 H-14	.03-.01 R	RADIUS GAGE		○
15	2 H-15	.040-.030 R	" "		○
16	2 E-20	2.23 R	Use Fixt. E42414 DG With Gage Pins		○
17	2 E-19	72°	" "		○
18	2 F-20	58°	" "		○
19		35°	" "		1 1/10
20					○
21					○
22					○

REMARKS: ALL CHARACTERISTICS DESIGNATED BY * TO BE RECORDED.

INSP. APPROVAL

DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
INSP. STAMP																					

PROCESS SHEET

Part No. 6053T69G04	Part Name INLET FRAME	Job No.
Oper. No. 12 Oper. Description LOCAL FPI CASTING - REC. INSP.	Work Station FPI	MPS-12

SKETCH

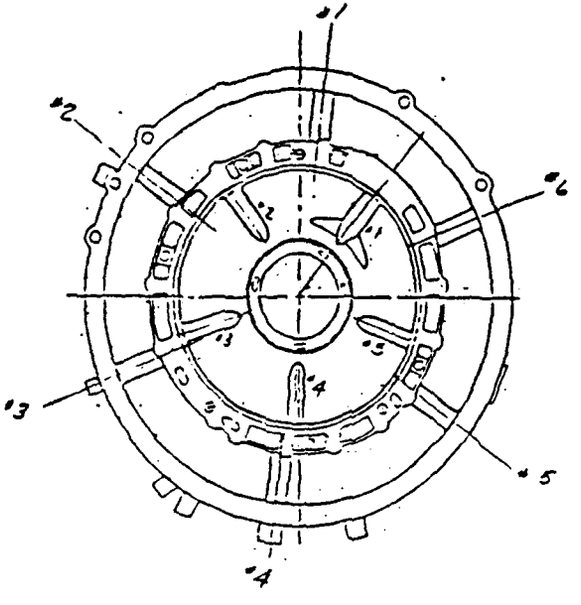
LOCAL FPI VANE AREAS ONLY

FLUORESCENT PENETRANT INSPECT PER P31F2 CL-A WITH THE FOLLOWING ACCEPTABILITY LIMITS:

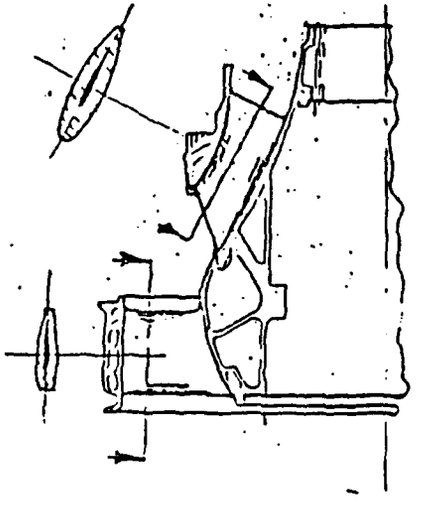
A) NO THRU INDICATIONS ALLOWED
B) ALL INDICATIONS .04 OR LESS ARE ACCEPTABLE
C) ALL INDICATIONS, EXCEPT CRACKS: BETWEEN .04 - .08 ARE ACCEPTABLE PROVIDED THAT THEY ARE NOT CLOSER THAN .20
D) MICROSHRINKAGE PER DWG 109A161 CL-30

U.O.S.	
Locate	▲
Clamp	△
Fixt.	
Tapes	
Finish	
Dec. .xxx ± .005	
Fillet Rad	
All Dia. W/N .	TIR
Break Edges .	R

Revision	Da



AFT END LOOKING FWD.



VANE SECTION VIEWS

Drawn By [illegible] 10-26-57 | Engineer [illegible] 10/24/57 | Quality [illegible] 10/27/57 | Manufacturing [illegible] 10-26-57 | Released [illegible]

QUALITY CONTROL OPERATION CHART

DWG. NO. [redacted] '68 G/P 7604 REV.
OPER. NO. [redacted] SH. 1 OF 10 DATE 1-24-89
OPER. NAME MILL DRILL & TAP FWD END
PART NAME INLET FRAME PROJECT G.E.

PREPARED BY: [redacted]
APPROVED BY: [redacted]

1. RECORD SERIAL NUMBERS IN ORDER OF MANUFACTURE.
2. IF MIN TOLERANCE, (OPERATOR) STAMP CHARACTERISTICS CODED ⊕, ⊖, ○, Ⓡ AND Ⓣ. IF BOTH TOLERANCE WRITE IN EXACT DIMENSION.

REVISIONS

ITEM	DWG. LOC.	CHARACTERISTIC	Q.C. INFORMATION EQUIPMENT & TECHNIQUE	PAST HIST.	INSP. CODE
1					○
2		BHR MPS-110	FIXT.E-42414-DG		⊖
3		SHEET #1			⊖
4		SECT. M-M			⊖
5	2 F-15	4.835-4.825	MICRO-HITE		2 1/10
6	2 H-15	.04-.03 R	RADIUS GAGE		2 1/10
7		SECT. CU-CU			⊖
8	2 B-8	.05-.03 R	RADIUS GAGE		2 1/10
9	2 B-8	.627-.631	MICRO-HITE		2 1/10
10		SECT. AE-AE			⊖
11	2 B-4	W/N .0005	MICRO-HITE		2 1/10
12	2 B-4	W/N .002 MAX	MICRO-HITE		○
13	2 H-16	2.560-2.550 R	"		○
14	2 B-8	2.855-2.845 R	"		○
15	E-7 D-9	1.01-.99 R 2 PLC	RADIUS GAGE		○
16	2 F-8	22°-21°	FUNCTIONAL GAGE	*	○
17		37°37'22"	" " "	*	○
18	2 D-5	1.580 MIN	" " "		○
19		.9 APPROX.	"		○
20	2 D-5	DIM BT 1.580 MIN	FUNCTIONAL GAGE	*	○
21	2 D-5	DIM BY .19-.15 R	RADIUS GAGE		○
22	2 D-9	.11-.09	" " "		2 1/10

REMARKS ALL CHARACTERISTICS DESIGNATED BY * TO BE RECORDED.

INSP. APPROVAL

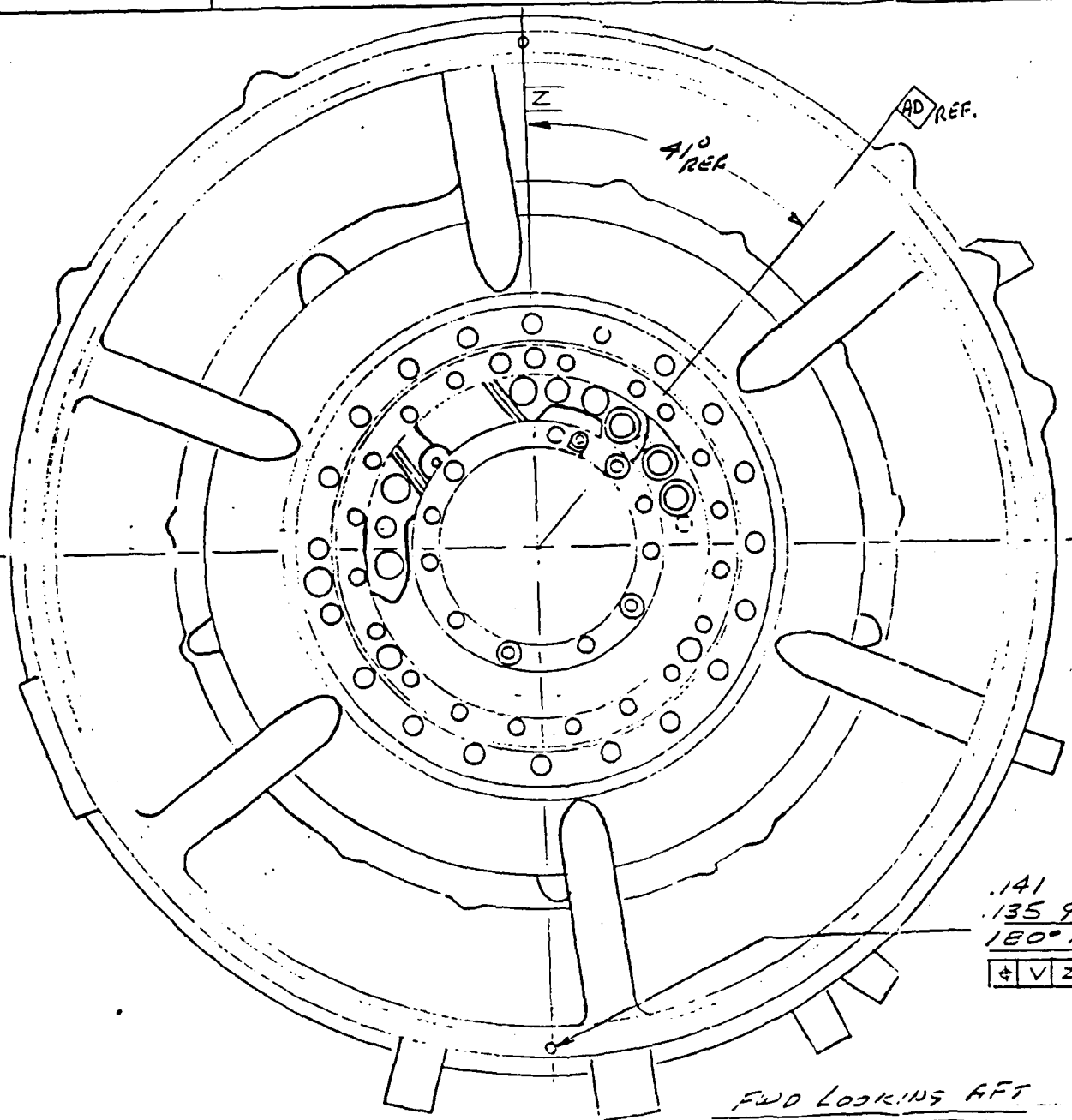
DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
INSP. STAMP																					

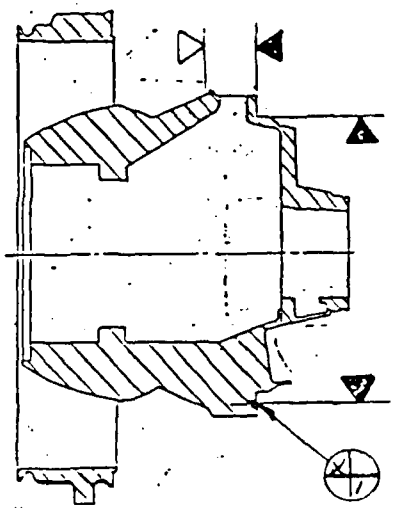
MPS 110

Part No. 6053T68 G04 | Part Name [illegible]LET FRAME | Job No.

Oper. No. 110 | Oper. Description MILL DRILL [illegible] TAP FWD END | Work Station NC MILL | MPS-110 SHT 0.

SKETCH





.141
.135 ⌀ THRU 2 HOLES
180° APART ON A 7.780 R

⌖	V	Z	W	.016 Ⓜ

FWD LOOKING AFT

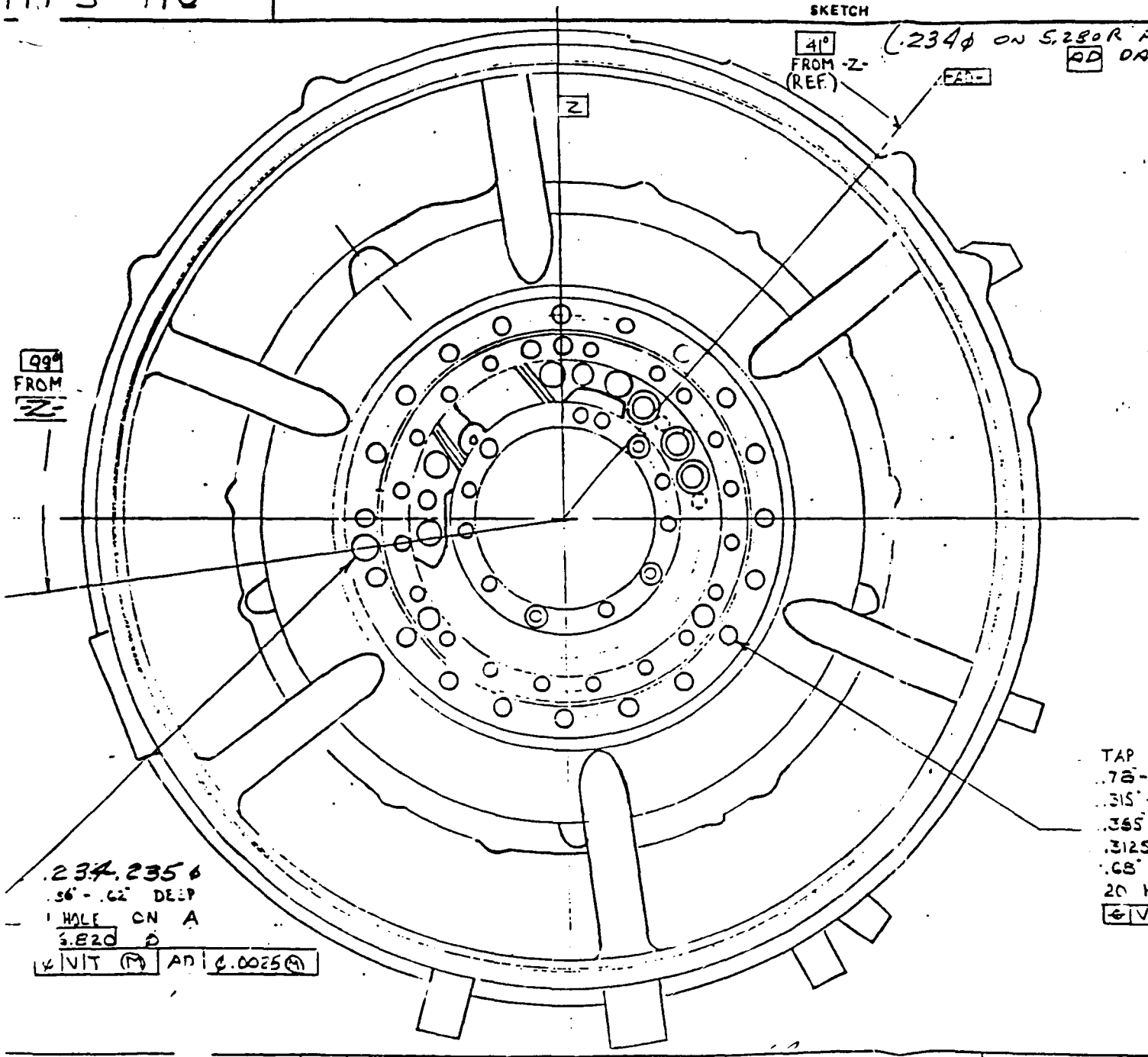
U.O.S.	
Locate	A
Clamp	L
Fixt.	E42414 L
Tapes	
Finish	
Dec. .xxx ± .005	
Fillet Rad	
All Dia. W/N	.
Break Edges	.005

Drawn By [illegible] | Engineer [illegible] | Quality [illegible] | Manufacturing [illegible] | Released [illegible]

Part No. 6055768 604	Part Name [illegible] FRAME	Job No.
Oper. No. 110	Oper. Description MILL DRILL TAP FWD. END	Work Station

MPS 110

SKETCH



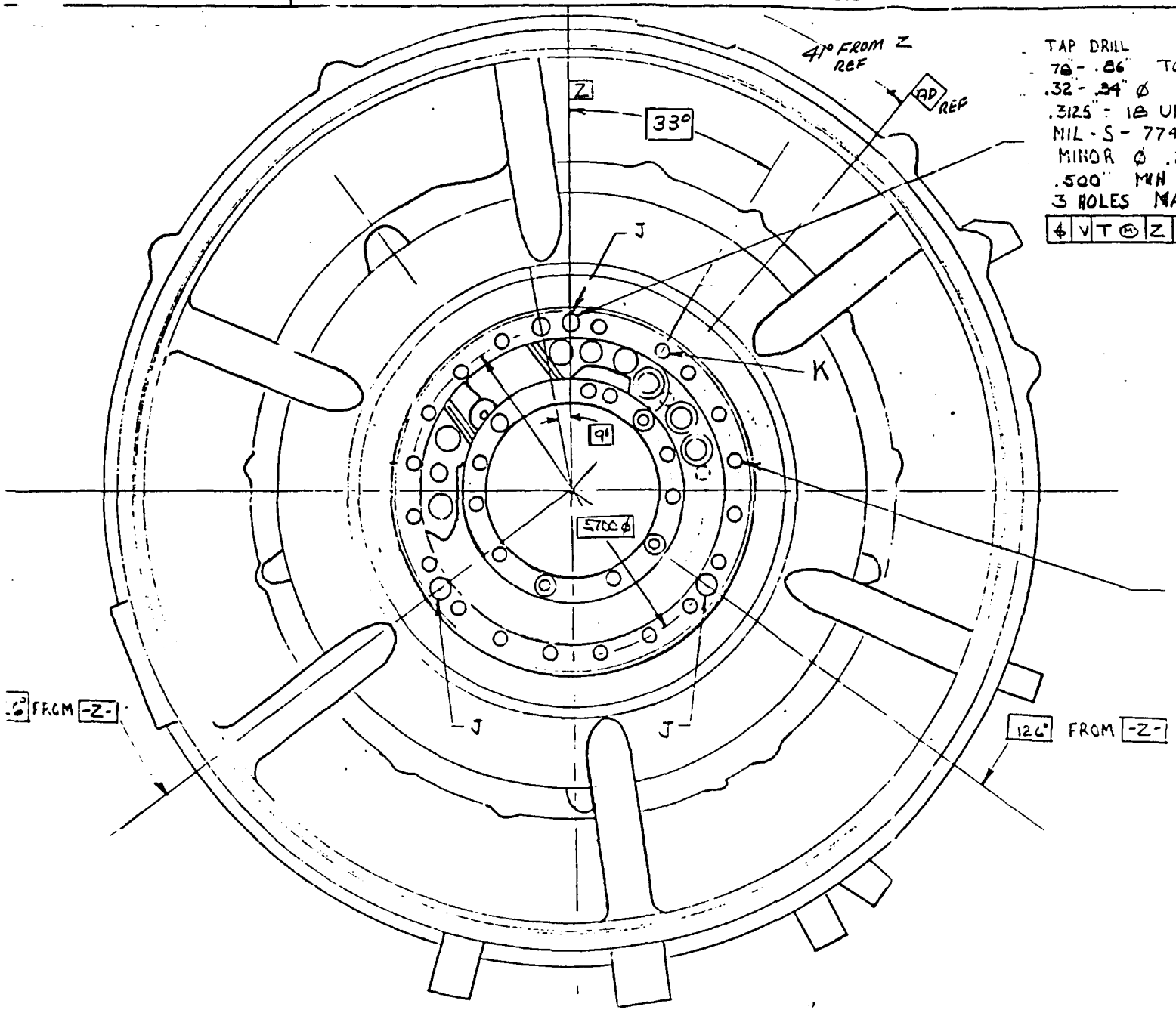
MPS-110

	U. O. S.
Locate	
Clamp	
Fixt. E424140	
Tapes	
Finish	
Dec. .xxx ± .005	
Fillet Rad	
All Dia. W/N	.
Break Edges	.

MPS 110

Part No. 6053T68 G04	Part Name ET FRAME	Job No.
Oper. No. 110 Oper. Description MILL DRI & TAP FWD END		Work Station

SKETCH



TAP DRILL FROM SURF -AM-
.78 - .86 TO DRILL POINT
.32 - .34 ⌀ 80° - 100° C'SNK
.3125 - 18 UNC - 3B MOD
MIL - S - 7742
MINOR ⌀ .271" - .276 MOD.
.500" MIN FULL THD DEPTH
3 HOLES MARKED "J"
⌖ | V | T Ⓜ | Z | .010 Ⓜ

TAP DRILL .2670 - .2754 ⌀
FROM SURF -AM- .78 - .86"
TO DRILL POINT
.315 - .322 C'BORE .15 - .17 DEEP
.385 - .395 ⌀ 80 - 100° CSK
.3125 - 24UNF - 3B MIL - S - 7742
.68" MIN FULL THD DEPTH FRO
20 HOLES EQ. SPACED EXCEPT
ONE HOLE MARKED K
⌖ | V | T Ⓜ | .010 Ⓢ

MPS-110

U.O.S.	
Locate	
Clamp	
Fixt	E 42414
Tapes	
Finish	63
Dec. .xxx ± .005	
Fillet Rad	
All Dia. W/N	.
Break Edges	.00

Part No. 6053TGE 604	Part Name T FRAME	Job No.
MPS 110	Oper. No. 110 Oper. Description MILL DRILL & TAP FWD END	Work Station

SKETCH

MPS-110 SHT. OF.

U. O. S.

Locate

Clamp

Fixt. E42419

Tapes

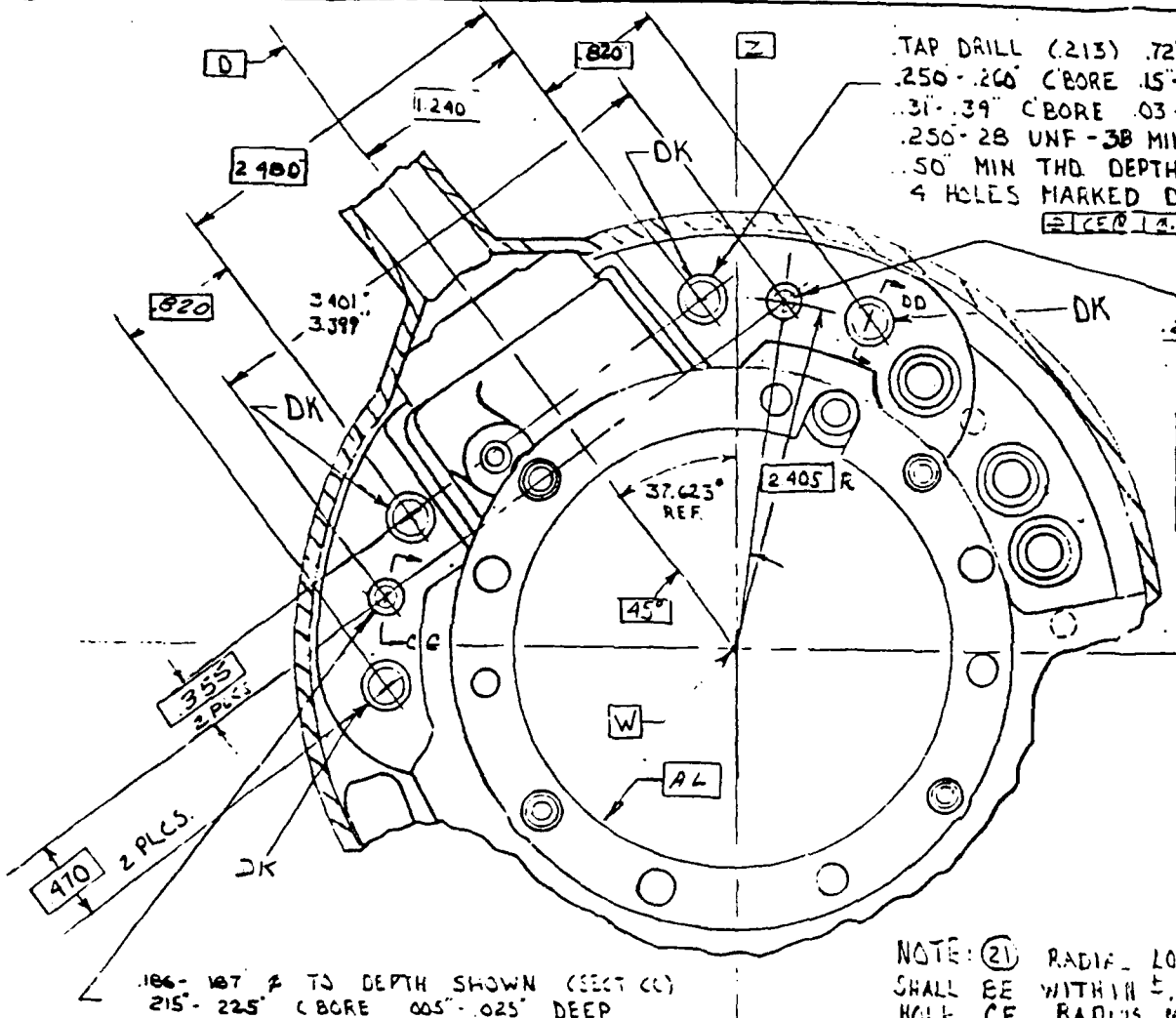
Finish 63

Dec. .xxx ± .005

Fillet Rad-

All Dia. W/N .

Break Edges .005

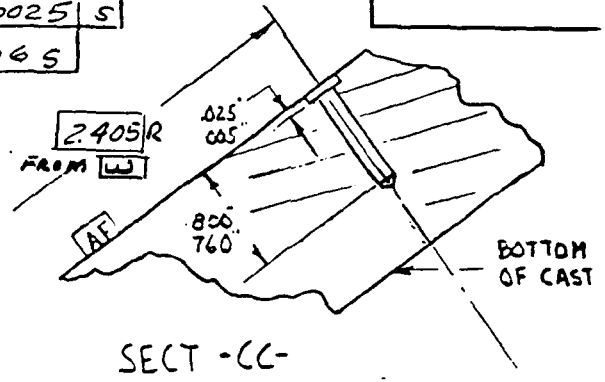


.TAP DRILL (.213) .72" MAX. DEPTH
.250 - .260 C'BORE .15" - .17" DEEP
.31 - .39" C'BORE .03 - .05" DEEP
.250 - 28 UNF - 3B MIL-S-7742
.50" MIN THD. DEPTH
4 HOLES MARKED DK

⌖ | CE | Ø.010 | M

⌖ | V | AL | Ø.0025 | S
⌖ | AD | Ø.006 | S
CE

Ø .186 - .187 ⌀ TO DEPTH SHOWN
.215 - .225 C'BORE .005 - .025 DP.

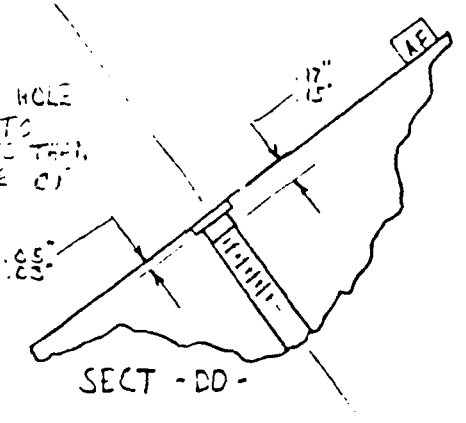


SECT - CC -

.186 - .187 ⌀ TO DEPTH SHOWN (SECT CC)
.215 - .225" C'BORE .005" - .025" DEEP

.107 MAX. FROM SURF -AF-
SEE NOTE 21

NOTE: (21) RADIAL LOCATION OF THIS HOLE SHALL BE WITHIN ⌖ .002 OF RADIUS TO HOLE CE. RADIUS MUST NOT BE LESS THAN 2.403 REGARDLESS OF FEATURE SIZE OF HOLES.



SECT - DD -

Drawn By	Engineer	Quality	Manufacturing	Released

MPS 110

Part No. 6053TGB 604 | Part Name LT FRAME | Job No.

Oper. No. 110 Oper. Description MILL DRILL & TAP FWD END | Work Station

SKETCH

MPS-110 SHT OF

U. O. S.

Locate

Clamp

Fixt. E42414 D

Tapes

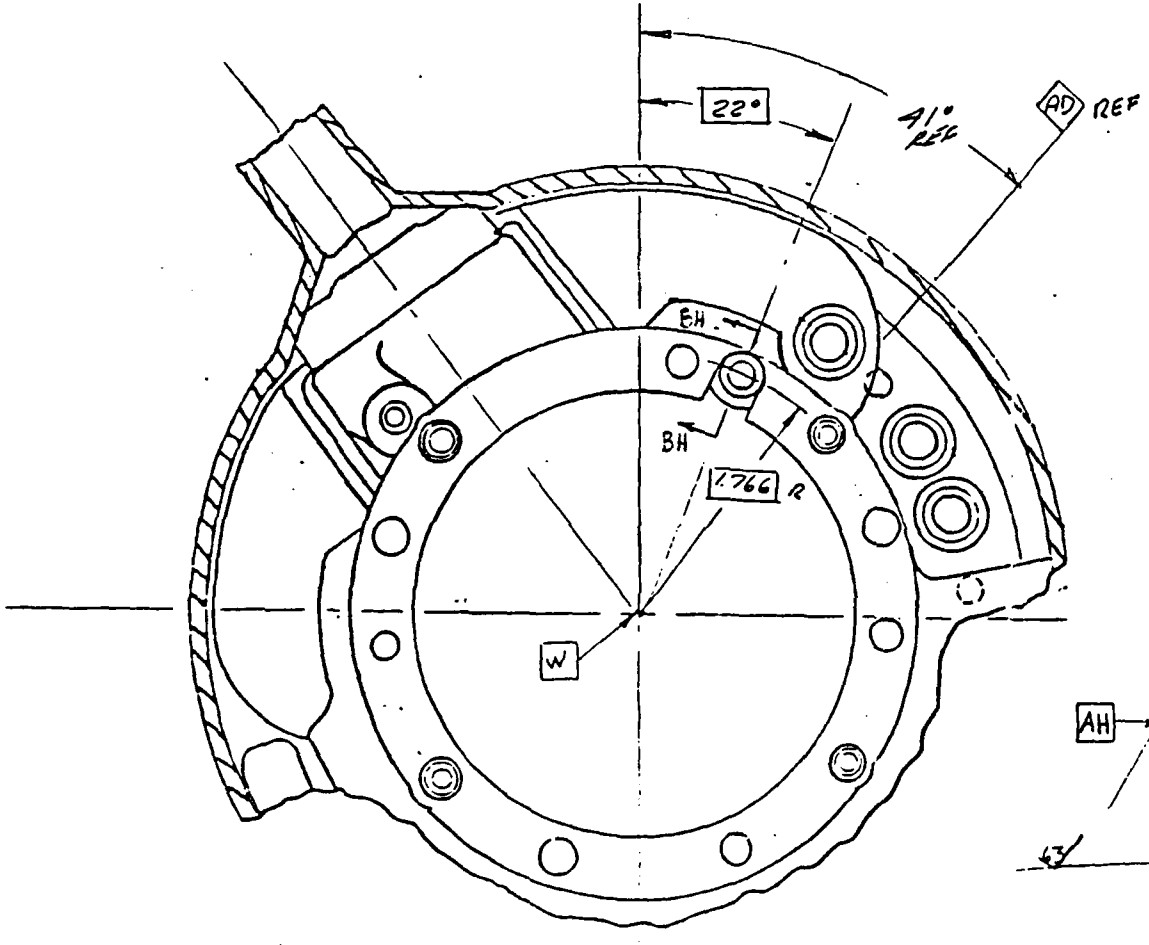
Finish 63

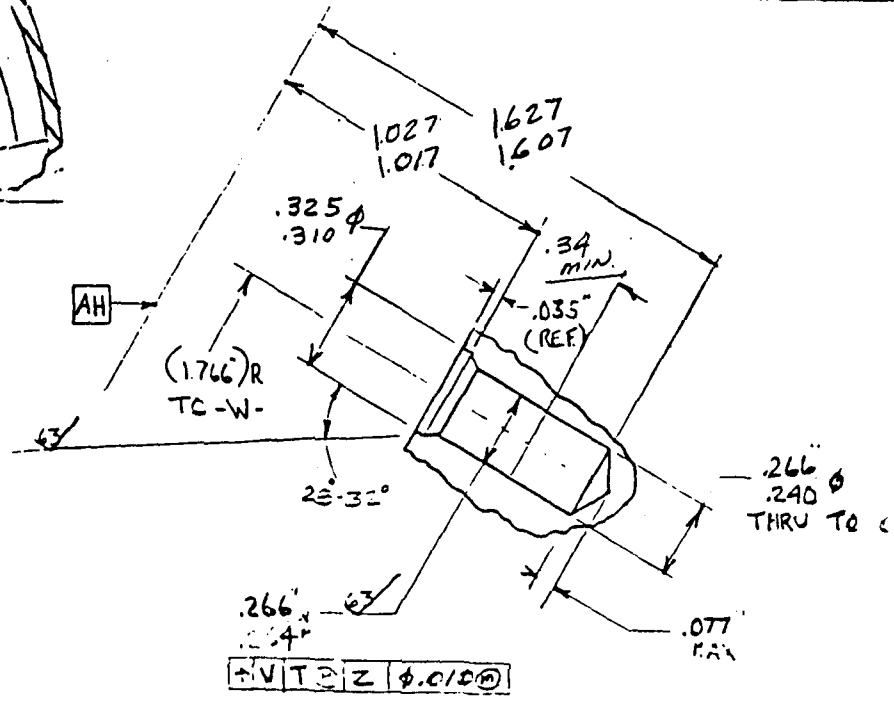
Dec. .xxx ± .005

Fillet Rad

All Dia. W/N .

Break Edges .005





SECT BH – BH

Drawn By | Engineer | Quality | Manufacturing | Released

MPS 110

Part No. 6053T68 604 | Part Name ET FRAME | Job No.

Oper. No. 110 Oper. Description MILL DRILL & TAP FWD END | Work Station

SKETCH

MPS-110 SHT OF

U. O. S.

Locate

Clamp

Fixt E42414D

Tapes

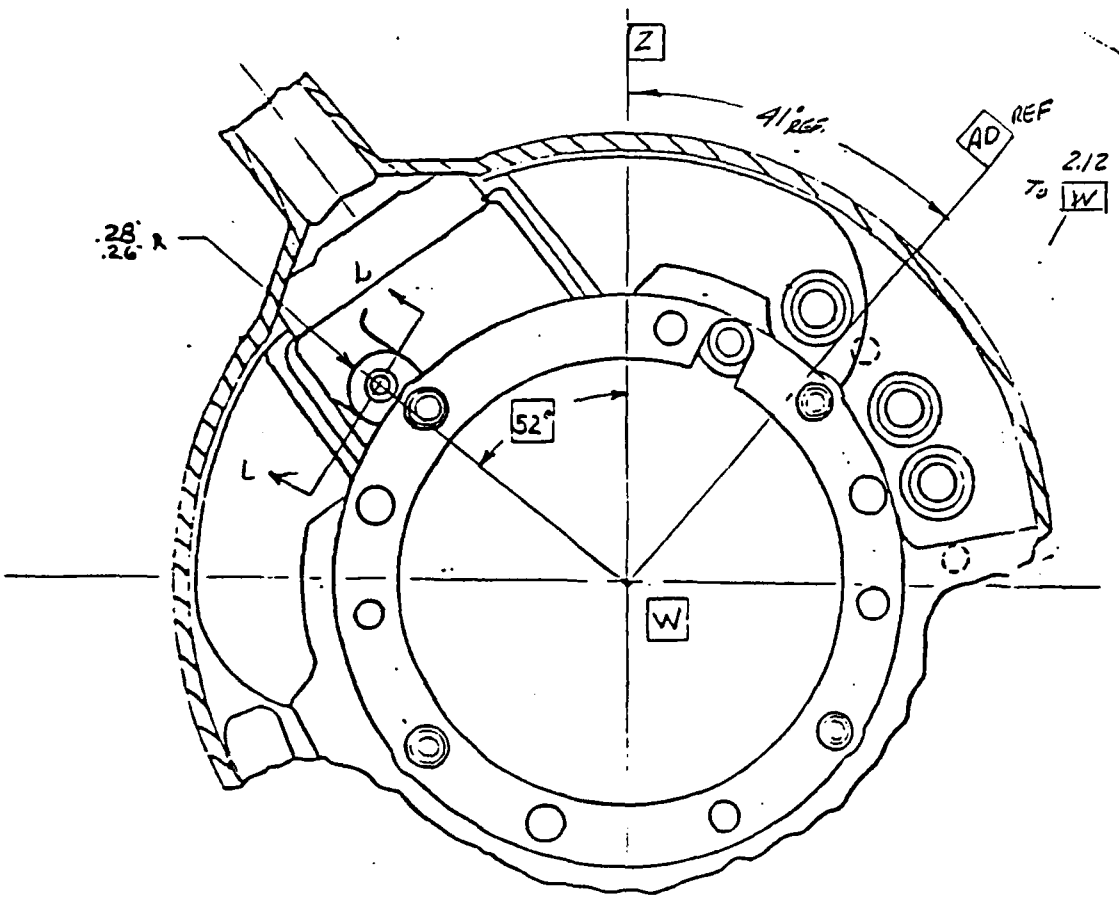
Finish 63

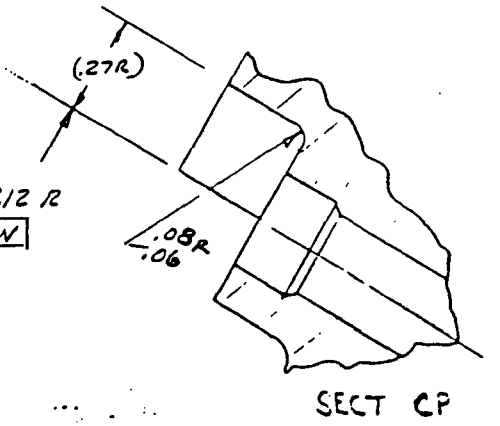
Dec .xxx ± .005

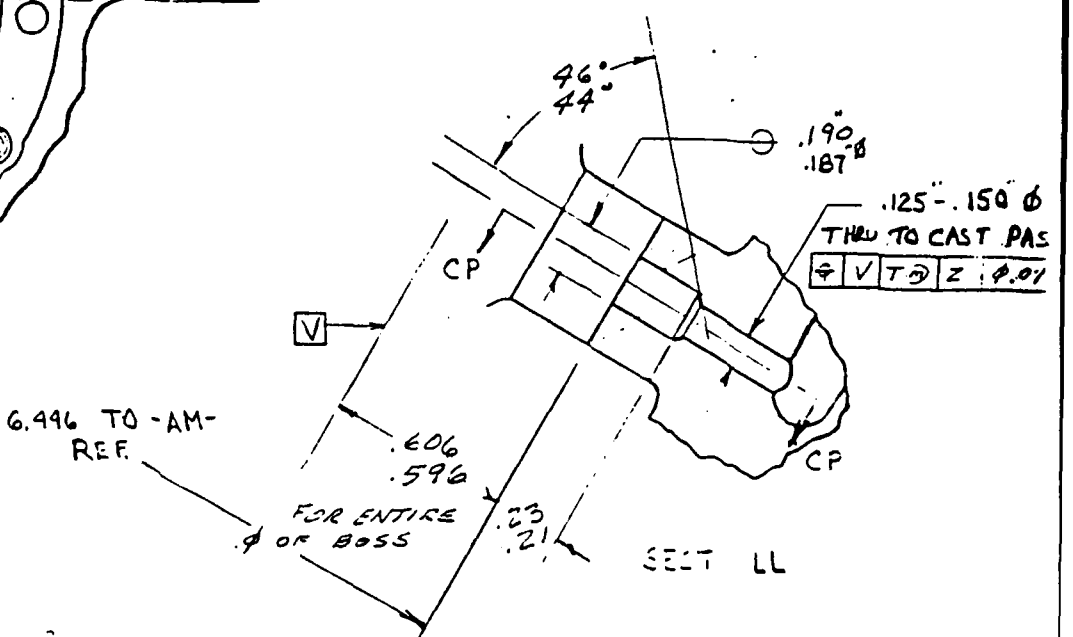
Fillet Rad

All Dia. W/N .

Break Edges .015







Drawn By | Engineer | Quality | Manufacturing | Released

PROCESS SHEET

BUILD

Part No. 6053T68 604	Part Name LET FRAME	Job No.
IPS 110	Oper. No. 110 Oper. Description MILL DRILL & TAP FWD END	Work Station

SKETCH

MPS 110 SHT OF

U. O. S.

Locate

Clamp

Fixt. E42414 D

Tapes

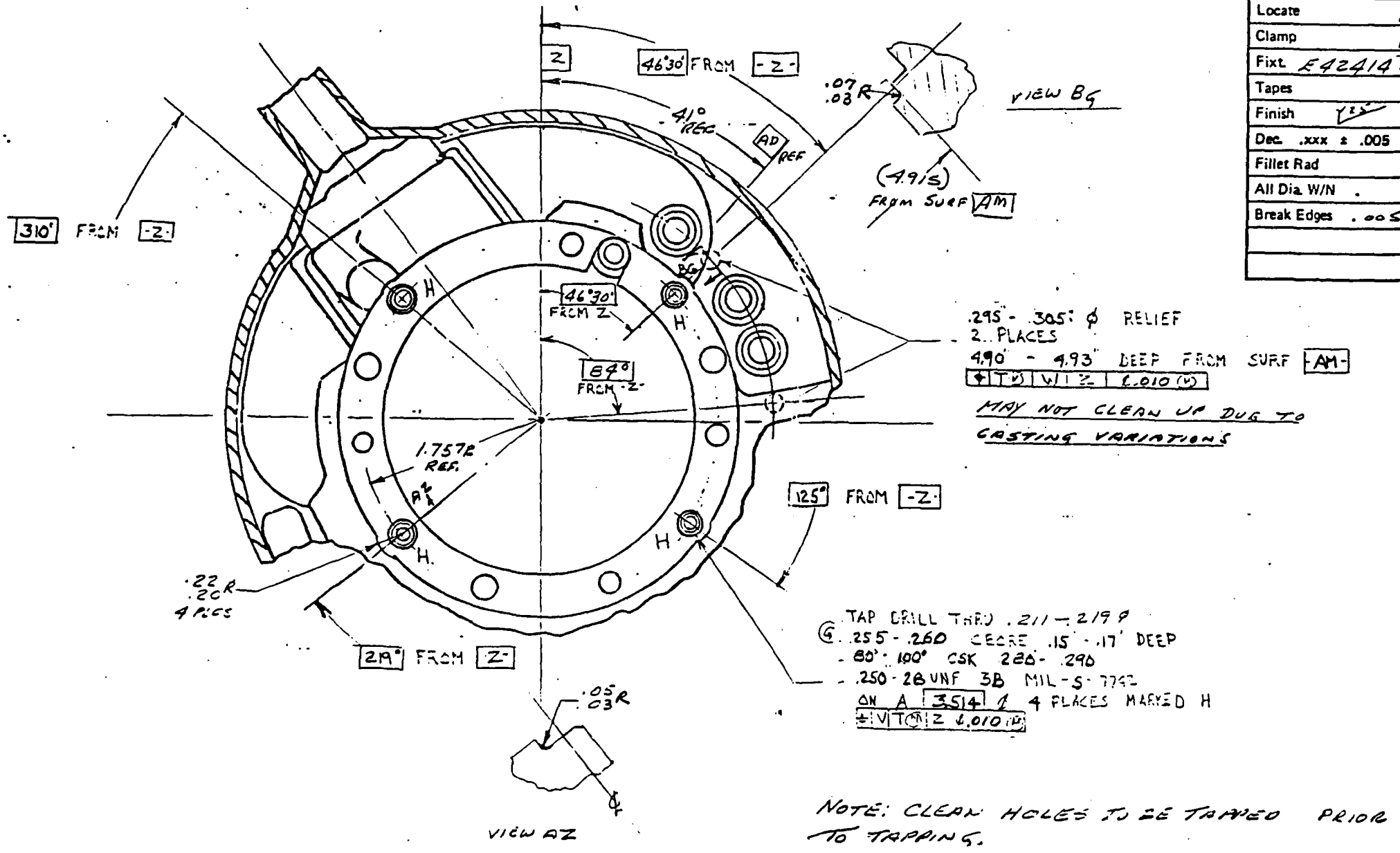
Finish

Dec. .xxx ± .005

Fillet Rad

All Dia. W/N .

Break Edges .005



.295 - .305 ⌀ RELIEF
2 PLACES
4.90 - 4.93 DEEP FROM SURF AM
⌖ T(M) W Z .010 (M)

MAY NOT CLEAN UP DUE TO CASTING VARIATIONS

G TAP DRILL THRU .211 - .219 ⌀
.255 - .260 CBORE .15 - .17 DEEP
80° - 100° CSK .220 - .290
.250 - 28 UNF 3B MIL-S-7742
ON A 3514 1 4 PLACES MARKED H
⌖ V T(M) Z .010 (M)

NOTE: CLEAN HOLES TO BE TAPPED PRIOR TO TAPPING.

Engineer Quality Manufacturing Released

PROCESS SHEET

BOEING

Part No. 6063T68-604 | Part Name ...LET FRAME | Job No.

MPS 110

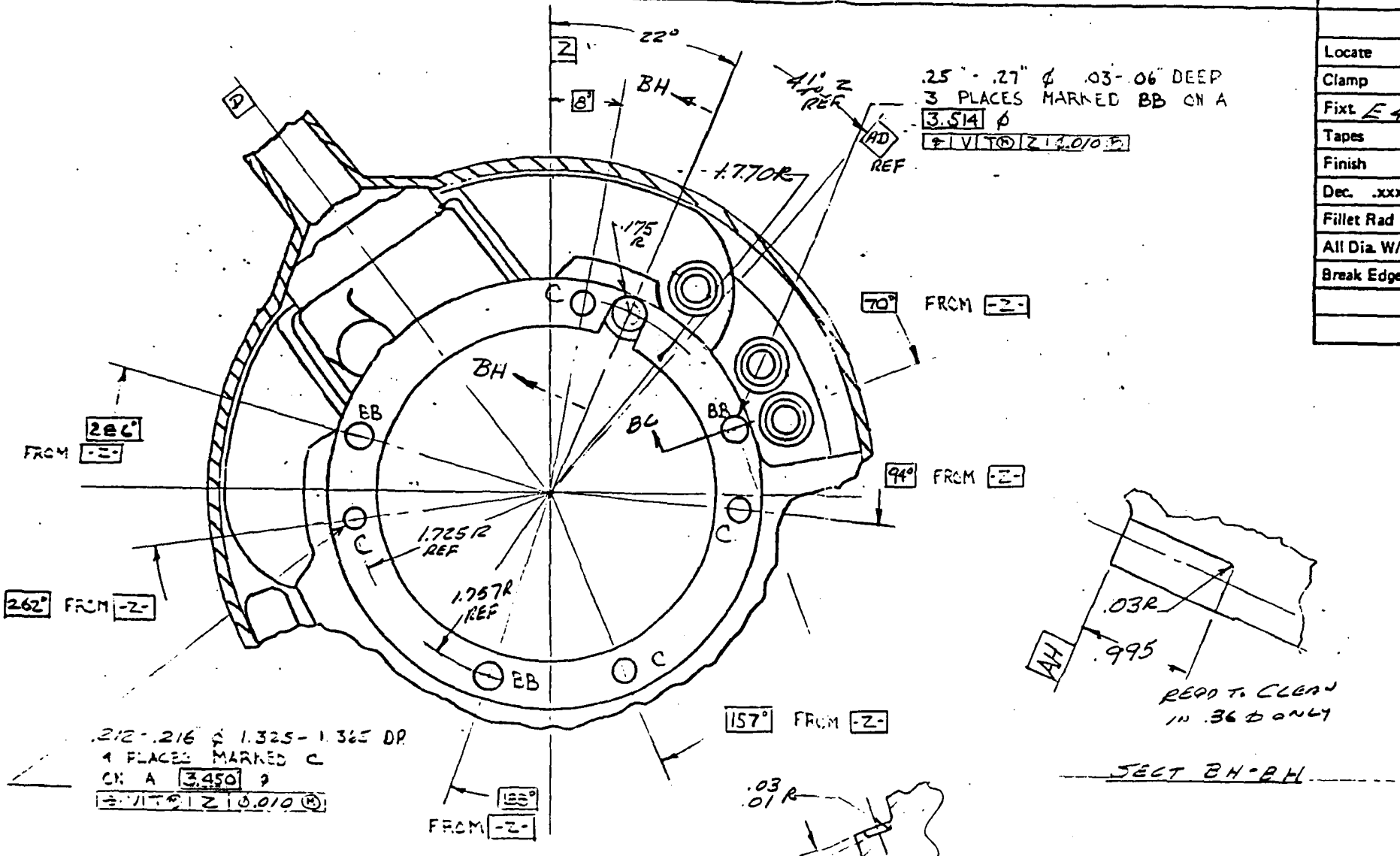
Oper. No. 110 | Oper. Description MILL DRILL & TAP FWD END | Work Station NC MILL

SKETCH

MPS-110 SHT OF

U. O. S.

Locate	▲
Clamp	△
Fixt	E42414 Dc
Tapes	
Finish	125
Dec. .xxx ± .005	
Fillet Rad	
All Dia. W/N	.
Break Edges	.005



Engineer | Quality | Manufacturing | Released

PROCESS SHEET

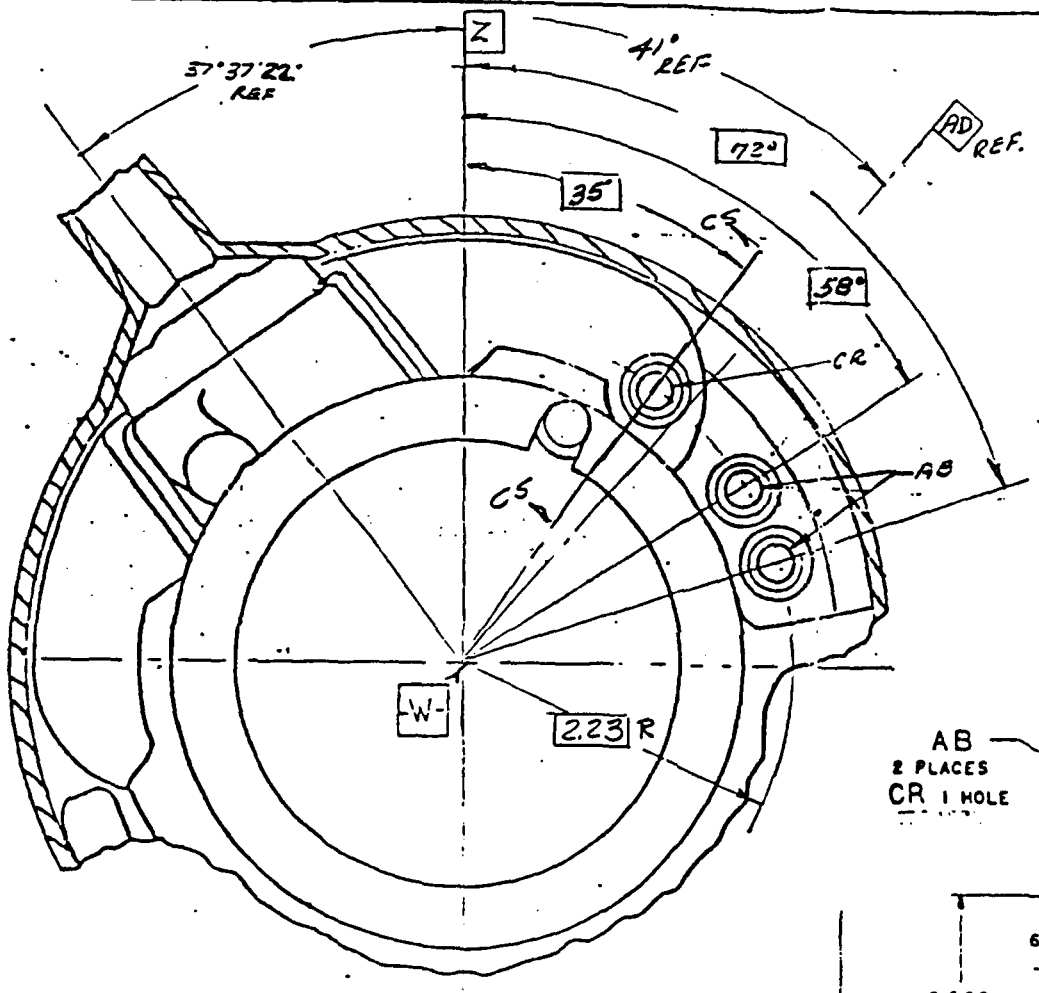
BABCO

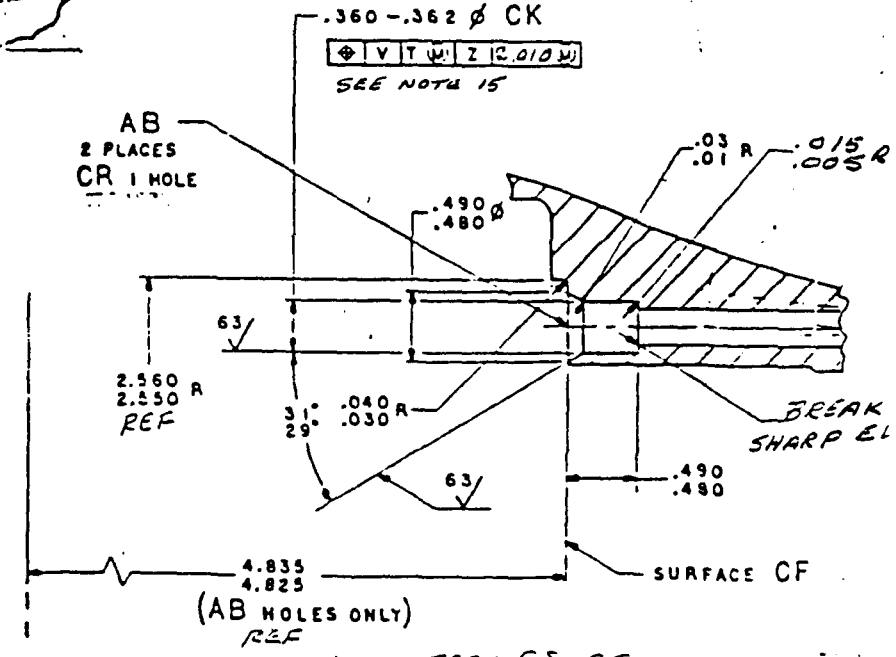
Part No. 6053T68-604	Part Name LET FRAME	Job No.
1PS 110	Oper. No. 110 Oper. Description MILL DRILL & TAP FWD END	Work Station

SKETCH

MPS-110 SHT. 1 OF 1

U.O.S.	
Locate	▲
Clamp	△
Fixt. E42414DG	
Tapes	
Finish	
Dec. .xxx ± .005	
Fillet Rad	
All Dia. W/N	.
Break Edges	.





SECT CS-CS- ROTATED

15- .400 MIN. LENGTH OF DIA. CK FROM SURF. CF IS REQUIRED IF DIA. CK DOES NOT CLEAN UP BECAUSE OF CASTING VARIATIONS.

Engineer | Quality | Manufacturing | Released

PROCESS SHEET

BAHCO

*CAUTION: HANDLE PARTS WITH
REMOVE ALL CHIPS FROM PART &

Part No. 6053768-604 | Part Name FILET FRAME | Job No.

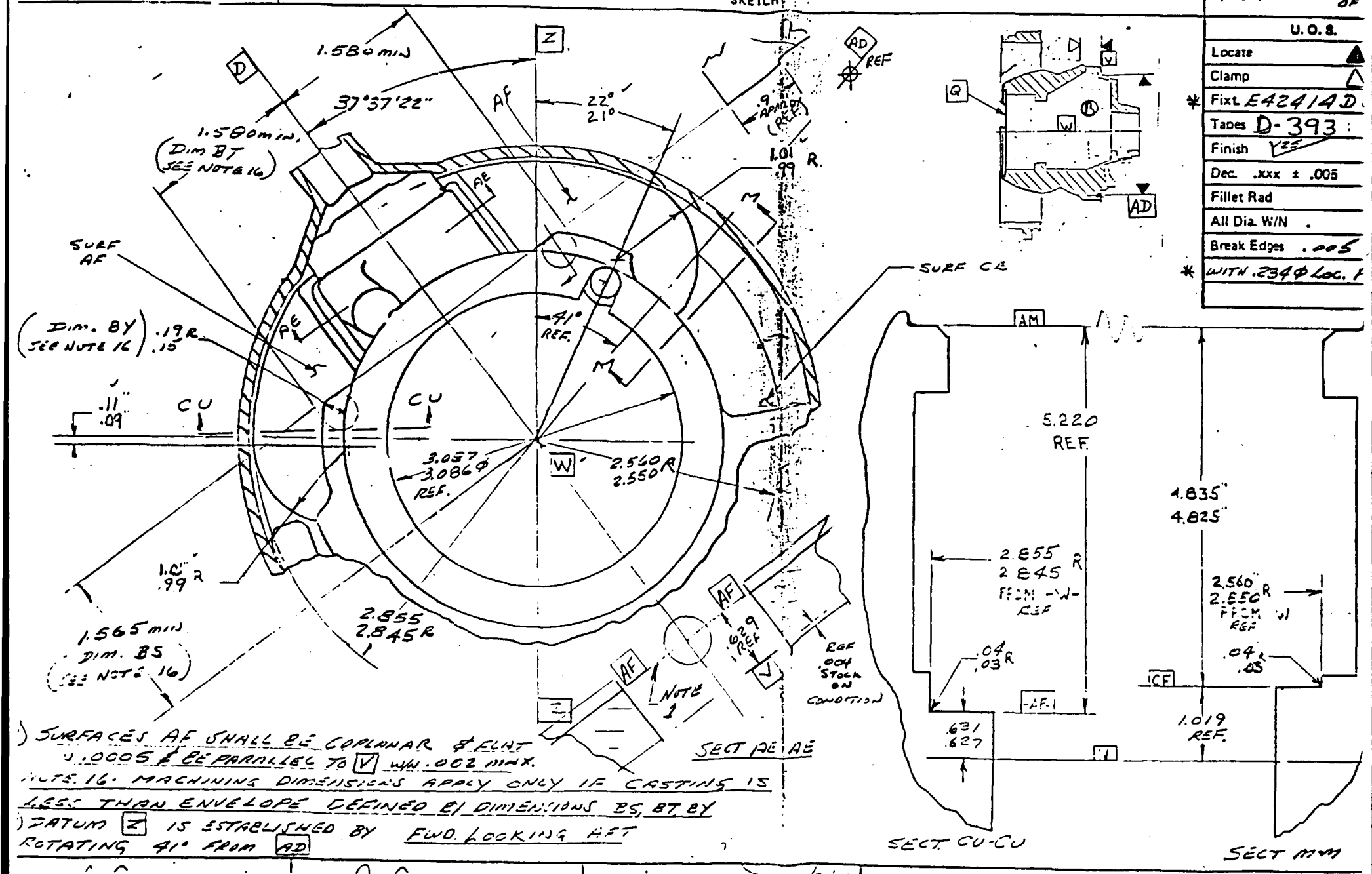
.PS 110

Oper. No. 110 | Oper. Description MILL DRILL & TAP FWD END | Work Station NC MILL

MPS-110 SHT OF

SKETCH

U.O.S.	
Locate	▲
Clamp	△
Fixt	E424140
Tapes	D-393
Finish	VEE
Dec.	.xxx ± .005
Fillet Rad	
All Dia. W/N	.
Break Edges	.005
* WITH .234Φ Loc. H	



1) SURFACES AF SHALL BE COPLANAR & FLAT WITHIN .0005 & BE PARALLEL TO V WITHIN .002 MAX.

NOTE 16. MACHINING DIMENSIONS APPLY ONLY IF CASTING IS LESS THAN ENVELOPE DEFINED BY DIMENSIONS BS, BT, BY

2) DATUM Z IS ESTABLISHED BY FWD. LOCKING HFT ROTATING 41° FROM AD

PERCENT OF OTHER WORKLOAD FOR RCC

(80/20 LISTING)
RCCs

JOB TYPES	MANPGP	MANPGW	MANPNA	MANPRA	MANPRB	MANPRC	MANPWW
TEMPORARY	13.72	2.35	15.11	1.40	1.05	1.35	1.05
MANUFACTURE	0.00	1.00	0.92	0.00	4.51	2.74	12.50
PDM	1.00	0.00	22.79	0.04	0.07	4.39	22.44
ARMAMENT	0.00	0.23	1.26	0.04	0.03	4.18	2.38
HYDRAULICS	0.00	0.05	7.00	1.11	2.67	3.88	13.99

MATERIAL HANDLING

IN MANUPRA AND MANUPRB. THE PRODUCT OR MATERIAL IS BROUGHT INTO THE HOLDING AREA BY ONE OF THE FOLLOW METHODS

1. THE OVERHEAD CONVEYOR SYSTEM
2. FORK LIFTS
3. BEING PUSHED THERE ON CARTS

THE HOLDING AREA IS BETTER KNOWN AS THE WALL.

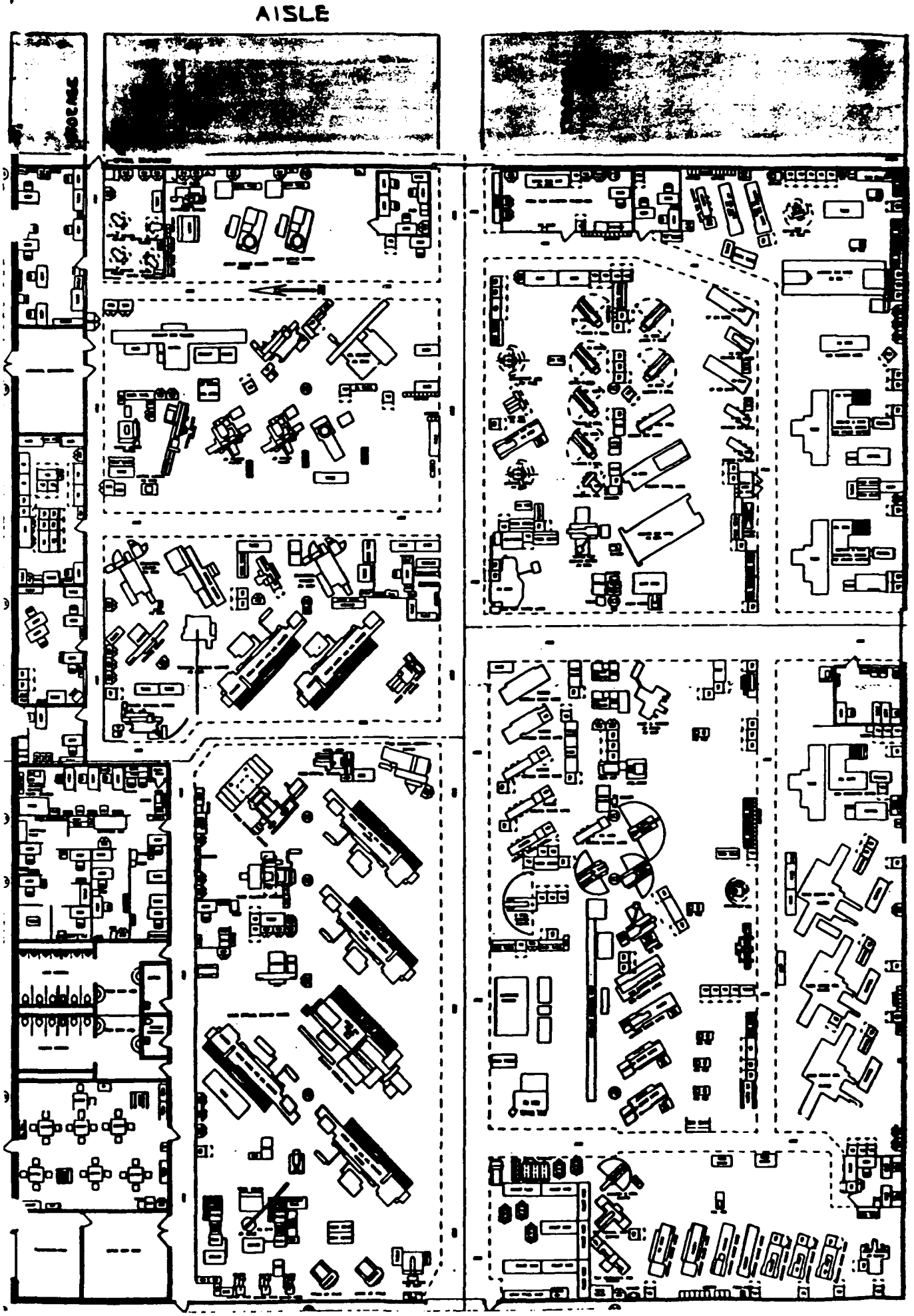
ONCE THE PARTS ARE IN THE HOLDING AREA, THE FOREMAN AND OR A WORKER TAKE THE HOT SHEET WHICH IS FURNISHED BY THE SCHEDULER EACH WEEK TO THE FOREMEN AND GO OUT TO THE WALL. THERE THEY DECIDE WHAT PART NEED TO BE WORKED ON AND COMPLETED AND WHAT THE PRIORITY IS FOR THOSE PARTS.

WHEN A MECHANIC HAS FINISHED HIS PRESENT JOB AND HE HAS CHECKED IT TO INSURE THAT IT IS UP TO SPECIFICATIONS, HE THEN TAKES THE PART OUT TO THE WALL. THE PART IS THEN ROUTED TO THE NEXT STATION. THE MECHANIC THEN GOES OVER AND SELECTS HIS NEXT WORK PIECE. HE THEN RETURNS TO HIS WORK STATION WITH THE PART.

COMMENT:
I FEEL THAT A MATERIAL HANDLER SHOULD BE IN CHARGE OF MOVING THE PARTS TO AND FROM THE WALL TO THE MECHANICS. LET THE EMPLOYEES PREFORM THE TASK THAT THEY ARE ASSIGNED TO. THIS WOULD ALSO INSURE THAT ALL OF THE HARD JOBS WOULD GET SPREAD AROUND.

STORAGE

THE STORAGE AREA FOR MANPRA & MANPRG IS LOCATED JUST OUT SIDE THE MACHINE SHOP ON THE EAST SIDE. IT IS THE AREA BETWEEN THE MACHINE SHOP AND THE ASILE. AT THE PRESENT TIME THE MACHINE / GRINDING SHOPS SEAM TO BE A BOTTLE NECK. THERE FOR THE PARTS KEEP CREEPING OUT TOWARDS AND INTO THE ASILE. WHEN THE BECOMES MANY PART IN THEIR STORAGE AREA THEY TURN ON SOME OVER TIME TO REDUCE THE SIZE OF THE QUEUE. COMMENT I FEEL THAT IF THE PARTS WE FLOWING SMOOTHLY THROUGH THIS AREA THE PRESENT STORAGE FACILITY WOULD BE ADEQUATE.

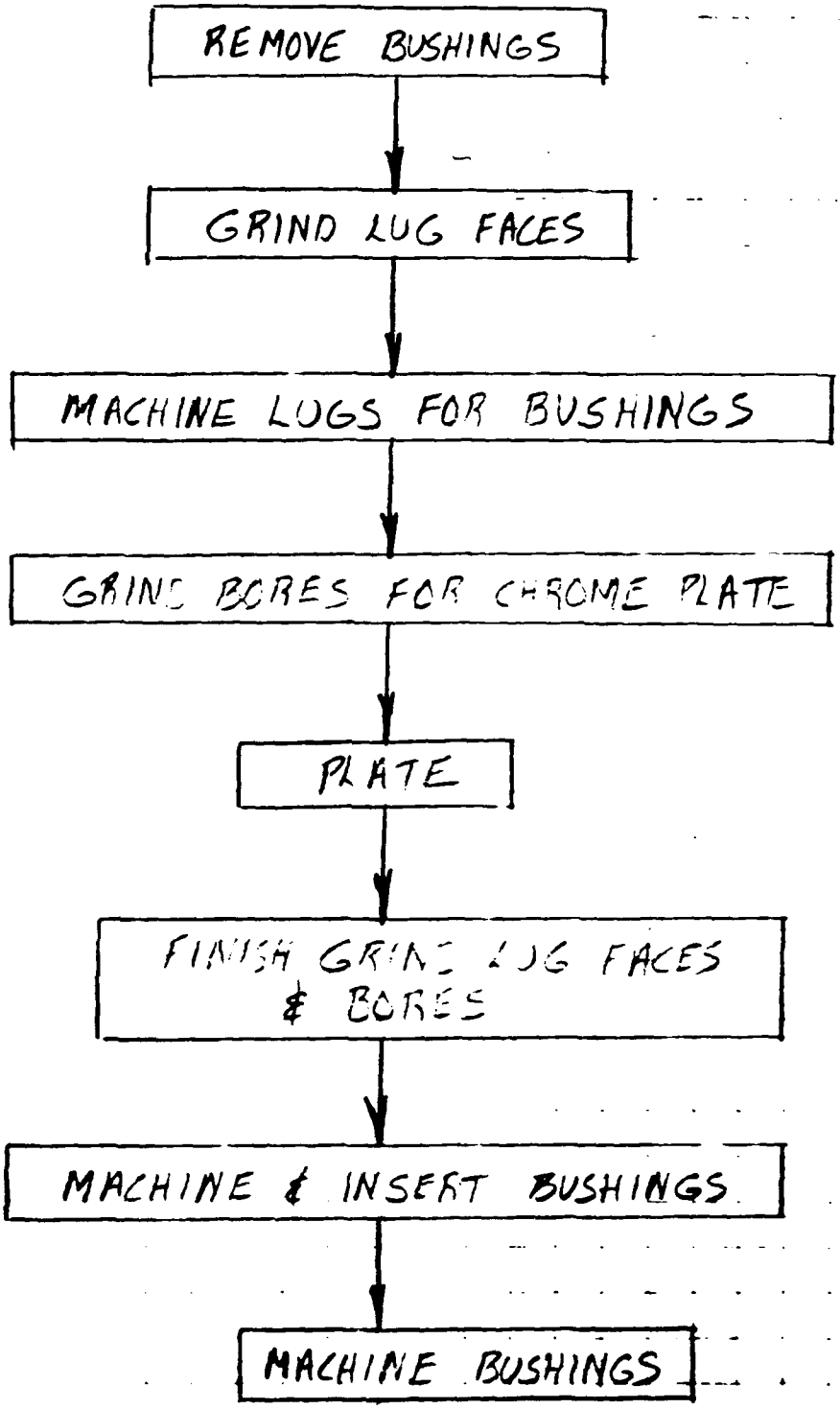

AISLE

The following section contains generic flow charts of brakes, gear, & wheels as those parts flow through the machine shop & grinding areas.

The parts chosen were selected only because they were the most conspicuous in their areas of the R.C.C.

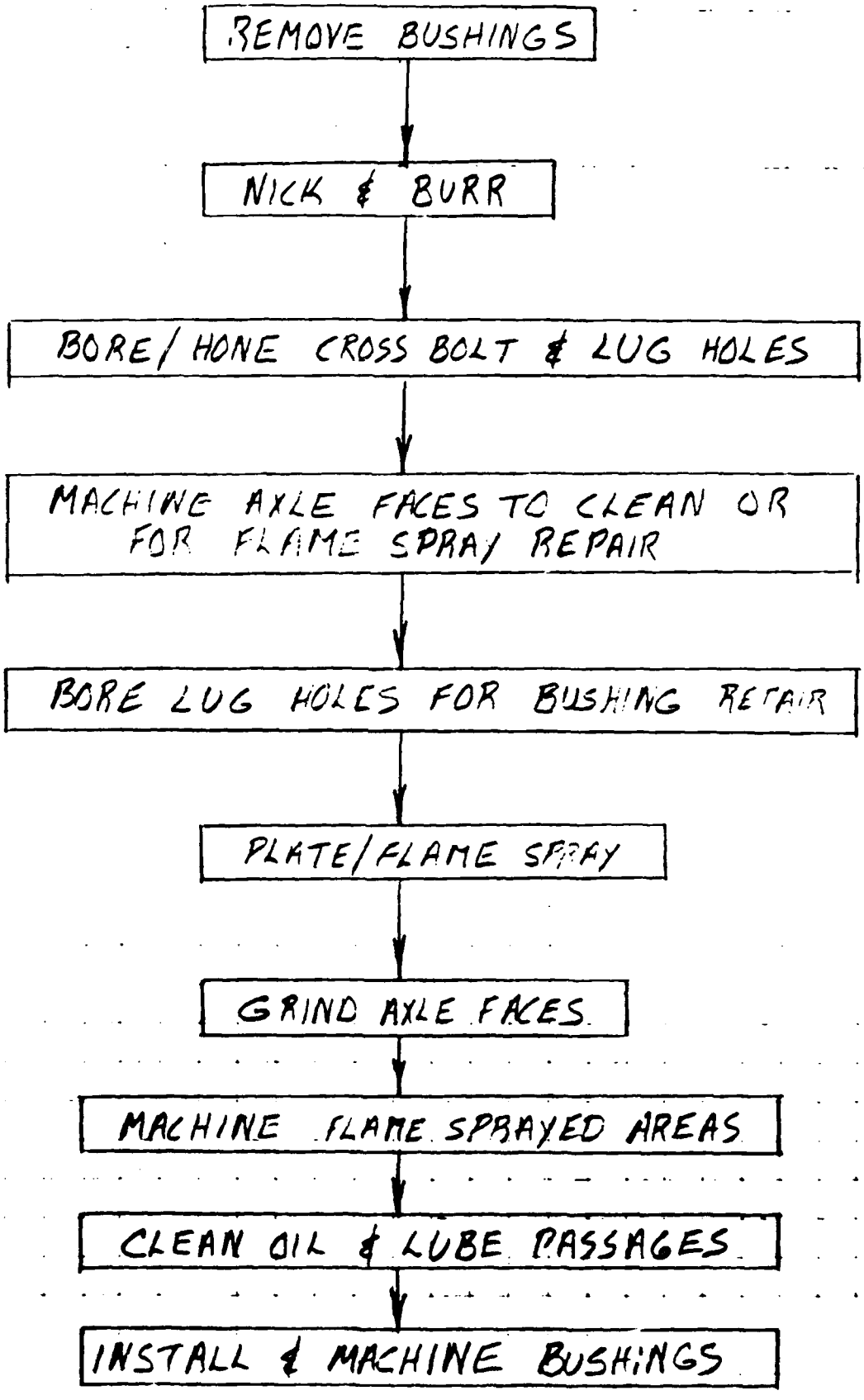
The operations perfomed on these parts are generally representative of the type & sequence of work that is required on other similar type parts (ie. brakes, wheels & gear).

KC-135 N.L.G.
OUTER CYLINDER

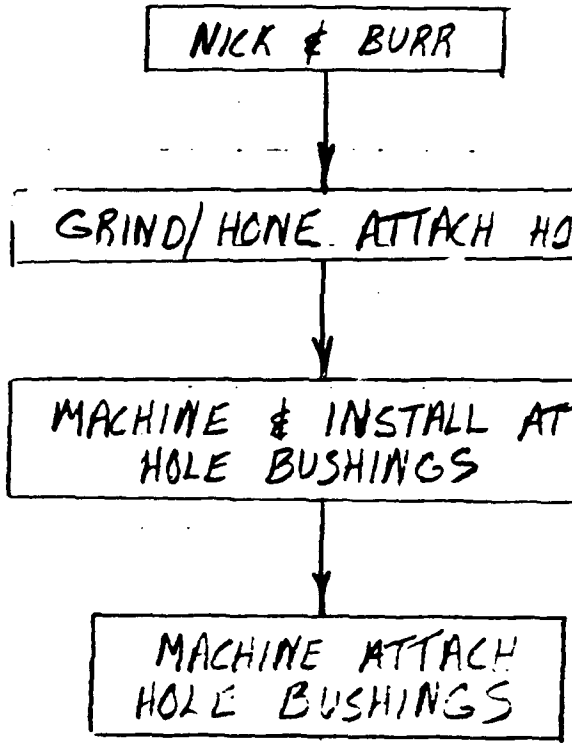


C-141 M.A.G.

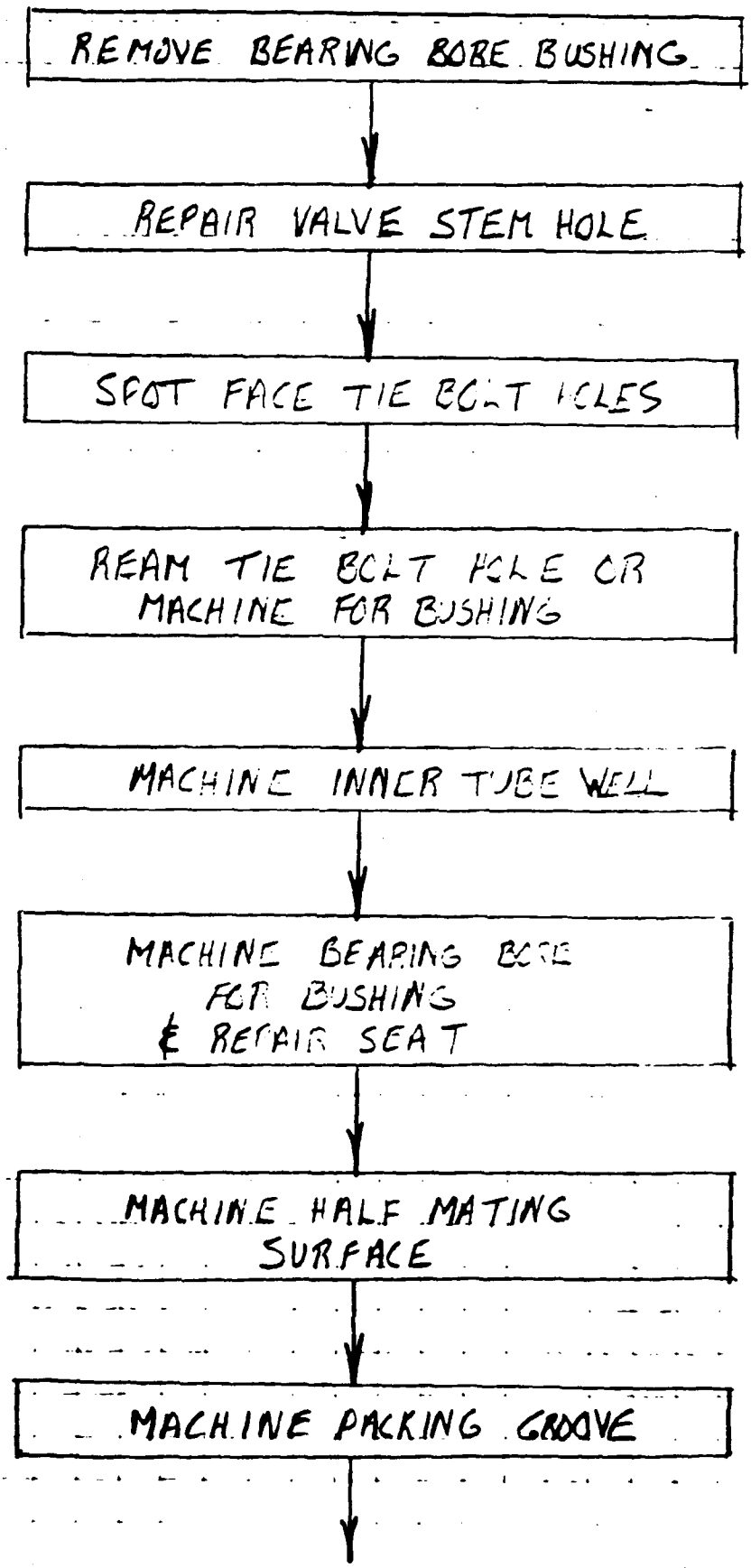
BOGIE BEAMS

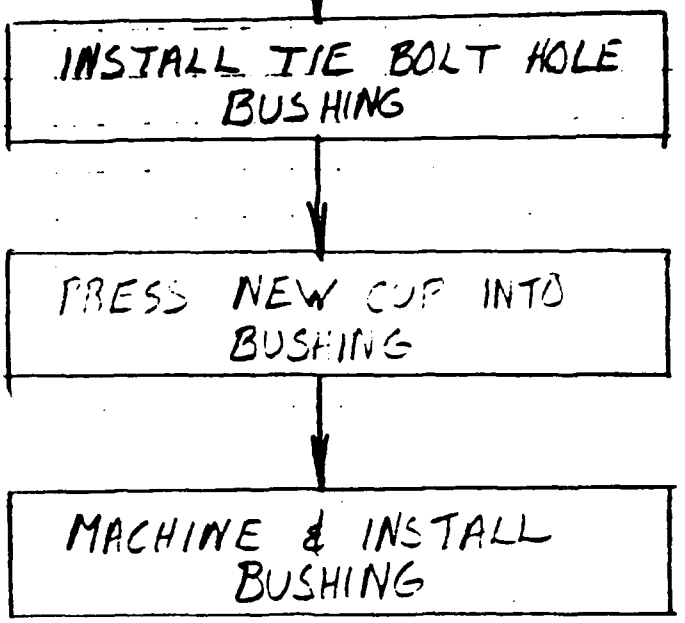


C-141 M.L.G.
LOWER DRAG BRACE

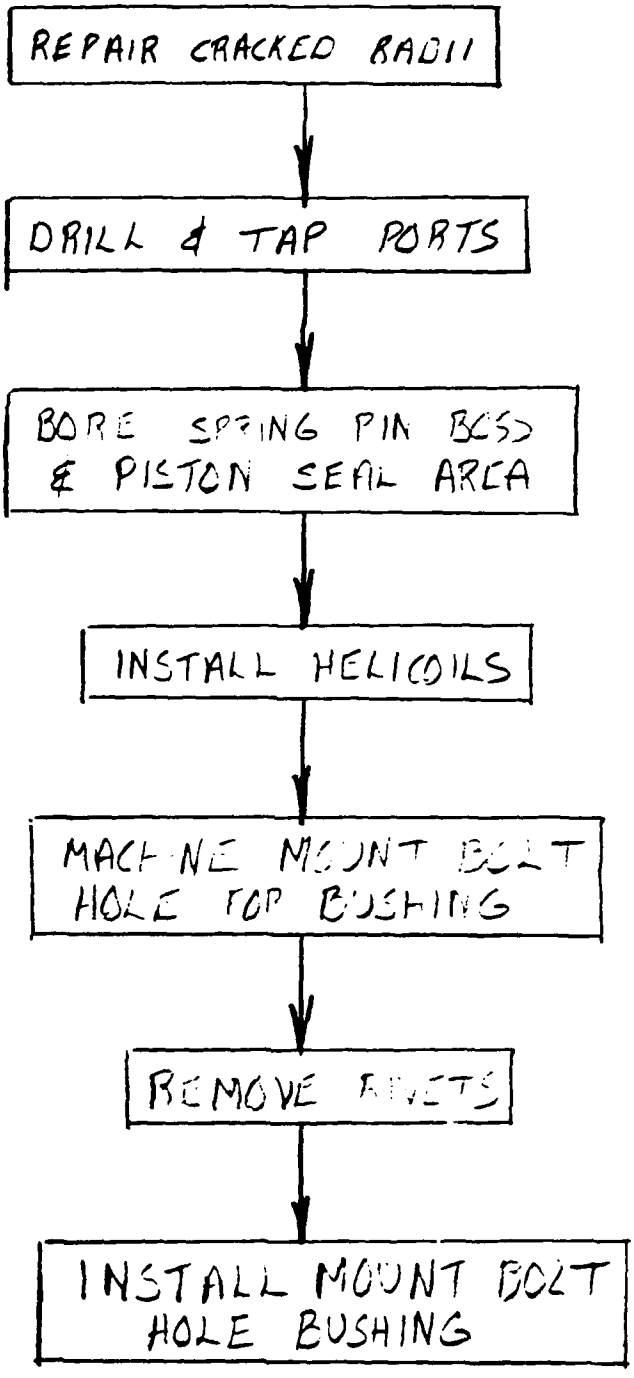


KC-135 MAIN WHEEL HALF OUTER




INSTALL TIE BOLT HOLE BUSHING
PRESS NEW CUP INTO BUSHING
MACHINE & INSTALL BUSHING

KC-135 BRAKE


REPAIR CRACKED RADII
DRILL & TAP PORTS
BORE SPRING PIN BOSS & PISTON SEAL AREA
INSTALL HELICOILS
MACHINE MOUNT BOLT HOLE FOR BUSHING
REMOVE RIVETS
INSTALL MOUNT BOLT HOLE BUSHING

The following section conteins flow charts for the machine shop & grinding operations performed on the disassembled wheels.

The wheels chosen for chereacterization herein are considered to be representative of a particular wheel type. The particular wheels charted were selected by A.F. & M.D.C. personnel at a meeting whose results are detailed in Jack Schneider's Engr. Notes.

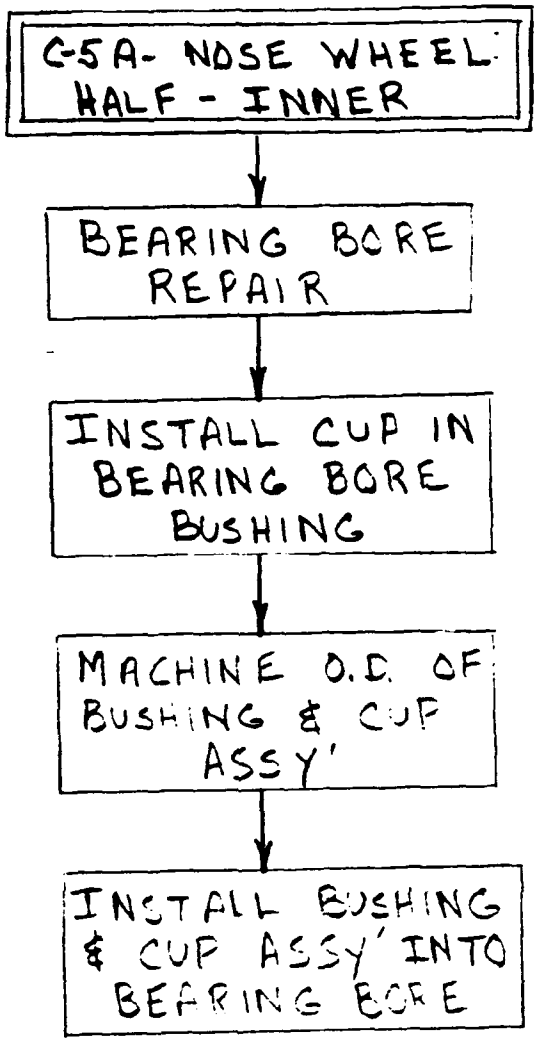
The wheel groups to be chereacterized & the type they represent are as follows:

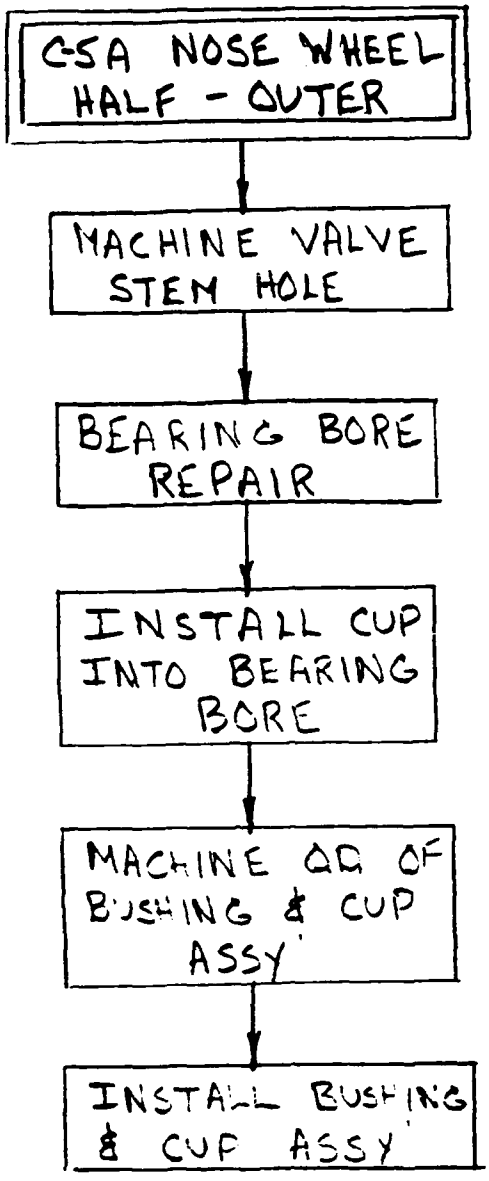
	KC-135 Nose		Magnesium
	B-52 Main		Alum. - large
	KC-135 Main		Alum. - medium
Δ *	T-38 Nose		Alum. - small
	C-5 Main	special bores	Alum. - large
	C-5 Nose	special bores	Alum. - small

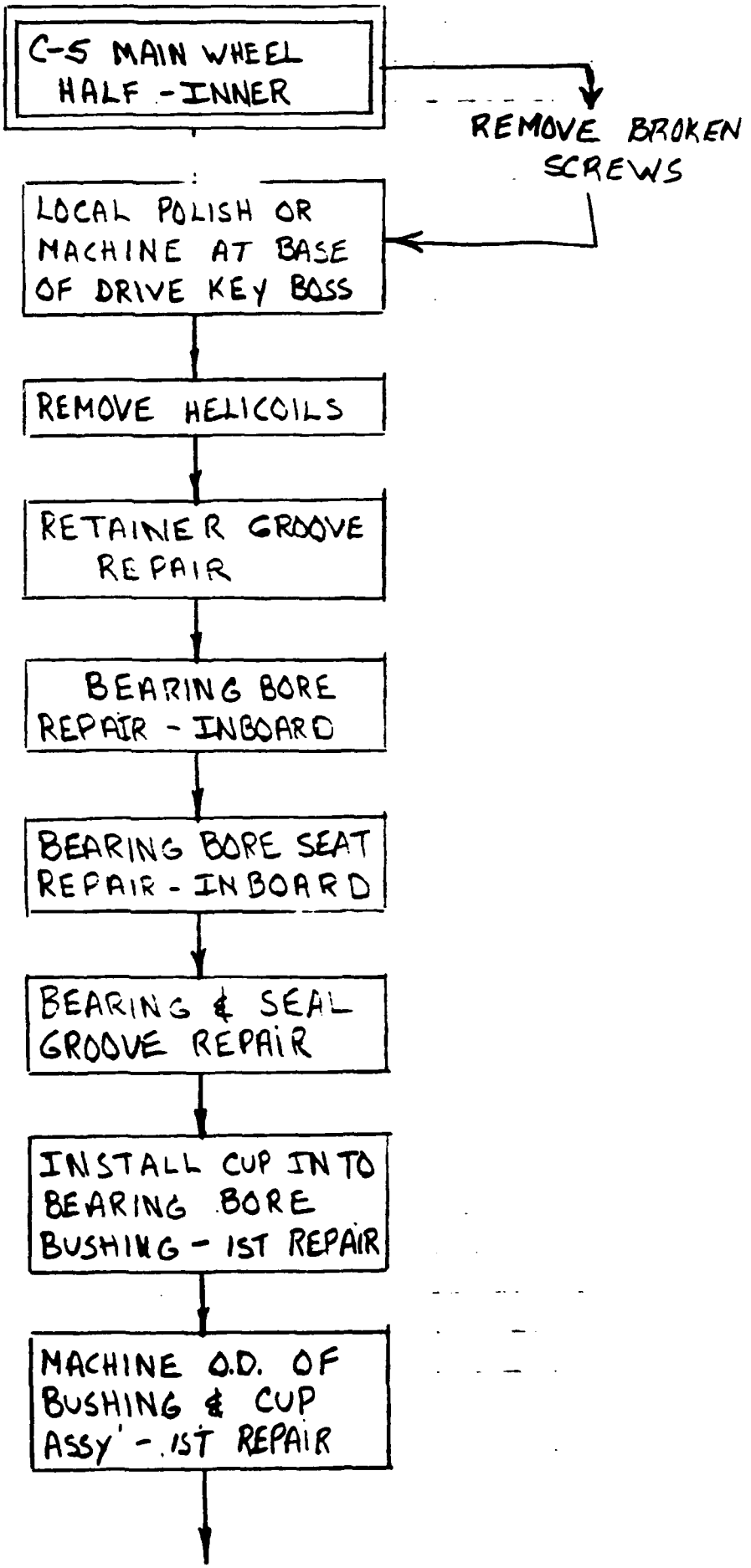
Process flow information was pulled from the appropriate WCD whose number is listed on the last page of each individual flow chart along with the operation numbers represented by the flow chart

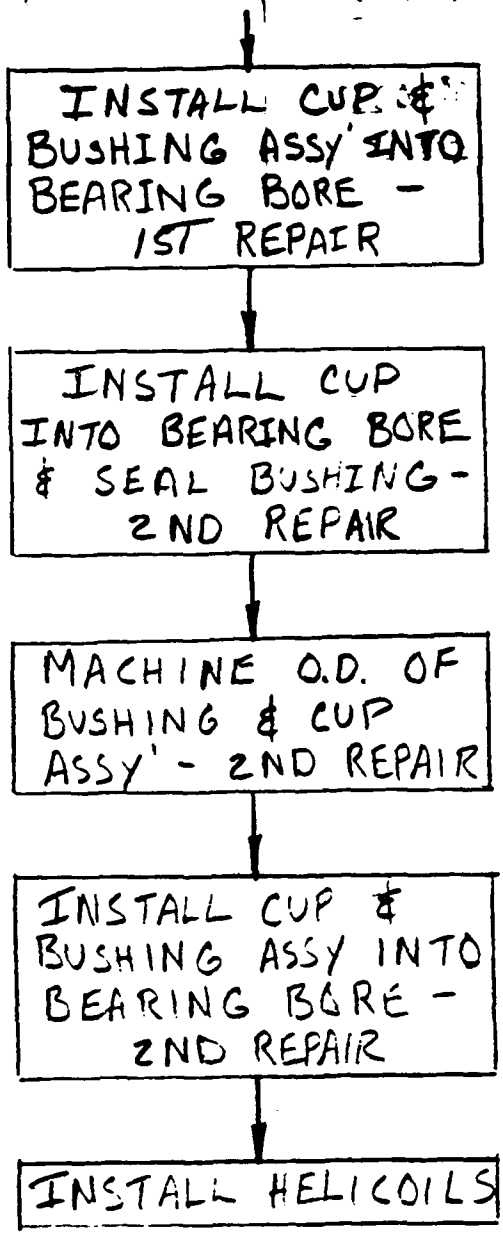
* T-38 & F-5 nose gear are identical for the scope of this work

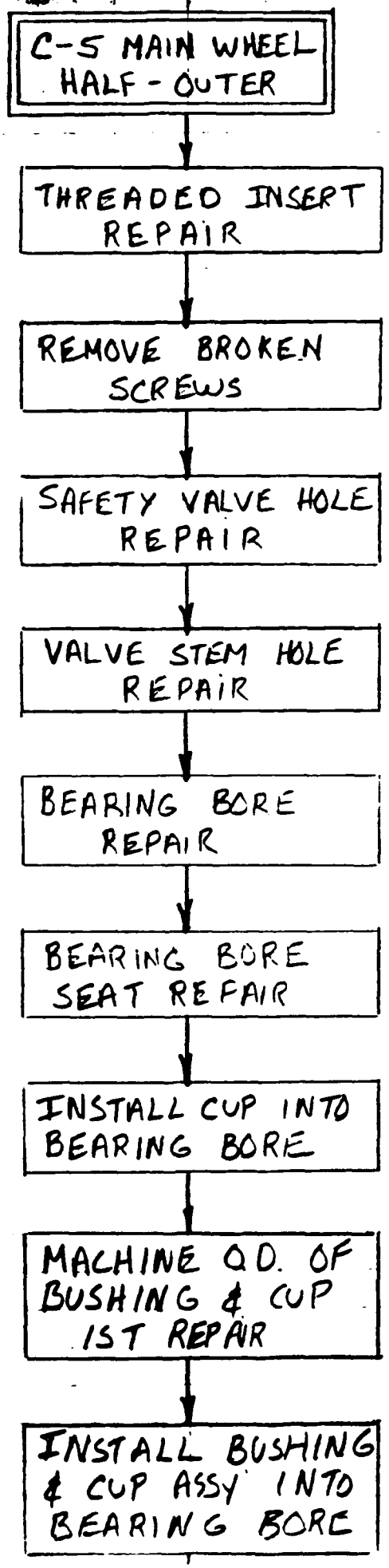
Δ T-38 & F-5 nose wheels are replaced rather then repaired and consequently have been dropped from flow charted.

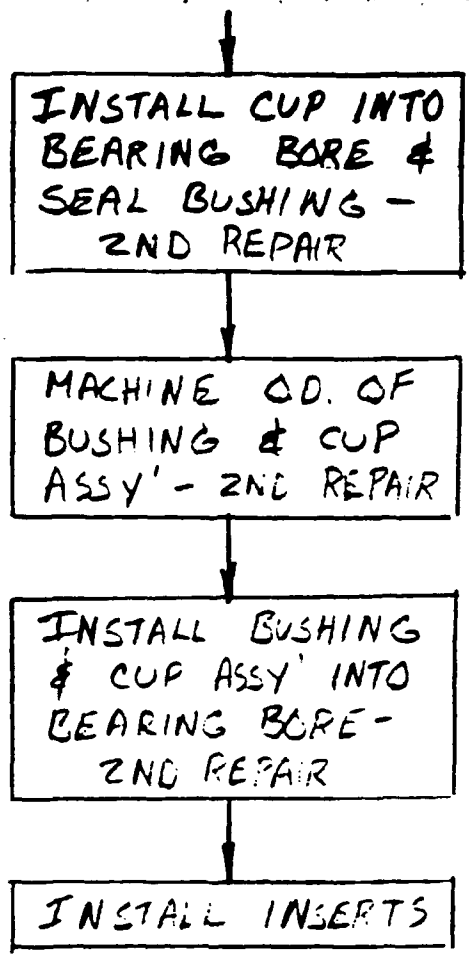

C-5A- NOSE WHEEL HALF - INNER
BEARING BORE REPAIR
INSTALL CUP IN BEARING BORE BUSHING
MACHINE O.D. OF BUSHING & CUP ASSY'
INSTALL BUSHING & CUP ASSY' INTO BEARING BORE

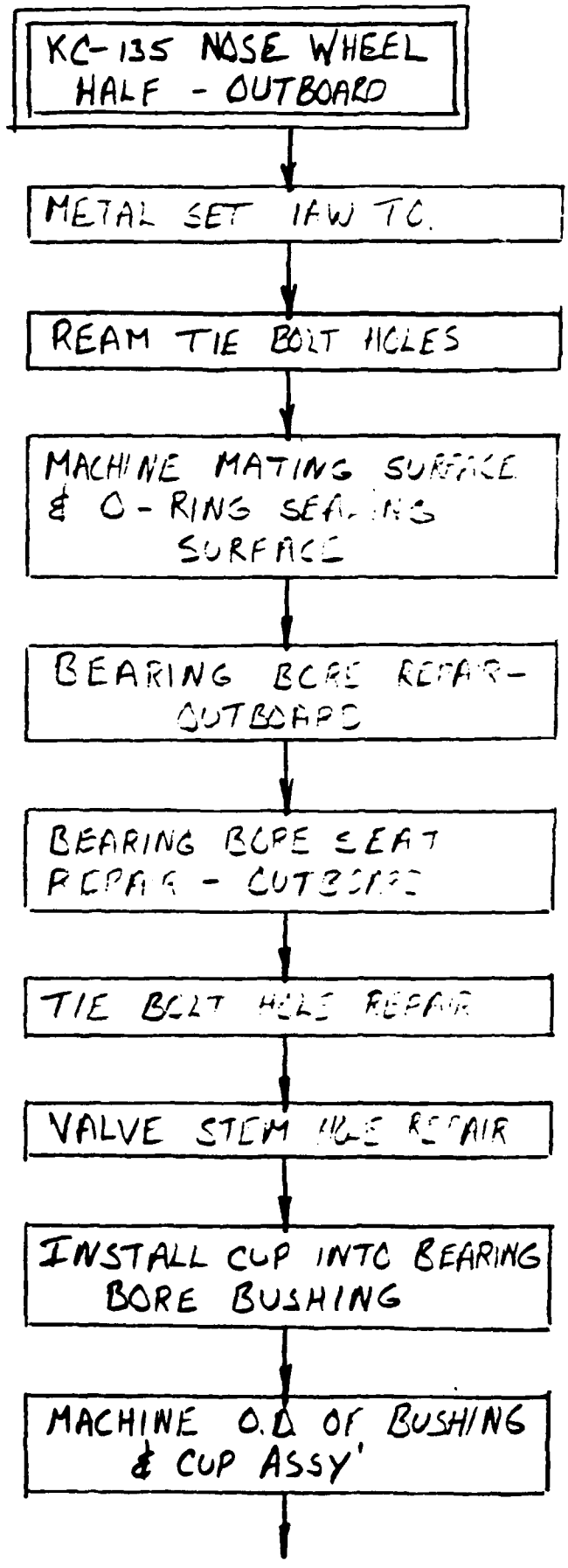

C-5A NOSE WHEEL HALF - OUTER
MACHINE VALVE STEM HOLE
BEARING BORE REPAIR
INSTALL CUP INTO BEARING BORE
MACHINE OD OF BUSHING & CUP ASSY
INSTALL BUSHING & CUP ASSY

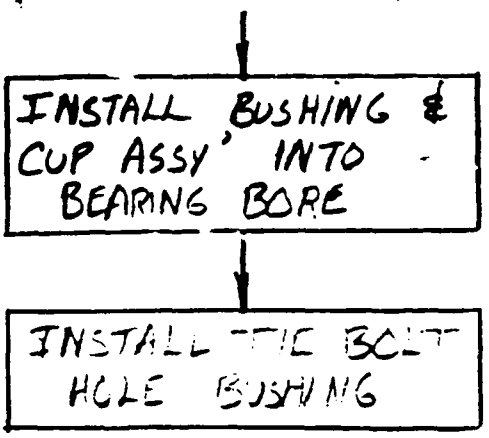

C-5 MAIN WHEEL HALF - INNER
REMOVE BROKEN SCREWS
LOCAL POLISH OR MACHINE AT BASE OF DRIVE KEY BOSS
REMOVE HELICOILS
RETAINER GROOVE REPAIR
BEARING BORE REPAIR - INBOARD
BEARING BORE SEAT REPAIR - INBOARD
BEARING & SEAL GROOVE REPAIR
INSTALL CUP INTO BEARING BORE BUSHING - 1ST REPAIR
MACHINE O.D. OF BUSHING & CUP ASSY' - 1ST REPAIR

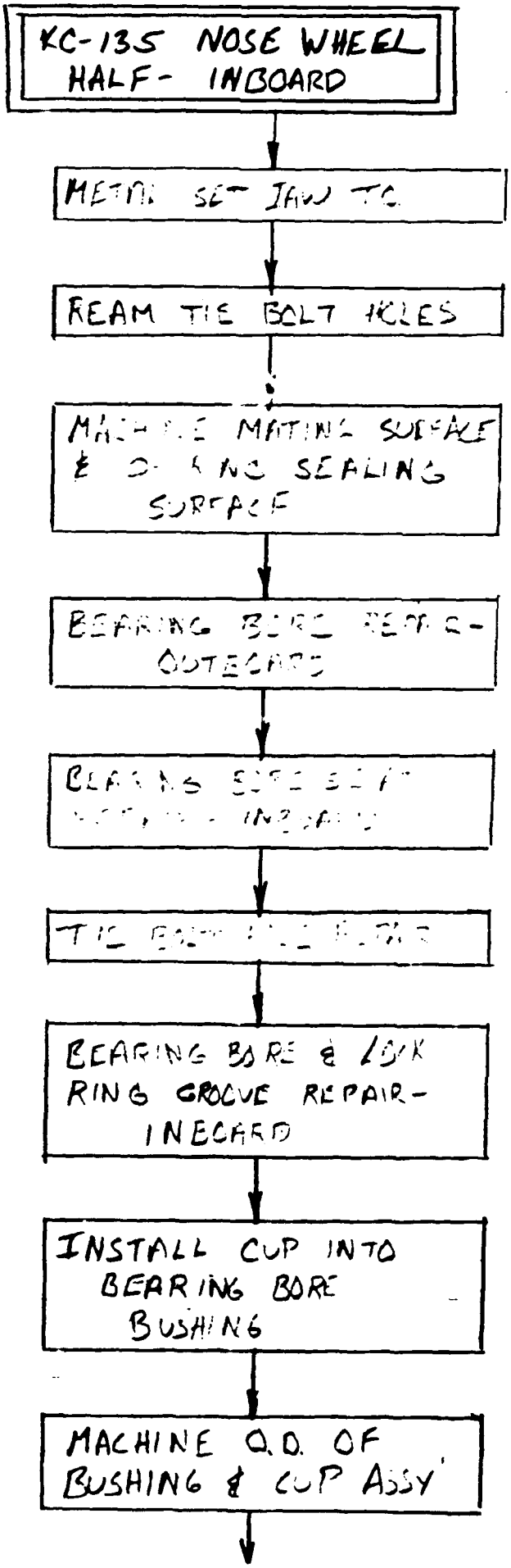

INSTALL CUP & BUSHING ASSY INTO BEARING BORE - 1ST REPAIR
INSTALL CUP INTO BEARING BORE & SEAL BUSHING - 2ND REPAIR
MACHINE O.D. OF BUSHING & CUP ASSY - 2ND REPAIR
INSTALL CUP & BUSHING ASSY INTO BEARING BORE - 2ND REPAIR
INSTALL HELICOILS

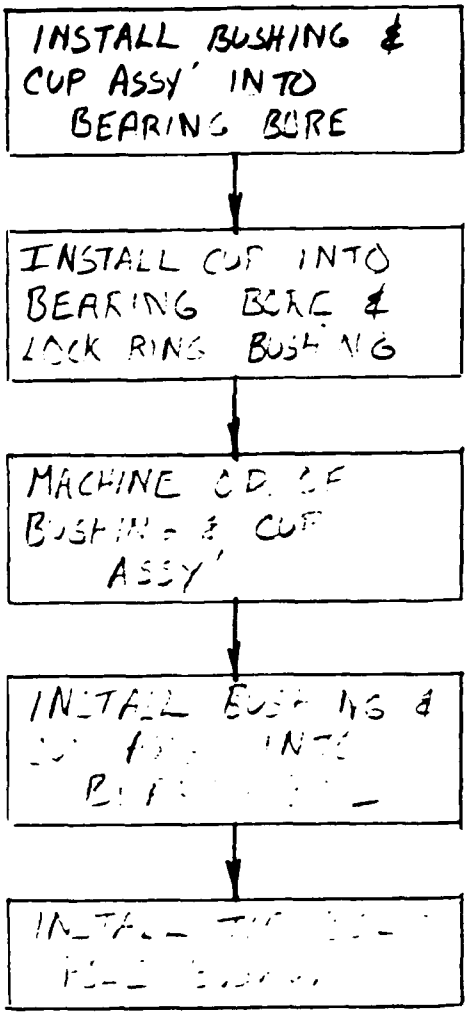

C-5 MAIN WHEEL HALF - OUTER
THREADED INSERT REPAIR
REMOVE BROKEN SCREWS
SAFETY VALVE HOLE REPAIR
VALVE STEM HOLE REPAIR
BEARING BORE REPAIR
BEARING BORE SEAT REFAIR
INSTALL CUP INTO BEARING BORE
MACHINE O.D. OF BUSHING & CUP IST REPAIR
INSTALL BUSHING & CUP ASSY INTO BEARING BORE

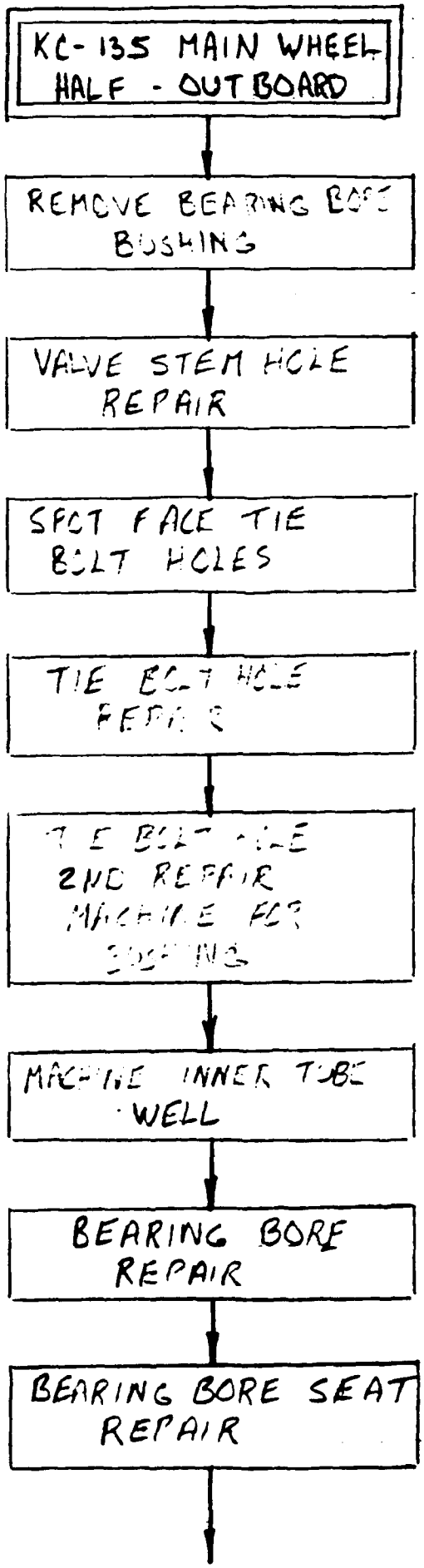

INSTALL CUP INTO BEARING BORE & SEAL BUSHING - 2ND REPAIR
MACHINE O.D. OF BUSHING & CUP ASSY' - 2ND REPAIR
INSTALL BUSHING & CUP ASSY' INTO BEARING BORE - 2ND REPAIR
INSTALL INSERTS

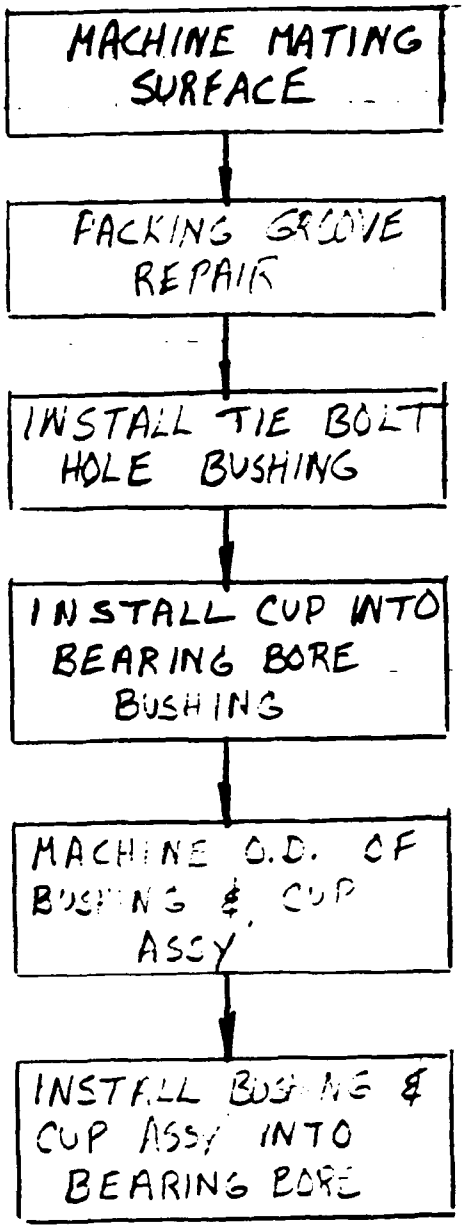

KC-135 NOSE WHEEL HALF - OUTBOARD
METAL SET IAW TC.
REAM TIE BOLT HOLES
MACHINE MATING SURFACE & O-RING SEALING SURFACE
BEARING BORE REPAIR - OUTBOARD
BEARING BORE SEAT REPAIR - OUTBOARD
TIE BOLT HOLE REPAIR
VALVE STEM HOLE REPAIR
INSTALL CUP INTO BEARING BORE BUSHING
MACHINE O.D. OF BUSHING & CUP ASSY'

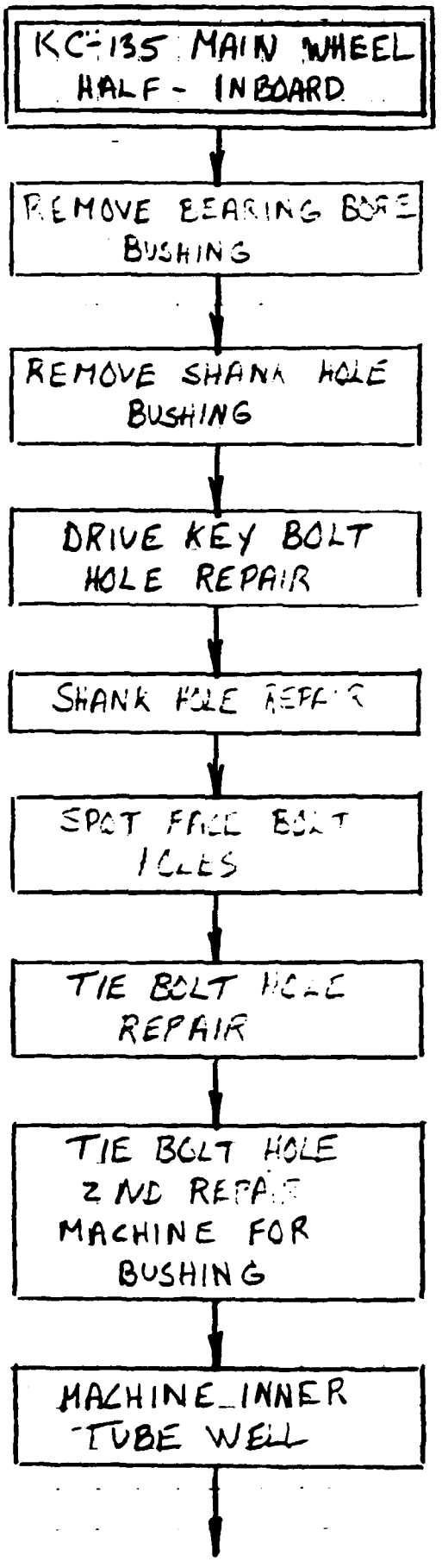

INSTALL BUSHING & CUP ASSY' INTO BEARING BORE
INSTALL TIE BOLT HOLE BUSHING

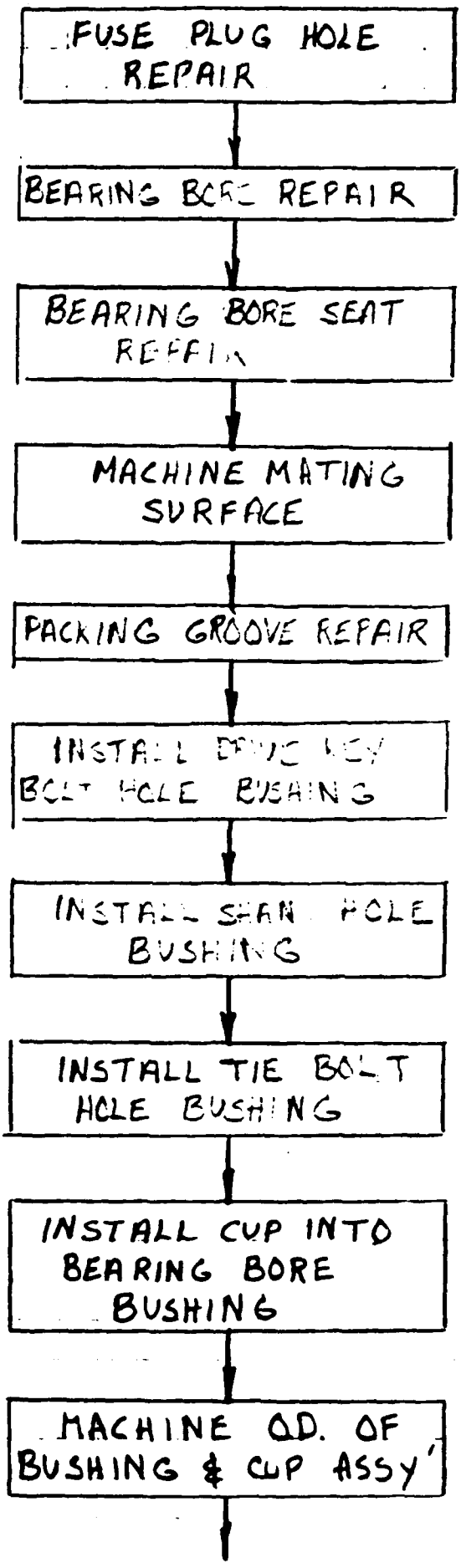

KC-135 NOSE WHEEL HALF- INBOARD
REAM TIE BOLT HOLES
MACHINE MATING SURFACE & O-RING SEALING SURFACE
INSTALL CUP INTO BEARING BORE BUSHING
MACHINE O.D. OF BUSHING & CUP ASSY'


INSTALL BUSHING & CUP ASSY' INTO BEARING BORE
INSTALL CUP INTO BEARING BORE & LOCK RING BUSHING
MACHINE O.D. OF BUSHING & CUP ASSY'

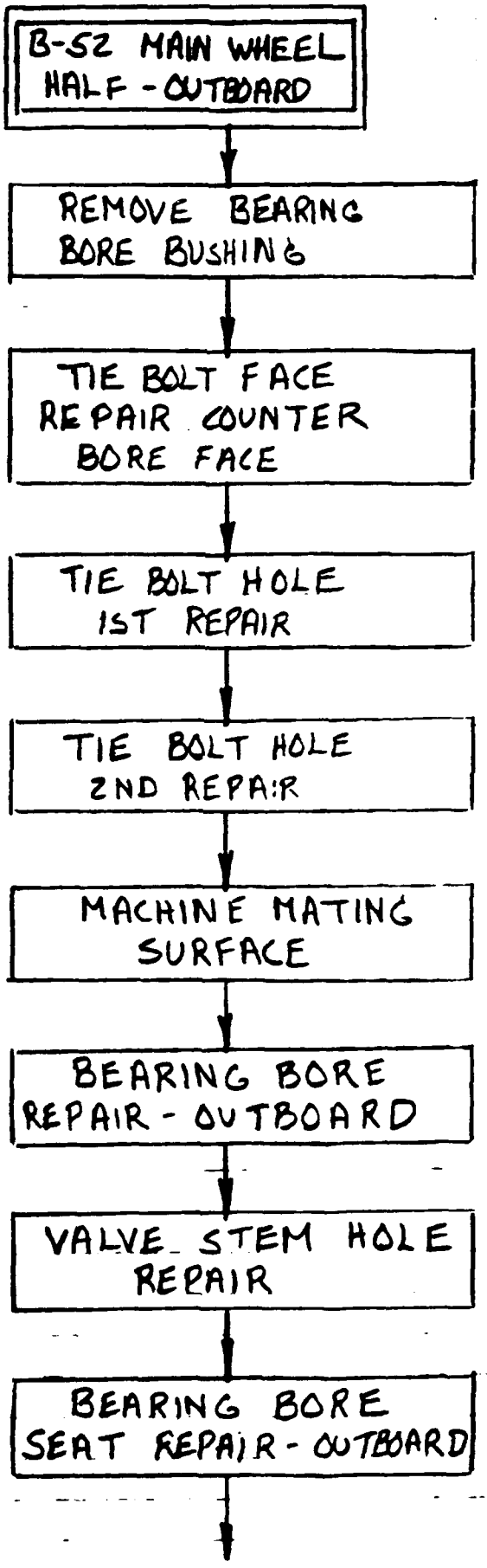

KC-135 MAIN WHEEL HALF - OUTBOARD
REMOVE BEARING BORE BUSHING
VALVE STEM HOLE REPAIR
SPOT FACE TIE BOLT HOLES
TIE BOLT HOLE REPAIR
TIE BOLT HOLE 2ND REPAIR MACHINE FOR BUSHING
MACHINE INNER TUBE WELL
BEARING BORE REPAIR
BEARING BORE SEAT REPAIR

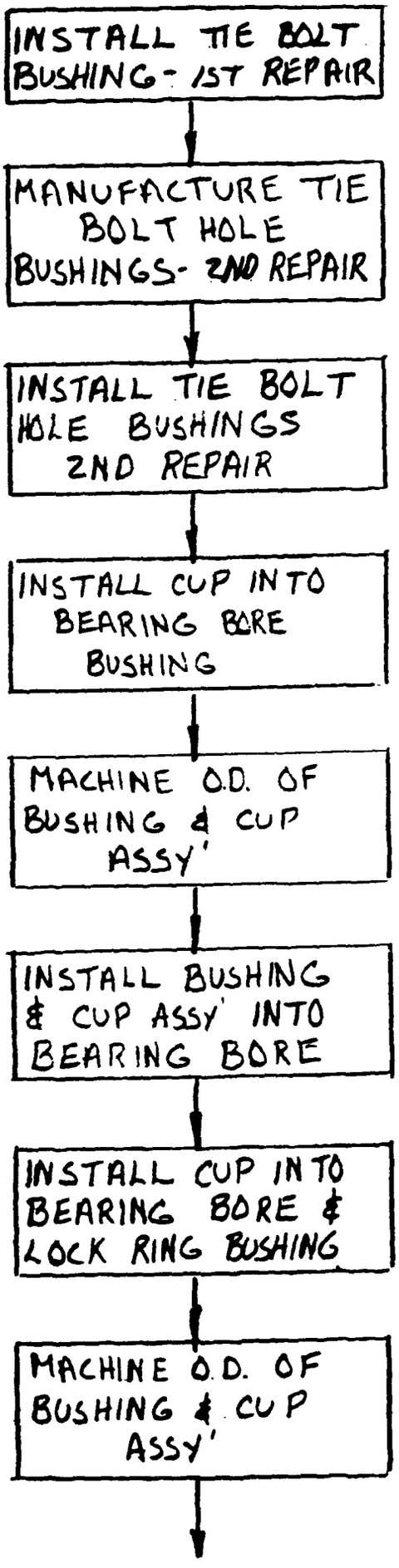

MACHINE MATING SURFACE
PACKING GROOVE REPAIR
INSTALL TIE BOLT HOLE BUSHING
INSTALL CUP INTO BEARING BORE BUSHING
MACHINE O.D. OF BUSHING & CUP ASSY
INSTALL BUSHING & CUP ASSY INTO BEARING BORE

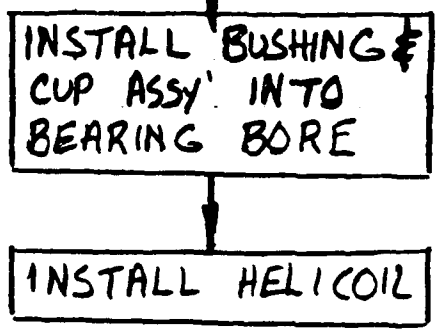

KC-135 MAIN WHEEL HALF - INBOARD
REMOVE BEARING BORE BUSHING
REMOVE SHANK HOLE BUSHING
DRIVE KEY BOLT HOLE REPAIR
SHANK HOLE REPAIR
SPOT FACE BOLT HOLES
TIE BOLT HOLE REPAIR
TIE BOLT HOLE 2 ND REPAIR MACHINE FOR BUSHING
MACHINE INNER TUBE WELL

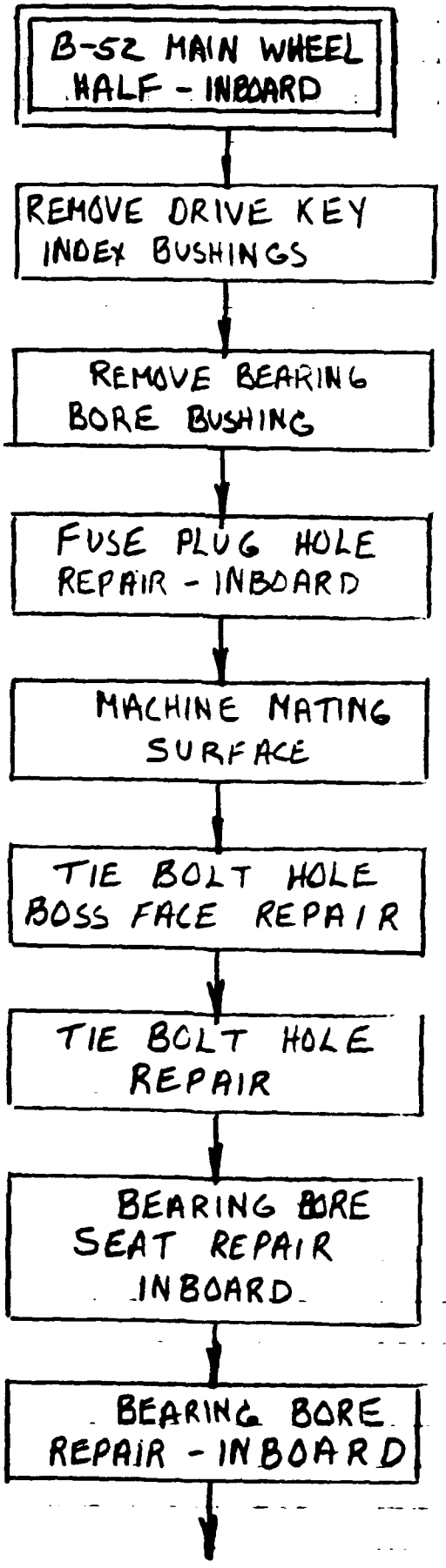

FUSE PLUG HOLE REPAIR
BEARING BORE REPAIR
BEARING BORE SEAT REPAIR
MACHINE MATING SURFACE
PACKING GROOVE REPAIR
INSTALL DRIVE KEY BOLT HOLE BUSHING
INSTALL SHAFT HOLE BUSHING
INSTALL TIE BOLT HOLE BUSHING
INSTALL CUP INTO BEARING BORE BUSHING
MACHINE O.D. OF BUSHING & CUP ASSY'

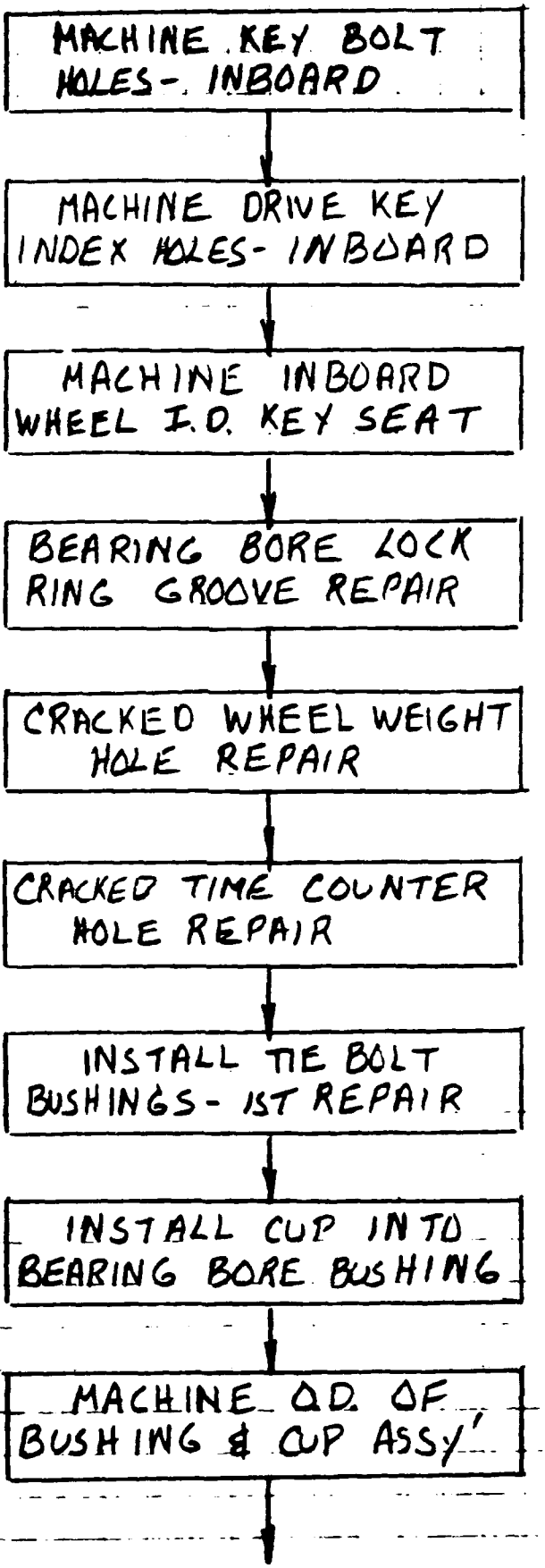
INSTALL BUSHING & CUP ASSY' INTO BEARING BORE

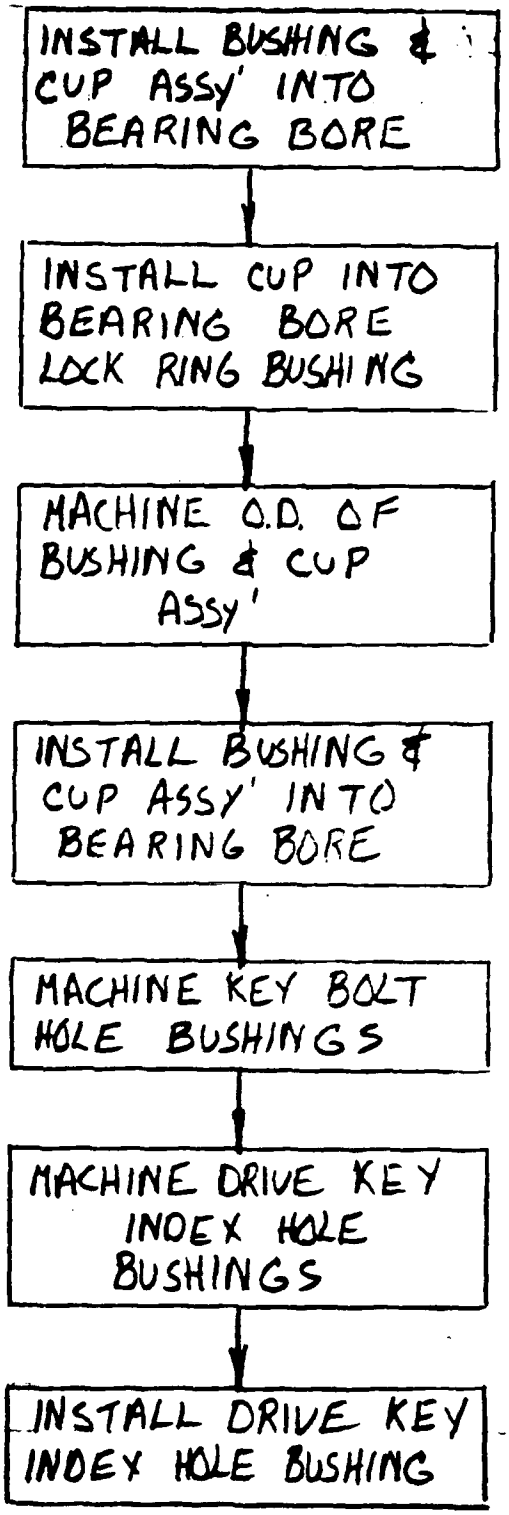

B-52 MAIN WHEEL HALF - OUTBOARD
REMOVE BEARING BORE BUSHING
TIE BOLT FACE REPAIR COUNTER BORE FACE
TIE BOLT HOLE 1ST REPAIR
TIE BOLT HOLE 2ND REPAIR
MACHINE MATING SURFACE
BEARING BORE REPAIR - OUTBOARD
VALVE STEM HOLE REPAIR
BEARING BORE SEAT REPAIR - OUTBOARD


INSTALL TIE BOLT BUSHING - 1ST REPAIR
MANUFACTURE TIE BOLT HOLE BUSHINGS - 2ND REPAIR
INSTALL TIE BOLT HOLE BUSHINGS 2ND REPAIR
INSTALL CUP INTO BEARING BORE BUSHING
MACHINE O.D. OF BUSHING & CUP ASSY'
INSTALL BUSHING & CUP ASSY' INTO BEARING BORE
INSTALL CUP INTO BEARING BORE & LOCK RING BUSHING
MACHINE O.D. OF BUSHING & CUP ASSY'


INSTALL BUSHING & CUP ASSY' INTO BEARING BORE
INSTALL HELICOIL


B-52 MAIN WHEEL HALF - INBOARD
REMOVE DRIVE KEY INDEX BUSHINGS
REMOVE BEARING BORE BUSHING
FUSE PLUG HOLE REPAIR - INBOARD
MACHINE MATING SURFACE
TIE BOLT HOLE BOSS FACE REPAIR
TIE BOLT HOLE REPAIR
BEARING BORE SEAT REPAIR INBOARD
BEARING BORE REPAIR - INBOARD


MACHINE KEY BOLT HOLES - INBOARD
MACHINE DRIVE KEY INDEX HOLES - INBOARD
MACHINE INBOARD WHEEL I.D. KEY SEAT
BEARING BORE LOCK RING GROOVE REPAIR
CRACKED WHEEL WEIGHT HOLE REPAIR
CRACKED TIME COUNTER HOLE REPAIR
INSTALL TIE BOLT BUSHINGS - 1ST REPAIR
INSTALL CUP INTO BEARING BORE BUSHING
MACHINE O.D. OF BUSHING & CUP ASSY'


INSTALL BUSHING & CUP ASSY' INTO BEARING BORE
INSTALL CUP INTO BEARING BORE LOCK RING BUSHING
MACHINE O.D. OF BUSHING & CUP ASSY'
INSTALL BUSHING & CUP ASSY' INTO BEARING BORE
MACHINE KEY BOLT HOLE BUSHINGS
MACHINE DRIVE KEY INDEX HOLE BUSHINGS
INSTALL DRIVE KEY INDEX HOLE BUSHING

F-4 NOSE WHEEL HALF - OUTBOARD

REMOVE BEARING BORE BUSHING

BEARING BORE C/S OUTER

TIE BOLT FACE REPAIR

O/S VALVE STEM HOLE & REIDENTIFY

INSTALL CUP INTO BEARING BORE BUSHING

MACHINE O.D. OF BUSHING & CUP ASSY

INSTALL GREASE BAFFLE & BUSHING & CUP ASSY

F-4 NOSE WHEEL HALF - INBOARD

REMOVE BEARING BORE BUSHING

BEARING BORE O/S - INNER

TIE BOLT FACE REPAIR

INSTALL CUP INTO BEARING BORE BUSHING

MACHINE O.D. OF BUSHING & CUP ASSY

INSTALL GREASE BAFFLE & BUSHING & CUP ASSY

The following section contains flow charts for the machine shop & grinding operations performed on the disassembled landing gear struts.

The struts chosen for characterization herein are considered to be representitive of a particular strut type. The particular gear charted were selected by A.F. & MCDC personnel at a meeting whose results are detailed in Jack Schneider's Engr. Notes.

The strut types to be characterized & the type they represent are as follows:

F-15 MLG	Steel / Steel
C-141 NLG	Steel / Steel
KC-135 MLG	Steel / Steel
F-15 NLG	Alum / Steel
KC-135 NLG	Alum / Steel
B-52 MLG	Alum / Steel

Process flow information was pulled from the appropriate WCD whose number is found on the last page of each individual flow chart along with the operation numbers represented by the flow chart

KC-135 M.L.G.
ACTUATOR BEAM

REAM TERMINAL ATTACH LUGS

ROLL BURNISH TERMINAL ATTACH LUGS

REAM SUPPORT LINK ATTACH LUGS

ROLL BURNISH SUPPORT LINK ATTACH LUGS

REAM HYDRAULIC ACTUATOR ATTACH LUGS - 1ST REPAIR

REAM HYDRAULIC ACTUATOR ATTACH LUGS - 2ND REPAIR

ROLL BURNISH HYDRAULIC ACTUATOR ATTACH LUGS

STAMP LETTER

MACHINE TERMINAL ATTACH LUG BUSHING

INSTALL TERMINAL ATTACH
LUG BUSHING

MACHINE SUPPORT LINK ATTACH
LUG BUSHING

INSTALL SUPPORT LINK ATTACH
LUG BUSHING

MACHINE HYDRAULIC ACTUATOR
ATTACH LUG BUSHING

INSTALL HYDRAULIC ACTUATOR
ATTACH LUG BUSHING

MACHINE HYDRAULIC ACTUATOR
ATTACH LUG BUSHING

INSTALL HYDRAULIC ACTUATOR
ATTACH LUG BUSHING

KC-135 M.L.G.
BEAM ASSY'

REMOVE BUSHINGS

REAM BRAKE EQUALIZER
ROD ATTACH LUGS

REAM CYLINDER ATTACH
PIN BOLT HOLES

HONE CYLINDER ATTACH
LUG

HONE AFT SOCKET

HONE FORWARD SOCKET

STAMP TRUCK BEAM

MACHINE CYLINDER ATTACH
LUG BUSHING

INSTALL CYLINDER ATTACH
LUG BUSHING

MACHINE ATTACH PIN
BOLT HOLE BUSHING

INSTALL ATTACH PIN
BOLT HOLE BUSHING

MACHINE BRAKE EQUALIZER
ROD ATTACH LUG BUSHING

INSTALL BRAKE EQUALIZER
ROD ATTACH LUG BUSHING

FINAL ACCEPTANCE

FINAL VISUAL INSPECTION

KC-135 M.L.G.
FORWARD AXLE

NICK & BURR

KEYWAY REPAIR

NEW AXLES ONLY - MACHINE
JOURNAL #3

FIRST GRIND JOURNAL #1
(CHROME)

FIRST GRIND JOURNAL #2
(CHROME)

FIRST GRIND JOURNAL #3
(FLAME SPRAY)

FINISH GRIND JOURNAL #1

FINISH GRIND JOURNAL #2

MACHINE FLAME SPAYED
JOURNAL #3

FINAL ACCEPTANCE

FINAL PRODUCT VISUAL INSPECTION

KC-135 M.L.G.
AFT AXLE

REMOVE SLEEVE FROM
JOURNALS 5 & 6

KEYWAY REPAIR

DRILL AXLES (NEW ONLY)

MACHINE AXLES (NEW ONLY)

FIRST GRIND JOURNAL #1
(CHROME)

FIRST GRIND JOURNAL #2
(CHROME)

FIRST GRIND JOURNAL #3
(CHROME)

FIRST GRIND JOURNAL #4
(CHROME)

FIRST GRIND JOURNAL #5
(FLAME SPRAY)

KC-135 M.L.G.
PISTON ROD

CHECK STRAIGHTNESS

KC-135 M.L.G.
SUPPORT LINK

APEX LUG 1ST O/S - REAM

APEX LUG 2ND O/S - REAM

REAM BASE LUG

MACHINE APEX LUG BUSHING

INSTALL APEX LUG BUSHING

MACHINE BASE LUG BUSHING

INSTALL BASE LUG BUSHING

KC-135 M.L.G
BRAKE COLLAR

MACHINE AXLE LUG I.D.

MACHINE EQUALIZER ROD
LUG

MACHINE I.D. BUSHING

INSTALL I.D BUSHING

MACHINE LUG BUSHING

INSTALL LUG BUSHING

FIRST GRIND JOURNAL
#6 (FLAME SPAY)

FIRST GRIND JOURNAL
#7

FIRST GRIND JOURNAL #8
(CHROME)

FIRST GRIND JOURNAL #9
(CHROME)

FIRST GRIND JOURNAL #10
(CHROME)

FINISH GRIND JOURNAL #1

FINISH GRIND JOURNAL #2

FINISH GRIND JOURNAL #3

FINISH GRIND JOURNAL #4

FINISH GRIND JOURNAL #7

FINISH GRIND JOURNAL #8

FINISH GRIND JOURNAL #9

FINISH GRIND JOURNAL #10

FINISH GRIND JOURNAL #1

FINISH GRIND JOURNAL #2

FINISH GRIND JOURNAL #3

FINISH GRIND JOURNAL #4

FINISH GRIND JOURNAL #7

FINISH GRIND JOURNAL #8

FINISH GRIND JOURNAL #9

FINISH GRIND JOURNAL #10

MACHINE FLAME SPAY
JOURNAL #6

POLISH JOURNAL #5

MACHINE FLAME SPRAY
JOURNAL #6

POLISH JOURNAL #6

INSTALL AXLE

FINAL ACCEPTANCE

FINAL INSPECTION

KC-135 M.L.G.
LOWER SIDE SEGMENT

REMOVE BUSHINGS

REAM UPPER STRUT HOLE
1ST O/S

REAM UPPER STRUT HOLE
2ND O/S

ROLL BURNISH UNIVERSAL
STRUT HOLE

ROLL BURNISH INTERMEDIATE
& LIGHTENING HOLES

MACHINE UPPER HOLE
BUSHINGS

INSTALL UPPER HOLE
BUSHINGS

MACHINE UNIVERSAL
HOLE BUSHING

INSTALL UNIVERSAL
HOLE BUSHING

KC-135 M.L.G
TORSION LINK

MACHINE REAR LUG HOLE I.D.

MACHINE APEX LUG HOLES

CLEAN ALL LUBE & OIL PASSAGES

INSTALL APEX LUG BUSHINGS

MANUFACTURE APEX LUG BUSHING O/S

INSTALL O/S APEX LUG BUSHING

INSTALL REAR LUG BUSHINGS

MANUFACTURE REAR LUG BUSHINGS O/S

INSTALL O/S REAR LUG BUSHINGS

KC-135 M.L.G.
CK ASSY - MISC. (STL.)

FINAL ACCEPTACE

FINAL INSPECTION

KC-135 M.L.G.
CK. ASSY - MISC. (ALUM)

FINAL ACCEPTANCE

FINAL INSPECTION

KC-135 M.L.G.
MAIN OLEO TRUNNION - MISC.
ALUM CAT. A-3

FINAL ACCEPTANCE

FINAL INSPECTION

KC-135 M.L.G.
MAIN OLEO TRUNNION
MISC (STL) CAT. S-II

FINAL ACCEPTANCE

FINAL INSPECTION

KC-135 M.L.G.
TRUCK ASSY

MATCH-UP

INSTALL FORWARD AXLE

MACHINE FWD. AXLE CROSS PIN HOLES

INSTALL AFT AXLES

MACHINE AFT AXLE CROSS PIN HOLES

KC-135 N.L.G.
PISTON

NICK & BURR

REPAIR TORQUE ARM BOSS O/S

GRIND INNER CYLINDER

GRIND AXLE JOURNAL OUTBOARD
#1

GRIND AXLE JOURNAL INBOARD
#2

GRIND AXLE JOURNAL INBOARD
#3

GRIND AXLE JOURNAL OUTBOARD
#4

GRIND UPPER BEARING LAND

FINISH GRIND UPPER BEARING
AREA

FINISH GRIND INNER CYLINDER
O.D.

FINISH GRIND AXLE JOURNAL
#1

FINISH GRIND AXLE JOURNAL #2

FINISH GRIND AXLE JOURNAL #3

FINISH GRIND AXLE JOURNAL #4

MACHINE TORQUE ARM BOSS FLANGE BUSHING

TORQUE ARM BOSS FLANGE BUSHING REPAIR

MACHINE TORQUE ARM BUSHING

INSTALL TORQUE ARM BOSS BUSHING

REPLACE SHOULDER BLOCKS

KC-135 N.L.G.
GEAR DRAG BRACE PLATE

REWORK SAFETY PIN HOLES

KC-135 N.L.G.
UPPER OLEO NUT

REMOVE CRACKS FOUND IN CRACKS

KC-135 MLG
ACTUATOR BRACKET

DRILL & REAM NEW ACTUATOR BRACKET

ALODINE REWORK

ACTUATOR ATTACH HOLE SINGLE O/S

TRUNNION ATTACH HOLES UPPER O/S

TRUNNION ATTACH HOLES LOWER O/S

MACHINE ACTUATOR ATTACH HOLE BUSHING

ACTUATOR ATTACH HOLE SINGLE BUSHING INSTALLATION

MACHINE TRUNNION ATTACH HOLE UPPER BUSHING

INSTALL TRUNNION ATTACH HOLE UPPER BUSHING

MACHINE TRUNNION ATTACH
HOLE LOWER BUSHING

INSTALL TRUNNION ATTACH
HOLE LOWER BUSHING

KC-135 N.L.G.
TORSION LINK

NICK & BURR

UPPER LINK LUG REPAIR
O/S

LOWER LINK LUG REPAIR
O/S

MACHINE UPPER LINK
LUG BUSHINGS

INSTALL UPPER LINK
LUG BUSHING

MACHINE LOWER LINK
LUG BUSHING

INSTALL LOWER LINK
LUG BUSHING

KC-135 N.L.G.
ARM ASSY.

ROD ATTACH HOLE
O/S

RECENTER

FIRST GRIND SHAFT LARGE
O.D.

FIRST GRIND SHAFT SMALL
O.D.

FINISH GRIND SHAFT SMALL
O.D.

FINISH GRIND SHAFT LARGE
O.D.

MACHINE BUSHING ROD ATTACH

INSTALL BUSHINGS IN ROD

KC-135 N.L.G.
LOWER LINK

NICK & BURR

LOWER END LOG REPAIR
O/S

MACHINE LOWER END LOG
BUSHINGS

INSTALL LOWER END LOG
BUSHINGS

MACHINE BUSHINGS

INSTALL BUSHINGS

KC-135 N.L.G.
UPPER LINK

BLEND WORN AREA

REIDENTIFY

BUSHING REPAIR

CHROME REPAIR

FIRST GRIND ATTACH LUG
O.D.

FINISH GRIND ATTACH LUG
O.D.

FINISH GRIND ATTACH LUG

MACHINE BUSHING

INSTALL BUSHING

KC-135 N.L.G.
STEERING PLATES

MODIFY SUPPOPT PLATE

MACHINE RADIUS
IN SLOT AREA

MACHINE RADIUS

MACHINE SMALL ATTACH
HOLES

MACHINE BUSH

INSTALL BUSHING

EDGE BUSHING

KC-135 N L G.
OLEO CAM - UPPER & LOWER

MODIFY CAM

MODIFY CAM

KC-135 N.L.G.
OUTER CYLINDER

NICK & BURR

REMOVE BUSHINGS

DRAG BRACE HOLE REPAIR O/S

FIRST REPAIR - TRUNNION BORE

SECOND REPAIR (O/S) - TRUNNION BORE

TRUNNION RETAINING PIN HOLE REPAIR (O/S)

ROLL BURNISH

ACTUATOR BRACKET HOLE REPAIR J (O/S)

DOOR LUG HOLE REPAIR (O/S)

ACTUATOR BRACKET HOLE REPAIR K (O/S)

STEERING PLATE LUG HOLE REPAIR (O/S)

FIRST REPAIR - STEERING COLLAR

TOWING COLLAR REPAIR

SECOND REPAIR - STEERING COLLAR

SECOND REPAIR - TOWING COLLAR

I.D REWORK
LONGITUDINAL DEFECTS

I.D REWORK
CIRCUMFRENTIAL DEFECTS

HONE UPPER SEAL AREA BORE

REMOVE IRREGULARITIES

HONE UPPER BEARING BORE
STD. BORE

HONE UPPER BEARING BORE
FIRST REPAIR

HONE STD SIZE LOWER BEARING BORE

HONE LOWER BEARING BORE FIRST REPAIR

MACHINE STEERING COLLAR AREA

MACHINE TOWING COLLAR AREA

HONE UPPER SEAL BORE

POLISH UPPER SEAL BORE

POLISH UPPER BORE

HONE LOWER BORE

POLISH LOWER BORE

FINAL POLISH UPPER SEAL BORE

FINAL Polish UPPER BORE

FINAL POLISH LOWER
BARE

IDENTIFY

MACHINE DRAG BRACE BUSHING

INSTALL DRAG BRACE BUSHING

MACHINE TRUNNION HOLE BUSHING

INSTALL TRUNNION HOLE BUSHING

CENTER DRILL TRUNNION
RETAINING PIN HOLE

MACHINE TRUNNION RETAINING
PIN BUSHINGS

MACHINE STEERING PLATE
LUG BUSHING

INSTALL STEERING plate
LUG BUSHING

MACHINE ACTUATOR BRACKET
HOLE BUSHING

MACHINE ACTUATOR BRACKET HOLE (T) BUSHING

INSTALL ACTUATOR BRACKET HOLE BUSHING

MACHINE ACTUATOR BRACKET HOLE BUSHINGS

INSTALL ACTUATOR BRACKET HOLE BUSHINGS

MACHINE DOOR ATTACH LUG BUSHINGS

INSTALL DOOR ATTACH LUG BUSHINGS

INSTALL TRUNNION PINS

REAM TRUNNION PIN LOCK SCREW HOLES

MARK & REMOVE TRUNNION PIN

INSTALL HELICOILS

KC-135 N.L.G.
UPPER BEARING

MACHINE O.D.

NICK & BURR

B-52 M.L.G.
JACKSHAFT STOP

DRILL HOLES IN STOP ASSY

B-52 M.L.G.
UPPER OLEO BEARING
RETAINER NUT

MACHINE SPANNER SLOTS

B-52 M.L.G.

CENTERING CAM ASSY

CENTERING CAM KEY
REPAIR

CENTERING CAM KEY
REPAIR - RADIUS

ELECTRO ETCH

B-52 M.L.G.
TORSION LINK ASSY

MACHINE APEX BOSS
BUSHING

INSTALL APEX BOSS
BUSHING

B-52 MLG

STEERING PLATE ASSY.

DRILL BOTTOM PLATE

MOUNTING BOLT HOLE REPAIR
O/S

TORQUE ARM LUG HOLE REPAIR
O/S

NICK & BURR

MACHINE MOUNTING BOLT HOLE
BUSHING

INSTALL MOUNTING BOLT HOLE
BUSHING

MOUNTING BOLT HOLE BUSHING
FINISH I. D.

MACHINE TORQUE ARM LUG
BUSHING

INSTALL TORQUE ARM LUG
BUSHING

TORQUE ARM LUG BUSHING
FINISH I. D

B-52 M.L.G. [illegible]

DRAG STRUT I/B TRIPOD LINK

REMOVE BUSHINGS

MACHINE LUG E O/S TO CLEANUP

MACHINE LUG F O/S TO CLEANUP

MACHINE LUG E BUSHING

INSTALL LUG E BUSHING

REAM LUG E BUSHING

MACHINE LUG F BUSHING

INSTALL LUG F BUSHING

REAM LUG F BUSHING

B-52 M.L.G.
DRAG STRUT O/B TRIPOD
LINK

REMOVE BUSHING

LUG A O/S REPAIR

O/S REPAIR LUG B

O/S REPAIR LUG C

O/S REPAIR LUG D

MACHINE LUG B BUSHING
O.D.

INSTALL LUG B BUSHING

FINISH HONE LUG B BUSHING
I.D.

MACHINE LUG C BUSHING O.D.

INSTALL LUG C BUSHING

FINISH HONE LUG E BUSHING

MACHINE LUG D BUSHING

INSTALL LUG D BUSHING

FINISH HONE LUG D BUSHING

MACHINE LUG A BUSHING

INSTALL LUG A BUSHING

FINISH HONE LUG A BUSHING

LOWER TRIPOD LINK

REMOVE BUSHINGS

MACHINE LUG G O/S

MACHINE LUG H O/S

MACHINE LOWER LINK LUG G BUSHING

INSTALL LOWER LINK LUG G BUSHING

FINISH MACHINE LOWER LINK LUG G BUSHING

MACHINE LOWER LINK LUG H BUSHING

INSTALL LOWER LINK LUG H BUSHING

FINISH MACHINE LOWER LINK LUG H BUSHING

8-52 M.L.G.

STEERING BEARING ASSY'

REPAIR STEERING BEARING HOLE

STEERING BEARING END RADIUS & CHAMFER

INSTALL & MATCH DRILL GEAR

B-52 M.L.G.
CYLINDER ASSY'

BRAKE MOUNTING HOLE CRACK REPAIR

JACK PAD BOSS REPAIR

WELD SPLATTER REWORK

MODIFY RETAINER NUT HOLES

REPAIR RETAINER NUT LOCK BOLT HOLES

DRILL NEW RETAINER NUT LOCK BOLT HOLES

TORQUE ARM ATTACH LUG O/S REPAIR

TOW LUG HOLE REPAIR FIRST O/S

TOW LUG HOLE REPAIR FIRST O/S

REPAIR HYDRAULIC FITTING HOLES

MACHINE CRACKS IN AXLE THREAD AREA

FIRST GRIND PISTON O.D.

FIRST GRIND AXLE JOURNAL #1

FIRST GRIND AXLE JOURNAL #2

FIRST GRIND AXLE JOURNAL #3

FIRST GRIND AXLE JOURNAL #4

INNER CYLINDER BORE SEAL REWORK

FIRST GRIND SEAL AREA

(LEFT SIDE REPAIR O/S)
AFT DOOR LEVER LUG
HOLE

(LEFT SIDE) ROLL BURNISH
AFT DOOR LEVER LUG
HOLE

(RIGHT SIDE REPAIR O/S)
FWD. DOOR LEVER LUG
HOLE

(FWD. RIGHT SIDE) ROLL
BURNISH DOOR LEVER
LUG HOLE

(LEFT SIDE REPAIR O/S)
FWD. DOOR LEVER LUG
HOLE

(LEFT SIDE FWD.) ROLL
BURNISH DOOR LEVER
LUG HOLE

REPAIR ACTUATOR LUG
HOLE O/S

ROLL BURNISH ACTUATOR
LUG HOLE

CENTER ATTACH HOLE
REPAIR (FIRST REPAIR)

CENTER ATTACH HOLE
REPAIR (SECOND REPAIR)

MACHINE CENTER CYLINDER
ATTACH HOLE

MACHINE CENTER ATTACH
HOLE BUSHING

INSTALL CENTER ATTACH
HOLE BUSHING

FINISH I.D.

(RIGHT SIDE) MACHINE END
TRUNNION SOCKET

(RIGHT SIDE) INSTALL END
TRUNNION SOCKET BUSHING

FINISH BUSHING I.D.

(LEFT SIDE) MACHINE END
TRUNNION SOCKET

(LEFT SIDE) INSTALL
END TRUNNION SOCKET BUSHING

FINISH BUSHING I.D.

MACHINE END CROSS BOLT
HOLE (SMALL) BUSHING

INSTALL END CROSS BOLT
HOLE (SMALL) BUSHING

MACHINE END CROSS BOLT
HOLE (LARGE) BUSHING

INSTALL END CROSS BOLT
HOLE (LARGE) BUSHING

MACHINE MOUNTING FLANGE
BOLT HOLE (FWD END)

INSTALL MOUNTING FLANGE
BOLT HOLE (FWD END)

MACHINE FLANGE BOLT HOLE
BUSHING (AFT END)

INSTALL MOUNTING FLANGE BOLT
HOLE BUSHING (AFT END)

MACHINE AFT DOOR LEVER
LUG HOLE (RIGHT SIDE)
BUSHING

INSTALL AFT DOOR LEVER
LUG HOLE (RIGHT SIDE)
BUSHING

MACHINE AFT DOOR LEVER
LUG HOLE (LEFT SIDE)
BUSHING

INSTALL AFT DOOR LEVER
LUG HOLE (LEFT SIDE)
BUSHING

MACHINE FWD. DOOR LEVER
LUG HOLE BUSHING

INSTALL FWD. DOOR LEVER
LUG HOLE BUSHING

MACHINE FWD. DOOR LEVER
LUG FACE BUSHING
(LEFT SIDE)

INSTALL FWD DOOR LEVER
LUG HOLE (LEFT SIDE)
BUSHING

MACHINE ACTUATOR LUG BUSHING

INSTALL ACTUATOR LUG BUSHING

REIDENTIFY

C-141 N.L.G.
AXLE

NICK & BURR

RECENTER AXLE

CHASE THREADS

REPAIR CROSS BOLT HOLE
O/S

FIRST GRIND AXLE CENTER
JOURNAL

FIRST GRIND LARGE JOURNAL

FIRST GRIND SMALL JOURNAL

POLISH O.D. BETWEEN JOURNALS

FINISH GRIND CENTER JOURNALS

FINISH GRIND LARGE JOURNALS

FINISH GRIND SMALL JOURNALS

MACHINE CROSS BOLT
HOLE BUSHING

INSTALL CROSS BOLT
HOLE BUSHING

C-141 N.L.G.
INNER CYLINDER

NICK & BURR

REPAIR TORQUE ARM
ATTACH LUG
O/S

REPAIR AXLE ATTACH
LUG

REPAIR AXLE ATTACH
LUG BUSHING

REPAIR CROSS BOLT HOLE
O/S

REPAIR TOW LUG O/S

FIRST GRIND PISTON O.D.

FIRST GRIND PISTON UPPER
END O.D.

POLISH METERING PIN I.D.

FIRST GRIND METERING
PIN I.D.

FINISH GRIND INNER CYLINDER
LONG AREA

FINISH GRIND INNER CYLINDER
SHORT AREA

FINISH GRIND METERING AN
I.D.

MACHINE AXLE ATTACH LUG

MACHINE CROSS BOLT HOLE O/S

HONE AXLE ATTACH LUG

MACHINE TORQUE ARM
ATTACH LUG BUSHING

INSTALL TORQUE ARM
ATTACH LUG BUSHING

MACHINE TOW LUG BUSHING

INSTALL TOW LUG BUSHING

MACHINE AXLE ATTACH
LUG BUSHING

INSTALL AXLE ATTACH
LUG BUSHING

FINISH I.D. AXLE ATTACH
LUG

COUNTER BORE AXLE
ATTACH LUG HOLE

MACHINE AYLE CROSS BOLT
HOLE BUSHING

INSTALL AYLE CROSS BOLT
HOLE BUSHING

HONE AXLE ATTACH LUG

C-141 N.L.G.
OUTER CYLINDER

FIRST GRIND TRUNNION JOURNAL

FINISH GRIND TRUNNION JOURNAL

FIRST GRIND COLLAR JOURNAL (CHROME)

FIRST GRIND COLLAR JOURNAL (FLAME SPAY)

FIRST GRIND UPPER BORE (CHROME)

FIRST GRIND LOWER BORE (CHROME)

REMOVE LINK PIN

EXTERNAL DEFECT REPAIR

POLISH O.D. OF CYLINDER

REPAIR DRAC ATTACH LUG O/S

REPAIR ACTUATOR LUG O/S

REPAIR TORQUE LUG O/S

MACHINE FILLER TUBE HOLE

REPAIR STEERING LUG O/S

REPAIR LINK PIN HOLE O/S

REPAIR STEERING FLANGE RADIUS

REMOVE PITTING ON STEERING FLANGE

MACHINE VERTICLE SLOTS FOR KEYWAYS

RELOCATE & MACHINE NEW KEY SLOTS

REMOVE CORROSION IN RING GROOVE

HONE PISTON

FIRST GRIND
PISTON I.D.

FINISH GRIND
PISTON O.D.

FINISH GRIND
AXLE JOURNAL #1

FINISH GRIND
AXLE JOURNAL #2

FINISH GRIND
AXLE JOURNAL #3

FINISH GRIND
AXLE JOURNAL #4

FINISH GRIND
I.D. SEAL AREA

MANUFACTURE
JACK PAD BOSS STEEL INSERT

INSTALL JACK PAD
BOSS STEEL INSERT

MACHINE BUSHING O.D.
TORQUE ABM ATTACH
LUG

MACHINE BUSHING O.D.
TOW LUG

INSTALL TOW LUG
BUSHING

B-52 M.L.G.
OUTER CYLINDER ASSY

COUNTERBORE OUTBOARD TRUNNION

REPAIR INBOARD TRUNNION HYDRAULIC TUBE

REPAIR KEYWAYS CENTERING CAM

REMOVE CHROMIUM PLATE

REPAIR OUTBOARD TRUNNION

REPAIR INBOARD TRUNNION

REPAIR OUTBOARD TRUNNION RADIUS

REPAIR INBOARD TRUNNION RADIUS

REPAIR ORIFICE TUBE HOLE

REPAIR OUTBOARD TRIPOD LUG HOLE

REPAIR INBOARD TRIPOD LUG HOLE

REPAIR LOWER TRIPOD LUG HOLE

REPAIR STEERING LUG HOLE (INBOARD)

REPAIR STEERING LUG HOLE (OUTBOARD)

REWORK STEERING LUG COUNTERBORE

REPAIR ACTUATOR LUG HOLE (SMALL)

REPAIR ACTUATOR LUG HOLE (LARGE)

REPAIR ACTUATOR LUG KEY SLOT

REPAIR DOOR ACTUATOR LUG

REPAIR DOOR ACTUATOR LUG
(5 EA)

REPAIR DOOR ACTUATOR LUG
HOLE

REAM LUG HOLE

ROLL BURNISH LUG HOLE O/S

REAM LUG HOLE

ROLL BURNISH LUG HOLE O/S

REAM LUG HOLE

ROLL BURNISH LUG HOLE O/S

REAM LUG HOLE

Sleeve reaming
a lug hole
SP= 502

MACHINE UPPER STEERING JOURNAL

MACHINE LOWER STEERING JOURNAL

NICK & BURR DAMAGED AREA

POLISH CYLINDER I.D. UPPER BORE

HONE CYLINDER UPPER BORE

MACHINE UPPER STEERING JOURNAL

MACHINE LOWER STEERING JOURNAL

INSTALL FLANGED BUSHINGS

MACHINE INBOARD TRIPOD LUG BUSHING

INSTALL INBOARD TRIPOD LUG BUSHING

MACHINE OUTBOARD TRIPOD LUG BUSHING

INSTALL OUTBOARD TRIPOD LUG BUSHING

MACHINE LOWER TRIPOD
LUG BUSHINGS

INSTALL LOWER TRIPOD
LUG BUSHINGS

MACHINE INBOARD ACTUATOR
LUG BUSHINGS

INSTALL INBOARD ACTUATOR
LUG BUSHINGS

MACHINE OUTBOARD ACTUATOR
LUG BUSHING

INSTALL OUTBOARD ACTUATOR
LUG BUSHING

MACHINE STEERING LUG
BUSHINGS

INSTALL STEERING LUG
BUSHING

CLEAN THREADS

INSTALL HELICOILS

MACHINE DOOR ACTUATING
LUG BUSHINGS

INSTALL DOOR ACTUATING
LUG BUSHINGS

MACHINE d/s ORIFICE
TUBE BUSHING

C-5A N.L.G.
OUTER CYLINDER

NICK & BURR

LOCAL POLISH

DRAG BRACE LUG HOLE O/S
REPAIR

RETRACT ARM RIGHT UPPER
SET O/S REPAIR

RETACT ARM RIGHT LOWER
SET O/S REPAIR

RETRACT ARM LEFT UPPER
SET O/S REPAIR

RETRACT ARM LEFT LOWER
SET O/S REPAIR

DOOR LUG HOLE RIGHT INSIDE
SET O/S REPAIR

DOOR LUG HOLE LEFT INSIDE
SET O/S REPAIR

DOOR LUG HOLE RIGHT
OUTSIDE SET O/S REPAIR

DOOR LUG HOLE LEFT
OUTSIDE SET O/S REPAIR

TRUNNION END SOCKET
LEFT SIDE O/S REPAIR

TRUNNION END SOCKET
RIGHT SIDE O/S REPAIR

TRUNNION CROSS BOLT
HOLE (SMALL) REPAIR

TRUNNION CROSS BOLT
HOLE (LARGE) REPAIR

ACTUATOR BRACKET HOLE
REPAIR

PULLEY MOUNT HOLE
REPAIR

STEERING VALVE HOLE
REPAIR - UPPER LEFT
LUG

STEERING VALVE HOLE REPAIR - UPPER RIGHT LUG

STEERING VALVE HOLE REPAIR - LOWER LUG

2ND REPAIR - METERING TUBE HOLE

FIRST GRIND UPPER STEERING JOURNAL (SMALL)

FIRST GRIND UPPER STEERING JOURNAL (LARGE)

FIRST GRIND LOWER STEERING JOURNAL

FIRST GRIND UPPER BORE

FIRST GRIND LOWER BORE

FIRST REPAIR - GRIND METERING TUBE HOLE

2ND REPAIR - GRIND METERING TUBE HOLE

FINISH GRIND SMALL
UPPER STEERING JOURNAL

FINISH GRIND LARGE
UPPER STEERING JOURNAL

FINISH GRIND LOWER
STEERING JOURNAL

FINISH GRIND LOWER
BORE

FINISH GRIND METERING
TUBE HOLE

MACHINE DRAG BRACE LUG
BUSHING

INSTALL DRAG BRACE LUG
BUSHING

MACHINE RETRACT ARM LUG
BUSHINGS - LOWER RIGHT
SET

INSTALL RETRACT ARM LUG
BUSHING - LOWER RIGHT
SET

MACHINE RETRACT ARM LUG
BUSHINGS - UPPER LEFT SET

INSTALL RETRACT ARM LUG
BUSHING - UPPER LEFT SET

MACHINE RETRACT ARM LUG
BUSHING - LOWER LEFT SET

INSTALL RETRACT ARM LUG
BUSHING - LOWER LEFT SET

MACHINE DOOR LUG BUSHINGS
RIGHT INSIDE SET

INSTALL DOOR LUG BUSHINGS
RIGHT INSIDE SET

MACHINE DOOR LUG BUSHINGS
RIGHT OUTSIDE SET

INSTALL DOOR LUG BUSHINGS
RIGHT OUTSIDE SET

MACHINE DOOR LUG BUSHINGS
LEFT INSIDE SET

INSTALL DOOR LUG BUSHING
LEFT INSIDE SET

MACHINE DOOR LUG BUSHING
LEFT OUTSIDE SET

INSTALL DOOR LUG BUSHING
LEFT OUTSIDE SET

MACHINE TRUNNION END
SOCKET BUSHING -
LEFT SIDE

INSTALL TRUNNION END
SOCKET BUSHING -
LEFT SIDE

MACHINE TRUNNION END
SOCKET BUSHING -
RIGHT SIDE

INSTALL TRUNNION END
SOCKET BUSHING -
RIGHT SIDE

MACHINE TRUNNION CROSS
BOLT HOLE BUSHING -
RIGHT SIDE

TRUNNION CROSS BOLT HOLE
RIGHT SIDE BUSHING INSTALLATION

MACHINE TRUNNION CROSS BOLT HOLE
BUSHING - LEFT SIDE

TRUNNION CROSS BOLT HOLE
LEFT SIDE BUSHING INSTALLATION

MACHINE ACTUATOR BRACKET LUG
BUSHING

INSTALL ACTUATOR BRACKET LUG
BUSHING

MACHINE PULLEY MOUNT LUG
BUSHING

INSTALL PULLEY MOUNT LUG
BUSHING

MACHINE STEERING VALVE LUG
BUSHING UPPER LEFT

INSTALL STEERING VALVE LUG
BUSHING UPPER LEFT

MACHINE STEERING VALVE LUG
BUSHING-UPPER RIGHT

INSTALL STEERING VALVE LUG
BUSHING - UPPER RIGHT

MACHINE STEERING VALVE LUG
BUSHING - LOWER

INSTALL STEERING VALVE LUG
BUSHING - LOWER

MACHINE METERING TUBE HOLE
BUSHING

INSTALL METERING TUBE HOLE
BUSHING

PRESSURE TEST OUTER CYLINDER
METERING TUBE HOLE

C-5A N.L.G.
PISTON & AXLE ASSY

NICK & BURR

RECENTER AXLES

TORQUE ARM LUG HOLE
REPAIR

KNEELING LUG HOLE REPAIR

FIRST GRIND O.D

FIRST GRIND AXLE JOURNAL #1

FIRST GRIND AXLE JOURNAL #2

FIRST GRIND AXLE JOURNAL #3

FIRST GRIND AXLE JOURNAL #4

FIRST GRIND AXLE JOURNAL #5

FIRST GRIND AXLE JOURNAL #6

FIRST GRIND AXLE JOURNAL #7

FIRST GRIND AXLE JOURNAL #8

FIRST GRIND ORIFICE TUBE HOLE I.D.

GRIND PISTON I.D. LOWER BORE

O/S REPAIR - LOWER BORE

GRIND PISTON I.D. UPPER BORE

FINISH GRIND PISTON O.D.

FINISH GRIND AYLE JOURNAL #1

FINISH GRIND AXLE JOURNAL #2

FINISH GRIND AXLE JOURNAL #3

FINISH GRIND AXLE JOURNAL #4

FINISH GRIND AXLE JOURNAL #5

FINISH GRIND AXLE JOURNAL #6

FINISH GRIND AXLE JOURNAL #7

FINISH GRIND AXLE JOURNAL #8

FINISH GRIND ORIFICE TUBE HOLE I.D.

HONE LOWER BORE

MACHINE TORQUE ARM LUG BUSHING

INSTALL TORQUE ARM LUG BUSHING

MACHINE KNEELING LUG BUSHING

INSTALL KNEELING LUG BUSHING

C-5A N.L.G.

UPPER TORQUE ARM

NICK & BURR

BASE LUG HOLE REPAIR

APEX LUG HOLE REPAIR

MACHINE BASE LUG BUSHINGS

INSTALL BASE LUG BUSHINGS

MACHINE APEX LUG BUSHING

INSTALL APEX LUG BUSHING

C-5A N.K.G.

LOWER TORQUE ARM

NICK & BURR

BASE LUG HOLE REPAIR

APEX BOSS REPAIR

MACHINE BASE LUG BUSHINGS

INSTALL BASE LUG BUSHINGS

MACHINE APEX BOSS SLEEVE

INSTALL APEX BOSS SLEEVE

FINISH APEX BOSS SLEEVE O.D.

C-5A N.L.G.

RETRACT ARM ASSY L/H

MACHINE ROOT LUG BUSHING UPPER

INSTALL ROOT LUG BUSHING UPPER

MACHINE ROOT LEG BUSHING LOWER

INSTALL ROOT LEG BUSHING LOWER

MACHINE GIMBAL ATTACH LUG BUSHING

INSTALL GIMBAL ATTACH LUG BUSHING

MACHINE BALLSCREW ATTACH LUG BUSHING

INSTALL BALLSCREW ATTACH LUG BUSHING

C-5A N.L.G.
STEERING COLLAR

NICK & BURR

TORQUE ARM HOLE REPAIR

INDICATOR ATTACH LUG HOLE REPAIR

STEERING ARM LUG HOLE REPAIR (LEFT)

STEERING ARM LUG HOLE REPAIR (RIGHT)

UPPER BEARING BORE REPAIR

LOWER BEARING BORE REPAIR

MACHINE TORQUE LUG BUSHING

INSTALL TORQUE LUG BUSHING

MACHINE INDICATOR ATTACH LUG BUSHING

INSTALL INDICATOR ATTACH LUG BUSHING

MACHINE STEERING ARM LUG BUSHING

STEERING ARM LUG BUSHING INSTALL

MACHINE UPPER BORE BEARING

INSTALL UPPER BORE BEARING

MACHINE LOWER BORE BEARING

INSTALL LOWER BORE BEARING

C-SANLG
GIMBAL RING

NICK & BURR

CENTER HOLE REPAIR

FIRST GRIND END
JOURNAL
CHROME

FIRST GRIND END
JOURNAL
FLAME SPRAY

FIRST GRIND SHOULDER FACES

ROUGH MACHINE END JOURNALS
AFTER FLAME SPRAY

FINISH GRIND END JOURNALS

FINISH GRIND SHOULDER FACES

MACHINE CENTER HOLE BUSHING

INSTALL CENTER HOLE BUSHING

C-5A N.L.G.

RETRACT ARM ATTACH BOLT

FIRST GRIND O.D.

FIRST MACHINE FOR FLAME SPRAY

FINISH GRIND OD

CSA N.I.G.

LOWER BEARING

KEYSLOT REWORK

C-5A N.L.G.
TRUNNION PIN L/H

RECENTER

FIRST GRIND O.D.

FINISH GRIND O.D.

C-SA N.A.61

PISTON STOP TUBE

NICK & BURR

DRILL LOCATING PIN HOLE

RECENTER

STANDARD REPAIR: FIRST GRIND O-RING GROOVE

O/S REPAIR: FIRST GRIND O-RING GROOVE

HONE I.D

FIRST GRIND LOWER AREA O.D.

FINISH GRIND LOWER AREA O.D.

FINISH GRIND O-RING GROOVE O.D.

HONE I.D.

C-5A N.L.G.
TORQUE ARM BOLT

NICK & BURR

BORE SMALL I.D.

RECENTER

FIRST GRIND O.D.

FINISH GRIND O.D.

MACHINE BUSHING

INSTALL BUSHING

C-SA NLG

SPACER ASSY

REMOVE RIG PIN BUSHING

NICK & BURR

RIG PIN HOLE REPAIR

MACHINE RIG PIN BUSHING

INSTALL RIG PIN BUSHING

C-5A NLG

ORIFICE TUBE

DRILL NEW PIN HOLES

C-5A N.L.G.
UPPER CAM

POLISH CAM RAMP

C-5A N.L.G.

TRUNNION PIN R/H

RECENTER

FIRST GRIND O.D

FINISH GRIND O.D.

C-5A NLG

RETRACT ARM ASSY

MACHINE ROOT LUG BUSHING UPPER

INSTALL ROOT LUG BUSHING UPPER

MACHINE ROOT LUG BUSHING UPPER

MACHINE ROOT LUG BUSHING LOWER

INSTALL ROOT LUG BUSHING LOWER

MACHINE GIMBAL ATTACH LUG BUSHING

INSTALL GIMBAL ATTACH LUG BUSHING

MACHINE FACE TO FACE

BALLSCREW ATTACH LUG BUSHING

C-5A N.L.G
AXLE NUT BUSHING

DRILL BUSHING & COVER

C-5A M.L.G.

OUTER CYLINDER

CHECK CONCENTRICITY OF DIA "C" TO "B"

CHECK CONCENTRICITY OF COLLAR AREA TO DIA "C"

CHECK CONCENTRICITY OF UPPER BORE TO DIA "A"

CHECK CONCENTRICITY OF LOWER BORE TO DIA "A"

GRIND CHAMFER

FINISH GRIND CYLINDER O.D.

FIRST GRIND UPPER BORE I.D.

FIRST GRIND LOWER BORE I.D.

FIRST GRIND AREA "C" AS NEEDED

HONE LOWER BORE

LOCAL REWORK I D

HONE UPPER BORE

LOCAL REWORK I.D.

SECOND REPAIR AREA "C" I D

CHECK & RECORD DIMS

COLLAR AREA O.D. REPAIR

REPAIR COLLAR FACE

MACHINE SHOULDER OF THRUST BEARING

BALLSCREW HOLE REPAIR — RIGHT SIDE

BALLSCREW HOLE FACE REPAIR RIGHT SIDE

BALLSCREW HOLE FACE REPAIR
LEFT SIDE

BALLSCREW CROSS PIN HOLE
REPAIR
LEFT SIDE

BALLSCREW CROSS PIN HOLE
REPAIR
RIGHT SIDE

CROSSWIND LUG HOLE REPAIR
LEFT SIDE

CROSSWIND LUG HOLE REPAIR
RIGHT SIDE

ROTATION LUG HOLE REPAIR
LEFT SIDE

ROTATION LUG HOLE REPAIR
RIGHT SIDE

MANIFOLD LUG HOLE REPAIR
LEFT SIDE

MANIFOLD LUG HOLE REPAIR
RIGHT SIDE

FINISH GRIND CYLINDER .O.D.

FINISH GRIND CYLINDER
UPPER BORE

FINISH GRIND CYLINDER
LOWER BORE

HONE LOWER BORE

HONE UPPER BORE

FINISH GRIND AREA "C"

MACHINE AREA "C" BUSHING

INSTALL AREA "C" BUSHING

CUT OFF AREA "C" BUSHING &
CHAMFER 30° X .090

MACHINE UPPER END THRUST
BEARING

INSTALL UPPER END THRUST
BEARING

MACHINE UPPER END COLLAR
BEARING

INSTALL UPPER END COLLAR BEARING

MACHINE CROSSWIND LUG HOLE BUSHING (L/S)

INSTALL CROSSWIND LUG HOLE BUSHING (L/S)

MACHINE CROSSWIND LUG HOLE BUSHINGS (L/S)

MACHINE CROSSWIND LUG HOLE BUSHINGS (R/S)

INSTALL CROSSWIND LUG HOLE BUSHING (R/S)

MACHINE CROSSWIND LUG HOLE BUSHING (R/S)

FINISH GRIND AREA "C" BUSHING I.D.

COLLAR O.D. BUSHING

FINAL MACHINE UPPER END THRUST BEARING

CHECK DIMENSIONS

CHECK CONCENTRICITY OF DIA "C" TO "B"

CHECK CONCENTRICITY OF UPPER BORE TO DIA "A"

CHECK CONCENTRICITY OF LOWER BORE TO DIA "A"

MACHINE BALLSCREW HOLE BUSHING (L/S)

INSTALL BALLSCREW HOLE BUSHING (L/S)

MACHINE BALLSCREW HOLE BUSHING (L/S)

MACHINE BALLSCREW HOLE BUSHING (R/S)

INSTALL BALLSCREW HOLE BUSHING (R/S)

MACHINE BALLSCREW HOLE BUSHING (R/S)

MACHINE BALLSCREW CROSS PIN HOLE BUSHINGS (L/S)

INSTALL BALLSCREW CROSS PIN HOLE BUSHINGS (L/S)

MACHINE BALLSCREW CROSS PIN HOLE BUSHINGS (R/S)

INSTALL BALLSCREW CROSS PIN HOLE BUSHINGS (R/S)

MACHINE ROTATION LUG HOLE BUSHINGS (LEFT UPPER)

INSTALL ROTATION LUG HOLE BUSHINGS (LEFT UPPER)

MACHINE ROTATION LUG HOLE BUSHINGS (LEFT UPPER)

MACHINE ROTATION LUG HOLE BUSHINGS (LEFT LOWER)

INSTALL ROTATION LUG HOLE BUSHINGS (LEFT LOWER)

MACHINE ROTATION LUG HOLE BUSHING (LEFT LOWER)

MACHINE ROTATION LUG HOLE BUSHING (LEFT LOWER)

MACHINE ROTATION LUG HOLE BUSHINGS (RIGHT UPPER)

INSTALL ROTATION LUG HOLE BUSHINGS (RIGHT UPPER)

MACHINE ROTATION LUG HOLE BUSHING (RIGHT UPPER)

MACHINE ROTATION LUG HOLE BUSHING (RIGHT LOWER)

INSTALL ROTATION LUG HOLE BUSHING (RIGHT SIDE)

MACHINE ROTATION LUG HOLE BUSHING (RIGHT LOWER)

MACHINE MANIFOLD LUG HOLE BUSHING (LEFT SIDE)

MACHINE MANIFOLD LUG HOLE BUSHINGS (LEFT SIDE)

MACHINE MANIFOLD LUG HOLE BUSHING (R/S)

MACHINE MANIFOLD LUG HOLE BUSHINGS (R/S)

C-5A M.L.G.
FWD AXLE

NICK & BURR

COMPENSATOR LUG HOLE
REPAIR (O/S)

FIRST GRIND LOCKING LUG
SIDES

FIRST GRIND BOGIE ATTACH
JOURNAL (LEFT)

FIRST GRIND BOGIE ATTACH
JOURNAL (RIGHT)

FIRST GRIND LARGE WHEEL
JOURNAL (LEFT)

FIRST GRIND LARGE WHEEL
JOURNAL (RIGHT)

FIRST GRIND SMALL WHEEL
JOURNAL (LEFT)

FIRST GRIND SMALL WHEEL
JOURNAL (RIGHT)

FIRST GRIND SPACER
JOURNAL (LEFT)

FIRST GRIND SPACER
JOURNAL (RIGHT O/B)

FIRST GRIND SPACER
JOURNAL (RIGHT I/B)

FINISH GRIND LOCKING
LUG SIDE

FINISH GRIND BOGIE
ATTACH JOURNAL (LEFT)

FINISH GRIND BOGIE
ATTACH JOURNAL (RIGHT)

FINISH GRIND LARGE WHEEL
JOURNAL (LEFT)

FINISH GRIND LARGE WHEEL
JOURNAL (RIGHT)

FINISH GRIND SMALL WHEEL
JOURNAL (LEFT)

FINISH GRIND SMALL WHEEL
JOURNAL (RIGHT)

FINISH GRIND SPACER JOURNAL (LEFT)

FINISH GRIND SPACER JOURNAL (RIGHT OUTBOARD)

FINISH GRIND SPACER JOURNAL (RIGHT INBOARD)

MACHINE COMPENSATOR LUG BUSHING

INSTALL COMPENSATOR LUG BUSHING

C-5A M.L.G.
AFT AXLES

FIRST GRIND JOURNAL # 1

FIRST GRIND JOURNAL # 2

FIRST GRIND JOURNAL # 3

FIRST GRIND JOURNAL # 4

FIRST GRIND LOCKING LUGS SIDES (LEFT)

FIRST GRIND LOCKING LUG SIDES (RIGHT)

FINISH GRIND JOURNAL # 1

FINISH GRIND JOURNAL # 2

FINISH GRIND JOURNAL # 3

FINISH GRIND JOURNAL # 4

FINISH GRIND LOCKING LUG (SIDES LEFT)

FINISH GRIND LOCKING LUG (RIGHT)

C-5A M.L.G.

UPPER DRAG LINK

FIRST GRIND SHAFT FOR CHROME

FINISH GRIND SHAFT

C-5A M.4.6.

LOWER DRAG SHAFT

FIRST GRIND SHAFT FOR CHROME PLATE

FINISH GRIND SHAFT

C-5A M.L.G.
SPINED TUBE

CHECK SEAL GROOVE
T.I.R.

CHECK BEARING O.D.
T.I.R.

RE-CENTER ENDS

NICK & BURR

FIRST GRIND SEAL GROOVE

FINISH GRIND SEAL GROOVE

CHAMFER SEAL GROOVE

C-5A M.L.G.
BOGIE CENTER BEAM

REMOVE GUDGEON & FWD AXLE ATTACH BUSHING

NICK & BURR

GUDGEON ATTACH LUG REPAIR

FWD AXLE SOCKET REPAIR

AFT BRACKET ATTACH LUG HOLE REPAIR

FWD. BRACKET ATTACH LUG HOLE REPAIR

TORQUE ARM LUG HOLE REPAIR

HOUSING ATTACH HOLE REPAIR

CENTER BEAM ATTACH LUG HOLE REPAIR

MACHINE GUDGEON ATTACH LUG BUSHING

INSTALL GUDGEON ATTACH LUG BUSHING

MACHINE FWD AXLE SOCKET BUSHING

INSTALL FWD. AXLE SOCKET BUSHING

MACHINE AFT BRACKET ATTACH LUG BUSHING

INSTALL AFT BRACKET ATTACH LUG BUSHING

MACHINE FWD. ATTACH LUG BUSHING

INSTALL FWD BRACKET ATTACH LUG BUSHING

MACHINE TORQUE ARM LUG BUSHING

INSTALL TORQUE ARM
LUG BUSHING

MACHINE HOUSING ATTACH
LUG BUSHING

INSTALL HOUSING ATTACH
LUG BUSHING

MACHINE CENTER BEAM
ATTACH LUG BUSHING

INSTALL CENTER BEAM
ATTACH LUG BUSHING

C-5A M.L.G.

UPPER SIDE BRACE ARM

BASE LUG HOLE REPAIR

BASE LUG FACE REPAIR

APEX LUG HOLE REPAIR

APEX LUG FACE REPAIR

MACHINE BASE LUG BUSHING

INSTALL BASE LUG BUSHING

MACHINE APEX LUG BUSHING

INSTALL APEX LUG BUSHING

C-5A M.L.G.
GUDGEON PIN

NICK & BURR

REWORK DAMAGED SPLINES

RECENTER BOTH ENDS

MACHINE OLD FLAME SPRAY

FIRST GRIND LARGE JOURNAL

FIRST GRIND SMALL JOURNAL

SECOND REPAIR GRIND SMALL JOURNAL

FIRST REPAIR SELF ALIGNING BEARING HOLE

SECOND REPAIR SELF ALIGNING BEARING HOLE

SECOND REPAIR- MACHINE EXCESS FLAME SPRAY ON SMALL JOURNAL

FINISH GRIND LARGE JOURNAL

FINISH GRIND SMALL JOURNAL

FIRST REPAIR - FINISH GRIND
SELF ALIGNING BEARING
HOLE

BLEND/POLISH RAISED AREAS
OF CHROME/NICKLE

SECOND REPAIR - MACHINE
BEARING BORE SLEEVE

SECOND REPAIR - INSTALL
BEARING BORE SLEEVE

FINISH MACHINE BEARING
BORE SLEEVE

INSTALL SELF ALIGNING
BEARING

C-SA MLG

LOWER SIDE BRACE AKM

BASE LUG HOLE REPAIR

BASE LUG FACE REPAIR

APEX LUG HOLE REPAIR
O/S

APEX LUG FACE REPAIR

MACHINE BASE LUG BUSHING

INSTALL BASE LUG BUSHING

MACHINE APEX LUG BUSHING

INSTALL APEX LUG BUSHING

C-SA M.I.G.

YOKE

REMOVE CENTER BORE LINER

NICK & BURR

REPAIR DAMAGED THREADS IN CHAIN COVER HOLES

REPAIR CRACKS IN CHAIN COVER HOLES

HONE I.D. OF CENTER BORE

MACHINE BALLSCREW FACE LEFT SIDE

MACHINE BALLSCREW FACE RIGHT SIDE

BALLSCREW HOLE REPAIR - LEFT SIDE

BALLSCREW HOLE REPAIR - RIGHT SIDE

UPPER SIDE BRACE HOLE
REPAIR

LOWER SIDE BRACE HOLE
REPAIR O/S

TRUNNION END HOLE
REPAIR (LEFT SIDE)

TRUNNION END HOLE
REPAIR (RIGHT SIDE)

TRUNNION CROSS PIN
HOLE REPAIR (LEFT SIDE)

TRUNNION CROSS PIN HOLE
REPAIR (RIGHT SIDE)

RETAINE BOLT HOLE REPAIR
LEFT SIDE

RETAINER BOLT HOLE REPAIR
RIGHT SIDE

BALLSCREW SOCKET BORE
REPAIR

HONE I.D. OF CENTER
BORE

INSTALL INSERTS

INSTALL CENTER MOUNTING HOLE SLEEVE

MACHINE BALLSCREW HOLE BUSHING (LEFT SIDE)

MACHINE BALLSCREW HOLE BUSHING (RIGHT SIDE)

INSTALL BALLSCREW HOLE BUSHING (RIGHT SIDE)

MACHINE UPPER SIDE BRACE HOLE BUSHING

INSTALL UPPER SIDE BRACE HOLE BUSHING

MACHINE LOWER SIDE BRACE HOLE BUSHING

INSTALL LOWER SIDE BRACE HOLE BUSHING

MACHINE TRUNNION END HOLE BUSHING (LEFT SIDE)

INSTALL TRUNNION END HOLE BUSHING (LEFT SIDE)

MACHINE TRUNNION END HOLE BUSHING (RIGHT SIDE)

INSTALL TRUNNION END HOLE BUSHING (RIGHT SIDE)

RECORD DIM.

MACHINE TRUNNION CROSS PIN HOLE BUSHING (LEFT SIDE)

INSTALL TRUNNION CROSS PIN HOLE BUSHING (LEFT SIDE)

MACHINE TRUNNION CROSS PIN HOLE BUSHING (RIGHT SIDE)

INSTALL TRUNNION CROSS PIN HOLE BUSHING (LEFT SIDE)

MACHINE RETAINER BOLT HOLE BUSHING (LEFT SIDE)

INSTALL RETAINER BOLT HOLE BUSHING (LEFT SIDE)

MACHINE RETAINER BOLT HOLD BUSHING (RIGHT SIDE)

INSTALL RETAINER BOLT HOLE (RIGHT SIDE)

MACHINE BALLSCREW SOCKET SLEEVE

INSTALL BALLSCREW SOCKET SLEEVE

MANUFACTURE REPAIR MEMBER #5

INSTALL REPAIR MEMBER #5

C-5A M.L.G.

POSITIONING COLLAR

REMOVE PINS

POSITIONER LUG HOLE REPAIR

CLEVIS LUG HOLE REPAIR LEFT SIDE

CLEVIS LUG HOLE REPAIR RIGHT SIDE

MACHINE TOP OF SMALL TEETH

CHAMFER BIG TEETH

FIRST GRIND COLLAR FACE

FIRST GRIND COLLAR INSIDE

FINISH GRIND COLLAR FACE

FINISH GRIND COLLAR INSIDE

MACHINE PINS

INSTALL PINS

MACHINE POSITIONER LUG BUSHING

INSTALL POSITIONER LUG BUSHING

MACHINE CLEVIS LUG HOLE BUSHING (L/S)

INSTALL CLEVIS LUG HOLE BUSHING (L/S)

MACHINE CLEVIS LUG HOLE BUSHING (R/S)

INSTALL CLEVIS LUG HOLE BUSHING (R/S)

C-5A M.L.G.
APEX SHAFT

RECENTER

FIRST GRIND SHAFT

FINISH GRIND SHAFT

C-5A M.L.G.
RETRACT ARM

CROSS PIN HOLE REPAIR

RIG PIN HOLE REPAIR

SMALL ARM HOLE REPAIR

LARGE ARM HOLE REPAIR

FIRST GRIND ARM SHAFT

FINISH GRIND ARM SHAFT

MACHINE LARGE ARM HOLE BUSHINGS

INSTALL LARGE ARM HOLE BUSHINGS

MACHINE LARGE ARM HOLE BUSHINGS

MACHINE SMALL ARM HOLE BUSHINGS

INSTALL SMALL ARM HOLE BUSHINGS

MACHINE SMALL ARM HOLE BUSHINGS

MACHINE CROSS BOLT HOLE BUSHING

INSTALL CROSS BOLT HOLE BUSHING

MACHINE CROSS BOLT HOLE BUSHING

MACHINE RIG PIN BUSHING

INSTALL RIG PIN BUSHING

MACHINE RIG PIN BUSHING

C-5A M.L.G.
TRUNNION PIN

FIRST GRIND O.D.

FIRST GRIND I.D.

POLISH I.D.

FINISH GRIND PIN O.D.

FINISH GRIND PIN I.D.

C-5A M.L.G.

ANTI-ROTATION BOLT

FIRST GRIND BOLT SHANK

FINISH GRIND BOLT SHANK

C-5A M.L.G.

COMPENSATOR LINK

GUDGEON ATTACH LUG HOLE REPAIR #1

HONE I.D. OF SELF ALIGNING BEARING BORE

FIRST GRIND I.D. OF SELF ALIGNING BEARING BORE

FINISH GRIND I.D. OF SELF ALIGNING BEARING BORE

MACHINE GUDGEON ATTACH LUG BUSHING

INSTALL GUDGEON ATTACH LUG BUSHING

2ND REPAIR BEARING HOLE

2ND REPAIR - INSTALL BEARING HOLE SLEEVE

FINISH GRIND I.D.

INSTALL SELF ALIGNING BEARING

C-5A M.L.G.

TRUNNION CROSS BOLT

RECENTER

FIRST GRIND BOLT SHANK

FINISH GRIND BOLT SHANK

C-5A M.L.G.

SIDE BRACE APEX BOLT

RECENTER

FIRST GRIND BOLT SHANK

FINISH GRIND BOLT SHANK

C-5A M.L.G.

COLLAR LOCK COLLAR

NICK & BURR

ATTACH LUG HOLE (L/S)
REPAIR

ATTACH LUG HOLE (R/S)
REPAIR

MACHINE ATTACH LUG BUSHING
(L/S)

INSTALL ATTACH LUG BUSHING
(L/S)

MACHINE ATTACH LUG BUSHING
(R/S)

INSTALL ATTACH LUG BUSHING
(R/S)

C-5A M.L.G.
SAFETY STOP FITTING

ATTACH LUG HOLE REPAIR (FWD)

ATTACH LUG HOLE REPAIR (AFT)

MACHINE ATTACH LUG HOLE BUSHING (FWD.)

INSTALL ATTACH LUG HOLE BUSHING (FWD)

MACHINE ATTACH LUG HOLE BUSHING (AFT)

INSTALL ATTACH LUG HOLE BUSHING (AFT)

C-5A MLG.
BRAKE COLLAR

NICK & BURR

ATTACH LUG HOLE REPAIR

FIRST GRIND INSIDE LARGE BEARING LAND

FIRST GRIND LOCKING LUG SIDES

FINISH GRIND LOCKING LUG SIDES

MACHINE LARGE BEARING LAND

MACHINE ATTACH LUG BUSHING

C-5A M.L.G.

PITCH COLLAR ASSY

SIDE LUG HOLE REPAIR
RIGHT (O/S)

SIDE LUG HOLE REPAIR
LEFT (O/S)

TOP LUG HOLE REPAIR
(O/S)

BOTTOM LUG HOLE REPAIR
LEFT (O/S)

BOTTOM LUG HOLE REPAIR
RIGHT (O/S)

GRIND I.D. OF AXLE ATTACH
LUG

ROUGH MACHINE I.D

FINISH GRIND I.D

MACHINE SIDE LUG (LEFT)

INSTALL SIDE LUG BUSHING
LEFT

MACHINE SIDE LUG BUSHING
RIGHT

INSTALL SIDE LUG BUSHING
RIGHT

MACHINE TOP LUG BUSHING

INSTALL TOP LUG BUSHING

MACHINE BOTTOM LUG BUSHING
LEFT

INSTALL BOTTOM LUG BUSHING
LEFT

MACHINE BOTTOM LUG BUSHING
RIGHT

INSTALL BOTTOM LUG BUSHING
RIGHT

C-5A M.L.G
LOCK RING ASSY

MATCH - UP

PRE-ASSEMBLE

ASSEMBLE

C-5A M.L.G.

ANCHOR SHAFT

O/S PIN HOLE

O/S THREADED HOLE

FIRST GRIND LARGE JOURNAL

FIRST GRIND SMALL JOURNAL

SECOND GRIND LARGE JOURNAL

SECOND GRIND SMALL JOURNAL

POLISH

MACHINE BUSHING

INSTALL BUSHING

INSTALL INSERT

C-SA M.L.G.
ROUND NUT

MACHINE 4 NEW WRENCHING SLOTS

MACHINE EXISTING SLOTS

C-5A M.L.G.

THRUST BEARING LOCK COLLAR

MACHINE THRUST
BEARING

C-5AM.L.G.
LOCK ROLLER FITTING

FLANGED ROLLER ATTACH
BOSS REPAIR

TRACK BRACKET ATTACH
BOSS REPAIR

STRAIGHT ROLLER ATTACH
BOSS REPAIR

SMALL ATTACH BUSHING
HOLE REPAIR

MACHINE TRACK ATTACH
BUSHINGS

INSTALL TRACK BRACKET
ATTACH BUSHINGS

MACHINE SMALL ATTACH
BUSHINGS

INSTALL SMALL ATTACH
BUSHINGS

MACHINE FLANGED ROLLER
ATTACH BUSHING

INSTALL FLANGED ROLLER
ATTACH BUSHING

MACHINE STRAIGHT ROLLER
ATTACH BUSHING

INSTALL STRAIGHT ROLLER
ATTACH BUSHING

MODIFY

C-5A MLG

TRACK ROLLER BRACKET

REMOVE HELICOILS

LOCK ROLLER BOSS REPAIR

LOCK ROLLER FITTING ATTACH
BOSS REPAIR

SMALL BOGIE ATTACH
BOSS REPAIR

LARGE BOGIE ATTACH
BOSS REPAIR

SMALL ATTACH BOSS REPAIR

MACHINE LOCK ROLLER ATTACH
BUSHINGS

INSTALL LOCK ROLLER ATTACH
BUSHINGS

MACHINE LOCK ROLLER ATTACH
BUSHING

INSTALL LOCK ROLLER
FITTING ATTACH BUSHINGS

MACHINE SMALL BOGIE
ATTACH BUSHINGS

INSTALL SMALL BOGIE
ATTACH BUSHINGS

MACHINE LARGE BOGIE
ATTACH BUSHINGS

INSTALL LARGE BOGIE
ATTACH BUSHINGS

MACHINE SMALL ATTACH
BUSHINGS

INSTALL SMALL ATTACH
BUSHINGS

INSTALL HELICOILS

C-5A M.L.G.

FLUID TRASFER HOUSING.

FIRST HONE

SECOND HONE

NICK & BURR

MACHINE FITTING LUG HOLE BORE

MACHINE OD

PIN HOLE REPAIR

HONE I.D.

POLISH I.D.

MACHINE FLAME SPRAY

MACHINE SMALL BUSHINGS

INSTALL SMALL BUSHINGS

MACHINE LARGE BUSHING

REMOVE LEE PLUGS

INSTALL SMALL BUSHING

INSTALL HELICOILS

INSTALL LARGE BUSHINGS

MACHINE PIN BUSHINGS

C-5A M.L.G.
BALLSCREW PIN

RECENTER ENDS

FIRST GRIND O.D.

C-5A M.L.G.
GAUGE

ROLL CRIMP

INSTALL TUBE & LENS
USE SEALANT

C-5A M.L.G.
SWIVEL FITTING

END HOLE O/S REPAIR

THREADED END REPAIR

DRILL HOLES

MFG. STUD

MACHINE END HOLE BUSHING

INSTALL END HOLE BUSHING

INSTALL INSERT

CHASE THREADS

C-5A M.L.G.
SWIVEL FITTING (INT)

END HOLE O/S REPAIR

THREADED END REPAIR

DRILL HOLES

MFG. STUD

MACHINE END HOLE BUSHING

INSTALL END HOLE BUSHING

INSTALL INSERT

CHASE THREADS

PRESSURE PLATE

REAM FASTENER HOLES

BRAKE

1 BACKING PLATE

REAM BRAKE LINING HOLES

ROTOR SEGMENT ASSY

MODIFY SEGMENT & REIDENTIFY

GRIND SEGMENT AREA

STATOR PLATE

REAM BRAKE LINING HOLES

CARRIER ASSY

ANCHOR NUT SCREW HOLE REPAIR

DRILL & TAP INLET PORT

DRILL & TAP BLEEDER PORT

MOUNTING BOLT HOLE BUSHING REPAIR

REAM UNDER SIZE HOLES

HELICOIL INLET PORT

HELICOIL BLEEDER PORT

HELICOIL RETURN SPRING BRACKET SCREW HOLES

DRILL CROSSOVER PORT

INSTALL MOUNTING BOLT HOLE BUSHING

CRACKED RADIUS REPAIR

DRILL & TAP INLET PORT

DRILL & TAP BLEEDER PORT

BORE SPRIN PIN BOSS

OVERSIZE PISTON AREA

HELICOIL INLET PORT

HELICAL BLEEDER PORT

MOUNT BOLT HOLE BUSHING REAMR

REMOVE RIVETS ON HOUSING

INSTALL MOUNT BOLT HOLE BUSHING

BACKING PLATE

MODIFY ELONGATED HOLES

MODIFY PER DWG AXE-32231

STATION

RADIUS HEAT RELIEF HOLES

REAM FASTENER HOLES

PRESSURE PLATE

REPAIR ELONGATED HOLES

ROTOR SEGMENT ASSY

GRIND ROTOR

HOUSING

MACHINE CAVITY

DRILL & TAP INLET PORT

DRILL & TAP BLEEDER PORT

ASSY BOLT HOLE REPAIR

PISTON PIN SEAL AREA

CHECK HELICOILS

INSTALL HELICOILS

ROTOR

GRIND ROTOR

PLATE SUB ASSY

MACHINE RADIUS

ALIGNMENT HOLE REPAIR

INSTALL ALIGNMENT HOLE BUSHING

REMOVE INSERTS

REMOVE SS. WEAR RING

REPAIR HUB AREA

REMOVE PIN PLUG

MODIFY HOUSING PER
T.C.T.O 481-2-552

MACHINE TORQUE LUGS

DRILL & TAP TORQUE
LUG SHIMS

INSTALL INSERTS

INSTALL PIN PLUGS

INSTALL TORQUE LUG
SHIMS

INSTALL RING

HOUSING ASSY

MACHINE FACE OF HOUSING

REIDENTIFY

REMOVE PITTING

REMOVE THREADED INSERTS

REPLACE THREADED INSERTS

TORQUE TUBE

REMOVE & REPLACE
INSERTS

BACKING PLATE

TERMINAL HOLE REPAIR

RADIUS O/S TERMINAL HOLES

RESURFACE PLATE

RADIUS STD. TERMINAL HOLES

HEAT SHIELD HOUSING

MODIFY PER TO

PISTON [illegible] ASSY

MACHINE UPPER SEAL LAND

MACHINE LOWER SEAL LAND

THREAD CLEAN UP PISTON CAVITY

THREAD CLEAN UP INLET PORTS

THREAD CLEAN UP BLEEDER PORTS

PLUG REPAIR

INSTALL O/S LEE PLUG

REMOVE HELICOILS

[redacted] CYLINDER

REMOVE BUSHINGS

HONE LOWER BORE

HONE UPPER BORE

NICK & BURR

O/S ORIFICE TUBE
BUSHING REPAIR

O/S DRAG BRACE
BOSS CHECK

O/S TRUNNION
SOCKET CHECK

O/S INBOARD JURY
BOSS CHECK

O/S OUTBOARD
TRUNNION BOSS CHECK

O/S DOOR DRIVE BOSS
CHECK

CROSS PIN [illegible]
CHECK

FIRST GRIND LOWER
BORE

FIRST GRIND OUTBOARD
TRUNNION BOSS

FIRST GRIND COLLAR
AREA

FINNISH GRIND COLLAR
O.D.

FINNISH GRIND OUTBOARD
TRUNNION BOSS

FINISH GRIND LOWER
BORE

O/S ORIFICE TUBE
BUSHING REPAIR

MACHINE UPPER DRAG
BUSHING ± 96

DRAG BUSHING INSTALLATION

MACHINE O/S UPPER DRAG BUSHING #31

O/S UPPER DRAG BUSHING INSTALL

MACHINE UPPER JURY LINK BUSH

INSTALL UPPER JURY LINK BUSHING

MACHINE O/S UPPER JURY LINK BUSHING OUTBOARD

INSTALL O/S UPPER JURY LINK BUSHING

MACHINE UPPER JURY LINK BUSHING INBOARD

INSTALL UPPER JURY LINK BUSHING

MACHINE O/S UPPER JURY LINK BUSHING INBOARD

INSTALL O/S UPPER
JURY LINK BUSHING

MACHINE STD. DOOR
DRIVE BUSHING

INSTALL STD. DOOR
DRIVE BUSHING

MACHINE O/S DOOR
DRIVE BOSS BUSHING

INSTALL O/S DOOR
DRIVE BOSS BUSHING

MACHINE STANDARD
TRUNNION BUSHING

INSTALL STANDARD
TRUNNION BUSHING

MACHINE O/S TRUNNION
SOCKET BUSHING #32

INSTALL O/S TRUNNION
SOCKET BUSHING #32

F-15 MLG
PISTON ASSY

NICK & BURR

POLISH OR HONE
LARGE AXLE I.D.

POLISH OR HONE
SMALL AXLE I.D.

O/S TORQUE ARM
BOSS CHECK

O/S UPLOCK BOSS
CHECK

POLISH BRAKE
FLANGE HOLE

FIRST GRIND PISTON
O.D.

FIRST GRIND PISTON
I.D. METERING
PIN SEAL AREA

FIRST GRIND INNER AXLE JOURNAL

FIRST GRIND OUTER AXLE JOURNAL

FINISH GRIND PISTON O.D.

FINISH GRIND PISTON I.D. METERING PIN SEAL AREA

FINNISH GRIND INNER AXLE JOURNAL

FINNISH GRIND OUTER AXLE JOURNAL

MACHINE TORQUE ARM BUSHING

INSTALL TORQUE ARM BUSHING

MACHINE O/S TORQUE ARM BUSHING

INSTALL O/S TORQUE ARM BUSHING

INSTALL CAM FOLLOWER BUSHING

MACHINE O/S CAM FOLLOWER BUSHING

INSTALL O/S CAM FOLLOWER BUSHING

DRILL PISTON HEAD

DRIVE TUBE

POLISH HARD
ANODIZED AREAS

DISASSEMBLE

POLISH TUBE

POLISH HARD
ANODIZED AREAS

REMOVE TORQUE
ARM PIN

O/S LOCK PIN

FIRST GRIND BASE
LUG FACES

FIRST GRIND APEX
LUG FACES

FIRST GRIND BASE
BOSS I.D.

FIRST GRIND APEX
LUG BOSS I.D.

FINISH GRIND BASE
LUG FACE

FINISH GRIND APEX
FACE

FINISH GRIND BASE
BOSS I.D.

F-15 ALC [illegible]

APEX PIN - JURY LINK

FIRST GRIND PIN

O.D.

FINISH GRIND PIN

O.D.

TRUNNION PIN

POLISH CROSS PIN HOLE

FIRST GRIND LARGE O.D.

FIRST GRIND SMALL O.D.

FINISH GRIND LARGE JOURNAL

FINISH GRIND SMALL JOURNAL

F-15 A/C

LOWER DRAG BRACE

REPLACE LOCK SLEEVE

O/S APEX INBOARD BOSS CHECK

O/S OUTBOARD APEX CHECK

O/S CYL. ATTACH BOSS CHECK

MACHINE NEW LOCK SLEEVE

INSTALL NEW LOCK SLEEVE

INSTALL RIVET

MACHINE SLEEVE

MACHINE APEX #8 INBOARD BUSHING

INBOARD BUSHING

MACHINE O/S APEX
INBOARD BOSS

INSTALL O/S APEX
INBOARD BOSS

MACHINE APEX
OUTBOARD BUSHING

INSTALL APEX
OUTBOARD BUSHING

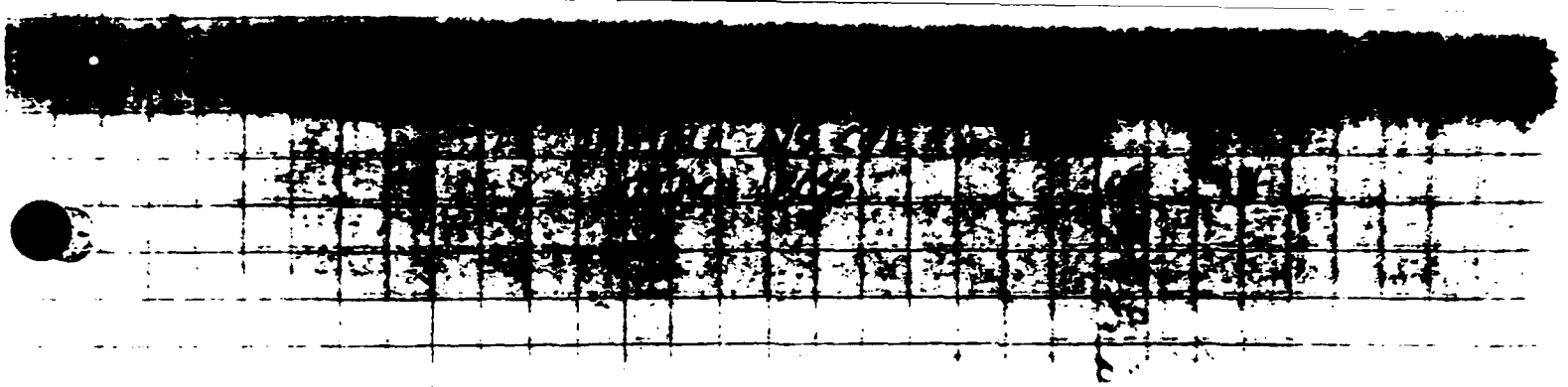
MACHINE O/S OUTBOARD
APEX BOSS

INSTALL O/S OUTBOARD
APEX BOSS

MACHINE CYL. LUG
BUSHING #6

INSTALL CYL LUG
BUSHING #6

MACHINE O/S CYL.
ATTACH BOSS



[redacted]

FINISH CROSS BOLT HOLE

FIRST GRIND PIN SMALL O.D.

FIRST GRIND LARGE O.D.

FINISH GRIND PIN

FINISH GRIND LARGE O.D.

S MLG
JURY LINK

POLISH SPRING
ATTACH HOLE

O/S APEX LUG BOSS
CHECK

O/S GROUND LUG BOSS
CHECK

O/S DRAG BRACE LUG
BOSS CHECK

MACHINE STD APEX
FLANGED BUSHING

INSTALL STD. APEX
FLANGED BUSHING

MACHINE O/S APEX
FLANGED BUSHING

INSTALL O/S APEX
FLANGED BUSHING

INSTALL STD. DRAG
BRACE BOSS BUSHING

HONE STD DRAG BRACE
BOSS BUSHING

MACHINE O/S DRAG BRACE
BUSHINGS

INSTALL O/S DRAG
BRACE BUSHINGS

HONE O/S DRAG BRACE
BOSS BUSHINGS

INSTALL O/S GROUND
BOSS

MACHINE O/S GROUND
BOSS

E-5 MLG
UPPER JURY LINK

REMOVE PIN

REMOVE BUSHINGS

POLISH ATTACH HOLE

O/S CYL. SOCKET CHECK

MACHINE STAKE METAL

O/S APEX BOSS CHECK

REWORK GROUND BOSS SLCT

FIRST GRIND LINK O.D.

FINISH GRIND LINK O.D.

[redacted]

MACHINE [redacted]
BUSHING

INSTALL O/S CYL SOCKET
BUSHING

MACHINE FINISH SOCKET
BUSHING

MACHINE STD. APEX
BUSHING

INSTALL STD. APEX
BUSHING

HONE STD. APEX FLANGED
BUSHINGS

MACHINE O/S APEX
BUSHINGS

INSTALL O/S APEX
BUSHINGS

HONE O/S APEX
BUSHINGS

FIRST GRIND SMALL O.D.

FINISH GRIND SMALL O.D.

[redacted]

BOSS

FIRST GRIND LARGE O.D.

FIRST GRIND SMALL O.D.

FINISH GRIND LARGE O.D.

FINISH GRIND SMALL O.D.

MACHINE BUSHINGS

INSTALL BUSHINGS

MACHINE O/S BUSHING

INSTALL O/S BUSHING

O/S BUNGEE BOSS
CHECK

RECENTER

FIRST GRIND PIN O.D.

FINISH GRIND PIN O.D.

MACHINE FLANGED
BUSHINGS

INSTALL FLANGED
BUSHINGS

MACHINE O/S BUNGEE
BOSS BUSHING

INSTALL O/S BUNGEE
BOSS BUSHING

MACHINE COLLAR I.D.

MONE TORQUE ARM
LUGS

MACHINE SPINDLE LUG
UPPER

MACHINE SPINDLE LUG
LOWER

INSTALL COLLAR
BUSHING

MACHINE COLLAR BUSHING

MACHINE COLLAR BUSHING
O/S

INSTALL COLLAR BUSHING
O/S

MACHIN COLLAR BUSHING
O/S

INSTALL SPINDLE LUG
BUSHING

INSTALL SPINDLE BUSHING
O/S #25

INSTALL SPINDLE LUG
BUSHING #16

MACHINE SPINDLE LUG
BUSHING O/S #16

INSTALL SPINDLE LUG
BUSHING O/S #16

MACHINE TORQUE ARM
LUG BUSHING #19

INSTALL TORQUE ARM
LUG BUSHING #19

MACHINE TORQUE ARM
LUG BUSHING #19

INSTALL TORQUE ARM
LUG BUSHING #19

[illegible] BRAZE [illegible] FAN

FIRST GRIND LARGE O.D.

FIRST GRIND SMALL I.D.

FINISH GRIND O.D.

FINISH GRIND O.D.

REMOVE BUSHING

INSTALL BUSHING
IN LUG HOLES

COLLAR TRUNNION

O/S BUNGEE ATTACH
BOSS CHECK

O/S FLANGE BUSHING
BOSS CHECK

MODIFY COLLAR

FIRST GRIND COLLAR
I. D.

FINISH GRIND COLLAR
I. D.

MACHINE BUNGEE ATTACH
BUSHING

INSTALL BUNGEE ATTACH
BUSHING & REAM

MACHINE FLANGED
BUSHING

INSTALL FLANGED BUSHING
& REAM

CONFIGURATIONS

REMOVE SPHERICAL BEARING & MACHINE STAKE METAL

INSTALL NEW SPHERICAL BEARING STAKE

MACHINE BUSHING

INSTALL BUSHING & MACHINE I.D.

MACHINE BUSHING

INSTALL BUSHING & MACHINE I.D.

REMOVE CYL. BUSHING
MACHINE HOLE

MACHINE O/S BUSHING

INSTALL O/S BUSHING
MACHINE I.D.

DRILL .410 DIA. THRU

REAM & MACHINE
HOLE I.D.

MACHINE LINK HOLE

MACHINE O/S LINK
BUSHING

INSTALL O/S LINK
BUSHING
& MACHINE I.D.

FIRST GRIND PISTON
LANDS O.D.

FIRST GRIND PISTON
LANDS I.D.

FIRST GRIND PISTON
GROOVE O.D.

FIRST GRIND PISTON
GROOVE I.D.

FINISH GRIND PISTON
LANDS O.D.

FINISH GRIND PISTON
LANDS I.D.

FINISH GRIND PISTON
GROOVE O.D.

FINISH GRIND PISTON
GROOVE I.D.

F-15 MLG
MISC. ALUM CAT. A-1

FINAL ACCEPTANCE
OF W.C.D.

FINAL PRODUCT
VISUAL INSPECTION

F-15 NLG
OUTER CYLINDER

BUSHING REMOVAL

REWORK O/S ORIFICE TUBE
SUPPORT BUSHING
SOCKET

REPAIR ORIFKE TUBE HOLE
O/S

REPAIR LOWER DRAG BRACE
BUSHING O/S

REPAIR TIE DOWN LUG
BUSHING O/S

REPAIR DOOR LINK LUG
O/S

REPAIR SUPPORT ARM
LOWER LUG O/S

REPAIR SUPPORT ARM
UPPER LUG O/S

UPPER JURY BRACE
LUG O/S REPAIR

REPAIR TRUNNION SOCKET

MACHINE MOUNTING HOLE
O/S

POLISH UPPER BORE

HONE UPPER BORE

POLISH LOWER BORE

HONE LOWER BORE

POLISH UPPER BORE

POLISH LOWER BORE

FINAL POLISH UPPER
BORE

FINAL POLISH LOWER
BORE

MACHINE MOUNTING
BUSHING O/S

MOUNTING BUSHING O/S
INSTALLATION

MACHINE DRAG BRACE
BUSHING

INSTALL DRAG BRACE
BUSHING

MACHINE DRAG BRACE
O/S BUSHING

INSTALL DRAG BRACE
O/S BUSHING

MACHINE UPPER JURY
BRACE BUSHING

INSTALL UPPER JURY
BRACE BUSHING

MACHINE UPPER JURY
BRACE O/S BUSHING

INSTALL UPPER JURY
BRACE O/S BUSHING

MACHINE UPPER
SUPPORT ARM BUSHING

INSTALL UPPER
SUPPORT ARM BUSHING

MACHINE SUPPORT ARM
UPPER LUG

INSTALL SUPPORT ARM
UPPER LUG
O/S BUSHING

MACHINE LOWER SUPPORT
ARM BUSHING

INSTALL LOWER SUPPORT
ARM BUSHING

MACHINE SUPPORT ARM
LOWER LUG O/S BUSHING

INSTALL SUPPORT ARM
LOWER LUG O/S BUSHING

MACHINE DOOR LINK
BUSHING

INSTALL DOOR LINK
BUSHING

MACHINE DOOR LINK
LUG O/S BUSHING

INSTALL DOOR LINK
LUG O/S BUSHING

MACHINE TRUNNION
SOCKET BUSHING

INSTALL TRUNNION
SOCKET BUSHING

MACHINE TRUNNION
SOCKET O/S BUSHING

INSTALL TRUNNION
SOCKET O/S BUSHING

MACHINE TIE DOWN
LUG BUSHING

INSTALL TIE DOWN
LUG BUSHING

MACHINE TIE DOWN
LUG O/S BUSHING

INSTALL TIE DOWN O/S BUSHING

MACHINE ORIFICE TUBE HOLE BUSHING

INSTALL ORIFICE TUBE HOLE BUSHING- LOWER

MACHINE ORIFICE TUBE BUSHING

INSTALL ORIFICE TUBE HOLE BUSHING

MACHINE ORIFICE TUBE HOLE O/S BUSHING

INSTALL ORIFICE TUBE HOLE BUSHING O/S

F-15 NLG SUPPORT ARM

O/S LOWER BOLT HOLE CHECK

MACHINE LUG FACES

O/S UPPER BOLT HOLE CHECK

MACHINE O/S BUSHING

INSTALL FLANGED BUSHING

INSTALL O/S BUSHING

MACHINE O/S BUSHING

INSTALL O/S BUSHING

MACHINE UPPER LIP

MACHINE 95° CHAMFER

MACHINE LOWER LIP

O/S UPPER BEARING I.D.

O/S LOWER BEARING I.D.

MACHINE UPPER BEARING I.D.

MACHINE LOWER BEARING I.D.

MACHINE UPPER LIP

MACHINE 45° CHAMFER ON UPPER LIP

MACHINE LOWER LIP

DRILL HOLE

RE-IDENTIFY

FIS NLG
PISTON

MACHINE RADIUS

POLISH RADIUS

POLISH OUTER AXLE

POLISH INNER AXLE

POLISH INNER AXLE

UPLOCK BUSHING
REPAIR

TOW SOCKET
BUSHING REPAIR

FIRST GRIND PISTON
O.D.

FIRST GRIND INNER
AXLE JOURNAL

FIRST GRIND OUTER
AXLE JOURNAL

FIRST HONE PISTON
I.D.

FINISH GRIND INNER AXLE JOURNAL

FINISH GRIND OUTER AXLE JOURNAL

FINISH GRIND O.D.

FINISH GRIND PISTON I.D.

MACHINE TOWING BUSHING

INSTALL TOWING BUSHING

MACHINE UPLOCK BUSHING

INSTALL UPLOCK BUSHING

MACHINE TOW SOCKET BUSHING

INSTALL TOW SOCKET BUSHING

F-15 NLG
ORIFICE TUBE

POLISH I.D.

HONE I.D.

CHECK RACEWAYS

FIRST GRIND SEAL LANDS

FIRST GRIND TUBE SEAL GROOVES

FINISH GRIND SEAL LANDS

FINISH GRIND TUBE SEAL GROOVES

CHECK RACEWAYS

FIRST GRIND 4° ANGLE

FIRST GRIND RACEWAYS

FINISH GRIND 4° ANGLE

FINISH GRIND RACEWAYS

FINISH GRIND RACEWAYS

CHECK I. D.

F-15 NLG
STEERING CRANK

1ST GRIND BOSS

FINISH GRIND BOSS

F-15 NLG
UPPER JURY LINK

O/S CYLINDER
ATTACH BOSS CHECK

O/S ACTUATOR
BUSHING BOSS CHECK

O/S SPRING BOSS CHECK

O/S DOWNLOCK BOSS
CHECK

O/S APEX BOSS CHECK

INSTALL STD. BUSHING
CYLINDER ATTACH BOSS

INSTALL O/S BUSHING
CYLINDER ATTACH BOSS

INSTALL STD. BUSHING
ACTUATOR BOSS

INSTALL O/S BUSHING
ACTUATOR BOSS

INSTALL STD. BUSHING
APEX BOSS

INSTALL O/S BUSHING
APEX BOSS

INSTALL BUSHING IN
O/S DOWNLOCK

INSTALL BUSHING IN
O/S SPRING BOSS

F-15 NLG
UPPER BRACE ASSY

REMOVE BUSHINGS

NICK & BURR

O/S BOSS FOR
BUSHING #47

O/S BOSS FOR
BUSHING #47

O/S BOSS FOR
BUSHING #46

INSTALL BUSHING
#46

INSTALL BUSHING
#48

F-15 NLG
LOWER BRACE ASSY

REMOVE BUSHINGS

NICK & BURR

O/S APEX LUG BOSS
CHECK

MACHINE APEX LUG
BUSHING

INSTALL BUSHING

MACHINE O/S APEX LUG
BUSHING

INSTALL O/S BUSHING

INSTALL BEARING

F-15 NLG
JURY LINK LOWER

NICK & BURR

DOWNLOCK LUG HOLE
O/S REPAIR

SPRING LUG HOLE
O/S REPAIR

APEX LUG HOLE
REPAIR

DRAG BRACE LUG
HOLE REPAIR

INSTALL DOWNLOCK
BUSHING

MACHINE SPRING LUG
BUSHING

INSTALL SPRING LUG
BUSHING

MACHINE APEX LUG
BUSHING

INSTALL APEX LUG BUSHING

MACHINE DRAG BRACE LUG BUSHING

INSTALL DRAG BRACE LUG BUSHING

HONE DRAG BRACE LUG BUSHING

F-15 NLG
UPPER STEERING BOLT

RECENTER

FIRST GRIND BOLT O.D.

FINISH GRIND BOLT O.D.

C-141 N.L.G.

METERING PIN

CHECK CONCENTRICITY

C-141 N.L.G.

PIN-LOCK CRANK

MODIFY PIN

TREAT WITH RUST
PREVENTIVE

C-141 N.L.G.

CRANK RETAINER

MODIFY RETAINER

MODIFY RETAINER

REIDENTIFY RETAINER

C-141 N.L.G. W052 0300

FILLER TUBE

*90

MACHINE FILLER TUBE

BRUSH CAD PLATE

C-141 M.L.G.
ACTUATOR CRANK

MODIFY CRANK

FIRST GRIND FACES

FIRST GRIND JOURNAL

FINISH GRIND FACE

FINISH GRIND JOURNAL

C-141 N.L.G.
DOWNLOCK CRANK

MACHINE HOLE

MACHINE CROSS BOLT HOLE

FIRST GRIND SMALL JOURNAL

FIRST GRIND LARGE JOURNAL

FINISH GRIND LARGE JOURNAL

FINISH GRIND SMALL JOURNAL

MACHINE CROSS BOLT HOLE BUSHINGS

INSTALL CROSS BOLT HOLE BUSHINGS

C-141 N.L.G.
DOWNLOCK BELL CRANK

REPAIR INNER HOLE O/S

REPAIR OUTSIDE HOLE O/S

RECENTER CRANK
SPOTFACE

RECENTER

FIRST GRIND LARGE JOURNAL

FIRST GRIND SMALL JOURNAL

FINISH GRIND LARGE JOURNAL

FINISH GRIND SMALL JOURNAL

MACHINE INNER HOLE
BUSHING

INSTALL INNER HOLE
BUSHING

HONE INNER HOLE
BUSHING

MACHINE OUTSIDE HOLE
BUSHING

INSTALL OUTSIDE HOLE
BUSHING

HONE OUTSIDE HOLE
BUSHING

C-141 N.L.G.
DRAG BRACE TRUNNION

REMOVE TRUNNION BUSHING

EXTERNAL DEFECT REMOVAL

REPAIR TRUNNION (SMALL) END SOCKET

REPAIR TRUNNION (LARGE) END SOCKET

CROSS BOLT HOE REPAIR

CROSS BOLT HOLE REPAIR LARGE TRUNNION END

ACTUATOR LUG HOLE REPAIR

CENTER ATTACH HOLE REPAIR O/S

MACHINE TRUNNION SOCKET BUSHING

INSTALL TRUNNION SOCKET (SMALL END) BUSHING

FINISH I.D. TRUNNION SOCKET BUSHING

MACHINE CROSS BOLT HOLE BUSHING

INSTALL CROSS BOLT HOLE (SMALL END) BUSHING

FINISH I.D. OF CROSS BOLT HOLE

MACHINE TRUNNION SOCKET BUSHING

INSTALL TRUNNION SOCKET (LARGE END) BUSHING

MACHINE CROSS BOLT HOLE BUSHING

INSTALL CROSS BOLT HOLE (LARGE END) BUSHING

FINISH ID OF CROSS BOLT HOLE BUSHING

MACHINE ACTUATOR LUG
HOLE BUSHING

INSTALL ACTUATOR LUG
HOLE BUSHING

MACHINE CENTER ATTACH
HOLE BUSHING

INSTALL CENTER ATTACH
HOLE BUSHING

C-141 N.L.G.
AFT DRAG BRACE

REMOVE INSERT

NICK & BURR

REPAIR TRUNNION ATTACH
LUG O/S

MACHINE UPPER & LOWER
TRUNNION ATTACH LUG

REPAIR FWD. ATTACH LUG
O/S

REPAIR DOWNLOCK ATTACH
LUG O/S

MACHINE DOWNLOCK LINK
LUG FACES

ROLL BURNISH LUG HOLES

CLEAN ALL LUBE & OIL
PASSAGES

MACHINE TRUNNION ATTACH
LUG BUSHING

INSTALL TRUNNION ATTACH
LUG BUSHING

MACHINE FWD ATTACH
LUG BUSHING

INSTALL FWD. ATTACH
LUG BUSHING

MACHINE DOWNLOCK ATTACH
LUG BUSHING

INSTALL DOWNLOCK ATTACH
LUG BUSHING

INSTALL STEEL INSERT

C-141 N.L.G.

FWD. DRAG BRACE

REMOVE SLEEVE

NICK & BURR

REPAIR PLUNGER BORE

REPAIR AFT LUG HOLE O/S

ROLL BURNISH HOLES

REPAIR CYLINDER ATTACH LUG HOLE O/S

REPAIR LOCK ACTUATOR LUG HOLE O/S

ROLL BURNISH LOCK ACTUATOR LUG

ROLL BURNISH ALL BUSHING LUG HOLES

REPAIR LOCK PIN HOLES O/S

HONE PLUNGER BORE

MACHINE PLUNGER BORE SLEEVE

INSTALL PLUNGER BORE SLEEVE

MACHINE AFT LUG BUSHING

INSTALL AFT LUG BUSHING

MACHINE CYLINDER ATTACH LUG BUSHING

INSTALL CYLINDER ATTACH LUG BUSHING

MACHINE LOCK ACTUATOR LUG BUSHING

INSTALL LOCK ACTUATOR LUG BUSHING

MACHINE LOCK PIN HOLE BUSHINGS

INSTALL LOCK PIN HOLES
STD. BUSHINGS

MACHINE LOCK PIN HOLE
BUSHINGS O/S

INSTALL LOCK PIN HOLE
O/S BUSHINGS

STEERING PLATE

REMOVE RAISED TURN BOSS

REPAIR CYLINDER LUG HOLES O/S

MACHINE KEYWAY SLOTS

MEASURE I.D.

GRIND I.D.

MACHINE CYLINDER LUG HOLE BUSHINGS

INSTALL CYLINDER LUG HOLE BUSHINGS

C-141 N.L.G.

STEERING COLLAR

REMOVE EXTERNAL DEFECTS

REPAIR TORQUE ARM HOLE

FIRST GRIND COLLAR I.D.

FIRST GRIND COLLAR FACES

FINISH GRIND COLLAR I.D.

FINISH GRIND COLLAR FACE

FINISH GRIND COLLAR FACE

MACHINE TORQUE ARM LUG BUSHING

INSTALL TORQUE ARM LUG BUSHING

C-141 N.L.G.
LOWER BEARING

REMOVE FABROID IF
I.D. IS DAMAGED

MACHINE FABROID I.D.

MACHINE BEARING I.D.

FINISH MACHINE I.D.

C-141 N.L.G.

TRUNNION PIN (THREADED)

FIRST GRIND LARGE DIA.

FIRST GRIND SMALL DIA.

GRIND CROSS BOLT HOLE.

FINISH GRIND LARGE O.D.

FINISH GRIND SMALL O.D.

C-141 N.L.G.
UPPER TORQUE ARM
& ASSY'

NICK & BURR

REAM BASE LUG HOLE

MACHINE FACE (BASE
& APEX)

REAM APEX LUG HOLE

CHASE THREADS IN
ZURK FITTING

REIDENTIFY

ROLL BURNISH APEX
& BASE LUG HOLES

CLEAN ALL LUBE &
OIL PASSAGES

MACHINE APEX LUG
HOLE BUSHING

INSTALL APEX LUG HOLE BUSHING

MACHINE BASE LUG HOLE BUSHING

INSTALL BASE LUG HOLE BUSHING

C-141 N.L.G.
LOWER TORQUE ARM

NICK & BURR

REPAIR BASE LUG HOLE

REPAIR BASE LUG HOLE
O/S

COUNTERSINK

REPAIR APEX LUG HOLE

REPAIR APEX LUG HOLE
O/S

COUNTERSINK

CHASE THREADS IN ZURK
FITTING

REPLACE GREASE FITTING

CLEAN ALL LUBE & OIL
PASSAGES

MACHINE BASE LUG HOLE BUSHING

INSTALL BASE LUG HOLE BUSHING

MACHINE APEX LUG BUSHING

INSTALL APEX LUG HOLE BUSHING

TRUNNION PIN

FIRST GRIND LARGE O.D.

FIRST GRIND SMALL O.D.

GRIND PIN HOLE

FINISH GRIND LARGE O.D.

FINISH GRIND SMALL O.D.

C-141 N.L.G.
OLEO TRUNNION

REMOVE BUSHINGS

POLISH I.D.

POLISH I.D. OF TRUNNION END

NICK & BURR

REWORK TRUNNION CENTER HOLE

REPAIR END TRUNNION SOCKET (LEFT SIDE) O/S

REPAIR END TRUNNION SOCKET (LEFT SIDE) O/S

REPAIR END CROSS BOLT HOLE (SMALL) O/S

ROLL BURNISH END CROSS BOLT HOLE (SMALL)

REPAIR END CROSS BOLT HOLE (LARGE) O/S

ROLL BURNISH END CROSS BOLT HOLE (LARGE)

(FWD. END REPAIR O/S) MOUNTING FLANGE BOLT HOLES

(FWD. END) ROLL BURNISH MOUNTING FLANGE BOLT HOLES

(AFT END REPAIR O/S) MOUNTING FLANGE BOLT HOLES

(AFT END) ROLL BURNISH MOUNTING FLANGE BOLT HOLES

(RIGHT SIDE REPAIR O/S) AFT DOOR LEVER LUG HOLE

(RIGHT SIDE) ROLL BURNISH AFT DOOR LEVER LUG

KC-135 M.L.G.
OLEO TRUNNION

DEFECT REMOVAL

RECENTER OLEO TRUNNION

MACHINE COLLAR

SECOND FIX- COLLAR
CROSS BOLT HOLE

TRUNNION LUG HOLE
REPAIR

REPAIR TERMINAL ATTACH
LUG

REPAIR DRAG ATTACH LUG

REPAIR ACTUATOR ATTACH LUG

LUG K- FIRST REPAIR

LUG K- SECOND REPAIR

LUG L - FIRST REPAIR

FIRST GRIND TRUNNION LUG

FIRST GRIND DRAG ATTACH LUG

FIRST GRIND COLLAR JOURNAL

FIRST GRIND TRUNNION JOURNAL

FINISH GRIND COLLAR JOURNAL

FINISH GRIND TRUNNION JOURNAL

FINISH GRIND TRUNNION LUG FACES

FINISH GRIND DRAG ATTACH LUG(K)

MACHINE TRUNNION LUG HOLE BUSHING

REAM TRUNNION LUG HOLE BUSHING

MACHINE COLLAR CROSS BOLT HOLE BUSHING

INSTALL COLLAR CROSS BOLT HOLE BUSHING

MACHINE TERMINAL ATTACH LUG BUSHING

INSTALL TERMINAL ATTACH LUG (J) BUSHING

MACHINE ATTACH LUG (I) BUSHING

INSTALL ACTUATOR ATTACH LUG (I) BUSHING

MACHINE DRAG ATTACH LUG (K) BUSHING

INSTALL DRAG ATTACH LUG (K) BUSHING

INSTALL COLLAR

MACHINE COLLAR

KC-135 M.L.G.
SIDE STRUT UPPER

REMOVE CRACK INDICATIONS

NICK & BURR

REPAIR UNIVERSAL ATTACH LUG O/S

FIRST GRIND ROLLER BOSS

FINISH GRIND ROLLER BOSS

MACHINE UNIVERSAL ATTACH LUG BUSHING

INSTALL UNIVERSAL ATTACH LUG BUSHING

MACHINE LOWER SIDE STRUT ATTACH LUG BUSHING

INSTALL LOWER SIDE STRUT ATTACH LUG BUSHING

KC-135 N.L.G.
DRAG STRUT

NICK & BURR

REPAIR UPPER ATTACH LUG
O/S

REPAIR LOWER ATTACH LUG
O/S

MACHINE UPPER ATTACH LUG
BUSHING

INSTALL UPPER ATTACH LUG
BUSHING

MACHINE LOWER ATTACH LUG
BUSHING

INSTALL LOWER ATTACH LUG
BUSHING

KC-135 M.L.G.

COLLAR

REMOVE PITS & CORROSION

MACHINE COLLAR

MACHINE COLLAR LUG I.D.

MACHINE COLLAR BUSHING

INSTALL COLLAR BUSHING

KC-135 M.L.G.

BOLT TRUNNION COLLAR

OP #10

OLEO/COLLAR INSTALLATION

KC-135 M.2.G.

TRUCK PIVOT BOLT

REWORK ZURK FITTING

CHASE BOLT THREADS

BORE I.D.

RECENTER

FIRST GRIND JOURNAL
THREADED END

FIRST GRIND JOURNAL
HEAD END

FINISH GRIND JOURNAL
THREAD END

FINISH GRIND JOURNAL
HEAD END

KC-135 M.L.G.
TRUNNION BOLT

REMOVE BROKEN ZURK

RECENTER

FIRST GRIND JOURNAL
THREADED END

FIRST GRIND JOURNAL
HEAD END

FINISH GRIND JOURNAL
THREADED END

FINISH GRIND JOURNAL
HEAD END

KC-135 M.L.G.
UNIVERSAL LOWER
SIDE STRUT

REAM LOWER SIDE STRUT
ATTACH LUGS

MACHINE LOWER SIDE STRUT
ATTACH LUG BUSHINGS

MACHINE OUTER CYLINDER
ATTACH LUG BUSHINGS

INSTALL & REAM OUTER
ATTACH LUG BUSHINGS

KC-135 M.L.G.
BRAKE EQUALIZER ROD

REAM TRUCK ATTACH LUG

REAM OLEO ATTACH LUG

MACHINE ATTACH LUG
BUSHING

INSTALL TRUCK ATTACH LUG
BUSHING

MACHINE OLEO ATTACH LUG
BUSHING

INSTALL OLEO ATTACH LUG
BUSHING

OUTER SLIDER

REMOVE BUSHINGS

GRIND TRUNNION LUGS

GRIND DRAG STRUT LUGS

GRIND SIDE BRACE LUG

GRIND TORQUE ARM LUG

REPAIR TRUNNION LUGS

MACHINE DRAG STRUT LUGS

MACHINE SIDE BRACE LUGS

COUNTERBORE TORQUE ARM LUGS

MACHINE TORQUE ARM LUGS

UPLOCK SOCKET - FIRST REPAIR

UPLOCK SOCKET - SECOND REPAIR

MACHINE LOOK ATTACH
LUG HOLES

MACHINE ORIFICE TUBE
HOLE

GRIND UPPER BORE
(CHROME PLATE)

GRIND LOWER BORE
(CHROME PLATE)

FINISH GRIND TRUNNION
LUG FACE

FINISH GRIND DRAG STRUT
LUG FACE

FINISH GRIND SIDE BRACE
LUG FACE

FINISH GRIND TORQUE ARM
LUG FACE

FINISH GRIND UPPER BORE

FINISH GRIND LOWER BORE

MACHINE TRUNNION LUGS

MACHINE & INSTALL TRUNNION LUG BUSHING

MACHINE DOOR ATTACH LUG BUSHING

INSTALL DOOR ATTACH LUG BUSHING

MACHINE DRAG STRUT LUG BUSHING

INSTALL DRAG STRUT LUG BUSHINGS

MACHINE SIDE BRACE LUG BUSHINGS

INSTALL SIDE BRACE LUG BUSHINGS

MACHINE TORQUE ARM LUG BUSHING

INSTALL TORQUE ARM LUG BUSHINGS

MACHINE UPLOCK SOCKET 2ND REPAIR

UPLOCK SOCKET 2ND REPAIR

MACHINE ORIFICE TUBE HOLE BUSHING

KC-135 M.L.G.
INNER CYLINDER

MACHINE PIVOT LUGS

MACHINE TORQUE ARM LUGS

MACHINE BRAKE EQUALIZER ROD ATTACH LUG

MACHINE SNUBBER ATTACH LUG

GRIND TORQUE ARM LUG (FACE)

GRIND CYLINDER O.D.

GRIND CYLINDER F.D.

FINISH GRIND TORQUE ARM LUG FACE

FINISH GRIND CYLINDER O.D.

FINISH GRIND CYLINDER ID

MACHINE TORQUE ARM BUSHINGS

INSTALL TORQUE ARM LUG BUSHINGS

MACHINE PIVOT LUG BUSHINGS

INSTALL PIVOT LUG BUSHINGS

MACHINE BRAKE EQUALIZER ROD ATTACH LUG BUSHING

INSTALL BRAKE EQUALIZER ROD ATTACH LUG BUSHING

MACHINE SNUBBER ATTACH LUG BUSHING

INSTALL SNUBBER ATTACH LUG BUSHING

KC-135 N.C.
LOWER BEARING

MODIFY

REIDENTIFY

KC-135 M.R.G.
UNIVERSAL UPPER

SIDE STRUT ATTACH LUGS
1ST REPAIR

SIDE STRUT ATTACH LUGS
2ND REPAIR

SIDE STRUT ATTACH LUGS
LUBE HOLE

SIDE STRUT ATTACH LUG
FACE REPAIR

REAM ACTUATOR ATTACH
LUG

MACHINE SIDE STRUT ATTACH
LUG BUSHING

SIDE STRUT ATTACH LUG
1ST REPAIR
INSTALL & REAM BUSHING

MACHINE SIDE ATTACH LUG
BUSHING

2ND REPAIR
INSTALL & REAM BUSHING

DRILL LUBE HOLE PASSAGE

MACHINE ACTUATOR ATTACH
LUG BUSHING

INSTALL & REAM ACTUATOR
ATTACH LUG BUSHING

FINISH GRIND TRUNNION JOURNAL

FINISH GRIND COLLAR JOURNAL

FINISH GRIND TRUNNION JOURNAL (CHROME)

FINISH GRIND COLLAR JOURNAL (CHROME)

FINISH GRIND UPPER BORE

FINISH GRIND LOWER BORE

RELOCATE & MACHINE NEW KEYWAYS

MACHINE DRAG ATTACH LUG BUSHING

INSTALL DRAG ATTACH LUG BUSHING

MACHINE ACTUATOR LUG BUSHING

INSTALL ACTUATOR LUG BUSHING

MACHINE TORQUE LUG BUSHINGS

INSTALL TORQUE LUG BUSHINGS

FINISH TORQUE LUG I.D.

MACHINE OR MFG. TUBE

INSTALL TUBE O/S

MACHINE STEERING LUG BUSHING

INSTALL STEERING LUG BUSHING

FINISH I. D.

MACHINE LINK PIN

INSTALL LINK PIN

MANPRB

I 75150 E.O. ALC. 00 MAN PRB. EH

Entered BZ

RCC EARNED HOURS FOR MNPRB...OCT 88 THRU JAN 89

	PROD NO.		NOUN	RCC DPEH	RCC DPEH %	CUMM % EARNED HR
1	16837A	1620001099287	STRUTF4C	1345.18	0.0722	0.0722
2	16836A	1620001099286	STRUTF4C	1295.06	0.0695	0.1417
3	17565A	1620010204973	STRUT	1025.88	0.0551	0.1968
4	M9662K	3120P855926-03		840.00	0.0451	0.2419
5	17143A	1620001398474	B52M-AFT	770.88	0.0414	0.2833
6	17142A	1620001398473	B52M-FWD	598.81	0.0321	0.3154
7	16915A	1620009485066	TRUCK AY	562.21	0.0302	0.3456
8	17575A	1620010054191	C5MLGRHA	531.44	0.0285	0.3741
9	25737A	1620011951141	MLGSTRUT	471.19	0.0253	0.3994
10	16019A	1620010248844	STRUT F4	441.23	0.0237	0.4231
11	17402A	1620010627002	F15-NLG	428.05	0.0230	0.4461
12	19588A	1630010585912	WHL F15M	417.69	0.0224	0.4685
13	15068A	1630007776698	B52 BRK	402.22	0.0216	0.4901
14	15988A	1620009825059	POSITNER	361:25	0.0194	0.5095
15	17576A	1620010054198	C5MLGLHA	355.02	0.0191	0.5286
16	17577A	1620010054193	C5M6LLHF	343.06	0.0184	0.5470
17	74524A	1620002458005	BOGIE B	340.41	0.0183	0.5653
18	17578A	1620010054194	C5MLGRHF	316.87	0.0170	0.5823
19	17478A	1620002990278	T38-NLG	282.96	0.0152	0.5975
20	74521A	1620001877445	NLG	271.50	0.0146	0.6121
21	19937A	1620010816339	STRUT AY	270.46	0.0145	0.6266
22	19844A	1620008961203	STRUT AY	243.37	0.0131	0.6397
23	17239A	1620006793440	TRUNNION	233.76	0.0125	0.6522
24	17354A	1620005459439	STRUT NL	210.06	0.0113	0.6635
25	16283A	1620007856073	SHAFT	209.19	0.0112	0.6747
26	74527A	1620004427877	BRACE DR	200.58	0.0108	0.6855
27	17327A	1620009118301	TRUNNION	193.38	0.0104	0.6959
28	26111A	1620012007131	16PISTON	192.77	0.0103	0.7062
29	17595A	1620008372427	A7-MLG	187.32	0.0101	0.7163
30	17407A	1620009921498	BOLT ASY	171.57	0.0092	0.7255
31	72877A	1620004325651	NLG	168.57	0.0090	0.7345
32	15583A	1630008329088	FB111BRK	156.86	0.0084	0.7429
33	17527A	1620010063237	A7-MLG	153.94	0.0083	0.7512 — 14491
34	69354A	1620010597842	KC-135 N	141.50	0.0076	0.7588
35	72573A	1620000271193	ACTUATOR	138.00	0.0074	0.7662
36	15866A	1620011037747	STRUT	129.77	0.0070	0.7732
37	17451A	1620006518221	TRUNNION	124.76	0.0067	0.7799
38	74692A	1620001791425	BOGIE BM	120.48	0.0065	0.7864
39	17313A	1620006518222	TRUNNION	112.74	0.0061	0.7925
40	T6912A	1620006133512		112.30	0.0060	0.7985
41	42626A	1620007158562	B52-RH.T	107.37	0.0058	0.8043
42	42625A	1620007158561	STRUT	104.18	0.0056	0.8099
43	14781A	1560008561386BF	HKPNT F4	97.38	0.0052	0.8151
44	17357A	1620007419178	BRACE	95.08	0.0051	0.8202
45	M4250K			92.00	0.0049	0.8251
46	72879A	1620004463776	ML6 OUTR	84.39	0.0045	0.8296
47	69752A	1560010410545WF	HOR STAB	80.96	0.0043	0.8339
48	26338A	1620011671000	M-LH-HW	77.15	0.0041	0.8380
49	17474A	1620002640744	T38M-L/H	76.94	0.0041	0.8421
50	17574A	1620003977413	CRK ASSY	75.06	0.0040	0.8461
51	17567A	1620010381912	KC-135 N	72.88	0.0039	0.8500

RCC EARNED HOURS FOR MNPRB...OCT 88 THRU JAN 89

	PROD NO.		NOUN	RCC OPEN	RCC OPEN %	CUMM % EARNED HR
52	17631A	1620010159859	DR-BRACE	71.50	0.0038	0.8538
53	16315A	1620010710535	F16MAXLE	68.25	0.0037	0.8575
54	26337A	1620011670999	M-RH-HW	66.54	0.0036	0.8611
55	17324A	1620003002261	SHOCK ST	65.60	0.0035	0.8646
56	19938A	1620010856009	A10-MLG	63.16	0.0034	0.8680
57	74652A	1620001486466	BALLSCRW	60.84	0.0033	0.8713
58	17494A	1620003084145	FISN-OUT	60.75	0.0033	0.8746
59	17348A	1620007117771	S STRUT	60.48	0.0032	0.8778
60	15677A	1620011741655	STRUT AY	59.62	0.0032	0.8810
61	17353A	1620005459395	STRUT NL	52.35	0.0028	0.8838
62	72858A	1620003238292	CYLINDER	51.92	0.0028	0.8866
63	19839A	1620007391746	DAMPER	51.69	0.0028	0.8894
64	M8168K			50.00	0.0027	0.8921
65	T6254A	1620008624060		49.30	0.0026	0.8947
66	72868A	1620002223887	CYLINDER	48.96	0.0026	0.8973
67	72864A	1620002307141	PITCH PO	48.34	0.0026	0.8999
68	98929A	1650002193602LE	BUNGEE	48.00	0.0026	0.9025
69	25918A	1620010141984	RHSTRUT	46.28	0.0025	0.9050
70	74552A	1620009270298	PIVOT P	45.76	0.0025	0.9075
71	17418A	1620010135910	SHOCK ST	45.53	0.0024	0.9099
72	74561A	1620001357877	A7-NLG	45.40	0.0024	0.9123
73	72863A	1620001790438	XWIND CL	44.52	0.0024	0.9147
74	16297A	1620010374639	CH3-NLG	42.69	0.0023	0.9170
75	19841A	1620001239478	DAMPER	42.39	0.0023	0.9193
76	T1302A	9999POV10A		40.00	0.0021	0.9214
77	69803A	1620011680338	CH3-NLG	38.49	0.0021	0.9235
78	26258A	1560011411064WF	HORZSTAB	38.40	0.0021	0.9256
79	15295A	1630000827955	F111 BRK	38.32	0.0021	0.9277
80	19838A	1620001177326	DAMPER	38.03	0.0020	0.9297
81	17664A	1620010700632	STRUT	37.75	0.0020	0.9317
82	74516A	1620001791083	BRACE DR	36.40	0.0020	0.9337
83	17663A	1620010668946	STRUT	35.28	0.0019	0.9356
84	15054A	1630000585242	KC135BRK	35.26	0.0019	0.9375
85	28041A	1630002262376	BR PLATE	34.22	0.0018	0.9393
86	69828A	1620005676803	ST VALVE	32.81	0.0018	0.9411
87	17479A	1620010185924	ACTUATOR	32.19	0.0017	0.9428
88	74885A	1005000566753	GUN M61A	31.82	0.0017	0.9445
89	17347A	1620007099371	S STRUT	31.68	0.0017	0.9462
90	16296A	1620004821247	CH3-NLG	31.58	0.0017	0.9479
91	T4798A	1620004853752		30.03	0.0016	0.9495
92	M5244K	1560ND028885GBF		30.00	0.0016	0.9511
93	72571A	1620009101898	ACTUATOR	29.52	0.0016	0.9527
94	17476A	1620002795839	T38M-R/H	27.56	0.0015	0.9542
95	93236A	1620001058930	ACTUATOR	26.64	0.0014	0.9556
96	69658A	1620010389101	STRUT RH	25.50	0.0014	0.9570
97	68878A	1620011009806	STRUT NG	25.14	0.0013	0.9583
98	M9407K			25.00	0.0013	0.9596
99	69613A	1620010692334	MANIFOLD	24.76	0.0013	0.9609
100	15642A	1630010054189	C130 BP	24.15	0.0013	0.9622
101	17757A	4730007586711LE	BOLT	23.80	0.0013	0.9635
102	T6850A	1620001157419		23.25	0.0012	0.9647

RCC EARNED HOURS FOR MNPRB...OCT 88 THRU JAN 89

	PROD NO.		NOUN	RCC DPEH	RCC DPEH %	CUMM % EARNED HR
103	17687A	1620010805925	INNER CL	23.19	0.0012	0.9659
104	T5305A	1620010888102		22.40	0.0012	0.9671
105	T6295I	1620002421514		22.00	0.0012	0.9683
106	69626A	1620005051184	STRUT AY	20.15	0.0011	0.9694
107	17396A	1620002671046	DAMPER	18.50	0.0010	0.9704
108	25917A	1620010141983	LH8TRUT	18.08	0.0010	0.9714
109	17662A	1620010668945	STRUT-MG	18.04	0.0010	0.9724
110	15161A	1630008810815	C141 BRK	18.00	0.0010	0.9734
111	T4661Q			18.00	0.0010	0.9744
112	16288A	1620009248927	YOKE	16.92	0.0009	0.9753
113	15053A	1630000528403	BRAKEASS	16.80	0.0009	0.9762
114	M7568K	1620000071783		16.50	0.0009	0.9771
115	74975A	1005003005135	BOOSTER	16.32	0.0009	0.9780
116	69833A	1620011031950	STRUT	16.02	0.0009	0.9789
117	26578A	1620ND053797G	DRG BRAC	14.56	0.0008	0.9797
118	15521A	1630008562073	FB111 PP	14.35	0.0008	0.9805
119	69887A	1620007057261	B52-RH-T	14.16	0.0008	0.9813
120	M6275K	3040003556251BF		14.00	0.0008	0.9821
121	72845A	1620001157413	CYLINDER	13.50	0.0007	0.9828
122	M7617K	3120P879409F		13.00	0.0007	0.9835
123	00141B	000V0010A	AIRCRAFT	12.60	0.0007	0.9842
124	72832A	1620000018416	STR ACT	11.64	0.0006	0.9848
125	15519A	1630001132133	FB111STR	11.55	0.0006	0.9854
126	17314A	1620003069942	S STRUT	11.52	0.0006	0.9860
127	17315A	1620003069943	S STRUT	11.52	0.0006	0.9866
128	74518A	1620001791087	BRACE DR	10.92	0.0006	0.9872
129	69573A	1620006238913	TORQ ST	10.45	0.0006	0.9878
130	15752A	1630010627046	A10 BRK	10.00	0.0005	0.9883
131	T9960A	1620009192742		9.52	0.0005	0.9888
132	73041A	1005003005136	BOOSTER	9.36	0.0005	0.9893
133	74821A	1005003472304	BOOSTER	9.00	0.0005	0.9898
134	69761A	1620004427875	XWIND CL	8.01	0.0004	0.9902
135	M5224K	1560ND02S868GBF		7.80	0.0004	0.9906
136	26642A	1620012026349	STRUT AS	7.75	0.0004	0.9910
137	94332A	1620000222923	ACTUATOR	7.55	0.0004	0.9914
138	T7600I	1620010054191		7.00	0.0004	0.9918
139	69775A	5315005006801LE	ROOT PIN	6.90	0.0004	0.9922
140	74525A	5315002952512LE	ROOT PIN	6.90	0.0004	0.9926
141	T9564A	1620008840372		6.76	0.0004	0.9930
142	97709A	1620006986015	CYC	6.45	0.0003	0.9933
143	74551A	1620008670810	SHAFT AS	6.22	0.0003	0.9936
144	63711A	1620000G54773	B52-DRAG	6.08	0.0003	0.9939
145	16743A	1620002041208	BELLCRNK	6.06	0.0003	0.9942
146	15229A	1630003154832	T33 BRK	6.00	0.0003	0.9945
147	68735A	1630010830445	F15ABBRK	6.00	0.0003	0.9948
148	T1434A	9999P000V0010A		6.00	0.0003	0.9951
149	97659A	1620006986014	CYLINDER	5.70	0.0003	0.9954
150	16334A	1620010710537	F16MAXLE	5.25	0.0003	0.9957
151	69385A	1620004107094	ROD CYL	4.91	0.0003	0.9960
152	63819A	1005010595785	M61A1	4.81	0.0003	0.9963
153	94829A	1620004023387	ACTUATOR	4.60	0.0002	0.9965

RCC EARNED HOURS FOR NNPRB...OCT 88 THRU JAN 89

	PROD NO.	NOUN	RCC DPEH	RCC DPEH %	CUMM % EARNED HR
54	M6740K 3120011093797		4.50	0.0002	0.9967
155	T4404N 1430ND026070GAH		4.50	0.0002	0.9969
156	19266A 1630010098475	E3A BRK	4.00	0.0002	0.9971
157	62902A 1620000313537	CYLINDER	3.88	0.0002	0.9973
158	26579A 1620ND0S2083G	DRG BRAC	3.64	0.0002	0.9975
159	25369A 1620010569656	F-16 CYL	3.45	0.0002	0.9977
160	69625A 1620004100874	CYLINDER	3.44	0.0002	0.9979
161	35571A 1620003353404	STOP ASY	3.42	0.0002	0.9981
162	18365A 1560009834324BF	WING SEC	3.00	0.0002	0.9983
163	T1435A 9999P000V0010A		3.00	0.0002	0.9985
164	T6779I 1620000563339		3.00	0.0002	0.9987
165	T7163A 1620001753939		3.00	0.0002	0.9989
166	69098A 1620003654001	BALLSCRU	2.88	0.0002	0.9991
167	68891A 1630008562195	FB111 BP	2.75	0.0001	0.9992
168	15616A 1630005678162	C141 BP	2.28	0.0001	0.9993
169	15438A 1630005802857	T-29 BRK	2.10	0.0001	0.9994
170	26110A 1620012005320	F16P18T0	1.97	0.0001	0.9995
171	T7043A 1620005343898		1.90	0.0001	0.9996
172	T9743I 1620010403581		1.87	0.0001	0.9997
173	69548A 1620007659187	CENT.CYL	1.75	0.0001	0.9998
174	74644A 1620001157393	TUBE ASS	1.66	0.0001	0.9999
175	34507A 1630005404253	F100 BRK	1.25	0.0001	1.0000
176	15162A 1630002692622	KC135BRK	1.05	0.0001	1.0001
177	T5652A 1630007947437		1.00	0.0001	1.0002
178	96274A 1650001685965BF	TURBINE	0.92	0.0000	1.0002
179	74535A 1620008699889	BRACE DR	0.88	0.0000	1.0002
	MS404K 3120ND023213GBF		0.70	0.0000	1.0002
	99959A 1620009195750	DAMPER	0.66	0.0000	1.0002
	16214A 1620011252217	POWER UT	0.60	0.0000	1.0002
183	69566A 1620009535572	VALVE	0.58	0.0000	1.0002
184	T45210 1620001877445		0.50	0.0000	1.0002
185	15387A 1630005557523	T38 BRK	0.38	0.0000	1.0002
186	16776A 1630008473731	A37 BRK	0.25	0.0000	1.0002
187	19681A 1620009383574	S-P UNIT	0.06	0.0000	1.0002
			18,633.28		

OGDEN 80/20 SORTED BY MANPRB

NSN	PCN	S	OPERS	OBSER	PGPS	PGPP	PGWS	PGWP	PNAS	PNAP	PRAS	PRAP	PRBS	PRBP	PRCS	PRCP	PWWS	PWWP	LTOT	CUM
1620001099287	16837A		30	87	17	0.0129	15	0.0124	6	0.0176	8	0.0306	1	0.0722	2	0.0356	29	0.0100	5200.55	0.025858
1620001099286	16836A		.	11	15	0.0131	13	0.0137	9	0.0161	10	0.0279	2	0.0695	4	0.0296	24	0.0107	4870.74	0.049689
1620010204973	17565A		10	.	23	0.0099	10	0.0161	24	0.0083	6	0.0336	3	0.0551	8	0.0197	27	0.0102	4318.94	0.070997
3120P855926-03	M9662K		.	.	.	.	.	.	.	.	.	.	4	0.0451	51	0.0049	.	.	990.91	0.075886
1620001398474	17143A		15	38	10	0.0197	8	0.0204	21	0.0085	5	0.0341	5	0.0414	1	0.0400	54	0.0043	5134.89	0.101220
1620001398473	17142A		15	28	12	0.0161	9	0.0162	23	0.0084	9	0.0290	6	0.0321	3	0.0326	55	0.0043	4241.38	0.122145
1620009485066	16915A		.	.	116	0.0019	20	0.0106	15	0.0106	45	0.0059	7	0.0302	9	0.0190	12	0.0190	2315.59	0.133570
1620010054191	17575A		.	37	5	0.0393	48	0.0058	26	0.0081	14	0.0197	8	0.0285	17	0.0132	87	0.0017	3744.30	0.152043
1620011951141	25737A		.	.	33	0.0069	126	0.0017	80	0.0027	71	0.0028	9	0.0253	21	0.0119	.	.	1342.79	0.158668
1620010248844	16019A		.	20	51	0.0052	46	0.0064	39	0.0055	40	0.0063	10	0.0237	18	0.0130	191	0.0003	1633.71	0.166728
1620010627002	17402A		.	17	89	0.0040	30	0.0086	90	0.0024	25	0.0105	11	0.0230	39	0.0072	44	0.0056	1662.46	0.174930
1630010585912	19588A		5	166	21	0.0110	42	0.0070	31	0.0071	16	0.0191	12	0.0224	59	0.0043	.	.	2187.93	0.185725
1630007776698	15068A		35	.	24	0.0088	45	0.0066	64	0.0039	38	0.0064	13	0.0216	240	0.0004	20	0.0117	1508.12	0.193165
1620009825059	15988A		.	.	.	.	.	.	103	0.0020	.	.	14	0.0194	90	0.0025	.	.	480.78	0.195537
1620010054192	17576A		21	3	.	.	29	0.0088	41	0.0054	17	0.0190	15	0.0191	20	0.1220	.	.	5315.04	0.221760
1620010054193	17577A		21	5	.	.	47	0.0058	42	0.0054	26	0.0100	16	0.0184	38	0.0073	72	0.0024	1330.45	0.228324
16200024GB005	74524A		.	.	.	.	.	.	.	.	.	.	17	0.0183	.	.	.	.	340.99	0.230007
1620010054194	17578A		21	5	8	0.0284	65	0.0041	83	0.0041	47	0.0054	18	0.0170	42	0.0084	103	0.0010	2027.08	0.240007
1620002990278	17478A		.	9	55	0.0049	17	0.0115	55	0.0045	29	0.0079	19	0.0152	26	0.0099	.	.	1559.86	0.247703
16200018877445	74521A		.	.	.	.	.	.	.	.	.	.	20	0.0146	.	.	.	.	272.05	0.249046
1620010816339	19937A		.	2	58	0.0045	74	0.0033	101	0.0021	36	0.0066	21	0.0145	44	0.0061	.	.	1069.49	0.254322
1620008961203	19844A		.	.	87	0.0028	49	0.0058	51	0.0046	37	0.0066	22	0.0131	22	0.0118	.	.	1275.75	0.260616
1620006793440	17239A		.	2	106	0.0021	53	0.0051	50	0.0046	41	0.0062	23	0.0125	27	0.0096	.	.	1131.17	0.266197
1620005459439	17354A		.	.	94	0.0024	58	0.0048	100	0.0022	101	0.0013	24	0.0113	32	0.0084	.	.	806.91	0.270178
1620007850073	16283A		.	.	.	.	.	.	.	.	.	.	25	0.0112	.	.	.	.	208.69	0.271208
1620004427877	74527A		.	2	39	0.0062	14	0.0134	47	0.0049	2	0.0494	26	0.0108	10	0.0189	51	0.0047	3785.10	0.289882
1620009118301	17327A		76	99	122	0.0017	51	0.0055	61	0.0042	33	0.0073	27	0.0104	30	0.0087	.	.	1100.24	0.295311
1620012007131	26111A		.	.	181	0.0005	153	0.0011	284	0.0003	112	0.0011	28	0.0103	57	0.0044	.	.	433.88	0.297451
1620008372427	17595A		.	.	.	.	.	.	.	.	.	.	29	0.0101	.	.	.	.	188.20	0.298380
1620009921498	17407A		.	.	147	0.0012	109	0.0020	134	0.0011	165	0.0004	30	0.0092	84	0.0029	.	.	407.06	0.300388
1620004325651	72877A	S	12	19	91	0.0025	133	0.0018	88	0.0025	134	0.0008	31	0.0090	85	0.0027	125	0.0007	498.13	0.302836
1630008329088	15583A		18	20	105	0.0021	70	0.0035	217	0.0008	146	0.0006	32	0.0084	483	0.0000	74	0.0023	416.86	0.304892
1620010063237	17527A		.	.	109	0.0020	121	0.0018	128	0.0014	128	0.0008	33	0.0083	142	0.0013	.	.	391.41	0.306823
1620010597842	69354A		12	54	25	0.0088	12	0.0140	33	0.0069	21	0.0124	34	0.0076	13	0.0164	19	0.0137	2313.41	0.318237
1620000271193	72573A		.	.	.	.	.	.	115	0.0017	.	.	35	0.0074	50	0.0050	.	.	327.61	0.319853
1620011037747	15866A		.	.	142	0.0012	212	0.0005	191	0.0007	119	0.0010	36	0.0070	74	0.0033	.	.	353.31	0.321597
1620006518221	17451A		.	1	139	0.0014	66	0.0040	68	0.0036	62	0.0037	37	0.0067	28	0.0095	.	.	828.29	0.325683
1620001791425	74692A		.	.	18	0.0121	56	0.0049	49	0.0047	44	0.0059	38	0.0065	24	0.0106	69	0.0027	1474.91	0.332960
1620006518222	17313A		.	22	162	0.0009	94	0.0027	95	0.0023	49	0.0053	39	0.0061	58	0.0044	248	0.0001	648.02	0.336157
1620006133512	T6912A		.	.	271	0.0002	201	0.0006	455	0.0000	78	0.0024	40	0.0060	77	0.0032	.	.	341.83	0.337843
1620007158562	42626A		.	.	103	0.0021	131	0.0017	153	0.0010	130	0.0008	41	0.0058	55	0.0047	211	0.0002	445.07	0.340039
1620007158561	42625A		.	.	120	0.0017	144	0.0014	179	0.0008	158	0.0005	42	0.0056	228	0.0005	210	0.0002	270.16	0.341372
1560008561386BF	14781A		18	54	.	.	221	0.0005	109	0.0019	.	.	43	0.0052	238	0.0004	15	0.0155	409.80	0.343394
1620007419178	17357A		.	.	71	0.0036	26	0.0095	27	0.0076	.	.	44	0.0051	19	0.0128	.	.	1066.71	0.348657
	M4250K		.	1	.	.	.	.	.	.	.	.	45	0.0049	172	0.0008	.	.	115.88	0.349229
1620004463776	72879A	S	106	51	200	0.0004	248	0.0003	174	0.0008	81	0.0023	46	0.0045	99	0.0022	226	0.0001	298.65	0.350692
1560010410545WF	69752A		.	.	.	.	.	.	85	0.0025	.	.	47	0.0043	.	.	.	.	133.22	0.351349
1620011671000	26338A		.	.	59	0.0043	36	0.0074	83	0.0026	.	.	48	0.0041	35	0.0075	.	.	746.54	0.355033
1620002640744	17474A		8	26	95	0.0024	68	0.0035	149	0.0011	69	0.0029	49	0.0041	78	0.0032	.	.	523.20	0.357614

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NSN	PCN	S	OPERS	OBSER	PGPPS	PGPP	PGWS	PGWP	PNAS	PNAP	PRAS	PRAP	PRBS	PRBP	PRCS	PRCP	PWWS	PWWP	LTOT	CUM
16200003977413	17574A		.	.	240	0.0003	163	0.0010	259	0.0004	117	0.0010	50	0.0040	120	0.0018	.	.	223.44	0.358718
16200010381912	17567A		12	17	232	0.0003	415	-0.0021	550	-0.0001	113	0.0011	51	0.0039	73	0.0033	358	0.0027	215.10	0.359778
16200010159859	17631A		.	.	.	.	.	.	53	0.0046	.	.	52	0.0038	37	0.0073	.	.	392.79	0.361715
16200010710535	18315A		.	.	347	0.0000	233	0.0004	442	0.0001	255	0.0000	53	0.0037	105	0.0020	.	.	144.03	0.362426
16200011670999	26337A		.	.	370	0.0000	59	0.0048	117	0.0017	42	0.0062	54	0.0036	52	0.0049	.	.	666.92	0.365716
16200003002261	17324A		.	.	317	0.0001	188	0.0007	440	0.0001	171	0.0004	55	0.0035	166	0.0009	.	.	136.87	0.366392
16200010856009	19938A		.	.	174	0.0007	.	.	120	0.0016	98	0.0016	56	0.0034	47	0.0053	152	0.0005	367.01	0.368202
16200001486468	74652A		.	.	107	0.0021	154	0.0011	148	0.0011	116	0.0010	57	0.0033	82	0.0030	143	0.0006	348.34	0.369911
16200003084145	17494A		21	10	.	.	266	0.0003	388	0.0001	.	.	58	0.0033	340	0.0001	.	.	75.32	0.370283
16200007117771	17348A		.	.	78	0.0033	57	0.0049	118	0.0016	.	.	59	0.0032	36	0.0075	.	.	596.69	0.373227
16200011741655	15677A		.	.	.	.	.	.	.	.	.	.	60	0.0032	.	.	.	.	59.63	0.373524
16200005459395	17353A		.	.	252	0.0002	197	0.0006	270	0.0003	281	0.0000	61	0.0028	125	0.0016	.	.	132.95	0.374177
16200003238292	72858A		.	.	.	.	.	.	167	0.0009	282	0.0000	62	0.0028	156	0.0010	290	0.0000	102.01	0.374680
16200007391746	19839A		.	.	.	.	.	.	113	0.0018	267	0.0000	63	0.0028	184	0.0007	.	.	111.91	0.375232
	M8168K		.	1	.	.	.	.	.	.	.	.	64	0.0027	213	0.0006	.	.	68.74	0.375571
16200008624060	T6254A		.	.	283	0.0001	182	0.0008	222	0.0005	105	0.0012	65	0.0026	80	0.0031	.	.	234.56	0.376729
16200002223887	72868A		.	.	.	.	.	.	169	0.0009	234	0.0001	66	0.0026	102	0.0021	.	.	136.52	0.377402
16200002307141	72864A		.	.	.	.	.	.	170	0.0009	252	0.0000	67	0.0026	181	0.0007	.	.	89.07	0.377842
16500021936O2LE	98929A		.	.	.	.	.	.	215	0.0006	221	0.0001	68	0.0026	68	0.0036	.	.	176.23	0.378711
16200010141984	25918A		.	2	161	0.0009	157	0.0011	251	0.0004	107	0.0012	69	0.0025	140	0.0013	.	.	215.82	0.379776
16200009270298	74552A		.	.	185	0.0005	279	0.0002	301	0.0003	247	0.0001	70	0.0025	129	0.0015	.	.	129.18	0.380413
16200010135910	17418A		.	.	135	0.0014	110	0.0020	157	0.0010	80	0.0018	71	0.0024	106	0.0020	.	.	320.67	0.381995
16200001357877	74561A		.	.	184	0.0005	161	0.0010	302	0.0003	118	0.0010	72	0.0024	163	0.0009	.	.	171.83	0.382843
16200001790438	72863A		.	.	.	.	.	.	163	0.0009	199	0.0002	73	0.0024	153	0.0011	.	.	106.51	0.383368
16200010374639	18297A		.	1	129	0.0015	91	0.0028	198	0.0006	97	0.0016	74	0.0023	63	0.0040	75	0.0023	426.38	0.385472
16200001239478	19841A		.	.	.	.	.	.	231	0.0005	272	0.0000	75	0.0023	169	0.0009	.	.	81.13	0.385872
999POV10A	T1302A		.	.	.	.	.	.	.	.	.	.	76	0.0021	.	.	.	.	39.13	0.386065
16200011680338	69803A		.	.	114	0.0020	136	0.0015	176	0.0008	150	0.0006	77	0.0021	115	0.0019	94	0.0014	286.27	0.387478
15600114110G4WF	26258A		.	.	.	.	.	.	137	0.0011	.	.	78	0.0021	.	.	.	.	62.49	0.387786
16300008827955	15295A		23	236	14	0.0142	40	0.0071	.	.	46	0.0058	79	0.0021	318	0.0002	26	0.0106	1241.53	0.393911
16200001177326	19838A		.	.	.	.	.	.	112	0.0018	269	0.0000	80	0.0020	219	0.0006	.	.	93.93	0.394375
16200010700632	17664A		.	.	104	0.0021	.	.	171	0.0008	131	0.0008	81	0.0020	114	0.0019	.	.	231.90	0.395519
16200001791083	74516A		67	.	141	0.0013	95	0.0026	104	0.0020	19	0.0156	82	0.0020	62	0.0040	85	0.0018	1049.96	0.400699
16200010668946	17663A		.	.	126	0.0016	138	0.0015	210	0.0006	153	0.0005	83	0.0019	135	0.0014	.	.	220.34	0.401786
16300000585242	15054A		28	82	27	0.0082	25	0.0095	98	0.0022	30	0.0077	84	0.0019	146	0.0012	.	.	1061.11	0.407021
16300022623T6	28041A		.	.	131	0.0014	194	0.0007	202	0.0006	.	.	85	0.0018	.	.	104	0.0010	138.14	0.407703
16200005676803	69828A		.	.	.	.	.	.	97	0.0022	.	.	86	0.0018	67	0.0037	.	.	193.95	0.408660
16200010185924	17479A		.	.	.	.	.	.	150	0.0010	238	0.0001	87	0.0017	107	0.0020	.	.	118.80	0.409246
10050005667S3	74805A		.	2	.	.	.	.	71	0.0033	.	.	88	0.0017	5	0.0278	14	0.0173	1230.31	0.415316
16200007099371	17347A		.	.	115	0.0019	87	0.0029	123	0.0015	114	0.0011	89	0.0017	41	0.0065	.	.	471.29	0.417641
16200004821247	16296A		.	.	186	0.0005	112	0.0019	246	0.0004	178	0.0003	90	0.0017	92	0.0023	.	.	198.77	0.418622
16200004853752	T4798A		.	.	194	0.0005	286	0.0002	273	0.0003	169	0.0004	91	0.0016	154	0.0011	.	.	113.43	0.419181
1560ND028885GBF	M5244K		.	.	.	.	.	.	.	.	.	.	92	0.0016	.	.	120	0.0008	42.50	0.419391
16200009101898	72571A		.	.	.	.	.	.	289	0.0003	.	.	93	0.0016	161	0.0010	.	.	66.91	0.419721
16200002795839	17476A		.	10	127	0.0015	82	0.0030	203	0.0008	139	0.0007	94	0.0015	123	0.0017	.	.	270.15	0.421054
16200010589S0	93236A		.	.	.	.	.	.	197	0.0007	224	0.0001	95	0.0014	190	0.0007	.	.	66.90	0.421384
16200010389101	69658A		.	.	175	0.0007	130	0.0017	193	0.0007	239	0.0001	96	0.0014	298	0.0002	.	.	128.38	0.422018
16200011009806	68878A		.	.	204	0.0004	247	0.0003	329	0.0002	211	0.0001	97	0.0013	234	0.0004	.	.	69.79	0.422362
	M9407A		.	1	.	.	.	.	.	.	.	.	98	0.0013	.	.	.	.	24.22	0.422481

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NSN	PCN	S	OPERS	OBSER	PGPS		PGPP		PGWS		PGWP		PNAS		PNAP		PRAS		PRAP		PRBS		PRBP		PRCS		PRCP		PWWS		PWWP		LTOT	CUM
1620010692334	69613A		.	.		.		.		.		.	190	0.0007		.		.	98	0.0013		.		.		.		.		.	39.091	0.422674
1630010054189	15642A	S	11	5	136	0.0014	98	0.0025	183	0.0007		.		.	100	0.0013		.		.	146	0.0006	176.401	0.423545								
4730007586711LE	17757A		.	.	187	0.0005	215	0.0005	315	0.0002	271	0.0000	101	0.0013	180	0.0008		.		.		.	87.385	0.423976								
1620001157419	T6850A	S	40	14	119	0.0017	186	0.0008	258	0.0004	137	0.0007	102	0.0012	134	0.0014	106	0.0010	211.627	0.425020										
1620010805925	17687A		.	.	228	0.0003	250	0.0003	303	0.0002	158	0.0005	103	0.0012	177	0.0008		.		.	93.970	0.425483										
1620010888102	T5305A		.	.	298	0.0001		.	503	0.0000	162	0.0005	104	0.0012	208	0.0006		.		.	66.966	0.425814										
1620002421514	T6295I		76	56	143	0.0012	150	0.0013	200	0.0006	35	0.0068	105	0.0012	104	0.0021	34	0.0083	618.243	0.428864										
1620005051184	69626A		.	.		.	189	0.0007	283	0.0003	194	0.0003	106	0.0011	179	0.0008		.		.	84.901	0.429283										
1620002671046	17396A		.	.		.		.	84	0.0026	120	0.0009	107	0.0010	83	0.0030		.		.	205.957	0.430299										
1620010141983	25917A		.	.	197	0.0004	249	0.0003	319	0.0002	154	0.0005	108	0.0010	265	0.0003		.		.	78.871	0.430688										
1620010668945	17662A		.	.	180	0.0006	205	0.0006	310	0.0002	176	0.0003	109	0.0010	187	0.0007		.		.	98.899	0.431176										
1630008810815	15161A		.	.	36	0.0063	67	0.0037	94	0.0023	27	0.0090	110	0.0010	164	0.0009	90	0.0015	876.013	0.435498										
	T4661Q		.	1		.		.		.		.	111	0.0010		.		.		.	18.633	0.435590										
1620009248927	16288A		.	.	267	0.0002	360	0.0001		.	207	0.0001	112	0.0009	299	0.0002		.		.	38.207	0.435778										
1630000528403	15053A		27	18	233	0.0003	146	0.0013	462	0.0000	55	0.0047	113	0.0009	275	0.0003	141	0.0006	293.396	0.437226										
1620000071783	M7568K		15	14		.		.		.		.	114	0.0009		.		.	16.770	0.437309										
1005003005135	74975A		.	.		.		.		.		.	115	0.0009		.	144	0.0006	26.287	0.437438										
1620011031950	49833A		.	.		.		.		.		.	116	0.0009		.		.	16.770	0.437521										
1620ND0537976	26578A		.	.	219	0.0004	208	0.0005	211	0.0006	83	0.0022	117	0.0008	288	0.0003		.	164.816	0.438334										
1630008562073	15521A		11	.	206	0.0004	192	0.0007	351	0.0002		.	118	0.0008		.	200	0.0002	58.428	0.438623										
1620007057261	69887A		.	.	303	0.0001	288	0.0002	397	0.0001		.	119	0.0008	259	0.0003		.	35.992	0.438800										
3040003556251BF	M6275K		.	.		.		.		.		.	120	0.0008	338	0.0001		.	17.979	0.438889										
1620001157413	72845A		.	.		.		.	237	0.0005		.	121	0.0007	162	0.0010		.	54.387	0.439157										
3120P879409F	M7617K		.	.		.		.		.		.	122	0.0007		.	216	0.0002	16.216	0.439237										
000V0010A	00141B		.	.		.	376	0.0000	30	0.0072	189	0.0003	123	0.0007	147	0.0012	119	0.0009	230.428	0.440374										
1620000018416	72832A		.	.		.		.	340	0.0002	203	0.0002	124	0.0006	229	0.0005		.	39.663	0.440570										
1630001132133	15519A		11	.	153	0.0011	60	0.0048	206	0.0006		.	125	0.0006		.	139	0.0006	215.452	0.441633										
1620003069942	17314A		.	.	234	0.0003	209	0.0005	290	0.0003	166	0.0004	126	0.0006	159	0.0010		.	92.378	0.442088										
1620003069943	17315A		.	.	218	0.0004	246	0.0003	291	0.0003	167	0.0004	127	0.0006	160	0.0010		.	90.612	0.442536										
1620001791087	74518A		.	2	238	0.0003	386	0.0000	257	0.0004	57	0.0045	128	0.0006	189	0.0007	133	0.0006	262.309	0.443830										
1620006238913	69573A		.	.	288	0.0001	202	0.0006	317	0.0002	220	0.0001	129	0.0006	272	0.0003		.	50.337	0.444078										
1630010627046	15752A		.	.	29	0.0070	52	0.0055	143	0.0011	31	0.0075	130	0.0005	263	0.0003		.	812.157	0.448085										
1620009192742	T9960A		.	.		.	216	0.0005		.		.	131	0.0005		.		.	23.705	0.448202										
1005003005136	73041A		.	.		.		.		.		.	132	0.0005		.	181	0.0003	14.075	0.448271										
1005003472304	74821A		.	.		.		.		.		.	133	0.0005		.	179	0.0003	14.075	0.448341										
1620004427875	69761A		.	.		.		.	144	0.0011	195	0.0002	134	0.0004	235	0.0004		.	51.980	0.448597										
1560ND028868GBF	M5224K		.	.		.		.		.		.	135	0.0004	214	0.0006	105	0.0010	41.750	0.448803										
1620012026349	26642A		.	.	79	0.0032	137	0.0015	111	0.0018	43	0.0061	136	0.0004		.		.	487.133	0.451207										
1620000222923	94332A		.	.		.		.	91	0.0024	74	0.0027	137	0.0004	97	0.0022		.	245.806	0.452419										
1620010054191	T7600I		.	37	62	0.0043		.		.		.	138	0.0004		.		.	178.994	0.453302										
5315005006801LE	69775A		.	.	340	0.0000	386	0.0001	423	0.0001		.	139	0.0004	298	0.0002		.	18.600	0.453394										
5315002952512LE	74525A		.	.	274	0.0001	172	0.0009	314	0.0002	263	0.0000	140	0.0004	399	0.0001		.	44.662	0.453615										
1620008840372	T9564A		.	.	295	0.0001	365	0.0001		.	235	0.0001	141	0.0004	327	0.0002		.	24.901	0.453737										
1620006986015	97709A		.	.		.		.	125	0.0014	173	0.0004	142	0.0003		.	161	0.0004	59.417	0.454031										
1620008670810	74551A		.	.	269	0.0002	411	-0.0004	353	0.0002	163	0.0005	143	0.0003	256	0.0004	254	0.0001	42.364	0.454240										
1620000854773	63711A		.	.		.		.		.		.	144	0.0003		.		.	5.590	0.454267										
162000204T208	16743A		.	.		.		.		.		.	145	0.0003	138	0.0013		.	45.531	0.454492										
1630003154832	15229A		.	3		.	413	-0.0011	507	0.0000		.	146	0.0003		.	180	0.0003	-21.306	0.454387										
1630010830445	68735A		.	.	93	0.0024	90	0.0028	155	0.0010	141	0.0007	147	0.0003	182	0.0007	167	0.0004	262.055	0.455680										

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9999P000V0010A	T1434A		.	.	.		83	0.0030	.		.		148	0.0003	157	0.0010	.		122.6	0.456285
1620006986014	97659A		.	.	.		.		141	0.0011	181	0.0003	149	0.0003	227	0.0005	173	0.0004	64.0	0.456600
1620010710537	16334A		.	.	336	0.0000	260	0.0003	474	0.0000	279	0.0000	150	0.0003	143	0.0013	.		54.2	0.456867
1620004107094	69385A		.	.	.		.		457	0.0000	.		151	0.0003	352	0.0001	.		8.7	0.456910
1005010595785	63819A		34	.	.		.		218	0.0006	.		152	0.0003	60	0.0042	66	0.0029	193.4	0.457864
1620004023387	94829A		.	.	.		.		296	0.0003	245	0.0001	153	0.0002	326	0.0002	.		20.7	0.457966
3120011093797	M8740K		.	.	.		.		.		.		154	0.0002	.		.		3.7	0.457985
1430ND026070GAH	T4404N		.	.	.		.		.		.		155	0.0002	222	0.0005	.		19.1	0.458079
1630010098475	19266A		.	.	251	0.0002	141	0.0014	495	0.0000	232	0.0001	156	0.0002	380	0.0001	220	0.0001	61.1	0.458380
1620000313537	82902A		.	.	.		.		430	0.0001	248	0.0001	157	0.0002	324	0.0002	.		16.4	0.458461
1620ND0520836	26579A		.	.	330	0.0000	338	0.0001	421	0.0001	182	0.0003	158	0.0002	367	0.0001	208	0.0002	28.3	0.458601
1620010569656	25369A		.	.	314	0.0001	269	0.0003	358	0.0001	.		159	0.0002	354	0.0001	.		21.5	0.458707
1620004100874	69625A		.	.	.		.		456	0.0000	.		160	0.0002	384	0.0001	307	0.0000	6.8	0.458741
1620003353404	35571A		.	.	.		.		279	0.0003	124	0.0009	161	0.0002	103	0.0021	.		114.5	0.459306
1560009834324BF	18365A		.	.	.		.		74	0.0030	.		162	0.0002	428	0.0000	178	0.0003	72.2	0.459662
9999P000V0010A	T1435A		.	.	.		.		.		.		163	0.0002	.		.		3.7	0.459680
1620000563339	T6779I		.	.	324	0.0001	336	0.0001	418	0.0001	237	0.0001	164	0.0002	309	0.0002	.		23.3	0.459795
1620001753939	T7163A	S	57	42	213	0.0004	229	0.0004	364	0.0001	79	0.0024	165	0.0002	337	0.0001	.		142.9	0.460500
1620003654001	69098A		.	.	220	0.0004	253	0.0003	355	0.0002	.		166	0.0002	348	0.0001	341	0.0000	35.6	0.460676
1630008562195	68891A		.	.	241	0.0003	280	0.0002	377	0.0001	.		167	0.0001	.		203	0.0002	24.9	0.460799
1630005678162	15616A		.	.	210	0.0004	301	0.0002	305	0.0002	.		168	0.0001	.		201	0.0002	31.0	0.460952
1630005802857	15438A		.	1	.		239	0.0004	518	0.0000	.		169	0.0001	.		.		13.4	0.461018
1620012005320	26110A		.	.	268	0.0002	257	0.0003	399	0.0001	240	0.0001	170	0.0001	248	0.0004	.		37.3	0.461202
1620005343898	T7043A		.	.	338	0.0000	337	0.0001	508	0.0000	241	0.0001	171	0.0001	346	0.0001	.		12.2	0.461262
1620010403581	T9743I		.	.	.		388	0.0000	538	0.0000	.		172	0.0001	433	0.0000	.		1.9	0.461272
1620007659787	69548A		.	.	.		.		.		.		173	0.0001	.		.		1.9	0.461281
1620001157393	74644A	S	35	42	342	0.0000	389	0.0000	412	0.0001	.		174	0.0001	.		.		4.0	0.461300
1630005404253	34507A		.	.	207	0.0004	271	0.0002	263	0.0004	127	0.0008	175	0.0001	258	0.0003	.		76.8	0.461679
1630002692622	15162A		28	138	11	0.0168	23	0.0097	48	0.0047	15	0.0195	176	0.0001	65	0.0038	30	0.0097	2178.8	0.472429
1630007947437	T5652A		.	.	344	0.0000	346	0.0001	483	0.0000	264	0.0000	177	0.0001	445	0.0000	.		4.7	0.472452
1650001685965BF	96274A		.	.	.		406	0.0000	313	0.0002	258	0.0000	178	0.0000	351	0.0001	.		7.3	0.472488
1620008699889	74535A		.	.	258	0.0002	241	0.0004	437	0.0001	115	0.0010	179	0.0000	291	0.0002	.		72.1	0.472844
3120ND023213GBF	M5404K		.	.	.		.		.		.		180	0.0000	.		.		0.0	0.472844
1620009195750	19959A		.	.	.		.		356	0.0002	278	0.0000	181	0.0000	478	0.0000	.		4.2	0.472865
1620011252217	16214A		.	.	.		.		175	0.0008	277	0.0000	182	0.0000	54	0.0047	.		161.4	0.473661
1620009535572	69566A		.	.	.		.		436	0.0001	.		183	0.0000	403	0.0001	.		5.2	0.473687
1620001877445	T45210		.	7	.		.		.		.		184	0.0000	.		.		0.0	0.473687
1630005557523	15397A		25	44	.		.		.		.		185	0.0000	.		.		0.0	0.473687
1630008473731	16776A		.	.	209	0.0004	119	0.0019	444	0.0000	188	0.0003	186	0.0000	.		145	0.0006	93.5	0.474148
1620009383574	19681A		.	.	.		.		478	0.0000	288	0.0000	187	0.0000	485	0.0000	.		0.0	0.474148
																			*******	
																			96104.1	

FOR YOUR EASE, WE HAVE SUBDIVIDED THIS SECTION INTO THE FOLLOWING:

A - 2.1 FACILITY LAYOUT
B - 2.2 EQUIPMENT
C - 2.3 WORK FORCE
D - 2.4 REPAIR WORK TECHNOLOGIES
E - 2.5 WORKLOAD MIX AND VOLUME
F - 2.6 MATERIAL HANDLING
G - 2.7 STORAGE
H - 2.8 PROCESS FLOW CHARTS

THE PROFILE SHEETS ARE IN THE FOLLOWING BOOKS

MANPGW	BRAKES
MANPGP	WHEELS
MANPWW	MAIN LANDING GEAR EXCEPT C5
MANPWW	NOSE LANDING GEAR EXECPT C5
MANPRA	C5 MAIN LANDING GEAR
MANPRA	C5 BOGIE BEAM.
MANPRA	NOSE LANDING GEAR.

FOCUS STUDY

TITLE: A potential process improvement opportunity (PIO) exists to ALL Parts at RCC ALL at OO ALC.

POINT(S) OF CONTACT:

(TRACKING OF PARTS)

AS-IS CONDITION: WHEN A PART IS REQUIRED FOR A PARTICULAR ORDER OR PLANE. SOME ONE MUST FISCALLY GO OUT AND FIND THE PARTS. AND THE FIND a SCHEDULER TO PUT the Part ON the Hot Sheet AND Get it COMPLETED.

TO-BE: - IMPLEMENT A SYSTEM. WHICH WOULD KEEP TRACK OF THE PARTS SO. THAT YOU COULD FIND THE ITEMS NEEDED ON the COMPUTER AND GET THEM MOVING WITHOUT HOURS OF TRACKING THEM DOWN IN THE SHOP.

POTENTIAL IMPROVEMENTS: - IMPROVED FLOW LESS TIME LOOKING FOR PARTS.

IMPLEMENTATION COST:

SCHEDULE:

FOCUS STUDY

TITLE: A potential process improvement opportunity (PIO) exists to COMPLEX PARTS at RCC MRB & MRA at OO ALC.

POINT(S) OF CONTACT:

AS-IS CONDITION: MEASURE EACH FINISH DIMENSION BY ITS SELF NOT IN RELATION TO THE REST OF THE PART EACH MACHINED SURFACE COULD BE CORRECT AND STILL THE OVER ALL DIM. OF THE PART COULD BE OFF.

TO-BE: WITH A COORDINATE MEASURING MACHINE YOU CAN CHECK ALL THE MACHINED SURFACES IN RELATION TO EACH OTHER.

POTENTIAL IMPROVEMENTS: LESS REWORK

IMPLEMENTATION COST:

SCHEDULE:

FOCUS STUDY

TITLE: A potential process improvement opportunity (PIO) exists to ALL PARTS at RCC MANPRA/MAMU/PRB at OO ALC.

POINT(S) OF CONTACT:

AS-IS CONDITION: THE MECHANIC GOES OUT TO THE WALL AND PICK OUT WHAT HE WANTS TO WORK ON NEXT. UNLESS A HOT JOB IS GIVEN TO HIM.

TO-BE: HAVE A SCHEDULER BING THE PART TO THE MECHANIC.

POTENTIAL IMPROVEMENTS:

IMPLEMENTATION COST:

SCHEDULE:

FOCUS STUDY

TITLE: A potential process improvement opportunity (PIO) exists to ALL Parts at RCC ALL at OO ALC.

POINT(S) OF CONTACT:

(TRACKING OF PARTS)

AS-IS CONDITION: WHEN A PART IS REQUIRED FOR A PARTICULAR ORDER. OR PLANE. SOMEONE MUST FISCALLY GO OUT AND FIND THE PARTS. AND THEN FIND a SCHEDULER TO PUT the Part ON the Hot Sheet AND Get it completed.

TO-BE: — IMPLEMENT A SYSTEM. WHICH WOULD KEEP ~~THAT~~ TRACK OF THE PARTS SO THAT YOU COULD FIND THE ITEMS NEEDED. on the computer AND GET THEM MOVING WITHOUT HOURS OF TRACKING THEM DOWN IN THE SHOP.

POTENTIAL IMPROVEMENTS: - IMPROVED FLOW LESS TIME ~~AND~~ LOOKING FOR PARTS.

IMPLEMENTATION COST:

SCHEDULE:

FOCUS STUDY

TITLE: A potential process improvement opportunity (PIO) exists to COMPLEX PARTS at RCC MRB & MRA at 00 ALC.

POINT(S) OF CONTACT:

AS-IS CONDITION: MEASURE EACH FINISH DIMENSION BY ITS SELF NOT IN RELATION TO THE REST OF THE PART EACH MACHINED SURFACE COULD BE CORRECT AND STILL THE OVER ALL DIM. OF THE PART COULD BE OFF.

TO-BE: WITH A COORDINATE MEASURING MACHINE YOU CAN CHECK ALL THE MACHINED SURFACES IN RELATION TO EACH OTHER.

POTENTIAL IMPROVEMENTS: LESS REWORK

IMPLEMENTATION COST:

SCHEDULE:

FOCUS STUDY

TITLE: A potential process improvement opportunity (PIO) exists to ALL PARTS at RCC MANPOWER IMPROVE at OO ALC.

POINT(S) OF CONTACT:

AS-IS CONDITION: THE MECHANIC GOES OUT TO THE WALL AND PICK OUT WHAT HE WANTS TO WORK ON NEXT. UNLESS A HOT JOB IS GIVEN TO HIM.

TO-BE: HAVE A SCHEDULER BRING THE PART TO THE MECHANIC.

POTENTIAL IMPROVEMENTS:

IMPLEMENTATION COST:

SCHEDULE:

Section F—Miscellaneous

4-10. Depot Maintenance Personnel Turnover. The annual rate of turnover of personnel performing depot maintenance. This rate is based on the average number of civilian personnel assigned to AFLC depot maintenance functions during calendar year 1985 and the total depot maintenance personnel losses experienced during that year. The source of the data is the Advanced Personnel Data System-Civilian (APDS-C), E300. The OPR is HQ AFLC/DPCC.

1985 Depot Maintenance Personnel Turnover Rate

$$\frac{\text{Losses}}{\text{Assigned}} \quad \frac{2,449}{40,109} = .0611$$

4-11. AF Maintenance Personnel Turnover. The annual rate of turnover of enlisted personnel performing Air Force base level maintenance. This rate is based upon the total number of enlisted personnel assigned to aircraft maintenance Air Force specialty codes at the end of FY85 and the total number of losses experienced during that year. The source of the data is the Retention Statistic Report prescribed by AFM 30-130, Vol 1 and the Airman Force Characteristics P769 Report Prescribed by AFR 30-3 and AFR 700-4, Vol 1 and Vol 2. The OPRs are HQ AFMPC/DPMATE and HQ AFMPC/DPMYA

FY85 AF Maintenance Personnel Turnover Rate

$$\frac{\text{Losses}}{\text{Assigned}} \quad \frac{18,923}{147,567} = .1282$$

4-12. Monthly Assigned Hours. The number of hours per month a military or civilian employee is assigned for duty. Monthly assigned hours is based on a 5-day 40-hour work week. This factor equals calendar days per month less holiday and relief days (Saturday, Sunday, or compensatory weekday for weekend workday) times hours per day. The standard Air force monthly assigned hours used in allocating manpower is 167.929 hours. The source of the data is AFR 26-1. The OPR is HQ USAF/PRM. The prescribing directive is AFR 26-1 (Vol III).

4-13. Annual Available Hours. The number of hours per year a military or civilian employee is available for primary duty. Annual available hours is equal to monthly assigned hours less total nonavailable hours (leave, PCS related absences, medical leave, organizational duties, education and training, social actions, miscellaneous, overseas peculiar activities and special absenses) times 12 months. The standard annual available hours for military and civilian personnel are presented. The source of the data is AFR 26-1. The OPR is HQ USAF/MPM. The prescribing directive is AFR 26-1 (Vol III).

Calendar days	30.4375
Less:	
Holiday	0.75
Relief Days	8.6964
Assigned Days	20.9911
Times hours per day	8.0
No. Assigned hours	167.929

	Military		Civilian	
	CONUS	OS	CONUS	OS
Monthly Assigned Hours	167.929	167.929	167.929	167.929
Less Total Nonavailable	22.730	24.464	22.65	20.76
Monthly Hours Available	145.2	143.5	145.3	147.2
Times Number of Months	12.0	12.0	12.0	12.0
Annual Hours Available	1742.4	1722.0	1743.6	1766.4

1744

WAGE FOR OVERTIME

DIRECT	$18.66
INDIRECT	10.06
OVERHEAD	3.27
TOTAL	31.98

BASE SALARY - WITH NO BENEFITS. $12.44

STANDARD HOURS WORK PER 1 MAN 1744 HRS

OVERTIME IS 7½% OF THE TIME

(1744 HRS)(7.5%) = 130.8 HRS. overtime / MAN

OVER TIME PAY = BASE PAY (12.44)(1.5) = $18.66 FOR OT.

PAY FOR.

A. STANDARD HRS. = (1744 HR)($31.98/HR) = 55,773.12 MAN/YEAR

B OVERTIME HRS. (130.8 HRS)($18.66/HR) = 2440.73 OT PAY

Total Pay with overtime one man = 58213.85

11/3/87

ENGINEERING NOTEBOOK

ALAN TURNER

00- ALC

MACHINE SHOP

&

GRINDING SHOP

Forman: Bill Phillips

Based on the conversation I had with Bill it seems that although the volume of work through his area is fairly constant, his workload per man goes up markedly in the summer months due to vacations. He said that the Air Force in general logs more flight time in the summer months resulting in a slight increase in work volume, but his big problem is still manpower shortages due to vacations.

With regards to To factors Bill suggested checking with Planning for details. He said that generally the level of repair needed per part varies greatly depending on the part itself. For example, the B-52, C-141, C-5A & KC-135 all have parts that come into his area needing 100% repair 100% of the time. They also, however, come in with any possible lower % of needed repair.

Bill stated that he does not have exact records of his condemnation rate & suggested contacting E & I for that information. His gut feeling is that most parts are condemned before they get through E & I.

When asked about his personnel Bill said he was short everywhere & that he felt it would get worse due to forced labor reductions.

His brief description of how the shop

handles training it's people leads me to believe that there is little room for improvement in this area. The way they handle it is as follows:

* trained on one machine
* trained on all the machines in one area
* trained on one machine at a time in an area other than the men's original area
* this process continues until the man has become familiar with all the machines & operations in the machining & grinding area

Training on any one machine includes learning to functionally operate the machine, set-up & run all the operations performed on that machine & finally, to check the parts.

It should be pointed out that there is no final inspection of re-manufactured parts. The operators are responsible for checking the dimensional accuracy of their work. This is all part of the P.A.C. (Product Acceptance Certification) program in place. This plan essentially makes the operator solely responsible for his work. Bill feels that this system works pretty well.

Getting back to training, there are training monitors on the floor to oversee & provide assistance to people in training who need it & there is a training supervisor who schedules & keeps track of everyone's progress through the system.

Bill feels that the general condition of his machine tools is good. There is a group whose function, among other things, is to monitor

the age of machine tools. ~~After~~ After a pre-specified length of time has elapsed since the purchase of a given machine, that machine shows up on a monthly computer printout calling for that machines electro/mechanical evaluation. If the supervisor of the area in which that machine resides says the machine needs replacement, the paperwork process to order a new, appropriate piece of equipment is begun.

When equipment fails before it's time, there are forms & a procedure for repairing or in extreme cases, replacing it.

Currently, the shop is slowly going N/C. This trend can be seen in the grinding shop in Bldg. 506 where several old manual grinders are being replaced by N/C equipment.

Bill has indicated that smaller items (gages, indicators, micrometers, etc.) are not a problem. If they need something, they buy it.

With regards to shifts, there are 110 people on first, 23 on second & no third. This is for both the machine & grinding shops. Neither shop works much O.T.

Response time to Form 103's varies from 1 day to 2 months depending on who the M&M engr. is for the part in question.

When asked what he would most like to have to improve the machine & grinding shops he tended on personnel. He pointed

out that morale was bad & he had a high turnover rate of people. Morale seems to be low because they have been reducing their manpower without reducing workload & increasing operator responsibility without increases in pay. (I'm ~~referred~~ inferring the pay problem, Bill actually mentioned the increase in responsibility) Bill blames the turnover rate on job boredom.

Summery & Suggestions

Equipment & hardware seem to be under control in both shops. The big problem seems to people oriented.

Workload per operator is only going to increase as labor reductions continue. Boredom is caused by mundane, repetitive work or general lack of interest in the job at hand.

As the operator does his own set-up work & is being moved from machine to machine I don't see the work as being all that repetitive. Consequently, ~~I~~ I feel lack of job interest is the problem.

I doubt that the people working in the shop feel much connection with the F-16's they see flying overhead. To them their job is to bore a few holes, grind an O.D. or two, press the occasional bearing & in general perform a variety of machine operations on non-descript forgings.

Hold a class. Explain to them how "their" parts fit together & function. Let them see what they make being installed on the aircraft. The occesional word of thanks from a pilot or aircrew member would also help to remind the shop people that what they do is VERY important to some people. Try to get your shop people in an aircraft. Make them feel like part of the team that puts the Air Force in the air. Most people did not go to see "Top Gun" to look at Tom Cruise & Kelly McGillis. They went to see fighter planes. Try to make these people part of that.

If you can't do this & the turnover rate stays high it would make more sense to drop the extensive training program now in place & give each operator one machine.

There's no sense investing time, effort & money into people who are'nt going to stay.

If you get into a one man - one machine mode your run times should come down as the operator becomes more familiar with the machine & it's operations.

Planner: Tom Wixom 5-1-89

Tom's responsibilities cover KC-135 & C-5 wheels.

His job is to see to it that KC-135 & C-5 parts flow smoothly thru the shop. His job seems to be that of an expediter with the added responsibility of acting as liason between the shop and M & M engineering when his parts get written up on form 103 (discrepent meterial).

He estimates that there are roughly 75-100 form 103's written per month for all wheels passing through the shop.

The standard turn around time on form 103 parts is 3-10 days. He seemed pleased with this & did not consider it a big problem.

He states that his workload of parts is stable throughout the year.

Tom also stated that few, if any changes to the WCD's came from the shop floor people. Most changes come thru M & M engr. either originating with that dept. or passing through it after being generated by the part manufacturer.

As Tom is not involved with the actual shop process he did not have any suggestion as to how to improve it, nor did he feel himself to be in a position to rate the shop's performance. He merely stated that he sometimes wished parts would flow more smoothly from point to point.

[redacted]

Planner: Kerry Loop

Kerry's responsibilities cover KC-135, F-15 & F-16 struts.

He estimates that he handles approximately 60 Form-103's per month on his parts.

Kerry states that the turn around time on his 103's is between 7-10 days depending on who the M&M engr. is. Kerry does not seem to think this is a problem.

His workload is stable throughout the year.

The few changes that occur to his W.C.O.'s are generated equally by M&M Engr. & suggestions from the shop floor.

With regards to potential shop improvements, Kerry said that a smoother flow of work would be desireble. Currently the shop processes work as it becomes 'hot'. He feels that maybe the implementation of MRP. II will help.

Planner - Frank Rigby

Frank is responsible for brakes for all the aircraft serviced at Hill.

He says that while there are minor fluctuations in his volume of work on a short term basis, his workload over the year is steady.

He tells me he gets good response from MM Engr. on his 103's & the average turn around time is roughly 4 days.

Frank states that his WCD's change frequently & that most of the changes are shop driven. He gets his changes as a result of operator/supervisor suggestions or in response to recurring 103's.

His only complaint about the shop was that they have a tendency to loose parts as they move through the building. They eventually turn up again but he feels a little more control over the flow of material in the building is called for.

Scheduling: Reuben Velerio

Reuben is the head of scheduling for the areas assigned to me. He tells me that his workload for the machine & grinding shops is stable throughout the year.

He also says that he's got more work than people to handle it. From an equipment standpoint he feels that the shop has plenty of capacity. They will occasionally have to juggle machines if they get a rush of one type of part but to date this sort of thing has never caused them to fall behind on the rest of their workload.

Reuben stated that the only thing that holds up the shop to his knowledge is a lack of bushings. Other than getting additional machinists, which he concedes is not going to happen, the bushing shortage is his only complaint. He made special mention of the fact that he is very happy with the people in his group.

THE PLAN

IN THE BEGINNING WAS THE PLAN -
AND THEN CAME THE ASSUMPTIONS -
AND THE ASSUMPTIONS WERE WITHOUT FORM -
AND THE PLAN WAS COMPLETELY WITHOUT SUBSTANCE -
AND DARKNESS WAS ON THE FACE OF THE WORKERS -
AND THEY SPAKE AMONGST THEMSELVES, SAYING
"It is a crock of shit and it stinketh."
AND THE WORKERS WENT TO THE SUPERVISORS AND SAYETH
"It is a pile of dung and none may abide the odor thereof."
AND THE SUPERVISORS WENT TO THE PLANNERS AND SAYETH UNTO THEM
"This is a container of excrement so strong that none may abide by it."
AND THE PLANNERS WENT TO THE SECTION CHIEFS AND SAYETH UNTO THEM
"It is a vessel of fertilizer and none may abide its strength."
AND THE SECTION CHIEFS WENT TO THE BRANCH CHIEFS AND SAYETH
"It contains that which aids growth and is strong."
AND THE BRANCH CHIEFS WENT TO THE DIVISION CHIEF AND SAYETH
"It promoteths growth and is very powerful."
AND THE DIVISION CHIEF WENT TO THE CHIEF OF THE DIRECTORATE
AND SAYETH UNTO HIM
"This powerful new plan will actively promote the growth and efficiency of the Directorate."
AND THE CHIEF OF THE DIRECTORATE LOOKED UPON THE PLAN AND
DECLARED IT GOOD -
AND THE PLAN BECAME POLICY!!!

NATE: The biggest problem that exists here is a management problem. "The Plan" came from one of your shop people. The people on the floor are VERY aware of the fact that no one is totally in command & that those with some authority quite often are too far removed from reality (ie, the shop floor) to make good, sound decisions concerning shop operations.

This state of affairs is not conducive to a high level of motivation in your people. You have enough good people & plenty of adequate equipment to improve your through put by at least 25% if you get good leadership.

KEIT ALL PARTS ROUTED TO STATION 69, GO TO THE FOLLOWING FOREMAN

BAMBROUGH

~~I. PAT HALE~~

C141 - ALL EXCEPT:

DRAG BRACE (7877) - LUDDINGTON
TORQUE ARM (6869) - LUDDINGTON
BOGIE BEAM (8005) - TROUT

F111 - ALL

KC135 MAIN - ALL

KC135 NOSE - BRACE ASSY (9178)

B52 - ALL EXCEPT: M. OUTER, TIP, & DRAG STRUT ASSY

F106 - ALL

C130 - ALL

A7D - ALL

C7A - ALL

LGM - 30 - ALL

F4 MOD - WET (LUCAS)

ALL PARTS ROUTED TO STATION 69, GO THE FOLLOWING FOREMAN:

2. JACK LUDDINGTON:

C5A - ALL
C141 DRAG BRACE (7877)
C141 TORQUE ARM (6869)
KC135 NOSE - INNER & OUTER
F4 ALL EXCEPT:
MAIN PISTON
ORIFICE TUBES (MAIN & NOSE)
F-15 - ALL
F16 - ALL
A10 - ALL
T38 - ALL
CH-3 - ALL
OV10 - ALL
B52 - MAIN OUTER, "TIPS",
& M DRAG STRUT ASSY

3. LEONARD TROUT:

ALL WHEELS & BRAKES (STATORS, PRESSURE & BACKING PLATES)
C141 BOGIE BEAM (8005)
F4 MAIN - INNERS & ORIFICE TUBES
F4 NOSE - ORIFICE TUBES