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MANUFACTURING METHODS AND TECHNOLOGY PROGRAM PLAN. UPDATE.(U)
NOV 81

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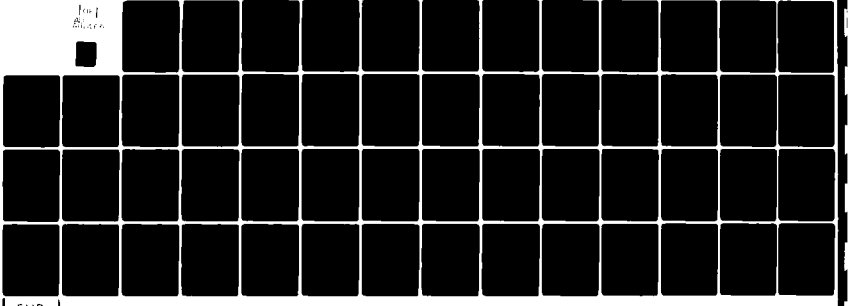

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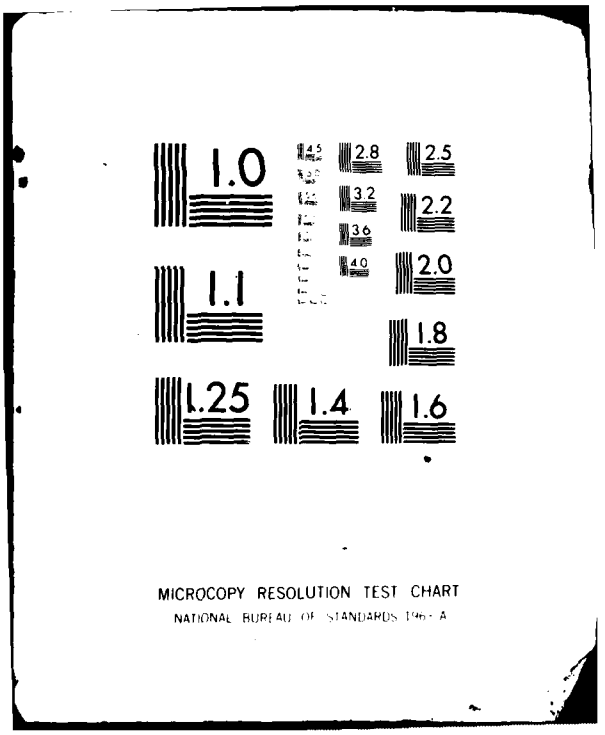
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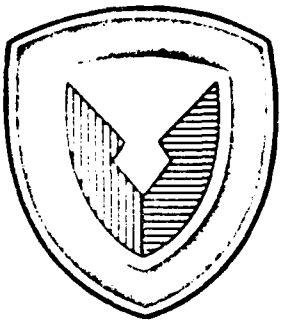
MATERIEL DEVELOPMENT AND READINESS COMMAND



MANUFACTURING METHODS & TECHNOLOGY

PROGRAM PLAN

UPDATE

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PREPARED BY

NOVEMBER 1981

MANUFACTURING TECHNOLOGY DIVISION
U S ARMY INDUSTRIAL BASE ENGINEERING ACTIVITY
ROCK ISLAND, ILLINOIS 61299

INDEX

INTRODUCTION

The MMT Program Plan Update

The MMT Program Plan is published once a year and provides, within a single source, a summary of current and near term work efforts included in the DARCOM MMT Program. Because of the changing nature of technology and weapons systems requirements, inclusion of a project in the Program Plan is not a guarantee that the project will ultimately be funded. The Plan, being a "snapshot" of the program at a point in time, does serve as an indicator of the areas towards which DARCOM's resources will be directed.

The last MMT Program Plan was published in May 1981 and covered work efforts planned for funding in the five year period FY81-85. The data contained in that Plan was as of April 1981. Since that time, the FY81 project funding has been finalized, the FY82 projects have completed the apportionment process, and the FY83 projects have been submitted and reviewed for the budget process. As a result of these events, a more definitive program than that offered in the 1981 Program Plan is now documented for Fiscal Years 1981-1983.

The MMT Program Plan Update contains project information presented by the last four digits of the project number and includes the project title and FY81-83 actual/proposed funding as applicable. The projects in the Update are grouped in an identical fashion as was the May 1981 Program Plan to permit easy cross referencing. More specifically, projects are separated by DARCOM Command, grouped according to broad categories, and then further subdivided according to component. In order to reduce volume, projects' problem and solution statements are not repeated in this Update. This type information was presented in the annual Program Plan and can, by cross referencing, be obtained from that Plan, extra copies of which are available upon request from the Industrial Base Engineering Activity. Other sources for this data are the Army's P-16 formats or computer retrieval from the Army's Manufacturing Technology Management Information System.

Industry Guide

An industry guide (Appendix A) has been included to explain the MMT budgeting process and to clarify, along with Appendix B (MMT Points of Contact), the interrelationships between the appropriations, commands, and personnel involved in the DARC[illegible]T Program.

MMT PROGRAM SUMMARY

($000)

COMMAND	FY 81	FY 82	FY 83
ARRCOM/ARRADCOM (AMMO)	23,525	33,557	39,377
ARRCOM/ARRADCOM (WEAPONS)	6,144	10,733	12,302
AVRADCOM	9,093	13,360	21,414
CECOM	591	3,992	3,145
ERADCOM	4,901	7,521	14,385
AMMRC	4,351	5,000	5,000
MERADCOM	1,260	968	1,220
MICOM	11,149	11,504	21,844
TACOM	5,127	9,148	24,880
DESCOM	546	604	3,268
TSARCOM/NLABS	1,960	2,415	18,675
TOTAL	68,647	98,802	165,510

ARMAMENT MATERIAL READINESS COMMAND

AND

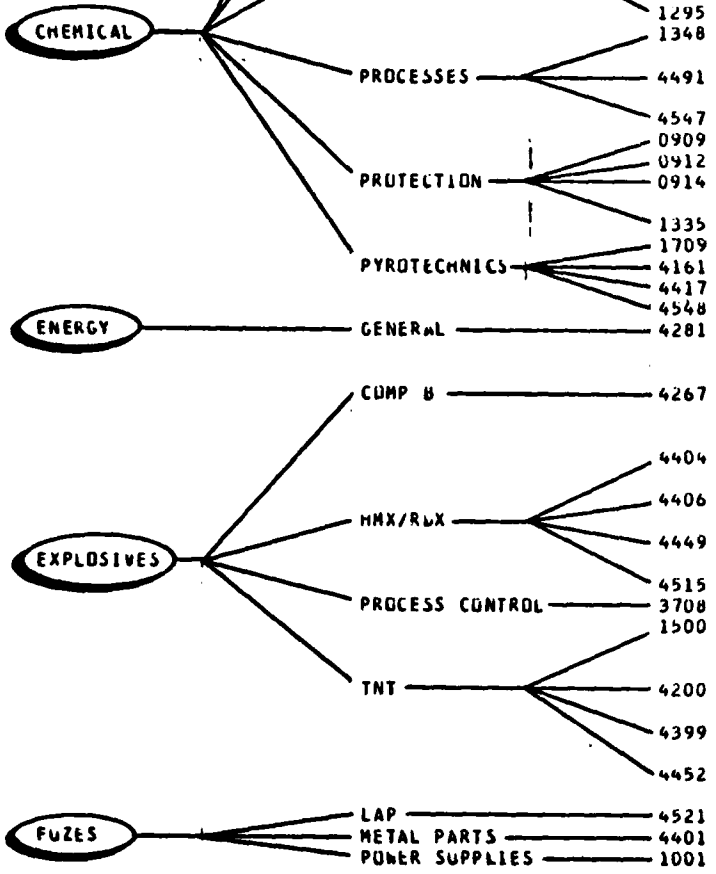
ARMAMENT RESEARCH AND DEVELOPMENT COMMAND

AMMUNITION PROGRAM

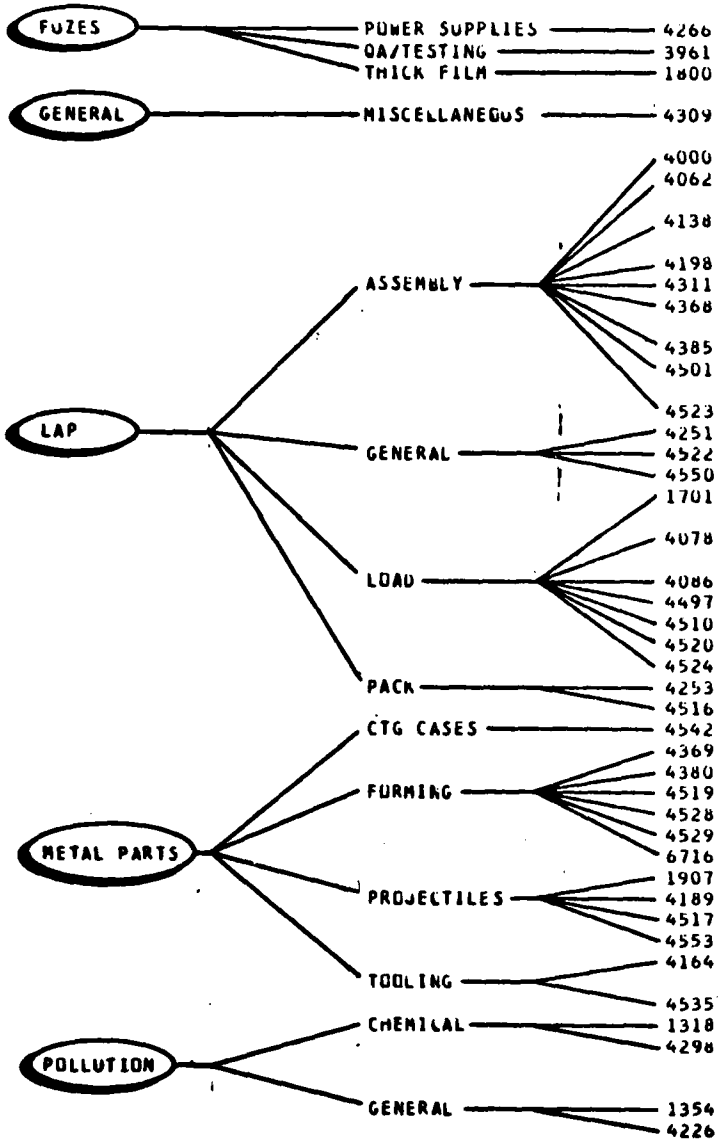
AMMUNITION FUNDING SUMMARY

($000)

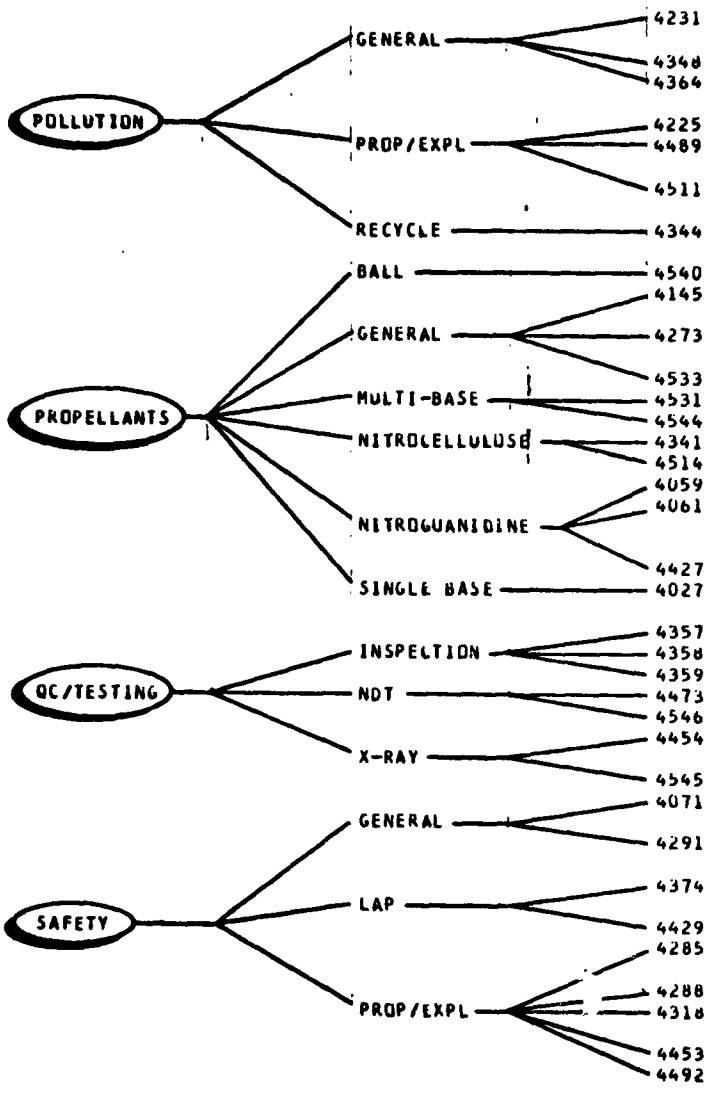
CATEGORY	FY 81	FY 82	FY 83
CHEMICAL	3,283	4,140	10,206
ENERGY CONSERVATION	1,142	1,370	1,897
EXPLOSIVES	976	3,520	4,404
FUZES	1,327	0	1,569
GENERAL	3,533	2,960	0
LAP	3,482	7,519	6,472
METAL PARTS	998	2,356	2,727
POLLUTION ABATEMENT	2,319	3,720	2,543
PROPELLANTS	2,250	2,739	3,761
QUALITY CONTROL/TESTING	1,885	1,460	2,039
SAFETY	1,061	2,133	1,441
SMALL ARMS	1,269	1,640	2,318
TOTAL	23,525	33,557	39,377



CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
CHEMICAL	DECONTAMINATION	0913	SPIN COATING OF DECON AGENT CONTAINERS	82	337
				83	166
	DETECTION/WARNING	0904	CHEMICAL REMOTE SENSING SYSTEMS	82	1182
				83	1273
		0917	AUTO HIGH SPEED TESTING SYS F/M43A1 CHEMICAL DETECTOR/ALARM	83	769
		4555	INFRARED MONITORING OF PYROTECHNIC BLENDING	81	250
	FILTERS	0900	AUTOMATED MULTIPLE FILTER LIFE TESTER	83	50
		0905	MANUFACTURE OF IMPREGNATED CHARCOAL (WHETLERITE)	82	256
				83	721
		0918	MODERNIZATION OF FILTER PENETRATION EQUIPMENT	83	848
		0919	POLLUTION ABATEMENT FOR WHETERITE CHARCOAL	83	793
		1295	MOD OF CHARCOAL FILTER TEST EQUIPMENT	83	561
	PROCESSES	1348	SUPER TROPICAL BLEACH	81	822
				83	561
		4491	TECHNOLOGY DATA BASE FOR PINACOLYL ALCOHOL	82	490
				83	1973
		4547	PROCESS TECHNOLOGY FOR IR XM76 GRENADE	83	295
	PROTECTION	0909	AUTOMATED AGENT PERMEATION TESTER	82	224
		0912	PRODUCTION PROCESS F/PROTECTIVE MASK CANISTER BODIES	82	474
		0914	AUTOMATIC FINISHING OF MASK COMPONENTS	82	701
				83	741
		1335	MFG TECH FOR NEW PROTECTIVE MASK	81	2046
	PYROTECHNICS	1709	IMPR PROCESSING OF STARTER MIX FOR PYROTECHNIC MUNITIONS	83	500
		4161	PROC TECH FOR PDN OF 81 MM IMPRV SMOKE MUN	82	476
		4417	USE OF RED PHOSPHORUS IN SMOKE POT APPLICATIONS	81	165
		4548	SAFETY IMPROVEMENTS OF PYROTECHNIC MIXING	83	955
ENERGY	GENERAL	4281	CONSERVATION OF ENERGY AT AAPS	81	1142
				82	1370
				83	1897
EXPLOSIVES	COMP B	4267	CONTINUOUS PROCESS FOR GRANULAR COMPOSITION B	81	160
				82	743
				83	1380
	HMX/RDX	4404	IMPROVE RECOVERY OF ACETIC ACID IN RDX MANUFACTURING	82	246
				83	157
		4406	IMPROVE YIELD OF HMX DURING RDX NITROLYSIS	82	633
				83	702
		4449	PROCESS IMPROVEMENT FOR COMPOSITION C-4	81	291
				82	520
		4515	HEXAMINE MANUFACTURING AND SOLUTION PREPARATION	83	194
	PROCESS CONTROL	3708	PROCESS FOR MANUFACTURE OF ETHYLENE DIAMINE DINITRATE (EDAN)	83	300
	TNT	1500	EVAL INDUST CAPABILITY F/LOAD COMMERCIAL EXPL-HIGH USE MUNIT	81	473
				82	450
				83	1200
		4200	TNT CRYSTALLIZER FOR LARGE CALIBER	81	52
				82	488
		4399	INSTRU IN-PROCESS MEASUREMENTS OF SOLID LIQUID TNT	82	163
				83	175
		4452	REPROCESSING DEMILLED EXPLOSIVES	82	277
				83	296
FUZES	LAP	4521	MOD M223 FUZE PACK OJT	83	787
	METAL PARTS	4401	HOT FORMING + COLD HEADING LARGE FUZE COMPONENTS	83	321
	POWER SUPPLIES	1001	PILOT LINE FOR FUZE FLUIDIC POWER SUPPLIES	81	315



CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
FUZES	POWER SUPPLIES	4266	MANUFACTURING, INSPECTION AND TEST EQUIP FOR MAG PWR SUPPLY	81	759
	QA/TESTING	3961	IMPROVE (3-D) VIBRATION ACCEPT TEST F/M732 M724	81	253
	THICK FILM	1800	PROCESSING FOR METAL-BASED SUBSTRATES	83	461
GENERAL	MISCELLANEOUS	4309	PROCESS DEVEL F/120MM AMMO	81	3485
				82	2960
LAP	ASSEMBLY	4000	AUTO M55 DETONATOR PRODUCTION EQUIPMENT	81	604
		4062	AUTO MFG SUPPORT FOR MORTAR INCREMENT CONTAINERS	81	2418
				82	1411
		4138	EQUIPMENT FOR AUTO PROCESSING OF ADDITIVE LINER	82	371
				83	397
		4198	AUTOMATED LAP OF STICK-PROPELLANT CHARGES	83	1010
		4311	AUTO PROD EQUIP FOR LAP OF XM 692 MINE DISPENSING SYSTEM	81	460
		4368	DEV AUTOMATED EQPT FOR SEALING M55 DETONATORS	82	716
				83	766
		4385	MECH OF ASSY OPERATION OF CENTER CORE IGNITERS	82	540
		4501	ADHESIVE BOND OF IGNITER AND FLASH REDUCER BAGS OR COMPONENTS	82	565
		4523	RAPID MOISTURE ANALYSIS OF EXPLOSIVE MIXES	83	203
	GENERAL	4251	AUTO MANU OF DELAY FOR M549 AND XM650 PROJECTILES	82	968
		4522	AUTO CARRIER CLEANING STATION FOR DET FAC	83	593
		4550	AUTO ASSY OF M22 FLASH SIMULATOR	83	467
	LOAD	1701	BULK TRANSFER OF CHEMICAL MATERIALS	82	221
				83	216
		4078	UPGRADE SAFETY READINESS AND PRODUCTIVITY OF EXIST MELT POUR	82	867
				83	595
		4086	REPROCESSING EXPLOSIVE FINES AND DRILL SCRAP	82	621
		4497	HANDLING EQUIPMENT FOR ADAM OVERLAYS	82	636
		4510	AUTO ASSY OF ADDITIVE LINER TO TANK CTG	83	478
		4520	DEV PROCESS F/PRESS LOADING 105MM HEAT-MP-T, XM815 PROJ	83	589
		4524	LOW VOLUME AUTO MELT-POUR EQUIP FOR LOADING SMALL AP MINES	83	377
	PACK	4253	AUTO HIGH RATE UNPACK EQUIP FOR MORTAR PROP CHGS	82	603
		4516	AUTO CARTONING OPERATIONS F/105MM	83	841
METAL PARTS	CTG CASES	4542	ULTRASONIC DEEP DRAWING OF CANNON STEEL CARTRIDGE CASES	83	350
	FORMING	4369	IMPROVED PROJECTILE CAVITY SURFACE	82	545
		4380	ABRASIVE MACHINING IN PROJECTILE MANUFACTURING	83	177
		4519	OUTLINE AUTOMATIC DETECTION OF TOOL WEAR	83	108
		4528	ROTARY FORGING OF DU PENETRATORS	83	493
		4529	MFG OF PRECISION CONES FOR HEAT PROJECTILES	83	420
		6716	DEV COMP-AID MODEL OF FORMING OPERATIONS FOR ARTILLERY MPTS	81	157
	PROJECTILES	1907	AUTO GAGING FOR 5 INCH PROJECTILE	81	625
		4189	HIGH FRAGMENTATION STEEL PRODUCTION PROCESS	82	1697
		4517	PROCESS FOR RECYCLING STABALLOY MACHINING CHIPS	83	824
		4553	PROCESS PARAMETERS FOR COLD DRAWING ALLOY STEELS	81	216
	TOOLING	4164	ANALYSIS FOR PREDICTING FAILURE OF MFG TOOLING	82	114
				83	145
		4535	PRECISION TOOLING FOR SMALL CALIBER AMMUNITION	83	210
POLLUTION	CHEMICAL	1318	EST CHEM PROD + FILL CLOSE + LAP TECH F/8VX2 XM736	81	216
		4298	EVALUATION OF OMN DISPOSAL ON HSAAP B-LINE	81	472
				82	391
				83	296
	GENERAL	1354	SLUDGE VOLUME REDUCTION AND DISPOSAL PROCESS STUDY	81	110
		4226	ON-LINE MONITORS FOR WATER POLLUTANTS	81	439



CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
				83	437
POLLUTION	GENERAL	4231	IN-PLANT REUSE OF POLLUTION ABATED WATERS	81	464
				82	313
		4348	NOISE POLLUTION ABATEMENT F/SCAMP IN LCAAP	82	264
		4364	ON-LINE BIO SENSORS TO MONITOR MIXED WASTE STREAMS	81	258
				82	290
	PROP/EXPL	4225	RED WATER POLLUTION ABATEMENT SYSTEM	81	160
		4489	ADVANCED POLLUTION ABATEMENT FOR DARCOM FACILITIES	82	1778
				83	1228
		4511	DISPOSAL OF FINAL SLUDGE FROM ACID RECOVERY OPERATIONS	82	304
				83	582
	RECYCLE	4344	EST WASTE DISPOSAL TECH FOR M687 BINARY PROJ FAC	81	200
				82	380
PROPELLANTS	BALL	4540	CALCIUM CARBONATE COATING OF 7.62MM BALL PROPELLANTS	83	293
	GENERAL	4145	CONTROL DRYING IN AUTO SB AND BALL PROP MFG	81	327
				82	553
		4273	AUTO PRODUCTION OF STICK PROPELLANT	82	838
				83	976
		4533	LOVA PROPELLANT MANUFACTURING PROCESS	83	400
	MULTI-BASE	4531	CONTINUOUS PRODUCTION OF NEW PROPELLANTS ON CAMBL	83	246
		4544	DEVELOP A THIRD GENERATION DYNAGUN TO SIMULATE TANK GUNS	83	408
	NITROCELLULOSE	4341	IMPROVED NITROCELLULOSE PURIFICATION	81	765
		4514	NONCONFINING NITRATING ACID REMOVAL	83	87
	NITROGUANIDINE	4059	NG CRYSTALLIZATION FOR CONTINUOUS PROP LINES	81	190
		4061	NITROGUANIDINE PROCESS OPTIMIZATION	81	905
				82	925
				83	944
		4427	ON-LINE ANALYZERS FOR NITROGUANIDINE PLANT	83	407
	SINGLE BASE	4027	SOLVENT RECOVERY/DRYING OF SINGLE BASE PROPELLANTS	81	63
				82	423
QC/TESTING	INSPECTION	4357	FLUX LEAKAGE INSPECTION SYSTEM FOR M483	82	124
		4358	AUTO LINE - PROCESS INSPECTION OF NEW FEEDS (ALPINE)	83	728
		4359	IMPROVE PROCESS TECHNOLOGY F/INSPECTION OF CLOTH	82	215
	NDT	4473	AUTO LEAK DETECTION OF WP MUNITIONS	82	809
		4546	NDT FOR BONDED AREAS OF 60/80MM MORTAR INCREMENT CONTAINERS	83	204
	X-RAY	4454	AUTOMATIC INSPECTION DEVICE EXPLOSIVE CAST IN SHELL	81	1885
				82	312
		4545	DIGITAL IMAGE AMPLIFICATION X-RAY SYSTEM	83	1107
SAFETY	GENERAL	4071	EXPLOS PREVENTION IN DRY DUST COLLECTION SYSTEMS	82	442
				83	144
		4291	BLAST EFFECTS IN THE MUNITIONS PLANT ENVIRONMENT	82	359
				83	383
	LAP	4374	EXPLOSIVE SAFETY SHIELDS	82	193
				83	207
		4429	IMPROVED SAFETY OF SCALE WEIGHING EQUIPMENT	82	377
	PROP/EXPL	4285	TNT EQUIV TESTING FOR SAFETY ENGINEERING	81	441
				82	251
		4288	EXPLOSIVE SAFE SEPARATION AND SENSITIVITY CRITERIA	81	620
		4318	OCCUPATIONAL EXPOSURE TO NITRATE ESTERS IN MUNITION MFG	82	215
				83	444
		4453	PROPAGATION DISTANCE FOR ENERGETIC MATERIALS	83	213
		4492	WATER DELUGE SYSTEM APPLICATION IN MUNITIONS PLTS	82	296

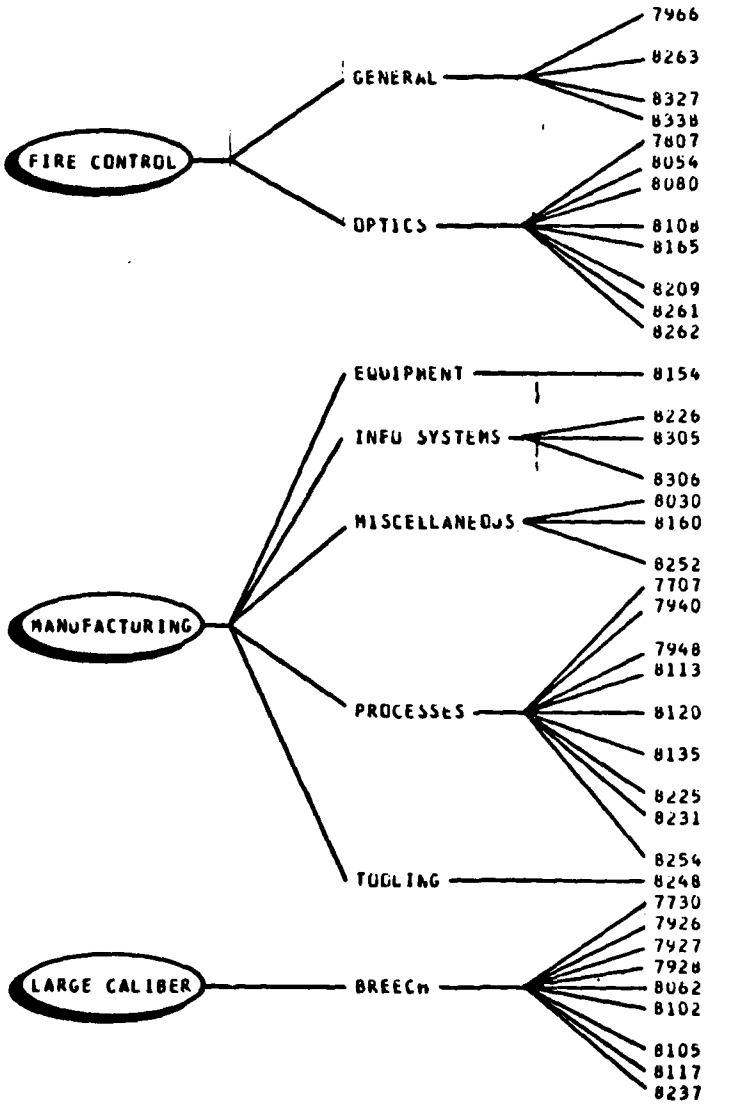
CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
SMALL ARMS	GENERAL	4351	IMPROVED STORAGE TECHNOLOGY FOR PRODUCTION MACHINE	82	421
				83	319
		4539	AUTOMATIC CARTRIDGE CASE HARDNESS MEASUREMENT	83	296
	5.56MM-.30 CAL	4150	NEW MFG PROCESSES FOR SMALL CAL PENETRATORS	81	211
		4177	NEW METH OF SM CAL TRACER CHARGE	83	129
		4503	NEW PROCESS FOR SAWS TRACER AMMUNITION	81	500
				82	129
		4506	5.56MM CARTRIDGE LINKING SYSTEM	81	558
				82	577
		4534	MODERNIZED PROCESSES FOR MANUFACTURE OF NATO 5.56MM AMMO	83	812
		4538	5.56MM SAWS LINK ORIENTOR AND FEED SYSTEM	83	145
		4541	AUTO PRIMER INSERT LACQUER AND ANVIL PRESENCE INSPECT SYS	83	617
		4551	MFG PROCESS PARAMETERS FOR XM855/856 AMMO	82	513

WEAPONS PROGRAM

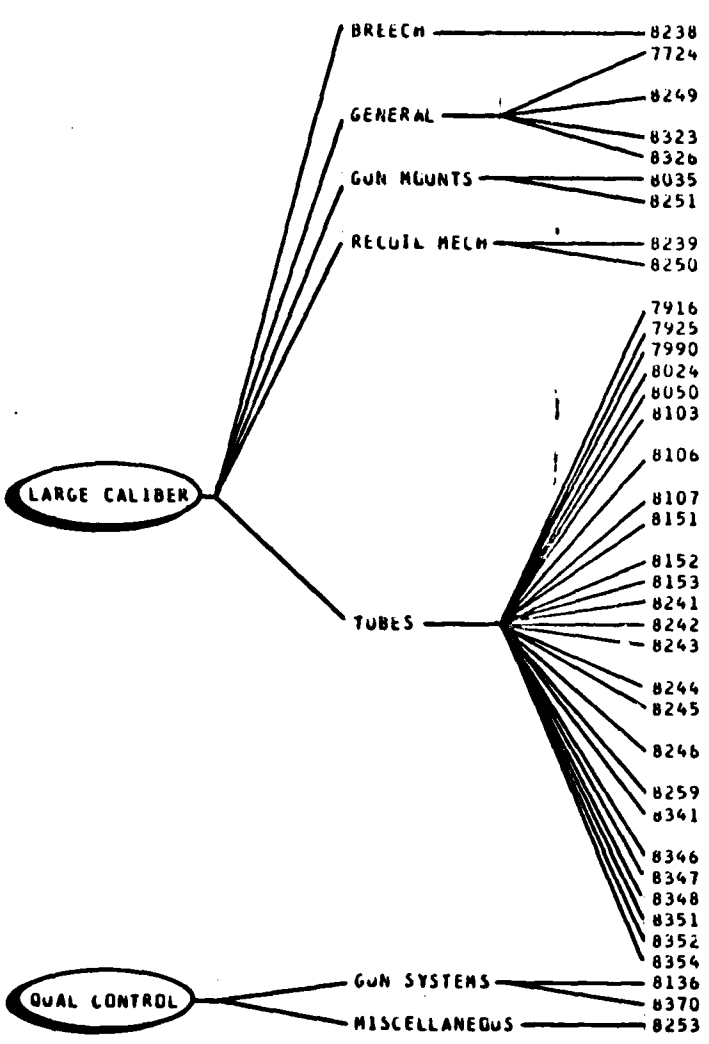
WEAPONS FUNDING SUMMARY

($000)

CATEGORY	FY 81	FY 82	FY 83
FIRE CONTROL	1,184	1,960	1,659
GENERAL MANUFACTURING	1,635	2,363	4,835
LARGE CALIBER	2,677	4,998	4,078
QUALITY CONTROL/TESTING	80	190	360
SMALL CALIBER	568	1,222	1,370
TOTAL	6,144	10,733	12,302

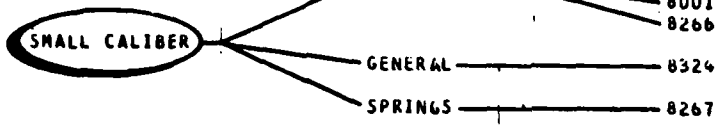


CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
FIRE CONTROL	GENERAL	7966	PRODUCTION ENGINEERING FOR TRITIUM RADIOLUMINOUS LAMPS	81	125
				82	253
		8263	PROD. IN-PROCESS INSPECT EQUIP FOR LASER RANGE FINDER CHARACTERISTICS	82	355
		8327	COMPUTER AIDED ENGINEERING (CAE) TECHNIQUES F/FC	83	933
		8338	MANUFACTURE OF PRECISION FLUIDIC AMPLIFIERS	83	289
	OPTICS	7807	PROGRAMMED OPTICAL SURFACING EQUIP AND METHODOLOGY-CAM	81	126
		8054	IMPROVE MFG TECH AND QUAL OF OPTICAL SCRATCH AND DIG STAND	81	266
		8080	HIGH SPEED FABRICATION OF ASPHERIC OPTICAL SURFACES	81	204
				82	170
		8108	THERMOGRAPHIC EVALUATION OF OPTIC BANDS	82	283
		8165	STANDARDS FOR DIAMOND TURNED OPTICAL PARTS	81	189
				82	287
		8209	PILOT PRODUCTION OF GRADIENT INDEX OPTICS	81	274
		8261	DEBONDING OF EPOXY RESIN ADHESIVE SYSTEM	82	132
		8262	PRODUCTION METHODS FOR OPTICAL WAVE GUIDES	82	480
				83	437
MANUFACTURING	EQUIPMENT	8154	COMPUTER INTEGRATION MFG (CIM), DDNC	81	442
				83	750
	INFO SYSTEMS	8226	COMPUTER AIDED WORK MEASUREMENT SYSTEM (CAM)	82	208
		8305	INTEGRATED MANUFACTURING SYSTEM(ICAM)	81	85
				83	2575
		8306	ON-LINE PRODUCTION INFORMATION SYSTEM (CAM)	83	360
	MISCELLANEOUS	8030	MANUFACTURING GUIDE FOR ELASTOMERIC SEALS	82	123
		8160	INITIAL PRODUCTION HANDBOOK	82	421
				83	195
		8252	INDUCTION HEATING OF VARYING DIAMETER PREFORMS	82	241
	PROCESSES	7707	AUTOMATED PROCESS CONTROL FOR MACHINING (CAM)	82	135
		7940	SYSERGISTIC PLATINGS WITH INFUSED LUBRICANTS	81	121
				82	175
		7948	ESTABLISH CUTTING FLUID CONTROL SYSTEM	81	164
		8113	ESTABLISHMENT OF ION PLATING PROCESS FOR ARMAMENT PARTS	81	150
				82	142
		8120	ADAPTIVE CONTROL TECHNOLOGY (CAM)	81	60
				83	495
		8135	SECOND ORDER MFG. METHODS FOR WEAPON COMPONENTS	81	613
				82	566
		8225	ELECTROCHEMICAL GRINDING OF WEAPON COMPONENTS	83	130
		8231	IMPROVED CASTING TECHNOLOGY (CAM)	82	250
				83	250
		8254	AUTOMATED SURFACE COATING OF CANNON (CAM)	83	80
	TOOLING	8248	APPLICATION OF HIGH-RATE CUTTING TOOLS	82	102
LARGE CALIBER	BREECH	7730	MANUFACTURE OF SPLIT RING BREECH SEALS	82	108
		7926	HOT ISOSTATIC PRESSING (HIP) OF LARGE CANNON COMP	82	295
		7927	GENERATION OF BASE MACHINING SURFACES	81	137
		7928	ROBOTIZED BENCHING OPERATIONS (CAM)	81	287
		8062	RAPID INTERNAL THREADING	82	366
		8102	APPLIC. OF POWDER METALLURGY FORGINGS TO COMP.	82	110
				83	142
		8105	ESTABLISH ROUGH THREAD BLANKS 8 IN. M201 BUSHING	81	292
		8117	SHAPED CASTING OF ESR MATERIAL	82	207
		8237	MULTIPLE MACHINING OF CARRIER HOUSINGS	82	103



CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
LARGE CALIBER	BREECH	8238	IMPROVED BORING TOOLS FOR BREECH RING LUGS	83	634
				82	203
	GENERAL	7724	GROUP TECHNOLOGY OF WEAPON SYSTEMS	81	180
				83	250
		8249	SHORT-CYCLE HEAT TREATING OF WEAPON COMPONENTS	82	102
				83	125
		8323	SPRAY-AND-FUSE PROCESSING OF ARMAMENT COMPONENTS	83	205
		8326	APPLICATION OF CORROSION RESISTANT GALVANIC COATINGS	83	185
	GUN MOUNTS	8035	COATING TUBE SUPPORT SLEEVES WITH BEARING MATERIALS	81	200
		8251	IMPROVED MELTING AND POURING TECHNOLOGY	82	193
				83	164
	RECOIL MECH	8239	IMPROVED MACHINING PROCEDURES FOR RAILS	82	254
		8250	IMPROVED FABRICATION OF RECOIL WEAR SURFACES	82	102
				83	125
	TUBES	7916	APPLICATION OF LOW COST MANDREL MATERIALS	81	168
		7925	BORE EVACUATOR BORING	81	248
		7990	IMPROVED FABRICATION AND REPAIR OF ANODES	81	100
		8024	HIGH SPEED ABRASIVE BELT GRINDING	82	142
		8050	RECYCLING SPENT GUN TUBES BY ESR MELTING	82	204
		8103	HIGH VELOCITY MACHINING	82	37
				83	414
		8106	LARGE CALIBER POWDER CHAMBER BORING	81	159
				82	72
		8107	CREEP FEED CRUSH FORM GRINDING	81	73
		8151	PORTABLE ENGRAVING SYSTEM	81	84
				82	171
		8152	IMPROVED ANODE STRAIGHTNESS FOR CHROMIUM PLATING	81	280
		8153	INCREASING GUN TUBE HEAT TREATMENT CAPACITY	81	325
		8241	COMPUTER APPLICATIONS TO BORE GUIDANCE	82	306
		8242	DUAL PRESS LOADING	82	120
		8243	COMPUTER CONTROLLED CHROMIUM PLATING PROCESS	82	301
				83	260
		8244	OPTIMIZATION OF HEAT TREAT	82	290
		8245	LOW CONCENTRATION (LC) CHROMIUM PLATING	82	241
				83	195
		8246	IMPROVED FINISHING OF GAS CHECK SEATS	81	60
				82	153
		8259	MACH/MARKING OF FIRE CONTROL REGISTERS	82	261
		8341	HOLLOW CYLINDER CUT OFF MACHINE	81	84
				82	655
		8346	DEBURRING OF BORE EVACUATOR HOLES	83	237
		8347	AUTOMATIC RIFLING HEAD ALIGNMENT	83	70
		8348	SIMULTANEOUS HOOP SHRINKING	83	450
		8351	IMP MFG OF QUADRANT FLATS ? MUZZLE BRAKE	83	88
		8352	SKIVING OF GUN TUBE BORES	83	120
		8354	AUTO FLAME CUTTING OF HOT ROTARY FORGED TUBES	83	414
DUAL CONTROL	GUN SYSTEMS	8136	IMPROVE IMPULSE PROGRAMMER FOR HYDRAULIC SIMULATOR	81	80
		8370	AUTOMATED INSPECTION OF WEAPONS COMPONENTS	83	360
	MISCELLANEOUS	8253	MACHINE TOOL DYNAMIC MEASUREMENTS AND DIAGNOSTICS	82	190

MMT PROGRAM PLAN UPDATE - FY81 THRU 83 PROJECTS
10/22/81



CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PRJJ COST
SMALL CALIBER	BARRELS	7985	SMALL ARMS WEAPONS NEW PROCESS PRODUCTION TECHNOLOGY	81	436
				82	520
				83	815
		8001	RAPID FLOW PLATING OF SMALL CAL GUN TUBES	81	132
		8266	INVESTMENT CAST LINERS OF SUBSTITUTE ALLOYS	82	298
				83	115
	GENERAL	8324	PROCESS CONTROLS FOR P/M WEAPONS COMPONENTS	82	195
				83	440
	SPRINGS	8267	STRESS PEENING OF HELICAL COMPRESSION SPRING	82	209

AVIATION RESEARCH AND DEVELOPMENT COMMAND

AVRADCOM FUNDING SUMMARY

($000)

CATEGORY	FY 81	FY 82	FY 83
AIRFRAME	1,863	2,493	1,500
AVIONICS	700	250	2,150
DRIVE SYSTEM	710	4,077	3,695
GENERAL	0	0	2,070
ROTOR SYSTEM	3,299	4,300	7,019
TURBINE ENGINE	2,521	2,240	4,980
TOTAL	9,093	13,360	21,414

MMT PROGRAM PLAN UPDATE - FY81 THRU 83 PROJECTS
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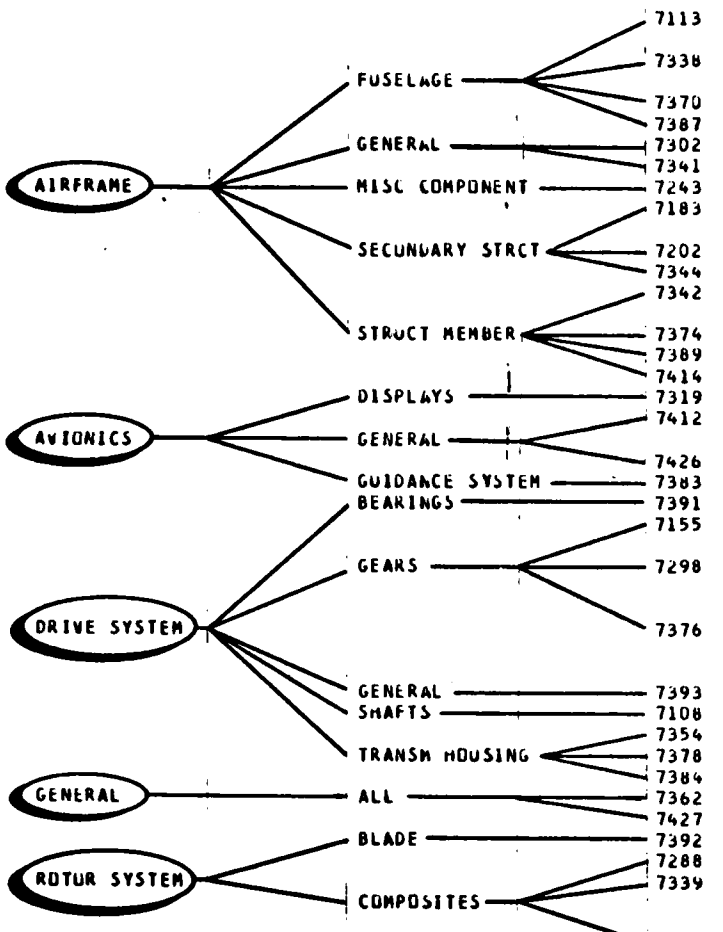
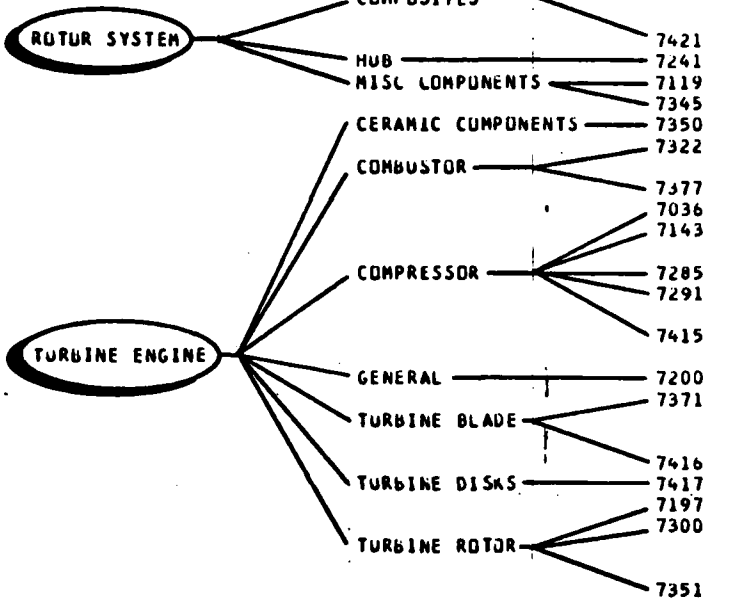


CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
AIRFRAME	FUSELAGE	7113	COMPOSITE REAR FUSELAGE MANUFACTURING TECHNOLOGY	81	1179
				82	200
		7338	COMPOSITE TAIL SECTION	81	60
				82	1700
		7370	RING WRAP COMPOSITES	82	400
		7387	LOW COST RADAR CAMOUFLAGE AIRFRAME MATERIAL	83	100
	GENERAL	7302	PROD OF T1B2 COATED LONG LIFE TOOLS	83	225
		7341	STRUCTURAL COMPOSITE FABRICATION GUIDE	81	73
	MISC COMPONENT	7243	MACHINING OPERATIONS ON KEVLAR LAMINATES	81	100
	SECONDARY STRCT	7183	SEMI-AUTO COMPOSITE MFG SYS FOR FUSELAGE SEC STRUCT	81	171
				82	100
		7202	THERMOPLASTICS FOR HELICOPTOR SECONDARY STRUCTURES	81	60
		7344	RIM MOLDING OF LOW COST SECONDARY STRUCTURES	83	175
	STRUCT MEMBER	7342	PULTRUSION OF HONEYCOMB SANDWICH STRUCTURES	81	200
				82	93
		7374	BI-MATRIX CARBON-CARBON STRUCTURAL COMPONENTS	83	500
		7389	SUPERPLASTIC FORMING OF ALUMINIUM COMPONENTS	83	400
		7414	JOINING OF REIN THERMOPLASTIC COMPOSITE STRUCT	83	100
AVIONICS	DISPLAYS	7319	MULTI-LEGEND DISPLAY SWITCH (MLDS)	81	50
	GENERAL	7412	INFRARED DETECTOR FOR LASER WARNING RECEIVER	81	650
				82	250
		7426	AIRCRAFT ELECTRONICS MFG PRODUCTIVITY IMPROVEMENT PROGRAM	83	2000
	GUIDANCE SYSTEM	7383	USE OF MOLDED PLASTIC HARDWARE IN TWO AXIS DRY GYROSCOPES	83	150
DRIVE SYSTEM	BEARINGS	7391	BEARING DIAGNOSTIC AND RECLAMATION TECHNIQUES	82	3228
	GEARS	7155	COST EFFECTIVE MFG METHODS FOR HELICOPTER GEARS	81	320
				83	275
		7298	EVALUATION OF HIGH TEMPERATURE CARBURIZING	81	75
				82	350
				83	400
		7376	AUTO INSPECT AND PRECISION GRINDING OF SB GEARS	81	215
				82	499
				83	345
	GENERAL	7393	PROD OF COMPOSITE PITCH HOUSING	83	200
	SHAFTS	7108	MFG TECHNIQUES FOR TRANSMISSION SHAFT SEALS	81	100
	TRANSM HOUSING	7354	INTEGRALLY STIFFENED HELICOPTER TRANS CASE	83	1500
		7378	STAINLESS STEEL FABRICATED HOUSING	83	600
		7384	COMPOSITE ENGINE GEARBOX	83	375
GENERAL	ALL	7362	ENG DESIGN HANDBOOK FOR TITANIUM CASTINGS	83	70
		7427	ATTACK HELICOPTER PRODUCTIVITY IMPROVEMENT (API) PROGRAM	83	2000
ROTOR SYSTEM	BLADE	7392	RADIATION CURE OF ROTOR BLADES	83	150
	COMPOSITES	7288	DET OF OPTIMAL CURE COND FOR PROC FIBER REIN COMPO	81	175
		7339	COMPOSITE TAIL ROTOR BLADE	81	1130
				82	600
				83	1452
		7340	COMPOSITE MAIN ROTOR BLADE	81	1094
				82	300
				83	1452



CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
ROTOR SYSTEM	COMPOSITES	7382	LOW COST COMPOSITE MAIN ROTOR BLADE FOR THE JM-60A	81	900
				82	2200
				83	3590
		7421	FILM RESIN IMPREGNATION OF BRAIDED HELICOPTER SPAR SECTION	83	75
	HUB	7241	HOT ISOSTATICALLY PRESSED TITANIUM CASTINGS	82	500
	MISC COMPONENTS	7119	NON-DESTRUCTIVE EVAL TECHNIQUES FOR COMPOSITE STRUCTURES	82	700
		7345	IN-PROCESS CONTROL OF RESIN MATRIX CURE	83	300
TURBINE ENGINE	CERAMIC COMPONENTS	7350	CERAMIC COMPONENTS FOR TURBINE ENGINES	83	2420
	COMBUSTOR	7322	LOW COST TRANSPIRATION COOLED COMBUSTOR LINER	81	125
				83	300
		7377	SPF/DB STATIC STRUCTURE FOR TURBINE ENGINES	83	400
	COMPRESSOR	7036	ISOTHERMAL ROLL FORGING OF COMPRESSOR BLADES	81	185
		7143	MFG OF SPRAY ABRADABLE GAS PATH SEAL SYSTEM	81	280
				82	455
		7285	CAST TITANIUM IMPELLER FOR TURBINE ENGINE	81	209
		7291	TITANIUM POWDER METAL COMPRESSOR IMPELLER	81	240
				82	275
		7415	RECOVERING DAMAGED T700 COMPRESSOR BLISKS	82	300
				83	400
	GENERAL	7200	COMPOSITE ENGINE PARTICLE SEPARATOR	81	500
	TURBINE BLADE	7371	INTEGRATED BLADE INSPECTION SYSTEM (IBIS)	81	357
				82	710
				83	460
		7416	ADVANCED TURBINE AIRFOIL CASTINGS	83	300
	TURBINE DISKS	7417	LOW COST DISKS BY CAP	83	300
	TURBINE ROTOR	7197	FABRICATION OF INTEGRAL ROTORS BY JOINING	81	190
		7300	IMPROVED LOW CYCLE FATIGUE CAST ROTORS	81	135
				82	500
				83	400
		7351	COMPOSITE SHAFTING FOR TURBINE ENGINES	81	300

COMMUNICATION AND ELECTRONICS COMMAND

CECOM FUNDING SUMMARY

($000)

CATEGORY	FY 81	FY 82	FY 83
DETECTORS	80	0	0
DISPLAYS	109	950	0
FREQUENCY CONTROL	112	1,927	875
GENERAL	0	120	620
INTEGRAIED ELECTRONICS	290	495	1,200
OPTICS	0	0	450
SOLID STATE	0	500	0
TOTAL	591	3,992	3,145

CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
DETECTORS	PHOTO/OPTICAL	3050	III-V SEMICONDUCTOR PHOTODETECTORS	81	80
DISPLAYS	MISCELLANEOUS	3056	ELECTROLUMINESCENT NUMERIC MODULE	81	109
		3073	TACTICAL GRAPHICS DISPLAY PANEL	82	950
FREQ CONTROL	CRYSTALS	3047	LOW COST HIGH STABILITY QUARTZ RESONATORS	83	875
		3057	HIGH STABILITY VIBRATION RESISTANT QUARTZ CRYSTALS	81	57
		9268	COST REDUCTION OF CERAMIC FLATPACK RESONATORS	82	100
		9851	TACTICAL MINIATURE CRYSTAL OSCILLATORS	81	55
	OSCILLATORS	3048	MICROPROCESSOR COMPENSATED CRYSTAL OSCILLATOR	82	827
		3083	36-40 AND 54-58 GHZ GUNN OSCILLATOR PRODUCTION PROCESS	82	1000
GENERAL	MISCELLANEOUS	3069	FUNCTIONAL SEGMENTATION OF AUTO TEST EQUIP	82	120
				83	120
		3091	LIGHTWEIGHT SURVIVABLE ANTENNA FOR ARMOR VEHICLES	83	500
INTEG ELECT	AMPLIFIERS	9835	INTEGRATED CONTROL CIRCUIT FOR THIN FILM TRANSISTOR DISPLAY	82	495
	CIRCUITRY	3036	SPECIAL COMPONENTS MFG TECHNIQUES FOR SINGLE CHANNEL RADIOS	81	290
				83	1200
OPTICS	FIBER	3089	CONTINUOUS OPTIC FIBER FROM DOMESTIC MATERIALS	83	450
SOLID STATE	DIODES/RECTIFIERS	3068	INCREASE PROD OF SEMICONDUCTOR CONTROL DIODES	82	500

ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND

ERADCOM FUNDING SUMMARY

($000)

CATEGORY	FY 81	FY 82	FY 83
DETECTORS	1,448	0	5,705
DISPLAYS	350	309	0
ELECTRON TUBES	0	1,308	2,190
GENERAL	681	1,179	2,179
INTEGRATED ELECTRONICS	805	1,179	1,783
LASER	523	621	550
OPTICS	518	0	0
PASSIVE COMPONENTS	0	596	0
POWER SOURCES	0	0	373
SOLID STATE	576	2,329	1,605
TOTAL	4,901	7,521	14,385

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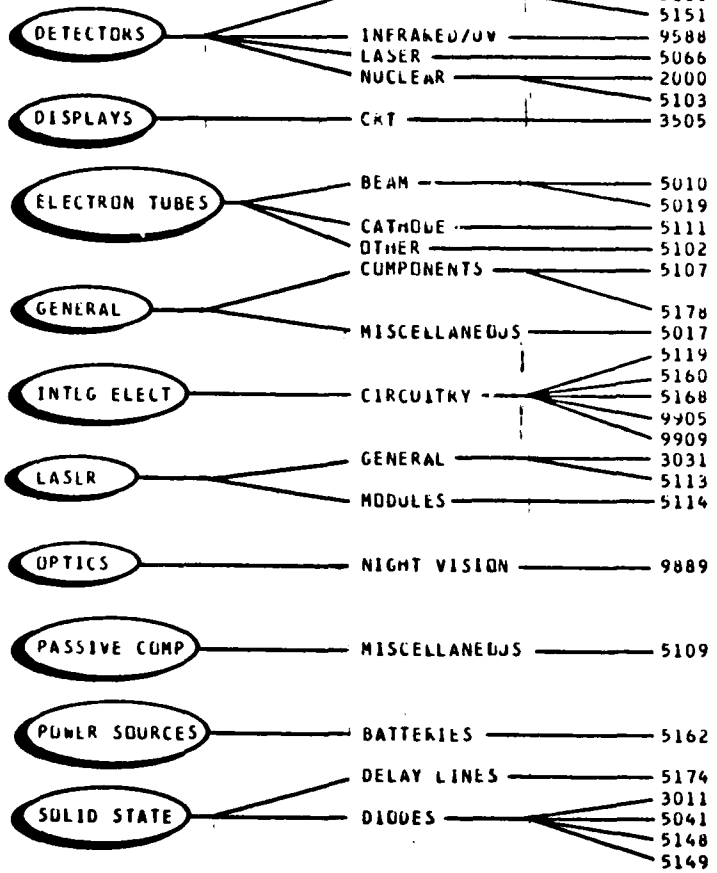

EFFORT NO	TITLE	FY	PROJ COST
5110	COMMON MODULE DETECTOR ARRAY	81	753
5151	LIQUID PHASE EPITAXIAL HGCDTE	83	3400
9588	THIRD GENERATION LOW COST GOGGLE TUBE	81	695
5066	1 TO 3 MICRON AVALANCHE DETECTORS	83	470
2000	RADIATION HARDNESS ASSURANCE TEST FOR MOS DEVICES	83	700
5103	CADMIUM TELLURIDE (CD-TE) RADIATION DETECTORS	83	1135
3505	HIGH CONTRAST CATHODE RAY TUBE	81	350
		82	309
5010	BONDED GRID CONVERGENT ELECTRON GUN	82	867
5019	LASER-CUT SUBSTRATES FOR MM TUBES	82	441
5111	VAPOR ORGANO METALLIC EPITAXIAL GROWTH PROCESS	83	650
5102	HIGH COERCIVITY,HIGH ENERGY PRODUCT MAGNETS	83	1540
5107	MILLIMETER WAVE POWER SOURCE COMBINER	82	1179
		83	1179
5178	PROGRAM FOR A GRAPHITE/EPOXY ANTENNA REFLECTOR	81	681
5017	NON-HERMETIC HYBRID MICROCIRCUITS	83	1000
5119	XRAY LITHOGRAPHIC PRODUCTION TECHNIQUES FOR VHSIC	83	368
5160	CONTINUOUS AUTO PLASMA PROCESSING OF SUBMICRON ICTS	83	457
5168	AUTOMATIC RETICLE INSPECTION SYSTEM, PHASE 1	83	938
9905	LOW COST MONOLITHIC GALLIUM ARSENIDE MM INTEG CKTS	82	1179
9909	PRODUCTION TECHNIQUES FOR SI MM PWR TRANSISTORS	81	805
3031	10.6 MICRON CO2 LASERS	81	523
5113	10-MICRON PULSED WAVEGUIDE LASER	83	550
5114	MINI LASER TRANSMITTER MODULE	82	621
9889	THIRD GENERATION 0.9 MICRON WAFER INTENSIFIER TUBE	81	518
5109	ULTRAWIDE BANDWIDTH SAW DELAY LINES	82	596
5162	EXJAM BATTERY MANUFACTURING TECHNOLOGY, PHASE I	83	373
5174	AUTOMATIC SPUTTERING PROCESS CONTROL F/PRODUCING 2ND PHASE I	83	292
3011	MILLIMETER-WAVE INDIUM PHOSPHIDE GUNN DEVICES	82	1179
5041	MILLIMETER WAVE MIXERS AND ARRAYS	81	576
5148	IMPATT DIODE SOURCES (94 GHZ)	82	1150
5149	220 GHZ IMPATT DIODE SOURCES	83	1313

MATERIALS AND MECHANICS RESEARCH CENTER

AMMRC FUNDING SUMMARY

($000)

CATEGORY	FY 81	FY 82	FY 83
GENERAL	250	0	0
TESTING	4,101	5,000	5,000
TOTAL	4,351	5,000	5,000

CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
GENERAL	MISCELLANEOUS	6390	PROGRAM IMPLEMENTATION AND INFORMATION TRANSFER	81	250
TESTING	CHEMICAL	6350	MATERIALS TESTING TECHNOLOGY (MTT)	81	914
				82	1110
				83	625
	ELECTRONICS	6350	MATERIALS TESTING TECHNOLOGY (MTT)	83	800
	MECHANICAL	6350	MATERIALS TESTING TECHNOLOGY (MTT)	81	875
				82	1070
				83	975
	NDT	6350	MATERIALS TESTING TECHNOLOGY (MTT)	81	2312
				82	2820
				83	2600

MOBILITY EQUIPMENT
RESEARCH AND DEVELOPMENT COMMAND

MERADCOM FUNDING SUMMARY

($000)

CATEGORY	FY 81	FY 82	FY 83
BRIDGING	663	0	0
GENERAL	175	0	350
LAND MINES	0	968	870
POWER SOURCES	422	0	0
TOTAL	1,260	968	1,220

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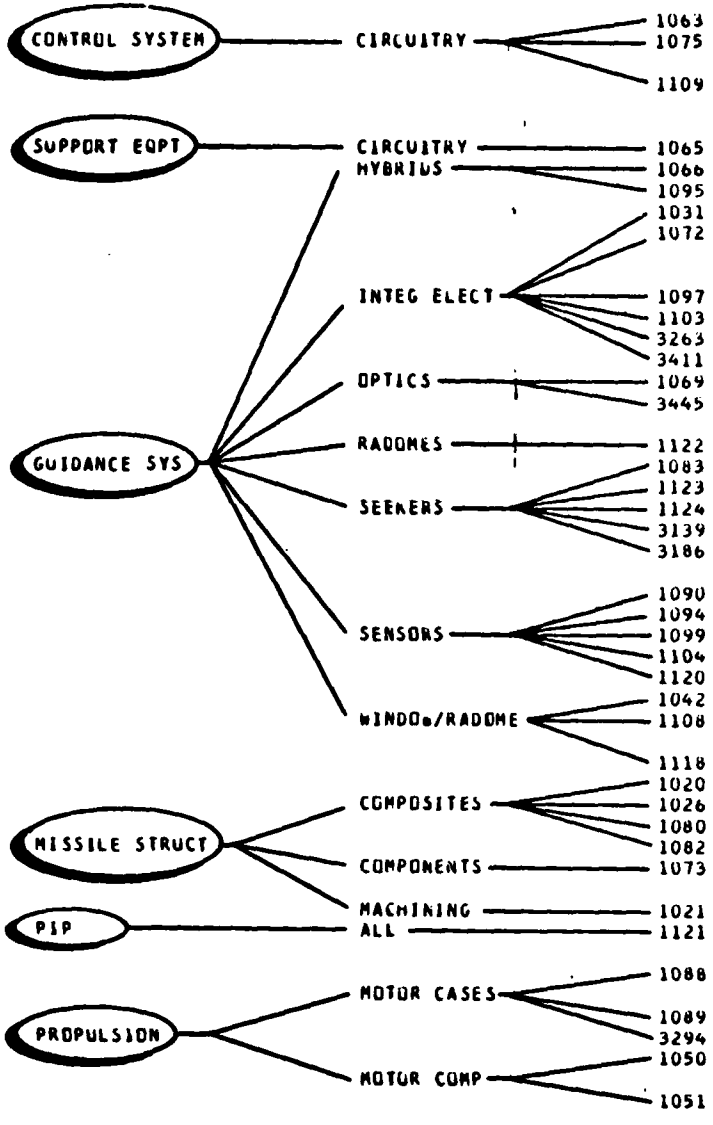
CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
BRIDGING	REINFORCEMENT	3745	ALUMINUM SKIN-GRAPHITE/EPOXY SANDWICH BRIDGE REINF	81	454
		3759	KEVLAR CABLE REINFORCEMENT FOR MILITARY BRIDGES	81	109
	STRUCTURAL MEMBERS	3743	COMPOSITE SPUN MATERIAL TRAVERSING BM FOR BRIDGES	81	100
GENERAL	MISCELLANEOUS	3718	DETERMINE PRODUCTION METHODS AIR CYCLE CIRCULATOR	83	350
		3747	LACV-30, SKIRT AND FINGER COMPONENTS	81	69
		3749	HYDRAULIC ROTOR ACTUATORS	81	106
LAND MINES	NEUTRALIZERS	3796	COMBAT VEHICLE DEGAUSSING	82	968
				83	870
POWER SOURCES	TURBINES	3717	HIGH TEMPERATURE NOZZLE FOR 10KW POWER UNIT	81	422

MISSILE COMMAND

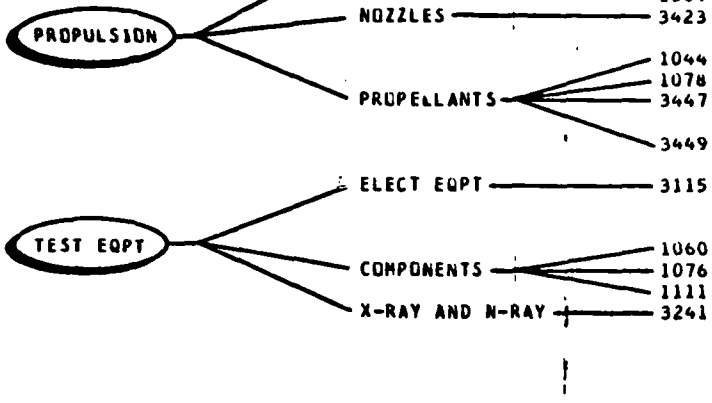
MICOM FUNDING SUMMARY

($000)

CATEGORY	FY 81	FY 82	FY 83
CONTROL SYSTEM	850	571	2,100
SUPPORT EQUIPMENT	0	0	450
GUIDANCE SYSTEM	5,060	4,399	11,853
MISSILE STRUCTURE	864	241	1,558
PIP	725	0	2,000
PROPULSION	2,989	4,561	2,293
TEST EQUIPMENT	661	1,732	1,590
TOTAL	11,149	11,504	21,844



CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
CONTROL SYSTEM	CIRCUITRY	1063	SEMIADDITIVE REEL TO REEL FLEX PRINT PROCESS	82	421
		1075	ELECTRONICS COMPUTER AIDED MANUFACTURING (ECAM)	81	700
				83	1100
		1109	ROBOTIZED WIRE HARNESS ASSEMBLY SYSTEM	81	150
				82	602
				83	1000
SUPPORT EQPT	CIRCUITRY	1065	PROD OF QUIET RADAR SIGNAL PROCESSORS USING VLSI TECHNOLOGY	83	450
	HYBRIDS	1066	ADDITIVE SINGLE AND MULTILAYER HYBRID CIRCUITRY	83	301
		1095	AUTOMATIC SEALING OF HYBRIDS	83	301
GUIDANCE SYS	INTEG ELECT	1031	HIGH SPEED PLATING OF CARD EDGE CONTACTS.	82	722
		1072	MULTIPLE HIGH RELIABILITY/LOW VOLUME LSI MFG	81	1540
				82	1444
				83	1200
		1097	LOW MASS FIBER CONNECTOR	83	250
		1103	STABLE MATERIALS ? MANUFACTURING FOR MULTILAYER PWB	83	511
		3263	MANF. TECH. FOR PWB UTILIZING LEADLESS COMPONENTS	81	400
		3411	MANUFACTURE OF NON PLANAR PRINTED CIRCUIT BOARDS	82	738
	OPTICS	1069	MANUFACTURE OF GRADIENT INDEX LENSES	83	400
		3445	PRECISION MACHINING OF OPTICAL ELEMENTS	81	625
				82	403
	RADOMES	1122	PRODUCTION OF HIGH PERFORMANCE LOW COST CERAMIC IR DOMES	83	450
	SEEKERS	1083	IMP MFG PROC F/FOUR-IN DIAMETER FOCAL PLANE ARRAY SEEKERS	83	1000
		1123	IMPROVED MFG PROCESSES STARING FOCAL PLANE ARRAY DETECTORS	83	2000
		1124	IMPROVED MFG PROC F/8-10 MICRON SCANNING TDI FPA DETECTORS	83	2000
		3139	MILLIMETER RADIOMETRIC SEEKERS FOR SUBMISSILE APPLICATION	81	1300
		3186	IMPROVED MANUFACTURE OF INFRARED SUBMISSILE SEEKERS	82	671
				83	500
	SENSORS	1090	ION IMPLANTED THIN FILM TRANSISTORS	83	350
		1094	PROD METH F/MILLIMTR MONOPULSE ANTENNA F/DIR FIRE APPL	83	1190
		1099	MFG METH AND TECH F/PIN DIODES AT MILLIMETER WAVE FREQUENCY	83	300
		1104	IMPROVED SANDWICH DETECTOR FABRICATION FOR INFRARED SEEKERS	83	500
		1120	DETECTOR GRADE CADMIUM SULFIDE (CDS)	83	300
	WINDOW/RADOME	1042	PRODUCTION OF COMPOSITE RADOME STRUCTURES	81	755
		1108	RF AND LASER HARDENING OF MISSILE DOMES	81	440
				82	421
		1118	NITRIDE-BASED MILLIMETER ANTENNA WINDOW AND RADOMES	83	300
MISSILE STRUCT	COMPOSITES	1020	MFG PROCESSES FOR FUSED SILICA FIBERS	83	458
		1026	LO-COST MFG TECHNIQUES FOR HI PRODUCTION MISSILE VANES (CAM)	81	430
		1080	LOW COST CARBON/CARBON NOSETIPS	83	500
		1082	HIGH ANGLE TAPE WRAPPED HEATSHIELDS	83	600
	COMPONENTS	1073	REAL TIME ULTRASONIC IMAGING	81	200
				82	241
	MACHINING	1021	COMPUTERIZED PROD PROC PLAN FOR MACH CYLINDRICAL PARTS (CAM)	81	234
PIP	ALL	1121	MISSILE MANUFACTURING PRODUCTIVITY IMPROVED PROGRAM	81	725
				83	2000
PROPULSION	MOTOR CASES	1088	OPTIMIZED MANDREL FAB AND UTILIZATION F/COMP MOTOR CASES	81	700
				82	481
		1089	INTEGRAL ROCKET MOTOR COMPOSITE PULE PIECES AND ATTACHMENTS	83	250
		3294	PRODUCTION PROCESS FOR ROTARY ROLL FORMING	81	159
	MOTOR COMP	1050	LOW COST BRAIDED ROCKET MOTOR COMPONENTS	81	430
				82	481
		1051	REPLACEMENT OF ASBESTOS IN ROCKET MOTOR INSULATIONS	81	475
				82	572



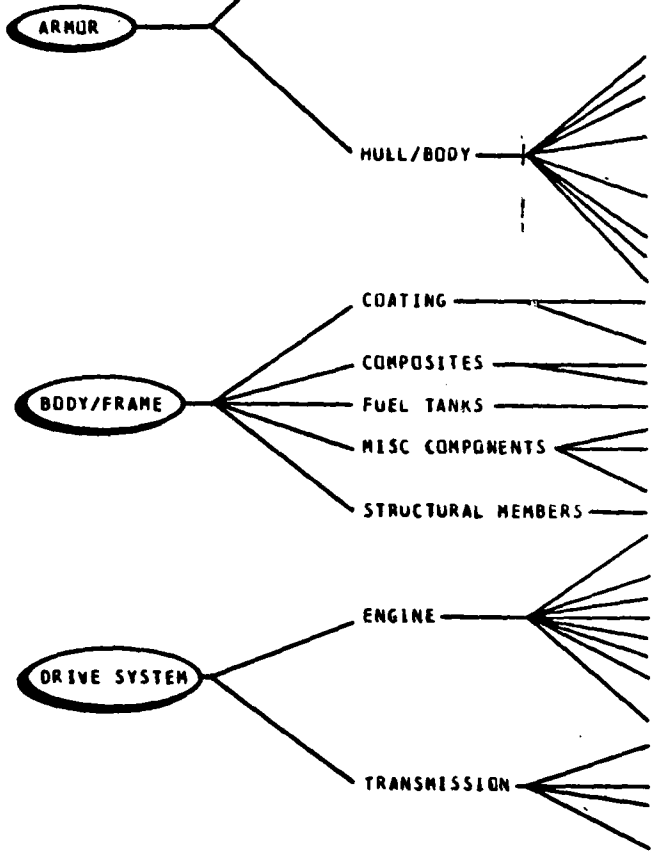
CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
PROPULSION	MOTOR COMP	1086	COBALT REPLACEMENT IN MARAGING STEEL F/ROCKET MOTOR COMP	81	300
				82	517
				83	550
		1087	APPLICATION OF COMMERCIAL GRADE KEVLAR TO ROCKET MOTOR COMP	83	400
	NOZZLES	3423	LOW COST/HIGH PERFORMANCE FIBROUS GRAPHITE ROCKET NOZZLES	81	300
				82	602
	PROPELLANTS	1044	CONTINUOUS PROCESS FOR PROPELLANT MANUFACTURE	82	1477
		1078	CONVERSION OF SURPLUS PENTABORANE TO NHC	83	893
		3447	SCALE UP AND DEMO FOR THE RECOV OF CARBORANE FROM WASTE PROP	81	375
				83	200
		3449	OPTIONAL PROPELLANT INGREDIENTS	81	250
				82	431
TEST EQPT	ELECT EQPT	3115	ENGINEERING FOR CALIBRATION EQUIPMENT	81	661
				82	800
				83	640
	COMPONENTS	1060	ELECTRICAL TEST AND SCREENING OF CHIPS	82	451
		1076	AUTOMATIC RECOGNITION OF CHIPS	82	481
		1111	AUTOMATIC COMPONENT VERIFICATION SYSTEM	83	350
	X-RAY AND N-RAY	3241	AUTOMATIC X-RAY READER TEST EQUIPMENT FOR 3D X-RAYS	83	600

TANK AND AUTOMOTIVE COMMAND

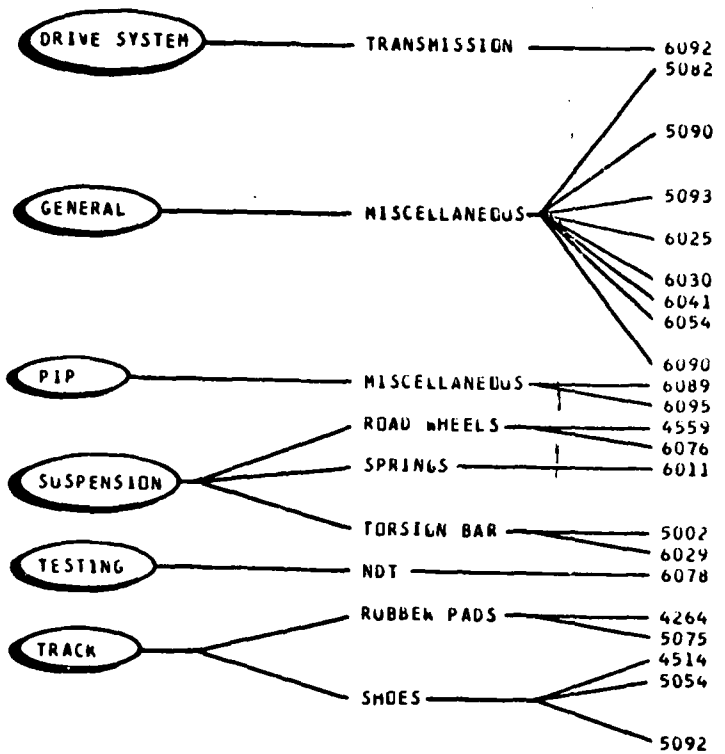
TACOM FUNDING SUMMARY

($000)

CATEGORY	FY 81	FY 82	FY 83
ARMOR	2,591	3,201	4,965
BODY/FRAME	580	327	2,435
DRIVE SYSTEM	360	2,215	6,905
GENERAL	859	2,430	5,150
PIP	0	0	3,200
SUSPENSION	362	525	650
TESTING	0	0	625
TRACK	375	450	950
TOTAL	5,127	9,148	24,880



CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
ARMOR	GENERAL	5065	ADVANCED TECHNOLOGY SURVEILLANCE COUNTERMEASURES MATERIALS	83	350
		5088	HIGH-POWER ELECTRON BEAM WELDING IN AIR	83	300
		5094	ALLOY AND ARMOR STEELS TREATED WITH RARE EARTH ADDITIVES	83	500
		6026	POLYMER QUENCHANTS	83	150
		6038	HIGH DEPOSITION WELDING PROCESSES FOR ARMOR	82	700
				83	600
		6057	XM-1 COMBAT VEHICLE-MFG TECHNOLOGY	81	67
				82	456
				83	300
		6059	FVS COMBAT VEHICLE-MFG TECHNOLOGY	81	291
				82	1460
				83	300
	HULL/BODY	4392	JOINING DISSIMILAR METALS	82	85
		5014	FOUNDRY CASTING PROCESSES USING FLUID FLOW + THERM ANALYS	81	50
		5091	HEAVY ALUMINUM PLATE FABRICATION	81	30
				83	240
		6053	WELDING SYSTEMS INTEGRATION	81	53
				82	500
				83	500
		6073	ADAPTION AND AUTOMATION OF ACOUSTIC EMISSION WELD MONITORING EQUIP.	83	150
		6085	IMPROVED CASTING PROCESSES	83	1575
		6098	PRODUCTION OF SPECIAL ARMOR STEEL	81	900
		6099	MANUFACTURING METHODS FOR SPECIALIZED ARMOR MATERIALS	81	1200
BODY/FRAME	COATING	5068	NEW ANTI-CORROSIVE MATERIALS AND TECHNIQUES	81	450
				83	450
		6012	PRODUCTION TECHNIQUES FOR THE APPLICATION NEW NONTOXIC PAINT	83	600
	COMPOSITES	6000	LIGHTWEIGHT TILT-UP HOOD/FENDER ASSEMBLY	83	510
		6058	EXPLOSIVE BONDING OF COMPOSITE MATERIALS	83	300
	FUEL TANKS	5064	LIGHTWEIGHT SADDLE TANK	83	225
	MISC COMPONENTS	5019	TACTICAL VEHICLE STORAGE BATTERY	81	130
		6064	ADHESIVES FOR TACTICAL VEHICLE ATTACHMENTS	82	250
				83	250
		6084	ARC STUD WELDING (PHASE I)	83	100
	STRUCTURAL MEMBERS	6067	AUTOMATED PROTOTYPE FRAME WELDING	82	77
DRIVE SYSTEM	ENGINE	5053	MANUFACTURE OF ENGINE COMPONENTS OF CERAMIC	82	500
				83	500
		5085	PROD TECH FOR FAB OF TURBINE ENGINE RECUPERATOR	81	250
		5097	INTEGRALLY CAST LOW COST COMPRESSOR	81	50
		6008	AUTOMATED COMPUTER CONTROL LASER MACHINING	83	250
		6018	JOINING OF ATTACHMENTS TO CERAMICS	83	300
		6020	PRODUCTION OF REINFORCED CERAMIC COMBUSTORS	83	250
		6028	PRODUCTION QUALITY CONTROL BY AUTO INSPECTION EQUIPMENT(CAM)	81	60
				83	450
		6079	AGT-1500 ENGINE	83	4100
	TRANSMISSION	5005	COLD FORGED GEARS TO DRAWING TOLERANCES	82	300
				83	300
		5024	GEAR DIE DESIGN AND MFG UTILIZING COMPUTER TECHNOLOGY (CAM)	82	640
		5083	UPSCALING OF ADVANCED POWDER METALLURGY PROCESSES	82	300
				83	150
		5086	SURFACE HARDENING AND ALLOYING OF TRANS SYSTEMS WITH LASERS	82	475
				83	255



TITLE	FY	PROJ COST
AUSROLLED GEARS FOR TACTICAL VEHICLES	83	350
FLEXIBLE MACHINING SYSTEM PILOT LINE FOR TCV COMPONENT	81	779
	82	750
	83	750
IMPROVED AND COST EFFECTIVE MACHINING TECHNOLOGY	81	30
	82	150
	83	350
MANUFACTURING METHODS FOR HIGH SPEED MACHINING FERROUS ALLOY	82	450
	83	550
MANUFACTURING LASER FACILITY	82	1060
	83	400
COMPUTER SIMULATION OF TCV MANUFACTURING PROCESSES	83	300
APPLICATION OF ADAPTIVE CONTROL	83	500
ADVANCED METROLOGY SYSTEMS INTEGRATION	81	50
	83	800
TOOELE ARMY DEPOT PRODUCTIVITY IMPROVEMENT PROGRAM	83	1500
ABRAMS TANK PRODUCTIVITY IMPROVEMENT (PHASE I)	83	1500
ABRAMS TRANSMISSION PRODUCTIVITY IMPROVEMENTS	83	1700
PRESSURE CASTING TECHNIQUES FOR ALUMINUM COMPONENTS	83	250
AUTOMATED DEPOT INSPECTION OF ROAD WHEELS	81	247
SPRINGS FROM CARBON-FIBER PLASTIC-COMPOSITES	81	115
	82	250
	83	100
FABRICATING TORSION BAR SPRINGS FROM HIGH STRENGTH STEEL	82	275
MANUFACTURING PROCESS FOR METAL MATRIX COMPOSITES	83	300
AUTO DYNAMOMETER CONTROL FOR STANDARDIZED INSPECTION TESTING	83	625
INSERTS AND FRICTION FILLERS FOR TRACK RUBBER PADS	83	250
RUBBER FOR MILITARY TRACK	81	200
HARD FACING OF TRACK SHOES	83	175
LASER SURFACE HARDENING COMBAT VEHICLE COMPONENTS	81	175
	82	175
	83	250
RHEOCAST PRESSURE CASTING FOR COMBAT VEHICLE PARTS	82	275
	83	275

DEPOT SYSTEMS COMMAND

DESCOM FUNDING SUMMARY

($000)

CATEGORY	FY 81	FY 82	FY 83
ARMOR	0	283	162
BODY/FRAME	421	74	0
DRIVE SYSTEM	0	0	625
GENERAL	0	0	1,820
TRACK	125	247	661
TOTAL	546	604	3,268

MMT PROGRAM PLAN UPDATE - FY81 THRU 83 PROJECTS
10/30/81

CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
ARMOR	HULL/BODY	2001	PROVIDE PROTOTYPE ROBOTS FOR AUTOMATED BLAST CLEANING	82	283
				83	162
BODY/FRAME	SUSPENSION SYSTEM	4002	ROBOTIZED WELDING OF M113A2 SUSPENSION	81	421
				82	74
DRIVE SYSTEM	ENGINE	7001	AUTOMATED DYNAMOMETER CONTROL FOR STANDARDIZED INSP TESTING	83	625
GENERAL	MISCELLANEOUS	0002	CAM APPLICATION OF ROBOTICS TO SHELTER REFINISHING	83	420
		2002	LONG RANGE DEPOT PRODUCTIVITY IMPROVEMENT PROGRAM - LEAD	83	1400
TRACK	RUBBER PADS	4003	RUBBER INJECTION MOLDING OF DOUBLE PIN TRACK	83	345
		4005	WATER JET MATERIAL REMOVAL SYSTEM	81	125
	SHOES	4004	AUTOMATED DISASSEMBLY OF DOUBLE PIN TRACK	82	247
				83	316

TROOP SUPPORT AND AVIATION READINESS COMMAND

TSARCOM/NLABS FUNDING SUMMARY

($000)

CATEGORY	FY 81	FY 82	FY 83
GENERAL	0	2,000	10,500
TURBINE ENGINE	1,950	415	8,000
TESTING	0	0	175
TROOP SUPPORT	10	0	0
TOTAL	1,960	2,415	18,675

MMT PROGRAM PLAN UPDATE - FY81 THRU 83 PROJECTS
11/02/81

CATEGORY	COMPONENT	EFFORT NO	TITLE	FY	PROJ COST
GENERAL	ALL	8193	MMT AIRCRAFT MANUFACTURING PRODUCTIVITY IMPROVEMENT	82	2000
				83	7000
		8195	AAH AIRCRAFT MANUFACTURING PRODUCTIVITY IMPROVEMENTS	83	3500
TURBINE ENGINE	GENERAL	8192	TURBINE ENGINE PRODUCTIVITY IMPROVEMENT	81	1725
				83	8000
	TURBINE BLADES	8190	IMPRVD CUTTER LIFE, T-700 COMP BLISK/IMPELLER MILLING OPER	81	225
				82	415
TESTING	NDT	8073	COMPUTERIZED COLOR MATCHING SYSTEM	83	175
TROOP SUPPORT	PROTECTION	8063	IMPROVED METHODS OF MFG OF BUTYL RUBBER HANDWEAR	81	10

APPENDICES

INDUSTRY GUIDE

This section of the MMT Program Plan explains the Army programming cycle for the MMT Program. The objective of the MMT Program is to develop new manufacturing methods and processes that will reduce the cost of producing weapon systems. The program consists of approximately 200 projects annually that concentrate on improving and/or developing manufacturing methods, techniques and processes.

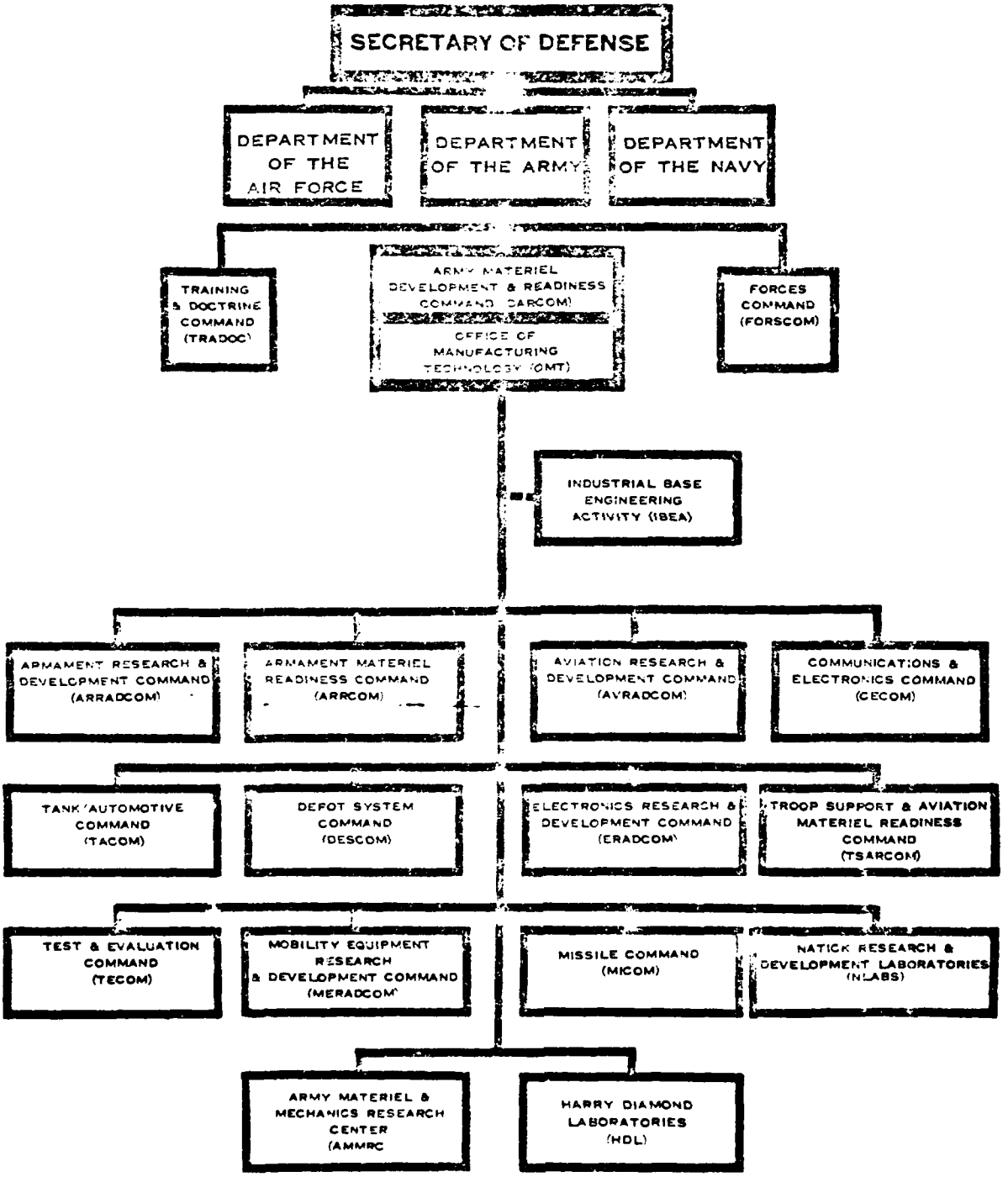
The scope of the MMT Program covers all three of the military services. Within the Army, the Office of Manufacturing Technology (OMT) has been established to provide overall program responsibility. Functional responsibility is at the commodity oriented, Major Subcommands (SUBMACOM'S). The SUBMACOM'S plan, formulate, budget, and execute individual projects. The Industrial Base Engineering Activity (IBEA) assists OMT on the technical aspects of the Manufacturing Technology Program. The organizational chart on the next page depicts this supporting framework.

Throughout the Program Plan reference is made to various appropriations. These appropriations are identified in the Army Management Structure (AR 37-100-FY) and are established by the US Congress as a standard accounting system. Most MMT efforts are funded through the Procurement Appropriations which include (1) Aircraft, (2) Missile, (3) Weapons and Tracked Combat Vehicles, (4) Ammunition, and (5) Other. A few projects receive funds for the Operations Maintenance, Army (OMA) appropriation.

Identification of manufacturing problems is the first step in developing an MMT Program. Problem areas are conceptualized and compiled into a planning document (the Program Plan). At the date of the publication, the Program Plan contains one funded year, one programmed year and three planned years. As the program cycle proceeds the concepts are refined and project proposals are developed. A diagram depicting this programming cycle is shown on page A-3. To fully understand the entire programming cycle one must realize that DOD budgets on a Fiscal Year (FY). The FY starts on 1 October and ends the last day of the following September. For example, on 1 October 1980, the Army began the first quarter of FY81.

The following programming cycle chart depicts the various activities and stages that MMT projects go through. Concepts are first identified in the five year plan according to the projected year funding is expected. Each year these concepts are reevaluated and move forward until they reach the budget phase. Industry has the opportunity to participate during the annual MTAG conference. At this gathering the current program, the latest budget project and the Program Plan are discussed.

UNITED STATES ARMY MATERIEL DEVELOPMENT & READINESS COMMAND (DARCOM)



Calender Year Activities
MMT Planning/Budgeting/Review Cycle

YEARLY ACTIVITIES

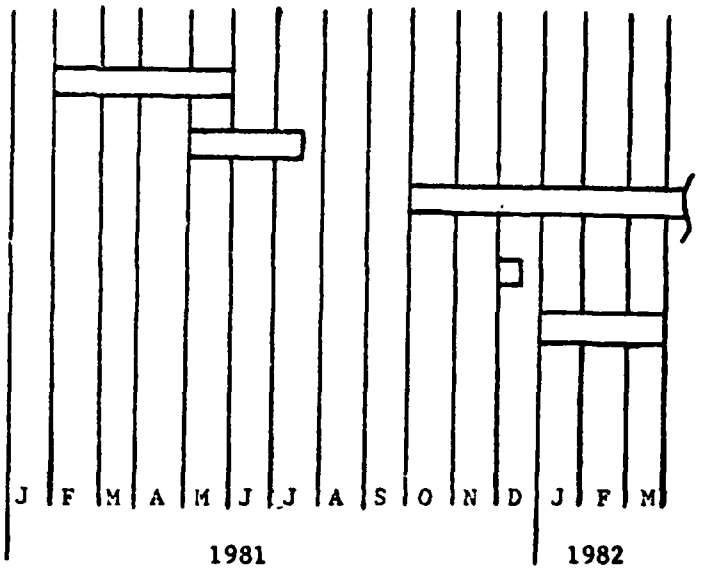
Program Plan (FY81-85)

FY83 Budget Submission/Review

FY82 MMT Funds Released

MTAG Annual Conference

FY83 Apportionment Submission/ Review



The programming cycle shown above starts with the Program Plan. This document consolidates individual submissions from the SUBMACOM'S and develops the planned program. Because Army budget guidance provides "ceilings," potential projects must be prioritized which results in some being excluded or slipped. Inclusion in the Plan does not guarantee that the project will be funded. The level of funding is dependent upon what Congress will appropriate each year.

As projects approach the start of the funding cycle specific objectives and work scopes are developed. These projects are documented in what is known as a P-16. A P-16 is simply the format that is utilized to document data elements such as estimated cost, economics, and description of work. (The P-16 format is described in AR 700-90).

The budget submission represents the first P-16 submitted for inclusion in the program. This submission is followed about nine months later by the more definite apportionment submission. Projects are then funded when the new fiscal year begins. Although this is the normal planning cycle, a project can enter the planning cycle at any point in time. Such a project would be known as a late start submission and funding is usually at the expense of another project.

Criteria for actually funding individual projects include technical, operational, and economical feasibility. The potential for technical success, the means by which the results will be implemented, the potential payback or return on investment and the interrelationships that exist between factors are all evaluated.

For a more comprehensive understanding of the MMT program, the following list of documents is provided for reference:

DOD Instruction 4200.15, Manufacturing Technology Program

AR 700-90, The Army Industrial Preparedness Program

AR 37-100, The Army Management Structure

AR 11-28, Economic Analysis and Program Evaluation for Resources Management

ARMY MMT PROGRAM REPRESENTATIVES

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MERADCOM
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NLABS
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TECOM
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AMMRC
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HDL
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AMRDL
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ATTN: DAMA-PPM-P, Mr. R. Barnett
Room 3C400, The Pentagon — C: 202 695-0506/07/08
Washington, DC 20310 — AV: 225-0506/07/08

DCSRDA (PA 1497, Aircraft)
ATTN: DAMA-WSA, LTC Jay B. Bisbey
Room 3B454, The Pentagon — C: 202 695-1362
Washington, DC 20310 — AV: 225-1362

DCSRDA (PA 2597, Missiles)
ATTN: DAMA-WSM-A, Mr. John Doyle
Room 3B485, The Pentagon — C: 202 695-8740
Washington, DC 20310 — AV: 224-8740

DCSRDA (PA 3297, Weapons; PA 3197, Tracked Combat Vehicles)
ATTN: DAMA-WSW, LTC Raymond Roskowski
Room 3D455, The Pentagon — C: 202 697-0106
Washington, DC 20310 — AV: 227-0106

DCSRDA (PA 5297, Communications/Electroncis)
ATTN: DAMA-CSC-BU, MAJ Paul Harvey
Room 3D440, The Pentagon — C: 202 695-1881
Washington, DC 20310 — AV: 225-1881

DCSRDA (Other Procurement Activities:
PA 5197, Tactical and Support Vehicles)
ATTN: DAMA-CSS-P, LTC L. R. Hawkins
Room 3D416, The Pentagon — C: 202 694-8720
Washington, DC 20310 — AV: 224-8720

DCSRDA (Other Procurement Activities:
PA 5397, Other Support)
ATTN: DAMA-CSS-P, LTC P. K. Linscott
Room 3D418, The Pentagon — C: 202 694-8720
Washington, DC 20310 — AV: 224-8720

DCSRDA (PA 4950, Ammunition)
ATTN: DAMA-CSM-DA, COL Jack King
Room 3C444, The Pentagon — C: 202 694-4330
Washington, DC 20310 — AV: 224-4330

DCSRDA (PA 4950, Ammunition)
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DATE
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