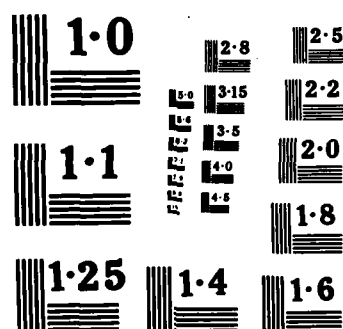


AERONAUTICAL SYSTEMS DIVISION MANUFACTURING/QUALITY
ASSURANCE ORIENTATION(U) AIR COMMAND AND STAFF COLL
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AIR COMMAND AND STAFF COLLEGE

STUDENT REPORT

AERONAUTICAL SYSTEMS DIVISION
MANUFACTURING/QUALITY ASSURANCE
ORIENTATION

MAJOR WAYNE F. LAESSIG 85-1535
MAJOR AUTHOR LAIRD

"insights into tomorrow"

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ASSURANCE ORIENTATION

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Submitted to the faculty in partial fulfillment of
requirements for graduation.

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Aeronautical Systems Division (ASD) Manufacturing/Quality Assurance (Mfg/QA) Orientation (videotape) includes ASD organization, program management team concept, matrix management, generic acquisition milestones with associated Mfg/QA inputs, and general sources of expertise. Intended as an overview to enhance big picture understanding of new Mfg/QA managers. Mfg/QA Orientation for Mfg/QA Managers (sound-on-slide) expands explanation of Mfg/QA inputs to the request for proposal (RFP), source selection participation, pre/post-award contract reviews and audits, and more specifics on additional help. Intended to start the new Mfg/QA manager working. Mfg/QA Orientation for Program Managers (sound-on-slide) provides an overview of Mfg/QA requirements, expected participation, and potential Mfg/QA inputs covering RFP preparation, source selection, and reviews and audits.					
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PREFACE

This project involved the development of a 22-minute videotape entitled "Aeronautical Systems Division (ASD) Manufacturing/Quality Assurance (Mfg/QA) Orientation", a 30-minute sound-on-slide presentation entitled "Mfg/QA Orientation for Mfg/QA Managers", and a 20-minute sound-on-slide presentation entitled "Mfg/QA Orientation for Program Managers." The purpose of this project is to provide orientation training for ASD's newly assigned Mfg/QA and program managers.

We would like to thank Major Thomas G. Jones for his guidance and suggestions in the preparation of this project and his skillful review of the final product. Additional thanks to our sponsor Mr. Brian Kosmal, his staff, and the numerous ASD Mfg/QA collocates for their help in providing information, material, and advice for this project.

Based on their recent Mfg/QA experience at ASD, both authors and their sponsor believe the Mfg/QA discipline has grown more rapidly than the ability to provide sufficient orientation to the increasing numbers of new Mfg/QA managers. As an offshoot of the growing emphasis on Mfg/QA, many program managers, particularly the new ones, need a "nutshelled" overview of what Mfg/QA is and where it fits in the program management scheme. It is essential for both Mfg/QA managers and program managers to understand ASD's Mfg/QA organization and responsibilities. Despite the increasing need for qualified Mfg/QA managers, a limited personnel pool has resulted in a majority of inexperienced assessments. At ASD, only 7 of 41 military, from lieutenant to lieutenant colonel, had prior Mfg/QA experience for the 1984 inbound permanent change of station (PCS) cycle. In the civil service area, which accounts for approximately 50 percent of the Mfg/QA managers at ASD, personnel from GS-05 through GS-12 grades are hired with Mfg/QA experience varying from none to highly experienced. But, less than 10 percent have Mfg/QA experience as it applies to the ASD acquisition process. The ASD Mfg/QA annual turnover rate is approximately 25 percent for military and 15 percent for civil servants. Additionally, the limited number of experienced personnel available to enter the program management field has created an influx of inexperienced lieutenants and civil servants as program managers.

Because of the manpower shortage and limited scheduling of the present ASD orientation course, newly assigned personnel are not always able to attend the week long orientation course in a timely manner. In addition, the Mfg/QA portion of the orientation does not, in the opinion of the authors and their sponsor, provide sufficient specifics for Mfg/QA managers or the necessary background for program managers to effectively implement a successful Mfg/QA program. Currently there is no other formal orientation program available at ASD.

Having analyzed the audience, we decided it is very important to provide new individuals with the basic knowledge necessary to make reasonable decisions while they learn through on-the-job training. The videotape provides general understanding of ASD's Mfg/QA organization and responsibilities and includes a description of matrix management, the program management team, and sources of Mfg/QA expertise. The two sound-on-slide presentations include more specific details on the "how to" for Mfg/QA managers as well as helpful hints on Mfg/QA for program managers.

Our intended use is to have newly assigned ASD personnel view the videotape as initial orientation along with the appropriate sound-on-slide presentation. Additionally, the project sponsor, Mr. Brian Kosmal, and his staff will evaluate the entire orientation package for content and effectiveness during the first year's use. See the Afterword for further recommendations on usage, revision and expansion.

The videotape portion of this project may be obtained by ordering AUTV production number F3652-85-0011 from Air University Television, Bldg 1405, Maxwell AFB, AL 36112. Requester must supply a 30-minute 3/4 inch videocassette. The audio portion of either sound-on-slide presentation may be obtained by sending a blank 45-minute (one side) audiocassette for the Mfg/QA presentation or a blank 30-minute (one side) audiocassette for the program manager presentation to ASD/PMD, Wright Patterson AFB, OH 45433.

ABOUT THE AUTHOR

Major Laessig served as the Deputy Director of Manufacturing/Quality Assurance (Mfg/QA) for the Aeronautical Systems Division (ASD). Prior to assuming duties as Deputy Director, Major Laessig served as Mfg/QA manager on programs such as Chemical Defense, Standardized Avionics, and Support Equipment in the Deputy for Aeronautical Equipment. Major Laessig completed AFIT's Education with Industry course in the Manufacturing option at Pratt and Whitney, East Hartford, CT. His operational experience includes AC-119K pilot (PACAF), C-5A pilot (MAC), and C-5A pilot (AFLC). His formal education includes a BA in English from Glassboro State College, NJ and an MA in Communication from the University of Northern Colorado. Professional military education includes Squadron Officers School in residence (1976).

Major Laird served as the Deputy Director of Manufacturing/Quality Assurance in the Deputy for Tactical Systems at ASD. Prior to assuming duties as Deputy Director, he was responsible for Mfg/QA on programs such as the Maverick missile and F-15 aircraft. Major Laird completed AFIT's Education With Industry course in the Quality Assurance option at IBM, Owego, NY. His operational experience includes KC-135 pilot (SAC), Emergency Action Controller (TAC), and C-130 pilot (PACAF). His formal training includes a BA in Biological Science from the University of Arkansas at Pine Bluff, and an MS in Operations Management from the University of Arkansas. Professional military education includes Squadron Officers School in residence (1975) and National Security Management School (1984).

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APPENDIX

AFTERWORD

This ACSC project was only part of the overall product; ASD/PMD was an active partner in not only the planning and implementation of the ACSC portion, but also the integrator for the final product. Specifically, time and cost constraints precluded generation of the slide portion of either sound-on-slide presentation using ACSC/AU resources. Therefore, we provided ASD/PMD with side-by-side slide/script manuscripts. ASD/PMD will utilize in-house resources for appropriate graphics and photo lab work to make finished slides, using the slide format shown on our manuscript. In addition, where the script called for pictures, we included, as a separate package, appropriate pictures to be made into slides. As a consequence of the above, the AU library copy of our ACSC project will only include the manuscript information on slides. ASD/PMD will have full control of both script and slides to complete both sound-on-slide presentations.

What we have done is only part of the picture. It provides the basis for a complete orientation/on-going training program for ASD/PMD. We recommend follow-on actions to include yearly revision of both sound-on-slide presentations updating policy and regulatory changes, expansion of the sound-on-slide library to include short (10-20 minutes) presentations on specific topics such as Should Costs, Fact-Finding, TechMod, Work Measurement, Software QA, Mfg Assessments (MM/PCR, PRR), etc. These can be done either as additional ACSC projects or by ASD/PMD.

We believe our orientation project can be optimized by providing a handout package after new personnel review the videotape and sound-on-slide programs. Therefore, although not intended as part of our formal project, we have taken advantage of our research to put together a recommended handout package. It includes existing handbooks, checklists, instructions, sample forms/formats, and sources of existing Mfg/QA publications. This package was provided to ASD/PMD under a separate cover (not part of this project).

AERONAUTICAL SYSTEMS DIVISION (ASD)
MANUFACTURING/QUALITY ASSURANCE (MFG/QA) ORIENTATION
(VIDEOTAPE)

NOT LONG AGO I WAS SITTING EXACTLY WHERE YOU ARE, AND MY EXPERIENCE UPON ARRIVAL AT ASD, ALONG WITH FEEDBACK FROM OTHER NEWLY ASSIGNED MANUFACTURING AND QUALITY ASSURANCE MANAGERS, IDENTIFIED THE NEED TO ORIENT NEW PERSONNEL AND GIVE THEM THE MINIMUM TOOLS TO SURVIVE WHILE THEY'RE LEARNING.

I'M NOT THE WORLD'S EXPERT IN MANUFACTURING AND QUALITY ASSURANCE BUT, I GRADUATED FROM THE EDUCATION WITH INDUSTRY PROGRAM IN MANUFACTURING AND QUALITY ASSURANCE AND MY ASD EXPERIENCE INCLUDES MANUFACTURING AND QUALITY ASSURANCE MANAGEMENT ON PROGRAMS SUCH AS CHEMICAL DEFENSE, STANDARD AVIONICS AND LIFE SUPPORT EQUIPMENT. I ALSO BECAME INVOLVED IN POLICY DECISIONS AS DEPUTY DIRECTOR OF MANUFACTURING AND QUALITY ASSURANCE FOR ASD.

THIS PRESENTATION WILL START WITH A BRIEF OVERVIEW OF THE AIR FORCE ACQUISITION ORGANIZATION. NEXT, I'LL OUTLINE THE ASD ORGANIZATION TO INCLUDE AN EXPLANATION OF THE PROGRAM MANAGEMENT TEAM CONCEPT AS WELL AS MATRIX MANAGEMENT. AFTER THAT, MAJOR LAIRD WILL DISCUSS THE CONTRACTOR SELECTION PROCESS, THEN LEAD YOU THROUGH AN EXPLANATION OF A GENERIC PROGRAM'S MILESTONES. FINALLY, HE'LL SHOW YOU SOME OF THE PLACES YOU CAN FIND MANUFACTURING AND QUALITY ASSURANCE EXPERTISE AND HELP.

FIRST THEN, A SHORT BRIEFING ON "HOW" THE AIR FORCE OPERATES

AS A TOTAL SYSTEM. LET'S START WITH THE PRIMARY MISSION OF THE AIR FORCE---TO FIGHT AND WIN. ON THE OPS SIDE, TAC OWNS PRIMARILY FIGHTER AIRCRAFT AND THEIR MISSION INCLUDES AIR SUPERIORITY, AIR INTERDICTION AND CLOSE AIR SUPPORT. SAC HAS THE BOMBERS WHICH ACT AS THE AIR BREATHING, MANNED LEG OF THE STRATEGIC DETERRENCE TRIAD. MAC FLIES THE TRANSPORT AIRCRAFT WHICH PROVIDE TRANSPORTATION FOR TROOPS AND SUPPLIES. SIMPLY PUT, TAC "SHOOTS THEM DOWN", SAC "BLOWS THEM UP", AND MAC "HAULS AROUND THE SUPPLIES NEEDED TO FIGHT WITH."

BUT, BEFORE THE "OPS TYPES" CAN FIGHT, SOMEONE HAS TO DEVELOP EQUIPMENT FOR THEM TO USE! AND THAT'S THE ROLE OF AIR FORCE SYSTEMS COMMAND---TO DEVELOP EQUIPMENT; NOT JUST GOOD ENOUGH TO FIGHT WITH, BUT GOOD ENOUGH TO WIN WITH.

HOW DO WE DO THAT? WELL---TO START WITH, SYSTEMS COMMAND IS SET UP SO A SINGLE ORGANIZATION IS RESPONSIBLE TO DEVELOP A GENERAL FAMILY OF SYSTEMS. FOR EXAMPLE, AT ASD WE'RE RESPONSIBLE FOR DEVELOPING EXACTLY WHAT OUR NAME SAYS---"AERONAUTICAL SYSTEMS"---WHICH ARE THINGS THAT FLY OR DIRECTLY SUPPORT FLYING. EACH ORGANIZATION WITH RESPONSIBILITY FOR A GENERAL FAMILY OF SYSTEMS IS CALLED A PRODUCT DIVISION, AND THE PRIMARY ONES ARE ELECTRONIC SYSTEMS DIVISION, ARMAMENT DIVISION, SPACE DIVISION, THE BALLISTIC MISSILE OFFICE, AND OURSELVES, AERONAUTICAL SYSTEMS DIVISION. I'LL USE ASD'S STRUCTURE TO DEMONSTRATE HOW A PRODUCT DIVISION OPERATES. FIRST, THE GENERAL FAMILY OF "AERONAUTICAL SYSTEMS" IS BROKEN DOWN INTO NINE SPECIFIC FAMILIES SUCH AS TACTICAL, AIRLIFT, AND

ACQUISITION PLAN INPUTS

3 RISK
4 PREHENSIVE COST REDUCTION PLAN
5 RISK
6 GOVERNMENT FURNISHED EQUIPMENT,
7 MATERIALS, AND FACILITIES
8 COMPONENT BREAKOUT

ACQUISITION PLAN "HELP"

9 HANDBOOK

10 CHECKLIST

EXISTING ACQUISITION PLANS

WHERE TO GET ACQUISITION PLAN "HELP"

11 R SPO MFG/QA
12 CO-WORKERS
13 BRANCH CHIEF
14 DIVISION CHIEF
15 DIRECTOR
16 HOME OFFICE
17 MORE ON THIS LATER

LET'S LOOK AT THE CATEGORIES YOU'LL BE TASKED
TO PROVIDE INPUTS FOR (SEE SLIDE). MIND BOGGLING?
HANG IN THERE. THE MFG HANDBOOK IN YOUR
REFERENCE PACKAGE HAS A SECTION THAT COVERS
ACQUISITION PLANS. ALSO INCLUDED IN THE PACKAGE
IS A "CHECKLIST" PREPARED BY PMD COVERING EXACTLY
WHAT IS REQUIRED FOR EACH ENTRY. YOU CAN ALSO
LOOK AT THE ACQUISITION PLAN DEVELOPED FOR
PROGRAMS THAT ARE "SIMILAR" TO YOURS--IT'S A GREAT
STARTING POINT FOR YOUR PLANNING. REMEMBER, THE
INDIVIDUALITY OF YOUR SPECIFIC PROGRAM MEANS
YOU'LL NEED TO USE BOTH REGULATORY GUIDANCE AND
COMMON SENSE TO DECIDE EXACTLY WHAT TO PUT IN THE
ACQUISITION PLAN. YOU SAY IT'S STILL MIND
BOGGLING? OK, HERE'S WHERE YOUR CO-WORKERS,
BRANCH CHIEF, DIVISION CHIEF, OR DIRECTOR CAN HELP
YOU. ANOTHER PLACE YOU CAN GET EXCELLENT HELP IS
THE HOME OFFICE. WE'LL GIVE YOU MORE SPECIFICS ON
HOME OFFICE HELP LATER.

USER COMMANDS SUCH AS TAC, SAC, OR MAC AND TELLS THE PROGRAM MANAGER WHAT THE USERS NEED TO DO THEIR JOB. NEXT, THE PROGRAM MANAGER PUTS TOGETHER A BRIEFING CALLED THE NEW START REVIEW (NSR)--THIS PRESENTATION COVERS THE SYSTEM PROGRAM OFFICE'S (SPO) CAPABILITIES AND READINESS TO TAKE ON THE TASK. THE PROGRAM IS TECHNICALLY NOT A "REAL" PROGRAM UNTIL THE NEW START IS AUTHORIZED BY THE APPROPRIATE LEVEL. FOR SMALL PROGRAMS THE HEAD OF THE SPO CAN AUTHORIZE THE NEW START; LARGER PROGRAMS CAN GO AS HIGH AS THE SECRETARY OF DEFENSE. NEXT, A PROGRAM MANAGEMENT DIRECTIVE (PMD) PROVIDES FORMAL SYSTEMS COMMAND GUIDANCE TO THE SPO. YOUR PRIMARY CONCERN DURING THESE MILESTONES SHOULD BE TO INSURE ANY MAJOR MFG/QA ISSUES ARE CONSIDERED BEFORE THE TASK IS FORMALIZED.

PRIMARY CONCERNS

MFG TECHNOLOGY-DOES INDUSTRY HAVE THE CAPABILITY?

PROCESSES- PROPRIETARY?

MATERIALS- EXOTIC?

UP TO THIS POINT, YOU'VE VOICED YOUR CONCERNS ABOUT THE MFG/QA ISSUES, THE CHIEFS UP THE LINE HAVE REVIEWED AND ACCEPTED THE PROGRAM, AND YOU HAVE A FORMAL START. TIME TO BEGIN WORKING, RIGHT? SORRY, BUT EVEN BEFORE THE PROGRAM IS FORMALIZED YOU'LL BE WORKING ON YOUR FIRST MAJOR INPUT TO THE PLANNING PHASE--THE ACQUISITION PLAN.

ORM 103 WITH ACQUISITION PLAN ADDED

PICTURE OF B-1 AND OXYGEN REGULATOR
SIDE BY SIDE

THE INDIVIDUALITY OF EVERY PROGRAM BUT WE WILL
PRESENT THE BASIC NEEDS AND CONSIDERATIONS OF A
GENERIC PROGRAM. SPECIFICALLY, THE GENERIC ASPECT
OF MFG/QA DOES NOT CHANGE DRASTICALLY FROM PROGRAM
TO PROGRAM, BUT YOU'LL HAVE TO SELECTIVELY APPLY
WHAT WE PRESENT HERE TO FIT THE SPECIFIC PROGRAM
YOU'RE WORKING ON--WHETHER IT'S AS BIG AS THE B-1
OR AS SMALL AS AN OXYGEN REGULATOR.

AGENDA

- o MFG/QA INVOLVEMENT
 - oo PLANNING
 - oo PREPARATION
 - oo SOURCE SELECTION
 - oo IMPLEMENTATION
- o EXPERTISE AND ADVICE

ENOUGH ANTHROPOLOGY--WHAT ABOUT MFG/QA? WE'LL
DISCUSS THE MFG/QA INPUT TO THE ACQUISITION
PROCESS USING THESE GENERAL CATEGORIES (SEE
SLIDE). WE'LL WRAP IT UP WITH A SHORT DISCUSSION
ON SOURCES OF EXPERTISE AND ADVICE.

AFSC FORM 103--BLANK

FORM 103 WITH FIRST THREE MILESTONES
ADDED: SON, NSR, AND PMD

TO START OFF THE PLANNING PHASE, THIS IS AN
AIR FORCE SYSTEMS COMMAND (AFSC) FORM 103--THEY'RE
REGULARLY USED ON EVERY PROGRAM TO SHOW SPECIFIC
PROGRAM "MILESTONES." NOW LET'S FILL-IN ONE WITH
THE MILESTONES YOU'LL BE INTERESTED IN--THE ONES
THAT AFFECT YOU OR REQUIRE YOUR DIRECT INPUT.
THESE ARE NOT THE ONLY MILESTONES A PROGRAM CAN
HAVE, NOR DOES EVERY PROGRAM HAVE EACH MILESTONE,
BUT THESE INCLUDE SOME OF THE MORE REGULARLY USED
ONES. THE FIRST THREE MILESTONES RARELY REQUIRE
YOUR DIRECT INPUT, BUT THEY CAN HAVE AN EFFECT ON
YOU. THE STATEMENT OF NEED (SON) COMES FROM THE

AERONAUTICAL SYSTEMS DIVISION (ASD)
MANUFACTURING/QUALITY ASSURANCE (MFG/QA)

ORIENTATION FOR MFG/QA MANAGERS

(SOUND ON SLIDE)

(SPEAKER 1)

MANUFACTURING/QUALITY ASSURANCE
(MFG/QA)

ORIENTATION

WELCOME TO MANUFACTURING/QUALITY ASSURANCE. BY NOW YOU SHOULD HAVE SEEN THE VIDEOTAPE TITLED "ASD MFG/QA ORIENTATION", HAVE A GENERAL IDEA HOW ASD OPERATES, AND UNDERSTAND WHERE YOU FIT IN. THIS SOUND ON SLIDE PRESENTATION IS DESIGNED TO CONTINUE YOUR "LEARNING" PROCESS BY SHOWING A MORE COMPLETE PICTURE OF THE MFG/QA INPUTS FROM THE "WHAT, HOW, WHEN, AND WHERE" VIEWPOINT. IF YOU HAVEN'T SEEN THE VIDEOTAPE ORIENTATION AND WANT A "BIG PICTURE" OVERVIEW, CONTACT PMD (ASD DIRECTORATE OF MFG/QA)--YOU SHOULD REALLY SEE IT BEFORE VIEWING THIS PRESENTATION.

ASD MFG/QA ORIENTATION

VIDEOTAPE

EXT 54217

PICTURE OF DIFFERENT TYPES OF PEOPLE

THE FIRST THING YOU NEED TO UNDERSTAND IS THAT ASD PROGRAMS AND PEOPLE ARE VERY SIMILAR. ASD PROGRAMS, LIKE PEOPLE, HAVE "BASIC" CHARACTERISTICS AND NEEDS, BUT JUST LIKE AN "INDIVIDUAL", EACH SPECIFIC PROGRAM WILL BE A UNIQUE BLEND OF REQUIREMENTS, STRENGTHS, AND WEAKNESSES. WE CAN'T SHOW YOU HOW TO WORK WITH

BOTH PRESENTATIONS COVER REGULATION AND POLICY REQUIREMENTS, POTENTIAL BENEFITS, AND METHODS OF IMPLEMENTATION.

WE HOPE BY NOW YOU HAVE A FEEL FOR THE MANUFACTURING AND QUALITY ASSURANCE ORGANIZATION AND RESPONSIBILITIES. THIS PRESENTATION IS JUST THE FIRST STEP IN A LEARNING PROCESS THAT WILL MAKE YOU AN EFFECTIVE MEMBER OF THE PROGRAM MANAGEMENT TEAM. YOUR INPUTS WILL HAVE A DIRECT IMPACT ON WHETHER OR NOT THE AIR FORCE WILL HAVE THE TOOLS, IF NEEDED, TO FIGHT AND WIN. IF YOU DO IT RIGHT, WE MAY NEVER HAVE TO FIGHT. BUT IF IT EVER COMES ~~TA~~ IT, LET'S MAKE SURE THE EQUIPMENT WE'VE PROVIDED WILL DO THE JOB RIGHT THE FIRST TIME.

MILESTONE, PRODUCTION, IS THE ULTIMATE GOAL OF THE PROGRAM MANAGEMENT TEAM.

UP TO NOW WE HAVE DISCUSSED SEVERAL MILESTONES FOR A "GENERIC" PROGRAM. THE "ACTUAL" MILESTONES FOR A PROGRAM WILL DEPEND ON A BLEND OF REGULATIONS, POLICIES, AND PROGRAM MANAGEMENT TEAM ANALYSES. THE PROGRAM MANAGER WILL MAKE THE FINAL DECISION FOR ALL MILESTONES. EACH OF THE MILESTONES REQUIRE AN INPUT FROM YOU AS A PROGRAM MANAGEMENT TEAM MEMBER. YOU ARE PROBABLY WONDERING EXACTLY WHAT YOU WILL NEED TO DO THOUGH. WELL, THE EXPERTISE TO HELP YOU AS A MANUFACTURING AND QUALITY ASSURANCE MANAGER EXISTS IN SEVERAL PLACES. FOR EXAMPLE, THERE ARE COLLOCATED MANUFACTURING AND QUALITY ASSURANCE PEOPLE IN EACH SPO, HOME OFFICE MANUFACTURING AND QUALITY ASSURANCE PEOPLE, AND THE IN-PLANT CAO MANUFACTURING AND QUALITY ASSURANCE. EACH OF THESE GROUPS HAS EXPERIENCED PEOPLE WHO ARE EXPERTS IN PREPARING STATEMENTS OF WORK AND CONDUCTING REVIEWS AND AUDITS. THEY CAN ASSIST YOU WHILE YOU'RE LEARNING. FOR A SPECIFIC, EXPANDED EXPLANATION OF FUNCTIONS, INPUTS, AND SOURCES OF EXPERTISE WE HAVE DEVELOPED A SOUND ON SLIDE PRESENTATION FOR THE NEW MANUFACTURING AND QUALITY ASSURANCE MANAGER. THIS PRESENTATION IS AVAILABLE THROUGH ASD/PMD. IN ADDITION, WE HAVE DEVELOPED A SECOND SOUND ON SLIDE PRESENTATION ORIENTED TOWARD THE PROGRAM MANAGER. IN IT, WE HAVE INCORPORATED FOR THE PROGRAM MANAGER THE MANUFACTURING AND QUALITY ASSURANCE VIEWPOINT OF WHAT "MUST" BE INCLUDED, WHAT "SHOULD" BE INCLUDED, AND WHAT "CAN" BE INCLUDED IN A CONTRACT.

COMES AFTER THE CONTRACTOR HAS COMPLETED INITIAL DESIGN PLANNING. THE PURPOSE IS TO REVIEW AND DETERMINE IF THE CONTRACTOR'S DESIGN APPROACH WILL MEET THE GOVERNMENT'S NEEDS. OBVIOUSLY THIS DESIGN WILL NOT WORK. THIS IS USUALLY CONSIDERED THE MILESTONE WHERE THE GOVERNMENT CAN REDIRECT THE CONTRACTOR WITHOUT COSTLY IMPACT ON THE PROGRAM.

THE THIRD MILESTONE, THE CRITICAL DESIGN REVIEW OR CDR, IS SCHEDULED WHEN A CONTRACTOR HAS A FIRM DESIGN. THE CONTRACTOR MAY HAVE BUILT PROTOTYPE HARDWARE, BUT THE GOVERNMENT TEAM DETERMINES IF THE DESIGN AND PLANNING ARE READY FOR THE BUILD OF PRODUCTION HARDWARE. AS YOU CAN SEE HERE, THE REDIRECTION RESULTED IN A FIRM BASELINE AND A SUCCESSFUL CDR. ANY CHANGES FROM THAT BASELINE MAY INVOLVE CHANGE IN COST.

THE FOURTH MILESTONE, THE FUNCTIONAL CONFIGURATION AUDIT OR FCA, USUALLY OCCURS WHEN EITHER A PROTOTYPE UNIT OR THE FIRST PRODUCTION UNIT IS BUILT. THE PURPOSE IS TO DETERMINE IF THE UNIT WILL FUNCTIONALLY MEET ALL CONTRACTUAL PERFORMANCE REQUIREMENTS. THIS AUDIT IS SIMULTANEOUS WITH OR CLOSELY FOLLOWED BY THE FIFTH MILESTONE, THE PHYSICAL CONFIGURATION AUDIT OR PCA.

THE PCA IS DONE ON A PRODUCTION CONFIGURATION AND CONFIRMS THAT THE DRAWINGS AND HARDWARE MATCH. THE PURPOSE IS TO ESTABLISH EXACTLY WHAT DRAWINGS AND PROCESSES WILL BE USED FOR PRODUCTION AND WHAT THE HARDWARE WILL LOOK LIKE. SUCCESSFUL COMPLETION OF THIS AUDIT FREEZES THE DESIGN AND PROVIDES A DRAWING PACKAGE SUITABLE FOR REPROCUREMENT. THE FINAL

REQUIREMENTS. THE PROPOSALS ARE ANALYZED AND EVALUATED BY THE SOURCE SELECTION TEAM. THE TASK OF THE SOURCE SELECTION TEAM IS TO IDENTIFY AND RISKS TO THE GOVERNMENT. DURING THE SOURCE SELECTION AN ON-SITE REVIEW IS USUALLY CONDUCTED AT THE CONTRACTOR'S PLANT. DEPENDING ON THE COMPLEXITY OF A PROGRAM THE SOURCE SELECTION TEAM CAN DELEGATE THE ON-SITE REVIEW, ASSIST IN THE ON-SITE REVIEW, OR CONDUCT THE REVIEW INDEPENDENTLY. PROPOSAL EVALUATIONS AND ON-SITE REVIEWS ARE THE PRIMARY TOOLS USED TO SELECT A CONTRACTOR. THE ULTIMATE GOAL IS TO DETERMINE NOT ONLY WHICH CONTRACTORS ARE CAPABLE BUT WHICH ONE IS BEST SUITED TO DEVELOP AND DELIVER THE PRODUCT.

NOW THAT WE KNOW THAT THE STATEMENT OF WORK IS THE ROAD MAP AND SOURCE SELECTION IS THE PROCESS, LET'S LOOK AT THE PRIMARY MILESTONES OF A GENERIC PROGRAM. THE PLAYERS INVOLVED INCLUDE CONTRACTOR MANAGEMENT AND TECHNICAL PERSONNEL, PROGRAM MANAGEMENT TEAM MEMBERS, AND A NEW PLAYER---THE CAO OR CONTRACT ADMINISTRATION OFFICE. THE CAO IS THE "IN-PLANT" EYES AND EARS OF THE GOVERNMENT AND INSURES THAT THE CONTRACT IMPLEMENTATION IS IN ACCORDANCE WITH THE UNDERSTANDINGS REACHED AT THE FIRST MILESTONE, THE POST-AWARD CONFERENCE. ACCOMPLISHED SHORTLY AFTER CONTRACT AWARD, THE POST-AWARD CONFERENCE IS CONVENED TO INSURE THAT GOVERNMENT EXPECTATIONS AND CONTRACTOR INTENT ARE THE SAME. IT'S LIKE A FOOTBALL HUDDLE, THE QUARTERBACK CALLS THE PLAY AND EXPECTS EVERYONE TO MAKE SURE THEY UNDERSTAND WHAT THE PLAY IS, WHERE TO MOVE AND WHAT TO DO.

THE SECOND MILESTONE, THE PRELIMINARY DESIGN REVIEW OR PDR,

FORCE'S ACQUISITION ORGANIZATION, OUTLINED ASD'S ORGANIZATION, TALKED ABOUT THE PROGRAM MANAGEMENT TEAM AND FINISHED WITH HOW MATRIX MANAGEMENT WORKS. SINCE MOST ASD ACQUISITIONS ARE BUILT BY CIVILIAN CONTRACTORS, HOW DO WE TELL THE CONTRACTOR WHAT WE WANT SO HE CAN DEVELOP THE PRODUCT---WHAT TOOLS DO WE USE? MAJOR LAIRD WILL START US OFF BY EXPLAINING WHAT A "SOW" IS AND HOW IT'S USED IN THE SOURCE SELECTION PROCESS, FOLLOWED BY SOME PROGRAM MILESTONES AND SOURCES OF MANUFACTURING AND QUALITY ASSURANCE EXPERTISE. FIRST, A "SOW" ISN'T JUST A FARM ANIMAL. IT'S ALSO THE ACRONYM FOR STATEMENT OF WORK---S.O.W.---AND IT'S THE PRIMARY TOOL THE PROGRAM MANAGEMENT TEAM USES TO TELL THE CONTRACTOR WHAT THEY WANT WITH RESPECT TO CAPABILITY, CONTROLS, AND DATA. THE STATEMENT OF WORK PROVIDES A ROAD MAP FOR THE CONTRACTOR WHICH ENABLES HIM TO DO THE NECESSARY PLANNING TO DETERMINE COST, SCHEDULE AND PERFORMANCE REQUIREMENTS. EARLY IN THE ACQUISITION PROCESS, EACH PROGRAM MANAGEMENT TEAM MEMBER CONSIDERS THE COMPLEXITY AND SIZE OF THE PROGRAM TO DETERMINE WHAT MUST BE INCLUDED IN THE STATEMENT OF WORK TO MEET REGULATION AND POLICY REQUIREMENTS. EVENTUALLY, THE STATEMENT OF WORK BECOMES THE STANDARD AGAINST WHICH WE EVALUATE THE CONTRACTOR'S PERFORMANCE. BUT, BEFORE A CONTRACTOR CAN PERFORM HE MUST BE SELECTED FOR CONTRACT AWARD. HOW DO WE SELECT A CONTRACTOR? THE PROGRAM MANAGEMENT TEAM COMPLETES THE STATEMENT OF WORK AND RELEASES THE REQUEST FOR PROPOSAL TO INTERESTED CONTRACTORS. EACH CONTRACTOR SUBMITS A PROPOSAL DESCRIBING HIS CAPABILITY TO MEET THE STATEMENT OF WORK.

PM IS THE TWO-LETTER ORGANIZATION THAT OWNS BOTH CONTRACTING AS WELL AS MANUFACTURING AND QUALITY ASSURANCE PEOPLE. WE'LL TAKE THE MANUFACTURING AND QUALITY ASSURANCE SIDE TO SHOW HOW MATRIX MANAGEMENT WORKS. PMD PUTS PEOPLE IN EACH SPO TO WORK ON THAT SPO'S PROGRAMS---THEY'RE CALLED "COLLOCATES" BECAUSE THEY TECHNICALLY "BELONG" TO PMD EVEN THOUGH THEY ACTUALLY WORK IN A SPECIFIC SPO LIKE AE, AF, AND THE OTHERS. BASED ON THE SPECIFIC NEEDS OF EACH SPO, PMD "COLLOCATES" AS MANY PEOPLE AS THEY CAN TO SPECIFICALLY WORK ON THAT SPO'S PROGRAMS WHILE MAINTAINING A BALANCED MANNING LEVEL IN THE OTHER EIGHT SPOs.

AS YOU CAN SEE PMD ALSO HAS A HOME OFFICE STAFF TO SUPPORT MANUFACTURING INITIATIVES AND SOLVE PROBLEMS THAT ARE GENERIC VERSUS UNIQUE TO A SINGLE SPO. FOR EXAMPLE, FORGINGS ARE USED IN ALMOST EVERY SPO'S PRODUCT, SO PMD HAS A SMALL GROUP DEDICATED TO PROVIDE EXPERTISE AND A CORPORATE APPROACH TO UPGRADING FORGINGS AS AN INDUSTRY.

OVERALL, MATRIX MANAGEMENT WILL BE LOVED BY SOME AND HATED BY OTHERS, BUT IT IS A VALUABLE TOOL TO INSURE THAT MANUFACTURING AND QUALITY ASSURANCE MANAGERS ARE ASSIGNED TO SPOs BASED ON PROGRAM PRIORITIES, AND CAPABILITIES OF THE PEOPLE. SINCE EACH SPO BELIEVES ITS PROGRAMS ARE MOST IMPORTANT, MATRIX MANAGEMENT INSURES THE AIR FORCE'S NEEDS ARE LOOKED AT WHEN ASSIGNING COLLOCATES TO INDIVIDUAL SPOs. TO SUM IT UP---MATRIX MANAGEMENT IS A PROVEN METHOD TO EFFECTIVELY ORGANIZE AND ALLOCATE LIMITED MANPOWER RESOURCES.

UP TO THIS POINT, I'VE GIVEN YOU A BRIEF OVERVIEW OF THE AIR

REQUIREMENTS INTO THE PRODUCT AS A DESIGN OR DEVELOPMENT CONSIDERATION. CONFIGURATION MANAGERS CONTROL CHANGES TO THE CONFIGURATION TO INSURE THAT THE GOVERNMENT HAS A WORKABLE PATTERN THAT WILL ENABLE IT TO REPAIR OR REPRODUCE THE ITEM AT A LATER DATE IF THE NEED ARISES. SAFETY INSURES THE DESIGN DOES NOT HAVE AN INHERENT RISK TO PERSONNEL OR PROPERTY. AND FINALLY, OUR DISCIPLINE OF MANUFACTURING AND QUALITY ASSURANCE HAS A DUAL ROLE; FIRST, TO PLACE SUFFICIENT CONTROLS IN THE CONTRACT TO INSURE THAT THE CONTRACTOR WILL HAVE THE CAPABILITY TO DELIVER THE ITEM ON SCHEDULE, TO SUFFICIENTLY COPE WITH MANUFACTURING PROCESSES, AND TO MAKE IT RIGHT THE FIRST TIME. SECONDLY, THE MANUFACTURING/ QUALITY ASSURANCE MANAGER MONITORS THE MANUFACTURING PROCESS TO INSURE THAT THE CONTRACTOR'S CONTROLS DO COMPLY WITH REQUIREMENTS; SOME TYPICAL REQUIREMENTS THEY MONITOR INCLUDE THE PLANNING AND SCHEDULING FOR MATERIALS, MANPOWER, EQUIPMENT, AND FACILITIES, AS WELL AS HOW THE CONTRACTOR PERFORMS IN-PROCESS AND FINAL PRODUCT VERIFICATION. TO WRAP IT UP, A PROGRAM MANAGEMENT TEAM EXISTS FOR EVERY PROGRAM AT ASD AND EACH TEAM MEMBER HAS A SPECIFIC FUNCTION---EACH IS AN IMPORTANT PART OF THE TEAM.

UP TO NOW I'VE SHOWN THE PROGRAM MANAGEMENT TEAM CONCEPT AS ONE WHERE EACH MEMBER HAS SPECIFIC FUNCTIONS. BUT, SEVERAL OF THOSE TEAM MEMBERS HAVE ONE LAST LEVEL OF MANAGEMENT THAT'S UNIQUE---THEY ARE "MATRIX MANAGED." I'LL USE MANUFACTURING/QUALITY ASSURANCE AS AN EXAMPLE OF HOW MATRIX MANAGEMENT WORKS.

ACQUISITION PROCESS. THE PROGRAM MANAGEMENT TEAM, LED BY A PROGRAM MANAGER, BRINGS NUMEROUS DISCIPLINES TOGETHER TO DEVELOP A PROGRAM THAT BEST MEETS THE NEEDS OF THE AIR FORCE.

THE TEAM CONSISTS OF A CONTRACTING OFFICER, A PROGRAM CONTROL MANAGER, ENGINEERS FROM NUMEROUS FIELDS, LOGISTICIANS, CONFIGURATION MANAGERS, SAFETY, AND MANUFACTURING/QUALITY ASSURANCE MANAGERS.

LET'S TALK ABOUT EACH ONE---THE PROGRAM MANAGER HAS FINAL RESPONSIBILITY TO INSURE THAT THE ACQUISITION IS IN THE BEST INTEREST OF THE GOVERNMENT. HIS CHARTER IS TO INSURE THAT THE CONTRACTED ITEM IS DELIVERED ON TIME AND MEETS THE PERFORMANCE REQUIREMENTS AT THE BEST POSSIBLE PRICE FOR THE GOVERNMENT. TO DO THIS HE NOT ONLY MANAGES THE PROGRAM MANAGEMENT TEAM, HE'S ALSO THE PRIMARY LIAISON WITH THE CONTRACTOR. THE CONTRACTING OFFICER HAS SOLE AUTHORITY TO COMMIT THE GOVERNMENT ON A CONTRACT. AS SUCH, HE'S RESPONSIBLE FOR WRITING, COORDINATING, NEGOTIATING, OR TERMINATING CONTRACTS. PROGRAM CONTROL MANAGES PROGRAM FUNDS AND SUBMITS BUDGET REQUESTS TO INSURE FUNDS WILL BE AVAILABLE. THE NUMEROUS ENGINEERING DISCIPLINES EVALUATE ALL ASPECTS OF DESIGN AND DEVELOPMENT INCLUDING TEST AND EVALUATION, QUALITY, PRODUCIBILITY, HUMAN FACTORS, RELIABILITY AND MAINTAINABILITY, AS WELL AS VALIDATION OF SPECIFICATIONS. LOGISTICS MANAGERS ARE RESPONSIBLE FOR INSURING THAT THE FINAL PRODUCT IS SUPPORTABLE IN THE OPERATIONAL ENVIRONMENT. THEIR CHARTER IS TO INTEGRATE LONG-TERM REQUIREMENTS SUCH AS SPARE PARTS, LIFE CYCLE COST, TEST EQUIPMENT, AND MAINTENANCE

STANDING FOR SYSTEM PROGRAM OFFICE. REMEMBER IT---SPO---YOU'LL HEAR THIS ACRONYM USED EVERY DAY.

NOW WHAT DO WE HAVE SO FAR; SPOs WITH RESPONSIBILITY FOR A FUNCTIONAL FAMILY SUCH AS TACTICAL, AIRLIFT, AND STRATEGIC AND SPOs WITH A SINGLE AIRCRAFT SYSTEM RESPONSIBILITY---B-1 AND F-16. LET'S COMPLETE THE LIST WITH THE REMAINING SPOs. AERONAUTICAL EQUIPMENT SPO IS SOMEWHAT UNIQUE BECAUSE THEY HAVE SEVERAL SPECIFIC FAMILIES INCLUDING LIFE SUPPORT EQUIPMENT LIKE THE ACES-II EJECTION SEAT USED IN OUR FIGHTERS AND BOMBERS, GROUND SUPPORT EQUIPMENT USED TO MAINTAIN OUR AIRCRAFT, AND STANDARDIZED AVIONICS LIKE AIR DATA COMPUTERS AND INERTIAL NAVIGATION UNITS THAT CAN BE USED ON MORE THAN ONE AIRCRAFT TYPE. THE RECONNAISSANCE AND ELECTRONIC WARFARE SPO DEVELOPS BLACK BOX TECHNOLOGY WITH PROGRAMS SUCH AS INFRARED NAVIGATION AND TARGETING FOR OUR FIGHTERS, CALLED LANTIRN. THE SIMULATOR SPO DEVELOPS MANY OF OUR AIRCRAFT SIMULATORS, INCLUDING THE NEWEST GENERATION OF COMPUTER IMAGING. AND THE PROPULSION SPO DEVELOPS THE HIGH PERFORMANCE, FUEL EFFICIENT ENGINES USED ON OUR TACTICAL AND STRATEGIC WEAPON SYSTEMS.

THESE NINE SPOs ARE THE MAIN PROGRAM OFFICES FOR AERONAUTICAL SYSTEMS DIVISION. WITH THAT OVERVIEW OF HOW SYSTEMS COMMAND FITS INTO THE AIR FORCE STRUCTURE AND HOW ASD IS ORGANIZED, THE NEXT QUESTION IS, HOW DO WE ULTIMATELY MANUFACTURE A WEAPON SYSTEM? TO DO THAT, I'LL SHOW YOU HOW THE PROGRAM MANAGEMENT TEAM CONCEPT IS APPLIED AT ASD. TO START WITH, WE BELIEVE THE PROGRAM MANAGEMENT TEAM IS THE BACKBONE OF THE

STRATEGIC SYSTEMS. BEFORE I GO ANY FURTHER THOUGH, LET'S ADD THE ACTUAL SYMBOLS FOR THOSE ORGANIZATIONS. AS YOU'LL SEE EACH ORGANIZATION HAS A TWO LETTER SYMBOL TO IDENTIFY IT AND THESE SYMBOLS CAN BE OBVIOUS, OR NOT LINKED AT ALL TO THE NAME ITSELF. FOR EXAMPLE, THE TACTICAL ORGANIZATION "TA" AND AIRLIFT ORGANIZATION "AF" ARE OBVIOUS CHOICES, BUT THE STRATEGIC ORGANIZATION "YY" ISN'T VERY OBVIOUS. NOW THAT YOU UNDERSTAND WHAT A "TWO-LETTER" ORGANIZATION IS, LET'S TALK ABOUT WHAT FALLS UNDER EACH SPECIFIC FAMILY. WELL, TA INCLUDES THE F-15 AS OUR NEWEST DUAL-ROLE FIGHTER, THE MAVERICK AIR-TO-GROUND MISSILE USED WITH OUR F-4, F-15, AND F-16 AIRCRAFT, AND THE ADVANCED TACTICAL FIGHTER WHICH WILL INCORPORATE THE NEWEST TECHNOLOGY IN OUR NEXT GENERATION FIGHTER. AF INCLUDES CARGO AIRCRAFT LIKE THE TACTICAL AND STRATEGIC AIRLIFT C-17, TANKER AIRCRAFT SUCH AS THE KC-10 EXTENDER SHOWN REFUELING A C-5, TRAINER AIRCRAFT LIKE THE T-46, A REPLACEMENT FOR OUR PRIMARY JET TRAINER, AND HELICOPTERS SUCH AS THE HH-60D USED FOR RESCUE AND SPECIAL OPERATIONS. NEXT, YY INCLUDES THE AIR LAUNCHED CRUISE MISSILES AS WELL AS BOMBER MODIFICATIONS ON AIRCRAFT LIKE THE FB-111 AND B-52H. SOMETIMES A SINGLE AIRCRAFT SYSTEM LIKE THE B-1 IS A BIG ENOUGH PROGRAM TO WARRANT ITS OWN SEPARATE ORGANIZATION. HERE, B-1 AS THE NAME OF THAT ORGANIZATION IS OBVIOUS. BUT ANOTHER ORGANIZATION WITH A SINGLE AIRCRAFT SYSTEM IS THE F-16, WHICH IS CALLED YP, SOMETHING YOU'LL HAVE TO LEARN RELATES TO THE F-16' TO HELP YOU FIT IN AT ASD LET ME GIVE YOU THE ACRONYM USED TO IDENTIFY EACH OF THESE TWO-LETTER ORGANIZATIONS---"SPO",

FORM 103 WITH RFP PREPARATION AND RFP
RELEASE ADDED

RFP CONTENT

- o STATEMENT OF WORK (SOW)
- o SPECIAL PROVISIONS/CLAUSES
- o INSTRUCTIONS TO OFFEROR (ITO)
- o CONTRACT DATA REQUIREMENTS
LIST (CDRL)

STATEMENT OF WORK

- o PRE-AWARD ROAD MAP
- o POST-AWARD YARDSTICK

MIL-STD-1528, "PRODUCTION"

- o PLANNING AND SCHEDULING
- o MFG ENGINEERING
- o FABRICATION AND ASSEMBLY
- o INSTALLATION AND CHECKOUT
- o DEMONSTRATION AND TESTING
- o PRODUCT ASSURANCE
- o DETERMINATION OF RESOURCE
REQUIREMENTS

(SPEAKER 2)

MOVING INTO THE PREPARATION PORTION OF YOUR
MFG/QA INPUTS, THE CORNERSTONE OF PREPARATION IS
THE REQUEST FOR PROPOSAL OR RFP. THE RFP PROVIDE
INTERESTED CONTRACTORS WITH THE NECESSARY
INFORMATION TO PREPARE A BID PROPOSAL FOR A
GOVERNMENT CONTRACT. IT TELLS WHAT THE GOVERNMENT
WANTS, UNDER WHAT CONDITIONS, AND WHEN. THE RFP
CONTAINS ITEMS SUCH AS THE STATEMENT OF WORK,
SPECIAL PROVISIONS AND CLAUSES, INSTRUCTIONS TO
OFFEROR (ITO), AND CONTRACT DATA REQUIREMENTS LIST
(CDRL).

THE KEY DOCUMENT IN THE RFP IS THE STATEMENT
OF WORK. IT TELLS THE CONTRACTOR EXACTLY WHAT THE
GOVERNMENT EXPECTS HIM TO DO IN FULFILLMENT OF THE
CONTRACT. IT BECOMES A STANDARD, AFTER CONTRACT
AWARD, AGAINST WHICH THE GOVERNMENT MEASURES
PERFORMANCE. THEREFORE, IT IS ESSENTIAL THAT THE
STATEMENT OF WORK BE CLEAR AND COMPLETE. ALTHOUGH
THE STATEMENT OF WORK SHOULD BE TAILORED FOR EACH
CONTRACT, WE WILL PROVIDE ADVICE WHICH WILL HELP
YOU DETERMINE SOME OF YOUR INPUTS.

IN PREPARING THE STATEMENT OF WORK YOU WILL
FIND SEVERAL MILITARY STANDARDS (MIL-STD) HELPFUL
MIL-STD-1528, ⁽¹⁷⁻³⁾ THE PRIMARY MANUFACTURING GUIDANCE,

DESCRIBES THE "SYSTEMIC" ELEMENTS OF PRODUCTION MANAGEMENT AND INCLUDES THESE MAJOR FUNCTIONS (SEE SLIDE).

THE MANUFACTURING MANAGEMENT SYSTEM EVALUATES THE EFFECTIVENESS OF THE CONTRACTOR'S USE OF RESOURCES SUCH AS EQUIPMENT, MANPOWER, AND CAPITAL TO CONVERT RAW MATERIALS AND COMPONENT PARTS INTO END PRODUCTS.

MIL-STD-1567, "WORK MEASUREMENT"

ACTUAL HOURS

- o EFFICIENCY=STANDARD HOURS
- o ANALYZES
 - oo METHODS
 - oo PROCESSES
 - oo PROBLEMS
- o OPTIMIZES
 - oo PRODUCTIVITY

MIL-STD-1567 IS IMPOSED TO MONITOR THE CONTRACTOR'S WORK EFFICIENCY. IT PROVIDES TOOLS TO DETERMINE IF THE CONTRACTOR IS ACHIEVING AN ACCEPTABLE LEVEL OF PRODUCTIVITY. THIS MIL-STD IS REQUIRED BY REGULATION WHEN A PROGRAM EXCEEDS \$100M TOTAL OR \$20M ANNUALLY.

QA LEVELS

- o NONE-USED ON SOME COMMERCIAL CONTRACTS AND SMALL PURCHASES
- o CONTRACTOR RESPONSIBILITY PROVISIONS
- o STANDARD INSPECTION REQUIREMENTS
- o MIL-I-45208, INSPECTION SYSTEM REQUIREMENTS
- o MIL-Q-9858, QUALITY PROGRAM REQUIREMENTS

IN THE QUALITY ASSURANCE AREA THERE ARE FIVE LEVELS OF QA WHICH CAN BE APPLIED. THE FIRST THREE LEVELS OF QUALITY ARE SELDOM USED ON MAJOR PROCUREMENTS AT ASD AND ARE GENERALLY SUITED FOR NON-COMPLEX AND COMMERCIAL ITEMS. THE LAST TWO LEVELS ARE MORE COMMONLY USED AT ASD AND WARRANT A MORE IN-DEPTH LOOK.

MIL-I-45208, "INSPECTION SYSTEM REQUIREMENTS"

- o IN-PROCESS AND END-ITEM CONTROL
- o SOME SYSTEM CONTROLS
 - oo VENDOR SUPPLIED ITEMS
 - oo DRAWINGS AND CHANGES
 - oo DOCUMENTATION AND RECORDS

MIL-I-45208 MUST BE INCLUDED IN THE CONTRACT WHEN TECHNICAL REQUIREMENTS DICTATE CONTROL OF A PRODUCT BY IN-PROCESS AND FINAL INSPECTION. SOME OF THE AREAS INCLUDED ARE SHOWN (SEE SLIDE).

MIL-Q-9858, "QUALITY PROGRAM
REQUIREMENTS"

- o IN-PROCESS AND END-ITEM CONTROL
- o CONTROL OF WORK OPERATIONS
- o FULL SYSTEM CONTROLS
 - oo ORGANIZATION
 - oo PLANNING
 - oo WORK INSTRUCTIONS
 - oo DOCUMENTATION AND RECORDS

MIL-I-45208/MIL-Q-9858

- o BOTH REQUIRE
 - oo WRITTEN PROCEDURES
 - oo CALIBRATION SYSTEM
- o BOTH SUBJECT TO GOVT APPROVAL
- o MIL-I-45208 INCLUDED IN MIL-Q-9858

SIDE BY SIDE PICTURES OF F-15 AND A
SINGLE COMPONENT AS EXAMPLES

MIL-STD-1520, "CORRECTIVE ACTION
AND DISPOSITION SYSTEM FOR
NONCONFORMING MATERIALS"

- o MATERIAL REVIEW BOARD (MRB)
- o CORRECTIVE ACTION BOARD (CAB)
- o STANDARD REPAIR

MIL-Q-9858 IS IMPOSED WHEN THE TECHNICAL
ASPECTS REQUIRE CONTROL OF WORK OPERATIONS,
IN-PROCESS CONTROLS AND INSPECTION, AS WELL AS
ATTENTION TO FACTORS SUCH AS THE ONES LISTED HERE
(SEE SLIDE).

BOTH MIL-I-45208 AND MIL-Q-9858 REQUIRE THE
CONTRACTOR TO MAINTAIN A CALIBRATION SYSTEM. BOTH
REQUIRE WRITTEN PROCEDURES WHICH MUST BE AVAILABLE
FOR REVIEW BY THE GOVERNMENT TO DETERMINE
ACCEPTABILITY BEFORE BEGINNING PRODUCTION UNDER
THE CONTRACT. AS YOU HAVE PROBABLY FIGURED OUT BY
NOW, IF YOU IMPOSE MIL-Q-9858, THEN THE
REQUIREMENTS OF MIL-I-45208 ARE AUTOMATICALLY
INCLUDED.

LET'S PUT IT IN PERSPECTIVE; MIL-Q-9858 IS A
QA "PROGRAM" APPROPRIATE FOR COMPLEX PROCUREMENTS
LIKE THE F-15, BUT MIL-I-45208 IS AN "INSPECTION
SYSTEM" MORE SUITED FOR A PROCUREMENT LIKE A
SINGLE COMPONENT.

MIL-STD-1520 IS IMPOSED TO PROVIDE ADDITIONAL
GUIDANCE, NOT EXPLICIT IN MIL-Q-9858, FOR THE
PROPER SEGREGATION, IDENTIFICATION, AND
DISPOSITION OF DEFECTIVE MATERIAL AND PARTS. AN
EXCELLENT SUPPLEMENT TO THE QA PROGRAM FOR COMPLEX
ITEMS, IT INCLUDES STANDARD REPAIR, MATERIAL

REVIEW BOARD, AND CORRECTIVE ACTION BOARD PROCEDURES.

MIL-STD-1535, "SUPPLIER QA REQUIREMENTS"

- o SUBCONTRACTOR QA
- o SUPPLIER RATING SYSTEM
- o REGISTERED COMPONENT CONTROL

MIL-STD-1535 PROVIDES GUIDANCE TO THE PRIME CONTRACTOR FOR MAINTAINING A SYSTEM WHICH MEASURES THE QUALITY OF GOODS RECEIVED FROM HIS SUPPLIERS. IT DESCRIBES A SUPPLIER RATING SYSTEM WHICH CONSIDERS RECEIVING, IN-PROCESS, AND FINAL INSPECTION. ADDITIONALLY, IT IDENTIFIES SUPPLIERS AS SATISFACTORY OR OTHER THAN SATISFACTORY, AND PROVIDES FOR CONTROL OF CRITICAL REGISTERED COMPONENTS.

MIL-S-52779, "SOFTWARE QA"

- o STANDARD FORMAT DOCUMENTATION
- o SOFTWARE AND FIRMWARE
- o END PRODUCT OR IN-PROCESS CONTROL

MIL-S-52779 ESTABLISHES THE REQUIREMENT FOR A SOFTWARE QA PROGRAM WHICH REQUIRES A STANDARD FORMAT FOR SOFTWARE DOCUMENTATION. THIS MILITARY SPECIFICATION (MIL-SPEC) IS APPLIED WHERE SOFTWARE AND FIRMWARE ARE USED IN PRODUCTION OR ARE PART OF THE END PRODUCT. REMEMBER, IF THERE IS EXTENSIVE USE OF AUTOMATIC TEST EQUIPMENT, SOFTWARE WILL PROBABLY BE A MAJOR PROGRAM CONCERN.

STATEMENT OF WORK REQUIREMENTS

- o SYSTEMIC
 - oo MIL-STDs
- o SPECIFIC
 - oo PLANS
 - ooo PRODUCTION, QA, WORK MEASUREMENT, AND PRODUCTIBILITY

ALONG WITH THE "SYSTEMIC" REQUIREMENTS TASKED BY THE MIL-STDs YOU'LL PROBABLY WANT TO INCLUDE SEVERAL SPECIFICS SUCH AS PRODUCTION, QA, PRODUCTIBILITY, AND WORK MEASUREMENT PLANS. THESE PLANS WILL BE USED IN THE SOURCE SELECTION PROCESS, AS WELL AS TO MONITOR PROGRESS AND

PRODUCIBILITY

EASE OF PRODUCTION AND ANALYSIS

- oo SIMPLICITY OF DESIGN
- oo STANDARDIZATION
- oo PROCESS AND CAPABILITY
- oo DESIGN FLEXIBILITY

COMPLIANCE AFTER A CONTRACT AWARD. PRODUCIBILITY IS THE RELATIVE EASE OF PRODUCTION, AND PRODUCIBILITY ANALYSIS IS PERFORMED BY A TEAM OF SPECIALISTS WHICH INCLUDES YOU. PRODUCIBILITY SHOULD CONSIDER THE AREAS SHOWN (SEE SLIDE). YOU CAN REDUCE COST BY WORKING WITH ENGINEERS TO COMBINE OR ELIMINATE COMPONENTS. ALSO, YOU CAN INCREASE AVAILABILITY BY INCORPORATING OFF-THE-SHELF MATERIALS AND COMPONENTS INSTEAD OF DEVELOPING NEW ONES. THE OBJECTIVE OF THE PRODUCIBILITY PROGRAM IS TO IMPLEMENT THE MOST EFFICIENT AND COST EFFECTIVE DESIGN, MANUFACTURING PROCESSES, AND TECHNIQUES TO MEET END ITEM REQUIREMENTS.

PICTURE-MODERN FACTORY WITH ROBOTICS

ONE OTHER INPUT YOU SHOULD CONSIDER FOR THE STATEMENT OF WORK IS TECHNOLOGY MODERNIZATION (TECHMOD) INITIATIVES TO IMPROVE THE CONTRACTOR'S PRODUCTIVITY. TECHMOD INCENTIVIZES THE CONTRACTOR TO MODERNIZE HIS PLANT TO INCLUDE STATE-OF-THE-ART EQUIPMENT AND PROCESSES IN PRODUCTION. SOME GOVERNMENT TECHMOD MONEY MIGHT BE USED AS A "SWEETENER" TO GET THE CONTRACTOR TO COMMIT SOME OF HIS MONEY. FOR ADDITIONAL INFORMATION ON TECHMOD CONSULT ASDR 800-4 OR THE GUIDE PUT OUT BY PMD.

RFP CONTENT

- o SDM
 - oo MIL-STD "SYSTEMICS"
 - oo PRODUCTION, QA, WORK MEASUREMENT, PRODUCIBILITY PLAN "SPECIFICS"
- o STANDARD PROVISIONS AND CLAUSES
 - oo "BOILER PLATE"

DD FORM 1423-FILLED IN

MFG/QA DATA USES

- o CONTRACTOR
 - oo PREPARATION AND CAPABILITY
- o DESIGN
 - oo FEASIBILITY AND ADEQUACY
- o GOVERNMENT
 - oo RISK ASSESSMENT AND SURVEILLANCE

ANOTHER PART OF THE RFP IS "STANDARD CONTRACT PROVISIONS AND CLAUSES," SOMETIMES REFERRED TO AS "BOILER PLATE." THE PROVISIONS AND CLAUSES ARE USUALLY INCORPORATED BY CONTRACTING PERSONNEL BUT YOU SHOULD BE AWARE OF THEIR CONTENT. AS AN EXAMPLE, WHEN YOU IMPOSE MIL-I-45208 OR MIL-Q-9858, THE STANDARD INSPECTION CLAUSE MUST BE INCLUDED IN THIS SECTION. ALSO, WHEN GOVERNMENT FURNISHED PROPERTY IS INVOLVED, YOU WILL FIND SEVERAL REQUIRED CLAUSES IN THIS SECTION. THE BOTTOM LINE IS, DON'T GET SURPRISED; KNOW WHAT IS IN THE RFP AND HOW IT APPLIES TO YOUR FUNCTION.

ALONG WITH THE STATEMENT OF WORK AND BOILER PLATE, DATA REQUIREMENTS MUST ALSO BE CLEARLY STATED IN THE RFP. DATA REQUIREMENTS ARE SPELLED OUT IN THE RFP SECTION CALLED "CONTRACT DATA REQUIREMENTS LIST" OR CDRLs. SOME REQUIREMENTS REFERENCE A SPECIFIC "DATA ITEM DESCRIPTION" OR DID, WHICH IS A GOVERNMENT APPROVED FORMAT FOR THE SPECIFIC TASK THAT OUTLINES WHAT MUST BE COVERED IN THE DATA. YOU SHOULD SUBMIT A DD FORM 1423 FOR THE APPROPRIATE CDRLs TO MEET YOUR REQUIREMENTS.

DATA CAN BE RETAINED BY THE CONTRACTOR OR DELIVERED TO THE GOVERNMENT FOR THE USES SHOWN (SEE SLIDE). IT IS CRITICAL TO GET YOUR DATA

REQUIREMENTS IN EARLY IN THE PROGRAM. FINALLY, YOU WILL NEED TO DEFEND YOUR REQUIREMENTS AT THE DATA REVIEW BOARD, SO BE PREPARED.

RFP CONTENT

- o RFP TASKS
 - oo SOM, BOILER PLATE, CDRLs
- o RFP INSTRUCTIONS TO OFFERORS
 - oo PROPOSAL CONTENT AND FORMAT
- o RFP EVALUATION CRITERIA
 - oo WHAT THE GOVT LOOKS FOR

SO FAR, YOUR RFP INCLUDES A STATEMENT OF WORK WITH SYSTEMIC AS WELL AS SPECIFIC TASKS, BOILER PLATE CLAUSES, AND THE CDRLs WITH THE EXACT DATA NEEDS. BUT HOW DOES THE CONTRACTOR PUT TOGETHER A PROPOSAL TO DEMONSTRATE HIS CAPABILITY? WHAT DOES HE PUT IN THE PROPOSAL TO PROVE HE'S NOT ONLY CAPABLE BUT THE BEST CHOICE? TWO SECTIONS IN THE RFP ANSWER THE CONTRACTOR'S "WHAT AND HOW " QUESTIONS. THE SECTION TITLED "INSTRUCTIONS TO OFFEROR", ABBREVIATED ITO, SPELS OUT WHAT THE GOVERNMENT EXPECTS TO SEE IN THE CONTRACTOR'S PROPOSAL TO DEMONSTRATE CAPABILITY TO MEET ALL TASKS IN THE RFP. NEXT, A SECTION CALLED "EVALUATION CRITERIA" TELLS THE CONTRACTOR HOW WE WILL GRADE HIS RESPONSE. ITOs CAN REQUEST DRAFT OR PRELIMINARY COPIES OF PLANS SUCH AS PRODUCTION, PRODUCIBILITY, OR QA; AND THE EVALUATION CRITERIA SPECIFY WHAT A SATISFACTORY RESPONSE WILL INCLUDE. BASED ON ITOs AND EVALUATION CRITERIA, A SET OF "STANDARDS" IS DEVELOPED FOR SOURCE SELECTION TEAM USE. FOR MORE DETAILS ON WHAT SHOULD BE INCLUDED IN THE ITOs AND

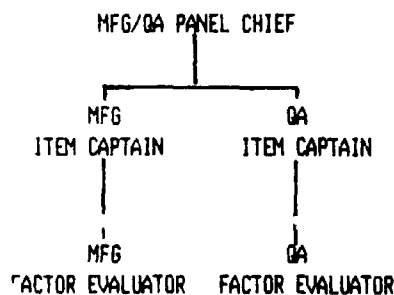
HELP

- o MFG HANDBOOK
- o MIL-STDs
- o DATA ITEM DESCRIPTIONS (DIDs)
- o ADVICE
- o INTEGRATE EVERYTHING

STANDARDS, YOU'LL FIND HELP IN THE MFG HANDBOOK ON SOURCE SELECTION, THE MIL-STDs, AND THE SPECIFIC DATA ITEM DESCRIPTIONS. ONE LAST COMMENT, YOUR STATEMENT OF WORK, CDRLs, ITOs, AND STANDARDS ALL NEED TO MESH AND AGREE WITH EACH OTHER.

FORM 103 SHOWING SOURCE SELECTION:
PROPOSAL RECEIPT AND EVALUATION, ON-SITE
REVIEW, BRIEFINGS, CONTRACT AWARD, AND
LOSER DEBRIEF

MFG/QA SOURCE SELECTION TEAM



ON-SITE REVIEW

- o PRE-AWARD SURVEY (PAS)- CONTRACT ADMINISTRATION OFFICE (CAO) WILL ACCOMPLISH IAW YOUR GUIDANCE, e.g. WHAT FACTORS REQUIRE EVALUATION

BLANK FORM 1524 PAS REQUEST

(SPEAKER 1)

NOW WHAT--TAKE THE DAY OFF? NOT YET! YOU'VE COMPLETED THE RFP, NOW IT'S TIME TO GET BUSY. I KNOW, YOU'VE ALREADY BEEN BUSY, BUT THIS IS THE TIME TO ORGANIZE FOR THE SOURCE SELECTION.

YOUR FIRST PRIORITY IS TO GET FIRM COMMITMENTS FROM THOSE ORGANIZATIONS YOU WANT TO SUPPORT YOU DURING THE SOURCE SELECTION. YOU'LL SELECT YOUR MFG PANEL CHIEF, ITEM AND FACTOR EVALUATORS, AND ADMINISTRATIVE OFFICER. AS SHOWN, THE MFG/QA AREA BREAKS DOWN TO THE TWO SEPARATE ITEMS OF MFG AND QA. THE MFG AND QA ITEMS BREAK DOWN EVEN FURTHER INTO MFG AND QA FACTORS. AS YOU CAN SEE, IT CAN GET COMPLEX, SO MAKE SURE YOU HAVE AN ADEQUATE TEAM TO MEET ALL DEADLINES IN THE SOURCE SELECTION PROCESS.

IF YOU'RE PLANNING AN ON-SITE REVIEW DECIDE WHO WILL ACCOMPLISH IT. IF YOU DECIDE ON A PRE-AWARD SURVEY (PAS), SELECT FACTORS YOU WANT EVALUATED BY THE CONTRACT ADMINISTRATION OFFICE (CAO), USING YOUR EVALUATION STANDARDS AS A GUIDE. DETERMINE WHEN YOU NEED THE SURVEY RESULTS TO KEEP THE SOURCE SELECTION ON TRACK, AND MAKE SURE THE PRE-AWARD REQUESTS ARE READY TO GO OUT SHORTLY AFTER RECEIPT OF THE PROPOSALS. CONTRACT

PERSONNEL WILL NORMALLY SEND OUT THE REQUESTS BUT YOU MAY HAVE TO DO SOME COACHING. YOU'LL USUALLY SEND COPIES OF THE RFP WITH THE SURVEY REQUEST TO AID THE CAO.

MANAGEMENT RESPONSIBILITY

- o EXPANDED PAS-CAO IS STILL OFFICE OF PRIMARY RESPONSIBILITY (OPR) BUT YOU AND YOUR TEAM WILL "ASSIST" THE CAO

- o MANUFACTURING MANAGEMENT/PRODUCTION CAPABILITY REVIEW (MM/PCR)-THIS ONE IS YOURS AS OPR WITH THE CAO, LABS AND OTHERS ASSISTING YOU

IF YOU PLAN TO PARTICIPATE IN, OR CONDUCT, AN ON-SITE REVIEW YOURSELF, NOW IS THE TIME TO ORGANIZE THE REVIEW TEAM AND ASSIGN DUTIES. IF YOU PARTICIPATE WITH THE CAO ON AN "EXPANDED" PRE-AWARD SURVEY YOU'LL WANT TO INTERFACE WITH THE CAO MEMBERS. REMEMBER, THE CAO IS TECHNICALLY THE OFFICE OF PRIMARY RESPONSIBILITY FOR A PRE-AWARD SURVEY. IF YOU "CONDUCT" MANUFACTURING MANAGEMENT/PRODUCTION CAPABILITY REVIEWS (MM/PCR), A PLAN MUST BE DONE AS SOON AS POSSIBLE. CHECK LOCAL OPERATING INSTRUCTIONS (OI) AND ASSOCIATED REGULATIONS FOR REQUIREMENTS. FINALLY, PREPARE STANDARD LETTERS, ONE TO ADVISE THE CAOs AND ONE TO ADVISE THE OFFERORS, ON YOUR PLANNED VISITS TO THEIR PLANTS.

QUICK REFERENCE BOOK

- o RFP
- o PROCEDURES
- o EVALUATION STANDARDS
- o SCHEDULE, ETC

NOW YOU SHOULD BE READY FOR THE SOURCE SELECTION, WITH ONE EXCEPTION. THAT IS, YOUR PERSONAL "HANDY DANDY" QUICK REFERENCE BOOK TO KEEP IN THE SOURCE SELECTION ROOM. IT SHOULD CONTAIN THINGS LIKE A COMPLETE COPY OF THE RFP, SOURCE SELECTION PROCEDURES, EVALUATION STANDARDS,

AND THE SCHEDULE YOU WANT THE MANUFACTURING PANEL TO WORK TO. OTHER ITEMS MAY BE HELPFUL, BUT I THINK YOU'VE GOT THE IDEA. MAYBE NOW YOU CAN TAKE A BREAK, BUT WATCH OUT, THE PROPOSALS ARE COMING.

PROPOSAL EVALUATION

- o ASSESS WORKLOAD AND PRIORITIZE
- o COMPLETE MFG EVALUATION SCHEDULE
- o CONFIRM FORMAT AND RULES

SOURCE SELECTION TERMS

- o CONTRACTOR INQUIRY (CI)-USED TO REQUEST CLARIFICATION
- o DEFICIENCY REPORT (DR)-IDENTIFY NON-COMPLIANCE WITH RFP ITOS
- o MODIFICATION REQUEST (MR)- MODIFY YOUR RFP TASKING
- o DETAILED NARRATIVE ANALYSIS (DNA)- WRITTEN FACTOR EVALUATION

QUICK LOOK

- o CHECK FOR
 - oo COMPLETENESS, OBVIOUS DEFICIENCIES
- o SEND
 - oo CIs, DRs, MRs
- o WRITE
 - oo DNAs

ALL TOO SOON, THE PROPOSALS ARRIVE--WHAT DO YOU DO NOW? FIRST, ASSESS THE WORKLOAD BASED ON THE NUMBER OF PROPOSALS RECEIVED AND ESTABLISH PRIORITIES. DETERMINE WHICH PROPOSALS YOU WANT COMPLETED FIRST AND COMPLETE THE SCHEDULE IN YOUR QUICK REFERENCE BOOK. BE SURE THE RULES FOR SENDING CONTRACTOR INQUIRIES (CI), DEFICIENCY REPORTS (DR) AND MODIFICATION REQUESTS (MR) ARE UNDERSTOOD BY YOUR TEAM. OKAY, SO I DIDN'T DEFINE CI, DR AND MR--HERE ARE THE DEFINITIONS (SEE SLIDE). ALSO, MAKE SURE EACH TEAM MEMBER UNDERSTANDS HOW YOU WANT THE DETAILED NARRATIVE ANALYSIS (DNA) WRITTEN FOR EACH EVALUATION FACTOR.

YOUR NEXT ACTION SHOULD BE TO REVIEW ALL PROPOSALS QUICKLY FOR COMPLETENESS AND OBVIOUS DEFICIENCIES. SEND CIs AND DRs AS SOON AS POSSIBLE TO INSURE THAT YOUR FINAL EVALUATION IS NOT HELD UP PENDING CONTRACTOR RESPONSE TO A CI OR DR. WHEN YOU SEND A CI OR DR CLEARLY STATE WHAT YOU WANT FROM THE OFFEROR. YOU WILL BE REQUIRED TO EVALUATE, IN WRITING, THE ADEQUACY OF THE

OFFEROR'S RESPONSE TO EACH ONE OF YOUR CIs AND DRs.

ON-SITE REVIEWS

EXPANDED PRE-AWARD SURVEYS OR
MM/PCRs
HOLD DOWN THE FORT
GET DRAFT REPORT
oo A BIRD IN HAND IS WORTH
TWO IN THE BUSH

YOU'RE NOW IN THE MIDDLE OF THE SOURCE SELECTION, AND IF YOU ARE PARTICIPATING IN THE ON-SITE REVIEW, IT'S TIME TO CONDUCT THE EXPANDED PRE-AWARD SURVEYS OR MM/PCRs. YOU AND YOUR TEAM COULD BE ON THE ROAD A MONTH OR MORE. SO, HOW DO YOU KEEP UP WITH THE SOURCE SELECTION? TRY TO LEAVE SOMEBODY HOME TO WORK SOURCE SELECTION WHILE YOU'RE GONE. WHILE ON THE ROAD, TRY NOT TO LEAVE AN OFFEROR'S PLANT UNTIL YOU HAVE A DRAFT OF EACH TEAM MEMBER'S INPUT FOR THE REPORT. ALSO, DON'T DEBRIEF THE OFFEROR ON FINDINGS AT HIS FACILITY. REMEMBER, YOUR TASK IS TO GATHER INFORMATION, NOT TO BRIEF THE OFFERORS ON THE PROGRESS OF THE SOURCE SELECTION.

INTEGRATE THE EVALUATIONS

ON-SITE REVIEW

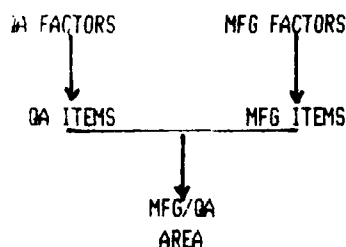
PROPOSAL EVALUATION

oo BASIC PROPOSAL EVALUATION PLUS
CI AND DR RESPONSES

oo SUMMARIZED IN DNA

THE REVIEW RESULTS SHOULD BE INTEGRATED INTO THE OVERALL SOURCE SELECTION PROCESS AND MADE AVAILABLE TO THE SOURCE SELECTION AUTHORITY. NOW YOU HAVE ALL THE INFORMAT. YOU NEED: SURVEY OR REVIEW REPORTS, PROPOSAL EVALUATION, AND CI OR DR RESPONSES. IT'S TIME TO WRITE THE OVERALL MANUFACTURING/QA EVALUATION FOR EACH OFFEROR, THE "AREA SUMMARY".

SUMMARIZE



MEMBERS OF YOUR EVALUATION TEAM HAVE ALREADY WRITTEN FACTOR AND ITEM SUMMARIES, SO THE AREA SUMMARY IS BASICALLY A SUMMATION OF THEIR ASSESSMENT OF THE FACTORS AND ITEMS. SINCE YOU ASKED EACH OFFEROR TO RESPOND WITH THE SAME FORMAT AND CONTENT, STANDARDIZE THE AREA SUMMARIES WHEREVER YOU CAN TO REDUCE YOUR WORKLOAD. BASE YOUR RATINGS OF AN OFFEROR'S PROPOSAL ON SOUND EVIDENCE AND BE PREPARED TO DISCUSS YOUR REASONS FOR GRADING THE PROPOSAL THE WAY YOU DID. FROM HERE ON, IT'S SIMPLY FOLLOWING THE SCHEDULE AND PROVIDING INFORMATION FOR MID-TERM AND FINAL BRIEFINGS TO THE SOURCE SELECTION AUTHORITY.

SOURCE SELECTION WRAP-UP

BRIEF LOSERS

STRENGTHS

WEAKNESSES

QUESTIONS AND ANSWERS

THE FINAL STEP IN THE SOURCE SELECTION PROCESS IS TO DEBRIEF THE LOSING OFFERORS. THIS IS USUALLY ACCOMPLISHED IMMEDIATELY AFTER CONTRACT AWARD. CONCENTRATE ON THOSE STRENGTHS AND WEAKNESSES THAT AFFECTED YOUR DECISION. THE OFFERORS ARE USUALLY NOT ALLOWED TO ASK QUESTIONS EXCEPT IN WRITING AND YOUR RESPONSE WILL BE IN WRITING. DON'T LET THE SOURCE SELECTION AUTHORITY SET AN UNREASONABLE SUSPENSE FOR YOUR RESPONSE; YOU'LL NEED ENOUGH TIME TO PUT TOGETHER A SATISFACTORY ANSWER. YOU FINALLY MADE IT THROUGH THE SOURCE SELECTION AND HAVE A WINNER--NOW YOU

CAN LOOK FORWARD TO PARTICIPATING IN THE
POST-AWARD CONFERENCE.

SIDE PICTURES OF F-15 AND A
COMPONENT AS EXAMPLES

D-1520, "CORRECTIVE ACTION
DISPOSITION SYSTEM FOR
NONCONFORMING MATERIALS"

AL REVIEW BOARD (MRB)

TIVE ACTION BOARD (CAB)

RD REPAIR

D-1535, "SUPPLIER QA
REQUIREMENTS"

TRACTOR QA

ER RATING SYSTEM

IERED COMPONENT CONTROL

S-52779, "SOFTWARE QA"

RD FORMAT DOCUMENTATION

IRE AND FIRMWARE

RODUCT OR IN-PROCESS CONTROL

LET'S PUT IT IN PERSPECTIVE; MIL-Q-9858 IS A
QA "PROGRAM" APPROPRIATE FOR COMPLEX PROCUREMENTS
LIKE THE F-15, AND MIL-I-45208 IS AN "INSPECTION
SYSTEM" MORE SUITED FOR A PROCUREMENT LIKE A
SINGLE COMPONENT.

MIL-STD-1520 CAN BE IMPOSED TO PROVIDE
ADDITIONAL GUIDANCE, NOT EXPLICIT IN MIL-Q-9858,
FOR THE PROPER SEGREGATION, IDENTIFICATION, AND
DISPOSITION OF DEFECTIVE MATERIAL AND PARTS. AN
EXCELLENT SUPPLEMENT TO THE QA PROGRAM FOR COMPLEX
ITEMS, IT INCLUDES STANDARD REPAIR, MATERIAL
REVIEW BOARD, AND CORRECTIVE ACTION BOARD
PROCEDURES.

MIL-STD-1535 PROVIDES GUIDANCE TO THE PRIME
CONTRACTOR FOR MAINTAINING A SYSTEM WHICH MEASURES
THE QUALITY OF GOODS RECEIVED FROM HIS SUPPLIERS.

MIL-S-52779 ESTABLISHES A SOFTWARE QA PROGRAM
WHICH REQUIRES A STANDARD FORMAT FOR SOFTWARE
DOCUMENTATION. THIS MILITARY SPECIFICATION
(MIL-SPEC) IS APPLIED WHERE SOFTWARE AND FIRMWARE
ARE USED IN PRODUCTION OR ARE PART OF THE END
PRODUCT. IF THERE IS EXTENSIVE USE OF AUTOMATIC
TEST EQUIPMENT, SOFTWARE WILL PROBABLY BE A MAJOR
PROGRAM CONCERN.

-1567, "WORK MEASUREMENT"

ACTUAL HOURS
EFFICIENCY=STANDARD HOURS
METHODS
PROCESSES
PROBLEMS
SIZES
PRODUCTIVITY

QA LEVELS

USED ON SOME COMMERCIAL
FACTS AND SMALL PURCHASES
CONTRACTOR RESPONSIBILITY
INSPECTIONS
STANDARD INSPECTION REQUIREMENTS
MIL-I-45208, INSPECTION SYSTEM
REQUIREMENTS
MIL-Q-9858, QUALITY PROGRAM
REQUIREMENTS

MIL-I-45208, "INSPECTION SYSTEM
REQUIREMENTS"

PROCESS AND END-ITEM CONTROL
MEASURING AND TEST EQUIPMENT
CALIBRATION
DOCUMENTATION AND RECORDS

MIL-Q-9858, "QUALITY PROGRAM
REQUIREMENTS"

PROCESS AND END-ITEM CONTROL
SYSTEM CONTROLS
ORGANIZATION
TRAINING
WORK INSTRUCTIONS
DOCUMENTATION AND RECORDS
ADVANCED METROLOGY AND
CALIBRATION

MIL-I-45208/MIL-Q-9858

REQUIRE WRITTEN PROCEDURES
THAT ARE SUBJECT TO GOVT APPROVAL

MIL-I-45208 INCLUDED IN MIL-Q-9858

MIL-STD-1567 IS IMPOSED TO MONITOR THE
CONTRACTOR'S WORK EFFICIENCY. THIS MIL-STD IS
REQUIRED BY AFR 800-9 WHEN A PROGRAM EXCEEDS \$100M
TOTAL OR \$20M ANNUALLY.

IN THE QUALITY ASSURANCE AREA THERE ARE FIVE
LEVELS OF QUALITY ASSURANCE REQUIREMENTS WHICH CAN
BE APPLIED. THE FIRST THREE LEVELS OF QUALITY ARE
SELDOM USED ON MAJOR PROCUREMENTS AT ASD BUT CAN
SUFFICE FOR SOME NON-COMPLEX AND COMMERCIAL ITEMS.
THE LAST TWO LEVELS ARE MORE COMMONLY USED AT ASD
AND WARRANT A MORE IN-DEPTH LOOK.

MIL-I-45208 CAN BE INCLUDED IN THE CONTRACT
WHEN AN "INSPECTION SYSTEM" IS SUFFICIENT TO
INSURE A PART OR ITEM IS MADE RIGHT.

MIL-Q-9858 IS IMPOSED WHEN A MORE
COMPREHENSIVE QA "PROGRAM" IS NEEDED TO INSURE AN
ITEM IS MADE RIGHT. IT REQUIRES CONTROL OF WORK
OPERATIONS AND INSPECTION, AS WELL AS ATTENTION TO
FACTORS SUCH AS THE ONES LISTED HERE (SEE SLIDE).

BOTH MIL-Q-9858 AND MIL-I-45208 REQUIRE
WRITTEN PROCEDURES WHICH MUST BE AVAILABLE FOR
REVIEW BY THE GOVERNMENT TO DETERMINE
ACCEPTABILITY BEFORE BEGINNING WORK. AS YOU HAVE
PROBABLY FIGURED OUT BY NOW, IF YOU IMPOSE
MIL-Q-9858, THEN THE REQUIREMENTS OF MIL-I-45208
ARE AUTOMATICALLY INCLUDED.

REMEMBER, THE INDIVIDUALITY OF YOUR SPECIFIC PROGRAM MEANS YOUR MFG/QA PEOPLE WILL USE BOTH REGULATORY GUIDANCE AND COMMON SENSE TO DECIDE EXACTLY WHAT TO PUT IN THE ACQUISITION PLAN.

(SPEAKER 2)

(1) MOVING FROM PLANNING INTO PREPARATION, THE CORNERSTONE OF PREPARATION IS THE REQUEST FOR PROPOSAL OR RFP. WE'LL COVER THE MFG/QA INPUTS FOR THE RFP INCLUDING STATEMENT OF WORK, SPECIAL PROVISIONS, CONTRACT DATA REQUIREMENTS LIST (CDRL), AND INSTRUCTIONS TO OFFEROR (ITO). AS A KEY DOCUMENT IN THE RFP, IT'S ESSENTIAL THAT THE STATEMENT OF WORK BE CLEAR, COMPLETE, AND TAILOR-MADE FOR EACH CONTRACT.

(2) FIRST, LET'S COVER SOME OF THE MILITARY STANDARD (MIL-STD) REQUIREMENTS IN THE STATEMENT OF WORK. MIL-STD-1528, THE PRIMARY MANUFACTURING GUIDANCE, DESCRIBES THE "SYSTEMIC" ELEMENTS OF PRODUCTION MANAGEMENT AND INCLUDES THESE MAJOR FUNCTIONS (SEE SLIDE). APPROPRIATE FOR MOST ACQUISITIONS, THE MANUFACTURING MANAGEMENT SYSTEM REQUIRED BY THIS MIL-STD CONTROLS THE CONTRACTOR'S USE OF EQUIPMENT, MANPOWER, AND CAPITAL TO CONVERT RAW MATERIALS AND COMPONENT PARTS INTO END PRODUCTS.

183 WITH RFP PREPARATION AND RFP CASE ADDED

RFP CONTENT

STATEMENT OF WORK (SOW)

SPECIAL PROVISIONS/CLAUSES

CONTRACT DATA REQUIREMENTS LIST (CDRL)

INSTRUCTIONS TO OFFEROR (ITO)

MIL-STD-1528, "PRODUCTION"

PLANNING AND SCHEDULING
MFG ENGINEERING
FABRICATION AND ASSEMBLY
INSTALLATION AND CHECKOUT
DEMONSTRATION AND TESTING
PRODUCT ASSURANCE
TERMINATION OF RESOURCE
REQUIREMENTS

AGENDA

FG/QA INVOLVEMENT

- o PLANNING
- o PREPARATION
- o SOURCE SELECTION
- o IMPLEMENTATION
- o EXPERTISE AND ADVICE

M 103 WITH FIRST THREE MILESTONES
ED: SON, NSR, AND PMD

PRIMARY CONCERNS

FG TECHNOLOGY-DOES INDUSTRY HAVE
THE CAPABILITY?

PROCESSES- PROPRIETARY?

MATERIALS- EXOTIC?

M 103 ACQUISITION PLAN ADDED

ACQUISITION PLAN INPUTS

MFG RISK
COMPREHENSIVE COST REDUCTION PLAN
QA RISK
GOVERNMENT FURNISHED EQUIPMENT,
MATERIALS, AND FACILITIES
COMPONENT BREAKOUT

ACQUISITION PLAN "HELP"

MFG HANDBOOK

PMD CHECKLIST

EXISTING ACQUISITION PLANS

WE WILL DISCUSS THE MFG/QA INPUT TO THE ACQUISITION PROCESS USING THESE GENERAL CATEGORIES (SEE SLIDE), WRAPPING IT UP WITH SOURCES OF EXPERTISE AND ADVICE.

TO START OFF, THE FIRST THREE MILESTONES [STATEMENT OF NEED (SON), NEW START REVIEW (NSR), AND PROGRAM MANAGEMENT DIRECTIVE (PMD)] RARELY REQUIRE DIRECT MFG/QA INPUT, BUT THEY CAN BE IMPACTED BY MFG/QA ISSUES. YOUR PRIMARY CONCERN SHOULD BE TO INSURE ANY MAJOR MFG/QA ISSUES ARE CONSIDERED BEFORE THE TASK IS FORMALIZED AS A NEW START.

BUT EVEN BEFORE THE FORMAL NEW START, MFG/QA WILL BE WORKING ON THEIR FIRST MAJOR INPUT TO THE PLANNING PHASE--THE ACQUISITION PLAN.

LET'S LOOK AT THE CATEGORIES MFG/QA WILL BE TASKED TO PROVIDE INPUTS FOR (SEE SLIDE). MIND BOGGLING? HANG IN THERE, THERE ARE SEVERAL PLACES YOU CAN GET HELP. THE MFG HANDBOOK IN THE REFERENCE PACKAGE HAS A SECTION THAT COVERS ACQUISITION PLANS. ALSO INCLUDED IN THE PACKAGE IS A "CHECKLIST" PREPARED BY ASD/PMD COVERING EXACTLY WHAT IS REQUIRED FOR EACH MFG/QA ENTRY. FINALLY, EXISTING ACQUISITION PLANS DEVELOPED FOR "SIMILAR" PROGRAMS ARE ALSO HELPFUL. WE WILL COVER EXPERTISE AND ADVICE IN MORE DEPTH LATER.

AERONAUTICAL SYSTEMS DIVISION (ASD)
MANUFACTURING/QUALITY ASSURANCE (MFG/QA)
ORIENTATION FOR PROGRAM MANAGERS
(SOUND ON SLIDE)

(SPEAKER 1)

MANUFACTURING/QUALITY ASSURANCE
(MFG/QA)

ORIENTATION

ASD MFG/QA ORIENTATION

VIDEOTAPE

EXT 54217

(1) WELCOME TO MANUFACTURING/QUALITY ASSURANCE.

THIS SOUND ON SLIDE PRESENTATION IS DESIGNED TO
SHOW MFG/QA INPUTS FROM THE "WHAT, HOW, WHEN, AND
WHERE" VIEWPOINT. (2) FIRST THOUGH, IF YOU HAVE NOT
SEEN THE VIDEOTAPE TITLED "ASD MFG/QA
ORIENTATION", AND WANT A "BIG PICTURE" OVERVIEW,
CONTACT ASD/PMD--YOU REALLY SHOULD SEE IT BEFORE
VIEWING THIS PRESENTATION.

(3) AS YOU KNOW, EACH OF YOUR PROGRAMS IS A UNIQUE
BLEND OF REQUIREMENTS, STRENGTHS, AND WEAKNESSES.
WE CANNOT SHOW YOU HOW TO WORK WITH THE
INDIVIDUALITY OF EVERY PROGRAM BUT WE WILL PRESENT
THE BASIC MFG/QA NEEDS AND CONSIDERATIONS FOR A
GENERIC PROGRAM. SPECIFICALLY, ALTHOUGH THE
GENERIC ASPECT OF MFG/QA DOES NOT CHANGE
DRASTICALLY FROM PROGRAM TO PROGRAM, YOU'LL HAVE
TO SELECTIVELY APPLY WHAT WE PRESENT HERE TO FIT
YOUR SPECIFIC PROGRAM NEEDS--(4) WHETHER IT IS AS BIG
AS THE B-1 OR AS SMALL AS AN OXYGEN REGULATOR.

AGE PICTURE OF SEVERAL "PROGRAM"
DUCTS

URE OF B-1 AIRCRAFT AND OXYGEN
ILATOR SIDE BY SIDE

CONCLUSION
YOU CAN MAKE
A
DIFFERENCE

ALL" OF MFG/QA. YOU'LL FIND EXCEPTIONS TO OUR GUIDANCE, BUT IT PROVIDES A GENERIC BASELINE FOR MOST PROGRAMS. YOUR BEST TRAINING WILL COME FROM HANDS ON EXPERIENCE IN PROGRAM MANAGEMENT TEAM MEETINGS, WITH CONTRACTORS ON PROGRAM MANAGEMENT REVIEWS, AND WITH YOUR COHORTS ON THE MULTITUDE OF AUDITS, SURVEYS, AND EVALUATIONS YOU'LL PERFORM. KEEP AN OPEN MIND AND LEARN WHAT'S REQUIRED AND WHAT'S SMART FOR YOUR SPECIFIC PROGRAMS. LEARN NOT ONLY WHAT YOU "MUST" DO, BUT ALSO WHAT YOU POTENTIALLY "CAN" DO FOR YOUR PROGRAMS. EACH PROGRAM IS UNIQUE AND DESERVES TO HAVE YOUR TAILORED INPUT FOR MFG/QA. GOOD LUCK AND HANG IN THERE.

TRAINING

- o FORMAL-ALLOCATIONS THROUGH PMD OR YOUR SPO
- o INFORMAL-COURSES CONDUCTED BY PMD

PERSONAL LIBRARY OR REFERENCE BOOK

- o USE THIS FOR REFERENCE AT MEETINGS, ON TRIPS IN THE CONTRACTOR'S PLANT, ETC.
- o CAN INCLUDE-HANDBOOKS, GUIDES, POLICY LETTERS, CHECKLISTS, ETC.

SUMMARY

- o TIP OF THE ICEBERG
 - oo BUT NOW YOU CAN BE MORE PRODUCTIVE AND AVOID MAJOR CATASTROPHES
- o THE REST OF THE ICEBERG
 - oo HANDS-ON EXPERIENCE

CAN BE REWARDING OR FRUSTRATING, COMPLEMENTARY OR REDUNDANT--IT'S UP TO YOU TO DECIDE HOW YOU'LL SUPPORT EACH OTHER. ONE LAST AID IS THE TRAINING COURSES AVAILABLE THROUGH PMD OR YOUR SPO. YOU'LL NEED TO PUSH TO GET YOUR NAME IN FOR A CLASS REQUEST, AND KEEP YOUR EYES AND EARS OPEN FOR ANY CLASSES THAT AREN'T FORMALLY LISTED.

PERIODICALLY, PMD WILL PUT ON A WEEK LONG TRAINING SESSION COVERING THE SPECTRUM OF MFG/QA DUTIES. BY ALL MEANS GET INCLUDED IN THOSE AS SOON AS YOU GET YOUR FEET WET. FINALLY, SOMETHING THAT SEEMS TO HELP THE NEW MFG/QA MANAGER IS TO BUILD A PERSONAL LIBRARY OR REFERENCE PACKAGE. IT CAN INCLUDE HANDBOOKS, GUIDES, POLICY LETTERS, CHECKLISTS, AND THE MULTITUDE OF ACRONYMS YOU'LL HEAR.

WELL, THAT'S BASICALLY IT. YOU ARE NOW A FULL FLEDGED, QUALIFIED MFG/QA MANAGER. RIGHT? WHOA-THERE! LET'S PUT THE RECORD STRAIGHT. WHAT WE'VE TRIED TO PRESENT IN OUR ORIENTATION VIDEOTAPE AND THIS TRAINING AID IS MERELY THE BASIS FOR YOU TO START LEARNING ABOUT MFG/QA. HOPEFULLY, IT WILL HELP TO KEEP YOU AND YOUR PROGRAMS OUT OF HOT WATER WHILE YOU'RE LEARNING, BUT IT DEFINITELY IS NOT THE FINAL "END ALL AND BE

(DLA) HAS COGNIZANCE AT PLANTS WHERE NO SINGLE SERVICE DOMINATES. IT'S IMPORTANT TO REMEMBER YOU ARE ON THE CAO'S TURF WHEN YOU WALK INTO THE PLANT THEY HAVE COGNIZANCE FOR. PRE-NOTIFICATION AND COORDINATION GO A LONG WAY TOWARD MAKING YOUR RELATIONSHIP PRODUCTIVE AND COMPLEMENTARY VERSUS ADVERSARIAL.

LAB HELP

- o ANALYSIS AND RECOMMENDATIONS
 - oo METALS
 - oo POLYMERS
 - oo COMPOSITES
 - oo ELECTRONICS
- o PROCESSES
 - oo COMPUTER AIDED DESIGN AND MFG (CAD/CAM)
 - oo WAVE SOLDERING, ETC

SUPPORT CONTRACTOR HELP

- o QA
- o SHOULD COST
- o FACT-FINDING

XXNOTE: YOUR SPO MUST FOOT THE BILL FOR THESE!

PRODUCT ASSURANCE (PA) AND ENGINEERING (EN) COUNTERPART HELP

- o PA-DESIGN ASPECTS OF QA
- o EN-DESIGN ASPECTS OF PRODUCIBILITY

OVER AND ABOVE YOUR COLLOCATE, HOME OFFICE, AND CAO, THERE ARE SEVERAL ORGANIZATIONS THAT CAN PROVIDE ADDITIONAL HELP. THE ASD LABS CAN PROVIDE EXPERTISE ON ANYTHING FROM QA CORRECTIVE ACTIONS AND WAIVER REQUESTS, TO INTEGRATION OF NEW PROCESSES AND MATERIALS. THERE ARE ALSO SUPPORT CONTRACTOR AGENCIES AVAILABLE THROUGH PMDP OR PMDQ FOR MFG/QA ASSISTANCE. THESE COST YOUR PROGRAM MANAGER MONEY, BUT FOR A SHORT-TERM EFFORT THEY ARE AN EXCELLENT SOURCE OF ADDITIONAL MANPOWER. IN ADDITION, THE CONTRACTOR'S MFG/QA PEOPLE THEMSELVES CAN BE EXTREMELY VALUABLE AS YOUR OPEN LINE OF COMMUNICATION WITH WHAT'S ACTUALLY GOING ON IN A PRODUCTION LINE. ANOTHER AREA INVOLVES THE PRODUCT ASSURANCE (PA) AND ENGINEERING (EN) PEOPLE ASSIGNED TO YOUR SPO. THESE ARE YOUR COUNTERPARTS FOR THE DESIGN SIDE OF QUALITY AND PRODUCIBILITY. YOUR RELATIONSHIP WITH PA AND EN

EXPERTISE

HELP

SUGGESTIONS

PMD-HOME OFFICE HELP

- o PMDP(MFG)-ACQUISITION PLANS, SOURCE SELECTION, ON-SITE SURVEYS, REVIEWS AND AUDITS, TECHMOD, AND PRODUCIBILITY
- o PMDQ(QA)-ACQUISITION PLANS, SOURCE SELECTION, ON-SITE SURVEYS, REVIEWS AND AUDITS, SOFTWARE AND SUPPLIER QA
- o PESO(PRODUCT ENGINEERING SUPPORT OFFICE)-PRR, MM/PCR, SHOULD COST, INDEPENDENT REVIEWS
- o PMDA(FACILITIES)-GOVERNMENT FACILITIES

CAO HELP

- o AIR FORCE PLANT REPRESENTATIVE OFFICES (AFPRO)
- o DEFENSE LOGISTICS AGENCY (DLA)
 - oo DEFENSE CONTRACT ADMINISTRATIVE SERVICE (DCAS)
 - oo DCAS PLANT REPRESENTATIVE OFFICE (DCASPPD)

(SPEAKER 1)

TO WRAP UP THIS PRESENTATION, WE'LL DISCUSS THE DIFFERENT PLACES YOU CAN GET HELP OR ADVICE AND MAKE SOME SUGGESTIONS THAT MADE IT EASIER FOR OTHER MFG/QA MANAGERS.

TO RECAP WHAT WE COVERED IN THE VIDEOTAPE ORIENTATION, THE THREE PRIMARY AREAS YOU CAN FIND HELP ARE YOUR COLLOCATES, THE PMD HOME OFFICE STAFF, AND THE CAO. THE HOME OFFICE STAFF INCLUDES INDUSTRIAL ENGINEERS, INDUSTRIAL SPECIALISTS, AND QA SPECIALISTS WHO CAN HELP ON ANY FACET OF PLANNING AND IMPLEMENTATION. THE PRODUCT ENGINEERING SUPPORT OFFICE (PESO), A SMALL BUT HIGHLY EXPERIENCED GROUP OF INDUSTRIAL ENGINEERS, CAN HELP ON BOTH TECHNICAL AND MANAGEMENT ISSUES. PMDA CAN HELP WHENEVER YOUR PROGRAM INCLUDES A PLANT OWNED BY THE GOVERNMENT. CONTRACT ADMINISTRATION OFFICES (CAO) FULFILL THE MFG/QA MONITORING FUNCTION AT THE CONTRACTOR'S PLANT. THEY ARE THE GOVERNMENT'S EYES AND EARS AND ONE OF YOUR MOST VALUABLE ALLIES. CAOs FALL INTO THE TWO MAJOR GROUPINGS SHOWN (SEE SLIDE). AIR FORCE PLANT REPRESENTATIVE OFFICES (AFPRO) ARE FOUND AT PLANTS THAT HAVE A SIGNIFICANT PERCENTAGE OF AIR FORCE WORK, AND DEFENSE LOGISTICS AGENCY

TECHNICAL DATA PROVIDED BY THE CONTRACTOR. YOU
CAN HAVE A DIRECT IMPACT ON THE NEGOTIATED COST.

STILL MORE REVIEWS AND AUDITS

- o QUALITY AUDITS
- o SHOULD COST
- o FACT-FINDING

MANAGEMENT IS RESPONSIBLE FOR SETTING THEM UP. THEY WILL ESTABLISH TEAMS AND AGENDAS FOR THE REVIEWS AND AUDITS. HOWEVER, THERE ARE OTHER REVIEWS AND AUDITS LIKE PRODUCTION READINESS REVIEWS (PRR) AND MM/PCRs THAT YOU WILL HAVE TOTAL RESPONSIBILITY FOR MANAGING. MORE INFORMATION ON THESE CAN BE FOUND AS SHOWN (SEE SLIDE). BRIEFLY, A PRR IS USUALLY USED DURING FSD TO DETERMINE READINESS FOR PRODUCTION WHEN THE FSD CONTRACTOR IS SOLE SOURCE FOR THE PRODUCTION PHASE. THE PRR OR AN MM/PCR IS ACCOMPLISHED TO SUPPORT PRODUCTION DECISIONS. IN ADDITION, QUALITY AUDITS ARE USED TO IDENTIFY AND RECOMMEND CORRECTIVE ACTIONS FOR QA PROBLEMS. "SHOULD COSTS" ARE DONE ON OUR LARGER PROGRAMS TO VERIFY THE CONTRACTOR'S PRICING DATABASE. THIS IS A COMPREHENSIVE REVIEW WITH A LARGE GOVERNMENT TEAM MADE UP OF COLLOCATE, HOME OFFICE AND CAO PLAYERS, AS WELL AS SUPPORT CONTRACTOR PEOPLE. YOU SHOULD WORK CLOSELY WITH BOTH THE HOME OFFICE STAFF AND YOUR SPO TO ORCHESTRATE A SHOULD COST. ANOTHER AREA IS FACT-FINDING, USED DURING PREPARATION FOR NEGOTIATIONS WITH A CONTRACTOR TO VALIDATE PROPOSAL ESTIMATES. HERE, YOU WILL WORK WITH THE INDUSTRIAL ENGINEERS IN YOUR GROUP TO ANALYZE

THE FUNCTIONAL CONFIGURATION AUDIT (FCA)

VERIFIES THAT THE ITEM'S PERFORMANCE MEETS THE SPECIFICATION REQUIREMENTS AND IS USUALLY CONDUCTED AT THE END OF FULL-SCALE DEVELOPMENT USING PROTOTYPE OR PREPRODUCTION ITEMS. THE TEST DATA IS REVIEWED TO VERIFY FUNCTIONAL PERFORMANCE. YOUR TASK IS TO INSURE TEST PROCEDURES AND DATA ARE ACCURATE. AGAIN, ANY CONCERNS RAISED AT PREVIOUS REVIEWS SHOULD BE ANALYZED FOR SATISFACTORY RESOLUTION.

PHYSICAL CONFIGURATION AUDIT

- o REVIEW DRAWING AND MFG SHEETS FOR ACCURACY AND TO INSURE
 - oo CHANGES ARE REFLECTED IN DRAWINGS AND HARDWARE
 - oo SPECIAL INSTRUCTIONS ON DRAWINGS ARE REFLECTED IN MFG/QA PROCESS SHEETS
- o VERIFY ACTUAL PRODUCT
 - oo DIMENSIONS, TOLERANCES, FINISHES, ETC

OTHER REVIEWS AND AUDITS

- o PRODUCTION READINESS REVIEW (PRR)
 - oo AFSCR 84-2
- o MANUFACTURING MANAGEMENT/PRODUCTION CAPABILITY REVIEW (MM/PCR)
 - oo AFSCP 84-4

XXNOTE: BOTH OF THESE ARE MANAGED BY
MFG/QA

USUALLY CONDUCTED EARLY IN THE INITIAL PRODUCTION, THE PHYSICAL CONFIGURATION AUDIT (PCA) EXAMINES THE AS-BUILT VERSION OF AN ITEM AGAINST ITS TECHNICAL DOCUMENTATION IN ORDER TO ESTABLISH THE CONFIGURATION BASELINE. YOU WILL PROBABLY BE A PART OF A TEAM RESPONSIBLE FOR VERIFYING ITEMS LIKE THESE (SEE SLIDE). AFTER A SUCCESSFUL PCA, ALL SUBSEQUENT CHANGES ARE PROCESSED BY ENGINEERING CHANGE ACTION.

GUIDELINES FOR THESE REVIEWS AND AUDITS CAN BE FOUND IN MIL-STD-1521 TITLED, "TECHNICAL REVIEWS AND AUDITS FOR SYSTEMS, EQUIPMENT, AND COMPUTER PROGRAMS."

ALTHOUGH YOU HAVE THINGS TO ACCOMPLISH IN THE FOREGOING REVIEWS AND AUDITS, CONFIGURATION

PRELIMINARY DESIGN REVIEW

- o MATERIAL AND COMPONENT SELECTION
- o PRELIMINARY PRODUCTION SEQUENCING
- o MFG/QA METHODS
- o MFG/QA RISK
- o EQUIPMENT AND FACILITY UTILIZATION
- o IN-PROCESS AND FINAL INSPECTION PROCESSES

1.23-3172) USUALLY ACCOMPLISHED DURING THE FULL-SCALE DEVELOPMENT (FSD) PHASE THE PRELIMINARY DESIGN REVIEW (PDR) IS A FORMAL TECHNICAL REVIEW OF THE BASIC DESIGN APPROACH. THE CONTRACTOR MUST DEMONSTRATE THAT IN-DEPTH ANALYSES, SUCH AS THESE (SEE SLIDE) WERE PERFORMED BY QUALIFIED INDIVIDUALS AND THE RESULTS OF THE ANALYSES WILL BE INCORPORATED IN THE DESIGN. EFFORTS TO MAXIMIZE PRODUCTIVITY SHOULD BE DEMONSTRATED AND MFG/QA MANAGEMENT SYSTEMS SHOULD INTEGRATE MFG, PRODUCIBILITY, AND QA CONSIDERATIONS. FINALLY, ANY CONCERNS IDENTIFIED AT PREVIOUS REVIEWS ARE ANALYZED FOR PROGRESS.

CRITICAL DESIGN REVIEW

- o STATUS OF PDR CONCERNS
- o IMPACT OF NEW MFG PROCESSES
- o INDUSTRIAL BASE CONCERNS
- o REVIEW OF MFG ENGINEERING EFFORTS
 - oo MATERIALS, PROCESSES, METHODS, SPECIAL TOOLS, TEST EQUIPMENT
- o REVIEW MFG MANAGEMENT SYSTEM
 - oo SUITABLE FOR PRODUCTION

1.40-53) THE CRITICAL DESIGN REVIEW (CDR) IS CONDUCTED PRIOR TO THE PRODUCTION DESIGN RELEASE TO INSURE THE DESIGN SATISFIES PERFORMANCE REQUIREMENTS. YOUR RESPONSIBILITY IS TO REVIEW THE STATUS OF CONSIDERATIONS SUCH AS THESE (SEE SLIDE). A SUCCESSFUL CDR ESTABLISHES A DESIGN BASELINE FOR FABRICATION AND PRODUCTION PLANNING. IN ADDITION, ONCE THE GOVERNMENT HAS APPROVED THE CDR, ANY SPECIFICATION CHANGES CAN RESULT IN ADDITIONAL COST SINCE A SUCCESSFUL CDR SIGNALS ALL PARTIES THAT THE EXISTING DESIGN SHOULD MEET ALL CONTRACTUAL PERFORMANCE REQUIREMENTS.

FORM 103 WITH POST-AWARD CONFERENCE
ADDED

POST-AWARD CONFERENCE

o MEETING OF MINDS

- oo SPO
- oo CAO
- oo CONTRACTOR

REVIEWS AND AUDITS

- o IAW MIL-STD-1521
- o CONTRACTOR PROVIDES
 - oo FACILITIES, MATERIALS, PEOPLE,
DATA, ETC
- o INCLUDES
 - oo PRELIMINARY DESIGN REVIEW (PDR)
 - oo CRITICAL DESIGN REVIEW (CDR)
 - oo FUNCTIONAL CONFIGURATION AUDIT
(FCA)
 - oo PHYSICAL CONFIGURATION AUDIT
(PCA)

(SPEAKER 2)

TO BEGIN THE IMPLEMENTATION PHASE, AND BEFORE THE WINNING CONTRACTOR PUTS THE FIRST SAW TO METAL, A POST-AWARD CONFERENCE IS CONVENED TO GET A CLEAR UNDERSTANDING OF WHAT IS EXPECTED OF ALL PARTICIPANTS. THIS IS YOUR OPPORTUNITY TO MAKE SURE THE CONTRACTOR AND THE CAO KNOW EXACTLY WHAT YOU WANT IN RESPECT TO DATA, PERFORMANCE AND MFG/QA SYSTEMS. ADDITIONALLY, YOU CAN MAKE MONEY WITH THE CAO BY LETTING THEM KNOW THEY ARE PART OF YOUR TEAM AND YOUR KEY CONTACT IN THE PLANT. LET THEM KNOW WHAT YOU WANT AND LISTEN TO THEIR ADVICE ON HOW TO BEST ACCOMPLISH IT.

BEFORE WE GO ANY FURTHER, LET'S TALK ABOUT SOME BACKGROUND INFORMATION YOU WILL NEED TO UNDERSTAND FOR REVIEWS AND AUDITS. MIL-STD-1521 STATES,

UNLESS OTHERWISE SPECIFIED IN THE STATEMENT OF WORK, TECHNICAL REVIEWS AND AUDITS ARE CONDUCTED BY THE CONTRACTOR AT HIS FACILITY OR DESIGNATED SUBCONTRACTOR FACILITY IF APPROVED BY THE PROCURING ACTIVITY. THE CONTRACTOR IS REQUIRED TO PROVIDE THE NECESSARY RESOURCES AND MATERIALS TO EFFECTIVELY PERFORM THE REVIEW OR AUDIT.

214.1.2)

NOW WE WILL DESCRIBE EACH AUDIT AND BRIEFLY OUTLINE YOUR RESPONSIBILITIES.

STATEMENT OF WORK REQUIREMENTS

- o "SYSTEMICS"
 - oo MIL-STDs
- o "SPECIFICS"
 - oo PLANS
 - ooo PRODUCTION, QA, PRODUCTIBILITY, AND WORK MEASUREMENT
 - oo TECHMOD
 - ooo ASDR 800-4

RFP CONTENT

- o MIL-STD "SYSTEMICS"
- o "SPECIFICS"
- o PROVISIONS AND CLAUSES
 - ooo "FILLER PLATE"
- o CONTRACT DATA REQUIREMENTS LIST(CDRL)

25 ALONG WITH THE "SYSTEMIC" REQUIREMENTS TASKED BY THE MIL-STDs, SEVERAL "SPECIFICS" SUCH AS PRODUCTION, QA, PRODUCTIBILITY, AND WORK MEASUREMENT PLANS MAY BE APPROPRIATE. THESE PLANS MAY BE USED DURING THE SOURCE SELECTION PROCESS, AS WELL AS TO MONITOR PROGRESS AND COMPLIANCE AFTER CONTRACT AWARD. IN ADDITION, ON ALL MAJOR PROGRAMS ASDR 800-4 REQUIRES THE MFG/QA MANAGER TO CONSIDER TECHNOLOGY MODERNIZATION (TECHMOD) IN THE STATEMENT OF WORK AS AN INITIATIVE TO IMPROVE THE CONTRACTOR'S PRODUCTIVITY. FOR ADDITIONAL INFORMATION ON TECHMOD CONSULT ASDR 800-4 OR THE GUIDE PUT OUT BY ASD/PMDP.

(SPEAKER 1)

26 NEXT, THE SECTION TITLED "PROVISIONS AND CLAUSES" IS USUALLY INCORPORATED BY CONTRACTING PERSONNEL BUT MFG/QA SHOULD REVIEW THEIR CONTENT FOR ITEMS AFFECTING THE MFG/QA FUNCTION. AS AN EXAMPLE, WHEN YOU IMPOSE MIL-I-45208 OR MIL-Q-9858, THE STANDARD INSPECTION CLAUSE MUST BE INCLUDED IN THIS SECTION. ALSO, IF GOVERNMENT-FURNISHED PROPERTY IS INVOLVED, MFG/QA WILL NEED TO INCLUDE SOME ITEMS IN THIS SECTION.

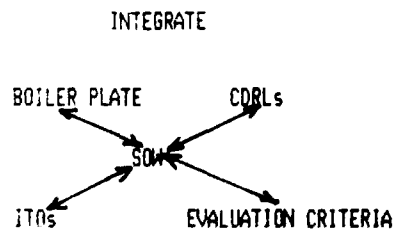
DD FORM 1423-FILLED IN

CONTRACT MFG/QA DATA USES

- o CONTRACTOR
 - oo PREPARATION AND CAPABILITY
- o DESIGN
 - oo FEASIBILITY AND ADEQUACY
- o GOVERNMENT
 - oo RISK ASSESSMENT AND SURVEILLANCE

RFP CONTENT

- o RFP INSTRUCTIONS TO OFFEROR
 - oo PROPOSAL CONTENT AND FORMAT
- o RFP EVALUATION CRITERIA
 - oo WHAT THE GOVT LOOKS FOR



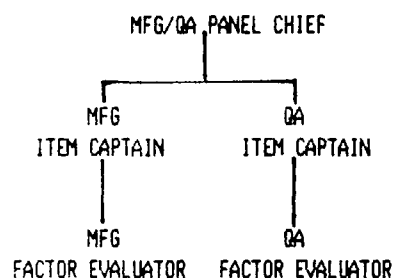
DATA, A MUST FOR MFG/QA MANAGEMENT, WILL BE CALLED OUT IN THE CONTRACT DATA REQUIREMENTS LIST (CDRL). MFG/QA WILL SUBMIT A DD FORM 1423 FOR THE APPROPRIATE CDRLs TO MEET THEIR REQUIREMENTS WHICH SHOULD REFERENCE THE APPROPRIATE DATA ITEM DESCRIPTION (DID). THE DID CAN BE, AND IN SOME CASES SHOULD BE, TAILORED TO YOUR PROGRAM'S ACTUAL NEEDS. ⁽²⁶⁾ MFG/QA DATA MAY BE RETAINED BY THE CONTRACTOR OR DELIVERED TO THE GOVERNMENT FOR THE USES SHOWN (SEE SLIDE). IT IS USED TO BOTH EVALUATE AND CONTROL THE CONTRACTOR.

ADDITIONALLY, YOUR MFG/QA MANAGER WILL PROVIDE TWO MORE THINGS; ITOs WHICH SPELL OUT WHAT WE WILL WANT TO SEE IN THE PROPOSAL TO DEMONSTRATE CAPABILITY TO COMPLETE MFG/QA REQUIREMENTS, AND EVALUATION CRITERIA WHICH TELL THE CONTRACTOR HOW WE WILL GRADE HIS RESPONSE. THE MFG/QA HANDBOOK HAS A FULL SECTION ON THESE AND INCLUDES ADVICE LIKE ASKING FOR DRAFT OR PRELIMINARY PRODUCTION, QA, AND PRODUCIBILITY PLANS TO AID IN THE SOURCE SELECTION PROCESS.

ONE LAST COMMENT ABOUT RFP INPUTS, THE STATEMENT OF WORK, CDRLs, BOILER PLATE, ITOs, AND MFG/QA EVALUATION CRITERIA ALL NEED TO MESH AND AGREE WITH EACH OTHER. YOU WILL WANT YOUR MFG/QA MANAGER TO COORDINATE AND RE-INTEGRATE ALL OF THEM WHENEVER YOU MAKE ANY CHANGES.

FORM 183 SHOWING SOURCE SELECTION:
PROPOSAL RECEIPT AND EVALUATION, ON-SITE
REVIEW, BRIEFINGS, CONTRACT AWARD, AND
LOSER DEBRIEF

MFG/QA SOURCE SELECTION TEAM



QUICK LOOK

- o CHECK FOR
 - oo COMPLETENESS, OBVIOUS DEFICIENCIES
- o SEND
 - oo CONTRACTOR INQUIRIES (CI)
 - oo DEFICIENCY REPORTS (DR)
 - oo MODIFICATION REQUESTS (MR)
- o WRITE
 - oo DETAILED NARRATIVE ANALYSES (DNA)

(SPEAKER 2)

ONCE THE RFP IS RELEASED MFG/QA MUST ORGANIZE FOR SOURCE SELECTION. ACTUALLY, ORGANIZING FOR THE SOURCE SELECTION SHOULD BE WELL ON ITS WAY BY RFP RELEASE. MFG/QA WILL GET FIRM COMMITMENTS FROM THOSE ORGANIZATIONS NEEDED TO SUPPORT THE SOURCE SELECTION, SELECT A MANUFACTURING PANEL CHIEF, ITEM AND FACTOR EVALUATORS, AND AN ADMINISTRATIVE OFFICER. MFG/QA PEOPLE ARE USUALLY VERY SCARCE AND REQUIRE THOROUGH PRE-PLANNING TO KEEP ON SCHEDULE.

ALL TOO SOON THE PROPOSALS ARRIVE. THE MFG/QA TEAM WILL REVIEW THEM QUICKLY FOR COMPLETENESS AND OBVIOUS DEFICIENCIES. THEY'LL SEND CIs (CONTRACTOR INQUIRIES) AND DRs (DEFICIENCY REPORTS) AS SOON AS POSSIBLE TO INSURE THE FINAL EVALUATION ISN'T HELD UP PENDING RESPONSE TO A CI OR DR. MAKE SURE THE MFG/QA TEAM UNDERSTANDS THE RULES FOR SENDING CIs, DRs, AND MRs (MODIFICATION REQUESTS). ALSO, IT'S THE MFG/QA PANEL CHIEF'S JOB TO INSURE THE MFG/QA TEAM MEMBERS UNDERSTAND HOW YOU WANT THE DNA (DETAILED NARRATIVE ANALYSIS) WRITTEN FOR EACH EVALUATION FACTOR.

ON-SITE REVIEW

- o PRE-AWARD SURVEY (PAS) - CONTRACT ADMINISTRATION OFFICE (CAO) WILL ACCOMPLISH IAW YOUR GUIDANCE, e.g. WHAT FACTORS REQUIRE EVALUATION

BLANK FORM 1524 PAS REQUEST

MANAGEMENT RESPONSIBILITY

- o EXPANDED PAS-CAO IS STILL OFFICE OF PRIMARY RESPONSIBILITY (OPR) BUT YOUR MFG/QA TEAM WILL "ASSIST" THE CAO
- o MANUFACTURING MANAGEMENT/PRODUCTION CAPABILITY REVIEW (MM/PCR)-THIS ONE IS MFG/QA RESPONSIBILITY WITH THE CAO, LABS AND OTHERS ASSISTING

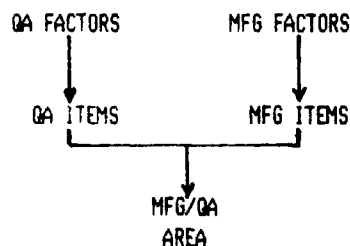
ON-SITE REVIEWS

- o EXPANDED PRE-AWARD SURVEYS OR MM/PCRs
- o HOLD DOWN THE FORT
- o GET DRAFT REPORT
 - oo A BIRD IN HAND IS WORTH TWO IN THE BUSH

IF, DURING THE PLANNING OF YOUR PROGRAM, AN ON-SITE REVIEW WAS PLANNED YOU SHOULD WORK WITH THE MFG/QA PANEL CHIEF, USING THE EVALUATION STANDARDS AS A GUIDE, TO DETERMINE SPECIFIC CAO TASKS AND WHEN THE SURVEY RESULTS WILL BE NEEDED TO KEEP THE SOURCE SELECTION ON TRACK. MAKE SURE THE PRE-AWARD REQUESTS ARE READY TO GO OUT SHORTLY AFTER RECEIPT OF THE PROPOSALS. CONTRACT PERSONNEL WILL NORMALLY SEND OUT THE REQUESTS BUT YOU MAY HAVE TO DO SOME COACHING. IF MFG/QA PARTICIPATES IN, OR CONDUCTS THE ON-SITE REVIEW, THEY WILL ORGANIZE THE REVIEW TEAM AFTER CONSIDERING ANY INPUTS YOU MAY HAVE. IF THEY PARTICIPATE WITH THE CAO ON AN "EXPANDED" PRE-AWARD SURVEY, OR CONDUCT A MANUFACTURING MANAGEMENT/PRODUCTION CAPABILITY REVIEW (MM/PCR), THEY -- INTERFACE WITH THE CAO MEMBERS. ALSO, IF THEY CONDUCT A PRODUCTION READINESS REVIEW (PRR) OR MM/PCR A PLAN MUST BE WRITTEN. FINALLY, STANDARD LETTERS, ONE TO ADVISE THE CAOS AND ONE TO ADVISE THE OFFERORS, MUST BE PREPARED.

YOUR MFG/QA PEOPLE WILL OFTEN PARTICIPATE IN THESE ON-SITE REVIEWS IN THE MIDDLE OF THE SOURCE SELECTION. THE TEAM COULD BE ON THE ROAD A MONTH OR MORE. SO, HOW DO THEY KEEP UP WITH THE SOURCE SELECTION? THEY SHOULD LEAVE SOMEONE

SUMMARIZE



WRAP-UP

o DEBRIEF LOSERS

oo STRENGTHS

oo WEAKNESSES

oo QUESTIONS AND ANSWERS

FORM 103 WITH POST-AWARD CONFERENCE
ADDED

HOME TO WORK SOURCE SELECTION WHILE THE REST OF THE TEAM IS GONE. ALSO, WHILE ON THE ROAD, MFG/QA SHOULD PREPARE A DRAFT OF EACH TEAM MEMBER'S INPUT FOR THE ON-SITE REVIEW REPORT.

(S) THE MFG/QA PANEL CHIEF WILL CONSOLIDATE MFG AND QA FACTORS, AND ITEMS, INTO AREA SUMMARIES USING DNAs, CI AND DR RESPONSES, AS WELL AS THE RESULTS OF THE ON-SITE REVIEWS. THEY WILL PROVIDE INFORMATION FOR MID-TERM AND FINAL BRIEFINGS TO THE SOURCE SELECTION AUTHORITY, AND BE PREPARED TO DISCUSS REASONS FOR GRADING THE PROPOSAL THE WAY THEY DID.

(S) DURING DEBRIEF OF THE LOSING OFFERORS, MFG/QA WILL INCLUDE STRENGTHS AND WEAKNESSES THAT AFFECTED THEIR DECISION. PLEASE DON'T LET THE SOURCE SELECTION AUTHORITY SET AN UNREASONABLE SUSPENSE FOR ANY FORMAL MFG/QA RESPONSES TO CONTRACTOR QUESTIONS.

(SPEAKER 1)

(S) TO BEGIN THE IMPLEMENTATION OF OUR PREVIOUS PLANNING, A POST-AWARD CONFERENCE IS CONVENED AFTER CONTRACT AWARD TO MAKE SURE ALL PARTICIPANTS HAVE A CLEAR UNDERSTANDING OF WHAT IS EXPECTED.

POST-AWARD CONFERENCE

o MEETING OF MINDS

oo SPO

oo CAO

oo CONTRACTOR

PRELIMINARY DESIGN REVIEW(PDR)

o MATERIAL AND COMPONENT SELECTION

o PRELIMINARY PRODUCTION SEQUENCING

o MFG/QA METHODS

o MFG/QA RISK

o EQUIPMENT AND FACILITY UTILIZATION

o IN-PROCESS AND FINAL INSPECTION
PROCESSES

CRITICAL DESIGN REVIEW(CDR)

o STATUS OF PDR CONCERNS

o IMPACT OF NEW MFG PROCESSES

o INDUSTRIAL BASE CONCERNS

o REVIEW OF MFG ENGINEERING EFFORTS
oo MATERIALS, PROCESSES, METHODS,
SPECIAL TOOLS, TEST EQUIPMENT

o REVIEW MFG MANAGEMENT SYSTEM
oo SUITABLE FOR PRODUCTION

THIS IS YOUR OPPORTUNITY TO MAKE SURE THE CONTRACTOR AND THE CAO KNOW EXACTLY WHAT THE SYSTEM PROGRAM OFFICE (SPO) WANTS IN RESPECT TO DATA, PERFORMANCE AND SYSTEMS. YOUR MFG/QA MANAGER SHOULD WORK CLOSELY WITH THE CAO TO COORDINATE THE MFG/QA INTERFACE. YOU CAN MAKE MONEY WITH THE CAO BY LETTING THEM KNOW THEY ARE PART OF YOUR TEAM AND YOUR KEY CONTACT IN THE PLANT. LET THEM KNOW WHAT YOU WANT, AND LISTEN TO THEIR ADVICE ON HOW TO BEST ACCOMPLISH IT.

(112-31) IF YOUR PROGRAM IS IN THE FULL-SCALE DEVELOPMENT (FSD) PHASE THE CONTRACTOR MUST DEMONSTRATE AT A PRELIMINARY DESIGN REVIEW (PDR) THAT IN-DEPTH MFG/QA ANALYSES, SUCH AS THESE (SEE SLIDE), WERE PERFORMED BY QUALIFIED INDIVIDUALS, AND THE RESULTS OF THE ANALYSES WILL BE INCORPORATED IN THE DESIGN. EFFORTS TO MAXIMIZE PRODUCTIVITY SHOULD BE DEMONSTRATED AND MFG/QA MANAGEMENT SYSTEMS SHOULD INTEGRATE MFG, PRODUCIBILITY, AND QA CONSIDERATIONS. FINALLY, YOUR MFG/QA MANAGER SHOULD ANALYZE ANY MFG/QA CONCERNS IDENTIFIED AT PREVIOUS REVIEWS FOR PROGRESS.

(112-32) THE MFG/QA MANAGER'S RESPONSIBILITY DURING THE CRITICAL DESIGN REVIEW (CDR) IS TO LOOK AT THE STATUS OF EFFORTS FOR COST AND SCHEDULE CONSIDERATIONS SUCH AS THESE(SEE SLIDE).

FORM 103 WITH CDR, FCA, PCA, AND
PRODUCTION ADDED

2120.000 MFG/QA PARTICIPATION AT THE FUNCTIONAL

CONFIGURATION AUDIT (FCA) IS TO INSURE TEST
PROCEDURES AND DATA ARE ACCURATE. AGAIN, ANY
CONCERNS RAISED AT PREVIOUS REVIEWS SHOULD BE
ANALYZED FOR SATISFACTORY RESOLUTION.

7 PHYSICAL CONFIGURATION AUDIT (PCA)

2120.000 (45) DURING THE PHYSICAL CONFIGURATION AUDIT (PCA),
THE MFG/QA MANAGER EXAMINES THE AS-BUILT VERSION
OF AN ITEM AGAINST ITS TECHNICAL DOCUMENTATION IN
ORDER TO ESTABLISH THE CONFIGURATION BASELINE, AND
IS RESPONSIBLE FOR VERIFYING ITEMS LIKE THESE (SEE
SLIDE).

- o REVIEW DRAWING AND MFG SHEETS FOR
ACCURACY AND TO INSURE
 - oo CHANGES ARE REFLECTED IN
DRAWINGS AND HARDWARE
 - oo SPECIAL INSTRUCTIONS ON DRAWINGS
ARE REFLECTED IN MFG/QA PROCESS
SHEETS
- o VERIFY ACTUAL PRODUCT
 - oo DIMENSIONS, TOLERANCES, FINISHES,
ETC

(46) MIL-STD-1521 TASKS CONFIGURATION MANAGEMENT

WITH THE RESPONSIBILITY FOR SETTING UP THE
FOREGOING REVIEWS AND AUDITS. BUT, THERE ARE
OTHER REVIEWS AND AUDITS, LIKE PRRs AND MM/PCRs,
THAT MFG/QA WILL HAVE TOTAL RESPONSIBILITY FOR
MANAGING. BRIEFLY, A PRR IS USUALLY USED DURING
FSD TO DETERMINE READINESS FOR PRODUCTION WHEN THE
FSD CONTRACTOR IS SOLE SOURCE FOR THE PRODUCTION
PHASE. AN MM/PCR CAN BE USED WHEN THE PROGRAM IS
COMPETITIVE. ON LARGE PROGRAMS, EITHER A PRR OR
AN MM/PCR SHOULD BE ACCOMPLISHED TO SUPPORT
PRODUCTION DECISIONS. "SHOULD COSTS" ARE
CONSISTENTLY TASKED BY AIR FORCE SYSTEMS COMMAND
TO VERIFY THE CONTRACTOR'S PRICING DATABASE ON
LARGER PROGRAMS. THIS IS A

21 OTHER REVIEWS AND AUDITS

- o PRODUCTION READINESS REVIEW (PRR)
- o MANUFACTURING MANAGEMENT/PRODUCTION
CAPABILITY REVIEW (MM/PCR)

XXNOTE: BOTH OF THESE ARE MANAGED BY
MFG/QA

- o SHOULD COST
- o FACT-FINDING

COMPREHENSIVE REVIEW WITH A LARGE GOVERNMENT TEAM MADE UP OF COLLOCATE, HOME OFFICE AND CAO PLAYERS, AS WELL AS SUPPORT CONTRACTOR PEOPLE. YOU SHOULD WORK CLOSELY WITH BOTH YOUR MFG/QA MANAGER AND HIS HOME OFFICE STAFF TO ORCHESTRATE A SHOULD COST. IN ANOTHER AREA, MFG/QA IS TASKED BY POLICY LETTER TO PARTICIPATE IN FACT-FINDING ON MANY NEGOTIATIONS TO VALIDATE THE CONTRACTOR'S PROPOSAL ESTIMATES.

(SPEAKER 2)

AS TO WRAP UP THIS PRESENTATION, WE'LL DISCUSS THE DIFFERENT PLACES MFG/QA HELP CAN COME FROM AND MAKE SOME SUGGESTIONS TO MAKE MFG/QA EASIER TO INTEGRATE INTO YOUR PROGRAM. THE PRIMARY SOURCES OF MFG/QA EXPERTISE ARE: YOUR COLLOCATE MFG/QA MANAGER, THE MFG/QA HOME OFFICE STAFF AND THE CAO. THE HOME OFFICE STAFF INCLUDES INDUSTRIAL ENGINEERS, INDUSTRIAL SPECIALISTS, AND QA SPECIALISTS WHO CAN HELP ON ANY FACET OF PLANNING AND IMPLEMENTATION. THE PRODUCT ENGINEERING SUPPORT OFFICE (PESO) IS A HIGHLY EXPERIENCED GROUP OF INDUSTRIAL ENGINEERS WHO CAN HELP ON BOTH TECHNICAL AND MANAGEMENT ISSUES. THEY ARE TASKED BY AFR 800-9 TO PERFORM INDEPENDENT REVIEWS PRIOR TO EVERY AFSARC (AIR FORCE SYSTEM

EXPERTISE

HELP

SUGGESTIONS

ASD/PMD-HOME OFFICE HELP

- o PMDP(MFG)-ACQUISITION PLANS, SOURCE SELECTION, ON-SITE SURVEYS, REVIEWS AND AUDITS, TECHMOD, AND PRODUCIBILITY
- o PMDQ(QA)-ACQUISITION PLANS, SOURCE SELECTION, ON-SITE SURVEYS, REVIEWS AND AUDITS, SOFTWARE AND SUPPLIER QA
- o PESO(PRODUCT ENGINEERING SUPPORT OFFICE)-PRR, MM/PCR, SHOULD COST, INDEPENDENT REVIEWS
- o PMDA(FACILITIES)-GOVERNMENT FACILITIES

ACQUISITION REVIEW COUNCIL) AND DSARC (DEFENSE SYSTEM ACQUISITION REVIEW COUNCIL) MILESTONE. THEIR ASSESSMENT IS BRIEFED TO THE AFSARC AND DSARC COUNCILS. YOUR MFG/QA MANAGER CAN BE A VALUABLE LIAISON BETWEEN YOU AND PESO TO INSURE THEY HAVE ALL THE APPROPRIATE DATA FOR THEIR ASSESSMENT. PMDA CAN HELP WHENEVER YOUR PROGRAM INCLUDES A PLANT OWNED BY THE GOVERNMENT SINCE THEY MANAGE ALL AIR FORCE (AF) OWNED FACILITIES, WHICH INCLUDES REFURBISHMENT, MODERNIZATION, AND ENVIRONMENTAL CONTROL.

4. CAO ORGANIZATIONS FULFILL THE MFG/QA MONITORING FUNCTION AT THE CONTRACTOR'S PLANT. THEY ARE THE GOVERNMENT'S EYES AND EARS. ONE OF YOUR MOST VALUABLE ALLIES. CAOs FALL INTO THE TWO MAJOR GROUPINGS SHOWN (SEE SLIDE). AFPROs ARE FOUND AT PLANTS THAT HAVE A SIGNIFICANT PERCENTAGE OF AF WORK, AND DLA HAS COGNIZANCE AT PLANTS WHERE NO SINGLE SERVICE DOMINATES. IT'S IMPORTANT TO REMEMBER YOU ARE ON THE CAO'S TURF WHEN YOU WALK INTO THE PLANT THEY HAVE COGNIZANCE FOR. PRE-NOTIFICATION AND COORDINATION GO A LONG WAY TOWARD MAKING YOUR RELATIONSHIP PRODUCTIVE AND COMPLEMENTARY VERSUS ADVERSARIAL. YOUR MFG/QA MANAGER SHOULD KEEP HIMSELF CHAINED WITH HIS OWN COUNTERPARTS.

CAO HELP

AIR FORCE PLANT REPRESENTATIVE
OFFICES (AFPRO)

DEFENSE LOGISTICS AGENCY (DLA)

oo DEFENSE CONTRACT ADMINISTRATIVE
SERVICE (DCAS)

oo DCAS PLANT REPRESENTATIVE OFFICE
(DCASPRO)

LAB HELP

ANALYSIS AND RECOMMENDATIONS

METALS

POLYMERS

COMPOSITES

ELECTRONICS

PROCESSES

COMPUTER AIDED DESIGN AND MFG

(CAD/CAM)

WAVE SOLDERING, ETC

SUPPORT CONTRACTOR HELP

SHOULD COST

FACT-FINDING

NOTE: YOUR SPO MUST FOOT THE BILL
FOR THESE!

PRODUCT ASSURANCE (PA) AND ENGINEERING (EN) COUNTERPART HELP

DESIGN ASPECTS OF QA

DESIGN ASPECTS OF PRODUCIBILITY

OVER AND ABOVE YOUR COLLOCATE, HOME OFFICE,
AND CAO HELP, THERE ARE SEVERAL ORGANIZATIONS THAT
CAN BE INVALUABLE. THE ASD LABS CAN HELP ON
EVERYTHING FROM QA CORRECTIVE ACTIONS AND WAIVER
REQUESTS, TO MANUFACTURING TECHNOLOGY INTEGRATION
OF NEW PROCESSES AND MATERIALS. THERE ARE ALSO
SUPPORT CONTRACTOR AGENCIES AVAILABLE THROUGH PMDP
OR PMDQ FOR MFG/QA HELP. SUPPORT CONTRACTORS WILL
COST YOU MONEY, BUT FOR A SHORT TERM EFFORT LIKE A
SHOULD COST, THEY ARE AN EXCELLENT SOURCE OF
ADDITIONAL MANPOWER. IN ADDITION, THE
CONTRACTOR'S MFG/QA PEOPLE CAN BE EXTREMELY
VALUABLE AS AN OPEN LINE OF COMMUNICATION WITH
WHAT'S ACTUALLY GOING ON IN A PRODUCTION LINE.

ANOTHER AREA INVOLVES THE PRODUCT ASSURANCE (PA)
AND ENGINEERING (EN) PEOPLE ASSIGNED TO YOUR SPO.
THESE ARE ENGINEERING COUNTERPARTS FOR THE DESIGN
SIDE OF QUALITY AND PRODUCIBILITY. HERE'S WHERE
YOUR PROGRAM "MANAGEMENT" NEEDS TO BE FIRMLY
APPLIED. AT ASD, MFG/QA HAS "PROGRAM AND
SYSTEMIC" RESPONSIBILITY FOR QA, WHILE PA HAS
RESPONSIBILITY FOR DESIGN QA CONSIDERATIONS.
LIKEWISE, MFG/QA HAS MFG PRODUCIBILITY WHILE EN
HAS DESIGN PRODUCIBILITY RESPONSIBILITY. YOU CAN
BUILD A BETTER PACKAGE AND RUN A

TRAINING

IL-COURSES CONDUCTED BY

FINDING

ILD COST

QA OVERVIEW TRAINING

INPUTS, SOURCE SELECTION,

UCIBILITY, GFE, ETC)

CONCLUSION

MFG/QA CAN MAKE

A

DIFFERENCE

MORE EFFECTIVE PROGRAM IF THESE TWO FUNCTIONALS
"INTEGRATE" THEIR INPUTS. AS A LAST TOPIC

AREA, PMD WILL PERIODICALLY RUN A TRAINING SESSION
COVERING THE SPECTRUM OF MFG/QA DUTIES. IT MAY BE
BENEFICIAL TO SIT IN ON SOME SESSIONS.

WELL, THAT'S BASICALLY IT. WHAT WE HAVE TRIED
TO PRESENT IS MERELY THE BASIS FOR YOU TO START
LEARNING ABOUT MFG/QA. HOPEFULLY, IT WILL HELP TO
KEEP YOU AND YOUR PROGRAMS OUT OF HOT WATER. BUT
IT DEFINITELY IS NOT THE FINAL "END ALL AND BE
ALL" OF MFG/QA. YOU WILL FIND EXCEPTIONS TO OUR
GUIDANCE, BUT IT PROVIDES A GENERIC BASELINE FOR
MOST PROGRAMS. YOU WILL NEED TO WORK WITH YOUR
MFG/QA MANAGER ON AREAS LIKE GFE, COMPONENT
BREAKOUT, CRITICAL MATERIALS, STRIKE IMPACT, AND SO
ON. ABOVE ALL, CONSULT WITH YOUR MFG/QA MANAGER
TO DECIDE NOT ONLY WHAT "MUST" BE DONE BUT ALSO
WHAT "CAN" BE DONE FOR YOUR SPECIFIC PROGRAMS.
YOUR PROGRAMS ARE UNIQUE AND DESERVE TO HAVE A
TAILORED MFG/QA APPROACH. GOOD LUCK AND HANG IN
THERE.

END

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