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STUDENT REPORT

DEFINING AND DOCUMENTING
CONSTRUCTION REQUIREMENTS
THERE'S NO ROOM FOR MISTAKES

Major James J. Behan

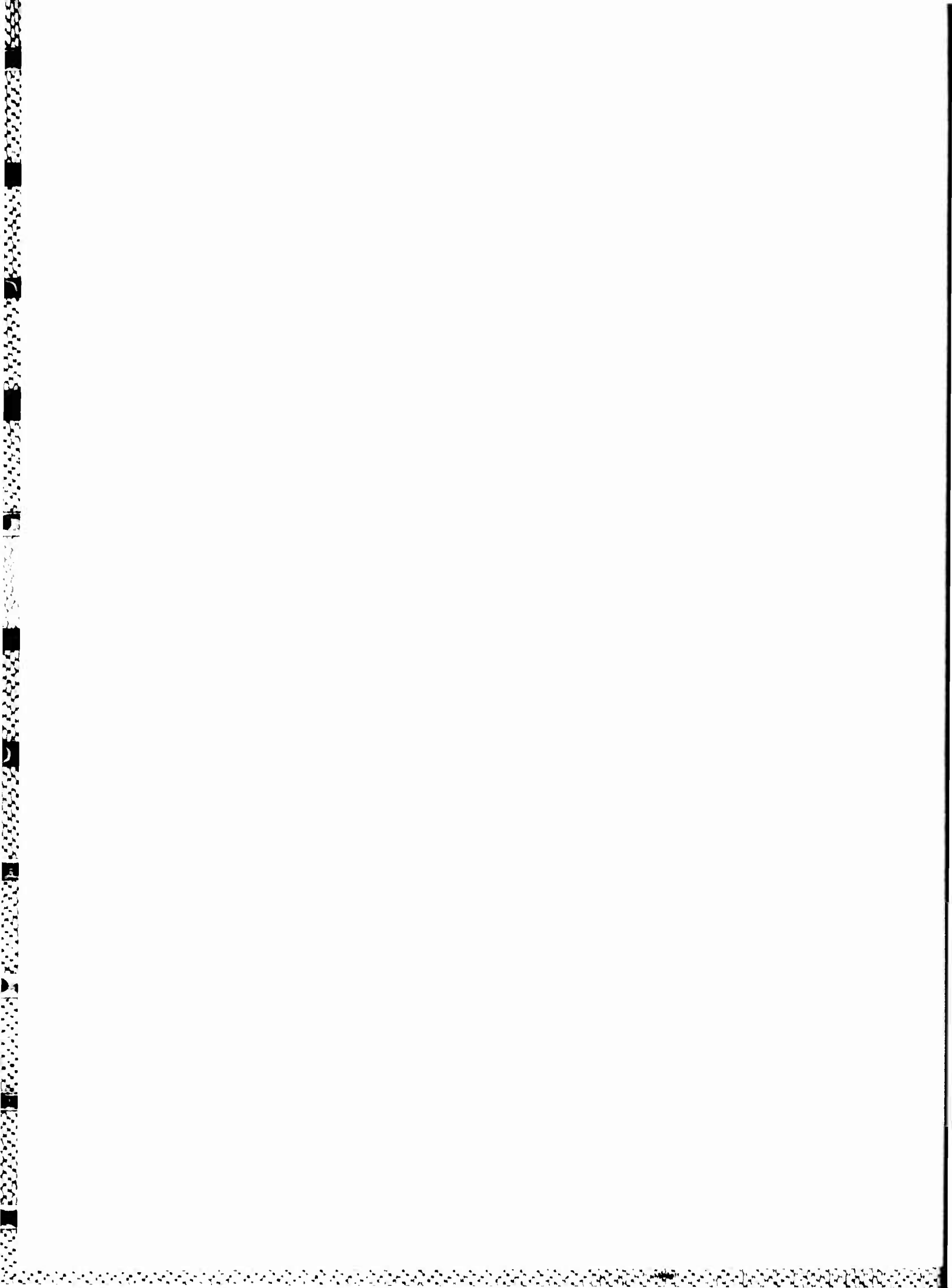
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TITLE DEFINING AND DOCUMENTING CONSTRUCTION REQUIREMENTS
THERE'S NO ROOM FOR MISTAKES

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

**AIR COMMAND AND STAFF COLLEGE
AIR UNIVERSITY
MAXWELL AFB, AL 36112**

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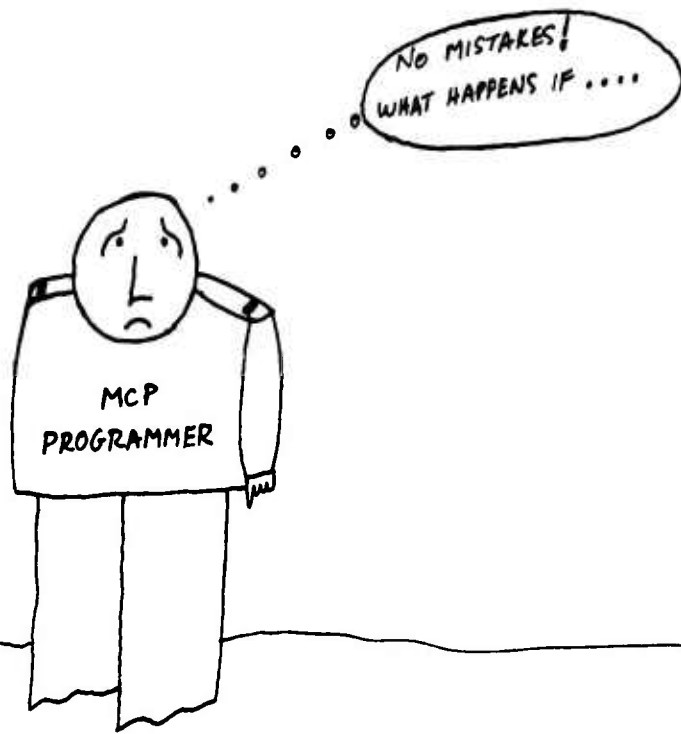
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19. ABSTRACT (Continue on reverse if necessary and identify by block number) The Military Construction Program (MCP) has experienced enormous growth in the 1980s. However, current guidance for base-level programmers has not kept pace especially in the areas of defining and documenting construction requirements. The handbook concentrates on the steps in developing irrefutable, undeniable construction requirements. Primary emphases are on accomplishing the requirements computation, determining the space deficiency on the Existing Facilities/Deficiency Detail Data Sheet, preparing the front sheet 1391 and the Functional Relocation Schematic.					
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DEFINING AND DOCUMENTING CONSTRUCTION REQUIREMENTS

THERE'S NO ROOM FOR MISTAKES





PREFACE

This handbook provides guidance to base-level MCP programmers. It focuses on the central need of properly defining and documenting new construction requirements.

The Air Force has experienced tremendous growth in its MCP budget during the 1980s. However, base (and MAJCOMs) generally have not received additional personnel to manage this expanding program. As a result, programmers of MCP projects must be able to do their job more efficiently. If we are to continue receiving the strong support of defense and congressional leaderships then -- There's no room for mistakes!

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"....we are all challenged to lead and manage to the best of our ability; it makes no difference whether it's a complex multi-year construction program or a relatively simple repair project.... if we don't do it better, we will continue to have problems that lead to cost growth, adverse publicity, increased levels of micromanagement, more restrictions, and, ultimately, fewer dollars."

Maj Gen Clifton D. Wright, Jr., USAF, Retired
Former Director of Engineering and Services

ABOUT THE AUTHOR

Major Behan has held positions within the Civil Engineering career field since commissioning through ROTC at the Pennsylvania State University in 1973. His first assignment was in a RED HORSE Squadron at Hurlburt Field, Florida. During the three and one-half years there he managed construction projects at several CONUS and overseas locations. From 1977 through September 1979 Major Behan held positions within the 50th Civil Engineering Squadron at Hahn AB, Germany.

He received a master's degree in civil engineering in 1980 during an AFIT assignment at the Georgia Institute of Technology. Following a brief tour at HQ TAC, Major Behan was reassigned to Tel Aviv, Israel as Assistant to the Program Manager of the Israeli Airbase Program. There he was part of the Air Force team managing the construction of two Israeli airbases in the Negev Desert. Returning to HQ TAC in July 1982, Major Behan was a Facility Requirements Staff Officer responsible for validating and programming new construction at several TAC bases and in Southwest Asia until August 1985.

Major Behan has extensive experience in the programming and accomplishment of military construction. He is a registered Professional Engineer in Pennsylvania.

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Chapter One

INTRODUCTION

The Military Construction Program (MCP) has undergone enormous growth in recent years. Gone are the days when a base could only expect one or two projects per year totalling perhaps \$2-3M. There is no doubt installation commanders have always been interested in new construction programs. However, the 4-5 year lead time coupled with the limited impact the program had on base management did not generate the keen interest the annual MCP does today.

Since FY 80 congressional appropriations for the Air Force's annual MCP have nearly tripled, reaching almost \$2.7B in FY 86. Military construction now consumes almost 3% of the Air Force budget. There are several reasons for this growth including meeting the objectives for improved energy efficiency, enhancing quality of life, supporting new weapon system beddowns, and simply replacing those nearly half-century old WWII facilities. The stronger congressional support now translates into a typical base receiving about \$10M each year in new construction. This provides installation commanders a very real opportunity to improve the living, working, and recreational environment for their personnel.

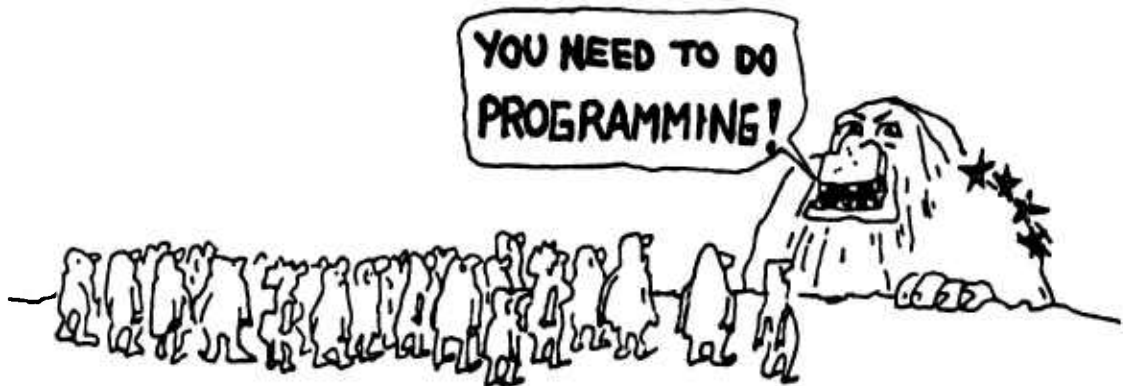
The challenges to base MCP programmers are great. Credible, professionally planned, and well-justified projects are essential if your projects are to gain the support of Air Force and congressional leaderships. Like other resource management areas, there are many more construction requirements than available dollars. Your base and the Air Force cannot afford having valid projects disapproved by Congress because of poor planning and justification. Likewise, the opportunities for MCP programmers are large. New construction provides a means for shaping the base to meet the requirements of the future. It can have a dramatic and favorable impact on productivity of the installation by providing a modern, efficient, and pleasing environment in which to live and work.

Military Construction Program

This handbook is designed to assist base level programmers in developing (MCP) project documentation that is accurate and supportable at all levels of review. Programming may seem mundane and boring to some Civil Engineers. However, it is usually the primary basis for approving or disapproving the project at MAJCOM and higher levels. Without credible documentation your multi-million dollar MCP project will never get off the ground!

We'll look at the steps necessary at base level in developing those irrefutable, undeniable construction requirements. Essentially, there are three steps in this process: defining the requirement, documenting the requirement, and finally, validating and prioritizing the project. Chapter Two analyzes how the total space requirement is determined for a project. The primary sources of data are reviewed while calculations regarding manpower and administrative facilities are detailed. Chapter Three looks at the primary form (D3 Sheet) that documents the construction requirement. Following a careful analysis of the D3 Sheet, two other important forms for communicating the requirement are considered in Chapter Four. The front sheet 1391 and Functional Relocation Schematic further help explain the need for the project. Chapter Five discusses the long and arduous course your project travels on the road to approval. Four separate reviews above your base demand the best product you can produce. Finally, the major points of the handbook are summarized in Chapter Six.

Primary emphasis is on those actions taken in defining and documenting the project's need. While the handbook is oriented toward projects of MCP scope, it also has utility for O&M, NAF, and P-341 programming actions. Let's begin our analysis of the process by looking at how the space requirement is determined.



Calendar No. 380

99TH CONGRESS }
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SENATE

{ REPORT
99-168

MILITARY CONSTRUCTION APPROPRIATION BILL, 1986

OCTOBER 31 (legislative day, OCTOBER 28), 1985 —Ordered to be printed

Mr. MATTINGLY, from the Committee on Appropriations,
submitted the following

REPORT

together with

MINORITY VIEWS

[To accompany H.R. 3327]

The Committee on Appropriations, to which was referred the bill (H.R. 3327) making appropriations for military construction for the Department of Defense for the fiscal year ending September 30, 1986, and for other purposes, reports the same to the Senate with various amendments, and presents herewith information relative to the changes made:

Amount of bill passed by House	\$8,372,730,000
Amount of increase by Senate over the House	272,403,000
<hr/>	
Total of bill as reported to Senate.....	8,645,133,000
Amount of 1986 budget estimate.....	10,340,200,000
Amount of 1985 appropriations	8,405,206,000
The bill as reported to the Senate:	
Under the budget estimate, 1986.....	1,695,067,000
Above appropriations for fiscal year 1985.....	239,927,000

THIS IS WHAT IT'S ALL ABOUT

Chapter Two

DEFINING THE TOTAL REQUIREMENT

INTRODUCTION

The Air Force manages facility space by functional areas described by six-digit category codes. New construction is only authorized when the total space requirement for a category code cannot be satisfied by available facilities. The difference (total requirement minus available space) is the new construction requirement. The starting point in MCP project development is defining the total space requirement for the category code involved.

The "requirement computation" is the item in the 1391 package receiving the greatest scrutiny since it is the basis for the entire project. Unless you can establish (on 1391c) the space requirement, your "irrefutable" project will die on the vine. This chapter investigates the sources of information for defining the total space requirement and considers peculiarities associated with manpower and administrative facilities. The following four sources of information will be reviewed:

- * AFM 86-2
- * base level functional managers
- * MAJCOMs
- * product divisions (AFSC)

SOURCES OF INFORMATION

AFM 86-2

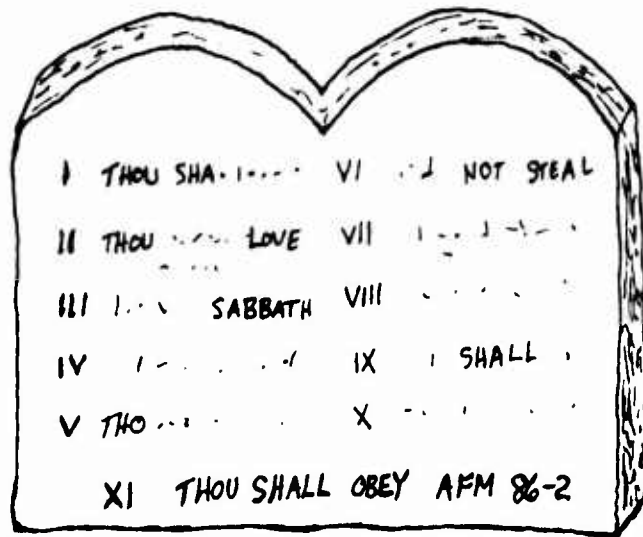
AFM 86-2 is the definitive source for defining or detailing the space requirement for a category code. Unfortunately, changes to this manual have not kept current with the evolving space requirements for the new systems entering the inventory nor with some of the MAJCOM initiatives. Even with its shortcomings, AFM 86-2 still provides an excellent basis for computing facility requirements for most category codes. Analysis of manpower and administrative offices, however, deserves special consideration.

Manpower. Most category code authorizations are based on some unit of measure--manpower, aircraft, vehicle equivalents, squadrons, etc. The first step is to determine the longest projection for that factor. Normally, this is five years because DOD continually updates a Five-Year Defense Program projecting resources (manpower, \$, forces) needed to accomplish the Air Force missions. Manpower is the factor that can cause the greatest amount of confusion because of the myriad of terms describing it. You hear of validated positions, current strength, overhires, part-time workers, etc. What should a programmer use for defining a new construction requirement? The proper figure is the longest projection of funded personnel strength. This signifies the number of permanent positions the organization can hire against. Therefore, it is the basis for future space requirements. A unit's funded authorizations can be confirmed by reviewing the Unit Manpower Document (UMD), or contacting either the Management Engineering (MET) detachment or the CBPO Manning Control Unit.

Another consideration is the work schedule of the activity. While much of the Air Force works a standard eight-to-five schedule, some activities require 24-hour, seven-days-a-week operations. The Maintenance Control, Civil Engineering Service Call, Security Police Operations, and Base Operations are common activities managing multiple shifts. The same facility will be utilized by all the shifts, but it only needs to be sized for the greatest number of workers.

As previously mentioned, manpower can be very confusing. Many personnel support and MWR category codes are based on such factors as "military population." Sometimes military population, such as for a Rod & Gun Club, is defined as military strength plus a percentage of retired military in the area. Retired strength is contained in report "DOD Statistical Report on Military Retiree System," RCS: DD-M(A) 1375. Othertimes, military population consists of military strength plus a percentage of dependent population (e.g., recreation centers). Space authorizations are also based on combinations of retired and dependent strength, number of civilian employees, etc. Criteria in AFM 86-2 must be carefully considered for these category codes. The following is a summary of common manpower classifications and sources for the information:

<u>Manpower</u>	<u>Report</u>	<u>Source of Data</u>
Active Duty	UMD	MET, CBPO Manning Unit
Retired Military	RCS: DD-M(A) 1375	CBPO
Dependents	Family Housing Survey	Housing Office
Civilians		Civilian Personnel Office



THE ELEVEN COMMANDMENTS

Administrative Offices. Programming for administrative facilities, whether a wing headquarters or a base personnel office, has received increased scrutiny by Congress. One result has been a relatively high disapproval rate by Congress of administrative (office) projects in recent MCP cycles. Another result has been the reduced space allowance for each administrative position from 150 SF to 135 SF begun with the FY 87 MCP. The new design of prewired work stations promises to require even less space for administrative activities. Programmed construction using such a comprehensive interior design may be authorized as little as 115 SF/person gross. These reductions demand increased analysis of administrative space requirements.

The guidance in AFM 86-2, para 13-2, requires careful study. The 135 SF/person includes the routine space needed by the individual including space for:

- * control files, storage, mail handling
- * conference room
- * reproduction equipment

Additional space is authorized for special purpose space requirements such as:

- * small auditorium
- * training room
- * drafting room
- * electronic data processing

WORKSHEET NO

ADMINISTRATIVE FACILITIES

Activity	Number	Space Requirement (gross)	Subtotal
Funded Manpower: (PN)			
Non-prewired		105 SF/PN (max)	
or			
Prewired stations		105 SF/PN (max)	
Special Purpose:			
Small auditorium			
Training room			
Drafting room			
Electronic data processing			
Vault			
Planning room			
T.O. library			
Vending machines			
Customer service area			
Lobby/waiting area			
Break area			
Special storage			
Other:			

Total: _____

Figure 1. Administrative Space Worksheet

However, this is not an all-inclusive list of special purpose requirements. Any space requirement, not specifically supportable in the 135 SF/person, should be considered as a special purpose requirement. Additive gross space can be provided for many other activities. A worksheet for analyzing and computing administrative space requirements is shown in Figure 1. Please note the list is not complete but represents some of the more common items.

Base Functional Managers

A second source of information for defining requirements is the functional experts at your base--people from the organization/agency which the project supports. They are the ones who should be able to explain their job and the facility space needed to accomplish it. To have confidence in the project documentation and be able to defend the requirements computation, you should have an excellent understanding of how the functional activity operates. This requires not only discussions with organizational representatives, but walk-throughs of the facilities supporting the activity. It is essential programmers be very familiar with an activity's function in order to survive the rigorous review at the MAJCOM level.

MAJCOM

The MAJCOM staffs contain a wealth of knowledge and experience. Often the MAJCOM reviewers of MCP projects have a breadth of experience unequalled in the Air Force. Why? These individuals typically are responsible for numerous programs at several bases. As a result, they see a very wide range of construction requirements. Additionally, they frequently travel to their bases and visit the facilities involved in new construction projects. For instance, HQ TAC/DEPR strives for each MCP requirements engineer to annually survey the bases he/she is responsible for. This includes a walk-through of all flightline, most combat support, and selected NAF, MWR, and billeting facilities. Other MAJCOMs have similar approaches ensuring their engineers become very familiar with their installation's needs. Often the "outsider's view" from the MAJCOM representative provides fresh approaches to facility problems overlooked by base programmers.

MAJCOMs frequently are more knowledgeable of future initiatives affecting your base such as mission changes, new equipment programmed, or organizational changes necessitating new construction. If the change is quite significant the MAJCOM will send a facility survey team consisting of representatives from across the MAJCOM staff. This team analyzes the adequacy of existing facilities to support the new initiative and recommends construction if warranted. This scenario is most closely followed with major

initiatives such as a weapon system change (e.g., converting from B-52 to B-1B).

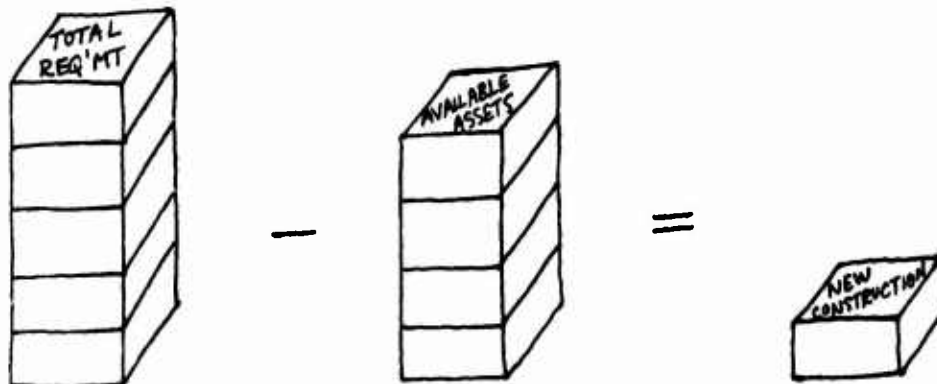
AFM 86-2 criteria does not contain a definitive statement of space requirements for all category codes. Generally, space requirements for activities specialized in one command are left to that command to define. Support for hardened aircraft shelters should most appropriately be defined by USAFE or PACAF. The point is MAJCOMs can often immediately provide the base programmer with the guidance needed for a requirements determination. USE YOUR MAJCOM!

Product Divisions (AFSC)

New weapon systems developed under AFR 800-2 routinely require different facilities from those required by the older system. For example, a hydrazine facility and BAK-14 aircraft arresting system are essential for full support of F-16 aircraft but are not required by other tactical aircraft. AFSC, through its product divisions (ASD, ESD, SD, BMO, and AD), is the interface with industry for the acquisition and initial beddown of new weapon systems. The divisions contain Special Project Offices (SPOs) which are the focal point for all agencies involved in a system acquisition (e.g., F-16, B-1B). The involved SPO determines, in conjunction with the contractor, the space requirements for the system. Typically, the requirements are published in a Facilities Requirements Pamphlet. This document is a vital reference for assessing the adequacy of existing facilities to support a new system.

TOTAL REQUIREMENT VERSUS AVAILABLE RESOURCES

AFM 86-2 and the other sources help determine the total space requirement for a category code. The second step is to analyze the existing facility resources that are or can be made available to support the category code. This analysis is documented on the 1391c, Existing Facilities/Deficiency Detail Data Sheet. Preparation of the 1391c is addressed in Chapter Three.



Chapter Three

DOCUMENTING THE DEFICIENCY

We have looked at sources of information necessary to compute the total space requirement for a particular category code. With this data we now compare this total requirement against existing resources that can be used to satisfy the requirement. The deficiency is the difference between the total requirement and available facilities. Available facilities actually consist of four categories:

- * existing adequate for the function
- * existing substandard but upgradable to adequate condition
- * facilities funded for construction but not yet occupied
- * facilities contained in an approved Air Force program but not yet funded by Congress

Having a validated deficiency, then, is the basis for programming new construction. In other words, existing or currently programmed facilities cannot satisfy the future needs. Determination of the deficiency (construction requirement) is documented on the 1391c, Existing Facilities/Deficiency Detail Data Sheet (D3 Sheet). This chapter looks at the D3 Sheet and concludes with a discussion of real property data.

D3 SHEET

Purpose and Importance

As previously indicated the D3 Sheet validates the need for the project. Here you detail the total requirement for a function, show what facilities are available to satisfy this need, and calculate the resulting deficiency as the basis for the project. AFR 86-1, para 4-8, states the D3 Sheet is "used to document all the individual facilities with similar category codes associated with, or affected by, the proposed project... The data sheet will show all facilities, having the same category code as the facility being requested." The key points are an individual D3 Sheet details all facilities with an individual category code and details related actions associated with the category code.

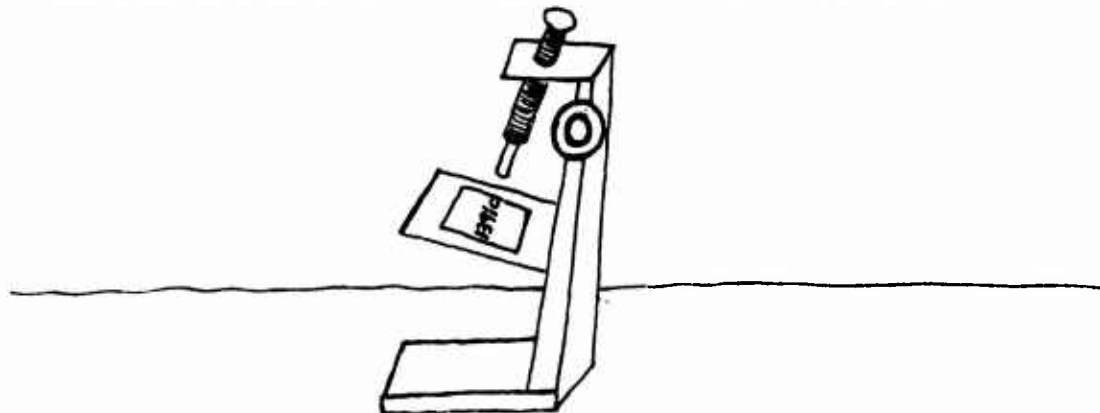
Defining the deficiency on a D3 Sheet is the second most closely scrutinized part of the project documentation. Remember, the Air Force's goal is to fully utilize existing facilities before considering new construction. Project documentation must

show all of the facilities associated with a category code and how they will be used in the future. It may be best, in some cases, to convert existing facility space from one category code to another and build space for the original category code. In this case, the required documentation becomes quite lengthy since D3 Sheets must be provided for all affected category codes.

D3 Sheet Up Close

So let's look at the individual items of the D3 Sheet. For this purpose, the item numbers in Table 1 correspond to those in Figure 2. Before dissecting the D3 Sheet, the following comments pertain to multiple items:

- * Items 4-7 detail facilities associated with the category code. It shows facilities currently belonging to the category code and those future facilities made available as a result of the project actions. For each facility, indicate in the "REMARKS" column the future of the facility: retained, demolished, upgraded, altered, or converted.
- * The treatment of space converted from one category code to another can be tricky. Air Staff recommends converted space that is adequate (code 1) should be listed in the Existing Substandard section with a remark, "Convert to XXX-XXX, this project."--see Figure 8, Bldg 216. Remember you must provide a D3 Sheet for the category code to which space is converted, for example, category code 442-758 in Figures 7-11.
- * Sometimes space identified against a category code actually has little relation to the other facilities in the category code. This commonly occurs when unique Air Force or non-Air Force activities occupy space at your base. The space is a "non-additive" amount when programming for the primary function. Non-additive space should be shown in parentheses indicating it is not charged against the category code--see Figure 11.



1. COMPONENT AIR FORCE	FY 19__ MILITARY CONSTRUCTION PROJECT DATA	2. DATE																																														
3. INSTALLATION AND LOCATION																																																
4. PROJECT TITLE		5. PROJECT NUMBER																																														
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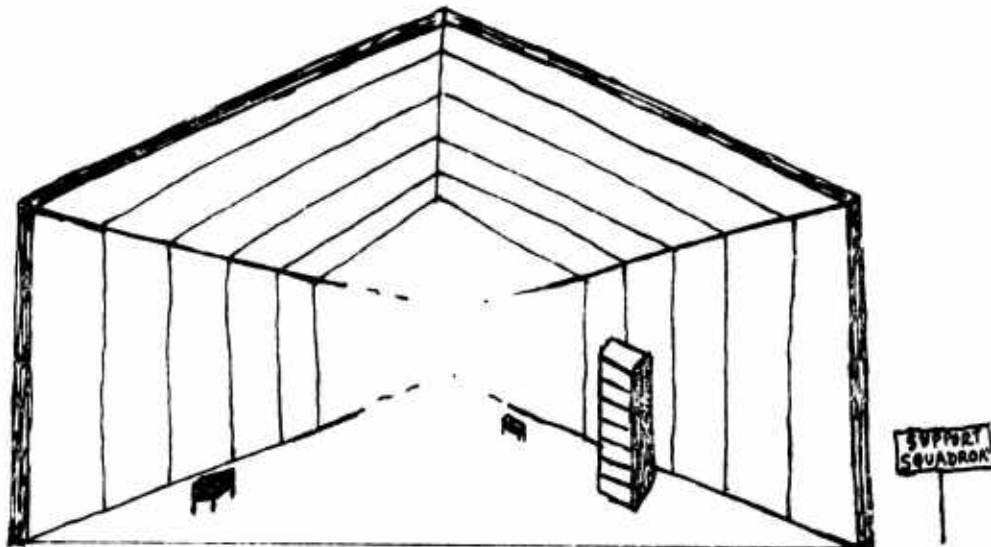
Figure 2. D³ Sheet

<u>Item #/Title</u>	<u>Remark</u>
1--Scope of FY XX Request	Self-explanatory
2--Mission	Cite mission of installation
3--Requirement	Shows detailed calculation of total requirement for category code --Limited to one category code per D ³ Sheet --Indicate source of information --Show calculations, not reference only --Continue on additional sheet if necessary
4--Existing Substandard	Total of all condition code 2 & 3 facilities <u>excluding</u> buildings committed for disposal by prior year program --Includes facilities converted to other category codes, but shown in parentheses --Code 3 facilities should be demolished --Code 2s should be demolished or upgraded to code 1
5--Existing Adequate	Includes all facilities suitable for function --Remark should indicate "retain for current use" --Code 1 facility converted to another category code is shown in Existing Substandard section with an appropriate remark "Convert to XXX-XXX"
6--Funded Not in Inventory	Is the scope of all facilities approved but not yet built. Includes projects in MCP, O&M, NAF, and P-341 programs. Example: FY 86 and earlier projects when considering FY 88 MCP.
7--Included in the FY XX Program	Is the scope of projects in prior FY program but not yet approved by Congress. For FY 89 MCP this includes FY 87 projects submitted to Congress and projects in your command's FY 88 program.
8--Deficiency	Difference between the total requirement minus Adequate (items 5 & 6) and FY XX Program (item 7). The project should satisfy the total deficiency. <u>Explain why not!</u>
9--Other Related Actions	Shows data for facilities in the way of the requested project and are to be demolished or relocated--see Fig. 13 --Extremely important but often overlooked --A separate D ³ Sheet is required for each displaced category code--see Figures 12 & 13
10--Requirements/ Assets	Summary of items 4-8. <u>MUST AGREE!</u>

Table 1. Preparation of D³ Sheet

Deficiency Versus Need

AFM 86-2 and the other sources specify typical space requirements for functional activities. Detailing the facility resources available to that category code helps determine the space shortfall or deficiency. However, simply having a calculated space deficiency does not provide automatic justification for programming new construction. This is because facility situations and management practices vary considerably between bases. Always ensure additional space is needed in addition to being authorized.



BEING AUTHORIZED MORE SPACE ISN'T ENOUGH!

D3 SHEET -- 7115 REPORT MATCH

The data shown on the D3 Sheet must match report HAF-LEE (AF 7115)--Inventory of Real Property. All MAJCOM headquarters soon will have their bases' 7115 reports automated so it will become easier to compare real property data with the 1391. HQ TAC already has the capability and discrepancies are quickly relayed to base programmers for review and resolution.

The need for consistency between the 7115 report and the 1391 documentation cannot be overemphasized. MCP programmers and real property specialists must ensure the correct coding of facilities by category and condition codes. (Definition of condition codes is shown in Figure 6.) When new construction is programmed, the base MCP programmer should accomplish a walk-through of the facilities relating to the affected category code. Nothing is more revealing than a personal viewing of the current situation. Not only does this help educate the programmer on the

unit's needs, but it can disclose 7115 errors early in the programming cycle. Ideally, base programmers and real property specialists should visit all base facilities (selected family housing units and dorms) on an annual basis.

REVIEW

So we have taken a detailed look at the D3 Sheet. The emphasis on the D3 Sheet is intentional because this information must confirm a need for the construction. Furthermore, it shows the "audit trail" of how effectively your base is utilizing existing assets and those provided by new construction. Remember, if the project doesn't pass the requirements review--it never gets built! In the next chapter, we'll review two other portions of the project documentation that help explain the project requirement.

Chapter Four

RELATED DOCUMENTATION

The primary emphasis of this handbook is the defining and documenting of MCP project requirements. Chapters Two and Three have detailed the research, analysis, and numbers-crunching necessary to justify a new construction requirement. However, there are two other portions of the 1391 package very important in "selling" your project. This chapter looks briefly at the DD Form 1391 (front sheet) and the Functional Relocation Schematic (1391c).

DD FORM 1391 (FRONT SHEET)

This form is the first page the project reviewer sees and is the only document that goes to OSD and Congress. These reviewers are not as intimately familiar with the operation as you are. They probably never have seen your installation and may have little or no military experience. Therefore, do not use unfamiliar descriptions containing:

- * building numbers
- * Air Force jargon
- * technical terms
- * military abbreviations
- * references to publications

The degree to which you can clearly and succinctly describe the project's valid need will determine if funds are approved by Congress. Items 1-10 on the 1391 are detailed quite adequately in AFM 86-2, para 4-5, and the annual MCP guidance provided by HQ USAF/LEE. While those items are important to a clear understanding of the project, the "guts" of the form is in the narration in Item 11. This provides the word-picture of why the existing conditions are not acceptable for the future mission. The sub-elements of Item 11 are shown in Figure 3 along with important considerations.

FUNCTIONAL RELOCATION SCHEMATIC

The final portion of documentation which helps explain the requirement is the Functional Relocation Schematic. This is a new form beginning with the FY 88 MCP. The schematic is required for all projects when a function is relocated or replaces existing facilities. This graphical portrayal is most useful in

explaining the "domino effect" in large, complex projects involving numerous category codes. Figure 4 shows an example.

1. COMPONENT AIR FORCE	FY 19__ MILITARY CONSTRUCTION PROJECT DATA	2. DATE
----------------------------------	---	---------

3. INSTALLATION AND LOCATION ANY AIR FORCE BASE, WORLD
--

4. PROJECT TITLE MILITARY PERSONNEL SUPPORT CENTER	5. PROJECT NUMBER
--	-------------------

FUNCTIONAL RELOCATION SCHEMATIC

EXISTING	PROPOSED
----------	----------

1. Cat-Code 730-441 (Ed Ctr)

Ed Ctr in this bldg will move to new bldg



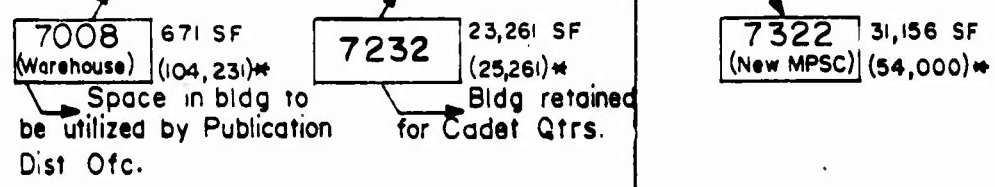
2. Cat-Code 610-911 (Soc Actions)

Soc Actions in this bldg will move to new bldg



3. Cat-Code 610-128 (Base Pers Ofc)

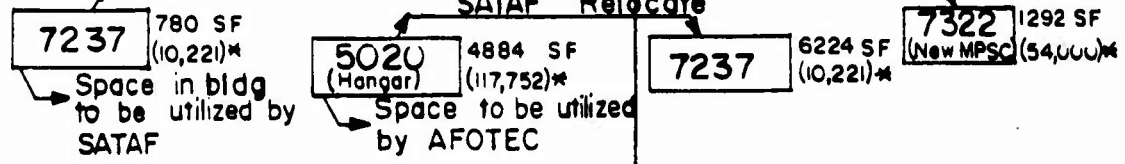
WAPS Testing and Main Pers Ofc. move to new bldg



4. Cat-Code 610-284 (Hq Major Comd)

SACMET will move to new bldg

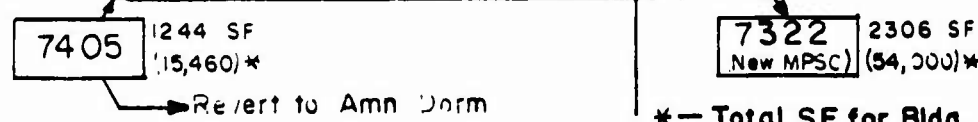
SATAF Relocate



5. Cat-Code 730-835 (SP Operations)



6. Cat-Code 740-253 (Family Spt Ctr)



* - Total SF for Bldg.

Chapter Five

VALIDATION & PRIORITIZATION

LEVELS OF REVIEW

New construction projects are reviewed and prioritized at four distinct levels before reaching Congress: installation, MAJCOM, HQ USAF, and OSD. Figure 5 details the typical route a 1391 takes on the road to approval. It is important for the base programmers to fully recognize the levels of review and the importance of the prepared documentation. We'll look first at activities at the installation level.

Installation

The base Facilities Board (FB) has the corporate responsibility for validating and prioritizing new construction requirements which exceed the Base Civil Engineer's approval authority. All MCP projects fall into this category. The intent and scope of the project is considered by the FB, but detailed review of the 1391s are commonly left to the Civil Engineers.

MAJCOM

However, this is not the case at the MAJCOM level which has the responsibility for validating the project. The first thing most MAJCOM/DEP folks do upon receipt of a 1391 package is to send a copy to the office of primary responsibility (OPR) for review. Concurrently, they distribute the document to appropriate offices on the MAJCOM/DE staff such as Environmental Planning and Fire Protection. Likewise, the DEP staffers begin dissecting the document with special emphasis on the front sheet and D3 Sheets. In order for a project to pass the MAJCOM review and continue on track for eventual funding, it must show a valid construction requirement. This means the project must be supportable by both the MAJCOM Civil Engineers and the functional OPR.

Maintain Dialogue with MAJCOM. While the MAJCOM review is on-going the base MCP programmer should maintain a dialogue with his/her MAJCOM counterparts. Check frequently on the status of the projects and quickly resolve problems that arise. Also, ensure the base OPR does the same with its headquarters counterparts. MAJCOM engineers can only support projects validated by the headquarter's functional managers. The

successful base programmer knows the work is not finished when the 1391 is mailed.

MAJCOM Cycle. In the past, MAJCOM review was a two-cycle affair. Using the FY 89-93 MCP cycle for instance, initial project documentation would have been due to the MAJCOM (exact date varied with MAJCOM) in Jan 86. MAJCOMs would have completed the review of the documents as previously mentioned. Comments and recommendations would have been provided to the bases in the months that followed. Bases would have resubmitted their revised 1391 documentation by April 86. MAJCOM would have forwarded the 1391s to the Air Staff on 1 July 1986 for modernization projects and 1 Nov 86 for new initiatives (non-modernization).

However, this procedure has changed recently. HQ USAF notified the field in Dec 85 that beginning with FY 88 a two-year budget would be submitted to Congress. The result is both FY 88 and FY 89 MCP budgets will be concurrently submitted to Congress in Jan 87 as part of the President's Budget. The FY 88 MCP is not impacted by this decision. However, the FY 89 program is accelerated one full year and will have no design completed by Jan 87 to support cost estimates. It is too early to fully assess the implications of this change.



HQ USAF

Air Staff reviews the MAJCOM/SOA submittals in a manner somewhat similar to the MAJCOM review. After receipt of documentation HQ USAF/LEEP distributes 1391s within the LEE staff and also to functional OPRs. Corporate review of a MAJCOM program is accomplished by the Facilities Panel chaired currently by LEEP. Questions and comments are provided to MAJCOMs for answer and/or resubmittal of documentation.

The Air Staff management of the MCP may be changed considerably by the two-year budgeting. However, the important milestone of being 35% designed upon submittal to Congress will remain. The purpose for this is to reach a point in design at which a reliable estimated cost for the project can be determined. It appears after the FYS 88/89 cycle disturbances, designs will be spread out over the two-year period with little impact.

Office of the Secretary of Defense (OSD)

In Sep 86 Air Staff will submit the FYS 88/89 MCP documentation to OSD as part of the Budget Estimate Submission (BES). While HQ USAF receives the complete 1391 package for each project, OSD only is provided the front sheet 1391. Once again the documentation is reviewed. (Also OSD further accelerates the design by requiring 35% upon submittal of the BES.) Recommended changes (issues) are analyzed through interaction between Air Staff and OSD staffers or the Office of Management and Budget. Adjustments to the BES are incorporated in the DOD portion of the President's Budget going to Congress in Jan 87.

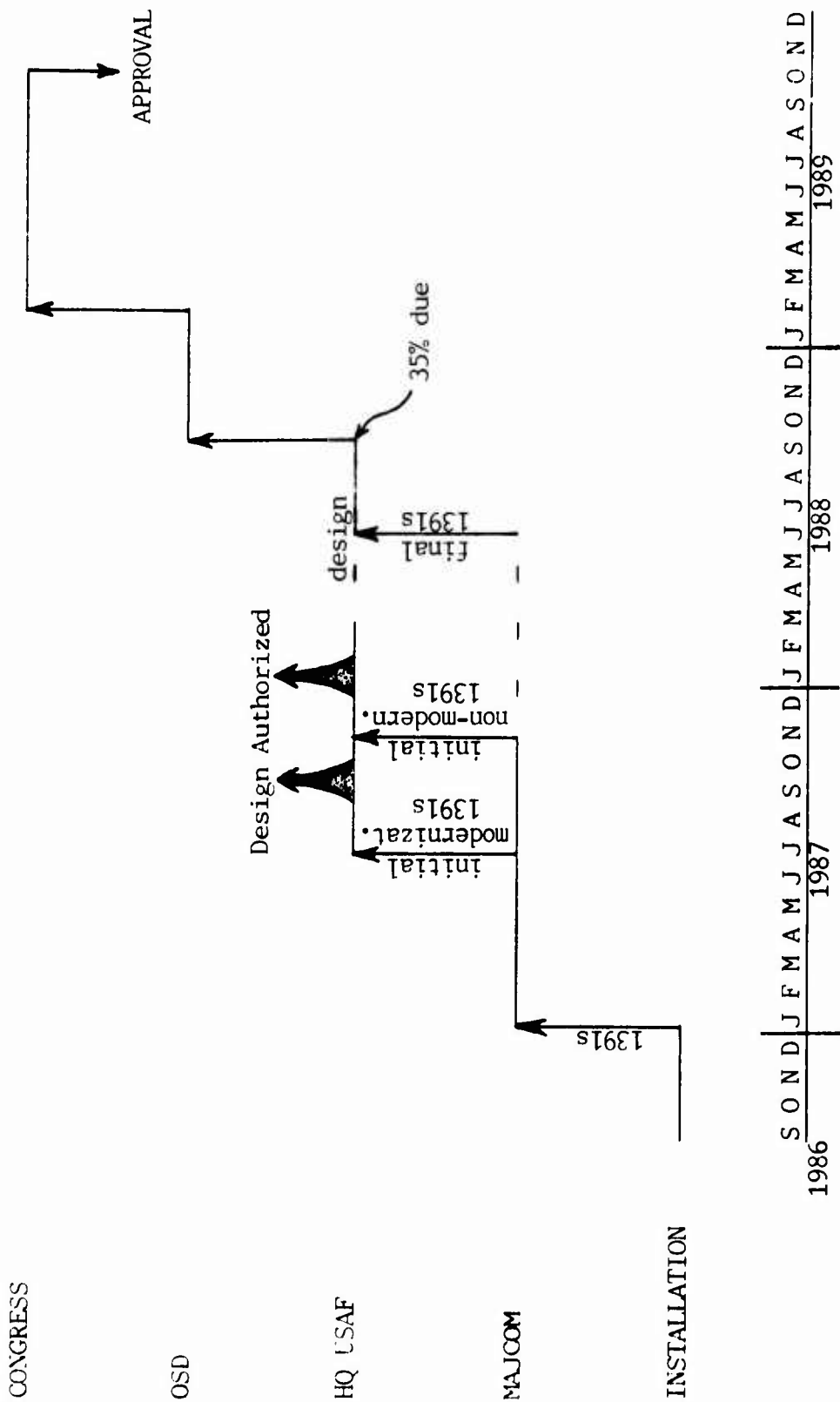
Congress

House and Senate Armed Services and Appropriations Committees then begin the lengthy legislative enactment process for specifying MCP project authorizations and appropriations respectively. MCP projects, unlike some other portions of the DOD budget, are approved by Congress on a line item basis. The services cannot spend funds on projects not supported by the authorization and appropriations laws.

NO ROOM FOR MISTAKES

So you have seen in a nutshell the levels of review which your project documentation must survive. You cannot rely upon higher headquarters to rewrite and otherwise "save" your poorly prepared 1391 since there are always more projects than MCP dollars. It is your responsibility to accurately research, define, and communicate the need for new construction. Though the magnitude of the MCP is enormous, you cannot afford to lose multi-million dollar projects because of shoddy and incomplete documentation.

NOTE: Shown below is what the 2-year programming cycle may look like. This is for general relationships only.



FY 90/91 MCP

Figure 5. "Typical" MCP Cycle

Chapter Six

SUMMARY

Military construction will continue to be a significant means for commanders to improve the efficiency, productivity, and liveability of their installation. It has the inherent goal of providing the facilities our personnel and forces will require for the next 25-40 years. The Air Force must obtain the most from its MCP dollars. Recent legislative initiatives will reduce future construction budgets. MCP programmers are challenged to do their very best in looking to the future and developing projects that best satisfy the needs.

Several sources are available to help define the space requirement for future projects. AFM 86-2 is the primary reference for space standards. Base programmers must also maintain close contacts with local OPRs. These functional experts know the facility support required for their organizations. MAJCOM staffs can help in areas where base personnel do not have all the information. The AFSC product divisions provide facility requirement data for new weapon systems. Armed with the knowledge of the requirement, the programmer compares the requirement with the available resources. Shortages, then, should be considered for new construction.

Programmers must be effective in communicating their base's needs. The 1391 programming package plays the biggest part in the ultimate approval or rejection of the project. As the Air Force enters a period of reduced funding, your installation and the service cannot afford the latter.

The DD Forms 1391/1391c are the tools for programming a construction requirement. Special emphasis must be taken with the front sheet 1391, since it alone goes to Congress. This "word picture" should be clear, concise, and consistent to someone unfamiliar with your base. Equally important is the D3 Sheet that forms the basis for validating your project. A project cannot be supported unless the D3 Sheets are accurate. Time spent researching and properly documenting a requirement will pay dividends in increased project approvals in the future.

On the next page is a short checklist of things to do when trying to nail down the construction requirement. There are many actions an MCP programmer must do if a project is to be successful. However, determining and documenting the space requirement are the actions around which everything else revolves.

CHECKLIST

Defining Space Requirement

- * Find appropriate data source: AFM 86-2, base experts, MAJCOM, AFSC or other
- * Walk through involved facilities
- * Determine longest projection for relevant factor (manpower, aircraft, etc.) upon which space is based
- * Calculate total space required for category code
- * Analyze availability of existing facility resources
- * Program total deficiency

Documenting the Deficiency (D3 Sheet)

- * Prepare one D3 Sheet per category code
- * Show disposition of all facilities, whether retained, demolished, etc.
- * Show converted space in parentheses--"non-add" for losing category code
- * Detail "Other Related Actions" which helps clarify the future use of facilities
- * Ensure D3 Sheet data agrees with 7115 Report

In Conclusion

- * Maintain close relationship to your MAJCOM requirements engineers
- * Be clear, concise, and consistent!

GOOD LUCK AND GOOD PROGRAMMING!

CONDITION CODES

DEFINITIONS

- 1 Usable--Class A (Adequate). Generally meets criteria. A facility which can be used to house the function for which currently designated through end position use with reasonable maintenance and without major alteration or reconstruction. Its functional adequacy, physical condition, structural adequacy, location, and adequate utility systems, i.e., heating, air conditioning, ventilation, power, etc., are the major elements of the determination. The use of this code does not prohibit project work. However, any construction project will indicate either a change in use, conversion or addition.
- 2 Usable--Class B (substandard)--upgrading required and practical. A facility which is structurally sound, and which is inherently capable of being raised to usable--Class A standards for housing function for which currently designated by reasonable and practical expenditure of funds; i.e., alteration, soundproofing, relocation, strengthening, fire protection deficiency correction, air conditioning, heating, or mechanical ventilation.
- 3 Force use (substandard). A facility that cannot practically be raised to meet usable--Class A standards for housing function for which currently designated, but which, because of necessity must be continued in use for a short duration, or until a suitable facility can be obtained. Its physical condition, location, lack of adequate utility systems or other overriding factors are such that the facility cannot be justifiably or economically improved and/or upgraded for that function. This definition is also applicable to a leased facility where the lease was entered into as the only means by which the required space could be provided. This excludes leases which are advantageous to the Air Force for

reasons of short duration of requirement, location, economics, etc., which will be Code 1.

4

Sterile--A facility which:
(a) does not meet the condition classification Codes 1, 2, 3, or 5; (b) is excess to mission requirement in designed, changed, or converted use and is not, due to economic considerations, considered appropriate for disposal. The expenditure of maintenance funds on facilities in this classification is not authorized except for safety, health, and/or "pickling" the facility. This code will apply to all facilities as they are vacated when the entire installation becomes excess of requirements.

5

Facilities committed to Congress:
Identifies all facilities that have been committed to the Congress for disposal. This code will not be changed unless permanent retention is approved by HQ USAF.

6

Disposals approved by HQ USAF:
Identifies all facilities approved for disposal by HQ USAF other than those in Condition Code 5. Code change requires HQ USAF approval.

Figure 6. Real Property Condition Codes

1 COMPONENT AIR FORCE		FY 19 ⁸⁹ MILITARY CONSTRUCTION PROJECT DATA			2 DATE 1 JUL 86	
3 INSTALLATION AND LOCATION HOME AIR FORCE BASE			4. PROJECT TITLE VEHICLE OPERATIONS ADMINISTRATION			
5 PROGRAM ELEMENT 2.75.96		6 CATEGORY CODE 610-121	7. PROJECT NUMBER VLSB893004		8. PROJECT COST (\$000) 630	
9. COST ESTIMATES						
ITEM		U/M	QUANTITY	UNIT COST	COST (\$000)	
VEHICLE OPERATIONS ADMINISTRATION		SF	6,215	66.	410	
SUPPORTING FACILITIES					158	
UTILITIES & PREWIRING		LS			(36)	
RELOCATION/DEMOLITION: BUILDING		SF	3,050	1.65	(5)	
RELOCATION/DEMOLITION: PAVEMENTS		SF	1,590	2.50	(4)	
SEISMIC		LS			(11)	
FENCING		LF	1,280	14.	(18)	
PARKING		SY	6,873	12.20	(84)	
SUBTOTAL					568	
CONTINGENCY (5%)					28	
TOTAL CONTRACT COST					596	
SUPERVISION, INSPECTION & OVERHEAD (5.5%)					33	
TOTAL REQUEST					629	
TOTAL REQUEST (ROUNDED)					630	
10. DESCRIPTION OF PROPOSED CONSTRUCTION Facility constructed with concrete foundation and floor, masonry walls, bar joist/coal tar pitch roof. Includes associated parking, demolition of existing facilities, and supporting utilities. Areas provided for administrative space, OJT area, drivers school office, training classroom, drivers lounge, orderly room, toilets, and mechanical. Relocate motor pool fuel pumps, fence, and gates. Air Cond. - 20 Tn						
11. REQUIREMENT: 6,215 SF ADEQUATE 0 SUBSTANDARD: 3,004 SF PROJECT: Construct a Vehicle Operations Administration Facility. REQUIREMENT: Facility is the managerial center of the motor pool controlling the operational and preventive maintenance functions of the assigned vehicle fleet, and the drivers training and licensing programs for the base. Squadron Commander's office and orderly room are included in the facility. CURRENT SITUATION: Vehicle operations administration functions are split between two crowded, substandard facilities. One facility is a trailer, while the other is a wood frame structure. Command and orderly room functions are performed in a facility originally constructed as a warehouse, and it is located over a half mile away from the motor pool. IMPACT IF NOT PROVIDED: Mission will continue to be performed in two cramped, substandard facilities. Command and control will be exercised from a facility far removed from the work area. The facility will continue to occupy space needed to reduce the base's large warehousing shortfall (41,755 SF).						

3. INSTALLATION AND LOCATION: HOME AIR FORCE BASE

4. PROJECT TITLE: VEHICLE OPERATIONS ADMINISTRATION
 5. PROJECT NUMBER: VLSB893004

EXISTING FACILITIES/DEFICIENCY DETAIL DATA SHEET

Scope of FY 89 Request: 6,215 SF

Requirements Computations

Mission: 363CSG; 363TFW; HQ 9AF; 507 TAIROW; 21 TASS; 682 ASOC

Requirement: Per AFM 86-2, Para 13-9.b(2), and Table 13-1:

Organization Veh. Equivalents Requirement
 363TFW 972 5000 SF

Per AFM 86-2, Para 13-4.d: 9 PN X 135 SF/PN=1215 SF
 (CC, 1ST SGT, Orderly Room(3), Training NCO,
 Veh. Ops. Tng. NCO, Admin Spt.(2))

TOTAL: 6,215 SF

Requirements/Assets	Scope (SF)	No. of Bldgs
a. Total Requirement	6215	1
b. Existing Substandard	3004	3
c. Existing Adequate	0	0
d. Funded, Not in Inventory	0	0
e. Adequate Assets (c+ d)	0	0
f. Included in FY Program	0	0
g. Deficiency (a-e-f)	6215	1

CAT CODE	NOMENCLATURE/BLDG NO.	SCOPE USED (SF)	SCOPE TOTAL BLDG (SF)	COND TYPE YEAR/CODE/CONST	REMARKS
610-121	b. Existing Substandard - 3004 SF	600	600	80 / 3 / Trailer	Dispose
610-121	Veh Ops Admin/304	600	1464	59 / 3 / Wood	Dispose
610-121	Veh Ops Admin/329	1464	92,276	57 / 1 / CMU	Convert to 442-758, this project
610-121	Veh Ops Admin/216	940			
	Total Substandard	3004			
610-121	g. Deficiency - 6215 SF	6215	6215		This FY 89 Request
	Veh Ops Admin/F-351	6215			

Figure 8. D3 Sheet

1. COMPONENT AIR FORCE		FY 19 ⁸⁹ MILITARY CONSTRUCTION PROJECT DATA		2 DATE 1 JUL 86	
3. INSTALLATION AND LOCATION HOME AIR FORCE BASE					
4. PROJECT TITLE VEHICLE OPERATIONS ADMINISTRATION				5. PROJECT NUMBER VLSB893004	

EXISTING FACILITIES/DEFICIENCY DETAIL DATA SHEET					
Scope of FY 89 Request: 940 SF					
Requirements Computations					
Mission: 363CSG; 363TFW; HQ 9AF; 507 TAIRCW; 21 TASS; 682 ASOC					
Requirement: See Attached DD Form 1391c					
CAT CODE	NOMENCLATURE/BLDG NO.	SCOPE USED (SF)	SCOPE TOTAL BLDG (SF)	COND TYPE YEAR/CODE/CONST	REMARKS
	b. Existing Substandard	- 29,296 SF			
442-758	WHSE SUP & EQUIP B/105	1,960	10,400	50 / 3 / Metal	Dispose FY 89 MCP
442-758	WHSE SUP & EQUIP B/200	12,564	70,453	45 / 3 / Wood	Dispose FY 89 MCP
442-758	WHSE SUP & EQUIP B/223	3,200	3,200	50 / 2 / Metal	Dispose FY 89 MCP
442-758	WHSE SUP & EQUIP B/601	3,972	20,050	42 / 3 / Wood	Dispose FY 89 MCP
442-758	WHSE SUP & EQUIP B/1507	7,600	7,600	58 / 2 / Metal	Dispose FY 89 MCP
	Total Substandard	29,296			
	c. Existing Adequate - 133,140 SF				
442-758	WHSE SUP & EQUIP B/16	(360) *	360	71 / 1 / Metal	Retain
442-758	WHSE SUP & EQUIP B/21	(4,800) *	4,800	66 / 1 / Metal	Retain
442-758	WHSE SUP & EQUIP B/26	(5,000) *	5,000	57 / 1 / Metal	Retain
442-758	WHSE SUP & EQUIP B/216	61,716	92,276	57 / 1 / Mas	Retain

Requirements/Assets	Scope (SF)	No. of Bldgs
a. Total Requirement	174,895	9
b. Existing Substandard	29,296	5
c. Existing Adequate	133,140	8
d. Funded, Not in Inventory	0	0
e. Adequate Assets (c+d)	133,140	8
f. Included in FY Program	0	0
g. Deficiency (a-e-f)	41,755	1

Figure 9. D³ Sheet

1. COMPONENT AIR FORCE		FY 19 ⁸⁹ MILITARY CONSTRUCTION PROJECT DATA		2. DATE 1 JUL 86	
3. INSTALLATION AND LOCATION HOME AIR FORCE BASE					
4. PROJECT TITLE VEHICLE OPERATIONS ADMINISTRATION				5. PROJECT NUMBER VLSB893004	
CAT CODE	NOMENCLATURE/BLDG NO.	SCOPE USED(SF)	SCOPE TOTAL (SF)	COND TYPE YEAR/CODE/CONST	REMARKS
442-758	WHSE SUP & EQUIP B/308	7,286	7,286	54 / 1 / Mas	Retain
442-758	WHSE SUP & EQUIP B/1205	3,230	26,382	57 / 1 / Mas	Retain
442-758	WHSE SUP & EQUIP B/1207	8,762	35,186	56 / 1 / Mas	Retain
442-758	WHSE SUP & EQUIP B/1511	(8,856)**	(55,383)	66 / 1 / Metal	Retain
442-758	WHSE SUP & EQUIP B/1604	24,000	24,000	72 / 1 / Mas	Retain
442-758	WHSE SUP & EQUIP B/1614	2,058	41,703	78 / 1 / Mas	Retain
442-758	WHSE SUP & EQUIP B/1858	5,040	5,040	84 / 1 / Metal	Retain
442-758	WHSE SUP & EQUIP B/1980	21,048	21,048	72 / 1 / Mas	Retain
	Total Adequate	133,140			
442-758	<u>g. Deficiency - 41,755 SF</u> WHSE SUP & EQUIP B/216	940	92,276	57 / 1 / Mas	Convert from 610-121, this FY 89 MCP Proj. Addition, FY 89 MCP
442-758	WHSE SUP & EQUIP B/216	40,815			
	Total Deficiency	41,755			
	* Facilities utilized by DPDO				
	** Awaiting category code change to 211-179, Maint Dock, Fuel System				

Figure 10. D3 Sheet

1. COMPONENT AIR FORCE		FY 19 ⁸⁹ MILITARY CONSTRUCTION PROJECT DATA		2. DATE 1 JUL 86	
3. INSTALLATION AND LOCATION HOME AIR FORCE BASE					
4. PROJECT TITLE VEHICLE OPERATIONS ADMINISTRATION				5. PROJECT NUMBER VLSB893004	
EXISTING FACILITIES/DEFICIENCY DETAILED DATA SHEET (CONTINUATION)					
Requirement:					
Per AFM 86-2, Para 11-2:					
Aircraft:	(F-16)	72 x 500 =	36,000 SF		
	(RF-4)	18 x 375 =	6,750 SF		
	(O-2)	33 x 175 =	5,775 SF		
	(CH-3)	4 x 250 =	1,000 SF		
	(I-39)	4 x 300 =	1,200 SF		
	Subtotal		50,725 SF		
Population:	4000 PN x 15 =		60,000 SF		
	2000 PN x 10 =		20,000 SF		
	685 PN x 5 =		3,425 SF		
	Subtotal		83,425 SF		
EMO:	134,150 x .10 =		13,415 SF		
WRSK:	(F-16, RF-4)	4 x 4000 x 1.5 =	24,000 SF		
	(IAC CSQ)	1 x 800 x 1.5 =	1,200 SF		
	(DASCSQ)	1 x 800 x 1.5 =	1,200 SF		
	(TCF)	1 x 620 x 1.5 =	930 SF		
	Subtotal		27,330 SF		
	Total		174,895 SF		

Figure 11. D³ Sheet

3. INSTALLATION AND LOCATION
YOUR AIR FORCE BASE

4. PROJECT TITLE
5. PROJECT NUMBER

EXISTING FACILITIES/DEFICIENCY DETAIL DATA SHEET		Requirements/Assets	Scope (SF)	No. of Bldgs	REMARKS
<p>Scope of FY 88 Request: 16,577 SF</p> <p><u>Requirements Computations</u></p> <p>Mission: Cite mission form current PD</p> <p>Requirement: Show detailed calculations. Indicate source of information such as AFM 86-2. Computations should justify the total requirement and not just show arithmetical calculation.</p>		<p>a. Total Requirement</p> <p>b. Existing Substandard</p> <p>c. Existing Adequate</p> <p>d. Funded, Not in Inventory</p> <p>e. Adequate Assets (c+d)</p> <p>f. Included in FY 87 Program</p> <p>g. Deficiency (a-e-f)</p>	<p>45,405</p> <p>32,489</p> <p>13,828</p> <p>0</p> <p>13,828</p> <p>15,000</p> <p>16,577</p>	<p>4</p> <p>2</p> <p>2</p> <p>0</p> <p>2</p> <p>1</p> <p>1</p>	<p>Dispose this FY 88 MCP</p> <p>Alter this FY 88 MCP</p>
CAT CODE	NOMENCLATURE/BLDG NO.	SCOPE USED (SF)	SCOPE TOTAL BLDG (SF)	COND TYPE YEAR/CODE/CONST	
	b. Existing Substandard - 32,489 SF				
211-152	Shop Acft, Gen Purp/218	912	45,655	43 3 Wood	
211-152	Shop Acft, Gen Purp/5	31,577	31,577	41 2 Mas	
	Total Substandard	32,489			
	c. Existing Adequate - 13,828 SF				
211-152	Shop Acft, Gen Purp/39	13,080	13,080	44 1 Metal	Retain
211-152	Shop Acft, Gen Purp/100	748	331,370	42 1 Mas	Retain
	Total Adequate	13,828			

Figure 12. D³ Sheet

1. COMPONENT AIR FORCE		FY 19 ⁸⁸ MILITARY CONSTRUCTION PROJECT DATA		2. DATE 1 JUN 85	
3. INSTALLATION AND LOCATION YOUR AIR FORCE BASE					
4. PROJECT TITLE				5. PROJECT NUMBER	
CAT CODE	NOMENCLATURE/BLDG NO.	SCOPE USED (SF)	SCOPE TOTAL (SF)	COND TYPE YEAR/CODE/CONST	REMARKS
211-152	f. Included in FY 87 Program - 15,000 SF Shop Acft, Gen Purp/F500	15,000	15,000		FY 87 MCP
211-152	g. Deficiency - 16,577 SF Shop Acft, Gen Purp/5	16,577	16,577	41 2 Mas	Alter this FY 88 MCP
442-758	Other Related Actions WHSE SUP & EQUIP B/77	20,000	20,000	48 3 Metal	Demolish, in way of construction
NOTE: When projects cause a "domino" effect on the use of other existing facilities, show the final disposition or use of all facilities affected. For this project, separate D3 Sheet would be required for 442-758 due to the demolition of bldg. 77. Also, separate D3 Sheets would be required for those displaced functions in bldg. 218 following its demolition.					

Figure 13. D3 Sheet

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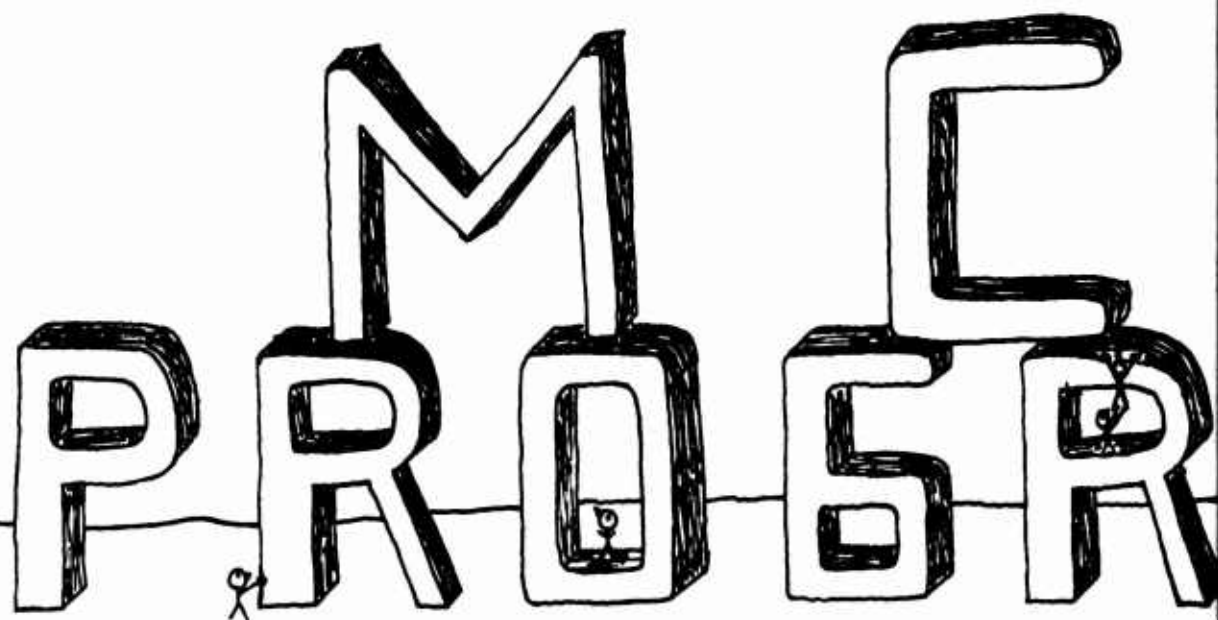
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PROGRAM

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