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TOOLS OF MANAGEMENT

FOR

BASE COMMANDERS

- a study of the need for more effective management in the United States Air Force and the role of the Commander in this most important management task

by

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CAUTION:

This is the report of a student research project. Views expressed are these of the authors, and do not necessarily reflect the official opinion of the School of Business, or of the sponsoring organization.

ABSTRACT

The magnitude and scope of the resources entrusted to the Base Commander in the Air Force are so large and diversified that it is physically impossible for him to devote the amount of personal supervision to each segment that the public investment would seem to warrant. Accordingly, management tools have been provided to assist Commanders in this effort.

In the event Base Commanders fail to use these "management tools" immediately, or in the future, the aims of maintaining a military posture capable of deterring war, or insuring victory if war comes, at a price the US can afford to pay, will be jeopardized.

Preface

As technology takes us farther and faster into a more complex world, the need for effective management increases daily. War compounds greatly the management task, because our resources in materials and manpower can never again be committed without the greatest care and precision. Skillful planning, sound organization, and capable direction of effort permit us to do more with less and do it sooner.

There are a great many roads by which we can approach a consideration of management. Management involves practically everything. We can approach it from the point of view of leadership, finance, sales, or production, and from a great many other angles. In fact, each of the approaches is a subject that we could pursue for hours, weeks, or months. Management is a subject that industry has been talking about continually in an effort to cause improvement in particular industries, and each of us knows from our military experience of the constant interest in the subject in the services.

This study then, is about management in the military services, particularly in the United States Air Force, and of the "tools of management" which are available to our leaders and commanders to be used in the management process. Effective utilization of these tools toward attaining decisive control over the use of resources has been, and will always be, primarily dependent on the personal leadership of Commanders. These individuals occupy a position of huge responsibility, in the military establishment, for and to others, in getting things done through group effort in organizations. The qualities that distinguish these leaders are their ability to think and act responsibly, to work cooperatively with others, and to provide others with opportunities to work with satisfaction within the group. With this background established, one additional factor should be considered and that is the necessity today for cost consciousness in all military operations. We need this thought to carry out the policy of maximizing operational readiness within a capability of limited resources.

How these management tasks are to be accomplished in this "jet-nuclear" age, by whom, and with what means, are the aims and objectives of this study. I am confident that a majority of the explanations presented will be useful to someone, for they represent the feelings and sentiments of several present-day Commanders, who likewise concur in the need for more efficient and effective management within the Air Force.

I am indebted to many of the faculty in the School of Business, Institute of Technology, Air University, and to the Commanders under whom I have served in the past eight years, who knowingly or unknowingly, have rendered an assistance in the research of this subject matter.

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TABLE OF CONTENTS

CHAPTER I

INTRODUCTION

The problem of having the right item available at the right time, at the right place, has concerned combatants since the earliest days of man. It has grown from a comparatively simple problem of stones, clubs, food and water, through complications stemming from the crossbow, gunpowder, and the reciprocal engine, to the vast and complex situation of today's jet, electronic, and nuclear weapons systems. It has grown from a problem involving single isolated encounters of two individuals, or two small groups of individuals, to forces of millions of men with the possibility that any one of the numerous encounters occurring at various places throughout the world might trigger world-wide nuclear annihilation.

Most of our advancement in military weapons systems and the global nature of conflict has occurred within relatively the last few years. It is self-evident that our ability to provide logistical support and to manage the tremendous and complex materiel resources required by a modern military machine has not kept pace with the rapid development of weapons and with the size and deployment of our military forces. It is readily apparent that yesterday's ox cart logistic system will not permit a jet or nuclear air force to perform at maximum effectiveness.

Historically, a considerable time lag has occurred between the basic inventions of today and the full exploitation of new weapons systems. This is inevitable since new weapons systems have been created by single manufacturers, or relatively small groups of individuals, where-as advances in tactics and in logistical support have been dependent upon the understanding, acceptance and initiative of large numbers of people. These advances required considerable time and strenuous effort to overcome resistance to change because of inertia, or deeply ingrained training in old tactics, procedures, and thought processes.

We need not be surprised that a time lag has again occurred between the development of jet and nuclear weapons and the development of the logistic system and control procedures necessary for their full exploitation. It would be dangerous and criminal, however, if we, as the military leaders of tomorrow, did not recognize that the dictatorial powers, overriding priority, and fanatical zeal of the leaders of the Union of Soviet Socialist Republic (USSR), will drastically continue to shorten the time lag which was formally available to us. Because we, as a nation, have up to this age grossly underestimated the technological and organizational capabilities of the Soviet Union, and because some field commanders have, of necessity, been almost entirely concerned with the purely military application of jet and other nuclear developments, we have been only vaguely aware of the urgency of the collateral requirement for bringing into being comparable advances in our logistic operations. Success or failure

in resolving this requirement may well determine our national survival.

The task is infinitely more difficult than in the past, since in previous major wars we had the comparatively simple job of making the military team ready for a "one shot" offensive effort. We knew the location of the game, the opponents lineup, many of his plays, and our time of entry was largely of our own choosing. Our transportation, storage and industrial and military build-up were not molested by enemy action, nor was such danger considered imminent. Our allies were depended upon to hold the enemy at bay until we were ready to enter the game. Today, we must expect to sustain the full force of the enemy's initial, and most severe blow. We must prepare simultaneously, and we must remain prepared, for both offensive and, for the first time, defensive air and missile warfare. We must be ready for an all-out effort today, tomorrow, and as far into the future as we can see; while at the same time being prepared to fight brush type wars of varied sizes and composition anywhere in the world.

Our problem has become increasingly difficult with each advance in technology that has been made. The logistical requirement for support of intermediate range and intercontinental missiles, and for the support of an electronic-nuclear missile counter-defense, is already upon us. We read of a new definition of logistics contained in the official Air Force dictionary as "that part of the military activity that provides for the build-up and transport of a military force by providing for supplies, equipment, transportation, maintenance, construction and operation of facilities, movement and evacuation of personnel, and other like services, so as to render the military force efficient and effective in both combat and noncombat operations." We see the support problem as becoming extremely complex for it encompasses hundreds of widely scattered locations and constantly changing weapons systems. Costs have risen in the military departments and it is predicted that they will continue to skyrocket. They reflect the research required to establish feasibility, to achieve working design, to provide production facilities, and to actually produce the finished product. Considered in this way, cost is instructive concerning the trend of technology. The fighter aeroplane of World War II cost less than $50,000. Five years later a counterpart fighter cost upwards of $250,000. Today the price of some fighter aircraft is quoted near the $5,000,000 mark. The bomber of World War II was priced in the region of $250,000 or less; the B-52 is estimated to cost nearly $8,000,000. In terms of technology these examples are representative of the more conventional air weapons - well inside the foreseeable limits of our present economy. Ballistic missile ventures on the other hand, require a more careful appraisal for their cost is in the realm of the outer limits of our present economy. They are priced at figures which again reflect their advanced nature: for example, the U.S. Navy's Polaris intermediate range missile to date represents an investment of nearly $1,000,000,000. (Ref 15:1). To

further explore cost in terms of technology, in the fiscal year 1956 the USAF research and development program totalled $2,939,020,000 in funds spent on research, and production and procurement in support of development. Investment in facilities for research and test of equipment was in excess of $2,500,000,000. (Ref 24:17). Both the annual expenditure and fixed investment have increased since that time under pressure generated by the apparent progress of Russian technology. It is well worth remembering, however, that this present level of expenditure has approached 25% of the USAF budget and may be expected to become even larger. The financial aspect of such cost is clear that even the immense resources of the United States are hardly sufficient to provide and support a full range of weapons on a continuous basis. Should such an objective be attempted the economists have predicted poverty as the true goal of air power and space mastery.

Along with the cost of technology, it may also be expected that the number of line items in inventories will increase even after the ultimate weapon is finally produced. In a lecture before the American Management Association in March 1959, General Bogart, of Headquarters Air Materiel Command, stated; that each new weapon system brought into being in the past four years , has resulted in an additional 50,000 support line-items of supply. Add to this the changes and replacements required by further technological advances and obsolescence - the costs appear to soar. But above all the problems of technology, we cannot forget the "reaction time" which must permit us to counter enemy actions, or to initiate actions of our own. This brief period of preparation time demands the greatest of emphasis for it has been reduced from years, months, and days, to hours, minutes, and seconds.

Whether the leaders and peoples of the United States and the rest of the free world will continue to provide the funds required to support this high cost of military preparedness is one of the most critical questions we face today, and one which will become increasingly crucial. This was not an unduly serious problem at the time of the "one shot" build-up for WW II. The after effects of the huge public debt created by this requirement, however, directly affect the actions of the free world today and substantially reduce the resources available for the current effort. We have seen from the above discussion that the cost of developing and maintaining both an offensive and defensive capability year in and year out, and the unquestionly high expenditure due to today's and tomorrow's technological advances, will make the WW II cost seem paltry by comparison.

It is evident that the proper selection of weapons systems, forces, and strategy by the Commander-in-Chief and his advisors is the prerequisite to this nation's survival. It should also be evident that these determinations only make possible, but do not insure, our continued safe existence. These decisions must have public confidence and support and must be attainable at a price the United States not only can afford to pay, but will pay.

To attain our objectives, the military service must, and can, bring about a dynamic improvement in not only the logistical system but in all management operations. Success can mean victory without war or, at worst, victory in the event of war. Failure can mean defeat, either as a result of military action; or through the progressive deterioration of our military posture, so that the will to resist likewise deteriorates. Defeat can also be caused through prolonged excessive military expenditure which become of such magnitude that two of our principal national objectives, "Maintenance of Our Way of Life" and "Maintenance of Our Standard of Living", are sacrificed.

The framework and the tools for effective management of our materiel resources, and converting them to combat effectiveness, have been introduced to the military departments during the past several years. In the Department of the Air Force, decentralization, monetary property accounting, work measurement and numberless other concepts and techniques have been successfully attempted within the logistics complex. In many other areas, such as personnel management, the expanding use of electronic data processing equipment and high-speed materials handling, and transceiver communication networks, for example, have required the military to lean towards business standards and methods for management improvement. We have found, however, that if these tools are to be successfully utilized and our objectives achieved, it depends primarily on the attitude, leadership, and the initiative of unit and base commanders who have command jurisdiction over activities which generate most of the logistical requirement, and who consume 85% of the total Air Force resources. (Computed from USAF Expense Accounting Data) Unfortunately, but understandably, as previously noted, most commanders have been so deeply engrossed with the operational application of new weapons and systems involving tactics of warfare, that they are only vaguely aware of the existence and the potential contribution newly developed tools of management can make to the combat effectiveness of their command. By and large, these commanders fail to recognize their full responsibility and their potential contribution toward enhancing the ability of the United States to support an adequate and sustained military posture. An understanding of this responsibility, is a prerequisite to a commander's acceptance of that responsibility, and discharging it.

This paper is composed of three main sections, mainly; the size and scope of the United States Air Force and its resources, the second section dealing with the evolution of management tools available to Air Force commanders, and the third section with implementation of these management tools. Therefore, while this study is intended to show the role that commanders play in this most important management task, the fundamentals considered are also applicable to those other people who work in Command major staff organizations throughout the Air Force. One additional point warrants attention. It is that the

techniques of managing (commanding or leading), in the military as well as in industry, have been changing in recent years. The older philosophy of "right, wrong, or indifferent, the letter of the law must be obeyed"; strict discipline; and the absoluteness of authority are being replaced by new ideas and practices more in tune with efficiency and effectiveness.

It is then the primary purpose of this paper to examine more closely the management tools available to us, and the utilization of the tools, principally at base level, with the objective of attaining and maintaining an effective fighting force at a price the United States can afford to pay, and will pay.

CHAPTER II

USAF IS BIG BUSINESS

Magnitude of USAF Resources

Even during the period between World Wars I and II, when our combined Army and Air Corps totaled approximately 150,000 men, (Ref23:728) when a large share of our operating costs were met from excess WW I stocks, and when the total annual military budget of about 600 million dollars constituted only 10% of the National Budget, (Ref 10:299) the Congress and the American people were concerned about the cost of the military establishment. It is easy to see and understand their concern today, when our defense requirements, past and present, utilize approximately 4/5 of the National Budget and almost 3/8 of our Gross National Product.

The FY 1957 budget request totaling $66 billion, provided $40 billion for "major defense requirements", including $35 billion in direct appropriations for U.S. Armed Forces ($16.5 billion for the USAF), and over $4 billion for Foreign Military Aid and other national defense items. Payment of past wars (debt interest and veterans aid), totaled another $12 billion, making a grand total of $52 billion attributable to national defense. The FY 1959 budget request for both missiles and conventional forces which emerged from the Joint Chiefs of Staff before budget pressure was applied in earnest came to some five billion dollars more than the $40.9 billion budget which the President finally sent to Congress. This budget actually was an increase of $5 billion over the FY 57 requirement and it earmarked approximately $18.7 billion for the exclusive use of the Air Force, of which we are primarily concerned.

It is quite evident that the Department of Defense is our nation's largest business. In its first formal report under Section 410 of the National Security Act, submitted as of 31 December 1954, the Department of Defense reported that military assets of $123.9 billion, exclusive of funds, were carried on its records. (Ref 6:7) Although the formal report to Congress was dis-continued in 1955, other subsidiary records available at HQ USAF indicate military assets exclusive of missiles and major weapon components, such as aircraft, currently exceed $160 billion. This sum is equal to 80% of the total assets of all U.S. Industrial companies, as reflected in a recent article in Fortune magazine which stated:

> Approximately one-half the free world's industrial output is produced by the U.S., and almost exactly one-half of the U.S. output, in turn, is produced by about 500 corporations . . . comprising less than two-tenths of one per cent of the 360,000 manufacturing (and mining) companies in the U.S. . . . . (this) group had assets of $108 billion (56 per cent of the total assets of U.S. Industrial companies). (Ref 3 :96)

Analysis of the two reports cited above, together with financial statements of Air Force Major Commands, with civic and commercial statistical summaries, further emphasizes the magnitude of Air Force resources. For example:

a. Including funds available for disbursement, USAF assets currently approximate $80 billion, according to a Department of Defense report dated 31 December 1958, and modified by local informal estimates. The two largest U.S. corporations, Standard Oil and General Motors, have total assets of $6.6 and $5.1 billion, respectively. (Ref 3 :96). Comparable figures for SAC and USAFE are $12 and $6 billion, as shown in command statements.

b. The five largest commercial airlines in the United States, with assets varying between $156 and $256 million, (Ref 3 :54) control assets smaller than many Air Force base commanders who are responsible for $100-$600 million worth of assets, depending on the type of aircraft, single or double wing base, number of weapon systems, missile support, or type and number of tenants. The very latest Fortune study lists only 200 industrial and mining firms with assets over $100 million, 115 over $200 million, and 60 over $400 million. (Ref 3 :96).

c. The annual operating expense of a two-wing B-47 base ($30-60 million depending on weapon components) (Ref 12:7) approximates the annual general expenditures of several of our states (Nevada $31.6 million; Vermont $40 million). (Ref 5:214).

Scope of USAF Resources

It has been previously mentioned that, dollarwise, 85% of the Air Force resources are consumed at the base level. We should also take cognizance of the fact that one-fifth of our inventories are stored at base level, and that virtually all AF Real Properties and "Equipment in Use" are under a base commander's jurisdiction. This representation does not mean that commanders are responsible for 85% of the current Air Force expenditures, for procurement holds that distinction. The figures do signify, however, that after the decision to buy has been made, and goods, services, or facilities are delivered, a base commander becomes the custodian. Broken down into the four basic management segments commonly utilized by industry, and which closely parallel the Air Force alignment of staff and unit responsibilities, we have the following picture, in terms of millions of dollars reflected in aggregate for the USAF:

Real Property	$ 8,700	Funds	$ 28,000
Equipment in Use	27,900	Inv.	15,800
Missiles and A/C	(13,700)		
Support to--Missiles and Other	(14,200)	incomplete	
Total	$ 80,400	(see a. above)	

(per DOD, Real and Personal Property - Department of Defense)

Management Capability

The magnitude and scope of the resources entrusted to the base commander are so large and diversified that it is physically impossible for a base commander, or his staff, to devote the amount of personal supervision to each segment or item that the public investment would seem to warrant. Accordingly, a base commander is forced to devote the greater part of his personal attention, and direct the major efforts of his staff and subordinate commanders, to those activities which will contribute the most toward the combat potential of his unit (s) and to overall U.S. military preparedness.

Before we try to determine how much of a commander's effort should be devoted to each segment, and the courses of action he may take after analyzing his operations, it might first be more fruitful if we understood the role of the commander and his responsibility as an individual thereby setting our frame of reference.

Like others who have people working for them, the commander's primary task is to get a job done through the efforts of other individuals. In more formal terms, this task has been aptly defined as:

> "A person who occupies a position of responsibility for and to others in getting things done through group effort in organizations. The qualities which distinguish the leader are his ability to think and act responsibly, to work cooperatively with others, and to provide others with opportunities to work effectively and with satisfaction within the group." (Ref9 :13).

As the executive, or manager, or leader, the commander performs certain basic functions: (1) planning, (2) organizing, (3) directing, (4) coordinating, and (5) controlling. These are generally known throughout the Air Force as the five functions of management. They are perhaps better known both in the military and in industry, as the tools by which group effort may be unified, and, when applied properly, they lead people to work harmoniously together as a team. Now as so often is the case, some commanders are unable to unshackle themselves from the details they handled in former assignments, or, their experience and background have not yet taught them how to manage in a big-business way. In short, the commanders themselves are not prepared to deal with all five functions of management, in terms of their current expanded responsibilities. One commander may be a good organizer, the next a sound planner. The next may be an effective operator. Not enough of them do well at all four plus the control function. Now it is not the purpose of this study to identify the strengths and weaknesses of individual commanders, but the individual characteristics of a leader cannot be altogether overlooked. All the effective so-called tools of management will serve little purpose if in the end they are channeled to a commander who fails to recognize their significance or importance.

As pointed out in 1951 by General E.W. Rawlings, when he was DCS/Comptroller, Headquarters USAF, "Management and control of operations of the Air Force have grown in complexity equal to the technology development of aircraft." Continuing, he said, "as we no longer fly aircraft by 'the seat of our pants,' neither can we guide the operation of the Air Force by any kind of a personal touch."

Expanding this, we know that modern aircraft must be flown by highly trained pilots, supported by the specialized skills of radio operators, navigators, mechanics, meteorologists, and many others. Likewise, a commander in this modern air arm must be a highly trained executive, who realizes that he can be aided in the performance of his duties by many skilled specialists, and who willingly accepts such aid. For the purpose of simplicity, therefore, we will assume that the person designated as the commander in reference throughout this report, has the ability to get other people to work effectively, the ability to make decisions, will accept responsibility, and possess an understanding of the economic, social and political forces which shape the environment in which he operates. We should bear in mind as we continue this study of management tools, that the most important and effective of all management devices -- is the manager himself and the techniques that he employs in his role of a leader or a commander.

Now that we have examined the commander as an individual, and have briefly discussed his relationship with other staff members, we can return to determining just how much of his efforts should be devoted to the four basic management segments (Property - Equipment in Use - Inventories - Funds) in accomplishing his assigned responsibilities. First, a commander must analyze his operations, resources, and capabilities to:

a. Determine the size and scope of individual activities or management segments.

b. Identify the activities or segments most responsive to his management actions, and most apt to provide the largest, the quickest, or the most sustained "pay off".

c. Acquire a working knowledge of the management authority and of all the management tools available to him.

Secondly, the commander should request of his staff a list, or other physical or tangible evidence of what they think the commander should have, or have knowledge of, in order to more effectively and efficiently guide the operation of the command. Frequently, by just asking staff members to enumerate the tools of management used within the command and the signs of frustration and embarrassment become pronounced. The same question asked differently, and the response is more encouraging in the forms of financial statements, analysis, rating system results, audits, inspections, investigations, accounting systems, automatic data processing achievements, supply analysis, mission effectiveness and the like, from each of the operating divisions within the command. Since many of these management tools, although implemented for some time at certain locations, have only recently been effectively utilized to give meaningful, useable,

management information regarding the military establishment as a whole and the relationship of individual segments, the commander's appraisal at this time takes on a new and vital meaning. In preceding paragraphs we have noted the monetary value of the four major management segments at the HQ USAF level of command. Let us now examine each area in greater detail to determine which segments are the most responsive to management actions by the base commander.

Real Properties

At the present time, records are maintained at each Air Force installation to provide a detailed accountable inventory summary of all fixed capital assets, including land, plants, buildings, structures, systems, and other facilities that serve the mission of the base. These property records furnish up-to-date, complete and historical cost data of each facility under custodianship of a commander. The area of Real Property administration and management is normally considered the most stable activity under a commander's jurisdiction. The base commander can do little, during his tour as commander, to achieve basic changes in his Real Properties. Usually, at the time of taking command he inherits a "going" establishment. Any major changes or additions require elaborate, time consuming screening by a higher headquarters, Secretary of Defense, Bureau of Budget, or separate action by Congress, to first approve the requirement and then appropriate the necessary funds. Seldom will a base commander see "in place" during his tour, any major change for which he initiated the original action.

The amount of resources devoted to the maintenance of Real Properties is like-wise controlled, to a large extent, by higher headquarters, through the establishment of "Budget Authorizations", "Manpower Authorizations", and expenditure control ceilings. These limitations are based largely on Air Force-wide cost and budget experience for similar types of facilities, severely modified by the critically inadequate Maintenance and Operations budget appropriations - which have strangled the Air Force for the past several years. The maintenance of Real Properties, I believe we can say has been reasonably well managed in the past. The fact that maintenance has been one of the main functions of a peacetime military posture, and is similar to the maintenance of commercial facilities, has provided most bases with fairly adequate technicians and supervisory staffs.

Notwithstanding the generally satisfactory status of base maintenance in the past, and the restrictions caused by an inadequate and closely controlled budget, some monetary savings are possible and considerable "qualitative" improvement is certain through the commanders personal interest, common sense, supervision, and through utilization of the management tools presently available. The commander needs only to review the pre-planned permanent program set-up for preventative maintenance, which includes periodic visits by work teams, to insure there is a plan to correct deficiencies and minimize deterioration of base Real

Property facilities. Except for programmed preventative maintenance which is accomplished in strict accordance with AFM 85-2, and minor complaint type work that can usually be accomplished by roving service trucks and crews, all other work that is performed must be documented for material and labor, and accounted in an installation engineer accounting system. This newly re-designed system in itself, properly interpreted, can provide tremendous management by exception.

For the most part, savings and improvement will be semi-automatic by-products of the management tools to be discussed later in the study, which includes:

a. Reduction and better control of materiel resources through the Integrated Accounting System.

b. Reduction in "facility requirements," or better utilization of available facilities, through analysis of Monetary Inventory Accounting transactions, the Installation Engineer Cost Accounting System, and systematic review of current operations and future programs.

c. Reductions in administrative and clerical personnel, and development of improved management data, through extension of mechanized procedures to installation and Real Property functions.

While the large monetary value, sizeable operating costs, and direct effect on combat effectiveness requires that the commander give personal attention to the management of the Real Property under his jurisdiction, he should not lose sight of the fact that the degree and the amount of personal supervision required is substantially reduced by the static nature of this Property, and the generally satisfactory level of staff supervision and current base maintenance policies. He cannot ignore this important area, but should not permit it to draw a disproportionate amount of his time, at the expense of more fluid and complex areas having potentially a greater payoff in terms of combat effectiveness, manpower, materiel and money.

Funds

As was the case with Real Property, the base commander is usually reasonably familiar with the problems of budgeting and funding, since these functions have been with us for a long time.

The Annual Budget Authorization, the Quarterly Allocation of Allotment and related instruments have been, and will continue to be, a direct and very meaningful device for central program planning and management control at HQ USAF and at HQ AMC. At the base, these procedures have considerably less direct management application, and their usefulness will decline still further as more effective use is made of other management devices now available, and as the Air Force initiates

use of installation engineering cost information, which will now be available in a more reliable form under the new installation engineer cost system. This system, the latest in the Air Force, is also geared for possible implementation of base "Operating Budgets" which will include all costs of operation, including those costs which are now centrally funded.

The base commander is currently allotted funds for less than 15% of the cost of operating his base. (Ref 13:4). He receives no funds by allotment for the pay of Military Personnel, or for supplies and equipment requisitioned from AMC which constitute his major expenses, since these are funded and controlled by HQ USAF and AMC, respectively. Of funds that are allotted to the base, the major portion is for pay of civilian personnel. Funds for this purpose are included in the base Annual Budget Authorization and Quarterly Allotment, based on the civilian manpower authorization and the prevailing wage scales. The personnel voucher, not the funding instrument, is the primary control factor, since the base commander may employ to the full limit of his personnel voucher, if he has the allotted funds, but he cannot employ in excess of his personnel voucher regardless of the adequacy of allotted funds available. A large portion of the allotted funds provided to cover other than civilian personnel costs is required to finance travel, transportation, and requirements directed by higher headquarters, leaving the base commander, strangely enough, only a small amount of funds to meet other locally programmed requirements. As a further example of the relatively small part played by locally allotted funds in the operation of a base, less than 15% of the monetary value of the base supply inventory is at present locally funded. This figure used to be 10% , but it was raised due to the introduction of purchasing "general supply stock fund items" from central procurement locations. It is clear that, for all practical purposes, the base commander merely "Administers" the bulk of the funds allotted to him.

While the funding area provides the base commander only a very limited opportunity to effect direct management control or significant monetary savings, we should not overlook the indirect, but significant, management contribution that funding procedures have made at base level in the past. These procedures have been the principle means of developing an awareness, on the part of some base commanders and their staffs, that all things do not flow free from AMC, or out of the blue. While the budget submitted to higher headquarters included only a small part of total base operating costs, as did the quarterly allotment, they forced at least limited consideration of centrally funded resources as well, in order to develop a complete and phased program as a basis for budget preparation and defense. In addition, the Annual Budget Authorization provided at least a partial yardstick, incomplete as it was, for measuring progress against a planned program and which constituted a known point of departure for program changes. Now since we are talking primarily about the methods of management which will help to control and direct an organization, the question of allocation of funds assumes

that a bona fide need for funds has been established, and if questioned this need for funds can be supported and justified. On the other hand, it is quite obvious that if there isn't any money for any particular activity, whether it is within the government or out of the government, it will be impossible to carry on that activity. It is for this reason that the control or budgeting or programming of funds is so essential if we are to get the results that we wish to get and if we wish to emphasize the areas where emphasis is desired. The granting or withholding of funds, therefore, should be recognized as another method for directing an organization along the channel a commander might desire to follow.

In general, budgeting, funding, and finance activities, have been reasonably well managed in the past several years. Management use of budget and funding controls varies between various bases, from fair to excellent. There has been a growing awareness on the part of commanders and their staffs of the legal responsibilities placed directly on them by Federal Statute. Increased utilization of technically qualified civilian employees coupled with increased use of commercial accounting machines and techniques, is offsetting increased workload requirements generated by recent laws and regulations, and is increasing the accuracy and timeliness of funding data.

Some monetary savings are still possible, through the commander's personal interest of deviations from budget planning, comparison of actual expenditures with forecast expenditure programming, and in areas of travel, transportation, and communications. Personnel reductions, and considerable savings in funds and facilities are certain through the ultimate replacement of manual accounting processes and record-keeping with commercial accounting and electrical data process accounting machines.

Inventories

The total supply inventory of the United States military establishment, in excess of eighty billion dollars, (Ref 7:6a), exclusive of A/C and Missiles, is only 12% less than the total supply inventory for all U.S. manufacturing, wholesale and retail, enterprises. (Ref 19:9). The Air Force inventory, alone, is almost twenty-four billion dollars, (Ref 11 :1), with depot stocks approximating the total value of the entire U.S. Wholesale Trade Inventory, and base inventories approximating one-third of the durable inventories of the U.S. Retail Trade.

Industry, after devoting years of its top management talent to inventory control, still considers itself less than 70% efficient. (Ref 19:Ch. 1). It is abundantly clear that the effectiveness of inventory control and supply management of the Air Force is substantially lower than industry, since the task is infinitely larger and more complex, and comparable time and resources have not been sufficiently devoted toward its improvement. It is in this area, that the military establishment can make the largest, quickest, most sustained, and most significant

improvement and contribution, to the sustained military effectiveness.

Because of the importance and scope of this activity, and the recent implementation of the management tools designed to assist in realizing its potential, the subject of inventory control, with emphasis on the base commander's role, is examined in greater length in subsequent chapters.

Equipment in Use

The total value of "Equipment in Use in the U.S. Military Establishment approximates close to sixty billion dollars. (Ref 7 :6a). The potential contribution, which can result from effective control and management of this area is second only to that of inventory control. Because it deals with line items, the problem is similar to that of supply inventory control. There are fewer items involved than in that of supply, but the number and variety of units, frequent substitution of items, authorization changes, and unit reorganization with weapon phasing systems, make the problem of control exceedingly difficult.

As in the case of inventory control, the use of the dollar sign as a common denominator, should provide the Air Force with a new and effective management device. Unit and base commanders have the key role in achieving and converting improved control and monetary savings into combat effectiveness. Their role and some of the problems they face is discussed in succeeding chapters.

CHAPTER III

THE EVOLUTION OF AF MANAGEMENT TOOLS AND THE COMMANDER'S ROLE

Historical Management Role

Historically, the management role of the military commander in the United States has been relatively simple and easy to discharge. In our early days as a nation, we maintained only a very small military establishment. In times of war we expanded rapidly and at great cost to the nation. The wartime role of the commander was to get his forces ready for combat in the shortest possible time and to lead them into combat. The matter of cost and management received lip service, at best, but little other practical consideration. Following each war we reduced the size of the military establishment to a small force which existed on the surplus left over from the conflict, supplemented by small appropriations for pay, subsistence and current services. Since these forces were small in number and static in size, with the major task just "existing" and doing their own housekeeping chores, the management problem caused little worry.

Post WW II - Management by Edict

The requirement to retain, in being, a multi-million-man military force, deployed world-wide; equipped with the most modern weapons and equipment, and capable of immediate offensive and defensive action, drastically altered the military commander's management role.

Shortly after the conclusion of WW II, the Executive Department, the Congress, and the Military Establishment realized that the peacetime military association had become the largest, most complex, business in the country and that our national economy and continued survival were largely dependent on the effective management of its resources. This realization was followed by a series of disasterous "crash" actions wherein all agencies attempted to demonstrate that they were aware of the problem and were taking swift action to discharge their responsibility.

The Secretary of Defense swung a ruthless axe in an effort to cut back the size of the establishment, reduce its appropriations, and force it to exist on so-called "fat", which actually consisted largely of obsolete or obsolescent materiel. This action not only precluded the procurement of new items, but prevented utilization of current stocks, because of shortage in component or related parts. The Executive department and Congress took similar courses of action. The Air Force, along with the other services, showered field commanders with a barrage of hastily conceived directives calling for the accumulation and submission of countless reams of statistics, supposedly required for internal management purposes, or for meeting or fighting off the demands of external agencies. As a result, directives were overlapping, duplicating, incomplete, and frequently unnecessary. Frequent chaos and fantastic inaccuracies occurred at the installation level where the data was gener-

ated and collected. Staffs at all levels were completely snowed under by the workload of accumulating and processing data. Use of this data at base level was virtually impossible and only very limited use could be made of the information at higher headquarters. As a result, commanders and staff officers developed a deep distrust of any procedure, system or directive bearing the "management" label.

Evolution of Air Force Management Tools

Fortunately, while directing ill-conceived "crash" actions in an effort to solve the military establishment's problems overnight, the Executive Department, Congress, and the Department of Defense had quietly developed sound, coordinated over-all plans, laying the foundation for organizational and procedural changes, to bring order and effective management out of chaos. The broad outlines of this plan came into being as the National Security Act of 1947, which established the Department of Defense. The framework was strengthened and extended in 1949 by an amendment to the NSA, which outlined specific actions to be taken to achieve effective management including:

a. Appointment of an Assistant Secretary of Defense (Comptroller) and a Comptroller for each of the three services.

b. Establishment of an "integrated" accounting system.

c. Accounting for supplies on a monetary, as well as quantitative, basis.

d. Establishment of a single supply catalog. (Ref21 :1-18).

With the promulgation of the public law, the military establishment was charged with the responsibility for development of the specific systems and procedures required to carry out the intent of the National Security Act.

Although a great deal of staff effort was devoted toward this end during the period 1949-1952, only limited progress was made. The need for obtaining the objectives of the NSA was recognized by our civilian leaders at a secretarial level, our senior military leaders at the USAF level, and by a considerable number of officers at field echelons. Unfortunately, however, the natural tendency of individuals and staff agencies to preserve "sacred kingdoms", the priority necessarily devoted to the Korean conflict, the innumerable "crash" directives for expansion, rollbacks and reports, coupled with the sheer magnitude of the job, all delayed the development of the detailed procedures required to implement the provisions of the National Security Act.

It was not until 1953 that outside pressure, principally the Executive department's effort to balance the National Budget and Congressional impatience with lack of progress, that precipitated more positive action. The report of the Flanders Committee, (Ref 21: T-IV), established by the

Congress to monitor implementing action of the NSA, is one of the most critical reports ever rendered on the military establishment, and understandably so. To prevent even more blunt and public censure and the issuance of arbitrary implementing procedures and directives by Congress, the DOD directed immediate implementing action by the military services.

Our failure to take early orderly action now forced us into a premature and "positive" implementation of procedures which were only partially developed. Although the hard core of an integrated accounting system and broad outlines for effective management procedures, designed to base level operations, had been developed, much detail work and testing still remained to be done. The system, as developed, was tailored to support the budget structure and provide data required as a basis for planning and programming, and for management or operating decisions. It would record the value of assets owned or liabilities owed, and transactions affecting these accounts, by individual activities, units, bases, and commands. It would accumulate operating costs by function and by activity. Eventually operating standards for individual activities would be developed to assist in measuring effectiveness and efficiency. The basic principles of the system were extremely simple, in the beginning, being a direct application of double entry bookkeeping theory taught in nearly every high school in the country, and understood, consciously or otherwise, by every individual who reads the daily newspaper or maintains a checking account or runs a family budget. Notwithstanding this, the scope of the program, its departure from traditional military procedures, and the tremendous workload involved in its initial phases, required a considerable lead time to educate commanders and staff officers, to recruit and train technicians, to mechanize clerical and accounting operations, and to provide for an orderly phased implementation.

Directives were issued to the field early in March 1954 to use the program and instructions for implementing base Monetary Inventory Accounting "as of" 31 March 1954. This was followed by additional directives for implementing the remainder of the "integrated" accounting system "as of" 30 June 1954.

The urgency of the directives was so great that they were coupled with unprecedented automatic personnel authorizations to meet with the initial workload requirements. Through the personal and vigorous leadership of the Secretary of the Air Force and the Chief of Staff, and unparalleled effort and initiative in the field, the almost impossible implementation deadlines were met.

By the end of the calendar year 1954, the new system was producing broad "order of magnitude" data as to Air Force inventories and other assets with AF liabilities. Of course no-one was quite sure how this information was to be used but one thing was evident - here was an entirely untapped field of historical information. Both the system itself and the accuracy of its product have been in various stages of refinement since the year 1955, so now we have in being considerable experience data, to serve as a

point of departure in the development of management decisions, with a system capable of generating all data required to manage a base, depot, or an Air Force, to the satisfaction of Congress.

The Commander's Role

The management tool that we created is a two-edged weapon. In the hands of a commander who knows how to use it properly, it is a fine edged sword to cut off the non-productive waste and fat that breaks his financial and logistical back and curtails the effectiveness and efficiency of his operation. Equally important, it serves as a warning device to alert him as to areas of deficiency or future trouble. Mis-used by him, or left idle to be picked up and wielded by higher or external agencies, with limited or distorted knowledge of his operations, it can be a dangerous bludgeon or cleaver.

The choice of its use or mis-use rests squarely upon the shoulders of the commander. It cannot be used safely or effectively unless he himself learns the fundamentals of its use and provides the personal leadership which causes his staff and subordinate commanders to learn how to work as an integrated team in using this tool. This fact has been dramatically demonstrated by the varying degrees of implementation and utilization among the major commands, to date. The commands which have been provided personal, positive, leadership in this endeavor, by their commander, lead the pack in measurable, irrefutable monetary, materiel, and personnel savings, and in improved combat capability. It is significant that SAC, our principal striking force, from the strategic viewpoint, and USAFE with its tactical forces in the shadow of the Soviet block, are leaders in this effort, and have been for some time.

The management role of the commander, as universally recognized by industry, is emphasized in a recent talk to members of the HQ USAF staff by Mr. C.J. Kushell, Director of Finance of the Port of New York Authority and former Director of the Comptrollers Institute of America who said:

> The company president must understand planning and control techniques, use them himself, and furnish the required leadership in their application. This philosophy permeates through the organization only when there is no question that the president gives it vigorous allegiance. . . Without the wholehearted and intelligent collaboration of the Chief Executive of the business, I would not even try. (Ref 14 :22).

The importance of the military commander's role in guiding his subordinates toward understanding and accepting sound management concepts, and directing their application toward effective and economical utilization of the resources under his jurisdiction, is crystal clear to me. As a student of the (Air Force) Institute of Technology, residing on the base, I have discussed this subject at length with a large number of Officer students also attending various courses of instruction at the Institute, who varied in rank status from 1st Lt. through Lt. Col. These

Officers have come from assorted commands and job assignments, and their awareness of their management responsibilities, and the tools available to them to discharge those responsibilities, varies, between individuals, from almost zero to a full realization.

I had expected that there would be a pronounced and consistent relationship between the rank, length of service, and background of individuals and their understanding and acceptance of management reponsibilities and management capabilities. Instead, I found that rank and background played only a secondary role and produced a most conflicting and contradicting pattern. It was evident that most Officers seemed content to explain why certain things should not be done, but they were in no position to offer alternate solutions. It was clearly, unmistakeably, and consistently evident that the degree of understanding and acceptance of these individuals depended primarily on what major command they had served with prior to coming to the Institute.

I was amazed by the extensive knowledge displayed by former SAC staff officer personnel, regarding some of the more recent AF management tools and their application to SAC problems. They could cite, from memory, the approximate cost of operating their base and how it compared to previous periods and to other bases. They took pride in the fact that they had utilized such tools to reduce their base supply inventories by a million dollars, or more, and at the same time they had increased their supply effectiveness. They were not ashamed that their accounting system, improvised locally to account for aviation petroleum consumed during FY 58, portrayed over-obligation and over-expenditure, for this condition proved to be true and not without good cause. I was told, that not a month goes by that some different segment of accounting or management information is not re-analyzed for command interpretation or discontinuance. They recognize that such actions contribute to the over-all effectiveness of the command and of the Air Force in terms of additional planes, flying hours, training, or essential procurement.

I was not shocked by the almost complete lack of knowledge and limited interest in the subject from line and staff officers of several of the other commands. I found an identical pattern of extreme differences, when in former assignments as Liaison Officer, and Resident Auditor for the Auditor General USAF, I reviewed indorsements to audit Command Summaries, inspection reports, Operations reports, rating system analysis, and assorted "management documents" published by the various commands. It was sometimes difficult to believe that all belonged to the same Air Force.

Having served from 1949 to 1958 in assignments that brought me in frequent and close contact with major command and Pentagon personnel, I am well aware of the impact that senior commanders personally have on their immediate staffs in developing their attitudes and capabilities. On the basis of earlier observations, supported by a sizeable sampling from a pool of over 200 Officer students, it appears evident that the impact of the senior commander's attitude and desires is as great, or greater, on subordinate commanders.

The base commander serves as a concave mirror reflecting and magnifying the attitude and desires of the senior commander. He is instinctive and uncanny in his ability to determine what the senior commander's attitude and desires really are. In carrying out their interpretation, in the words of a once popular song, they "accentuate the positive - eliminate the negative." Lip service and "for the record" letters supporting motherhood or effective management are eliminated or diluted as they flow downward, and produce negative results. Conversely, aggressive, personal leadership on the part of the senior commander, as demonstrated by his personal participation and definitive or carefully monitored programs, are accentuated as they pass to lower eschelons to produce positive results. These conclusions are particularly valid where the task is lacking in glamour, or where inertia and old habits must be overcome and new concepts and tools are to be used.

It is also clear that while the impact of the senior commander to a base commander is emphatic, it is exceeded by the impact of the leadership of the base commander on his subordinates, through the media of daily personal official and social contact.

It can generally be assumed and concluded with supportable evidence, that the majority of our senior commanders do not fully understand their responsibilities or their capabilities for management of Air Force resources. They are not providing the dynamic, personal, continuing leadership which is a prerequisite to effective management. Primary responsibility for this failure must rest squarely on the highest echelon of command - HQ USAF.

Despite the fact that the former Secretary of the Air Force and the Chief of Staff personally quarterbacked and ran interference in the development and initial phase of implementation of the accounting system management tool, the extent of participation by these offices since has been largely hidden in the fog of internal departmental staff actions, which has been depreciated through the use of technical channels and later publications. The "Pentagonites" counter-claim that their continuing concern has been evidenced from time to time through personal letters and discussions with senior commanders, however, these external indications of interest are entirely inadequate to overcome the inertia and resistance caused by our previous role of Army "parasite", and the deep seated distrust of "management" generated by ill-conceived "crash" mandates of the past.

To fully appreciate the ramifications of the problem as it applies specifically to the Air Force and the efforts we must take to overcome them, we must critically examine the impact of past events. From our earliest days as a separate section of the Army Signal Corps and through our days as the Army Air Corps, we considered ourselves an underprivileged step-child. Chiseling, hoarding and disregard for the seemingly boundless resources of higher eschelons, seemed to be essential to survival and growth. These actions came to be looked upon as honorable

practices, and the instinct is still deeply ingrained.

Added to the problem of mis-directed "instinct", is the problem of deficiencies in the background and training of personnel. Only an extremely limited number of our senior commanders and base commanders have had the variety or the type of assignments to prepare them for the automatic acceptance and discharge of today's management task. The early assignments of our senior commanders, of necessity, emphasized flying and operational problems almost exclusively. Their assignments during the war were largely training and combat operations which bears little resemblance to today's management role. The bulk of our officers coming into service during the WW II build-up, also of necessity, were trained in a narrow specialty. Not only was their wartime service confined almost exclusively to these specialties but, because of the problems inherent in our transition from a "parasite" to an autonomous agency, it was necessary to continue their specialized assignments during the early years of our operating as a separate Department. Only in the past few years has it been possible to provide our officers with the variety of command and staff assignments required to adequately prepare them for the role of commander/manager. Progress in these few short years has been unprecedented, and is nothing short of miraculous. Nevertheless, very real deficiencies still do exist.

As an initial step toward overcoming these deficiencies, we must continue to re-initiate at the earliest possible date, a dynamic and continuing educational program starting with our current Air Force objectives. This program could have broader implications involving the entire military establishment, however, I feel that if we can re-allign our thinking Air Force wide - the other services will likewise follow suit. This program should be developed and monitored as a Chief of Staff responsibility at HQ USAF level. The initial emphasis should be directed toward those individuals who are serving as major commanders and possibly as Deputy Chiefs of Staff at HQ USAF level. These individuals, in turn, with assistance and broad guidance from HQ USAF, should initiate two-pronged programs directed toward their senior staff officers and their sub-commanders and base commanders. Similar two-pronged programs should then be initiated by base commanders to include two principle objectives. First, to assist commanders and staff officers at all echelons to understand the critical urgency for obtaining more effective management of our resources; their responsibility in this effort, and the tools available to them to discharge their responsibility. Secondly, to establish a means of "exercising these management tools" in much the same manner as SAC and TAC exercise their combat tools. One means of doing this is through regularly scheduled Monthly Executive Control Meetings and Quarterly Commanders Conferences, conducted by the Commander and attended by all sub-commanders and senior staff officers, for the purpose of reviewing and analyzing products of the program and their application to logistical capability and combat effectiveness.

Several of the commanders at major commands have already initiated programs of the type mentioned in the preceding paragraph. They have

reported the measure to be a success, as evidenced by the fact that their commands are far in the lead in management efforts, and more important, these efforts have materially improved their combat capabilities. To assist them in their initial "educational" aims, several commands temporarily enlisted the services of Civilian Management Consultant firms. These firms, whose membership included a wide range of both industrial and military experience, researched command problems and the tools available to resolve these problems, and they further assisted the commanders in conducting personalized discussion panels. The panels lasted two days, with from 12-20 senior staff officers and sub-commanders attending each session as active participants. Stimulated by the personal leadership of the commander and the experience and research data contributed by the consultants, (enhanced by the fact that the consultants had no private axes to grind or kingdoms to maintain) participants eagerly sought to learn and they made invaluable contributions to the progress.

Use of management firms, would be particularly desirable (although not an absolute necessity) where our more senior officers are the participants, since discussion would tend to be less inhibited and ideas would be advanced and discussed more freely. This method has the additional virtue of being almost immediately available and comparatively inexpensive, since several excellent firms have already completed extensive research of Army, Navy and AF management problems and procedures, assisting commanders in conducting conferences and schools, and tailored to three and four star level as well as to field grade officer level. We must recognize, however, that valuable as this approach may be, it is only an expeditious supplement to the commander's personal leadership and the technical know-how of his staff. It must be supplemented by internal programs at the command and base level to reach all levels of operation.

In conducting any command educational program and in exercising the management device, through Commanders' Conferences and Executive Control Meetings, it should be remembered that while a broad understanding and working knowledge of management procedures and tools is essential for pointing out individual responsibilities, our activities in the Air Force are so diversified, and the task so large and changing, that we must avoid the mistake of trying to do everything at once. Best results can be obtained by initially concentrating on selected areas of particular interest to the command or installation, until the tool becomes familiar and confidence is gained in the over-all system. When such proposals as mentioned above were discussed informally with three major command Management Analysis Directors, they agreed that some kind of dynamic guidance was needed, but that their personnel were already tied-up in trying to solve current command problems. The questions of more effective management were naturally presented to the Management Analysis staffs, but as expected, each staff reflects the desire of the local commander who might not possess the capabilities of the Executive/Manager, whom we spoke about earlier. In the absence of management firms or the availability of Management Analysis staffs to take on

additional management exercises, I feel there is one additional source of energy available to major commanders, who as yet have failed to make their contribution to the current management effort. This source of technical brainpower and industrial experience is contained in the operations analysis staffs at each major command headquarters. A review of the projects under study by such groups, reveal little continuity in accomplishments or to the over-all Air Force effectiveness which could be said as leading to greater combat capability. I was told that SAC initially used operations analysis to recommend the most effective means for improving flight-operations, and that aircraft maintenance problems were to be their second target. USAFE operations analysis personnel, concentrating with the General Accounting Office, researched a most effective utilization and control of supply inventories, (utilizing monetary inventory accounting as one of the principal management tools), with control of Equipment in Use their second target. Both of these teams at one time planned to expand into other activities pending the acceptance and adoption of their findings. Other commands could well follow this example, determine their own areas of primary concern and initiate the aggressive action that is needed to insure better management.

While it is hoped that HQ USAF will undertake a comprehensive and continuing educational and monitoring program, commanders at lower echelons should not delay the initiation of a management program at their level. The objective of commanders at all echelons is the same - attaining and maintaining an effective military force structure. The management tools to assist them is this effort are already in their possession. Their use has been directed by law, by regulation, and by personal communications of the Secretary of the Air Force and the Chief of Staff. In the event they are not put to immediate and effective use, Commanders and staff officers, regardless of rank and service, must share in the responsibility for failure.

CHAPTER IV

MANAGEMENT TOOLS IN ACTION

General

The Air Force, I believe, can be justifiably proud of the progress made during the past few years in the development and implementation of what may be considered new management tools. While the size of the task and the abnormal difficulties associated with it have precluded anything like 100% effective utilization of the products of the system, we have, nevertheless realized substantial benefits - both direct and indirect - and we have accumulated experience data which, if used, should make possible far more productive results in the immediate future.

One of the most significant contributions over the past few year's operation of the Air Force Financial Management System was the creation of a growing awareness on the part of base commanders and their staffs, that the operation of a base or a major unit was "big business" - frequently the largest single business in the community or state in which it was located. This awareness served to direct the commander's attention toward his management responsibilities and led to a general improvement in the conservation and utilization of AF resources.

As an important by-product, more and more communities, adjacent to AF installations, have come to appreciate that AF installations were "big business ventures" and as such their contribution to the economic growth and stability of the community warranted the same welcome and consideration as would any large commercial enterprise. As an example, the Newburgh, New York Chamber of Commerce report for 1957, which had front page coverage in all local newspapers, highlighted the fact that AF activities in and adjacent to Newburgh and West Point(a city-wide population of 48,000 plus, with an annual budget approximating 1.5 million dollars): (Ref 17:228).

> grew in importance and economic value (during the year) . . . channeled $38,168.401 into Newburgh's business economy, . . . new construction at the base would represent another $2,168,000 . . . one in every 53 employed civilians living within sixty miles of Stewart Air Force Base worked for the Air Force . . . one in every 30 families was an Air Force family. (Ref 18:1).

A fuller appreciation of the economic importance of military establishments to the community, made easier through readily understood and accepted accounting data, can be of major importance to improved community relations, service morale and many other problems which directly affect unit effectiveness. As more detailed and complete accounting data becomes available in the immediate future, commanders should secure benefit, if for no other reason, than from its public relations value.

Real Properties and Funds

The current status and the potential for improved management in these areas has been discussed in broad terms in previous chapters. A considerable portion of the discussion and examples included in subsequent paragraphs dealing with Supply Inventories, Equipment in Use, and Mechanization, is directly applicable to the Real Property and Funding areas, as well.

Supply Inventories

As we have previously noted, the Air Force supply inventory of approximately twenty-four billion dollars offers our greatest potential toward substantial monetary savings and improved combat capability. Efforts at inventory management in the past have been blunted by the sheer mass in number of line items, which exceed 1,624,000 line items, (per Federal Supply Inventory Catalog reference - May 1959) of which 35,000 to 60,000 line items may be authorized for a wing base. The magnitude of the line item problem is emphasized by the fact that only the very largest corporations have line item inventories as large as the average Air Force base. Sears, Roebuck and Co., for example, has an average of 100,000 and J.C. Penney Co., about 25,000. (Ref 19:9). The implementation of monetary inventory accounting, Air Force wide in 1954, which expresses line item inventories and transactions to the common denominator of the dollar, gave us, for the first time, a different kind of a management tool for dealing with this problem.

Our potential in inventory control and materiel utilization is indicated by the fact that independent management firms, specializing in inventory control, contend, and have conclusively proven through tests and experimentation at several large corporations, that even industry's best run corporations can reduce their inventories by 1/3 without decreasing issue availability or as an alternate, with inventory levels remaining at their present level, can reduce by 1/3 the number of requisitions refused, because the supply warehouse is out of stock. (Ref 19: Chapt. I). It is also my belief, based on personal experience as an auditor in this area for the past seven years, that comparable results can be attained on individual bases in a period of one year, and Air Force wide within the next two years. This reduction in assets on shelves or in bins, is no different than the assets contained in stocks funds or in petroleum tanks, and they were reduced by edict alone in 1957.

Ineffective supply management is like an iceberg. The bulk of its costs in dollars and cents and in loss of combat effectiveness are mainly hidden beneath the surface. Only through using the dollar sign as a common denominator, or yardstick can we begin to appreciate its costs, which include the following:

a. Cost of the Item -- this is the top of the iceberg the commander sees when he makes a local procurement. It is frequently hidden by the

fog of "ease of attainment" when he obtains the item from AMC by simply asking for it. It is frequently only a percentage of the true cost.

b. Cost of acquisition -- this includes costs of procurement and requisitioning actions, communications, packing and crating, shipment, receiving, inspection, binning, fiscal, administrative and command overhead, etc. These costs frequently exceed the cost of the item itself.

c. Cost of possession -- this cost has frequently been referred to as a "hot potato" -- "the longer it is held the worse the burn." The annual cost of possession has been estimated by industry to be at 25% per year. It includes: obsolescence, 10%; interest on capital (cost of tax administration and interest and administrative costs of government loans), 6%; physical deterioration or its prevention, 5%; handling, distribution, storage facilities, taking inventory, clerical costs, etc., 4%. (Ref 4 : 114).

d. Hidden costs -- these costs are over and above all others previously listed. Industry estimates that money tied up in excess inventory prevents investment in merchandise that would gross 20% during the same period. The cost to the military is far greater, since its principle cost is not measured in dollars and cents but in an irreplaceable loss of combat capability.

While the cost of ineffective supply management as developed by industry, and expressed in terms of dollars and cents or in percentages, appears to be high, thoughtful consideration clearly indicates that the cost of ineffective supply management to the military is even higher. The cost of the basic item itself is often greater since our technical requirements are frequently so high or original; that we must pay the full cost of basic research and development plus the cost of initial production. The costs of acquisition and possession are almost certain to be higher, since our world-wide requirements, the remoteness and dispersion of our units and unfavorable geographic and storage conditions, markedly increase the costs of administration, communication, transportation, storage, and loss through deterioration. We are certain to have a higher rate of obsolescence since national survival depends on continued advances in technology and high quality of our forces in being and their equipment.

In the final analysis it is the commander who bears the brunt of the high cost of supply effectiveness, since he is the one who is deprived of critical resources that could have been provided with the funds that were wasted. Unknowingly, the commander himself is his own worst enemy in this respect, since he, as the consumer of 85% of our resources, the storekeeper of 20% of the AF stocks, and the custodian of virtually all our equipment, is the individual who is responsible, directly or indirectly, for most of the waste. True, hugh sums are wasted through faulty judgment in selection of weapons system and in determination of materiel requirements, which are not direct actions of the commander. Even here, however, he must share the responsibility, when incomplete and in-accurate base

supply records, unauthorized base stocks and issues, poor supply discipline and multiple requisitions for the same item, all have a pyramiding effect in computing the central procurement requirements of the Air Force. In short, the commander is the cause, directly or indirectly, of most of the ills that beset him in this area.

In eliminating the cancer of uncontrolled inventory, the commander must serve as his own surgeon, utilizing the management instruments provided to him. While most of the benefits which he will realize from his actions will reach him only indirectly, he will nevertheless realize several substantial direct benefits. He will realize increasing monetary savings in his local procurement, since approximately 15% of his inventory is presently locally procured and funded and (finally) supply policy is to increase decentralization of procurement. He will realize substantial monetary savings through reduced supply actions and reduced and balanced inventories, since, as we have noted, the costs of acquisition and the annual costs of possession run high. The commander pays for the major portion of these costs either through his allotted funds or through wasted military manpower, transportation charges, storage or wasted facilities. The average potential reduction of from 1 - 5 million dollars in the inventory of each base, indicated by the experience to date, would mean a substantial annual saving to the commander in his M&O funds, manpower and facilities. As a conservative estimate, every dollar of excess supplies promptly identified and disposed of properly, means a dollar in direct savings in funds considering again the high "cost of possession." Every dollar saved in new procurement, in excess of actual needs means a minimum of two dollars made available for increased combat capabilities, considering the cost of the item, cost of acquisition and cost of possession.

Indirect savings to the commander are equally impressive. Lack of inventory control is a blight that spreads rapidly throughout an organization. When personnel are permitted to be negligent in supply control and utilization, they become slipshod in other elements of the operation. (Ref 4 : 5). Correction of supply deficiencies will result in a general improvement in the overall operations.

The principle indirect saving, and more important than all the other savings combined, is that effective supply control and management will substantially reduce the "reaction" time of our conventional logistics system. Since we do not know when the enemy will strike, or how much of our own strike force will be destroyed before it is able to launch a return strike, or what subsequent military actions will develop, our logistics program must have the capacity to react instantly at all times and under any circumstances in support of the surviving combat forces. We do not have this capacity at present, using WW II type of weapons, and we cannot possibly attain the capacity regardless of costs, if we confine ourselves to the established archaic supply procedures we have known in the past.

The task of attaining effective inventory control will not be an easy one but neither is it a hopeless one. We will have the advantage of industry's cumulative experience to draw upon, as we have in the past, plus the tremendous assistance afforded by base level mechanization, and the extensive use of electronic data processing machine equipment with their high speed computers at different echelons of command. In the event we falter in the task, which we assume by reason of logic and compelling need will not be case, we may be spurred on by the fact that the direction of our actions has the blessings of Congress and also the Department of Defense.

In the past, with over one and a half million individual line items stored in hundreds of locations throughout the world, with countless supply transactions taking place simultaneously, with a procurement and shipping pipe-line of several years, with changes in Air Force planning and operating programs taking place continuously, and a hopelessly inadequate stone age manual record-keeping system, it was utterly impossible to realistically determine what we had, where we had it, what was on order, or what we needed. Even at base level, the commander, with 35,000 to 60,000 line items in his supply inventory, and countless training and operating problems demanding a priority of attention, was faced with an almost impossible task.

Through the use of the common denominator of the dollar, which has been required in one of the functions of the integrated accounting system, namely, Inventory Accounting Monetary (IAM), the commander can quickly obtain a general picture of his supply status by scanning sub-property class summaries, instead of trying to make an analysis by individual line items of supply. While monetary accounting data and the system has been subject to much controversy and will never supplant individual line item analysis, it does vastly simplify the task of the commander and his staff by blocking out large areas where conditions appear generally satisfactory, and spotlighting areas which appear to be in, or headed for, trouble. It highlights a crisis in the making and provides the opportunity to do something about it before it becomes too serious. (Ref 1 : 213-218).

I will present only a brief outline of the monetary inventory accounting system and its application to base and command level inventory problems, since this subject is excellently presented to commanders in AFM 67-10, dated 1 March 1956. This manual is the most readable, interesting, and understandable military publication I have had the opportunity to read in a long time. While normally I would shy away from a military manual as if it were a plague, I cannot praise this publication too highly. A little over two-hundred pages in length, it can be absorbed in one afternoon to provide a comprehensive knowledge of supply control and management that would take weeks of research to uncover.

In explanation, the IAM system is nothing more than a logical extension of existing supply accounting procedures. Its operation, while involving a hugh volume of data, is relatively simple. It requires that all supply transactions show a dollar value, as well as quantitive totals. In initiating IAM, the inventory on hand was priced out (at standard prices provided by AMC, or local purchase price, as applicable) to show dollar value. The value

of the then authorized Stock Control level, was also priced. Supply transactions, subsequent to the initial inventory, were priced as a matter of routine.

In order to pin-point probable problem areas and to provide meaningful experience data to aid the commander in his decisions, monetary inventory data was originally accumulated by sub-property class with a breakout of significant segments to include the following:

1. Value of Inventory
   - Prepositioned and War Reserve Stocks
   - Project Materiel
   - Operating Inventory
     - Servicable Stock
     - Reparable Stock
     - Work Order

2. Value of Increases and Decreases
   - To or From Base Organizations (other bases, depots, other agencies)
   - Base Manufacture
   - Local Purchase
   - Reclamation and Salvage
   - Donations

3. Value of Repair Cycle Transactions
   - Reparable Stock
   - Reparable Turn Ins
   - Returns to Service Stock
   - Work Order
   - Un-reparable

4. Value of Authorized Stock Levels

5. Value of Declared Excess
   - Initial
   - Upon Disposition

It is significant that such additional "breakouts" as have been added since the system was originally implemented, have been added at the insistence of supply managers, materiel staffs, and commanders (rather than by the accountants who already had their hands full) once they began to experience the system's benefits and realized its potential.

Since existing supply directives require that requisitions, purchase orders, and other supply documents show location, source, disposition, purpose and pertinent supply information, as well as the unit price, the extension of the supply system to provide monetary data is both logical and basically very simple. From a procedural standpoint it can only be truthfully said to require:

1. Supplementing the general, frequently hazy, and incomplete narrative information contained on supply documents with a numerical code to insure completeness and consistency, which also facilitates the processing function.

2. Review of supply documents for their completeness and accuracy of information shown thereon. (This review was required previously but it was frequently performed in a haphazard manner).

3. IAM merely required the extension of prices and quantity to show total value.

4. By the system, consolidation and summarization of monetary data was accomplished.

IAM operations to date confirm the simplicity of the original procedures by mechanization measures now adopted at most bases to handle the hugh workload of coding, extension work, consolidation and summarization requirements. It is evident that, as a prerequisite to the full success of the operation, the commander must insist that the information be current in the system, and that using units and base supply personnel be held responsible for the accurate and complete information on supply documentation. It must be remembered, that no matter how good the system , there will always be some persons who will "fight the problem" and say the products are worthless due to the numerous potential human failures inherent in the operation. This is like saying, all medicine to be good - must be a certain color which is agreeable to the user.

Perhaps the most significant contribution of IAM in the first year of operation, was to highlight the critical and shocking deficiencies in base supply operations. Rapid turnover of supply personnel, coupled with an almost complete lack of supply training for the majority of the assigned strengths in supply offices, together with critical under-manning, resulted in inaccurate and incomplete stock records, incomplete and inaccurate transaction descriptions on supply documents and frequent elimination or circumventing of established supply procedures. This situation was particularly prevalent at overseas bases because of their rapid activation and build-up under adverse conditions, and the inability to hire qualified indigenous personnel to supplement or offset the shortages and weaknesses of military supply personnel. Although considerable progress in this area has been made by major and local commanders, in alleviating this condition, only positive, aggressive action at the HQ USAF and AMC level can provide a satisfactory long term remedy. This can be done through improved manning, training, and stability of assignment in the supply field, coupled with increased emphasis and priority on the furtherance of base mechanization programs. A more equal distribution of military rank and civilian status to the supply field might be more profitable a move than any of the management tools so far designed, but this theory is beyond the range of this paper.

IAM operations emphasize that while our supply operation itself is

huge, and the potential monetary savings are large, the bulk of our savings will come from a few concentrated areas. The system enables the commander to readily identify and direct his efforts, or the efforts of his staff, toward those areas and thereby prevent him from giving a disproportionate amount of time to areas of lesser return.

The heavy concentration of value in a relatively few sub-classes of supply is illustrated in a TAC 1958 IAM Report, covering approximately 400 sub-classes:

Number of Sub-Classes	%Total Sub-Classes	% Total Value
4	1	31
15	4	52
78	20	85
400	100	100

A later TAC report, which reflects the increase in number of sub-classes due to incorporation of the new Federal Supply Catalog groupings, covered approximately 600 sub-classes and indicates that 40% of the sub-classes contained 98% of TAC inventory value. The concentration of value in a small number of sub-classes is generally more pronounced for an individual base than for command totals.

The heavy concentration of value in a single supply category, was also emphasized in many of the base inventory reports of various commands which were reviewed in developing this point. This concentration, with direct comparison to total line items in that class(based on informal estimates developed at HQ AMC) is shown below:

Category	%Total Line Items	% Total Value
I (over $500)	2	12
II ($10-$499.99)	20 (22)	78 (90) accumul.
III (under $10)	78 (100)	10 (100)

It is important to note that almost 80% of the value of base-wide inventories are concentrated in Category II. (This distribution differs materially from depot inventories because of the difference in stockage authorization and supply mission). Related USAF supply reports indicate that there is comparatively little "excess" of Category I items at base level. This would indicate that AMC's concentrated effort to control "High Value" items has met with considerable success and suggests that the next step might be a program directed toward better control of the substantial values contained in the Category II supply group. It would likewise appear that the existing controls which were recently modified on Category III classes of supply items, was a very wise move in view of the volume of transactions involved in comparison to their aggegate value.

Category III representing but 10% of the base supply value, includes nearly 80% of the line items. While base stockage authorizations are slightly higher for this category than for Categories I and II, and reporting requirements are somewhat reduced, they nevertheless, generate exorbitant acquisition and reporting costs, completely out of proportion to the cost of the items themselves. With the exception of very fast moving items, a base stockage authorization of one year should be authorized for all Category III items, including those centrally procured. Pending the attainment completely, of worldwide base mechanization, item reports to higher headquarters should not be required for this category more often than once annually. This recommendation, would allow even greater freedom than is currently being followed of reporting all Category III items in one total. It may be emphasized again however, that even the above recommendation, which may never be adopted, could not have been thought of without the analysis of inventory accounting monetary type of information.

Thus, in understanding the IAM data available and determining appropriate courses of action, base commanders can benefit from the experience of their staffs in the operation of the Clothing and Commissary Stock Funds, which have been operating sucessfully at base level for the past several years. Although these stock funds concentrate on relatively small areas of supply, as compared to the IAM task, their operating and management principles are similar. (I have purposely avoided the added fiscal details of the revolving fund, which we need not concern ourselves with at this time). As an example of the potential to be achieved through dollar controls and presentation, as provided by IAM and Stock Funds, SAC, in the face of a substantial strength build-up, reduced their Clothing Stock Fund Inventory from $7,000,000 in 1952 to $625,000 by December 1955. Service to the customer was materially improved and operating costs per dollar of sale were reduced by more than fifty percent. A more recent example of outback, based upon information reflected in monetary accounting systems, was the across-the-board reduction by 20% in petroleum inventories held in storage at base levels during June - December 1957. Similar reductions in other Stock Funds followed when managers realized the amount of funds that were tied up in excess inventories.

Probably the most significant red flag provided by IAM is the three-way comparison of base issues to operating inventory and to authorized stock control level. In analyzing a Quarterly Report covering a sub-property class supporting a static operating program which may be authorized a 90-day Stock Control Level, we know that all three figures (Issues- Inventory - and Stock Level) should be approximately equal. (If the SCL was for 30 or 60 days, or the operating program for the next period was to increase 50%, we would mentally interpolate). If all the figures are equal, we can assume that in general the sub-class is not in any serious difficulty. If the three figures are not equal (approximately), we must look further to locate the reason for the difference. To do this we would scan the individual items, beginning our search of items with the highest monetary balances. Inspection may show that the SCL has not been properly computed; it may show that War Reserves or Project Materiels have not been properly identified and are erroneously included as Operating Stock; it may reveal

a considerable amount of dead stock or current supplies in excess of our needs. Early IAM data, as an example, exploded the belief of many supply officers and commanders that the high value of the base inventory was mainly due to the conversion of old model or type of aircraft to new. Very few of the old spare parts and supplies related to former A/C were found to be useable on the new A/C; new supplies had to be pre-stocked; and disposition of old supplies was very slow. All this was true, except that the monetary value of these items represented only a very small fraction of the total monetary value of the base inventory. The bulk of the monetary overages of many of these bases, as highlighted by the uses of IAM, was concentrated in housekeeping and technical service supplies. (Ordnance, Quartermaster, Engineer, etc.) In any event, IAM will quickly tell us whether something is wrong in a specific sub-class, and drastically narrow our search to gain a general understanding of our supply position and potential problem areas.

In the event we desire to learn the status of Reparable Stock and perhaps the effectiveness of our maintenance program, we might again turn to a Quarterly IAM Report. By visual inspection of the report, we can determine the number of months backlog for reparables, by comparing the Reparable Stock Inventory with the rate of Returns to Serviceable Stock. We can determine whether depot or contractual assistance is required or whether a re-scheduling within our own shop is a possibility. We can determine whether units are actually turning in reparables when they are drawing replacements. By comparison with past reports and summary reports of other bases, or with AMC norms, we can get an indication as to whether our units are adhering to prescribed maintenance procedures, "bench check" etc., are turning in items for maintenance prematurely, or are holding them beyond prescribed periods.

IAM data is our most effective yardstick for measuring the status of the over-all supply program and major segments of the program. Having determined what the stockage objectives should be for various segments of the inventory, war reserves, etc., and what excesses or shortages are indicated, we can quickly make a visual check of progress and disposition, and thus be alerted to potential problem areas.

The commander's analysis of his base supply status can be accomplished in a few hours each month, after he has become acquainted with the capability and limitations of his new tools. This can be accomplished by determining what he and his staff should look at, and having this data extracted on a recurring basis from more detailed reports, and presented in chart or graph form. Initially, he should confine his monthly review to the large dollar amount areas and the critically dangerous areas, as revealed by normal supply and comptroller staff analysis. As an order of magnitude, he could examine a chart, kept up to date monthly, showing the over-all supply picture and the 10 to 20 sub-property classes (out of several hundred) which comprise from 50-65% of his base inventory monetary value. In addition, each month he could either briefly scan one-third of the remaining sub-classes (so as to scan them all every three months), or, as an alternative, could have presented for his scanning, all (or a third)

of the sub-classes that deviate more than 50-25- or 10% from a norm determined by him or prescribed by a higher headquarters.

Having reviewed IAM's capabilities we should also take cognizance of its limitations. The commander should be fully aware of these weaknesses so that if he cannot take the necessary actions to eliminate them, or to reduce them, he will at least consider them in his valued judgment. I have often heard commanders express their feeling in this regard by advising staff members to confine their use of IAM to its capabilities, or, plan to head for disillusionment and perhaps real danger.

IAM's major deficiencies are directly attributable to the fact that the system, for the present, must be tailored and restricted to the limited capabilities of a manual supply operation and a manual accounting operation as well. True, some bases throughout the Air Force have begun to mechanize, but in the main this mechanization is simply no more than doing by machine the same operations that were formerly done with people. This limitation permits us to accumulate only net overages or net shortages instead of gross overages or gross shortages. When IAM indicates there is something wrong with a sub-property class we may be assured that there really is something the matter. However the degree may be understated and there may be likewise instances where a sub-class appears to be in order, but in fact, there is hidden trouble. Since only net overages or shortages are indicated, it may be possible for a sub-class to have offsetting overages and shortages ($100,000 over and $100,000 short) and appear to be in perfect balance. In like manner, balances with $100,000 over and $60,000 short, or a net overage of $40,000 would be an understatement and the shortage would not be indicated.

This shortcoming is significant and commanders should exert all the resources at their command to implement a true base mechanization program at the earliest possible date. (Most bases reported to USAF in December 1958, partial mechanization, or like HQ TAC - use of "odd" equipment like Burroughs machines, which are one step removed from a manual operation) With prior awareness of this problem, machine supervisors can provide the commander, in less than 20% of the time and manpower now required for an incomplete appraisal, the full and true picture of the base supply status. Pending proper mechanization, the commander can either accept the limitation, knowing that half or three-forths of a loaf is better than none, or he can partially fill the gap by scanning stock record balances or Stock Balance and Consumption Reports for those items having high monetary balances, to ascertain if sizeable offsetting amounts exist.

Another temporary shortcoming in the use of IAM data, is not attributable to the IAM system, but rather to the shortcomings in carrying out existing supply procedures. While the deficiencies and discrepancies in our supply operation have been highlighted by IAM, which serves to show the effectiveness of IAM as a management tool, these discrepancies are carried forward into the IAM data itself (since IAM merely repeats, in the common denominator of the dollar, what the supply records show in quantities). Accordingly, before major decisions are made in problem areas,

portrayed by IAM, it may be necessary and advisable to check the supply stock records to first ascertain their validity. As the reliability of supply records is improved, comparable reliance can be placed on IAM without going back to verify the source data. This too can easily be achieved through mechanization.

We should anticipate that in the not too far distant future, after IAM has assisted us in identifying and disposing of dead stock, and other excesses for building up fully reliable consumption data, it will be our principal instrument for preparing the materiel budget, demonstrating our management capability, and justifying our budget requirement. In the meantime, raw IAM data, as it currently exists represents a real possible danger if mis-used by higher echelons or external agencies who may not be fully aware of its present limitations or in the fact that it tells only a part of the story. The commander must insure that his IAM report tells the full and the correct story of his operations as nearly as he can depict them and he should accompany or follow up his reports with narrative explanations, where required. He may check certain things himself contained in the accounting system, one; to insure that War Reserve and Prepositioned Stocks and Project Materials are not included as Operating Stocks, or, that obsolete, obsolescent, and limited-use stocks are separated and identified with current excesses for disposal actions.

To facilitate the field commander's task, HQ USAF and HQ AMC could think about modifying existing supply and IAM procedures to provide a more positive, complete identification of all obsolete or obsolescent aircraft - equipment - and supplies, now held in inventories for the contingency of U.S. participation in "limited" operations in remote or backward sections of the world. There are other reasons that could be mentioned for placing aside items and weapons like first line jet A/C, but unless this identification is complete and current, we dangerously overstate our capability for major combat operations and continually jeopardize favorable consideration of our budgetary requirements. In addition, immediate, priority action should be taken by all major commands to insure that base mechanization, transceivers between installations, depots and major command headquarters for electrical transmission of volume supply data, and high speed computers at strategic supply locations and selected major commands are installed and fully utilized as promptly as possible to reduce our supply reaction time and enable us to provide the true, complete story of our supply requirements and status.

In summary, IAM is a most practical and useful management tool. The early deficiencies which it has highlighted in supply procedures and operations, while requiring caution in the use of initial (raw) IAM data by itself, serves to emphasize IAM's immediate contribution and its vast potential. This potential will be realized only when supply activities are completely mechanized at all echelons so that attention can be directed to: modification of certain supply concepts and classifications, a further reduction in the number of General Ledger accounts which are used to reflect supply transactions, and a revision of the present dollar

inventory reporting requirements which will materially contribute to a simplification of IAM procedures. In the meantime, most thinking individuals will admit, some reluctantly, that this management device represents as great an advancement in inventory management as did the steamship over the sailboat in the field of transportation. Commanders should use it to the maximum of its present capabilities, while striving to refine its products and mechanize its operation.

Equipment in Use

The Air Force has approximately twenty eight billion dollars worth of equipment in the hands of using units. (Ref 6 :7). This area is second only to "on the shelf" inventories, in size of potential monetary savings and potential increase in combat effectiveness. As we have previously noted, the problem of attaining effective control and management of equipment in use is similar to that of supply inventory control, since it involves a large number of line items and requires the use of the "dollar," as a common denominator. While there are considerably fewer equipment line items than in the supply inventory, there are vastly more control segments involved. Controls must be established in thousands of individual units, whereas the number of supply accounts is considerably less than one thousand.

Notwithstanding the fact that the total monetary value of Equipment in Use was first reflected on installation, command, and Air Force Balance Sheets as of 30 June 1954, only a very limited use has been made of Monetary Equipment in Use data or procedures, to date. The principle reason for this was that priority has been given, and properly so, to the solid establishment of the over-all integrated accounting system, and to IAM, as the segment offering the largest potential payoff. Now that the bulk of this phase of thinking has been initiated and partially accomplished and some of its products are ready for effective management use, we should give increased attention to Equipment in Use, as the area of second largest pay off. While involving thousands of commanders, staff officers and supply and accounting personnel, and requiring an extensive "educational program", our efforts to establish control of Equipment in Use should be facilitated by related experience in the monetary accounting field, and by virtue of the fact we are dealing with only about a fifth or sixth as many items as we had in IAM.

The Equipment in Use problem breaks down into two major areas: Aircraft and Missiles, and all equipment other than aircraft and the basic missile weapon. Although aircraft and missiles represent the major portion of out total equipment value, because of their high unit costs and identification, they constitute by far the easiest management problem. Central assignment and accounting for individual aircraft is already in effect, and I understand a similar program is being instituted, or in the thinking stage for weapon accounting. Reasonably complete and accurate monetary data is said to already exist in this area. This information, therefore, should be put to immediate use, as a supplement to item control, to emphasize the

huge investment in obsolescent aircraft and to assist in determining whether the continuation of this large assortment of limited service aircraft and missiles in our active inventory is justified in the face of the high cost of possession, maintenance, and operation. As we have previously noted in our review of supply inventory operations, those "weapons" held for possible use of other friendly countries or for limited operations, should be separately identified.

The second area covering a $14 billion dollar investment in Equipment in Use, other than aircraft and the basic missile weapon, but including "weapon support equipment", is a far more difficult problem, but its potential pay off is great. As was the case with IAM, monetary equipment accounting has highlighted shocking deficiencies in the Equipment in Use records of using units. Many unit records were found to be almost worthless. While there has been some improvement, the records of many units are today still inaccurate and incomplete.

Monetary data will not provide all the answer to this problem on an AF-wide basis or even a major command basis, since it presently represents but one leg of a three legged stool. In addition to the value of equipment on hand, currently reported, we need to know the value of equipment authorized and the commander's estimate of equipment required in order to have an effective management instrument. Because of the unit record deficiencies, known to be prevalent throughout the Air Force, frequent substitution of items, changes in UALs, reorganization of units, hoarding, and lack of effective command control, equipment on hand frequently bears little resemblance to that authorized or that authorized to that required. An independent spot check of unit records, by commands which was made by USAFE with representatives of the General Accounting Office, April 1957, revealed examples as follows: (Ref 22:Supp#1).

Unit	Authorized	On Hand	Required
A	$ 27,000	$ 336,000	?
B	13,000	82,000	?
C	17,000	67,000	?
D	167,000	310,000	?

The naked figures, do not in themselves, solve our equipping problem. They do, however, direct the commander's attention to a very real problem and suggest the commander seek the reason for such disparity and the solution. Failure to do so, directly jeopardizes the combat effectiveness of the Air Force, and leaves the door open for "crash", so called "corrective", actions and reduction in procurement authorization, by higher echelons and external agencies. This is particularly dangerous since analysis of preliminary and admittedly incomplete monetary reports, indicates that despite substantial total overages in many individual units tested to date, a general shortage of approximately 25% of Unit Mission Equipment, exists in these same units. It further suggests that

a considerable portion of excesses in units may consist in obsolete or obsolescent equipment (particularly support equipment) which should be separately identified so as not to penalize the individual unit or the Air Force. Analysis of individual units may reveal that the "on hand" figures were extracted from incomplete or inaccurate unit records and that they bear little resemblance to items physically on hand; that the commander's list of authorization has not been kept current, or if kept current it in no way represents his requirements; that the apparent overage is not a true overage, being caused by the uneconomical substitutions for authorized, but unavailable items; or that true overages exist over and above both authorization and requirements, which should be promptly disposed of to eliminate the high cost of possession and maintenance. Whatever the reason there is trouble ahead if the situation is not corrected. No agency can realistically determine or justify procurement requirements on the basis of information such as shown above.

A true picture of our Equipment in Use status, our requirements, and the means of obtaining future control and management can be had, in short order and with a minimum of effort, in a single stroke. The method of accomplishing this is relatively simple but it requires the positive leadership of the commander and cannot be accomplished without it. For maximum effectiveness the program should be sponsored and supervised by the highest echelon of command in the Air Force, HQ USAF, but it can, with somewhat more effort, be accomplished by Major Commanders with the assist of base and unit commanders.

The basic elements of the program would entail:

1. The taking of a wall-to-wall physical inventory of equipment in use under the supervision of unit commanders. The inventory will be used to establish corrected unit equipment records and to establish corrected monetary records at all command levels.

2. Preparation of separate reports by each unit for each UAL (using a standard format) showing by quantity and by monetary value equipment:

(a) Authorized
(b) Authorized but Not Required
(c) Required but not Authorized
(d) Total Requirements
(e) On Hand

Substitute items, on hand, should be fully identified. Two reports should be prepared for each UAL, a detailed item list to be used in comparing and evaluating item requirements, and a summary report showing monetary value only to provide comparative analysis at higher headquarters and to spot-light major problem area which require especial attention. If condition or records permit, basic formats should be prepared centrally by major commands for each UAL, showing number and value of items authorized, and the unit price. Central preparation utilizing commercial accounting machine

equipment, or EAM punch cards, is easier than manual preparation by units, avoids duplication of effort, insures greater accuracy (subject to unit correction) and relieves the unit commander of a tedious manual chore.

3. The reviewing and recommending actions would remain the same, that is by unit commanders, base equipping review boards, base commanders, intermediate commanders and major commanders, as appropriate. (APPENDIX A)

Effective with the date of the physical inventory, it is suggested that the base accounting office expand its IAM accounting activity to include monetary equipment-in-use, thus relieving individual units of this requirement. (For many years the requirement to account for Equipment in Use in the integrated accounting system (AFM 177-1), was not considered, then a change to the AFM 177-1 series "suggested" that token amounts be portrayed in the base general ledgers. Most commands merely posted arbitrary amounts to reflect the value of UAL property and Equipment and revised this figure once a year to show compliance with accounting instructions.) Since the base accounting unit already receives virtually all supply documents which now affect Equipment in Use accounts, and the commander can arrange for them to receive the remainder (Reports of Survey, Salvage, Statement of Charges, Droppage Allowances, Turn-Ins, etc.,), the additional task can be performed by a comparatively simple extension of existing accounting machine or EAM procedures. This action will reduce duplication of effort, increase accuracy and timeliness, relieve units of an administrative burden, and provide an effective means for periodic checks of unit records, for completeness and accuracy.

In the year of 1957, the United States Air Force in Europe (USAFE) recognized the importance and confusion existing in the stop and go policy of handling equipment contained on unit authorization lists, and they made a special study of those items of supply - of what they considered - low unit value. In order to determine the impact of these minor items upon the Air Force supply and accounting systems and the savings that might accrue if items costing less than $10. - were excluded from all UAL procedures, the General Accounting Office was invited to participate in the study. This study was conducted at twelve air bases in the European theater, at staff and operational levels, encompassing UAL's and related documents, together with discussions and consultations of Equipping Review Boards, base commanders, directors of materiel, base and organizational supply officers, clerical employees, who all generally agreed to recommend dropping UAL supplies having a unit standard price of less than $10. In that same year AMC and USAF favorably indorsed this recommendation which eliminated approximately 1/3 of the items currently included on UAL's, and caused a reduction in the following administrative areas: the time expended by personnel in the preparation of UAL worksheets and equipment in use records, in the volume of mandatory statement of charges, in the volume of mandatory Reports of Survey, in droppage allowance procedures and in establishing the commander's materiel requirements. This study case is cited to show that this same area of savings could have portrayed itself to any discerning

manager, or commander, if only the monetary equipment records maintained by units had been reliable, and the information had been presented in some orderly and understandable manner. (See APPENDIX A).

In summary, Monetary Equipment in Use accounting, can be a most useful and effective management tool. While its main contribution to date has been to simply call attention to a huge investment in equipment, it can be quickly and easily applied to unit, command or Air Force wide equipping supply problems. Its potential will be realized only through the personal leadership of the commander in educating his people as to the possible monetary and combat contributions of this area, and by personal supervision of the initial "comprehensive survey," the accounting simplifications and the management applications, as outlined above.

Automation

General E.W. Rawlings, former Commander of HQ AMC, in a recent article in the Air University Quarterly Review, presents a conclusive case for "automation," which he defines as "substitution of machine energy, mental or physical." The urgent requirement for "mechanization" throughout the Air Force, starting with base level, which has been stressed in this study, is also encompassed in General Rawling's definition of automation, and emphasized throughout his article. The following points, emphasized in this message, are paraphrased at this time to provide a comprehensive picture of the need for automation, the over-all program to achieve it, and its application and benefits to the field commander:

1. Airlift plus automation equals fast and flexible air logistics.

2. Logistical flexibility is the capacity for supporting military forces at the same speed with which they can be employed tactically or strategically.

3. The high cost of the item itself, the cost of acquisition and possession, and the high rate of obsolesence due to rapid technological advances prohibits extensive stockpiling. Vulnerability of targets in overseas area particularly rules out extensive stockpiling in those areas.

4. The average speed of supply to the American troops in the American Revolution was 1-1/3 miles per hour . . . in World War II about 3-1/2 MPH . . . an average of 106 days was required for delivery of an item requisitioned by forces in Germany.

5. 80% of our present support cycle is consumed, not in transport, but in transmitting and processing paperwork and processing the materiel itself. Only 20% of the support cycle in consumed by transportation.

6. Automation is an absolute. A little of it is not practically

effective. Applied in patchwork fashion, its power is diffused and dissipated. Complete systems must be automatized and synchronized if the whole tempo of output is to be accelerated. Automation, systematically applied throughout the preponderant processing phases - permeating our communications, data processing, inventory control, materials handling - can galvanize the whole support cycle into new life.

7. Automation's major contribution will be, first, and of primary importance -- a substantial increase in our operational effectiveness . . . secondly economy in our logistics . . . thirdly, increased depth of defense through a stabilized and infinitely more productive industrial potential. More specifically it should eliminate stockpiling by quickly focusing materiel on given areas; eliminate manpower bottlenecks; provide stable, predictable expansion factors; save in manpower; save in cost of equipment; and save in initial materiel investment through better determination of requirements and shorter pipeline.

8. Automation is divided roughly into five broad areas of operations: (1) data processing (2) communications (3) inventory control (4) materials handling (5) manufacturing. Instantaneous, accurate and inexpensive communications between using units and the supply depots is an absolute necessity in order to realize the full benefits of mechanization. This will be accomplished by "transceivers," a desk-size transmitting and receiving device which transmits electronic impulses from coded card impressions over hundreds or thousands of miles to another transceiver, which punches an identical card at the receiving end. This system, installed between AMC installations in the ZI, is expected to reduce ZI pipeline time by 10-20%. It is scheduled to extend to overseas installations, using radio connections.

9. Inventory control is always the potential quagmire of a logistics system. We cannot safely trim inventories to the most economical minimums unless our stocks are completely and immediately at our command at all times. This is impossible by manual methods which generate a vicious cycle -- the requisition cycle is so slow that it tends to accumulate excesses and imbalances - the more ponderous the control machinery becomes, the less accurate and and timely is its reflection of the data which influences management decisions concerning requirements, distribution, transportation, etc. Electronic data-handling, besides radically shortening pipelines, will greatly increase precision in developing requirements.

10. In the calendar year 1954 alone the Air Force disposed of 575 million dollars worth of surplus material, much of it equipment which had become obsolete or which previously been required to support weapons that had become obsolete. While the entire sum cannot be considered waste, any more than hospitalization insurance is

a waste in a year when illness does not strike, the cost of obsolescence can be drastically reduced through more accurate knowledge of inventories and requirements and a shorter pipeline, all of which can be attained through automation at a small fraction of the cost of current surplus. (Ref 8 :extracts).

Base Mechanization

The application of mechanization at base level, the benefits realized to date, an indication of its potential, and the reaction of commanders and their staffs to mechanization are outlined in a recent HQ USAFE report. This report, which reflects the general tenure of reports of other commands, as well as of numerous base commanders and their staffs, has been compiled for presentation in this study. Their over-all opinions are as follows:

> Air bases at which mechanization has been in progress have obtained immediate management benefits as a result of introduction of mechanized Supply Accounting procedures. Principal among these were: accuracy of stock records; capability for more effective production control; substantial reductions in reporting workloads; controlled, effective and rapid requisitioning; accurate mechanical computation of stock levels; and more systematic analysis of supply activity. Office space and office equipment savings were also observed in each of the locations where machines had replaced the former manual system . . . local Wing Commanders and their staffs generally reflected interest, enthusiasm, and the desire to advance in the program as rapidly as possible. The development of a healthy spirit of competition . . . leading to rapid and successful transition to the new systems was observed by the team. (More specifically)
>
> a. Mechanical computation of stock levels and re-order points, in addition to the obvious advantages of speed, has yielded significant improvements in accuracy . . . the average time required to perform the necessary computations has been reduced by over 75%.
>
> b. Requisitions are now prepared mechanically at the rate of two (2) machine hours per 1,000 line items versus forty (40) man-hours for the same workload when performed manually. Requisitions are processed for all classes daily, resulting in a more level distribution of workload.
>
> c. A back-order listing is now furnished each unit on a regular basis for review, assuring that requirements are current for eliminating follow-up action by each organization.
>
> d. Manhours required to accomplish the inventory cycle have been reduced to approximately one-third of that formerly required. Inventory Count Cards are mechanically produced, showing location of each item and arranged in bin sequence.

e. Excess item listings are prepared by machine with corresponding decks of cards. This has been directly instrumental in a reduction of personnel spaces.

f. Maintenance of changes of stock lists at bases, previously unsatisfactory because of backlogs (sometimes as long as four months), is now accomplished by machine listings and they are current and accurate.

g. Supply data is complete, uniform and accurate when mechanized, since unit price, status codes, type procurement (LP CP), Cost Category, etc., are uniformly contained in the cards.

h. Through the use of a daily transaction register, automatically produced by machine processes, supply officers maintain accuracy and production control. They estimate that 98% of the errors previously made on stock record cards are now discovered and corrected by this procedure. Above all records are current; the average percentage of inventory error has been reduced from 2.4% to less than one percent.

i. The system provides positive control of voucher numbers by actual line item as an aid in tracing all vouchers throughout the system.

j. Stock Balance and Consumption Reports are mechanically prepared . . . a deck of punched cards is forwarded to the depot with the report. Workload has been substantially reduced at both base and depot. (Note: A MATS report, states machine listings of SB&C reports has produced a 90% savings in manhours).

k. "On the Job Training" of a posting clerk can be accomplished in five days, compared to 90 days for the same level of proficiency under the manual system. In addition, errors of a trainee are quickly caught through the use of the daily transaction register.

l. Reduction in personnel and reduced space requirements for mechanized supply records has provided more space to remaining personnel and has resulted in over-all reduction in space and office equipment requirements.

m. With substantially all the data required by IAM and Expense Accounting, already available in the stock record balance and supply transaction cards, IAM and Expense requirements are met as a virtually cost-free by-product. Substantial savings in personnel will be realized as well as improved accuracy and timeliness.

n. Increases in workloads can be absorbed by machine units without additional personnel requirements in either the machine facility or in Base Supply. The workload generated by the Federal Catalog Program has been readily absorbed at mechanized bases; one base absorbed a 33% increase in supply activity, without any increase in personnel required for the smaller manual operation.

o. At four bases where mechanization of supply has been completed, an average of 25 personnel spaces has been withdrawn from the Base Supply strength allocation, while benefits previously enumerated were realized, four additional spaces were withdrawn. (Ref 25:Rpt).

The direct and substantial contribution of base mechanization to a unit's combat effectiveness, to improved economy of operation and substantial monetary savings, is thoroughly documented and dramatically demonstrated by the article and the report cited above.

My experience in FEAF and my observation of several other commands is that, almost without exception, where commanders have made a one-half day visit to a mechanized base they have become enthusiastic disciples and have later insisted on some kind of mechanization for their own base. In several instances, to gain priority for their base, commanders have voluntarily surrendered manpower spaces in advance of receiving the equipment for such mechanization. (This move is going away out - but it happened at Langley AFB). With mechanization of base supply alone averaging a saving of from 25-30 spaces per wing base, while producing tremendously improved supply information in a small fraction of the time required for a manual operation, and with positive indications of substantial savings and improved results in other areas, neither the individual commander or the Air Force as an entity can afford to bear the continued loss of manpower, materiel, money, and combat effectiveness inherent in manual procedures.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

Summary

In the course of this paper we have considered the following significant items which directly affect our military requirements and capabilities:

1. The gap between our combat potential and our logistical capability has increased substantially as we have progressed into the jet-nuclear - electronics age. The gap and the ultimate danger to our national survival is greater now than at any time before in our history. While our logistics speed lagged somewhat behind the speed of our combat potential in prior wars, it is significant that it was not materially slower than the most potent enemy threat - the ground force! It is also significant that our principal materiel bases as well as the bulk of our combat forces, enjoyed virtual immunity from destruction by the enemy. Today our most potent destructive force - and even more important- our enemy's most destructive force, travels presently at the speed of sound, and soon will travel at a far greater speed - perhaps the speed of light. The enemy is capable of delivering explosive power one million times greater, pound for pound, than the conventional explosives of WW II, directly on our military and industrial bases. Our logistics system, meantime is still not capable of delivering any significant amount of logistical support at speed appreciably greater than the average speed of 3-1/2 MPH pf WW II, even if permitted to operate unmolested by enemy action.

2. Since, in accordance with our historical National Policy, we will not strike the first blow, we risk the devastating effects of a surprise nuclear attack which can destroy a significant part of our own nuclear striking force. Even without the surprise element, our defensive capability to save our air bases and military supplies from destruction is, at best doubtful. The need for logistical flexibility to insure the immediate effective utilization of all resources available to us is immeasurably greater than ever before in our history.

3. While our potential enemy is likewise faced with a requirement for improved logistical flexibility, (defined by the former commander AMC as "the capability for supporting military forces at the same speed with which they can be employed tactically or strategically"), his problem is not nearly so great. His initial advantage of initiative and surprise drastically reduces the logistical requirement for the first attack, which in itself could be decisive. His traditional disregard for human life and misery reduces his long range requirement for logistical flexi-

bility. The dictatorial control he now exercises and the tremendous concentration of his natural resources on his military requirements gives him a head start, and an increasing advantage in the race to attain logistical flexibility.

4. Our slowness in attaining the degree of logistical flexibility we require is attributable to many things, including:

a. The relatively small percentage of our total national resources we devote to meeting military requirements. While it is recognized that to devote an exhorbitant amount of our resources to military preparedness on a continuing basis, could result in defeat of two of our National Objectives, "Maintenance of our Way of Life" and "Maintenance of our Standard of Living," it is doubtful that we are even close to this point.

b. Lack of appreciation, throughout the military establishment, that our logistics capability is seriously deficient and could lead to our defeat.

c. Failure of commanders to appreciate and discharge their responsibilities in this area.

d. The size and complexibility of the military establishment, operating the largest single business in the nation, and deployed on a world-wide basis.

e. The sizeable and innumerable difficulties inherent in converting from an Army parasite to an autonomous agency, while attempting to simultaneously develop, implement, and utilize the tools required to control and manage an organization alternately subjected to cut-backs, participation in brush-fire wars, expansion, "crash" programs, and other retarding external actions.

5. Logistical deficiencies can be divided into two major segments. The first, transportation, representing twenty percent of our supply cycle time, has not been discussed in detail here since the provision of sufficient high speed aircraft and air transport is the primary responsibility of higher echelons and external agencies, rather than field commanders. Provision of large numbers of high speed air transport, vital as it is to logistical flexibility, is not enough in itself. Transport effectiveness will be seriously diluted if we do not first attain the second prerequisite to logistical flexibility -- control and management of our materiel resources. The time required for transmitting and processing paperwork and processing the materiel itself, presently consumes eighty percent of the supply cycle -- four times that of transportation. It is in this segment, that commanders can make direct, immediate and sustained contributions to our logistical flexibility and combat capability, even without one cent in additional appropriations.

6. The principal tools for attaining effective control and management of Air Force resources, leading to logistical flexibility, are now in existence and in various steps of implementation and utilization. These consist primarily of:

a. An integrated accounting system, as the foundation of our management effort and the primary mechanism to collect basic data required as an aid in reaching command decisions.

b. Accounting for all Air Force assets, (including supplies and equipment), on a monetary, as well as quantitive basis, thereby providing a common yardstick to express program objectives, to measure progress, and highlight problem areas, present and future.

c. Mechanization of all volume transactions, (supply, equipment, accounting, personnel, etc.,) to increase accuracy, completeness, and timeliness of management data, while substantially reducing critical manpower requirements, and by freeing commanders from the heavy burden of supervising manual collection, enabling them to concentrate on utilization of the data.

7. Considerable progress has been made in the past few years in the application of the new management tools. The framework of the integrated accounting system and of monetary accounting for inventories, has been with us for some time now in the Air Force and we know that it has produced a reasonable order of magnitude experience data. Effective utilization of this data has been made at HQ USAF, AMC, and at some major commands. In general, we might say that utilization in field commands and among bases and individual units has been spotty, varying from excellent to almost zero useage.

8. Effective utilization of the Air Force management tools toward attaining effective control and management of our resources has been, and will always be, primarily dependent on the personal leadership of the commander. Both industrial and military experience prove conclusively that maximum effectiveness in this endeavor is achieved only when the commander personally understands and utilizes the tools, and provides his personal leadership. While base and unit commanders, having command jurisdiction over activities which consume 85% of AF resources, and acting as storekeepers of 20% of our supplies and custodians of virtually all equipment in use, can make substantial progress on their own initiative, the priority, climate, and initiative required for full exploitation must come from the Chief of Staff, USAF and his major commanders.

Recommendations

In order to quickly, economically and effectively close the critically dangerous gap which now exists between our combat potential and our logistical capability to achieve and support that potential and to reduce the threat of national survival represented by this gap, immediate, positive

actions are required. These actions include:

1. Initiation by HQ USAF, under the personal auspices of the Chief of Staff, USAF, of a dynamic program to:

a. Require all senior Air Force commanders and staffs to report on what action has been taken to reduce the serious logistical deficiencies that have impact on their combat capabilities.

b. Re-indoctrinate senior Air Force commanders and staff officers regarding their command responsibility for management of Air Force resources, and provide them a working knowledge of the management tools that are already available to them. Insure that senior commanders provide positive, continued, personal leadership in the control and management of Air Force resources.

c. Provide for an extension of the HQ USAF educational and management program to insure that personal leadership in this effort is provided by commanders at all echelons of the Air Force.

d. Establish procedures to assist the commander to continually "exercise" management tools at all echelons. These procedures to include prescribed or suggested recurring reports and analysis and staff and command "executive" reviews or conferences.

2. Initiation of reforms and modernization in existing supply procedures to include:

a. Initiation of a priority, Air Force-wide, program to mechanize all volume supply transactions and to provide for simultaneous transmission and receiving of volume operational and logistical data between military activities. (This is in addition to the half-hearted effort attained over the past few years). AMC and selected major commands to be provided high speed computers to store and utilize statistical data. Base level mechanization to be completed within a definite time period.

b. Modification of supply and inventory accounting procedures to provide for positive and continued identification of all obsolete, obsolescent, or sub-standard materiel, to eliminate overstating our capability for major combat operations and jeopardizing our budgetary requirements.

c. Modification of monetary inventory accounting procedures to reflect the kind of information needed by commanders to make an appropriate decision. This modification may consist of an entirely "new look" at the number of accounts currently maintained by IAM, their significance, value, and the purposes served by their maintenance. Any aspects of the accounting program which are not useable should be dis-regarded so that attention may be devoted to areas of greater concern.

d. Increasing base level stockage authorization for Category III supply items to one year, except for the very fast moving items, to eliminate exhorbitant costs of acquisition. Reducing reporting frequency of this category to annually, pending over-all Air Force-wide mechanization.

e. Concentrating management effort of base commanders and supply officers on the small areas having the large "pay off", namely, the 10-20 sub-property classes and the Category II items that represent the bulk of the base commander's monetary investment.

f. Initiation of a long range USAF level program to provide a more comprehensive training and stability of assignment for personnel in the supply field.

g. Modification and enforcement of procedures to provide current, accurate, unit equipment records. Records to be established based on a wall-to-wall Air Force-wide physical inventory, which will include provisions for identification of obsolete, obsolescent, and sub-standard equipment. Concurrently, base central accounting offices to assume responsibility for maintenance of unit Monetary Equipment in Use records.

3. Development of detailed plans for expansion of mechanized procedures to other areas of volume transaction, to be implemented as soon as the supply phase is completed, to include maintenance of aircraft, vehicles and installations, personnel records, budget and accounting, and such other areas as now demand a significant amount of manpower and command supervision.

Implementation of the above recommendations will create an awareness on the part of our commanders of the serious consequences of the existing deficiencies, an acceptance of their responsibilities and an understanding of the tools available to discharge these responsibilities, that will permeate through all echelons of the Air Force. It will free the commander from the endless and fruitless role he now occupies as the principal collector of late, largely inaccurate, and seldom useable data and permit him to discharge his responsibility for managing the resources entrusted to him.

It will lead to substantially improved computation or materiel requirements. The resultant savings in item, acquisition, and possession costs will make substantial sums of money available for essential research and development, procurement of combat weapons and systems, and improved operational training. It will substantially increase our ability to react promptly to enemy actions and enable us to initiate, heretofore denied us, through increasing our logistical capability in support of our nuclear strike forces. It will measurably

increase public confidence and support of Air Force operations and capabilities. It will enable us to attain and maintain a military structure, through the years to come, capable of deterring war, or insuring victory if war comes, at a price the United States is willing to pay and can afford to pay.

HEADQUARTERS
UNITED STATES AIR FORCES IN EUROPE

APO 633, USAF

EMQA 27 April 1958

SUBJECT: UAL Dollar Value Inventory and Inventory Report (RCS USAFE* S65 (OT))

TO : DISTRIBUTION "O"

1. References: AFR 150-8 and AFR 67-83; AFM 67-1; USAFE Regulations 25-1 and 67-20; USAFE message EMQRB 38390, 30 Oct 54.

2. A review of the UAL Dollar Value Report (RCS AF-S97)(OT)), which was prepared "as of" 30 September, 1957 reflected many questionable areas in the equipping documents of USAFE organizations.

3. It has been determined that in order to amass information relative to command requirements encompassing the equipping field which is acceptable to Headquarters USAF and the Department of Defense, additional UAL dollar value reports will be required.

4. Further, the purpose of the inventory and report as required by this directive is to establish a policy and prescribe procedures for determining and reporting the monetary inventory of UAL equipment authorized, in-use, and required as a pre-requisite for monetary accounting for UAL equipment. It will re-establish an initial inventory and inventory report upon which future monetary accounting will be based. Detailed accounting and reporting instructions have been under development at this headquarters and will be, or have been disseminated. These accounting and reporting instructions will provide for an effective date of 1 July 1958.

5. The required report will be prepared by each individual unit that possesses a valid UAL, utilizing a locally reproduced form in the format as indicated in attachment #1. Reports will not be consolidated but will be compiled for each UAL number by individual unit. Dollar values will be determined by the extension of the unit cost times the quantity authorized or in-use, as applicable. Attachment #1 will reflect the following information:

APPENDIX A

HQ USAFE EMQ Subj: UAL Dollar Value Inventory and Inventory Report (RCS USAFE-S65(OT)).

a. UME Equipment.

(1) Column #1. The total dollar value of all UME authorized will be derived from the UME column of the unit UAL, AF Form 601 b.

(2) Column #2. Authorized - Not Required will reflect the dollar value of that equipment which is authorized but not required by the reporting unit in the performance of the organizational mission. This figure may be in variance with the figure in Col #1. In this event, an itemized listing of Non-Required equipment consisting of stock number, nomenclature, and unit cost will be attached.

(3) Column #3. - Required - Not Authorized. This figure will reflect the dollar value of all equipment required by an organization, but where no authority exists.

(4) Column #4. - Total Requirements - self explanatory.

(5) Column #5. - In-Use - This figure will reflect the total dollar and DM value of equipment in-use. The DM value will be computed from all equipment coded "D" on AF Form 601 b. A separate listing will be attached reflecting, by line item, the value of all equipment being utilized from MARL stocks (Seaweed). This figure should be included in the total of column #5.

b. USE Equipment

(1) Column #1. - The total dollar value of all USE authorized will be derived from the USE column of the Unit UAL, AF Form 601 b.

(2) Column #2. - The provision as stated in par 5a(2) above will apply except that a separate listing will not be required in the event there is a variance between columns #1 and #2.

(3) Column #3. - The provisions stated in par 5a(3) above will apply.

(4) Column #4. - USE total requirements - Self explanatory.

(5) Column #5. - Total Use in -Use - The reporting procedures are the same as for UME explained in the preceding par 5a (5) above.

c. Equipment - Other.

(1) Column #1. - Authorized Equipment - Other - This figure will represent all types of equipment which is authorized the unit by T/A 1-21 and ECL's which is not reflected in either the UME or USE column of the UAL, but where accountability is maintained on AF Form #1120. A large percentage of this figure will represent 17B hand tools which are components of 10 series ECL Kits authorized by T/A 1-21 to specific AFSC's.

(2) Column #2. - Equipment - Other - Authorized Not Required - Self-explanatory.

(3) Column #3. - Required - Not Authorized - Self-explanatory.

(4) Column #4. - Total Requirements - Self-explanatory.

(5) Column #5. - Equipment - Other. In-Use - In addition to the information contained in par 5c(1) above, it should be remembered that other items of equipment which must be reported are those items as referenced in par 8g(1), (4), (9), and (11) of AFR 67-83. This report will not include equipment falling under par 8g(2), (3), (5), (6), (7), (8), and (10), AFR 67-83, even though it may be accounted for on AF Form 1120.

6. .The dollar value of DM procured equipment being utilized to fulfill a "UME," "USE," or "Other" requirement will be computed by using the dollar value for the prime item of equipment as reflected in the pricing section of the USAF stock catalog. (Now Federal listing)

7. Reports will include, in addition to normally authorized and in-use equipment, the value of all equipment authorized by a valid special issue but will not include equipment "on loan" to an organization.

8. In instances where an item cost is not reflected in the price section of the USAF catalog, a reasomable estimate of the basic cost will be indicated. This will also apply to non-listed and locally manufactured items.

9. In cases of special activities that are being logistically supported by a USAFE unit, a separate and distinct special activity report will be prepared and forwarded with the support base report.

10. After review by base equipping boards, subject reports will be forwarded to the next echelon of command by means of a cover letter which will include a certificate, executed by the chairman of the applicable equipping review board, to the effect that all UAL's for which the board is responsible, including special activities supported, have been reported and are included. Reports initiated by SCARWAF units will be withdrawn from base reports and forwarded directly to the Commander, 7th Engineer Aviation Brigade, ATTN: Equipping Review Board, APO 57, USAF.

11. Major subordinate command equipping review boards will receive, review, and validate base and/ or special activity reports to be forwarded by cover letter to this headquarters.

12. Reports will be prepared in six copies with the following distribution: Copy #6 and #5 - Retained by the unit of origin.
Copy #4 - Retained by the base equipping review bd.
Copy #3 - Retained by the major subordinate command equipping review board.
Copy #2 and the original will be forwarded to this headquarters, ATTN: EMQA.

13. The one-time dollar value report, as required by this directive, will be prepared with an "as of" date of June 30. Subject report will be mailed in sufficient time so as to insure arrival in this headquarters on or before, but in no instance, later than 31 July 1958. Reports Control Symbol - RCS USAFE-S65(OT) is assigned this report.

BY ORDER OF THE COMMANDER IN CHIEF:

1 Incl
Format UAL Dollar
Value Report

LESTER W. LIGHT
Brig Gen, USAF
DCS/Materiel

Tp: Wiesbaden 22209

UAL DOLLAR VALUE REPORT

Reports Control Symbol USAFE * S65 (OT)

UAL Number | BAL Number | Station | "As of Date"

Organization | Subordinate Command | Major Command

		Column 1	2	3	4	5
		Authorized	Auth - Not Required	Required -Not Auth	Tot. Requirements	In-Use
UME	$ DM					
USE	$ DM					
Equipment "Other"	$ DM					
Reserved for Future Use	$ DM					
Reserved for Future Use	$ DM					
TOTAL	$ DM					

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