

We People

Article I



# AIR UNIVERSITY review

MARCH-APRIL 1975





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**REVIEW**









# AIR UNIVERSITY **review**

THE PROFESSIONAL JOURNAL OF THE UNITED STATES AIR FORCE

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Address manuscripts to Editor, Air University Review Division, Bldg. 1211, Maxwell AFB, AL 36112. Printed by Government Printing Office. Address subscriptions to Superintendent of Documents, GPO, Washington DC 20402; yearly \$11.60 domestic, \$14.50 foreign; single copy \$2.00.



the cover

Article 1 of the Constitution provides for the legislative powers of the Congress of the United States, and Section 8 thereof empowers the Congress to "provide for the common Defence and general Welfare of the United States." Congressman William L. Dickinson of Alabama, in "Congress and National Security," focuses on how this broad Constitutional mandate is put into effect by the Congress of this latter day. Our cover reflects both the U.S. Constitution and the seal of the U.S. House of Representatives.

# CONGRESS AND NATIONAL SECURITY

THE HONORABLE WILLIAM L. DICKINSON  
Member, U.S. House of Representatives





*The United States Senate and House, in joint assembly, hear an address by President Ford.*

**A**S I see it, national security covers two broad areas: the internal and the external. The external threat to our national security is the one with which most of you are better acquainted because you are a part of the military force charged with the responsibility to keep that threat in check. The Congress is deeply involved in both the internal and the external dimensions, and I want to spend a few minutes discussing each. But first I want to explain the internal organization of the Congress, which al-

lows it to effectively administer and supervise its part in the overall responsibility for national security.

The beginning of wisdom for a military officer attempting to understand how Congress works on national security would be, I suspect, to recognize that efficiency is not the first priority. I often find that military officers look with bemused tolerance on the way Congress conducts its business. (We have had Defense Secretaries who viewed us with unbemused tolerance.) This is not sui-

*On a visit to Headquarters Military Airlift Command on 2 November 1973, Congressman William L. Dickinson and members of the Airlift Subcommittee of the House Armed Services Committee confer with the Commander, General Paul K. Carlton. Mr. Dickinson is seated third on the General's right.*





prising because, in a sense, the first purpose of our institution is the antithesis of yours. The military's first priority is always to be organized and trained in such a way as to perform efficiently in the most violent and chaotic situation, that is, in war. The purpose of the Congress is to provide a forum where ideas are fully tested in debate and where all points of view are considered. The contribution of the legislative branch is the democratization of the governmental process. Whenever you infuse democracy into decision-making, you pay a price in lost efficiency; a committee is not as efficient as a dictator.

This is not to say that Congress cannot become more efficient in the way it conducts its business. In fact, it is now in the throes of a reorganization to do just that—particularly to ensure better control of the federal budget. But remember, as you view the Congress, it is not designed to be a streamlined decision-making organization, and attempts to reorganize it run the risk of limiting its capacity to represent the people's voice in the process of government.

I make this point at the beginning because I am going to say later on that I think Congress is going to have an increasing voice in national security policy-making in the future. If this happens, I hope you won't judge the wisdom of the Congressional decisions by the seemingly raucous and zigzag way we sometimes go about making them. But this isn't just a result of Congressmen and Senators' not knowing what they are talking about; it is a necessary concomitant of the basic nature of the institution. Winston Churchill said, "Democracy is the worst form of government ever devised—except for all the others."

We may even be coming to an appreciation of the fact the Congressional ap-

proach has a virtue that the Presidential decision-making lacks. In this regard, let me quote something from a delightful little book by George Reedy called *The Twilight of the Presidency* (1970). Mr. Reedy makes a point worth remembering about how even astute Presidents can blunder into bad political decisions.

No man is so wise as to play his own "devil's advocate," and workable wisdom is the distillation of many different viewpoints which have clashed heatedly and directly in an exchange of opinion. To maintain the necessary balance between assurances of security and assurances that enough factors have been taken into consideration is perhaps the most pressing problem of statecraft. The atmosphere of the White House, in which the president is treated constantly as an infallible and reverential object, is not the best in which to resolve this problem.

In retrospect, it seems little short of amazing that President Kennedy would ever have embarked upon the ill-fated Bay of Pigs venture. It was poorly conceived, poorly planned, poorly executed, and undertaken with grossly inadequate knowledge. But anyone who has ever sat in on a White House council can easily deduce what happened without knowing any facts other than those which appeared in the public press. White House councils are not debating matches in which ideas emerge from the heated exchanges of participants. The council centers around the president himself, to whom everyone addresses his observations.

*Air University Review* takes pleasure in presenting to its readers the substance of an address given at the Air Command and Staff College on 20 September 1974 by The Honorable William L. Dickinson, Representative from the Second District of Alabama in the Congress of the United States.

The Editor

The first strong observations to attract the favor of the president become subconsciously the thoughts of everyone in the room. The focus of attention shifts from a testing of all concepts to a groping for means of overcoming the difficulties. A thesis which could not survive an undergraduate seminar in a liberal-arts college becomes accepted doctrine, and the only question is not *whether* it should be done but *how* it should be done. A forceful public airing of the Bay of Pigs plan would have endangered the whole project, of course. But it might have prevented disaster.

The men who wrote the Constitution were not all that much concerned with efficiency in conducting the people's business. They didn't think there would be all that much business to conduct. If there is one idea to which they uniformly subscribed, it was: the less government, the better. They were imbued with Montesquieu's ideas of the nature of man, and they believed that *no one man* could be trusted with an undue concentration of power. In the field of national security they envisioned that the President would be, in effect, chief executive officer responsible for carrying out the *policy* fashioned by Congress.

As we know, it hasn't quite worked out that way.

The founders gave the Chief Executive the traditional powers given to an executive but circumscribed his authority in areas that had been abused by kings and governors in the past: the authority to make treaties and appoint ministers was shared with the Senate; the power of veto was limited to legislation as a whole (the veto was really thought of as a Presidential defense against an aggressive legislature); and the power to make war was given to Congress.

It is clear that the writers of the Constitution considered the legislature as

the place where policy would be made. Congress was given the power to collect taxes and duties, to "provide for the common defense and the general welfare," to "regulate commerce with foreign nations," to "declare war," to "raise and support armies," to "provide and maintain a navy," to "provide for organizing, arming, and disciplining the militia."

In giving "executive power" to the President, the framers nowhere stated what that is. But he was given specific powers in conducting external affairs. He was made Commander in Chief of the Army and Navy and was given the power to make treaties and to appoint ambassadors and other officials with the concurrence of the Senate.

Congress retains to this day more authority in domestic than in foreign affairs. A President can get us into war without prior action by Congress, but he can't build a highway or raise Social Security until Congress first gives the okay.

The founders, in other words, envisioned legislative government, and for much of the nineteenth century that is what we had. But what the founders did not foresee is the ability of an active President to make commitments that the legislature could not abrogate. The power of the President expanded, not by Constitutional amendment or acts of Congress but by Presidents' getting away with what they could. Often the Congress was left with no choice but to legitimize what the Commander in Chief had already done.

In the twentieth century a series of reforms designed to improve budgetary control contributed to a shift of power to the Executive Branch. The most notable was the Budget and Accounting Act of 1921, which set up the Budget Bureau



*Congressman Dickinson meets with young Air Force officers in a Committee hearing room.*

(now the Office of Management and Budget) and provided the President a central agency for clearing all legislative proposals. That act has resulted in the President's becoming the chief *legislative* officer of the government and Congress's largely forfeiting its role as originator of legislation.

Coupled with this has been a great shift in power to the Presidency, particularly since the Franklin D. Roosevelt administration. Congress, it must be said, acquiesced in the abrogation of much of its policy-making power.

In an essay entitled "Congress and National Security Policy," political scientist Holbert N. Carroll, writing in the early 1960s, summed it up this way:

In these sectors [military policy and foreign policy] Congress generally acquiesces in Presidential dominance. Its mode of behavior, by necessity or choice, has become primarily that of monitoring the executive branch. . . . The increasing tendency to monitor, to establish political perimeters of tolerance and expectation, rather than to use power to intervene deeply in the shaping of the substance of policies, is perhaps the most striking development in Congressional behavior.

I bring all this up for two reasons: one is that it is helpful background in talking about the Congress's role in national security policy-making. But more important, I think we are entering a most exciting time in the life of the legislature.

Recent events have reminded us of what too many of our citizens have forgotten: that the Congress is the branch that provides the democratization of government and that assures protection of people's rights and freedoms. I think what scared people most about Watergate—and rightly so—is the thought that it could happen here, that the Constitution could be subverted by willful men. And recent events should also remind us that if the genius of our system, the checks and balances of power, is to work, the Congress must play its full role. I think this realization will lead to the people's demanding more of the Congress.

There is a concomitant of this which also will surely contribute to Congress's playing a larger part in national security policy-making in the future. It is that events have taken the mystique out of the Presidency. The entry into and conduct of the Vietnam war, Watergate, credibility gaps of one kind or another—all have done much to dispell the idea that Presidents and their advisers are possessed of vast additional knowledge and special wisdom. Presidents of both parties have botched the job enough that members of Congress have lost their inferiority complex about opposing Presidential policies.

I think, therefore, that the Congress is facing its most interesting but most difficult challenge: the challenge to take back and exercise its share of the power it has surrendered over the past forty years. Whether it is willing to do that, and whether it can do so wisely, remains to be seen; but to do so will require much work and more political fortitude on the part of those of us in the legislature.

As I mentioned earlier, Congress has always played a more prominent part in domestic policy, where it has been on more familiar terrain. But in national

security affairs Congress has taken back seat, and it is here that the most significant changes are likely to occur. Some of us have a tendency to think of national security in terms of strictly military policy—the matters that are the province of the Armed Services and Appropriations Committees. I want to be clear, however, that I am thinking of national security in the broad sense which involves many committees, as well as the whole range of our foreign policy which involves the Foreign Affairs and Foreign Relations Committees.

I do want to say some things about how Congress is approaching military policies and which ones are likely to get added attention in the future. But first there is one aspect of our international trade policy with a profound impact on our national security which I want to discuss in some detail both because it is often neglected in talks such as this and because it is an area where I feel Congress is ready to take the initiative to prevent the Executive Branch from gravely weakening our security without realizing what it is doing.

The issue is just how far we are to go in assisting the Soviet Union and its Communist satellites to develop their military and industrial capability.

Since the May 1972 summit conference in Moscow, at which the ABM Treaty and the Interim Agreement for the Limitation of Strategic Offensive Arms were signed, we have seen an alarming increase in the exportation to the Soviets of some of America's most advanced technological know-how. For instance, in October 1973, Control Data Corporation announced the signing of a ten-year agreement with the U.S.S.R. Council of Ministers for Science and Technology to provide for technical "cooperation" in developing and manufacturing the most

advanced computer equipment. The word "cooperation" meant that they would supply us with some of their advanced capabilities and we would supply them with some of ours. The truth of the matter is, our technology in this area is roughly five years ahead of theirs. There is little that the Soviets know that would be of any value to the American computer industry. Consequently, any benefit derived from such an agreement would accrue to the Soviet side and would only serve to help close that five-year gap. American sources in Moscow established the agreement's ultimate worth to the Soviets at about \$500 million.

The Sperry Rand Corporation entered into a similar agreement with the Soviets in May of 1974 and is now discussing with the Soviets the possible construction of a large computer manufacturing complex in Moscow. Just recently a UNIVAC 1106 computer, the most advanced ever transferred to a Communist country, was delivered to Poland.

Obviously, such agreements could benefit the Soviets in a military way. And since the Soviet military machine is designed with the destruction of the United States in mind, I do not believe that such agreements are in our best interest.

(I believe the issue of national security is more important to the American people than the several million dollars that U.S. industry will derive from the sale of our best technology.)

Without computers, modern weapon systems could not be built, integrated, tested, deployed, kept combat-ready, or operated. In fact, computers form an integral part of the armament systems of missiles, aircraft, tanks, and submarines. Avionics are intrinsically computer-linked. So is missile accuracy. MIRVing missile heads is impossible without com-

puters. As you know, the Soviets have just recently developed the capability to MIRV their long-range ballistic missiles. We expect to see MIRV warheads deployed by the Soviets in 1975.

With the advancement of détente with the Soviet Union, we have witnessed a steady dismantling of our export controls. I believe that this trade constitutes a threat to American labor and industry, as well as to our security, in the long run.

But let us examine another question for just a moment: Does, indeed, a true détente exist between the United States and the Soviet Union? I don't believe so! The Soviets outspend us militarily, and have since 1970. They encouraged the Arabs to prolong the recent oil embargo against the West, as they encourage them to make war in the Middle East. We have lavished them with the American technology which they so desperately need and must have if they are ever to outstrip us militarily. But they have continued to go out of their way to prove that the Cold War is alive and well in Moscow. Détente must be a two-way street, but, so far as I can see, almost all of the benefits have been realized by the other side.

Now don't misunderstand me. I think détente is a good idea. It's a sensible alternative to perpetual tension between the two most powerful nations the world has ever known. But we've done our part, and it's now time for us to slow down and question what the Soviets are going to contribute to the cause of détente.

Using American technology, the Soviets have been able to increase their productivity to the point where they are now producing more of some products than their own economy requires. One example is tractors, which have been

introduced into the American market, selling for 20 to 50 percent less than comparable U.S.-made tractors. We cannot expect American industry and well-paid, organized American workers to compete with Soviet state-owned enterprise married to nonfree Soviet labor. And this is why I say that we must exercise strong export controls or else we threaten the very existence of American labor and industry as we know it. We still live in an economic world, and we must begin to view economics in the long run rather than in terms of immediate "Wall Street type" parameters.

There is no doubt in my mind that American technology in the computer field has advanced the Soviet military effort by several years. There is no doubt that American machinery to be used for the manufacture of trucks at the Kama River Truck Plant can also be used to produce trucks to transport troops and ammunition from behind the Iron Curtain in an attack on our allies in Western Europe. There is no doubt that a loan made by the Export-Import Bank to assist the Soviets in purchasing American goods has the ultimate effect of strengthening their economy, and 100 percent of the bank financing is provided by American banks while none is provided by the Soviets. There is no doubt that if Boeing or Lockheed proceeds to build a wide-bodied aircraft factory in the Soviet Union, those wide-bodied aircraft could be used for the transport of troops or for the mid-air refueling of Soviet bombers. I could go on and on, but I think the idea is clear.

Your question at this point would probably be, "What is the Congress doing about it?"

Many members of Congress are aware of and vitally concerned with problems in this area. But there is another strong

and vocal group of members who are in favor of giving the Soviets practically everything we have.

For the most part, trade with Communist countries is regulated by the Export Administration Act, passed by Congress in 1969. That act gives the President broad powers to control trade. The authority for administration of the act has been delegated to the Secretary of Commerce. Under the provisions of the act, a private company that desires to sell its products in foreign nations is required to apply to the Department of Commerce for a separate license to export each product. The Secretary of Commerce then notifies the Secretaries of State and Defense of the request for licensure and asks each to advise him as to whether or not the license should be granted. If, for example, the Secretary of Defense objects to the licensure of the product on grounds that it will be of military significance to the recipient, the Secretary of Commerce will consider the objection and will make the final decision. He can, and occasionally has, overruled the Secretary of Defense. Generally, when he does overrule the Secretary of Defense, his justification is that the product in question is "readily available elsewhere." In some cases it makes good sense that if the Soviets can get a particular product from England, France, Japan, or any one of several other nations, we may as well sell it to them, even if it benefits them in a military way. At least if we sell it to them, we know what they have. But the Soviets themselves have said that it is American technology in which they are interested. So it is not always as easy to control the exportation of technology as it might at first appear.

But there are many members of Congress, in both the House and Senate, who were not satisfied that the provisions

of the Export Administration Act were inadequate. Senator Henry Jackson of Washington succeeded in getting an amendment to the fiscal year 1975 Military Procurement Bill passed in June of his year. His amendment would allow the Secretary of Defense to "recommend to the President that he disapprove any request for the export of any goods or technology to any controlled country if he determines that the export of such goods or technology will significantly increase the military capability of such country. . . ."

And farther down in the amendment, it says that "the term 'controlled country' means the Soviet Union, Poland, Romania, Hungary, Bulgaria, Czechoslovakia, and the German Democratic Republic [East Germany]." Another section of the Jackson Amendment provides that

whenever the President exercises his authority under subsection (H) hereof to modify or overrule a recommendation made by the Secretary of Defense pursuant to this section, the President shall submit to the Congress a statement indicating his decision. Either House of the Congress shall have a period of thirty (30) calendar days of continuous session after the date on which the statement is transmitted to the Congress to disapprove by majority vote the action of the President.

This means that either house of the Congress can reverse the President's decision and thereby assure that the judgment of the Secretary of Defense does prevail.

A conference committee of Senators and Congressmen was formed to iron out the differences between the military procurement bills passed by each house, so that an identical bill could be presented in both houses for final passage.

I strongly believed that the Jackson Amendment was sound and that the

Secretary of Defense should have this power to stop the exportation to Communist countries of goods or technology that would aid their military effort against our country. But I was not one of the conferees, so I had to make my position on this subject known. I wanted the House conferees to adopt this amendment, which was already in the Senate version of the bill. I wrote a letter to the Chairman of our Armed Services Committee, Congressman Hebert, indicating just that and suggesting that Albania, Yugoslavia, Cuba, the People's Republic of China, North Korea, and North Vietnam be added to the list of controlled countries.

What the conference did was even better than I had hoped for. They accepted the amendment and took my recommendation into consideration. But instead of listing the countries I had suggested, they added the phrase, "and such other countries as may be designated by the Secretary of Defense." The bill passed both houses with little opposition.

Here is an example of a law passed by Congress, with its implication clearly extending to national security, and the Congress's becoming dissatisfied with the way it was being administered and passing legislation to provide for Congressional participation in implementing the law. This is an excellent recent instance of how Congress was able to influence national security. Congress, in effect, took a veto power on Presidential decisions in the interest of national security.

Now on the subject of military policy, a number of things need to be said in some important areas where Congress has taken the initiative and where it has not done too badly. Notable examples are the nuclear submarine program, the improvement of military pay, and the

*As the watchdog of national security, the House Armed Services Committee concerns itself with such Air Force milestones as the rollout of the XB-70 at North American Aviation, Palmdale, California, on 11 May 1964. Later designated as reconnaissance-strike RS-70, two prototypes were built, but the plane never went into production.*





eronautics and Space Act of 1958. If it were not for the Joint Atomic Energy Committee, the nuclear submarine would not have been developed nearly as early as it was—and Admiral Rickover would have been forced into retirement as a captain. And if it had not been for the Armed Services Committee, nuclear power for surface ships would have moved at an even slower pace than it has.

In the matter of military pay, it was the Congress—largely through our Committee on Armed Services—which increased pay significantly beyond what the Executive Branch proposed in the mid-1960s. We doubled the size of the 1965 pay bill and tied the military to the comparable automatic pay increases of the civil service in 1967. It was the Congress which provided the dramatic increases in pay and allowances in 1971, as a concomitant of the final extension of the draft, providing in one year the rate of increase the administration had proposed to take effect over a period of several years. Thus the fact that military pay today is generally competitive with private industry, for the first time in our history, is attributable more to the initiative of the Congress than of the Executive Branch.

In 1958, following the launch of Sputnik, the Congress, on the initiative of the Senate Preparedness Subcommittee, launched space committees in each house and forced legislation creating the National Aeronautics and Space Administration.

In some areas where Congress took the initiative, the jury is still out, most notably the War Powers Bill and the abolition of the draft.

The War Powers Bill, a product of the Foreign Affairs Committee, is an attempt by Congress to prevent the President from getting us into war without prior

Congressional action—to take back the war-making power. As much as anything, it is a product of the Vietnam war. Whether Congress, in a crisis, could avoid giving its imprimatur to a President's action, thus mitigating the effect of the law, remains a question. I suspect that the Vietnam experience itself, rather than any law, will restrain future presidents. But the act does represent an important attempt by Congress to get back its prerogatives.

The Administration requested the all-volunteer armed forces and an end to the draft, but these accomplishments were really in response to Congressional initiative, which in turn was in response to public opinion. If there is any bill that can be said to be a product of popular mandate, it is the elimination of compulsory military service. It remains to be seen whether the volunteer army will work—and if it does, whether we can afford it.

In areas where Congress tried to force acceptance of specific programs, the record is mixed—but often because support in Congress was not unified. Congress has been very successful in forcing a minimum strength for the Reserve forces, for example; less successful in trying to force production of specific weapon systems.

The classic example is the continuing confrontation over the manned bomber. In 1963 our committee started out to *direct* the construction of the RS-70 and moved on a collision course with President Kennedy. He didn't want to be directed to build anything, but he didn't want a clash with Congress, either. In the end Chairman Vinson and President Kennedy took their famous "walk in the Rose Garden," the word "directed" was changed to "authorized," Secretary McNamara wrote a letter promising a new

study, and everyone achieved a sort of peace with honor. In the House at the time there was much talk of a moral victory. At times, I suppose, there is a fine line between winning a moral victory and being seduced. The plane was never built, as our committee hoped, but it was not killed either, as the Defense Secretary desired; and today, ten years later, the battle over it still goes on, except that the opposition is now in Congress.

Another important point to be recognized is that Congress is getting more and more into the details of the defense business. It is attempting to play a larger role, not just in broad policy but in the selection of weapon systems and the determination of force levels.

Congressional decisions on force levels, numbers and types of strategic and tactical weapons, overseas deployments, spending levels, and so on, are expressed through the annual defense authorization and defense appropriation bills. They are the principal measures through which the Congress expresses itself on military policy. The authorization legislation, limited ten years ago to missiles, airplanes, and ships, has gradually been expanded to include authorization for active and reserve strength, all research and development, tracked combat vehicles, torpedoes and other weapons, and defense civilian manpower. This gradual expansion of the role played by the legislative committee is in itself evidence of the greater effort by Congress to deal with the defense business. And the expansion of the authorization requirement has generally been in response to problems found in the Defense establishment that had not been adequately dealt with—the M-16 scandal bringing about the regular review of “other weapons” procurement, the M-48 torpedo fiasco leading to the annual review of torpedo

procurement, and so on.

These authorization and appropriation cycles mean a double review of the defense program, which often looks confusing and duplicative to military personnel; but it allows the Congress to get deeper into programs and is consistent with what I said in the beginning about the inherent inefficiency of a democratic body.

A few statistics from Congresses ten years apart will show that Congress is spending much more time on defense matters, is no longer taking the words of the military on faith, and is challenging its cognizant committees in floor consideration.

The Defense Department keeps statistics on the hours its officials, military and civilian, spend before Congressional committees in hearings and briefings. For 1963 (1st session, 88th Congress) the total was 836 hours. For 1973 (1st session, 93d Congress) the total was 2284 hours.

To look at another example of level of effort, in 1963 our committee held 19 days of hearings on the authorization bill, had 835 pages of printed hearings, and issued a 32-page report. For 1973, the Committee had 42 meetings, 2917 pages of printed hearings, and a 115-page report.

In 1963 the authorization bill faced one floor amendment in the House and none in the Senate and passed unanimously in both houses. In 1973 there were 15 amendments offered in the House, 12 offered in the Senate (with eight adopted), and 59 votes against the bill on final passage in the House and 5 in the Senate.

In 1963 debate on the authorization bill in the Senate took 19 pages in the *Congressional Record*. In 1973, it took 303 pages.

I could quote numerous other statistical examples, but the point is clear that the services can no longer merely wave the flag and get Congressional approval for their requests. Congress is now very much in the act, and the services might as well learn to live with us. We are here to stay.

WITHOUT going into detail, let me mention a few areas where I think the Congress is going to be particularly concerned in the next few years.

I mentioned the volunteer army as still subject to question. It would be more correct to emphasize the high cost of personnel as the problem, because doing away with the volunteer army would not automatically lower personnel costs. In Congress we are very conscious of the fact that we spend 56 percent of our defense budget for personnel costs while the Soviets spend only about 30 percent for personnel. It doesn't take a mathematician to see where that could lead us after a number of years in the comparative amounts left to spend on research and development and on new weapons.

The question of whether or not the Soviets have overtaken us militarily seems to be a continuing debate these days. Some say they have and some say they haven't. The fact is, in fiscal year 1975 we are spending less than \$10 billion for military research and development while the Soviets are spending roughly three times that amount for the same purpose. If we continue to let the Soviets outspend us by three to one in military research and development, it will certainly be just a matter of time before they overtake us, if they have not already done so. The spending figures spell the inevitable. But I am confident the Congress will come to this realization before

it is too late. And when they do, it will trigger strong pressure for the services to reduce personnel and to reduce long-range personnel costs. At that time, I will be concerned about possible attempts to reduce the strength of our armed forces below what I believe to be the minimum safety level.

In short, the overall responsibility for national security, both internal and external, is shared by the Congress with the Executive Branch. The Congress authorizes and funds those programs it considers necessary for the nation's defense, and the Executive Branch, through the military services, has the responsibility for implementing our national security policies. The internal and external aspects of national security are inseparable. Both Congress and the Executive Branch must realize this important fact and willingly share the inherent responsibilities if our nation is to remain strong.

Two other items of special concern on the personnel front are retirement costs and the number of senior officers. Retirement costs are rising at a rate that frightens members of Congress. There is also an enduring feeling in Congress that we have too many generals and colonels, particularly since we have as many or more than we had during World War II. I would be quite surprised if some reductions are not made in the next few years.

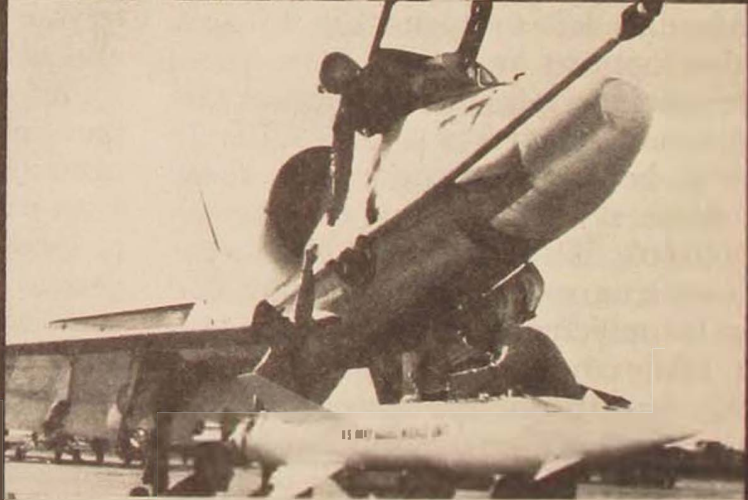
Finally, I believe that in the years ahead Congress is going to have to review extensively our worldwide commitments, for as of now they far outstrip our military capacity, if we support them seriously. Some of them have become inoperative, and, of course, we want everything pertaining to U.S. policy to be soundly based and respected in the eyes of the world.

*Washington, D.C.*

# THE DECISION TO RESPOND

*What Forces Do We Need  
in a Crisis?*

LEWIS A. FRANK



IN a politically fragmented but economically interdependent world, the ability of the United States to use military strength is closely tied to the suitability of its forces to support high-priority diplomatic objectives in a crisis.<sup>1</sup> Today many diplomatic and political factors are involved in shaping the world role of the U.S. and setting the tempo of its foreign relations.

The future momentum of policy and force planning is already being influenced by a wide set of considerations. There are systems procurement or development decisions that create "multiplier" effects throughout the economy. Advanced technology itself makes a significant impact on the requirements for skilled personnel to man an all-volunteer military force. Such considerations and the capabilities they lead to in later years reflect some essential judgments about possible adversary intentions and our objectives concerning deterrence.

We have experienced a decade of necessary public concern about U.S. defense, and today any discussion of the directions it could take cannot exclude the impact of the Strategic Arms Limitation Talks (SALT) negotiations, not only on forces but on diplomacy as well. At the time of this writing, the publicly reported U.S. position at SALT II favored achieving mutual "equivalence" in the nuclear capabilities available to each side by means of overall ceilings on the number of strategic missiles and bombers, including limits on missile-borne multiple independently targetable re-entry vehicles (MIRV's) and on the payload or "throw-weight" capabilities of land-based missiles.<sup>2</sup>

The Vladivostock SALT II accord, if confirmed by the U.S. Senate, reflects the desire for equivalence in delivery systems and

vehicles while at the same time leaving room for basing and payload flexibility as new strategic systems phase in. The SALT effect on the nuclear balance only serves to heighten the importance of maintaining credibility in our armed forces to carry out U.S. foreign policy in a suddenly shifting period of international relations. It might even be illusory to hope for further understandings of the SALT type without forces adequate to strengthen diplomacy and prevent misunderstandings at the eleventh hour.

Any force can conceivably be used to increase or decrease the risks of war; the question is about *how* and *when* such use is justified and, equally important, how a decision-maker should assign values to the use of force in a crisis. The decision to respond is a judgment that may have to be made in the absence of many needed facts. A distinguished economist and president of the American Economic Association, Kenneth Arrow, recently said that "our lack of economic knowledge is, in good part, our difficulty in modelling the ignorance of the economic agent."<sup>3</sup> In a similar vein, it may be said that while military forces are designed to operate under uncertain conditions, diplomacy feeds on certainty. Since payoffs are based on widely differing environments, any trade-offs between military and diplomatic requirements could be subject to a considerable margin of error.

The crisis decision-maker needs harmony between military and diplomatic operations. He wants to reduce the possibility of miscalculation. Thus, the means by which military forces can contribute to crisis settlement deserve further attention because military options by themselves do not resolve crises.

While it is still too early to speculate on the effects of the Strategic Arms Limita-

tion Talks on U.S.–Soviet crisis behavior, SALT's current purposes appear to have important potential for the management of future crises in two ways. First, by providing a set of agreed-upon levels of strategic force capability, SALT influences the way each side might deploy its forces in a crisis, including those not subject to SALT-negotiated ceilings. Second, SALT could institutionalize into another "hot line" for communicating some intentions as well as capabilities to the other side. Former President Nixon admitted using a "SALT channel" in 1971 or 1972 to persuade the Soviets to include ceilings on submarine-launched ballistic missile (SLBM) launchers in the SALT I Interim Agreement accompanying the 1972 Anti-ballistic Missile (ABM) Treaty.<sup>4</sup>

Besides SALT channels, there are SALT-related channels that could contribute to crisis management. The 1973 U.S.–Soviet agreement on the prevention of nuclear war has explicitly endorsed "urgent consultations" between the parties to avoid confrontation or escalation.<sup>5</sup> Such agreements, of course, are not self-executing and are only as good as the reactions of the parties to a crisis. Viewed in their best light, "hot line"-type treaties and agreements could play a major long-term role in reducing the risk of miscalculation and contributing to what Secretary of State Kissinger calls "strategic stability"—a condition in which both sides understand that neither can "gain a substantial aggregate advantage" over the other.<sup>6</sup>

There is, of course, a certain amount of wishful thinking that tends to assign to institutions roles which they were not intended to have and for which they lack suitable resources and power. SALT is a negotiating forum, a weathervane showing the rest of the world which way the wind is blowing in U.S.–Soviet relations.

At least for now, SALT is *not* a peace-keeping institution. Agreements or treaties to the contrary, political pressure can still emerge that move the U.S. and the Soviet governments into high-risk taking positions in a crisis, as in the Middle East during 1973.<sup>7</sup>

In a world of imperfect knowledge there is an increasing prospect of crisis-connected misunderstandings that could repeatedly involve military and diplomatic resources of the U.S. in many areas and in many forums. Accordingly, there are likely to be new problems and new tests of fine-tuning the art of diplomacy to the military art. It may be true, as Secretary of Defense James R. Schlesinger has said, that the world is becoming "a single strategic theater," but there is yet some distance to go before that becomes a perceived reality.

While there is some prospect for eventual negotiated force reductions in Central Europe between NATO and the Warsaw Pact through the Mutual Balanced Force Reduction (MBFR) discussions, the rest of the world is experiencing a proliferation of military force and "theaters" for conflict. It takes little imagination, unfortunately, to write realistic-sounding scenarios for U.S., Soviet, or Chinese confrontation along a global crisis path which, when traced, passes through the Middle East, northern and southern Africa, Latin America, the Indian subcontinent, and back into the Persian Gulf. In addition, the risks of a Soviet-Chinese dispute escalating from their border conflict into a wider war gives pause for concerned thought.

Crises that erupted into both World Wars and many limited wars began either because one of the parties could not (or would not) construct a timely, credible military-diplomatic position against the other or because one side

simply failed to perceive the danger posed by the other side. As a result of this initial imbalance or blindness, modern wars have had an almost uniform tendency to escalate to a scale of violence (and involvement) where the ultimate outcome was highly disproportionate to the issues involved. Of course, there are occasional indications that increased U.S.-Soviet and U.S.-Chinese diplomacy can shed new light on ways in which superpowers and third parties alike can manage conflicting interests if not resolve them.<sup>8</sup> Successful crisis management by the involved parties depends on a complicated process of identifying those diplomatic and military aspects of a situation that can be reliably controlled with available resources and then using these resources in ways that maximize the incentives for a peaceful settlement of the crisis. These are demanding requirements, in a conceptual as well as a practical sense. Yet, at a time when the U.S. and the Soviet Union together could hurl over 10,000 nuclear weapons at each other (in a purely two-sided, two-nation exchange), an uncontrolled crisis involving the superpowers could lead to disaster.<sup>9</sup>

INSURANCE against war by miscalculation is not the least of the many things that an \$82-billion defense budget has to buy and maintain. Even if contingencies do not arise from the somewhat frantic scrambling about for more arms and prestige, the high risks and costs of the 1973 Middle East experience and the ensuing U.S. worldwide nuclear alert have impressed even critics of increased defense spending that the country requires a more credible nonnuclear "ready force" option from which to choose, to reduce the risk of nuclear

escalation in the existing powder-keg areas of the world. As a defense analyst wrote some years ago:

The concept of deterrence is aimed . . . not only against the use of nuclear weapons but also against the *use of the threat* of nuclear weapons in vital circumstances.<sup>10</sup> (Emphasis added.)

In addition, credibility in "vital circumstances" means having nonnuclear "safety catches," as well as nuclear ones, by means of which a U.S. decision-maker can positively control and alert forces, deploy them to create a presence in the crisis or threat areas, use them to engage in threshold bargaining, and expeditiously withdraw, commit, or reinforce them, as appropriate.

Forces designed to be managed in this way must also support a parallel track of diplomatic actions aimed at restoring, creating, or maintaining communications with the parties involved—all in the hope of achieving peace. Although we may not know what stability is, we are in a century replete with the national and human toll of war and instability.

Should the United States (and the Soviet Union) be disposed toward crisis management? This is a question of utmost importance because it is becoming customary for smaller powers to emphasize nationalistic aims while seeking superpower assistance or mediation in a crisis. Moreover, this paradox is likely to recur because the reach of small powers for modern armed forces is exceeding their grasp in utilizing them.

Modern wars are very expensive to fight—economically, politically, and socially. Even an advanced small power can quickly exhaust its abilities on the battlefield if it has to be burdened with maintenance, repair, or replacement of sophisticated weapon systems, radars, and fire-control apparatus while provid-

ing adequate food, fuel, and other logistic support for its forces.<sup>11</sup> The loss of a highly trained pilot or missile specialist may not be easily compensated for, so it is little wonder that many states, including the U.S., the Soviet Union, Great Britain, France, Iran, Pakistan, India, North Korea, and Cuba, have undertaken what may best be called management contracts to operate and man advanced air strike, air defense, or armored assault components for various clients, principally in the Middle East and Southeast Asia.<sup>12</sup>

While some future wars could quickly expire through technological exhaustion, others occurring under different conditions might be easily extended through either contracting out or stepping aside for new or existing sponsors to take charge. Either way could result in dangerous escalation if a satisfactory diplomatic solution is not reached by the time one or both parties need more military capability. In such circumstances the U.S., Soviet Union, and China could have increasingly significant opportunities for both diplomatic and military participation in future regional conflicts and crises.

The superpowers have the means to "quarantine" a crisis to see that it does not erupt into a nuclear holocaust, but there is nothing automatic in this that assures restraint. By way of contrast, international organizations such as the United Nations may be conferred legal but ineffectual powers to become involved in a crisis. U.N. peace-keeping forces can provide a presence to police a cease-fire, but they can do little to put out the fire unless there is also a force contribution by a major power. Article 51 of the U.N. charter permits national acts of self-defense, making appeals to the U.N. unnecessary if one is "winning"

and irrelevant if one is "losing." Other forms of U.N. crisis intervention can only be triggered by a recognized attack on a U.N. member state.

Since the U.N. leaves much to be desired in a crisis, the U.S. is no doubt resigned to choices other than paralysis or Armageddon in searching for definable and credible "ready" forces that can checkmate a crisis, hoping for but not counting on Soviet, Chinese, or even allied cooperation.

Military forces that are to play a major part in creating the atmosphere for crisis settlement must add credibility to the settlement process. They can do this in two basic ways: through (a) selective response and (b) controllable effect. This is no more and no less than being able to create a match between diplomatic and military moves in a crisis. For example, the reliable communications at H-hour must also be sufficient at the eleventh hour to flexibly apply or withhold force. The implications of crisis capabilities must ultimately be understood by all parties to the crisis. After all, having crisis "credibility" is having a means of assuring all concerned that the use of force is *not* inconceivable if a settlement is not arrived at. Put another way, the U.S. requires both military and diplomatic means of maximizing the incentives to settle the matter peaceably, whether through tacit or negotiated understandings.

The "safety-catch" capabilities that a given force may require for crisis-control purposes will in turn affect the way this force is brought into the arena and its ability to react to situations encountered while there. For selective response, three initial operational capabilities appear to be required by a decision-maker:

*Positive Control:* The force must be able to have secure contact with national authori-



ties—the “word” must get through at all times.

*Quick Reaction:* Specific procedures are required to facilitate the conversion or activation of the force to achieve its mission.

*Presence:* Range, speed, and the ability to penetrate into or near the crisis area are obviously desirable, especially in a contingency where the United States has no forces stationed in the area. There should also be a capability to “signal” the other parties that such presence exists.

Being present in the area—and assuming that diplomatic measures have not abated tensions as yet—the deployed force requires further operational capabilities:

*Maintaining Threshold:* Depending on the intensity of the crisis, a threshold dividing tension and war may be at hand for times ranging from hours to weeks after the initial alert. This means that forces may have to be rotated or reinforced.

*Force Application or Withdrawal:* If the crisis becomes a war in which the United States, despite all other efforts, is involved, the deployed force must be ready to defend itself and/or attack targets on a selective, sustained basis. If the crisis is resolved, the force should be capable of timely disengagement and redeployment to home bases.

Without going into a detailed crisis scenario, we can illustrate these capabilities schematically as a package of demands varying in intensity as the crisis proceeds. (Figure 1)

Ideally, the decision-maker ranks his requirements for each major capability according to what his information tells him is most important to have at a given point in a crisis.<sup>13</sup> As Figure 1 indicates, his demand for receiving and acquiring information (e.g., positive control) is uniformly high (in economic terms, infinitely elastic) at all times. This is not as

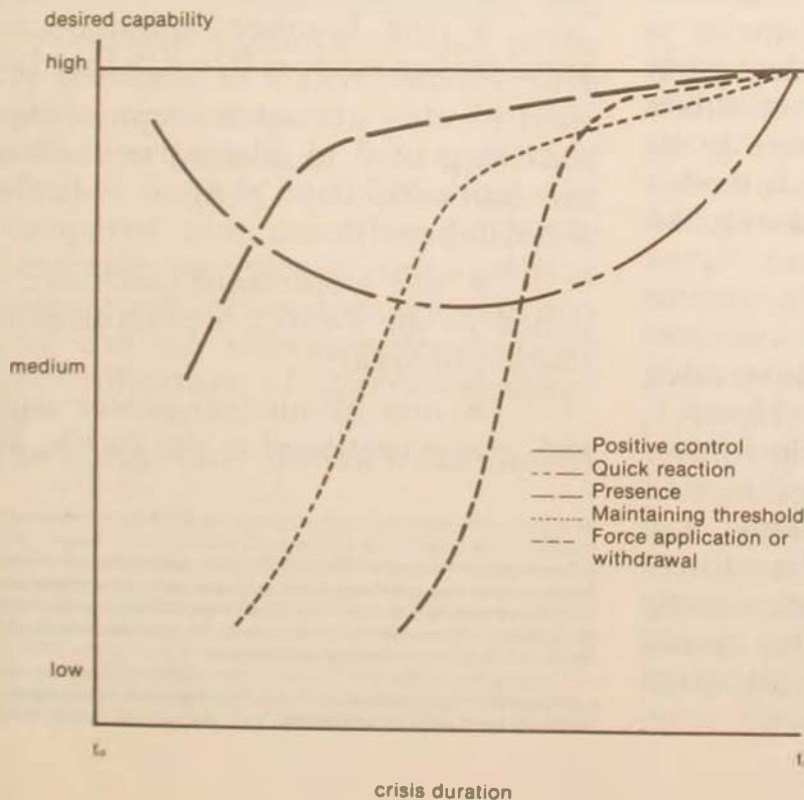


Figure 1.  
Decision-maker demands  
for force capability  
in a crisis.

true regarding other capabilities, although, as reflected by the ultimate convergence of the curves, they all become crucially important at the eleventh hour.

As the crisis extends, action priorities can, and should, change. The importance of sound but flexible judgment was chronicled by Robert Kennedy during the 1962 Cuban missile crisis deliberations:

It is no reflection on them [the 17 members of the "Excomm," the specially created Executive Committee of the National Security Council] that none was consistent in his opinion from the very beginning to the very end. That kind of open, unfettered mind was essential. For some there were only small changes, perhaps varieties of a single idea. For others there were continuous changes of opinion each day; some, because of the pressure of events, even appeared to lose their judgment and stability.<sup>14</sup>

The decision-maker is likely to prize quick reaction above all other capabilities (except positive control) at the beginning of the crisis. Later on, he may want the forces to maneuver in such a way as to signal our intentions to the other party (or parties) involved. At another subsequent point, the forces will have to be applied, disengaged, or reinforced—hence the U shape of the quick-reaction demand curve.

ASSUMING the illustrative crisis demand pattern shown in Figure 1, we can carry the analysis a step further by asking: "How available are certain forces to meet the requirements of a crisis?" The answer is that some forces are not as available as the public usually believes. To understand why, let us add some shadows and tones to the crisis picture:

(a) The crisis occurs without prior warning some 3000 to 5000 miles from the shores of continental U.S. (ConUS).

(b) No U.S. forces are within 400 miles of the crisis area.

(c) No allied forces are available, and in fact the U.S. has been denied permission to operate out of certain allied-owned airbases and seaports (à la the 1973 Middle East crisis), which further complicates the assembly of air, naval, and ground units.

If diplomatic activity increases but the use of force is not ruled out, what kinds of response do we have left? If the decision-maker considers (in our case) a nonnuclear response, he is compelled, for all practical purposes, to alert and deploy ConUS or sea-based forces to the scene of the crisis, whether it be for a friendly government endangered by external threats or to a troubled region beset by warring governments.

In addition to aspirin, let us afford the U.S. decision-maker four ready forces to choose from, given a crisis during the mid to late 1970s:

- one bomber squadron with aerial tanker support (ConUS-based)\*
- one airmobile Army brigade consisting of 3 to 5 airborne, armored, mechanized, or ranger battalions (ConUS-based)\*
- one amphibious task force (stationed in the Pacific, Mediterranean, or Caribbean area)\*\*
- one all-nuclear-power carrier task group (stationed in the Pacific, Med-

\*As experienced in the 1973 Middle East crisis, there is a possibility of last-minute foreign-government restrictions on movement of prepositioned U.S. forces and equipment in NATO Europe or the Far East. Therefore, forces based or home-ported in those areas are not considered available to the decision-maker in the situation discussed.

\*\*Generally consists of one or two marine regiments in amphibious shipping plus some armed Naval escorts.

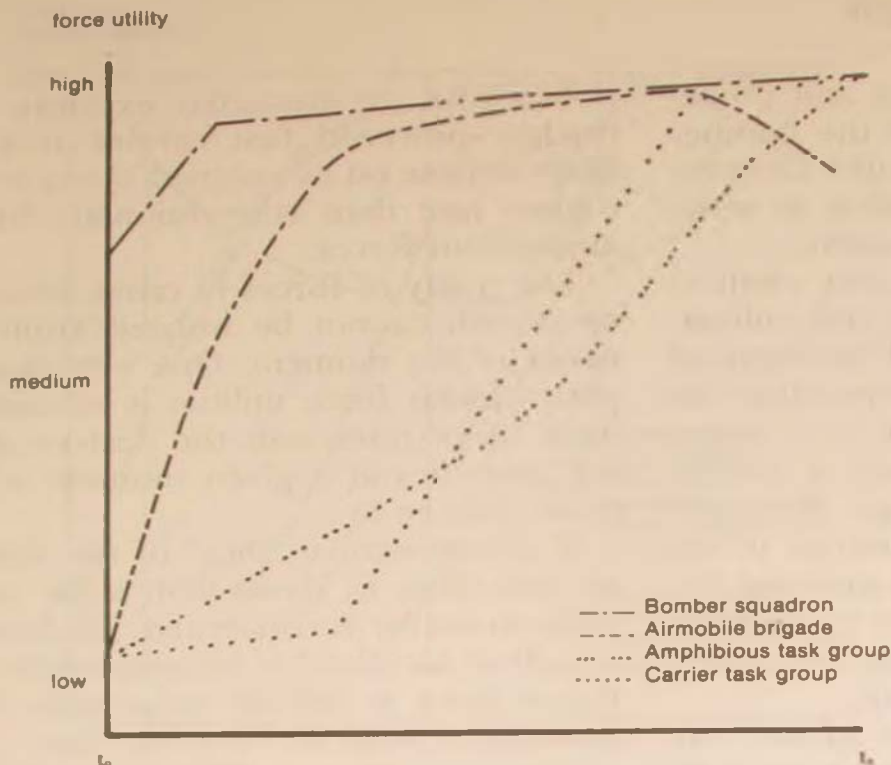


Figure 2.  
Surge rates of  
four alternative forces.

iterranean, or Indian Ocean area).\*\*\*

In considering these alternatives, one might construct a general measure of the utility generated by a given military force by estimating its surge rate—the increase in utilization (usually in hours per day) of which a force is capable for wartime as compared with peacetime purposes. For example, increases in crew-to-ship or crew-to-aircraft ratios, maintenance personnel, and war reserve materiel are all major indicators of increased surge rates.<sup>15</sup>

The surge rate indicates the overall

\*\*\*Availability depending on overhaul cycle—generally two carriers required to support one on station. Consists of one nuclear-powered aircraft carrier (CVAN) and associated air wing. (two interceptor squadrons with air-to-air missiles, two clear-weather attack squadrons, two all-weather attack and electronic warfare squadrons) with four nuclear-powered frigates (DLGN) in antisubmarine warfare (ASW) and antiaircraft surface-to-air missile (SAM) roles. (At present, the U.S. has only sufficient nuclear frigates—at over \$260 million each—to outfit one carrier task group. Two task groups of this kind could not be formed prior to 1978, assuming a reasonable period for sea trials after delivery of new DLGNs to the fleet.)

response that can be reasonably expected of a given force, involving highly coordinated operations with the requisite mobility and firepower to sustain combat or withdraw as appropriate. Just as operational capabilities desired by the decision-maker at a certain point in time define his demand for them, the respective surge rates of the forces constitute streams of military capabilities which the decision-maker can call upon at any given point in the crisis. (Figure 2)

Bombers are likely to have the highest initial utility because their initial peacetime utilization is relatively high. Significant numbers of alert aircraft and crews are based in the U.S. that could be quickly used, and their post H-hour transit time into a crisis area is likely to be much less than that required by the other forces considered. Even while air-



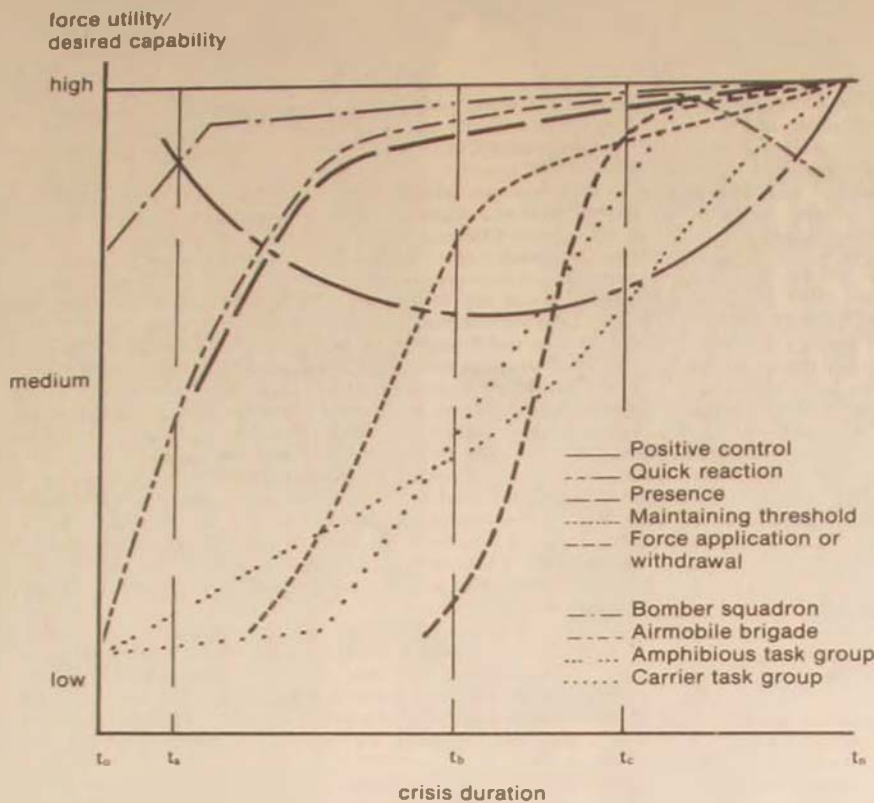


Figure 3.  
Crisis response of  
four alternative forces.

basically depend on what point the decision-maker *believes* the crisis is approaching. In the real world we do not usually know until it is over and we can look back on it. Uncertainty, however, does not preclude choice. Other things being equal, our short exercise indicates that the potential use of bombers in a contemporary crisis affords a high-confidence option for satisfying likely crisis objectives throughout the crisis.

THIS conclusion might surprise those who do not fully understand the difficulty of assembling forces where foreign bases could be politically denied, or those who regard the bomber as capable only of more Hiroshimas or Hanoi. Although it is not generally known by the public, bombers have been utilized in other ways appropriate to crisis management. For several years now, minelaying


of harbors and other vital approaches has been a secondary task of the U.S. Strategic Air Command (SAC) bomber force. In addition, the emergence of new technologies for surveillance could enhance the utility of the bomber for crisis operations: technologies including air-launched, remote-control pilotless drone aircraft; precision strike weapons guided by TV, laser, infrared, and radar; electronic defense jamming devices; and enlarged-capacity tanker aircraft.

The important point to be underscored is that crisis response should lead *away* from war by providing a measured deterrent force. The dynamics of a crisis situation—the decisions involved and the operational capabilities required—may go against conventional wisdom and lead us to support our diplomacy by utilizing long-range forces that are independent of foreign basing.

Washington, D.C.

## Notes

1. "Crisis" has been well defined by one observer as a series of events where the parties involved realize that "an important turning point in history is imminent and that there is an increased danger of war."—Hannes Adomeit, "Soviet Risk-Taking and Crisis Behavior," *IJSS Adelphi Paper 101* (London: International Institute for Strategic Studies, 1973), p. 3. I would add that governments can be highly selective in attaching a "crisis" label to events—especially where another party is merely suspected of being involved—e.g., the Dominican crisis of 1965 and the Soviet/Warsaw Pact invasion of Czechoslovakia in 1968.
2. Department of Defense, *Annual Defense Department Report FY 1975*, 4 March 1974, pp. 29, 44; also see articles by Leslie H. Gelb in *New York Times*, 24 March 1974, p. E3, and 31 March 1974, p. 2. If the public statements are accurate, the U.S. position appears to be an internal compromise between the technology-limiting viewpoint of the State Department and the Arms Control and Disarmament Agency (ACDA)—as reflected in *Senate Resolution 287* of 8 February 1974 (introduced by Senator Mathias, R., Md.)—and the Department of Defense's preference for equalizing throw-weight which Senator Jackson's (D., Wash.) SALT proposal of 4 December 1973 reflects; see *Congressional Record—Senate*, Vol. 119, No. 189, 4 December 1973, and Vol. 119, No. 230, 8 February 1974. In his news conference of 2 December 1974, President Ford acknowledged that the Vladivostok agreement allows the U.S. and U.S.S.R. each a ceiling of 2400 missile and bomber delivery systems (forward-based U.S. systems and probably the Soviet Backfire bomber excluded) with a constraint of 1320 missiles permitted to be equipped with multiple independently targeted warheads (MIRVs). *Washington Star-News*, 3 December 1974, p. A-7.
3. Kenneth Arrow, "Limited Knowledge and Economic Analysis," address delivered to the American Economic Association convention, 29 December 1973, published in *American Economic Review*, March 1974, p. 1.
4. U.S., *United States Foreign Policy for the 1970's: Shaping a Durable Peace—The President's Report to the Congress*, 3 May 1973, in *Weekly Compilation of Presidential Documents*, Vol. 9, No. 19, 14 May 1973, p. 625. Text of the "Interim Agreement between the USA and the USSR on Certain Measures with Respect to the Limitation of Strategic Offensive Arms" of 26 May 1972 in U.S., Congress, House Committee on Foreign Affairs and Senate Committee on Foreign Relations, *Legislation on Foreign Relations: Joint Committee Print*, 93d Congress, 2d Session (Washington: GPO, March 1974), pp. 1180-82. Hereafter cited as *Legislation on Foreign Relations*.
5. See text of "Agreement Between the USA and the USSR on the Prevention of Nuclear War" of 23 June 1973 in *Legislation on Foreign Relations*, pp. 1196-97. Especially relevant for crisis behavior is Article IV: "If at any time relations between the Parties or between either Party and other countries appear to involve the risk of a nuclear conflict, or if relations between countries not parties to this Agreement appear to involve the risk of nuclear war between the [U.S.A.] and the [U.S.S.R.] or between either Party and other countries, the [U.S.] and the [U.S.S.R.] acting in accordance with the provisions of this Agreement, shall immediately enter into urgent consultations with each other and make every effort to avert this risk." (Emphasis added.)
6. U.S., Congress, Senate, Committee on Foreign Relations, *Hearings on the Nomination of Henry A. Kissinger*, 93d Congress, 1st session (Washington: GPO, 1973), Part 1 of 11, p. 127. Hereafter cited as *Hearings*.
7. Expressing concern about U.S.-Soviet relations after the Middle East crisis and possibly over the threat to Soviet influence in Latin America after the fall of the friendly Allende regime in Chile, CPSU Chairman Brezhnev paid a state visit to Cuba and told (or warned) a Cuban revolution-day rally in early 1974: "We are not pacifists, we are by no means for freezing of the social and political processes that are taking place inside particular countries." On the other hand, he lauded the usefulness to world peace of the "improvement that has begun in Soviet-American relations"; see *Pravda* and *Izvestia* dispatches of 31 January 1974 as translated in *Current Digest of the Soviet Press*, Vol. 26, No. 5, 27 February 1974, p. 4.
8. From contacts with Moscow and Peking during 1971 and 1972, the United States was apparently able to ascertain certain limits on the nature of Soviet and Chinese support for North Vietnam. Such maneuvering may have been a *sine qua non* for the United States to harness military force and diplomatic activity (via the May 1972 Haiphong mining operations and the December 1972 LINEBACKER saturation bombing raids) in achieving the Vietnam cease-fire of January 1973. Laurence Martin, *Arms and Strategy* (New York: David McKay Co., 1973), pp. 207-9.
9. Total weapons count (force loadings) in terms of strategic offensive (ICBM/SLBM or bomber-launched) weapons available to the U.S. and Soviet Union estimated as of mid-1974 to be 7940 and 2600, respectively, excluding some 7000 U.S.-controlled nuclear weapons in NATO Europe; see table provided by Secretary of Defense Schlesinger to the Senate Armed Services Committee in early 1974. U.S., Congress, Senate, Committee on Armed Services, *Hearings on Fiscal Year 1975 Authorization for Military Procurement, Research and Development, and Active Duty, Selected Reserve and Civilian Personnel Strengths*, 93d Congress, 2d session (Washington: GPO, 5 February 1974), Part 1, p. 290.
10. Amoretta Hoerber, "Strategic Stability," *Air University Review*, July-August 1968, p. 67.
11. According to information released by Mr. Pinhas Sapir, Israel's Finance Minister, the 18-day 1973 war cost Israel \$396 million per day of fight. *Washington Post*, 5 March 1974, p. A24. This total was nearly four times Israel's daily war expenditures in the 1967 war. U.S., Congress, House Committee on Armed Services, *Report of the Special Subcommittee on the Middle East*, 93d Congress, 1st Session (Washington: GPO, 13 December 1973), p. 13.
12. When merger talks failed between Egypt and Libya, Pakistani Air Force pilots replaced Egyptians in the cockpits of French-made Mirage interceptors of the Libyan Air Force. *Washington Post*, 18 February 1974, p. A1. According to Israel's Defense Minister, Moshe Dayan, North Korean pilots manned a squadron of Egyptian MIGs in the 1973 Middle East war, and at least a brigade of Cuban "volunteers" have been helping operate Syria's Soviet-supplied forces in the Golan engagements with Israel in 1974. *Washington Post*, 1 April 1974, p. A14. In April 1974, a Beirut magazine reported that Iranian pilots would replace British contract pilots operating Oman's small air force in strike operations against rebel strongholds. Iranian tank and artillery personnel are also operating in Oman under a cooperation agreement with that state to secure the Persian Gulf entrance. *Washington Post*, 5 April 1974, p. A27.
13. In the "real world," things can be much different. In the USS *Pueblo* crisis of 1968, there was an apparent lack of information vis-à-vis a possibly troublesome situation, although previous North Korean attacks against South Korean vessels were known. The U.S. had detected some North Korean threats against the *Pueblo* several weeks prior to the ship's seizure, but such information was not properly routed into National Command Authority Channels. U.S., Congress, House Committee on Armed Services, *Inquiry into the USS Pueblo and EC-121 Plane Incidents: Hearings before the Special Subcommittee on the USS Pueblo*; 91st Congress, 2d Session (Washington: GPO, 1969), pp. 683-85, 704, 728, 896.
14. Robert F. Kennedy, *Thirteen Days: A Memoir of the Cuban Missile Crisis* (New York: Signet Edition, 1969), p. 31.
15. Statement of Secretary of Defense Schlesinger in U.S., Congress, Senate, Committee on Armed Services, *Hearings*, Part 1, p. 121.
16. See Addendum II to statement of the Chief of Naval Operations in U.S., Congress, House, Armed Services Committee, *Hearings on Cost Escalation in Defense Procurement Contracts and Military Posture and H.R. 6722*, Part 1, 93d Congress, 1st Session (Washington: GPO, 1973), p. 937.



# COUNTERFORCE IN AN ERA OF ESSENTIAL EQUIVALENCE

CAPTAIN D. J. ALBERTS

WHILE watching the national news on the evening of January 10, 1974, I was a bit startled to hear of a "new option," a "new targeting strategy" that the United States was implementing. The new option is "counterforce." I thought there must be some mistake. A misquote perhaps? But no, there in the next day's *New York Times* was a short article entitled, "U.S. Says It Is Retargeting

Some Missiles Under a New Strategic Concept."<sup>1</sup> This was followed on January 15 by an editorial in the same publication calling for "a great national debate" on the topic.<sup>2</sup> And then, lo and behold, *Time* on February 11 devoted its cover story to this issue and other matters relating to the defense policy of the United States.

I was beginning to feel a little like Rip Van Winkle must have felt when he awoke from his nap. Was I the only person alive who was either too young to forget or too old to remember that there once *was* a great debate on this very topic? Was there not a young man called forth from the

capitalistic dungeons of sweat-shop Detroit who slew the mighty dragons of missile gap and massive retaliation, who pursued the Holy Grail of flexible response, who provided to his king many and varied options, and who, while giving guidance to young scholars at Ann Arbor in 1962, first confounded and then tried to convince the mighty Red Knight of Moscow that a new, more rational strategy existed, one that would save us all from disaster if one of us somehow "pressed to test"? This better option was labeled "counterforce." What happened to the millions of words, the thousands of dollars of speakers' fees, the gallons of ink, the wrinkled brows, the testimonies before Congress, the panic workloads in the Pentagon, and the heated conversations at cocktail parties that made up the resulting Great Debate over counterforce? Have we had a book burning, a return to the Dark Ages where the works of such strategic thinkers as Schelling, Snyder, Brodie, Halperin, and Kaufmann have been relegated to the depths of some monastery to be watched over by the Order of John Birch? Or is it simply a case of the media forgetting that we did this once before? Are we about to reinvent the wheel?

Having been in the position of teaching some of these concepts to future officers, I wondered whether, if a Great Debate is indeed needed, I might offer for consideration some of the arguments put forth during round one, so that, at the very least, readers of this journal would not have to waste precious time relearning and rethinking old arguments. Furthermore, since the basic strategic environment of the world has changed considerably since 1962, it might prove worthwhile to consider the basic arguments relating to counterforce in context of strategic balance today.

There are two general areas that should be examined in the Great Debate: counterforce itself and the provision of options. Strictly defined, counterforce is a targeting strategy wherein the principal targets in a nuclear attack are those that have direct military significance. In particular, those targets are the opponent's offensive nuclear capability, consisting of his missile complexes and fields, his bomber force and supporting bases, and his submarines and supporting facilities. This targeting strategy may be contrasted with the targeting strategy of countervalue, which is the striking of targets because of their value to the opponent. These values are normally conceived of in terms of population (cities), industry, and other types of culturally, politically, or economically significant objects. (To Hitler and the Soviets, Stalingrad had "value" in the countervalue sense not only by virtue of its population, geographical position, and industrial potential but also because of its name.) Part of the confusion marking the sixties' debate as well as today's stems from equating counterforce to a credible first strike or, in Defense Secretary Schlesinger's terms, a "disarming first strike." The two *may* be tied together, but there is nothing in the logic of either concept that requires them to be tied together. The logic behind a truly credible first-strike capability implicitly assumes *either* near totally effective counterforce application of offensive weapons *or* a nearly invulnerable defensive capability (one that protects all types of targets, value, and force).

In discussing counterforce and countervalue strategies, an immediate practical problem surfaces. What is the dividing line between the two? For example, is Offutt Air Force Base a counterforce or countervalue target? The intention represented in striking Offutt would be



counterforce, but much of the resultant damage done to Omaha would provide a countervalue spin-off. (Herman Kahn would characterize an attack on Offutt as an example of "counterforce with bonus" strategy.)

The provision of options is a somewhat different matter. In the era of the 1960s, the United States was shaking off the effects of the Eisenhower/Dulles doctrine of massive retaliation. Under massive retaliation, the United States had effectively only two options should deterrence fail (in the form of a Soviet attack on Western Europe or the continental United States): either do nothing or attempt to destroy the Soviet Union in retaliation. Eisenhower began to retreat from pure massive retaliation after 1955. Despite modern-day revisionism concerning the actual application of massive retaliation as a deterrent strategy, the importance of the strategy to this brief historical synopsis is that skeptics and critics of the strategy saw only this choice. Therefore, the credibility of the strategy as a deterrent to any action short of a full-scale nuclear attack on the U.S. became suspect.

The McNamara strategy of flexible response was an attempt to change this basic strategic choice. At the nonnuclear level, flexible response was intended to provide a conventional defensive capability in those areas of threat to our security where deterrence by use of nuclear weapons was clearly irrational. On the strategic level, flexible response was also designed to provide, in any situation where deterrence failed, an alternative other than doing nothing or attempting to destroy the Soviet Union in retaliation. Thus, the original enunciation of counterforce was an option within flexible response.

The concern for options arises from

the dilemma created by the difference between deterrence and defense. (The classic explanation of this dilemma was provided by Glenn Snyder.<sup>3</sup>) Options are only important *if deterrence fails*. The exercising of an option is to engage in actually fighting a war. In other words, if the deterrent threat has failed to deter, what can we then do to (1) win, or (2) stop the nuclear exchange, or (3) avoid being destroyed? Unfortunately for both theoretical and practical exercises, one's consideration of various strategies and options to be used if deterrence fails also affects the credibility of one's deterrent threat. That is, deterrence is maximized if one's threatened response contains no option other than immediate *automatic* massive response. Likewise, the perception of the threat to be deterred, as well as the opponent's "risk calculus," is affected. Once the options are present, at least in the form of the physical ability to exercise them, the deterrent environment increases in complexity. Such ruminations as Schelling's negotiation of risk-taking<sup>4</sup> and Kahn's escalation ladders and tension scenarios<sup>5</sup> become vitally important, if for no other reason than that they have been enunciated and *might* be operating in the calculations of one or both sides in a given tension situation.

The overall name given the nuclear portion of the McNamara strategy was "controlled response." Counterforce and the various and sundry mutations of a basic counterforce targeting strategy are some of these options provided under controlled response. The debate, then as now, can therefore still be looked at in two ways: first, the rationality and effectiveness of counterforce itself as an option; and, second, the worth of pursuing options.

Perhaps the most concise formulation of round one of the great counterforce/

option debate is found in Morton Halperin's *Contemporary Military Strategy*.<sup>6</sup> Quoting Halperin:

The Strategy of Controlled Response, with its goals of limiting maximum damage in a general nuclear war, while giving first priority to deterring such a war, might seem unobjectionable. In fact, however, the enunciation of the doctrine by Mr. McNamara evoked a storm of criticism in the United States and elsewhere, which has continued. The objections which will be considered here are: the Soviets will not adopt the strategy given their inferiority; the strategy is of no value if both sides have well-protected strategic forces; it is only valuable in a first strike; the strategy increases the danger of an inadvertent nuclear war; and finally, it leads to an accelerated arms race.<sup>7</sup>

Halperin's counter arguments to the objections can also be viewed as summaries of the other side of the debate. First,

. . . even if the Soviets reject the strategy publicly, it is clearly in their interest to seek to limit damage, if war occurs. Such limitation concerns both sides; but it is even more in the interest of the weaker, rather than the stronger, power. Once war begins, the Soviet Union can do much less damage to the United States, even if it attacks American cities, than the United States can do to the Soviet Union, despite the greater concentration of American population. Moreover, the greatest Soviet objective—particularly as long as the Soviet Union is weaker than the United States—is to avoid general nuclear war.<sup>8</sup>

The second objection, that if nuclear forces are protected the strategy has no value, is answered by the charge that not all nuclear forces are protected. Eliminating reserve forces that can be destroyed in retaliation obviously increases negotiating power in that we would still have a usable reserve while the opponent's reserve would be lessened.

The objection that counterforce *per se* is a first-strike strategy is somewhat more difficult to answer. This is tied into the fourth objection, that opponent fear of a first strike makes inadvertent nuclear war more likely. Regarding the first-strike objection, Halperin claims that the critics miss the point: that the use of such strategy is really designed to increase leverage in the effort to negotiate an end to the nuclear exchange. The attractiveness of first-strike motives' influencing decision-makers can only be reduced by the development of well-protected strategic forces on both sides.<sup>9</sup> Therefore, the two objections are illogically linked in the first place.

Lastly, the criticism that controlled response/counterforce would lead to an arms race is dismissed because the criticism confuses war control with a commitment to strategic dominance. Critics of counterforce assume that counterforce requires either complete superiority or high payloads and superaccuracy. This is not necessarily so. Various quality mixes can confer a counterforce capability. In the extreme, one missile capable of destroying one other missile can be targeted counterforce. What is actually being argued is credible first strike. The requirements for a credible first strike are substantially different.

What really happened in this round of the debate? Which side was right? It is difficult to find sure answers because we have not fought a nuclear war (thereby "proving" the critics wrong); we have had a kind of arms race (thereby "proving" the critics right), and the issues involved in the debate were never really resolved. The policy emphasis shifted from controlled response to assured destruction somewhere in the later McNamara years, and the issues of counterforce faded away into some nether re-

ion to re-emerge in 1974. This would tend to indicate that any Great Debate today would have similar results—that is, no results. In fact, it is difficult to understand, in my mind, why the issue is suddenly again so sensitive. There is no public evidence, as I recall, that we ever left counterforce strategy between 1962 and 1974, with the exception of the announcement that we were returning to it. (Logic compels the assumption that if we are returning to it, we must have left it, even without public announcement.) One may argue that enunciation of assured destruction meant leaving counterforce out of our strategy, but this is not necessarily true. Assured destruction essentially says to an opponent, "Regardless of what you do to us in a first strike, we can guarantee to you destruction that you cannot accept and still survive." The targeting of the second strike may or may not be counterforce, or pure counterforce. In all probability, it would be a mixed strategy depending on many variables (enemy offensive forces in reserve, ability to retarget rapidly, desire for revenge, etc.). Assured destruction, if it fails to deter, may not be so "assured" because it might not even be used. In any case, the strategy of counterforce is definitely not new. It may be emphasized in a different manner, but it simply is not something new to the scene of strategic thought.<sup>10</sup>

Now, why did the first debate over counterforce abate? The answer is relatively simple. The debate was overcome by other issues, both in the strategic field and in other areas; namely, assured destruction leading to realistic deterrence in the former, Vietnam (among other things) in the latter. Other events crowded the minds and works of those who were the likely debaters. Likewise, the debate so fervently called for in

January died down in the summer of 1974 for rather obvious reasons, i.e., Watergate and the constitutional questions surrounding impeachment. Now that these two issues are largely history, one might expect renewed interest in the strategic question. The debate has continued to exist, however, low key and back burner but there nonetheless.<sup>11</sup>

There is some evidence, and the claim has been made, that the original statement of counterforce had unfavorable results and did in fact lead to something of an arms race. However, even if true, this would not invalidate Halperin's claim that such a race was a result of strategic dominance rather than the having of a strategy of counterforce. The construction put on the events of 1962 can vary; we simply do not have enough information. One construction runs something like this. With all our late 1950s concern over Soviet ICBM's, Sputnik, and missile gap, the Soviets saw that we perceived a Soviet capability (an added first-strike potential aimed at the continental U.S.) that did not exist. (Soviet missile strength was quite pronounced in IRBM's—a threat to Europe—but very weak in ICBM's.) As long as we so perceived the situation, it only seemed to blow up the Soviets' strength to encourage this belief through missile-rattling. Why would the United States want to give the Soviets an apparent capability they did not possess and then be afraid of that apparition? However, when Mr. McNamara announced counterforce, rather than telling the Soviets that we wanted to control a nuclear war, whether it be inadvertent or calculated, we were actually telling them that we had realized our error in regard to their capabilities. More than that, it is conceivable that we were telling the Soviets that we had a credible first-strike capability and were willing to use it as

part of our deterrent and/or confrontation posture. In other words, regardless of the content of Mr. McNamara's signal, the Soviets were hearing, "Look, we now know that you really don't have many ICBM's. We further know that we, the United States, possess a vast superiority in nuclear weapons. We know where your retaliatory forces are located, and we can destroy them, if we so desire." The Soviet response was threefold: a massive shift of emphasis from IRBM's to ICBM's, a quick-fix attempt to redress the balance by the Cuban episode, and, in time, the somewhat shaky decision (from a technical standpoint) to pour money into the development and deployment of the Goshawk ABM system around Moscow and its ICBM field. The Soviet ICBM panic then served as the trigger that led to the assured destruction concept and the arms racing of the later McNamara years.

Now, this is not to say that it actually happened. It is but one of the constructions that can be built upon the known facts. Other constructions have been placed on the same events. It should be noted that counterforce enunciation only indirectly led to the arms race. The perceptions of superiority and what such superiority meant in political terms can be seen as the direct cause of the late 1960s race.

The last point that should be looked into before moving to consideration of today's strategic environment is whether or not counterforce is in fact a first-strike strategy. It is on this point that logic and morality, not to say national objectives, become confused and create paradoxes. Counterforce by itself does not imply either a first-strike or second-strike capability. The United States has repeatedly gone on record as ruling out a U.S. preemptive strike on any grounds. The logic

of striking an opponent's force does not imply, however, *for maximum utility and benefit*, a first strike. But this fact does not detract from the capability of a less-than-maximally beneficial controlled second strike. There will be missiles left (reliability being what it is). Not all of the bombers would have made it off the ground (maintenance aborts), and some reserves would logically be left to insure destruction of key targets that were somehow missed in the first shot. It would be to our advantage, if we were to retaliate at all, to destroy these targets so as to limit or eliminate further damage to ourselves in any follow-on attack.<sup>12</sup> Further, anybody can always strike first—it is a possibility. But this may be a far cry from a *credible* strike. Counterforce only equates to a credible first strike in an environment where it is coupled either with overwhelming superiority, so as to guarantee a disarming or nearly disarming strike, or with a defensive posture that guarantees or nearly guarantees invulnerability to retaliation.

The *New York Times* article calling for the great debate put forth many of the same arguments that first appeared in 1962.

Such a debate is vital because of the immediate impact of the new strategy on Soviet military planning, on the strategic arms limitation talks (SALT II) and on the opportunity that still exists to halt a new arms race in MIRV multiple warhead missiles. . . .

Mr. Schlesinger insists that the retargeting Minuteman and projected deployment later of more accurate missiles would not constitute a true "first strike" capability since the United States would only be able to destroy some, not all, of Russia's ICBM's. But Soviet analysts, using traditional military "worst-possible-case" estimates, may see the American capability differently and press for a matching Soviet "first

strike" force. The advantages of shooting first in a crisis would be so great that both sides might become trigger happy. . . .

The trouble with this approach is not only that it requires enormous numbers of new, highly accurate warheads, making a new round in the strategic arms race probable and dooming SALT II, but it would increase rather than decrease the likelihood of strategic nuclear war. If the consequence of using nuclear weapons is a limited enemy counterattack against military installations—on the dubious assumption on both sides that rapid escalation into all-out nuclear exchange could be avoided—the inhibition against the use of nuclear weapons would be much reduced.<sup>13</sup>

One is very much tempted to throw up one's hands and either sob or laugh hysterically. There is no particular evidence that the Soviets in their planning have ever paid much attention to what we do. We already have the "enormous numbers of . . . highly accurate warheads"—but so do the Soviets (bigger, but less accurate). And, although it is a weak argument, since we first instituted counterforce in 1962 and no war has resulted, can one assert that the inhibition against use of nuclear weapons has been reduced? Additionally, there are the U.S. and U.S.S.R. triads (ICBM's, SLBM's, and manned bombers); so a "limited disarming strike" is *not* a credible first strike.

Confusion arises here for several reasons. Whereas both the United States and the Soviet Union possess a triad of strategic forces, the view we ascribe to each respective triad differs. Each element of the U.S. triad is viewed by many to be a deterrent across the strategic spectrum in its own right. At the same time, we tend to concentrate on the Soviet missile force (sometimes including SLBM's) as their sole deterrent. And, in

looking at our own forces, we tend to assume that one leg of the triad must deter all of the Soviet threat. In this particular case, a missile counterforce capability would only equate to a credible first strike if it were near totally disarming—if our MIRVed missile force possessed the accuracy, warhead quantity, and megatonnage necessary to destroy nearly every Soviet launcher, be it located in a submarine, in a silo, or on an airfield. Even prior to SALT I, this was not the case, and the limitations imposed by SALT I indicate that this is a physical impossibility for our ICBM force. Simply put, the numbers do not allow it.

However, this view of the triad is incorrect. Our purpose in the triad has been thus defined:

not to provide an independent assured destruction capability in each element of the strategic forces, as some people have presumed. Rather, it is to achieve a sufficient degree of diversification in our forces to hedge against both foreseeable and unforeseeable risks, and to enable us to continue to make available to the President a reasonable range of strategic options. . . .<sup>14</sup>

We must therefore look at the total strategic force and the total capabilities and limitations, not solely at ICBM versus ICBM. It likewise follows that if our ICBM force is counterforce targeted, this does not equate to a first-strike capability in and of itself. There is much more that must be accounted for in this determination.

The *New York Times* has erred once again in confusing deterrence with defense. As Glenn Snyder tried to point out in 1961, "the central theoretical problem in the field of national security policy is to clarify and distinguish between the two central concepts of *deterrence* and *defense*."<sup>15</sup> The *New York Times*,

among others, has not paid attention or has forgotten. Things that contribute to deterrence may be useless in defense, and vice versa. With the increasing complexity of the defensive posture of both sides, complete reliance on deterrence may leave us totally unprepared for defense, if deterrence fails.

Unlike 1962, the United States no longer enjoys a massive strategic nuclear superiority. Like it or not, for the foreseeable future we are in an era of *mutually assured destruction* (MAD—originally Donald Brennan's term). This situation exists primarily because of the hated "overkill" capabilities of both sides and the agreed-upon Antiballistic Missile (ABM) Treaty leaving retaliatory forces relatively undefended against missile attack. It is difficult to see how any amount of MIRVing, accuracy increase, or any other qualitative *offensive* improvement could alter this basic fact, barring a completely unforeseen technological breakthrough of the scope of the invention of the airplane or the discovery of fire. SALT I and the ABM Treaty help freeze us into MAD, and MAD insures a high, mutually existing *deterrent*. (An invulnerable defense and/or an unstoppable totally effective offense would be needed to break the MAD deadlock—i.e., give somebody a credible first strike.)<sup>16</sup>

A more serious objection is the possibility of an arms race, which is, in fact, being discussed. However, I would maintain, much as Halperin did in 1967, that if an arms race results, it does so because of a desire to maintain superiority, or to gain superiority, not because of pre-emption fears generated by a counterforce strategy. As Secretary of Defense Schlesinger stated, "The decision to produce and deploy these systems will depend, among other things, upon the

outcome of the strategic arms limitation negotiation."

Our defense policy in this age of SALT is now termed "essential equivalence." Unlike our previous "strategic sufficiency," the posture is now taking on some sort of definable shape. The United States has given up the desire or aim of clear-cut strategic superiority. This is not to say that by doing so we are willing to accept strategic inferiority. Rather, we will maintain some sort of rough parity or, if you will, equivalence with the Soviet Union. If they attempt to gain superiority, we will resist.

Much of this whole thing is involved in what has already been done in SALT I and the ABM Treaty and is hopefully to be continued in SALT II. While I do not care to indulge in a résumé of the alleged pros and cons surrounding SALT I, it is imperative to make a few points in the context of superiority.

The Soviets possess an agreed-upon guaranteed quantitative superiority in launchers, approximately 40 percent. This numerical superiority also confers superiority in throw-weight and thus in maximum megatonnage. This superiority is offset by U.S. MIRV technology and deployment, U.S. accuracy, and number of warheads (particularly the result of MIRV). The U.S. also possesses a vast, but aging, superiority in manned bombers. The sea-launched systems can likewise be considered roughly equal—more launchers on the Soviet side, better accuracy and MIRVing on the U.S. side. (The ABM Treaty really means that neither side will defend its forces in a way involving an imperative to increase numbers of missiles to offset the defense.) Essentially, the static position of mid-1974 is a Soviet missile numerical superiority balanced by an American qualitative superiority—or essential equivalence.

Many analysts would perhaps disagree with this formulation. However, by agreeing on these measures, both sides have accepted them and would appear to be satisfied with the parity presently existing. The future is another matter. If the Soviets move to MIRV deployment, and there is as yet no indication that they are going so, then the balance could start shifting to Soviet superiority. In August 1973 the Soviet Union tested a MIRV. The technological knowledge is there. Deployment is another matter. If the Soviets MIRV, the agreed-upon existing level of U.S. qualitative superiority could well disappear, and the already existing numerical and megatonnage superiority of the Soviets would be relatively strengthened. Secretary Schlesinger has asked for R&D funding to continue to develop U.S. qualitative options. An arms race, if it develops, will come only if Soviet deployments occur to erase the U.S. qualitative margin and we deploy new systems to keep it. Secretary Schlesinger has made it clear that we are willing to accept asymmetries in comparison of triad legs. This is a far cry, however, from accepting a major asymmetry in the overall strategic balance, or a series of asymmetries that "all point in one direction."<sup>17</sup>

Secretary Schlesinger has separated the sizing issue from the counterforce or targeting issue. This in itself has caused some mental confusion because there are linkages between the two issues.<sup>18</sup> The targeting, or option issue, relates to possible gaps in our deterrent threat, as well as the defensive ability (in Glenn Snyder's concept) to fight a nuclear war and provide intrawar deterrence should deterrence fail to deter. The view is expressed that deterrence based on assured destruction/countervalue is becoming less credible in a world where full-scale nu-

clear war is considered to be more irrational and less probable. If China was not deterred from supplying the Viet Minh by the possibility of massive retaliation, can we expect that the Soviet Union will be deterred from contemplating, threatening, or even using, in a limited manner, nuclear weapons in a confrontation with the United States or a NATO member over some strategic area? The options are to give us the ability to threaten less than maximal response and therefore increase the credibility of our deterrent threat. The linkage to the sizing question lies in the nature of the strategic balance, or more precisely, the question of parity or superiority. An option represents two things in this context: first, it is a rung on the escalation ladder that must logically be topped by superiority (whose ladder goes higher in thinking out the unthinkable); and second, it represents the physical capability in numbers of launchers, warheads, and/or megatonnage set aside for that option while still meeting the physical requirements of other options, including full-scale second-strike response.

Détente notwithstanding, Americans must ask themselves if this is an acceptable position to be in: a world with Soviet strategic superiority across the board. This is properly the central question to be answered. What price superiority, or more accurately, what price prevention of inferiority? While a discussion of superiority is beyond the scope of this article, some observations are in order.

I would agree with Colin Gray<sup>19</sup> that there is a lot of confusion in American strategic thinking today. Old arguments continue to be heard, still unsubstantiated by events or meaningful data. This holds true for the small but growing debate on the meaning of strategic superiority. Many of the arguments used to

refute the view that superiority is meaningful beg the question by using examples where U.S. superiority never entered the equation (specifically, the example of Hungary, 1956).<sup>20</sup> Huntington has made the point that the political implication of superiority essentially lies in the eyes of the beholder.<sup>21</sup> If we are confused as to what superiority means and if the Soviets gain strategic superiority, are we as a nation not automatically at a political disadvantage? Would not our deterrent posture immediately suffer from a lack of credibility simply because we could not agree on the meaning of superiority that is now hostile?<sup>22</sup>

The central point is that there are many questions of great importance that need investigation by strategic thinkers, and this investigation is needed now. Counterforce is not, in my opinion, one of these burning issues. (If for no other reason than that counterforce has been

with us as a concept/policy for over 12 full calendar years now.) The meaning of superiority is a burning issue, as is Mutual Force Reduction (MFR),<sup>23</sup> the desirability of MAD and what to do about it if we don't like it, and SALT II.<sup>24</sup> I would also add the warning(?) that the superiority question should be considered across the board, including escalation scenarios, intervention capabilities, and conventional situations. It is inconceivable to me that any individual, group, or "players in positions" would contemplate disarming the opponent's ICBM force when he/it/they would be deluged with bombers and SLBM's in retaliation. If we are going to indulge in a great debate, let us at least indulge in a meaningful one that can clarify significant issues today and in a manner that does not rely on emotional fears.

*United States Air Force Academy*

#### Notes

1. John W. Finney, "U.S. Says It Is Retargeting Some Missiles Under a New Strategic Concept," *New York Times*, January 11, 1974.

2. John W. Finney, "Nixon's Nuclear Doctrine," *New York Times*, January 15, 1974.

3. Glenn H. Snyder, *Deterrence and Defense* (Princeton: Princeton University Press, 1961), pp. 5-40.

4. Thomas C. Schelling, *Arms and Influence* (New Haven: Yale University Press, 1966).

5. Herman Kahn's own triad, *On Thermonuclear War* (1960); *On Escalation: Metaphors and Scenarios* (1965); and *Thinking About the Unthinkable* (1962).

6. Morton H. Halperin, *Contemporary Military Strategy* (Boston: Little, Brown and Company, 1967).

7. *Ibid.*, p. 84.

8. *Ibid.*, p. 85.

9. *Ibid.*, p. 86.

10. There does seem to be agreement in most learned circles that we did indeed leave counterforce behind after about 1964, not so much from choice as from the physical necessity to provide warheads and vehicles to meet our criteria of what constituted a level of assured destruction. Secretary Schlesinger indicates, however, that we still maintained some element of counterforce targeting in our overall counter-value assured destruction deterrent threat.

11. The editorials and short articles buried in back pages of newspapers throughout the country are too numerous to mention. However, attention should be drawn to: Herbert Schoville, Jr., "The Balance of Arms," *The New Republic*, March 30, 1974; U.S. Representative Robert Price's letter to the Op-Ed editor, "Of Counterforce and the Prospects of War," *New York Times*, March 22, 1974; editorial, "New Strategic Nuclear Policy," *Aviation Week*, March 18, 1974; Herbert York, "Deterrence by Means of Mass Destruction," *Bulletin of the Atomic Scientists*, March 1974;

Chalmers M. Roberts, "Expanding U.S. Options," *Washington Post*, April 10, 1974; and, for balance, Julius Duscha, "Military Spending: The Juggernaut Rolls On," *Progressive Magazine*, April 1974. Particular attention should be paid to those articles highlighting Senator McIntyre's position during testimony on the issues. If testimony is not readily available, a good set of articles can be found in the *Wall Street Journal* of June 12 and 13, 1974, entitled, "A Choice on Deterrence" and "Power Struggle: Critics Condemn Congress for Defense Budget."

12. In the era of SALT I, and assuming the Interim Agreement holds, the "open-hole" alleged illogic takes on new meaning perhaps. (The open holes are the "launchers" into which new missiles must go in order to be launched in 2d, 3d, . . . nth wave attacks.)

13. *New York Times*, editorial, January 15, 1974.

14. James R. Schlesinger, *Annual Defense Department Report: FY 1975* (Washington, D.C.: U.S. Gov't Printing Office, 1974), p. 49.

15. Snyder, p. 3.

16. For a rather short discussion of SALT I/MAD implication, see Donald J. Brennan, "When the SALT Hit the Fan," *National Review*, Vol. XXIV (June 23, 1972), pp. 685-92.

17. Schlesinger, p. 43.

18. Laurence Martin, in "Changes in American Strategic Doctrine," *Survival*, Vol. XVI, No. 4 (July-August 1974), pp. 158-64, provides an interesting look at the debate from a European point of view. Part of the article's value lies in proving once again that vastly different, yet objective and reasonable, conclusions can be drawn from the same printed word.

19. Colin S. Gray, "Defense and Negotiation," *Air Force*, January 1974, pp. 32-36. However, I would disagree with some of Gray's conclusions as to the importance of strategic questions. A "limited but substantial counterforce capability," in my mind, has been possessed by both sides for several years. What is in question and unknowable to the publishing analyst is the degree of certainty or probability of kill, thus credibility of



this capability. We could strike a number of Soviet silos today and destroy their missiles. So what? Can we assuredly get them all? The Soviets could likewise expend their SS-9s over several of our missile fields in a "limited but substantial counterforce strike." Again, so what?—we could launch the rest in retaliation—we are not disarmed.

20. See, for example, Benjamin S. Lambeth, "Deterrence in the MIRV era," contained in Richard G. Head and Ervin J. Rukke, editors, *American Defense Policy*, 3d edition (Baltimore: Johns Hopkins University Press, 1973), pp. 117-20.

21. Samuel P. Huntington, "Alter Containment: The Functions of the Military Establishment," *The Annals*, March 1973, p. 10.

22. For an interesting piece and a new term for the jargon, see Lewis

A. Frank, "Soviet Power after SALT I: A Strategic-Coercive Capability?" *Strategic Review*, Spring 1974.

23. The designation of MFR is recent. Previously the term was MBFR, or Mutual and Balanced Force Reduction. The Soviets had strenuously objected to "Balanced." Once again, the U.S. and NATO compromised on the unaltered Soviet position.

24. Not being able to resist a parochial self-institutional plug, I refer the readers to an excellent volume, already cited, Head and Rukke, in the field of national security policy. See also the newly published book by Frank B. Horton III, Anthony C. Rogerson, and Edward L. Warner III, editors, *Comparative Defense Policy* (Baltimore: Johns Hopkins University Press, 1974).

## Basis of Issue of Air University Review

USAF Recurring Publication 50-2

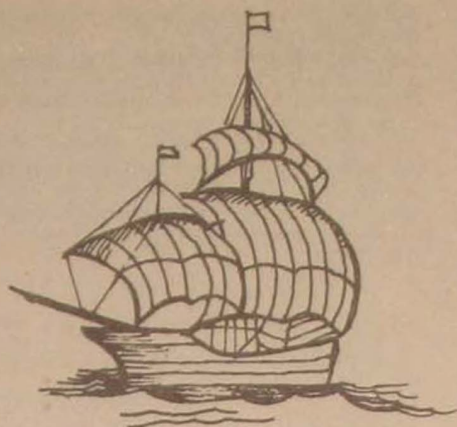
Active duty USAF generals, colonels, DAF civilians GS-16-18, air attachés	1 ea
OSAF and Hq USAF	1 ea div plus 1 ea 10 off*
Hq major air commands & Hq AFROTC	1 ea 10 off* & 2 info office
Hq numbered AFs, AFAFC, AAVS, ARRS, AWS, USAF Recruiting Svc, etc.	1 ea 15 off* & 2 info office
Hq of divisions & wings, groups, squadrons, flights, detachments, centers, depots, districts, hospitals, laboratories, MAAGs, missions and their detachments, etc.	1 ea 20 off*, 2 info office, 1 ea gp & sqdn comdr
AFROTC detachments & subdetachments	1 ea
Air National Guard	1 AG ea state, 1 ea state ANG hq, 1 ea wing & sqdn comdr, 2 ea gp comdr
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THE EDITOR



# NEW WAVES IN THE SOUTH ATLANTIC

*A Strategy Needed?*

DR. RICHARD E. BISSELL

**I**N what used to be an ignored corner of the globe, changes are occurring. The South Atlantic is the scene of both long-term and immediate changes in strategic formulas. The United States, in addition to the countries of that region, is looking at military and foreign policy questions concerning that area with great care. The problems to be faced have implications for coming decades, and answers will have to include

some long-range thinking about the future of that region. This article, of course, can only outline some of the alternative scenarios, but anyone interested in defense policy will want to explore at greater length the implications of American policy in the South Atlantic. With that in mind, let us consider American policy in the past, the challenge of present developments, and the possible future.



*he past*

Prior to 1960 the South Atlantic caused few anxieties. The countries of Latin America had more than enough problems to handle. Africa was an apparently quiet continent, ruled by colonial powers that were members of the North Atlantic Treaty Organization (NATO). The area was untouched by the cold war, and Great Britain kept the maritime peace from bases in Gibraltar, South Africa (Simonstown), and its island colonies. The air did not need to be ruled, since the South Atlantic was on the path to nowhere. The most advanced aircraft in the region were reconditioned C-47s of World War II vintage. Thus, for obvious reasons, the American government and the U.S. Air Force had few interests in the area.

There were some important aspects to South Atlantic defense, nonetheless, relating mostly to the sea-lanes around the Cape of Good Hope. Yet nobody had reason to be concerned for their safety, since all the powers in the area had an interest in keeping the sea-lanes free and open to tankers of all nations.

This situation lost its routine character, however, with certain long-term changes in Africa and Latin America and in non-Western strategic thinking. In addition, these changes were compressed into the last fifteen years, a time when American defense thinking was concentrating on problems in Europe, Southeast Asia, and the Middle East.

African states began obtaining independence in large numbers about 1960, with significant changes occurring almost immediately thereafter. Most continued to follow the lead of their former mother countries in foreign policy, but it took only one or two independent-minded leaders to change the situation. Pressure

from moralistic African leaders caused the British to lower their military visibility in South Africa. The national governments of South Africa then took on more defense activities of their own. The new African states pushed for the removal of all European powers from the African continent, the Indian Ocean, and the South Atlantic. The Liberation Committee of the Organization of African Unity has continually given material and moral support to liberation movements.

A few of the newly independent states also invited nontraditional powers into the area. In a sense, the United States made its first important impact on the area after 1960, but so did the U.S.S.R. and China. In Nigeria the Russians helped supply and finance the federal government during the Nigerian civil war and have remained to occupy key positions in the burgeoning oil industry and budding steel mill complex. Their military ties remained close enough for the Nigerians to send a military delegation to Moscow in October 1973 to check out possible arms purchases. Soviet influence was strongly felt at various times in Ghana, Guinea, and Tanzania, but two areas merit special mention. In Somalia, the U.S.S.R. has clearly been establishing a position—port facilities and a communications base in the north bought with IL-28s, MIG-17s, and SAM-2s—that would match the efforts of the U.S. in the Red Sea–Indian Ocean area. The U.S.S.R. appears to have little interest for the moment, however, in escalating that strategic race, being satisfied with occasional port courtesy calls, the latest being the three-ship convoy en route from Suez Canal work to the Black Sea. When observed during a call at Mauritius and while transiting the Cape of Good Hope, the convoy consisted of the helicopter cruiser *Leningrad*, a destroyer of the

Kachin class, and a support replenishment tanker. Such conventional forms of the Soviet presence must be balanced, of course, against small arms shipments and training given to the liberation movements of southern Africa. The quantities of those gifts can hardly be measured, being transferred frequently from the arsenals of Eastern European and third world friends.

The Chinese have tended to establish themselves on land, extending an offer that was accepted to build a railway from Dar es Salaam in Tanzania inland to the Zambian copper belt. The American presence has taken nonmilitary forms, with prominence given to the Peace Corps, bilateral aid programs, covert operations (as in the former Belgian Congo), NASA tracking stations, and the normal operations of U.S. corporations.

The Latin American side of the triangle was changing as well. Increasingly nationalistic and willing to thumb their noses at the *norteamericanos*, some Latin Americans found it profitable to establish relations with, first, Western European countries and later with Communist states. Such international trade and arms purchases became more common in the late 1960s, as Peru, Chile, Brazil, and Argentina expressed their self-confidence by breaking the Yankee monopoly. Thus in Argentina today the Air Force is mostly British-equipped; the Brazilian Air Force has 16 Mirage III-EBR's on order; Chile bought a cruiser for its Navy from Sweden in 1972; Venezuela is buying its fighters from Canada and France. Even Ecuador turned to Britain to buy its armed trainers (BAC-167) in late 1971. There were, of course, parallel developments in the economic and political fields, as the Latin Americans attempted to declare their independence from outside assistance.

Such were the long-term changes that began to stimulate a few Americans to new thinking about the southern hemisphere, including the South Atlantic. It was a process of reaction: to the gradually increasing Soviet naval presence in the Indian Ocean, to the withdrawal of Western Europeans from Africa, and to the fact of weakening United States influence in South America.

Short-term changes have been equally important, particularly in the last year. The dramatic change, certainly, has been that of the government in Portugal and subsequent indications that the Portuguese African colonies would obtain independence. Such a change is now accepted as inevitable by all sides. Moreover, the new governments of Guinea-Bissau, Mozambique, and Angola would clearly be led by men who succeeded in their quest for power by means of Chinese and Russian arms. The United States shipped school books to the rebels of Mozambique, through the efforts of Janet and Eduardo Mondlane, while the Russians shipped carbines and the Chinese provided instructors in guerrilla warfare. Mondlane, formerly the leader of FRELIMO (the Mozambique component of the Conference of Nationalist Parties of the Portuguese Colonies), is now dead, having been assassinated in 1969, and the leadership is in the hands of those who appreciated guns more than books. Such a dramatic change in power clearly alarms the remaining white governments, Rhodesia and South Africa, as well as the United States, whose assumptions about the power distribution in the South Atlantic are being destroyed. By 1975 the stakes are not simply tramp freighters limping around the Cape. Western Europe obtains nearly 60 percent of its petroleum supplies via the Cape route, and petroleum supertankers will con-

inue to use that route even after the Suez Canal is reopened. Admittedly the United States gets few vital supplies via the Cape of Good Hope, but if Western defense interests include a stable supply of energy to Western Europe, American strategic interests in the southern hemisphere are at stake.

#### *Present developments*

With the most to lose, the South Africans have been the first to react. South Africa has not traditionally searched out foreign alliances. External affairs were to be pursued only when necessary, which meant that South Africa had ties with neighbors—Britain, Australia, and recently the United States—but few other countries. The year 1973 caused changes in South African calculations. At the time of the Yom Kippur war, South Africa received the honor of being placed on the oil boycott list. Iran did not honor that list and continued to supply at least 40 percent of South Africa's petroleum needs. Needless to say, South Africa has been cultivating even closer ties with Iran. In recent months, for instance, the South African president visited Iran. In late January 1974 the South Africans carried out joint maneuvers with ships from Great Britain's Royal Navy. In that exercise the British supplied the naval component, and the South Africans supplied the air force to hunt phantom submarines off the Cape of Good Hope. Contacts between the British and South Africans had been at a low level in recent years, limited largely to the supplying of the British frigates lying off Beira that were trying to keep oil out of Rhodesian fuel tanks. Thus the joint maneuvers were an important indicator of South African and British relations. Whether such ties will survive the attainment of a

majority by Labour in the British parliamentary elections cannot be predicted.

The South Africans, though, have seen possibilities across the Atlantic also. Trade between South America and South Africa has generally been minimal, with a steamship of the Nedlloyd Line making the trip every week or two. More symbolically, the Cape-to-Rio yacht race is held every three years in January, the latest in 1974. Such a nautical tie translated into military relationships would please the South Africans greatly, but by all indicators the ties had been fairly weak until 1974. Events were to take a different tack, as Brazil became interested in the South African connection.

Brazil had long had ambiguous feelings about Africa. In 1972 the Brazilian Foreign Minister made a well-publicized trip to eight black African states. The junket, however, had few strategic implications, since the Foreign Minister was more interested in mustering support for higher coffee prices under the to-be-negotiated International Coffee Agreement. At the same time Brazil had certain natural bonds with the Portuguese territories through shared language and culture. But Brazil in 1974 saw itself as joining a fancier club of nations. It was booming economically, urging a higher birth rate to populate the inland frontier, talking of developing nuclear weapons, and seeing itself as the paramount power in Latin America. As Professor Robert Pfaltzgraff noted in a recent issue of this journal, "The growing strength of Brazil will give that rising power a role of unprecedented importance in Latin America."<sup>1</sup> South Africa wanted to link up with that power. The inauguration of General Ernesto Geisel as President of Brazil in March 1974 was attended by South African Foreign Minister Muller and the Chief of the South

African Navy, Vice-Admiral Johnson. Such a mission at that level, especially when sent by the South Africans, has more than simply courtesy implications. Relations were clearly warming, as indicated in the announcement of June 1974 that their respective diplomatic legations would be raised to embassy status. The improvement in relations can be expected to continue.

Relations between South Africa and Paraguay were the focus of President Stroessner's five-day visit to South Africa in April 1974. Such a trip was also unprecedented in terms of those two countries' relations. The immediate implications of that visit were clearly more economic than military, as South Africa contracted to help Paraguay undertake exploration for minerals. But the gesture on South Africa's part indicated a real urgency in its efforts to find common ground with the South American countries. It seems clear that South Africa was rebuffed by Argentina because of the latter's internal instability.

The most important leg of the strategic triangle, however, lies in the role of the United States in the South Atlantic. If American interests in that area are security and stability, a means of dealing with the major powers, Brazil and South Africa, will have to be found.

South Africa has made several approaches to the United States since the Portuguese coup. In January 1974 the South African Minister of Information, Cornelius Mulder, paid visits on then Vice President Ford and Vice Admiral Ray Peet, in charge of overseas military sales. In May more discussions were held in Washington by Admiral Hugo Biermann, South African Chief of Staff, with Admiral Thomas Moorer, Chairman of the Joint Chiefs of Staff, and Navy Secretary J. William Middendorf II. The

desire for closer ties is clearly present. The problem is for each side to determine the basic strategic needs and the political price that can be paid to obtain them. The same problem will be present in U.S.-Brazilian relations.

The principal cost to the United States of closer ties in the South Atlantic lies in the nature of the domestic politics of both Brazil and South Africa. Both profess to be democratic, and yet both are under attack from many parts of the world for allegedly repressive policies toward domestic opposition. South Africa has been under particularly strong attack, both at the United Nations and from official quarters of several American allies in Europe, for apartheid, a policy of racial segregation that the United States has voted to condemn at the United Nations. The degree to which Americans are committed to opposition to South African domestic policies will affect the ability of the American government to coordinate defense planning with the South Africans. The American government is under a great deal of pressure from many groups of domestic interests opposed to any dealings with South Africa at all. The formation of ties with Brazil and South Africa will thus involve the cost of alienating the segment of American opinion strongly opposed to the two governments.

Present developments thus push the American government in two directions, and like a man trying to stand in two boats at once, the government's policies may fall into the sea. Pressure for a decision on strategic policies is building, with the Navy asking for a go-ahead on constructing the Diego Garcia base in the Indian Ocean, which would have implications for the South Atlantic. Political pressures for a clear policy toward the newly independent Portuguese colonies

and southern Africa are stronger, going in both directions. Delaying a decision is itself a policy, since that merely gives the initiative to other countries. A purely defensive policy would satisfy none of the American goals in the area.

#### *The future*

American policy in the South Atlantic will need to be defined in response to all these long-term and short-term changes. But it will also need to reflect the American attitude toward new middle-level powers such as Brazil and South Africa. How does one deal with a country that is only slightly important on a global scale and yet very important in a particular region? The United States has faced this dilemma before and has never found a consistent solution. The South Atlantic will be another test case. The two major solutions that can be foreseen will be labeled "nationalist" and "internationalist." Each term can be explained in context.

The "nationalist" approach to the problem of the South Atlantic would involve two basic goals: preservation of American interests in and through the area (thus including the oil shipping lanes) and maintenance of those interests at the least possible cost, preferably using American military forces to achieve it. Such an American "nationalist" approach has many historical precedents and should be explained.

This view is based on the notion that the United States is the strongest power in the world and thereby has the right (and perhaps the obligation) to defend its own interests. Reliance on allies is discouraged, especially when dealing with relatively unstable states such as Brazil or South Africa; their stability, after all, is hardly assured. In a way, too, the major states in a region such as the

South Atlantic could be viewed as rivals. Any accretion of military power in the hands of the South Africans, for instance, would mean greater problems if at another time they were hostile to American interests. Thus any strategic ties formed in the area would be with weak, small states that could be easily manipulated and would demand little for themselves in return for the American presence. Potential friends of that type might be Liberia, Zaire, or independent Falkland Islands.

A major element in "nationalist" thinking is cost, and that means cost in both political and financial terms. Ties would be made with small states because the political costs would be minimal. The degree of military accommodation would be small, in contrast to the elaborate security needs of South Africa and Brazil. The political cost of developing Diego Garcia Island as a base in the Indian Ocean, for instance, is nothing in terms of the host government, as the island is owned by Britain; and the financial cost is also small. More important allies demand large aid packages as the price of bases. Portugal and Spain have been receiving large payments every year for decades so that the United States can have strategic bases in those two countries and in the Azores.

Indeed, a good "nationalist" analysis would compute the cost/benefit ratio of the American presence in the South Atlantic. The cost to date has been small. It is increasing rapidly and may already have surpassed the benefits. Some "nationalists" would urge either a more economical method of maintaining American interests or simple withdrawal. But there we can see that some would hesitate. Many factors elude precise pricing, particularly the potential benefits of the region.

An "internationalist" would take a broader view of the issues. Departing from a narrowly military viewpoint, the person with "internationalist" views operates on several assumptions. The first is that world politics is multipolar. Not only has the nuclear club expanded and thus changed international politics but those countries with the immediate potential of developing nuclear weapons need to be accorded due respect as well. A second assumption is that one can better preserve the peace through cooperation than through competition and confrontation. One can thus imagine what conclusions such an analysis would provide for the South Atlantic.

The policy would first concentrate upon the existing important powers in the area. Brazil and South Africa would be the targets for obtaining cooperative agreements. Few other countries in central and southern Africa would be worthy of much attention, although a few of the other states in South America would be catered to, particularly if Argentina can stabilize its politics. Cooperation with the two major regional powers would embrace all spheres of governmental activity, not merely the military. From the "internationalist" point of view, after all, all areas of activity are related. If agreement can be found in political, social, and economic matters, military ties will naturally follow. Or they will be unnecessary, since the South African and Brazilian militaries would be able to carry out American goals.

There would be a notable expansion of other forms of American influence, such as increased investment by U.S. multinational companies, more trade, and large aid programs (economic assistance and arms purchases). Such ties can be important in mitigating some of the political costs otherwise incurred. In the

case of South Africa, for instance, multinational corporations have been used as a form of pressure for changing the apartheid laws. In Brazil, on the other hand, American aid ties have been criticized for accommodating to local police practices rather than trying to change them. Such ties obviously do cut both ways, but each country has its own environment, and the ties will vary accordingly.

The overall goals of an "internationalist," however, would be to create a stable framework of governments in the South Atlantic and then allow a process of orderly change that would not threaten American interests directly or indirectly. But in contrast to the "nationalist" view, control over change would be vested in the local governments, as supported by the U.S., and not in the U.S. directly. Direct involvement of the U.S. would be discouraged as leading inevitably to costly imposition of American force in an area difficult to supply.

The "nationalists" and "internationalists" are both well represented in the American military and among the concerned public. The clash between their points of view is inevitable, but as to whether or not it is resolved at this time cannot be predicted. The South Atlantic is clearly important enough to deserve more attention, and when the issues are properly confronted we can expect one of these two points of view to prevail. After all, the South Africans and Brazilians are not inhabitants of mere banana republics. They are now powerful enough that American policy will either have to adjust to them or go around them.

*Princeton, New Jersey*

**Note**

1. Dr. Robert L. Platzgraff, Jr., "National Security in a Decade of Transition," *Air University Review*, July-August 1974, p. 7.



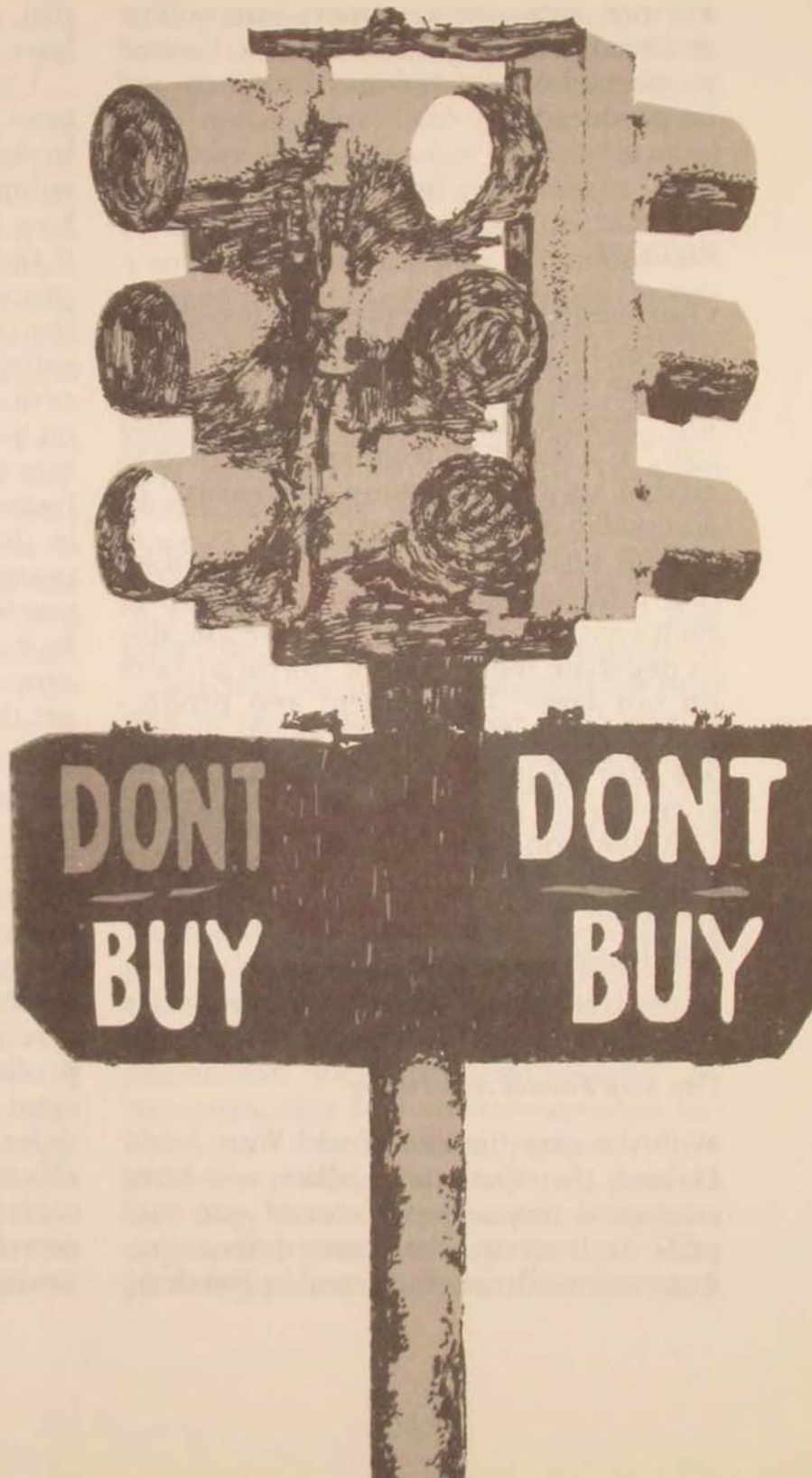
# ACQUISITION

## *A Dynamic Process*

LIEUTENANT COLONEL DAVID N. BURT

**D**URING the past fifteen years many innovative techniques have been instituted to improve the development, procurement, and support of defense systems. These improvements have been initiated in response to outside pressure—Congressional and taxpayer concern with how we acquire systems—and as the product of dedicated individuals within the acquisition process whose efforts focus on the purchase of more defense per dollar.

In the 1950s and most of the 1960s we made decisions concerning the future of billion-dollar programs based on analytical (paper work) analyses. When we progressed to production, we frequently encountered monumental problems, resulting in cost overruns and slipped schedules. The fly-before-you-buy approach is a reaction to the problems associated with the total reliance on such analyses. In effect, we



now test the hardware under consideration for purchase before committing ourselves to a production contract. (Obviously, this approach is not applicable when one or a few copies of an item are being bought.) Although development costs increase with inclusion of the hardware to be tested, we believe this additional cost will be more than offset by savings during production. Further, subsequent support costs will be reduced, since only one or a limited number of configurations of a system will be produced.

### **PIECOST**

Overhead typically represents two-thirds of the in-plant expenses incurred by defense contractors. PIECOST, an acronym for "probability of incurring estimated cost," is a statistical technique designed to enable us to determine a measure of acceptable overhead cost.

With PIECOST we identify the variables that influence or drive overhead costs at each contractor's plant. Thus we are able to negotiate more realistic overhead rates on our large development and production contracts. Of equal importance, we are able to monitor the contractor's incurrence of overhead costs. If we note that the contractor's costs are running high, we can inform him that he is spending at an excessive rate and direct that he correct the situation.

### ***Two Step Formal Advertising***

With the exception of World Wars I and II and the Korean conflict, we have attempted to purchase most of our supplies and services to meet defense requirements through formal advertising

(competitive bidding). Prior to the 1960s many supplies and services could not be procured by use of formal advertising procedures, since we did not have specifications describing our requirements adequate to use with this method of purchase. In the early sixties, we developed a procedure called Two Step Formal Advertising to allow the benefits of formal advertising even when we did not have adequate specifications.

Under this procedure, we provide a brief description of our requirement and invite interested potential suppliers to submit technical proposals indicating how they would satisfy our requirement if they received a contract. The technical proposal *does not* give any indication of the cost involved for the approach being submitted. The technical proposals are reviewed and accepted or rejected based on predetermined criteria. After two or more technical proposals have been found acceptable, we proceed to step two in the process. In this step we invite the potential suppliers whose technical proposals have been accepted to submit formal bids on their respective technical proposals. In this manner we are able to get the benefits of formal advertising.

### ***recognition of contractor capital employed***

Since the time of the Revolutionary War, we have related profit under negotiated procurements to the cost of the goods or services being purchased. Until very recently, we tended to ignore the role of invested capital as a factor in developing profit objectives. We have recently developed a procedure designed to encourage defense contractors to invest in more efficient equipment and facilities.

Historically, there has been a high correlation between a contractor's costs under a negotiated contract and the

profits he achieved. This relationship places the incentive (as seen from the contractor's point of view) on the side of inefficiency, for the greater the cost, the greater (in absolute terms) will be the profit.

Diametrically opposed to this approach is the European concept of basing profit solely on the amount of capital invested. This approach guarantees a profit on a contractor's investment regardless of the efficiency with which he uses those resources. This is *not* our objective. We desire to reduce the inequities in the profit opportunity available and motivate the contractor to employ his resources efficiently. Under certain large dollar-value contracts we will determine our profit objective by giving equal emphasis to the contractor's use of his capital resources and his likely costs.

By increasing the emphasis placed on the amount of contractor capital employed on a contract, we hope to reverse the historic incentive for contractors to increase cost. We are not going to the extreme of guaranteeing a profit based solely on the amount of capital invested. We are balancing between these two extremes. In the process, we hope to induce our suppliers to increase their efficiency and reduce their costs and ours.

### "Should Cost"

Should Cost is a procedure used to determine what a system ought to cost, assuming reasonable economy and efficiency in the contractor's operations. It represents a coordinated analysis of a contractor's management, cost estimating, and production engineering procedures. The ultimate objective of the Should Cost approach is to provide the government with a more supportable negotiat-

ing position. This goal is accomplished by conducting an in-depth in-plant analysis and by challenging inefficiencies in the contractor's operation. The actual methodology consists of a five-phase program: planning, data acquisition, analysis, report, and negotiation.

The planning phase begins with the identification of a candidate for a review. The general criteria for selection are found in the following questions: (1) Is the program a major, ongoing one of high dollar value—\$25 million or more? (2) Does the contractor have substantial amounts of negotiated government sales? (3) Has the contractor been operating in a sole-source atmosphere or another environment that does not require effective cost control? (4) Has there been substantial cost growth associated with the item being procured? (5) Will there be a significant number of follow-on production contracts? (6) Does the planned award date allow adequate time for the review? And finally, does the project manager have a reasonable expectation of a payoff from the type of effort that goes into a major Should Cost analysis?

Selecting the team members is the next step in the planning phase. The size of the team will vary with the magnitude of the effort. Generally, the team will have ten to thirty people, half of whom will be engineers. Team members must be highly capable, and great care must be taken during selection to insure that the proper balance of talent is obtained. The skills required generally include those of industrial engineers, designing engineers, production specialists, statisticians, accountants, cost analysts, management analysts, and any additional specialists required to analyze the company's product line (e.g., nuclear engineers, aerospace engineers, computer specialists). The planning phase concludes after the work

has been apportioned to the team members and a master schedule has been established.

Phase two, the data acquisition phase, takes from one to four months. This is the actual on-site investigation of the contractor's operation. Before the investigation begins, however, the contractor must be briefed on the goals of the analysis team, to insure cooperation in gaining access to required information. Then every aspect of the contractor's operation is reviewed by the appropriate team members. The areas evaluated include plant layout, machine capacity and utilization, production scheduling and control, labor standards, make or buy policy, industrial engineering standards, quality control, general and administrative expenses, cost estimating, tooling, labor, production engineering, design engineering, engineering overhead, manufacturing overhead, and any other areas vital to efficient operations. These evaluations must be completely coordinated to assure that all pertinent facts are gathered without duplication of effort.

Analysis, the third phase, overlaps both the preceding and following phases. During this period the team members discuss and integrate their findings.

The report phase is the realization of the team's efforts. The report will be the basis for the government's position during negotiations. The report format is designed to make the report an efficient negotiating tool. The report contains suggested primary and alternative negotiation positions, findings, and recommendations.

The negotiation phase is the finale of the effort. The government is concerned with areas such as more efficient plant layout, better inspection and sampling techniques, and improved material purchasing practices, as well as the actual

costs proposed for these elements. Individual team members contribute to these negotiations by providing expertise in the area they have evaluated.

The benefits of Should Cost are twofold: the short-term benefit of better pricing on the current requirement and the long-term benefit of more efficient contractor performance on future requirements.

While Should Cost is not a panacea, it has proven its effectiveness in analyzing high-dollar, major programs. As the method is further refined, its effectiveness should increase. The use of Should Cost principles to strengthen traditional analysis, coupled with the Should Cost review of selected major programs, will make detailed analysis more effective.

#### *Cost/Schedule Control System Criteria*

During the 1950s we found ourselves playing catch-up with the Soviet Union. Our concern was to develop high-performance systems—and quickly. Our management information systems provided cost information—after the fact. This information usually put us on notice that we were in a cost overrun situation after it was too late to take any corrective action. The net result of our 1950s approach to acquisition was high performance, slight program slippages, and huge cost overruns. Studies of acquisition during this period indicate the costs typically were 300 percent of those budgeted.

During the early 1960s we imposed new management information system requirements on our contractors. In most instances, the contractors found it expedient to resort to a sort of double bookkeeping—one information system for their information and control and another system to satisfy government

requirements. Cost control in the early sixties was somewhat better than during the 1950s, but still not good.

Now we have developed a concept that allows the contractor to satisfy both his and our cost and schedule information requirements with one system. This approach is known as Cost/Schedule Control System Criteria (C/SCSC).

A prospective contractor must describe in detail how his management system works and the steps required, if any, to bring the system into compliance with C/SCSC. This approach requires that the system to be developed and produced be broken into a pyramid of units down to end components. It then relates the elements of work required to each other and to the end product. The contractor establishes completion schedules and target costs for each subunit and lower tier item. C/SCSC recognizes that the contractor will have to reschedule and rearrange certain activities as the contract progresses and gives the contractor the freedom to make adjustments under certain constraints.

C/SCSC requires the contractor to have only one set of books for both his internal planning and control and for the required government reports. The contractor has to develop a program for work performance that the government can use to monitor the contractor's performance. In this context estimated and actual cost, schedule, and technical performances must be reported in summary terms to Department of Defense managers.

C/SCSC requires the contractor to assemble, review, and analyze the totals of several different categories of costs monthly. The results are then forwarded to the government for evaluation. A comparison is then drawn between the budgeted costs and actual costs. When

actual costs exceed or fall short of the budgeted cost, a cost variance is detected which points out a cost overrun or underrun for an individual work package or for the contract as a whole.

Another comparison is drawn according to the time span originally established for the work packages in the planning and budgeting stage. If the items scheduled to be completed at a certain time have not been accomplished, an unfavorable schedule variance is noted. Quite possibly other items that were not scheduled to be completed are actually finished. This balancing factor may eventually erase the effects of schedule variance in future accounting periods. If any variance, whether in cost or schedule, is noted through the C/SCSC analysis process, the contractor is required to trace the cause of the variance. He must determine and explain its origin and the steps he is taking to correct any deficiency.

Our experience in the 1950s and early 1960s demonstrated the need for an integrated system of inspection and evaluation of engineering requirements, cost, and schedule performance that could provide greater visibility for the program manager. C/SCSC has been designed to provide a means of comparing actual schedules and costs with budgeted schedules and costs. Thus we now have the capability to analyze problem areas in time to take effective management action. C/SCSC serves to flag problem areas that do not fall within the parameters of acceptable variance. Through the principle of management by exception, it focuses only on those items that cause a variance in cost or schedule which may result in a revision to desired product performance. Because of the timely reporting of information, danger areas are now detected early enough to afford a

direct resolution before the errors compound. The contractor is required to take the initiative to solve these problems and, at the same time, report the problems and their selected solutions to the government for further analysis.

The complexity of today's defense systems and the desire to be ahead of other nations in technological achievement frequently require a contractor to research deeply and develop processes that were beyond the state of the art when the contract was awarded. The nature of this work lies in uncertainty, which breeds variances from time schedules and planned costs. Thus c/scsc is not expected to eliminate cost growth. But management now has an effective tool to project the results of schedule and cost variance on the desired system and provide a sound basis for the decisions necessary to limit cost growth.

#### *the award fee*

The award fee concept is a relatively new innovation. It is an extremely flexible approach to contracting that improves communications within the buying and the selling organizations and between buyer and seller. The award fee provision is the major element, in terms of contractor motivation, in the Cost Plus Award Fee (CPAF) contract and a significant factor when the award fee is used in conjunction with other types of contracts. It is specifically designed to provide an incentive to the supplier for superior contract performance. The philosophy behind the award fee is to give the supplier a monetary incentive and to give the government a flexible management tool with which to influence performance. The award fee itself is simply a "fee pool" (a specific dollar amount) established by the buyer (DOD) and

awarded to the supplier (contractor) on a periodic basis. The amount of this fee pool that the supplier can earn is dependent on his performance—as determined unilaterally and qualitatively by us, the buyer—over and above the minimum requirements set down by the contract. It is possible for the contractor to earn from zero to 100 percent of the award fee, dependent, of course, on his performance.

The award fee has a periodic aspect in that its entire dollar amount available for the life of the contract may be broken down for disbursement at specific evaluation periods. Formal performance evaluations are made periodically over the life of the contract, and a fractional award fee determination and payment is made at the end of each evaluation period. For example, if a contract were awarded for a one-year period with a total award fee of \$1,000,000 and quarterly formal evaluation and fee disbursements, the supplier might typically be offered \$250,000 during each of the evaluation periods as the maximum amount he could earn. Formal evaluation and payment would be made at the end of each quarterly period.

The periodic nature of the award fee concept allows us to make a thorough evaluation of progress, make necessary changes in areas where conditions have changed or performance is not as expected, and provide useful feedback to the contractor on how he is progressing.

The flexibility in the award fee provision stems essentially from four factors: (1) the subjective nature of the performance evaluation and fee determination process, (2) our right to change or modify areas to be considered for performance evaluation from one period to another, (3) the versatility with which the amount of the award fee can be distrib-

ted over the life of the contract, and (4) the fact that no absolute requirement exists to have specific evaluation and fee determination periods set for all contracts. This inherent flexibility represents a major advantage of CPAF contracting over other types of arrangements (e.g., firm-fixed price, fixed-price incentive, cost-plus-incentive fee, cost-plus-fixed fee, and various multiple incentive contracts).

Increasing use of the award fee concept is being made in DOD acquisitions. Much research and development work is procured by use of this technique. The operation and maintenance of the Air Force Arnold Engineering Development Center are in the process of being accomplished under an award fee contract. The award fee concept has been used with excellent results in conjunction with other pricing techniques in the acquisition of the F-15 aircraft.

#### *design-to-cost*

One of the more recent developments in the acquisition field is called "design-to-cost." Although this concept has been used by industry for years, its application to the acquisition of defense systems is relatively new.

The incremental acquisition strategy that DOD has adopted can be compared to the product development process used in private industry. Generally, when a private firm initiates a new product, it first assigns that product to a small team of personnel from engineering, manufacturing, and marketing. The team develops estimates of required technology, market impact, and manufacturing requirements as well as their associated costs. Executive management reviews the project team's findings at specified intervals during the development process. At each of these review points, anticipated price and return on investment are com-

pared with the expected cost of production. The program proceeds to the next stage of development if projected production costs and net revenue are satisfactory. If they are unsatisfactory, alternatives are examined for cost correction or the project is terminated.

With the presently established procurement policies, DOD follows a similar process for system development and acquisition. A proposed major system is subjected to several stringent reviews by the military department, the Defense Systems Acquisition Review Council (DSARC), the Office of Management and Budget (OMB), and Congress before each funding milestone. The decision for continued development requires satisfactory findings as to expected system performance and projected system costs. Consequently, the total costs of a program must be commensurate with performance and must fall within budgetary constraints. This may require trade-offs in system performance and schedule. The strategy requires that viable alternatives be maintained until such time as the system selected for development has demonstrated the required performance and supportability within cost constraints.

This concept of procuring systems within a cost constraint has been given various titles, including design-to-cost, design-to-price, cost-to-produce, and design-to-cost-to-produce. For simplicity, we refer to the concept as design-to-cost.

Use of the concept requires the establishment of a unit production cost we can afford to pay for the quantities needed. The unit production cost is a primary design parameter equal in importance to system performance parameters. The concept requires that cost be emphasized continuously in trade-off decisions and that the contractor demonstrate his ability to achieve the cost target before

award of the production contract. Use of the concept requires attention to four key elements: (1) system cost targets, (2) system performance goals, (3) production plans, and (4) feedback mechanisms.

Establishment of the cost target is probably the most crucial aspect of design-to-cost. In the first or conceptual phase of a system acquisition, the total estimated future cost of a program depends on the technology required, the number of units required, monetary inflation, delays, changes in system performance characteristics, and numerous other cost factors. Since some of these factors can be estimated only imprecisely, cost estimation techniques are extremely important in the establishment of the initial target cost.

The establishment of system and subsystem performance goals is another important factor in the use of the design-to-cost concept. Unlike some acquisition policies, however, performance is not the dominating characteristic for program evaluation. Though desired performance characteristics may be specified, the concept requires an ability to trade performance factors for greater cost savings consistent with some minimum levels of performance. It should be noted, however, that failure to meet the cost target or the minimum performance levels would require that the program be examined for possible alternatives or termination. Consequently, design-to-cost requires rigorous use of cost-benefit analysis. Increments in cost must be justified by the benefits derived in performance from proposed system or subsystem designs, materials, or production methods. These cost increments must be consistent with the overall cost target.

System design not only influences performance characteristics, reliability, and maintainability; it also influences the type

of production method to be used. In addition to system design, the number of units required plays a major role in determining the production process and, consequently, the unit production cost. Design and the quantity required specifically affect direct labor, direct material, and factory overhead. For example, designs requiring special tooling or "clean room" facilities will increase a manufacturer's overhead. Usually specialized equipment is more economical for large production runs, and general-purpose tooling is ordinarily more cost-effective for smaller runs. The variable and fixed costs associated with labor, material, and overhead will vary depending upon the processes specified during system design.

When the Secretary of Defense approves the request to enter full-scale development, the unit production cost is established and becomes a firm requirement of the development contract. During development, it is essential to track the designs of those items comprising the significant cost elements of the system. Though these items are only a small part of the total system, they comprise the major portion of total system cost. Historically, 20 percent of a system's components constitute approximately 80 percent of its cost.

By monitoring design progress of the major cost components and evaluating the effect of designs on production costs, one can determine the need for redesign action to meet the design-to-cost goal. Figure 1 depicts an example of a system's projected production costs based on an analysis of designs produced. The top portion of the figure illustrates progress toward the unit production cost goal through successive design iterations and shows how the impact of early system designs can be extrapolated to reveal potential production cost overruns. The



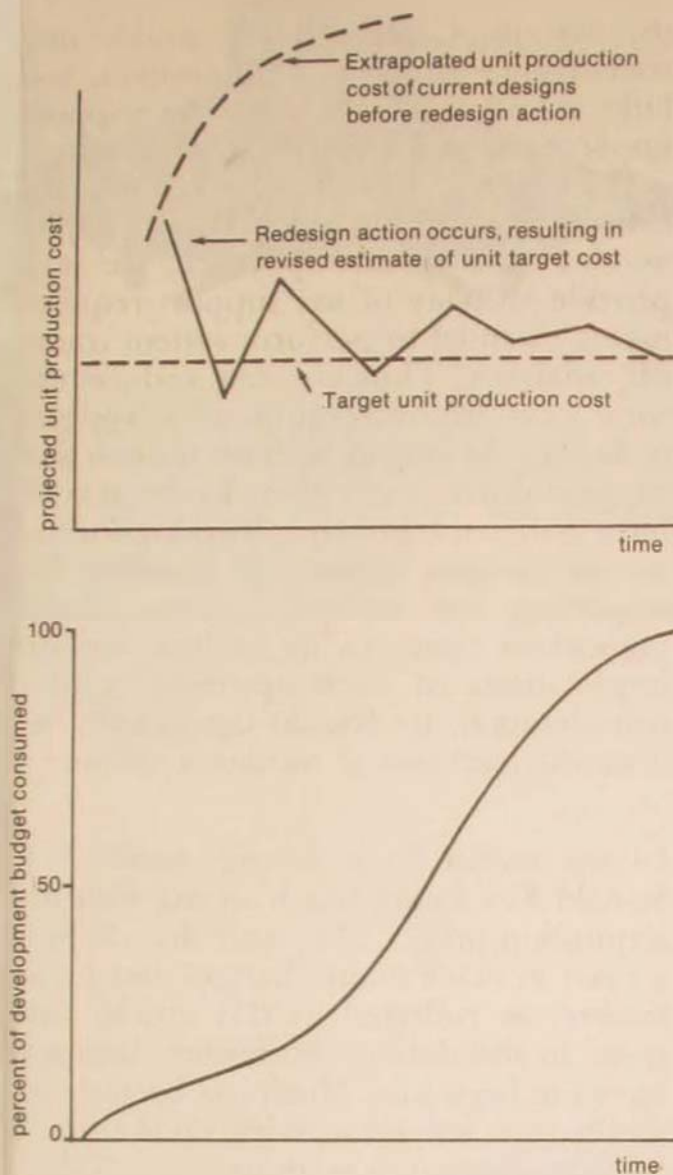


Figure 1. Projection of production costs and effects of redesign actions in relation to development funds expended. (Adapted from R. L. Bidwell and R. D. Gilbert.)

lower portion shows the expenditure of the development budget as design iterations and time progress. If the possibility of an overrun exists, alternate designs should be developed. These design iterations of the major cost items should occur early in the development phase of the system program. Otherwise there may be insufficient development funds remaining to correct designs, which could cause excessive production costs. Thus, early design review will usually

prevent sunk costs from consuming a major portion of the development budget. Further, the early review of designs is important since system design will ultimately influence not only cost but also performance, reliability, and maintainability.

As has already been noted, design-to-cost is part of the overall DOD incremental acquisition strategy. In an effort to provide system programs with exercisable, viable alternatives, the strategy calls for the Defense Systems Acquisition Review Council (DSARC) and service reviews throughout the life of the development program. Coupled with these reviews is the requirement for separate contracts for development and production. During the DSARC and service reviews, cost is given major consideration for program continuation and is the basis of the ultimate decision to enter a production contract. Though system performance goals are specified, design-to-cost requires trade-offs in performance and schedule to meet the cost objective consistent with these stated performance requirements.

Our experience with design-to-cost is very limited. There is a belief on the part of several practitioners that the design-to-cost approach is most applicable at the subsystem and even component level. As an observer of the evolving acquisition process, I have little doubt that proper application of design-to-cost will result in significant savings of DOD acquisition and operating dollars.

#### *integrated logistics support*

Perhaps the most significant improvement in the acquisition process is the introduction of the Integrated Logistics Support (ILS) concept. During much of the 1950s and 1960s our approach to

system acquisition was predicated on the principle of concurrency—concurrent system development, test, production, and even operation. The objective was to achieve an operational capability at the earliest possible time. Engineering and design changes were made on equipment in production and even after deployment, to correct deficiencies revealed during testing of the system. The concurrency concept created severe problems for those personnel subsequently supporting and maintaining the system. Spare parts, test equipment, and technical data ordered during previous months were not always compatible with the end items being produced during the current month. Under this concept performance and early operational capability were emphasized, frequently at the expense of future support costs. The reliability and maintainability of subsystems and components were not given the same attention as was system performance. Yet, as indicators of how long an item would perform satisfactorily under stated conditions and how quickly an item could be repaired when it failed, reliability and maintainability have tremendous implications when considering how much a system would cost to own. Frequently we found that an extra dollar invested during development or production would save us ten dollars during operation of

the system. Unfortunately, under our concurrency concept of acquisition, too little attention was paid to the support implications of the chosen system design.

During the past few years the ILS concept has been developed and implemented. Under this approach, we now provide visibility of the support requirements essential to perform system trade-off analyses. Thus we can reduce the total cost of ownership of a system, including the cost of both acquisition and support during operation. Under ILS, we have assigned highly qualified logisticians to the project offices responsible for acquiring new defense systems. These logisticians cause us to analyze support implications of each approach under consideration. ILS should significantly reduce the total cost of owning a system.

IN HIS recent book *Arming America*,\* J. Ronald Fox found much wrong with the acquisition process. I concur that there is a need to make many changes, but I also believe, as reflected in this article, that those in the defense acquisition business have not been idle. Much has been done, and we are actively working on the much more remaining to be done.

*School of Systems and Logistics, AFIT*

\*This book was reviewed by Colonel Burt in the January-February 1975 issue of *Air University Review*.



# Air Force Review

## THE NEW USAF FIGHTER LEAD-IN PROGRAM

*A First Year's Progress  
Report*



LAWRENCE R. BENSON



THE history of aerial warfare has repeatedly demonstrated that a superior fighter pilot can usually prevail in combat against a less capable pilot in a somewhat better-performing aircraft.<sup>1</sup> Consequently the United States Air Force historically has invested a significant portion of its resources in training its "fighter jocks." The Air Force has collected dividends on this investment whenever called to action in a combat situation. The accelerating complexity of weapon systems and tactics makes the training of fighter aircrews more important today than ever, and also more expensive. This article explores a new step in the process of training men to fly fighter aircraft, a change that might be both better and less expensive than the traditional way.

#### *present combat crew training*

Under the customary practice, the future Air Force fighter pilot or weapon systems officer (wso) begins earning his wings with undergraduate pilot or navigator training (UPT/UNT) after a systematic selection process. Here he learns basic flying skills in the T-41, T-37, and T-38 at an Air Training Command base. He then goes on to combat crew training (CCT) in first-line fighter aircraft with a Tactical Air Command unit. This move from undergraduate to combat training has meant a significant and sometimes

difficult transition period for the developing fighter pilot.

Upon his arrival at CCT the potential combat crewman faces two major challenges. First he must take transition training to a new aircraft and learn the fundamentals of flying a real fighter plane. Then he must learn how to use it and its sophisticated systems aggressively in the highly demanding combat environment. After several familiarization sorties, he is still "getting the feel" of his complex new aircraft while at the same time mastering the close teamwork and discipline of tactical formation flying—"scissors," "barrel rolls," and other basic fighter maneuvers (BFM)—and the precise delivery techniques of ground attack (GA). Performance is closely watched by the instructor pilot (IP). If the new man continues to make the grade in progressively more difficult tasks, he can expect to be a full-fledged Phase II fighter jockey in about six months, after approximately 100 hours of flying in the F-4 or 85 hours in an A-7.<sup>2</sup> If making the grade proved to be too hard at the expected pace, the new man had to be given more instruction, more practice, more time. This happened often enough to call for a close look at the scheduled progression through training.

#### *The fighter lead-in concept*

In recent years Tactical Air Command officials began developing the concept of a more gradual transition or "lead-in" from UPT/UNT to combat crew training. A 1969 Curriculum Review Conference at Luke AFB, Arizona, explored the idea in considerable detail. The fighter lead-in concept envisioned several advantages to be gained by utilizing the Northrop T-38A Talon in a concentrated tactical training course to teach basic fundamen-

als of combat flying. Today the concept is being put to the test by the 465th Tactical Fighter Training Squadron (TFTS) at Holloman AFB, New Mexico.<sup>3</sup>

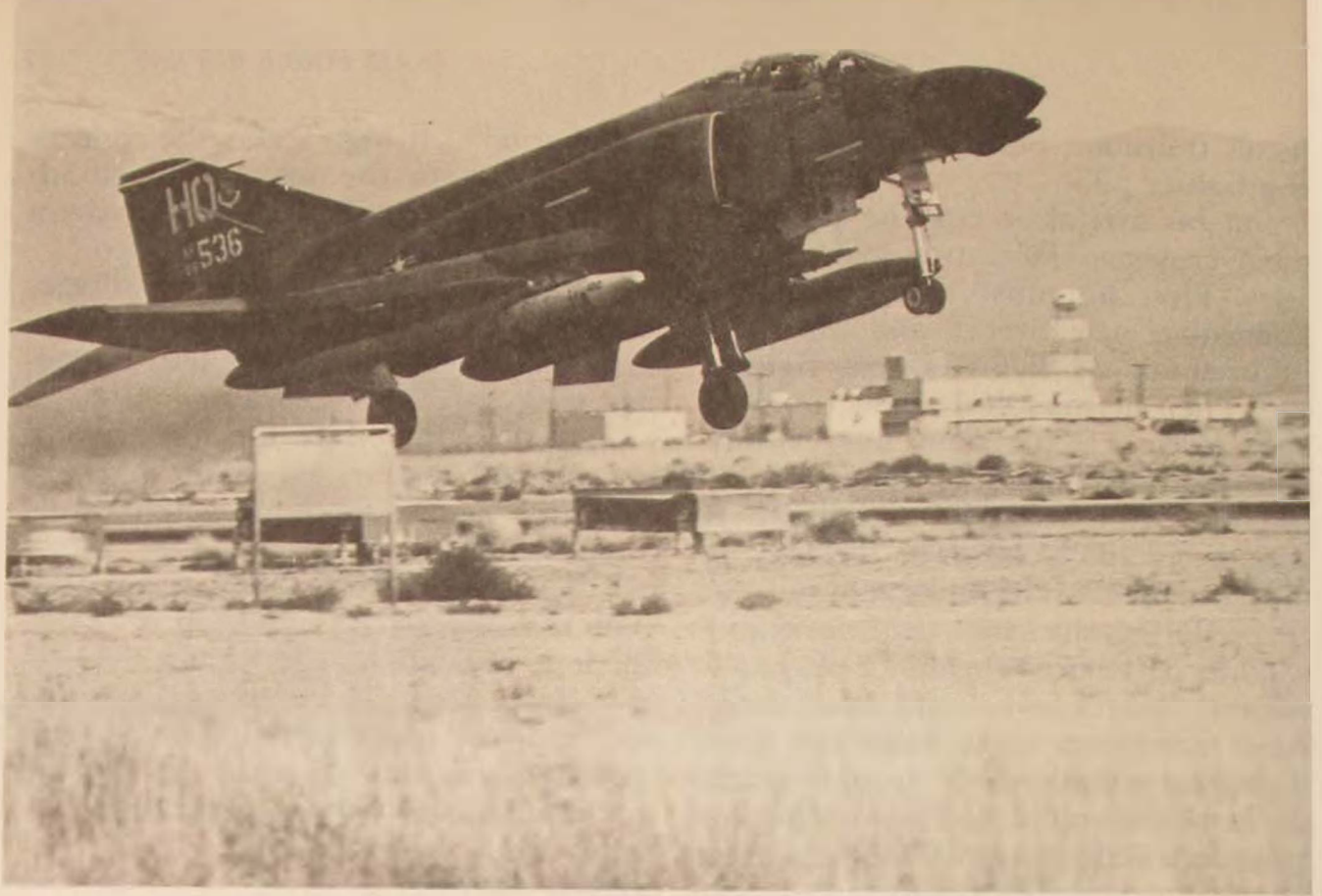
Briefly outlined, the major advantages that planners anticipated might ensue from employing the fighter lead-in concept were as follows:

(1) TAC could reduce the high cost of training an F-4 or A-7 pilot. Average total cost per flying hour was recently computed at \$319 for the T-38 versus \$1215 in an F-4 and \$947 in an A-7.<sup>4</sup> With the current configuration of the T-38, it is estimated that the lead-in program saves 10.1 F-4 and 9.4 A-7 training and indirect support flying hours per student. Even if total costs are not cut, the much lower fuel consumption of the T-38 (about 1/5 that of an F-4) has already become a significant factor in conserving JP-4.<sup>5</sup>

(2) A better pilot might be produced using fighter lead-in training. He would learn BFM, selected ground attack and tactical formations in a familiar, easier-to-fly aircraft, theoretically advancing faster than if starting these courses in a new and more difficult machine. The lead-in training would be consolidated in a highly controlled environment provided by a specialized training unit, a setting that a larger and many-faceted replacement training unit (RTU) cannot duplicate.

(3) With fewer first-line fighter aircraft devoted to training missions, TAC's combat posture would be strengthened.

In June 1972 TAC obtained concurrence from Headquarters USAF on the concept of T-38 lead-in training and through September briefed the Air Staff Board Structure on details of the plan. TAC was required to use its own existing resources to fund the program and did so by trading off 27 T/AT-33s and



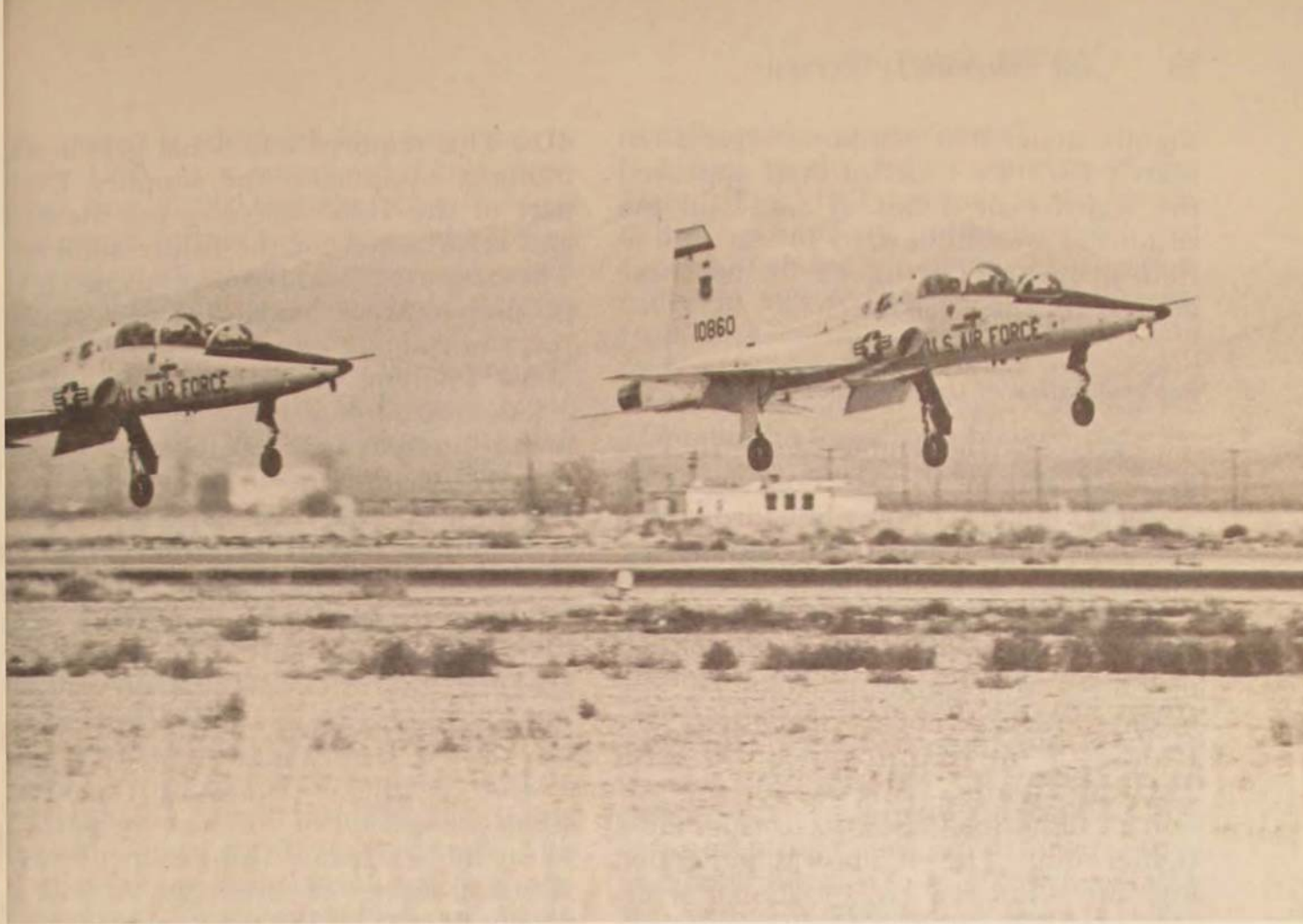
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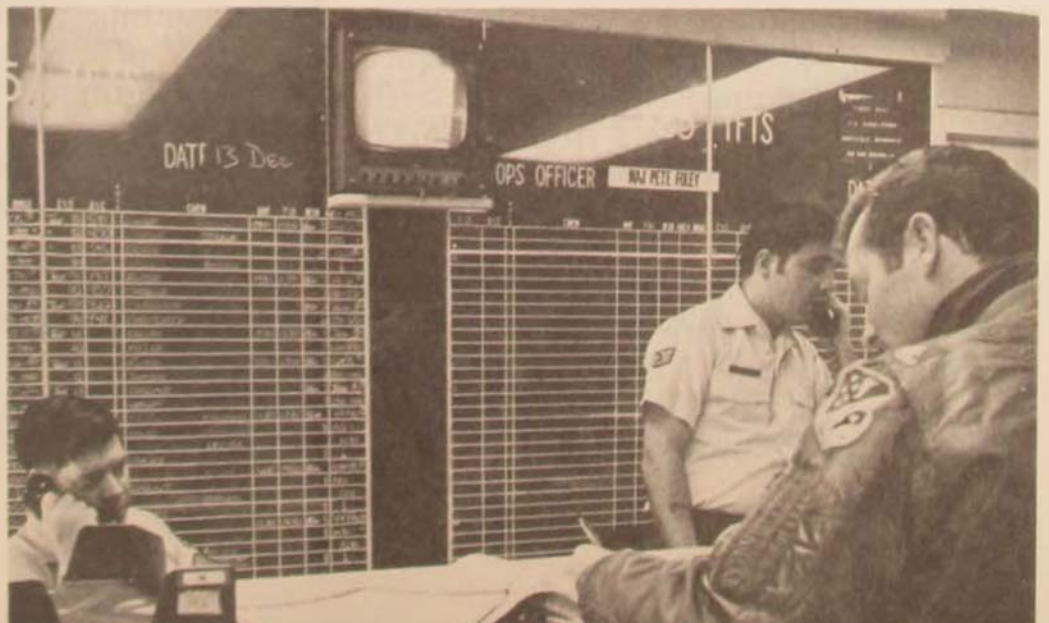
c



d



*The F-4D Phantom (a) is being replaced by the T-38 Talon in the USAF's Fighter Lead-In Program, one reason being the lower cost of operation of the T-38. . . . Student pilots in the 465th Tactical Fighter Training Squadron's fighter lead-in course practice formation landings in the T-38 (b). . . . A mockup of an F-4 bearing heading distance indicator serves in teaching navigation instrument procedures (c). . . . An instructor pilot demonstrates the high-speed tactical maneuver "yo-yo" to student pilots in preparation for performance in the T-38 (d). . . . The 58 sorties averaged per day by the 465th TFTS account for a busy squadron operations desk (e).*



slightly under 500 manpower spaces. In March 1973 the Chief of Staff approved the transfer of T-38s to TAC, and the command was authorized to start a limited program during FY 74 as these aircraft became available.<sup>6</sup>

#### *implementation of the program*

To carry out the Fighter Lead-In Program, Headquarters TAC chose the 465th Tactical Fighter Training Squadron, then an AT-33 unit stationed at Cannon AFB, on the plains of eastern New Mexico. On 1 August 1973 the 465th transferred "without personnel or equipment" to a new home at neighboring Holloman AFB, in the south-central part of the state.<sup>7</sup> At Holloman the 465th joined the 49th Tactical Fighter Wing (TFW), the Air Force's only dual-based NATO-committed fighter unit. The 465th was integrated into the 49th TFW organizational structure and became its fifth flying squadron. On 28 August the 465th flew its first T-38 sortie.

After the 49th TFW's official notification in May 1973 that it would be responsible for the Fighter Lead-In Program, wing officials planned the numerous actions required to bed down the 49th's newest unit. Adequate facilities were, of course, a priority. To provide hangar, classroom, and administrative space, the Holloman Facilities Board, in accordance with instructions from higher headquarters, approved use of a large hangar across the airfield from the main base and required several base organizations to move from adjacent buildings.<sup>8</sup> These facilities then underwent modification for the new mission. The 49th also had to add an entirely new logistics capability for the T-38 and the J-85 engine to its existing commitment to maintain the combat readiness of 96 F-

4Ds. This required additional personnel, training, equipment, and supplies. Even part of the Holloman BOQ was vacated and refurbished for the future students. The base used local resources as much as possible to accommodate its new squadron and training mission.<sup>9</sup>

Air Training Command (ATC), and to a lesser extent Air Force Systems Command, furnished the 465th with its most important item of unit equipment—Northrop T-38A Talon supersonic trainers.<sup>10</sup> These aircraft were transferred to the Tactical Air Command after thorough preparation and inspection. The 465th TFTS gradually received its 40 assigned and 4 not operationally authorized (NOA) aircraft in a delivery schedule that lasted from August 1973 to July 1974.<sup>11</sup> Many of the Talons required wing changes prior to their assignment to the more rigorous flying maneuvers of a tactical fighter environment. Almost all of the 465th's T-38s were built in 1960 and 1961. The 465th is currently working with the San Antonio Air Logistics Center, Kelly AFB, in a detailed stress analysis study to collect data for determining the actual wing life of T-38s in the lead-in program. The 465th's T-38s are now scheduled for wing changes after 1000 hours of lead-in flying.<sup>12</sup>

The San Antonio Air Logistics Center (SAALC) is also presently involved in a project to modify TAC's lead-in T-38s by adding a practice ordnance capability. The new equipment consists of a modified A-37 gunsight (CA 513), a KB-26A sight camera, an armament control panel, an A-37B-type aircraft pylon, and a B-37K bomb rack. The SAALC will strengthen the T-38s' center-line fuselage structure and also install MXU-553 recording systems on ten of the aircraft to obtain fatigue analysis data. The 465th expects to achieve weapons delivery capability in spring of 1975, and



he project is scheduled for completion by early 1976. At a programmed cost somewhat over \$2,000,000, the "Class 5 Mod" will permit further expansion of the 465th round attack training missions with a corresponding reduction of A-7 and F-4 sorties during CCT.<sup>13</sup>

In addition to the 65 officers and 18 enlisted personnel who are presently authorized in the 465th TFTS itself, the 49th Tactical Fighter Wing was given 300 new manpower spaces in support of its new mission.<sup>14</sup> Most of these positions were for T-38 maintenance. They have been largely filled by using assigned 49TFW personnel as well as by diverting pipeline resources, intracommand reassignments, and special assistance from the Air Force Military Personnel Center.<sup>15</sup>

The wing's logistics complex had to establish the necessary maintenance and supply support for the new aircraft. This involved everything from training personnel in T-38 aircraft systems to obtaining numerous bench stock items. The 49th Organizational Maintenance Squadron set up a new flight-line section devoted to the T-38s. The Field Maintenance Squadron encountered the most serious T-38 problem area in seeking to obtain a functional J-85 engine test cell. Fortunately the 78th Flying Training Wing at Webb AFB, Texas, was able to help the 49th by providing use of its "Queen Bee" jet engine intermediate maintenance facility pending the establishment of this capability at Holloman.<sup>16</sup> Despite some J-85 maintenance difficulties and shortages of certain T-38 parts and equipment, the 49th has been able to generate up to 1100 sorties per month to successfully meet the 465th's training requirements to date. The size of the squadron's future student load depends largely on increased manning and a reduction in the NORs (not opera-

tionally ready—supply) rate.<sup>17</sup>

A key to the future success of the Fighter Lead-In Program was the formation of a competent and highly motivated faculty of instructor pilots. The original cadre of IP's for the new 465th came from three main sources: the old 465th TFTS at Cannon, ATC T-38 units, and various TAC combat support groups. In addition, the squadron obtained the services of two former POW's as instructor pilots.<sup>18</sup>

As newly arrived members signed into the 465th, they found a tremendous job ahead of them before the first student class even arrived. Since the 49th's civil engineers could not provide all the resources needed to accomplish the unprogrammed workload suddenly required by the new mission, the 465th relied heavily upon "self-help" projects. Its officers and airmen took up hammers, saws, and paint brushes to remodel their facilities into a professional learning and operating environment in which to conduct the USAF Fighter Lead-In Program.<sup>19</sup>

#### *developing the new curricula*

Even more important, the methods of instruction and course content for the new program had to be developed and refined. Headquarters TAC prepared the syllabi for T-38 Qualification (Course T3800Q) and IP Upgrade (T3800I) as well as the overall Fighter Lead-In Course (T3800A). The 465th TFTS itself prepared the detailed phase manuals for the lead-in course as well as academic course outlines. The academic instructors constructed the actual course content by referring to Tactical Fighter Weapons School publications and texts in use by A-7 and F-4 training units.<sup>20</sup>

The USAF Fighter Lead-In Course

consists of five phases of training for pilots, four of which wso's will also complete. The amount of flight training in each phase is listed in Table 1.<sup>21</sup> After modification of the T-38s for practice weapons delivery, the ground attack phase will increase by three sorties and three hours for both pilots and wso's. Simulator usage and the academic training load are also listed in the table.

**Table 1**  
**Fighter Lead-In Training**

Flying Phases	Pilot Hours	WSO Hours	Pilot Sorties	WSO Sorties
Transition	1.3		1	
Formation	8.4	2.4	7	2
Basic Fighter Maneuvers	7.2	3.6	8	4
Low-Level Navigation	1.2	1.2	1	1
Ground Attack Orientation	2.0	1.0	2	1
Total	20.1	8.2	19	8
Simulation Training				
F-4 Simulator		6.0		
T-38 Simulator	3.0	3.0		
Egress Trainer	2.0	2.0		
Total	5.0	11.0		
Academic Training				
Specialized Training	7	6		
Life Support	3	3		
Aircraft Systems	4	4		
Flight Characteristics		4		
Formation	4	4		
Basic Instruments		10		
Basic Fighter Maneuvers	17	17		
Mission Planning	3	3		
Weapons Delivery	4	4		
Radar		10		
Inertial Navigation		6		
Air Attack		4		
Academic Preparation (.5 hour per hour of instruction)	21	27		
Total	63	102		

Each fighter lead-in class goes through 25 flying days and 3 ground training days, with a scheduled duration of six

weeks. Student progress follows an orderly flow schedule, which charts all required tasks, coordinated in a chronological sequence. RTU's have shown considerable interest in their academic program interface with the 465th TFFS. For example, in April 1974 an Instructional Systems Development (ISD) Team from the 355th TFW of Davis-Monthan AFB, Arizona, visited Holloman to review at first hand the 465th's capabilities and its lead-in curricula. As a result of this review, the 355th deleted eight hours of BFM academics as well as a tactical navigation course from its CCT for lead-in graduates. Close coordination in the future between the 465th and the combat training units it serves will be highly productive.<sup>22</sup>

#### *preparing the IPs*

Flying T-38s, however, remained the number one priority in the new squadron's order of business. The officers assigned to the 465th had a wide variety of flying experience and included combat veterans of Southeast Asia. Others had more limited backgrounds. For administrative purposes, the original contingent of pilots was divided into the following six groups, based on the range and currency of their previous experience and training: (1) six former ATC T-38 IP's with fighter experience, (2) six TAC T-33 IP's qualified in ground attack (GA) as well as T-38 Air Combat and Basic Fighter Maneuvers (ACM/BFM), (3) nine TAC T-33 IP's qualified in GA with fighter experience but without T-38 time, (4) four T-38 proficiency pilots with fighter experience, (5) three TAC F-4 pilots current in GA and ACM/BFM, (6) eighteen T-33 proficiency pilots with T-38 student time but without fighter or IP experience.<sup>23</sup>

Based on the needs of each of these groups, the squadron implemented a comprehensive upgrade program to obtain a fully qualified faculty of IP's in a minimum number of sorties and in time for the student load to come. The IP's in Group 1 needed only local orientation missions, which also served to qualify those in the second group as transition instructors. Full mission qualification in compliance with the TAC T-38 IP Upgrade Course was achieved when the squadron could generate multisortie missions. The IP Course consists of T-38 Transition, Formation, BFM, and GA achieved in 17 sorties (about 18 flying hours) and 30 hours of academics. A valuable added experience for many of the 465th's IP's has been the opportunity to fly BFM occasionally with the expert air-to-air T-38 pilots of the 64th Fighter Weapons Squadron from Nellis AFB, Nevada.<sup>24</sup>

This nucleus of a dozen instructors then began the task of upgrading the remaining pilots. The officers in the other four groups required training as follows: Groups 3 and 5—the T-38 Aircraft Qualification Course (T3800Q) and the T-38 IP Upgrade Course (T3800I); Group 4—Course T3800I; and Group 6—Courses T3800Q and T3800I as well as the new USAF T-38 Fighter Lead-In Course itself (T3800A). The T-38 Qualification course consists of both transition flying and instruments. It requires 10 sorties of about 14 flying hours and 24 hours in the classroom.<sup>25</sup>

Squadron officials selected both more experienced pilots (from Group 3) and the least experienced (Group 6) to begin training first. This allowed the 465th to increase its core of IP's quickly while at the same time gaining practical experience in its rapidly approaching mission of teaching the Fighter Lead-In Course.

Pilots from the other groups also soon began receiving the training they required.<sup>26</sup>

Despite not yet having as many of its aircraft on hand as it could have usefully employed, the 465th had fully qualified 22 T-38 IP's by the end of 1973 and 46 of 47 assigned pilots by 31 March 1974, just a month after the arrival of its first student class and slightly ahead of the revised program schedule.

#### *starting the new course*

Due to restricted areas over the vast White Sands Missile Range and the high volume of F-4 traffic in the 49th's existing airspace, the 465th TFRS needed its own airspace to safely perform its heavy load of student training missions. (It calculated a T-38 sortie generation of 60 per day.) Therefore, the Federal Aviation Administration established a special operating area southeast of Roswell, New Mexico, as requested by the squadron.<sup>27</sup>

The 465th TFRS actually began performing its T-38 training mission in February 1974. The first pilots to receive instruction from the new squadron were somewhat more experienced than its expected typical student. These pilots were the USAF Thunderbirds, who cross-trained to the T-38 in two groups of three each and one individual pilot between 4 February and 17 April 1974.<sup>28</sup> This accomplishment by the squadron helps indicate the three-pronged training mission of the 465th, which includes T-38 qualification—jet recurrency and IP upgrading as well as the Fighter Lead-In Course. The Lead-In Course itself is also designed as initial fighter training for experienced flyers (e.g., O-2 and OV-10 pilots) as well as students fresh from UPT and UNT.

The *raison d'être* of the 465th Tactical

Fighter Training Squadron remained to begin molding the products of undergraduate pilot and navigator training into "fighter jocks." The 465th was soon involved in a busy schedule of turning out fighter lead-in graduates. By 1 August 1974, its first anniversary at Holloman, the 465th had completed training 121 pilots in 8 classes, and 2 more classes were somewhere in the process of completing the 6-week course. Classes ranged in size from 13 to 35 individuals. The average class is programmed to consist of 25 UPT and 15 UNT graduates. With a 3-week overlap period between classes, the total student load for the 465th will eventually be about 80 individuals at a time. The graduation of all classes on schedule has proved the wisdom of locating the program in the Southwest, as very few flying days have been lost to weather.<sup>29</sup>

#### *appraising the lead-in course*

Student reaction to the overall Fighter Lead-In Course thus far has been highly favorable. Some typical comments upon their completion of training at Holloman have been:

The course is an excellent program for UPT grads. . . .

In talking to friends who have completed RTU, this course seems almost invaluable. . . .

I expect I'll be a better and safer A-7 pilot in RTU because of it. . . .

I feel I learned a good bit in a relatively painless process, which is what training is all about. I feel much better prepared to go on to the F-4. . . .

The learning here in six weeks was tremendous. . . .

The BFM phase of the program was outstanding. . . .

It's great to be able to learn these techniques in a familiar airplane. . . .

Here the instructors realize that students are the output, not grade folders.

Very professional outfit.<sup>30</sup>

The real proof of the 465th's performance and the validity of the whole fighter lead-in concept will come during combat crew training. That is where the 465th's graduates themselves will demonstrate how well they have learned. And that is where the Fighter Lead-In Program is now being evaluated.

Acting upon the interest expressed by TAC Commander, General Robert J. Dixon, Headquarters TAC developed a comprehensive "Plan for Evaluating the T-38 Fighter Lead-In Training Program."<sup>31</sup> It monitors a number of classes entering RTU's for whom lead-in training was not available. The performance of these pilots serves as a control sample when compared with data from several other classes whose members have been through the course at Holloman. After each training sortie, the IP will quantify his student's performance on a specified grade sheet, using a grading scale of one to ten. (One connotes "Unable to perform task," five is average, and ten indicates a perfect performance.)<sup>32</sup>

The Tactical Air Command Directorate of Studies and Analysis will collect all these scores and process the data into learning curves to determine such parameters as (1) the time required to reach various proficiency levels; (2) the potentials of lead-in training for increasing proficiency levels; (3) the transferability of lead-in training in areas covered, e.g., formations, BFM, ground attack; (4) fall-out benefits in other phases of training, e.g., transition, instruments, air attack; (5) potential for decreasing the amount of training in first-line aircraft; and (6) additional areas where lead-in training might be employed.

At the completion of each CCT phase, the IP's will complete additional evaluations on the students, including task analysis questionnaires. Project officers in each participating wing will forward bombing, strafing, and rocket scores for each student, as well as interview IP's for feedback and comments on lead-in graduates. The same methods will be used to monitor wso progress. The 49th TFW Project Officer is also maintaining similar data and instructor feedback on the students during their lead-in training, including the instructors' predictions on how their students will perform during CCT.<sup>33</sup> The TAC Comptroller has been asked to compute total cost figures for both lead-in training and traditional training with first-line aircraft, which the Directorate of Studies and Analysis can use to determine the cost effectiveness of the new program. Headquarters Tactical Air Command expects the first authoritative report on this systematic evaluation to be in by 1 June 1975.

### Acknowledgments

The author would like to thank Colonel William L. Kirk, Commander of the 49th Tactical Fighter Wing, for suggesting and encouraging the writing of this article. It was accomplished only with the assistance of numerous officers of the 465th TFTS and the staff of the 49th TFW. The contributions of Captain Edward Cole, who prepared the squadron histories during the period of this study, were especially valuable.

### Notes

1. In a recent article by Jack N. Merritt and Pierre M. Sprey, "Quality, Quantity or Training," *USAF Fighter Weapons Review*, Summer 1974, pp. 14-15, it has been stated: "Serious and detailed historical evidence of individual air and ground actions almost invariably points to the conclusion that sound training, well considered tactics, and individual competence overwhelm most other aspects of the battle."
2. TAC Briefing Guide, Course 111507B, *USAF Operational Training Series F-4*, Aug 1973; AFM 50-51, *USAF Formal Schools Catalog*, Jun 1974, change 5, 8-11-12.
3. Although the Fighter Lead-In Program is designed for both pilots and navigators (weapon systems officers), this article primarily addresses pilot training. The 465th TFTS began navigator training in August 1974.

THE 465th Tactical Fighter Training Squadron has in one year grown from a handful of officers with two T-38s into a highly active and professional training arena for producing apprentice fighter pilots. Its early graduates are already being further trained in combat tactics, flying A-7s and F-4s. The verdict on the new program's effectiveness is not yet in, but preliminary indications point toward a favorable judgment. If the existing program is found to be beneficial, further expansion of lead-in training is possible. Perhaps in the near future all would-be fighter crew members will be funneled through the Lead-In Course before moving on to combat training. The implementation of the Fighter Lead-In Program again demonstrates the willingness of the United States Air Force to find a better way of doing things.

*Holloman Air Force Base, New Mexico*

4. Cost figures were computed for the author by Major Durwood Lewis, 49TFW Budget Officer, using 1 April 1974 figures in Table 24, AFM 173-10, *USAF Cost and Planning Factors*, for depot maintenance, material, labor, replenishment and spares, and the latest available figures (as of 14 August 1974) for jet fuel costs.

5. Comparison of fuel consumption as made in *Talon Service News*, Summer 1974, p. 3.

6. Background of the program is outlined in Atch 1 to Ltr, TAC/XP to 49TFW *et al.*, subj: T-38 Lead-In Training, 29 Apr 1974.

7. Hq TAC Movement Order No. 5, 22 Jun 1973.

8. TAC Programming Plan 13-73, T-38 Lead-In Training, 25 May 1973 (originally classified SECRET, later declassified and title changed to "T-38 Fighter Familiarization"), Annex R.

9. 49TFW Programming Plan 1-73, Implementation of 465TFTS Unit Beddown.

10. Msg TAC/LGM to ATC/LGM, subj: T-38 Actl for TAC Fighter Familiarization Program, 211545Z Sep 1973; TAC Program 3T-273. Delivery schedules and related message traffic are in 49TFW History Office files.

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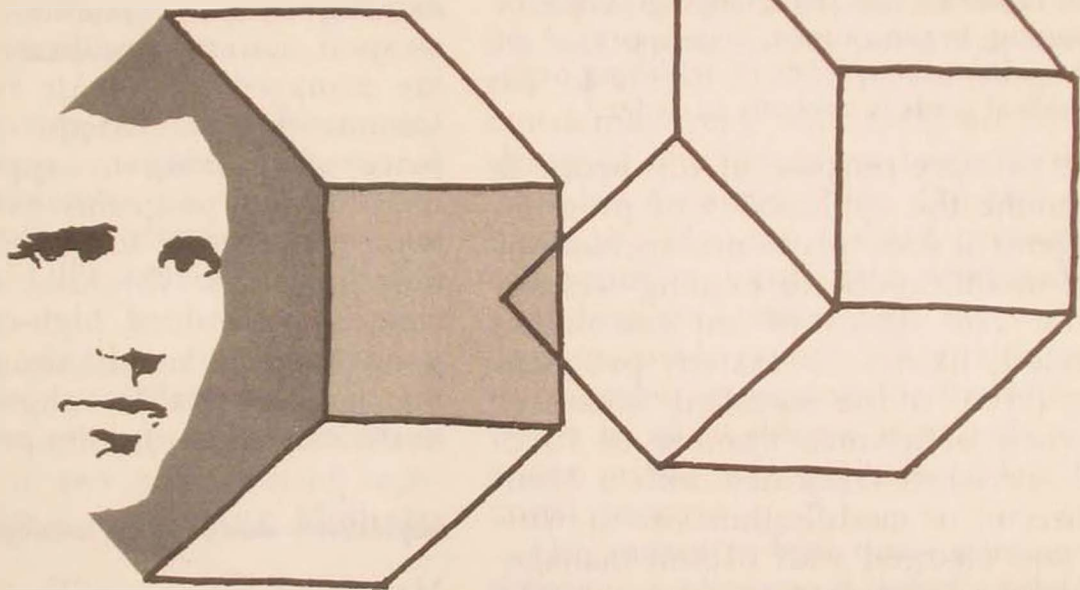
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18. 465TFTS Historical Reports.
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20. To allow more data bits for the AFMPC computer, the course numbering system was recently changed to a ten-digit number. Syllabi are now referred to by the first six of these characters. Of the courses discussed in this article, T3800A replaced 111502FL, T3800I replaced 111502FI, and T3800Q replaced 111502FQ as syllabi designations.
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28. TAC Programming Plan 6-74, Thunderbird Conversion, 14 Feb 1974.
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30. Excerpts from students' End of Course Critiques collected by 465TFTS School Secretary. The most criticized aspect of the course itself was the lack of realistic ground attack due to the absence of practice ordnance and a sight reticle. The students also made some specific suggestions on streamlining course content and improving visual aids.
31. Telephone interview, author with Maj. J. D. Koehler, Lead-In Project Officer, TAC Directorate of Fighter Operations—Fighter Training Division, 15 Aug 1974.
32. Msg, 49TFW/DOV to 12AF/DO, subj: Evaluation of T-38 Fighter Lead-In Training Program, 051710Z Feb 1974; Ltr, 49TFW/DOT to 12 AF/DOO, subj: Trip Report of Lead-In Training Study, 13 May 1974. The complete plan, which the author summarizes in the following paragraphs, is attached to Ltr, TAC/XP to 49TFW/CC *et al.*, subj: T-38 Lead-In Training, 29 Apr 1974.
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In My Opinion



LIEUTENANT COLONEL GEORGE R. HENNIGAN

PROGRAM MANAGEMENT AND  
MAJOR MODIFICATIONS

THE past two decades have produced an abundance of literature reflecting the changing nature of management theory and practice. The two major changes in traditional management thought have been the introduction of the systems concept and the professional system program manager. In the early 1960s, new approaches to managing weapon systems acquisition were being implemented within the Department of Defense. Concurrent with these management revolutions in government were similar changes in business and industry.

It is, in short, quite possible that the only truly effective methods for preventing, or coping with, problems of coordination and communication in our changing technology will be found in new arrangements of people and tasks, in arrangements which sharply break with the bureaucratic tradition. In either case, by changing people or changing organizations, a reappraisal of our traditional methods of achieving organizational goals is urgently in order.<sup>1</sup>

The primary purpose of this article is to examine the applicability of program management concepts to management of major modifications to existing weapon systems. The vehicle of implementation discussed, akin to a system program office (SPO), is the so-called Mini-SPO, comprised of a small number of functional specialists collocated with a Mini-SPO director or modifications (mod) manager and charged with overall management of a major weapon system modification. A major modification is defined as a program in excess of \$100 million.

A second purpose is to identify some of the problems faced by a Mini-SPO/mod-manager in trying to implement program management concepts in a bureaucratic environment and, finally, to offer some suggestions on how to cope with these problems.

In 1964 the Air Force developed a series of Air Force Systems Command (AFSC) Manuals known as the 375 series. These manuals were designed to set up a program of guidance for management logic and control over acquisition of all future weapon systems. This original guidance has been replaced with the current 800 series of Air Force regulations and related directives for system, subsystem, and equipment programs. General in nature, these regulatory documents are all geared to the management of major weapon systems acquisition. While billions of dollars are expended on new acquisitions, many other programs that do not share the acquisition spotlight are equally important to overall force structure and national security. They are programs designed to improve the safety or extend the capability of existing weapon systems. These major weapon system modification programs are managed by the Air Force Logistics Command (AFLC). At this time the total price of in-being or approved major modification programs exceeds \$2 billion. This sum is accounted for in only nine programs. Obviously, major modifications are indeed high-density dollar programs, and only the soundest of management practices should be applied in the execution of those programs.

#### *acquisition-modification analogies*

Many AFLC major modification programs bear a striking resemblance to AFSC system acquisition programs managed under the system program office concept. They share similar development risks, and it is not uncommon for the AFLC program to be of a more immediate national urgency. Most modification programs have direct parallels to AFSC acquisition life-cycle phases—conceptual,



Validation, development, production, and operational. They meet "major program" criteria as established by Air Force Regulation and are governed by an official USAF Program Management Directive. The objectives of acquisition program managers and modification managers are the same: to bring their program to completion on time, below cost, and within performance parameters. This is particularly true in the case of a modification designed to increase the capability of a weapon system, as there are often high development risks involved. In sum, many major modification programs are high-risk, high-cost efforts deserving of program management with centralized control over all the technical and business aspects of the modification. Reporting to the President in 1970 on major weapon systems acquisition, the Blue Ribbon Defense Panel made the following recommendation:

The matrix approach organizationally and in quality, not numbers, of personnel should be strengthened. Caliber, rank, and experience of personnel should be determined by the requirements of the program.<sup>2</sup>

The matrix organization referred to is the system program office. The majority of the major modification programs are tailor-made for SPO management techniques but on a smaller or Mini-SPO scale.

*When, how much, and how long*

Basic to successful program management is recognizing when or even if a program office is needed; in other words, when to form a matrix organization, as opposed to using the regular functional organization to do the job.<sup>3</sup> This is a decision of much more importance than meets the

eye and a difficult one to make accurately. The essence of the decision revolves around the fact that there are always many programs competing for the scarce manpower resource. Making the determination that a program office or Mini-SPO is warranted is only part of the problem. Since establishment of a Mini-SPO is always at the expense of the functional organization, timing becomes critical. The question involves when, how much, and how long. At what point in time should the Mini-SPO be formed, how much manpower should be allotted to it, and how long should they remain dedicated to Mini-SPO business? Considerations include magnitude of the effort, unfamiliarity of tasks, degree of interdependence existing between tasks, phase of the program, and corresponding workload.

The Mini-SPO must be formed before the task grows to the point that there is risk of fragmented effort among functional managers, with each working his share of the program commensurate with his own priorities. On the other hand, the Mini-SPO formed prematurely will result in insufficient workload and attendant slack time. This not only utilizes resources poorly but establishes an unfavorable reputation for the Mini-SPO, which in all likelihood is already under severe criticism from the hard-line functional manager.

The answer to how many personnel to devote to a Mini-SPO is directly related to the magnitude and unfamiliarity of the task. A sizable effort of a first-time nature involving high risk and high cost would require manning to a higher degree than a lesser program.

More important than quantity is the quality of personnel selected. The concept of program management evolved because the ordinary way of doing things

was not adequate for the task at hand. It is imperative that only highly competent personnel be assigned to perform in the "out of the ordinary" environment of the Mini-SPO.

Regarding the question of how long to keep a Mini-SPO in operation, no clearly defined solution can be found. Phase-out or slowdown of Mini-SPO activity cannot be tied to an event; it must be driven by program demands. Depending upon the nature of the program, a Mini-SPO might begin phasing out as production goes into full swing, at the time of modification kit proof, when first article configuration is established, or at any other time when it is determined that the program is going smoothly and will continue to progress in a routine fashion through completion. This is the time to start phasing down the Mini-SPO and returning personnel to their functional jobs.

At the start of a program the entire level of effort is centered in the functional activity. After the Mini-SPO is formed and begins to assume program responsibilities, the functional level of effort starts to decrease. It never drops completely out, however, because the Mini-SPO will require support from the functional organization on an exception basis throughout the life of the program. As the program reaches maturity and day-to-day business approaches a routine status, Mini-SPO activity will begin to slow down. As routine is established, functional responsibilities will once more increase until the formal phase-out of the Mini-SPO.

### *organization*

The essence of Mini-SPO organization is versatility: the organization can be built around the task; as the task changes, so must the scope of the organization. The

structure must be dynamic enough to meet the needs of a continually changing program environment.<sup>4</sup> Contrary to the bureaucratic form of pyramidal structure and its "crisis-centered" environment, the Mini-SPO must be a "knowledge-centered" organization. In the knowledge-centered organization, closely coordinated, integrated teams circumvent chains of command and depend upon a high degree of reciprocity between the participants. In this type of organization, the traditional functional theory has some application; but if carried too far, it will result in an authoritative environment that can offend and stifle the creative bent of the members.<sup>5</sup>

There are many alternatives from which to choose an organizational structure. These range from pure functional to pure project or to any combination of the two. In reality, however, initial selection of organizational structure is relatively unimportant because as the program progresses organizational structure will evolve to meet the need. Much more important is the selection of system program office personnel.

The caliber of the program manager is all-important. The successful program manager has been characterized as "a person who usually found a way to work around the regulations by carefully utilizing the source of authority from which the program draws its sponsorship."<sup>6</sup> Equally important is the selection of competent, eager, and dedicated personnel to man the Mini-SPO. These should be personnel specialized in budget, audit, contract surveillance, technical advice, programming, procurement, engineering, and other disciplines as determined by needs of the program.<sup>7</sup> These people should be detailed to the Mini-SPO for the duration of the program. In addition, a memorandum of agreement, with

scope of individual personnel tasks and limitations, should be drawn up between the parent functional organization and the Mini-SPO.

After identification of the Mini-SPO team, collocation of members under one roof is an absolutely essential step. This step must be taken to guard against divided loyalty of functional personnel assigned, late or inadequate staffing, and outright loss of personnel to other higher-priority programs. In addition, collocation fosters an *esprit de corps*, a sense of belonging, and a common goal, which will reduce conflicts with functional duties.

#### *The Mini-SPO director's role*

Recently a panel of military program managers, examining their role, likened it to that of the general manager of a small company. The comparison is especially apt. It would be impossible to write a meaningful position description for that job. It is equally impossible to write one for the mod-manager's job. What the general manager does is whatever is needed to move the affairs of the business. A general manager is not a "doer" of any job, but he sees to it that what he wants is done; and what he wants is a harmony of things done so that his objectives are met. This implies controlling and coordinating the work so that no one aspect dominates others to the detriment of the harmony of the whole.

This touches upon what is likely to be the most important function of the mod-manager: getting people to communicate with each other to achieve a common understanding of the needs of the program and their place in the harmony of the total program.<sup>8</sup> Stated more conventionally, the mod-manager is responsible for planning, organizing, directing, and

controlling a modification program, with the objective of satisfying cost, schedule, and performance requirements.

#### *special sources of trouble*

Mod-managers face some unusual problems in trying to direct and harmonize the diverse forces at work in the Mini-SPO environment. Their main difficulties, observation suggests, arise from three sources: organizational uncertainties, unusual decision pressures, and vulnerability to top-management mistakes.

Many newly appointed Mini-SPO directors will find that their working relationships with functional branch, division, or directorate chiefs have not been clearly defined. Many decisions vitally concern the mod-manager, but he must often interact with external forces in dealing with them. Unless he does so skillfully, the questions are apt to be resolved in the interest of individual departments at the expense of the program as a whole. The mod-manager must handle these delicate situations single-handed, with little or none of the experienced top-management guidance that the line manager enjoys.

Severe penalties of delay in both cost and operational capability often compel the mod-manager to base decisions and recommendations on relatively few data, analyzed in haste. Decisions to sacrifice time for cost, cost for quality, or quality for time are common in most programs, and the mod-manager must be able to make them without panicking. Clearly, then, he has a special need for total and intelligent support from higher management.

Though top management can seldom give the mod-manager as much guidance and support as his functional counterpart enjoys, they can easily jeopardize

program success by lack of awareness or ill-advised intervention.<sup>9</sup> This is particularly true in the initial phases of a program when a mod-manager may be constrained by a lag in contract negotiation or some minor legal tie-up between the government and the contractor. Too often these minor lags are elevated to the general-officer level without the mod-manager's concurrence or at times without his knowledge. The resultant high-level guidance is not always in the best interest of the overall program and sometimes creates more problems than it solves. In addition, this often casts the mod-manager in a bad light at the upper levels of management when in reality he has been too busy getting the job done to protect himself or practice "image management."

#### *authority*

Given the responsibility for a program, the Mini-SPO director must establish his authority to carry out the task. Authority is necessary if one is to get a modification completed on time and within cost and performance requirements. However, a degree of personal freedom is required in the Mini-SPO environment, particularly for the specialists. Balancing these two conditions of freedom and authority is one of the more challenging problems facing the Mini-SPO director.<sup>10</sup>

Authority derives from many sources. As a result of his position, the Mini-SPO director has official authority delegated from upper-level management. More important in the program management environment is what Henri Fayol called personal authority, "compounded of intelligence, experience, moral worth, ability to lead, past services, so forth . . ."<sup>11</sup> A significant measure of the mod-manager's authority springs from his ap-

proach to getting the job done and the manner in which he performs it. The environment of program management therefore places an extraordinary premium on talent for leadership as distinguished from command, on persuasion as distinguished from direction.

One student of program management has described this authority as derived in part from the program manager's "persuasive ability, his rapport with extra-organizational units, and his reputation in resolving opposing viewpoints within the parent unit and between the external organizations."<sup>12</sup>

#### *some pitfalls and suggestions on how to avoid them*

The remainder of this article will discuss some of the common everyday problems that the mod-manager might encounter and will offer some suggestions on how to cope with them.

*Universal Support.* Newly appointed Mini-SPO directors may be dismayed to discover that there is less than complete and enthusiastic support from all concerned agencies, including his own headquarters, and within the Air Staff. Every program competes with all others, and competition is especially fierce in periods of tight budgets.

To gain total program support, the mod-manager must sell his program.

The program manager's main job is to make the program look good. I don't mean to fake it. I mean to be on top of the program, to anticipate what the boss expects, what the budget people expect, what OSD expects, and even what Congress expects. The image of an energetic, capable program is a great asset in recruiting the people you want in the program office, and in obtaining the right kind of support from functional organizations. The morale and success of the program

office staff are largely a reflection of that image. A good image results in cooperation and a bad image results in struggling all the time to get what you need.<sup>13</sup>

taken in the context and scale of the mini-SPO environment, this quote succinctly defines the approach a mod-manager must pursue in achieving universal support for his program.

*The Magic Wand Syndrome.* One of the quickest and easiest ways to draw unwelcome attention to a program is to miss a much touted and publicized milestone. Sometimes the milestone will be missed because of uncontrollable circumstances. More often, failure to meet milestones will be the result of the "magic wand syndrome," a feeling deriving from over-optimism that all the detailed tasks associated with a major undertaking will automatically be accomplished—perhaps by someone waving a magic wand.

If program continuity is to be maintained, the mod-manager must administer an antidote. That antidote is skepticism. Skepticism is the second requisite of program management. Planning is the first. Planning will disclose what has to be done. Skepticism will probe the estimate of how simple it will be to do it. The searching questions are: Have detailed tasks been delineated? Has sufficient time been allotted for administrative processing? Have adequate provisions for contingencies been made?<sup>14</sup>

*Functional Specialists.* The mod-manager may find himself faced with functional specialists who see their discipline as the central core of a successful program. Their commitment to their specialty leads them to try to dictate to the program what will or must be done, as distinguished from advising what should be done. Further, there is no lack of regulations with which they can bolster their claim.

The expert, in fact, simply by reasons of his immersion in a routine, tends to lack flexibility of mind once he approaches the margins of his special theme.<sup>15</sup>

One of the most difficult concepts to put across to functional specialists is that the mod-manager is responsible for determining what will be done. The functional specialist is responsible for how it is done. There is no clear-cut method for solving this problem. One program manager said that he often overcame the opposition of functional specialists by "working harder than they did." This program manager found that he could so overwhelm a specialist with facts, figures, and analyses that it became too much of a chore for the specialist to refute the program manager's position.<sup>16</sup>

*The Low-Pass Filter.* Nothing dampens spirit faster than a system where everything stops at the mod-manager's desk waiting for his return from somewhere. If he is not careful, the boss can become the chief clerk and proofreader in the office, the one who checks everything to make sure it is right. This is poor utilization of what little time the mod-manager will have left after trying to satisfy insatiable demands for briefings and information updates.

The best way to go is to select the best people you can get, give them a reasonably free rein, and rely on being able to fix their mistakes without too much damage being done. Weekly staff meetings will provide a backstop to catch the really significant mistakes. If weekly meetings are not an adequate backstop, the problem is not organization but ineffective subordinates. The solution then is not centralization of decision-making but replacement of personnel.<sup>17</sup>

IN CONCLUSION, billions of defense dollars are being spent on operational weapon

system major modification programs. Management requirements for these programs closely parallel those of major acquisition programs. This suggests the advisability of applying system program

management techniques to management of modification programs—the Mini-spo for mods—on a scale governed by the scope of the modification.

*Tinker Air Force Base, Oklahoma*

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# CRISIS AROUND THE AIRPORT

CAPTAIN JOHN G. TERINO

- ! Twenty-two children and adults die when a privately owned, Korean War-vintage F-86 Sabrejet fails in an attempt to take off from a Sacramento, California, airport and crashes into an ice cream parlor directly off the end of the runway. The store had been built as part of a shopping center despite opposition from the state.<sup>1</sup>
- ! A fully loaded Air Force KC-135 tanker takes off from McConnell Air Force Base, Kansas. Moments later it crashes into a residential area in Wichita; 23 civilians and the seven crew members perish.<sup>2</sup>
- ! Forty-nine homeowners living near Los Angeles International Airport are awarded \$365,700 by a jury to compensate them for devaluation of their property caused by airplane noise.<sup>3</sup>
- ! An F-4 Phantom jet fighter taking off from Davis-Monthan Air Force Base, Arizona, plunges to the ground one mile from the base. Four civilians die in the accident, which a local newspaper calls a "fiery crash of an Air Force jet into a supermarket and residential area."<sup>4</sup>
- ! A United Airlines Boeing 737 on final approach crashes into a heavily populated neighborhood less than two miles from Chicago's Midway Airport. Forty-three aboard and two on the ground are killed. It is speculated that more passengers might have survived if part of the plane was not inside a house.<sup>5</sup>

**T**AKEN individually or collectively, these incidents are tragedies. But beyond the loss of life and material value, these and many similar events in recent years have real significance as manifestations, indicators, symbols of the crisis around the airport—a crisis that is facing the Air Force and the other military services, as well as civil and commercial aviation to an even greater extent in some ways.

Since December 1903, when the Wright brothers made powered, controlled flight a reality, aviation has progressed from being a curiosity to its present state as an important part of the daily life of virtually everyone in the United States. Food, newspapers, flowers, components of everything—from a transistor radio to the rockets used to hurl our astronauts into space—are carried routinely across the nation and

around the world by air. In 1973, almost 185,000,000 passengers were carried by airlines within the United States.<sup>6</sup> Business and government executives no longer depend on time-consuming exchanges of correspondence to solve problems involving widely scattered firms and departments. They solve them immediately in face-to-face meetings and conferences, often in six or seven different cities in a three- or four-day period. They are able to do this because of the reliability and accessibility provided by aviation.

Major cities, even states, depend on the airlines for their economic livelihood. Hawaii had over 2,245,000 tourists in 1972. Tourism tops pineapples and sugar as the major industry of Hawaii. Tourists spent over \$755 million there in 1972. The only bigger industry, and that by a very slight margin, is defense spending.<sup>7</sup>

Las Vegas, a city with a population of only 310,000 people, draws annually over 17,400,000 tourists, who spend and gamble over \$1 billion.<sup>8</sup> New York, Reno, Niagara Falls, Miami Beach, Chicago, Los Angeles, New Orleans, San Francisco, San Diego—name a major city in the United States, and the tourism, conventions, and businesses that are major economic factors in sustaining its prosperity are nurtured by a steady flow of nonresidents in and out. The heart that pumps this economic lifeblood of people and money is aviation.

Yet the very technological growth that has enabled aviation to produce faster, bigger, and more efficient aircraft capable of moving up to 400 passengers from New York to Miami Beach in less than three hours has also spawned the crisis around the airport.

As the aircraft industry has grown more complex and expanded its size and

services to meet the demands of our business and leisure economy, the size of airports and the ancillary industries associated with them have turned the area around major air terminals into industrial complexes. Simultaneously, businesses that rely on air transportation have gravitated to the vicinity of the airport to reduce costs in transportation of goods, as well as the time required to get goods to distributors and consumers.

With the airport now an industrial center employing directly or indirectly in some instances tens of thousands of people, it is only natural that those people employed in the industries at or near the airport should purchase or rent homes as close to their place of work as possible. This creates a need for shopping centers, schools, recreation facilities, churches, and all the other necessities of a residential community, which in turn increase the population dwelling near the airport as the people who provide these services move into the area to be near their place of business. The services and facilities, new housing developments, and modern highways and other means of transportation linking the airport to the metropolitan center increase the property values of land near the modern airport complex. This increases its desirability as a residential area for people who have no connection with the airport. Thus the airport, once a remote facility beyond the edge of town becomes an integral part of the city itself.

When all these factors are combined—the technological growth of aviation that has produced bigger and bigger aircraft that fly more and more frequently with larger and noisier engines that emit untold pollutants into the air, and the encroachment of cities up to and in some cases past the airport—the crisis around the airport occurs. Accidents, noise com-



plaints, environmental questions, suits and court tests then become common. That point has been reached around the airports of the United States today.

John F. Kennedy International Airport in New York City is a classic example of this. Created some fifteen years ago from the muck and marshes of Jamaica Bay in a sparsely populated area that lacked easy accessibility by road or any other means, today Kennedy Airport is surrounded by housing on virtually every piece of land within twenty miles in any direction. Dulles International Airport, which serves Washington, D.C., is starting to see the same thing happen. To a greater or lesser degree, encroachment is taking place at almost every commercial, general, or military aviation facility in the United States.

As encroachment grows around an airport, dissatisfaction with the airport rises. Complaints about noise, pollution, and crash potential are received by the airport, community, state, and federal officials. In most cases the airport was there first, but that justification makes little impression on most people who view the airport's activities as an invasion of their privacy. They don't want flying to stop; they just want it to stop in their neighborhood.

Is this a real problem or is it only something that seems to be a problem? For many Americans the idea of an airport crisis is unreal.

It is hard for the traveler sitting in the cocktail lounge of a Boeing 747, sipping a martini, or an Air Force pilot willing to give his life in defense of our nation, to realize that they are involved in and contributing to the crisis around the airport. Similarly, it is difficult for a recent retiree and his wife who are

moving into a home directly under the flight pattern of the USAF's largest fighter base to comprehend that they are part of a national problem that extends well beyond the aviation industry. But they and literally millions of other Americans are intimately and inexorably part of the problem.

Nevertheless, according to Gary D. Vest, of the Environment Planning Division, Directorate of Civil Engineering, Headquarters USAF, "Airports and their impacts are real. They are here to stay. However, there exist serious conflicts between many airports and the land areas in their environs."<sup>9</sup>

That conflict extends in many directions. The Environmental Protection Agency (EPA) considers the problem of noise from airport operations to be quite serious and growing more so every day. It estimates that there are 16 million people in America living or working in and near airports who are affected by aircraft noise. In ten years the EPA predicts the figure will grow to 24 million people.<sup>10</sup>

Harry Nelson, a medical writer for the *Los Angeles Times*, states: "There is good reason to believe that hundreds of thousands, perhaps millions, of Americans are slowly becoming partially deaf—painlessly and usually without an awareness of what is happening to them."<sup>11</sup> This loss he attributes to the rising noise level of the American environment, a noise level which he says for people in and near airports is largely attributable to the noise from jet aircraft.

Citing studies in Europe and at the University of Southern California and California medical schools, Nelson points to physical and mental effects from exposure to high noise levels, such as the 100 decibels generated by a jet transport at 1000 feet. These studies showed that

elevated diastolic blood pressure occurs in men exposed to noise near 100 decibels, and if the exposure is sustained the blood pressure does not return to normal, even with the aid of drugs, when the individual is removed from the noise environment.<sup>12</sup> Couple this with the emissions from jet engines adding pollutants to the air and the physical effects of aviation on the well-being of millions of Americans become evident.

But there is more to the crisis around the airport than the physical and psychological effects on people. There is a decided economic effect too. Land around airports is valuable. The people who own it expect big returns on their money. In most instances they wish to subdivide the land for residential use.

A recent lawsuit filed by a landowner against the county board of supervisors in Maricopa County (Arizona) Superior Court highlights the problem of regulating land use around airports. In this case the supervisors, following the recommendation of the county planning and zoning commission, refused the property owner's request to subdivide his land into residential lots because it was less than two miles from the runways of Luke AFB, the USAF's main F-4 Phantom jet fighter training facility. The supervisors felt that the development would expose residents to danger from possible crashes and the noise of the aircraft, whose flight pattern would pass near or over the homes in the proposed development. According to newspaper reports, the lawyer for the landowner saw the action as denying his client a chance for a fair return on his investment: "If we meet all legal requirements, we have a right to legally subdivide in accordance with regulations."

Even more interesting is what was planned if the zoning had been approved: "We intended, after receiving

county approval, to approach the Air Force to determine what dangers existed, what the noise levels were. Then we would either seek compensatory damages from the Air Force, or ask them to buy the land."<sup>13</sup>

With no county or state statutes adequately covering the matter of land-use planning around airports, this suit may succeed, not because the board of supervisors is doing something wrong but because it lacks legal authority to protect the people as well as the airport.

How much money was involved? As farmland, the property was worth \$18,000; subdivided, the price tag was \$3.6 million.

At one point Los Angeles International Airport was the defendant in noise damage suits totaling \$5 billion.<sup>14</sup> Prior to the trial, which cost the airport \$365,700, the city bought 34 other homes for \$1.8 million.<sup>15</sup>

One cannot shrug off figures like these, as well as multiples many times greater that could come to pass in the future, by simply saying "The property owners deserve it; the government should pay or build the airports someplace else." It takes only a moment's reflection to realize that we are running out of the wide-open spaces around our cities, that it costs too many billions of dollars to construct first-rate airports when we already have them, and we cannot afford to keep threatening the health of people and then paying them damages. Aviation is not going to fold its tent and leave the transportation scene as did the sedan chair and the horse and buggy. Along with the automobile, aviation is the basis for our mobile American society.

WHAT, then, are the alternatives? Although the crisis at the airport is

complex issue involving many more things than have been enumerated here, and any solution would be almost equally complex, there are some basic courses of action to consider.

First, there is the laissez-faire, or no action, approach. While many may contend this has worked until the present, the reverse is true, as exemplified at Los Angeles International Airport and Luke Air Force Base. Ultimately the money paid out of the public coffers would have to come from the people, thus adding to the tax burden or depriving our society of some benefit.

As communities have grown, the economic importance of the military to them has diminished. Pressures to end flying and close the field follow. Bolling, Lowry, Oxnard, Chanut, Mitchel, and Hanscom Air Force Bases and Floyd Bennett Naval Air Station are among the military airports that have either stopped flying or closed entirely. While there is little argument that many military installations were justifiably closed for sound national defense, economic, or other reasons, there is little logic in allowing a base such as Luke to suffer a similar fate because of urban encroachment. Replacement of Luke, which has perfect year-round flying weather, dual runways, modern support facilities, and accessibility to an ideal gunnery range, would run close to \$1 billion.<sup>16</sup> Anyone looking at recent defense appropriations can see that requests for major construction of new installations would stand little chance of acceptance by Congress.

Yet letting things go on as they are is simply unacceptable, both economically and in terms of the health of the American people.

A second approach to the problem would be to use our technology to develop quieter and less-polluting aircraft,

to introduce vertical and short takeoff and landing (v/STOL) aircraft that incorporate the quieter and cleaner engines, and to alter flight patterns so as to minimize the harmful effects of noise.

The quieter and cleaner engines are coming. The Federal Aviation Administration (FAA) already is requiring quieter engines on new commercial aircraft, and it has let contracts for design modifications to retrofit older aircraft. To re-equip one Boeing 707, however, has been talked of as costing up to \$750,000.<sup>17</sup> Where that money would come from is a serious question for an industry already beset by financial woes caused by new equipment purchases and the rising costs of operation, some of which resulted from increased fuel costs.

v/STOL aircraft could prove to be a partial solution to the noise and crash hazards of the crisis around the airport. What type of v/STOL aircraft is right presents a problem. According to Charles W. Harper and Albert J. Evans of NASA's Office of Advanced Research and Technology, "If it is to be, initially, a suburban-area-to-central-airport system, one kind of aircraft is called for. If it is to be suburban-or-outlying-airport-to-downtown, another type would be chosen. If many downtown stops are envisioned, still another type might be chosen."<sup>18</sup>

To be effective, the v/STOL aircraft must provide a means of giving more services to more people and of reducing noise, pollution, and crash hazards. Harper and Evans put this very succinctly: "It will take a well coordinated and decisive effort by city planners, aircraft designers, airway systems designers and operators . . . to succeed."<sup>19</sup>

Flight pattern alteration is another way to reduce the effects of noise. While this can be extremely effective, it can also

present problems, particularly for military aviation, which trains large numbers of pilots in high-performance aircraft. Safety is the prime consideration. While take-off power may be curtailed, a steeper glide path used, or a segmented approach tried, these are all compromises in terms of the ideal operating mode of the aircraft, and a compromise could produce fatal results in case of an emergency.<sup>20</sup>

Nevertheless, all possibilities should be considered. The FAA is currently working on a two-segment approach that would keep aircraft higher longer as they prepare to land. The FAA has also been studying lower wing flap and reduced engine thrust combinations. Similar tests have been and are continuing to be conducted by the airlines.<sup>21</sup>

A third alternative is to adopt planning and zoning legislation that will prevent encroachment upon airports. This, however, is a very sensitive subject. Great pressures can be brought to bear on city, county, state, and federal government by business, industry, and landowners when somebody starts telling them what they can or cannot do with their land and expansion plans.

Despite this, there is still hope. The Air Force has devised a tool that can be used by communities in planning land use around airports, whether military or civilian. The tool is called the Air Installation Compatible Use Zone (AICUZ). AICUZ blends information such as flight patterns and accident patterns of aircraft operating from an airport and noise generated by the aircraft with possible land uses around the airport. It also provides degrees of noise attenuation achievable in relation to the aircraft noise through different structural design and the choice of construction materials. With the data furnished by AICUZ, and

given that legislation is on the books allowing zoning around an airport, a planning and zoning commission or county board of supervisors can make appropriate decisions that will allow the airport to operate and provide the landowner a fair return on his land when the health, welfare, and safety of the entire populace are considered.

None of these three approaches is truly going to solve the crisis around the airport. Realistically, a total solution to the situation that would keep everyone happy is probably impossible. Yet some things can be done to reduce the problem considerably. Perhaps a program is needed that incorporates some aspects of the second and third approaches.

As Vest says, "the solution of the airport . . . problem must begin with the recognition that there is, in fact, a problem and that if it is not resolved the results will be unacceptable."<sup>22</sup> Gaining recognition of the problem around military airfields is more difficult because in many instances they do not represent a major factor in the community. The problem will become even greater as the economic impact of these airfields on the local communities continues to decline and because the military members are really transients in the communities and unable to wield the political power of permanent residents.

If the hearing and psychic damage faced by 16 million Americans today, the billions of dollars in lawsuits already settled or pending, and the costs of building new airports, whether military or civilian, do not represent a recognizable problem, then there is a communication and comprehension gap.

The first thing that must be done is to educate people in all echelons of government, industry, and the American public about the problem. The Departments of

Defense, Interior, Transportation, Health, Education and Welfare, the FAA, the ICC, and any other agency involved in aviation at the national level should combine and intensify efforts to obtain national legislation that will require states to provide laws of their own enabling proper land-use planning around airports or requiring that in the absence of such laws they follow a minimum federal statute. Similar action should be undertaken at state, county, and city level.<sup>23</sup> In addition, at the local level building codes should be sought that require appropriate and adequate noise attenuation, whether the source of noise is an airport or a toy factory. Here the catalyst should be the aviation and business communities, the people who own, operate, and use aviation on a daily basis.

Where inappropriate zoning has been made, government should subsidize noise attenuation, redevelopment, or even outright purchase of the structures, as was done in Los Angeles.<sup>24</sup> Although initially this might be costly, in the long run it could be considerably cheaper than the cost of lives and subsequent lawsuits that follow accidents. This program could save many airports that are now restricted in their operations or may face closing, thus saving the construction costs

of new airports while providing convenient facilities for air travel within the city.

At the same time, every technological option, including v/STOL aircraft, should be explored. Similarly, flight patterns and procedures need to be carefully examined to see what, within the limits of safe operation, can be done to reduce noise.

Research efforts to produce quieter and cleaner-burning engines should be further underwritten, either directly or through tax advantages. At the same time, as quieter and more efficient engines are developed, the government should back low interest loans or other means of subsidizing the costs of retrofitting existing aircraft.

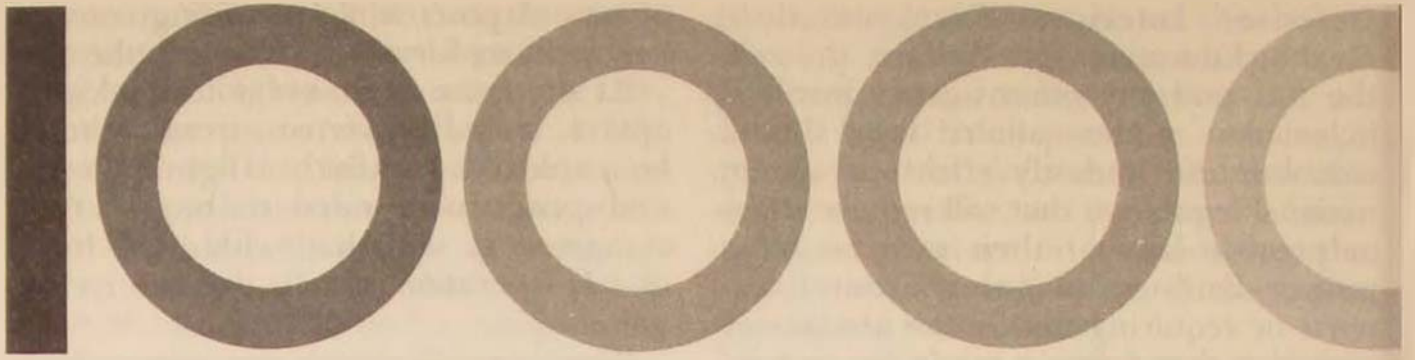
The solution, or even a marked easing, of the crisis around the airport requires a multifaceted, multilevel approach involving the total commitment of many government agencies and the entire aviation community working together. It is not a problem that will go away or be brought under control without hard work and much conciliation. How hard the leaders of government agencies and the aviation industry work will determine how quickly the crisis around the airport is diminished.

*Hq Tactical Air Command*

#### Notes

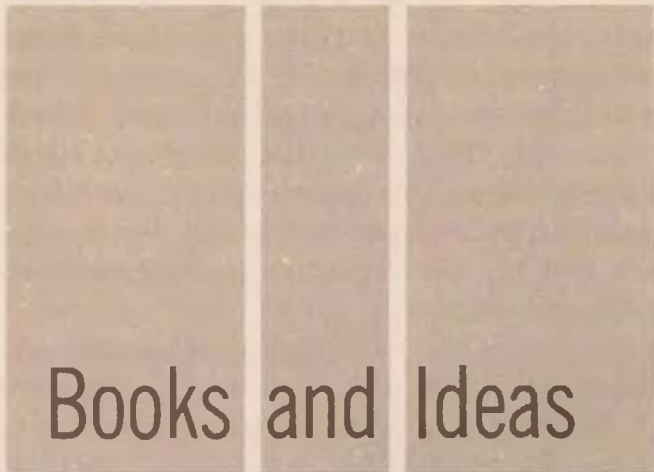
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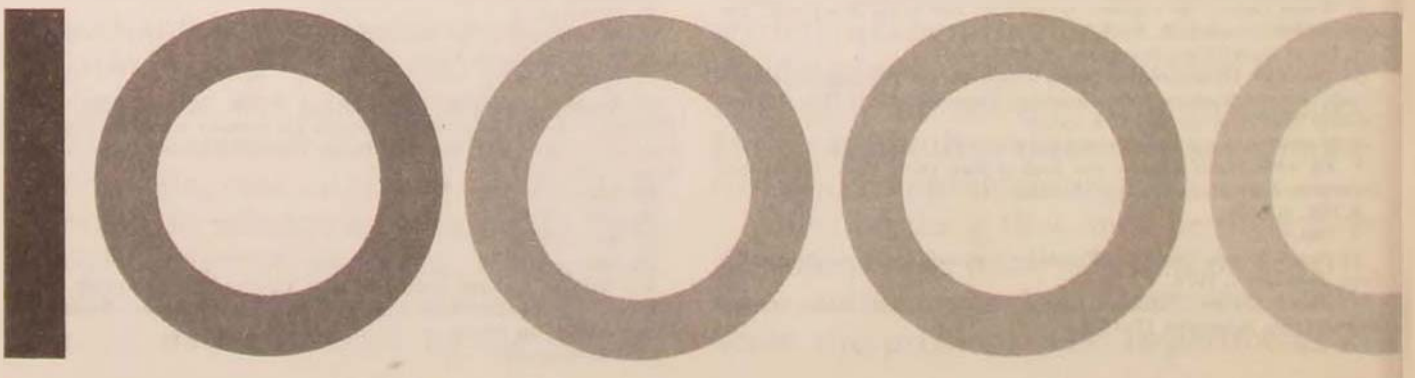


## THE METRICS ARE COMING!

DR. JAMES A. FRASER



THERE is an old saying to the effect that you don't know much about a subject until you can answer the questions "How much?" or "How many?" In short, qualitative information is useful, but far from complete. To be complete, the information must be quantified. When a motorist drives up to a filling station and asks for gasoline, the reply is usually, "Fill her up?" or "How much?" or some other form of a request for quantitative information. The same idea holds in the much more exciting business of space travel. To understand anything about space, one must think in terms of velocity or speed. And it is not sufficient to say "very fast" or "very slow" or "quick as a wink" or any other qualitative description of speed. One must use units of measurement.



Recently a master of ceremonies was presiding at a meeting where space scientists were reporting on their research. One after another the scientists read their papers, and one after another they spoke of speed in different units of measurement. The first spoke about feet per second. The next, miles per hour. After that came speakers using knots, feet per minute, meters per second, centimeters per minute, kilometers per hour, etc. The units that may be used are almost without limit. The master of ceremonies, before introducing the next speaker, remarked on this diversity of measurement units. He said, "I recognize the impossibility of standardizing upon a single unit for use in the whole world. But surely we could select a unit to be used in this one room for one day. However, I know better than to ask you gentlemen to select the unit. If I did, we would be right back where we are now. One would want feet per second and another meters per hour, and voting would bring no agreement. So I won't ask you, I'll tell you! From now on I want everyone to use furlongs per fortnight!"

The story illustrates nicely the current foolishness regarding systems and units for weights and measurements. In the United States a gallon is 231 cubic inches. In other English-speaking countries a gallon is 277.3 cubic inches. Thus a gallon of gasoline in Canada is bigger than a gallon of gasoline in the United States. A quart of milk in Canada contains more milk than a quart of milk in the United States. Even without leaving the United States, we have plenty of confusion. One must remember that it takes four of one kind of quarts to make

a gallon, but it takes 32 of another kind of quarts to make a bushel. A child must learn that there are two different ounces: there are 16 of one kind of ounce to a pound but 32 of the other kind of ounce to a quart. In fact, the situation is so confusing that the author of a delightful little book, *Let's Go Metric*, mixes things up when he says on page 66: "He must know that there are 16 of one kind of ounces to a quart but 32 of the other kind of ounces to the pound."† When the system confuses an expert, pity the poor school children.

In *Let's Go Metric* Mr. Frank Donovan says:

By 1971 all but fifteen countries in the world were using the metric system or were in the process of converting to it or were studying how they would convert to it. The only non-metric countries were Barbados, Burma, Gambia, Ghana, Jamaica, Liberia, Muscat, Oman, Nauru, Sierra Leone, Southern Yemen, Tonga, Trinidad, and of course, the United States. All of the non-metric partners of the United States in an otherwise all metric world are small islands or backward or emerging countries. More than 95 percent of the people of the world measure by the metric system or are learning how to. Most of those who do not are in the United States.<sup>1</sup> (pp. 31-32)

In response to this statement I made a survey of the larder in my wife's kitchen and found that packaged food was almost universally labeled only in pounds, ounces, gallons, pints, fluid ounces, etc. There were two exceptions. A box of corn muffin mix was labeled, "Net Wt. 8½ oz." in large print and "241 grams" in small print. A box of breakfast cereal called Total was labeled "Net wt. 12 oz." in large print and "net wt. 340 gms" in

† Frank Donovan, *Let's Go Metric* (New York: Weybright & Talley, 1974, \$5.95), 154 pages.

small print. This is, of course, a start and indicates the route of change. Household products and common articles of commerce will be labeled in familiar units and in metric units. This dual system will be required for perhaps a generation—until education and time make the metric system of units familiar.

The impact of the change to the metric system is probably less striking on household products than on national defense and industry. The August 7, 1974, edition of *Air Force Times* includes an article entitled, "Panel Plans Metric Move," which states:

. . . under the direction of Dr. Joseph Ryerson of the Rome Air Development Center, N.Y., a defense panel has been formed to plan for the pending conversion of the nation's present measurement system to the metric system known around the world as SI—the system international d'unites.

The U.S. is the only major industrial nation that's non-metric. However, some American manufacturers use both the metric and U.S. weights and measures systems.

Several bills have been introduced in Congress for converting the nation to the metric system over a period of years. Some defense industries have already begun the conversion process.

While it is true that Air Force medical, scientific, and technical personnel have been using the metric system for a long time, the coming change to a widespread and general use of the metric system in the United States makes *Let's Go Metric* a particularly appropriate book for members of the Air Force.

After three chapters dealing with the history of attempts to measure effectively, the creation of the metric system and its spread, and the debate in the United States as to whether it should be adopted or not, Frank Donovan presents

some telling reasons why we must change to the metric system. He notes that the important reasons have little to do with whether the housewife measures flour by the cup or by 250 milliliters. Rather the important and principal advantages for changing are in the areas of government, economics, industry and commerce, international trade, and international relations. He notes that the United States will go fully metric in an international cooperative space program that measurements are just as important as prices in determining the amount of machinery sold by the United States to major foreign countries. He also notes that the Department of Defense issued a metric study listing numerous advantages of the metric system. These included decrease in training time for engineers, mechanics, and maintenance personnel; reduction in errors, and easier and quicker repair.

Chapter five poses the question "What's wrong with the system we have?" and develops in detail the general answer that it is "much harder to learn the many unrelated units of the Customary system and even more difficult to learn the fractional arithmetic that this system requires. And when it is necessary to *calculate* measurements . . . the decimalized metric system is so far superior that there is no comparison." Specific examples of calculations are provided to document the argument.

The effect of the change on people in various types of jobs is next considered (chapter six), and it is noted that the effect will vary markedly with the kind of work. A man who sweeps floors will not be affected at all. A secretary will be only slightly affected in that she will have to learn the spelling of some new words. The effect on a factory worker will be slight. On the other hand the conversion



will cause great changes in the construction industry. Almost the entire pharmaceutical industry and the entire medical profession are now on the metric system, so that there will be little change in these professions. Probably the greatest cost and impact of change will be in industries that manufacture machinery, machine tools, agricultural equipment, motors, and automobiles. There may be a few industries where the impact will be so severe that they will not convert for many years, if ever. Railroading is a probable example. The chapter is replete with specific examples of the probable effect on many occupations. It should be noted, however, that the actual effect will not be fully known until the system is tried, and it will not be fully anticipated until experts in each occupation and industry seriously consider and plan for the conversion. This is already happening in many industries, and the current periodical literature is increasingly reporting the results. In *Automotive Engineering* for August 1974 is an article entitled "The Optimum Metric Fastener System." Fasteners are nuts, bolts, screws, washers, clips, rivets, and similar devices used to join components into assemblies. The article concludes that "the optimum metric fastener system can be the basis for direct and administrative savings worth millions of dollars annually to a company like Ford" and "the long range cost saving available to North America will be several hundreds of millions of dollars, not just one time, but repeated each and every year."

In chapter seven the author addresses himself to the problems of daily living that will be posed by the change to metric. He starts by pointing out that those who oppose the system claim that the change will cause complete chaos in our daily lives. They maintain that all

existing yardsticks, measuring tapes, scales, kitchen measuring cups, and other measuring devices will have to be scrapped. All cookbooks will have to be rewritten. All quart bottles, gallon cans, bushel baskets, and one-pound weights would have to be replaced. All gasoline pumps and water meters would have to be junked. All road signs would have to be changed.

He counters this argument by saying that the change will be slow and gradual, over a period of years. Originally there will be some inconvenience because of the need for thinking in two systems. Conversion from one to the other may be necessary in some circumstances. He then provides a most interesting speculation regarding the specific effect upon a long list of daily living activities. In many cases he supplies rule-of-thumb methods for quick conversion of units when necessary.

I think that there probably is an easier way out of the difficulty. In spite of inflation, which is making almost everything more expensive, small portable calculators are getting cheaper every year. Soon they will be within reach of everyone. Even today Rockwell International has a portable calculator that will make all the conversions from the customary system to the metric system and vice versa. With it in hand, the conversions will be quick, easy, and almost free from error. It may take a whole generation, however, before conversions become unnecessary.

The author provides an interesting speculation about the game of football (pages 121-22).

One sport that may defy conversion is football, because the yard is so much a part of the game. Of course, the field could be changed from 100 yards to 100 meters, with 10-meter end zones instead

of 10-yard end zones. But this change would make quite a difference in the game. It would be necessary to move the ball about 10 percent farther to retain possession, and this would result in fewer first downs. Because of this, and because American football is not played anywhere else in the world, it is possible that the yard will remain as the standard of measure.<sup>2</sup>

The book concludes with the explanation that while the coming system has been referred to as the metric system, that is not its official name. Since 1960 the official name is *Le Systeme International d'Unites* or the *International System of Units*. In both French and English it is called "The SI System." A brief description of the SI System and a set of conversion tables are provided.

The book is not a profound treatise. It

is not even a scholarly book. But it does do what it set out to do. It provides a short, clear, basic introduction to the coming system of measurement in the United States. It also provides interesting speculation regarding the effects of the new system. As such it is stimulating and could easily form the basis for a discussion. Many readers will disagree in part with some of the predictions. But after all, no one can see clearly into the future, and intelligent efforts to foresee change make us better able to cope when change is thrust upon us.

Montgomery, Alabama

#### Notes

1. The quotation is verbatim, but the countries cited total only fourteen.
2. Football is played in Canada also.



## AN AMERICAN DILEMMA

### *Empire or Containment?*

DR. GEORGE W. COLLINS

WHAT have been the aims of American diplomacy since the Second World War? Were they achieved, and, if so, were the results meritorious, or do they justify accusations of incompetence or imperialism? Did the United States use its economic superiority in the cause of global order and security, or was it used to promote the expansion of capitalism? Despite Vietnam and Watergate, is the United States still willing to accept the responsibilities incumbent upon a great power? These are among the many important questions Raymond Aron raises in a critical essay on the foreign policy of the United States.†

Professor Aron, of the College of France, a longtime political affairs analyst and author of many books, is well known to American students of contemporary affairs. In this work he examines the

meaning and results of American foreign policy since 1945, attacking the subject from two points. In the first he deals chronologically with some of the fundamental diplomatic issues, such as the origin and outcome of the cold war, the reconstruction of Europe, and the containment of Communism in Europe and Asia. In the second part he surveys the role of the United States in world economics. Aron makes no pretense of having written a diplomatic history of the period examining every twist and turn of policy; instead he has focused on the larger issues in Europe and Asia, with lesser attention to the nature and impact of U.S. policy regarding the Third World. A quick summary of his assessments of American policy might be: in Europe, success; with the Third World, indecisive; in Asia, failure.

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†Raymond Aron, *The Imperial Republic: The United States and the World, 1945-1973*, translated by Frank Jelinek (Englewood Cliffs: Prentice-Hall, Inc., 1974, \$10.00), 339 pages.

Professor Aron divides American diplomatic history into three periods. The first began with the Peace of Paris in 1793 and extended through the Spanish-American War of 1898. It resulted in the geopolitical continental hegemony of the United States; i.e., continental supremacy, yet insulated by oceans, interests, and traditions from the larger theater of interstate affairs. The second period, he states, ended either in 1941, when the United States entered World War II, or in 1947, a year he accepts as the beginning of the cold war. Aron characterizes this period as one of indecisiveness in American foreign policy, a period of inconsistency when, against its will, the nation participated in world affairs yet failed to accept "the role imposed upon it by destiny." (Shades of John L. O'Sullivan! How interesting to see a mid-twentieth-century scholar, and a European at that, extolling America's manifest destiny!)

For the chronological and policy parameters of the third period, the central aspect of his essay, Aron argues that the critical elements are the Marshall Plan of 1947 at one end and, at the other, the devaluation of the dollar in 1971 together with President Nixon's visits to Peking and Moscow the following year. Within this time span he considers American policy to have been very consistent, featuring the containment of Communism by economic, political, and military means. It was a policy ideologically negative and marked, although with important exceptions, by moderation toward its chief rival. He does maintain that American judgment was faulty in several instances during these years, including President Roosevelt's lack of interest in political settlement during World War II, the decision to carry the Korean War north of the thirty-eighth

parallel, the new China policy of 1950, the withdrawal from the Aswan Dam project, and the intervention in Vietnam. Nevertheless, Aron's overall assessment is complimentary, attributing the general international economic well-being of the last twenty-five years to the success of capitalism, and he observes that, although the United States was the leading world power for most of that period, it did not aspire to rule.

In approaching the issues immediately associated with the Second World War and the beginning of the cold war, Aron, unlike many other analysts, sees no purpose in searching for culprits. In fact throughout the book his treatment of individuals is moderate. Even Stalin, of whom no commendable quality is mentioned, is not personally vilified. As for the origins of the cold war, Aron rejects the "revisionist" thesis that holds America responsible, as he rejects all revisionist arguments. He concludes that the division of Europe was inevitable and that both Stalin and the Western leaders acted consistent with their own values. He cites Stalin's remark, "Everyone imposes his own system as far as his arms can reach," (nevertheless, the United States rejected that contention, and Truman ignored Churchill's advice and withdrew American forces from their forward positions in Europe at the end of the war).

While Aron finds no fault with Roosevelt's desire for postwar cooperation among the Big Three, a position he credits to the President's universalist ideals of interstate relations, he does criticize the emphasis placed on military victory instead of an attempt to reach a political settlement with Stalin. One wonders if that was possible. As Aron himself notes, after signing the Yalta agreement Stalin almost immediately violated it in

Poland and Rumania. What kind of agreement would he have accepted that would have been more equitable for either East or West Europe? To have placed any leverage on Stalin, the United States, at a minimum, would have had to maintain sizable forces in Europe, and Aron's comment that, had Truman wished to do so he would have found some way, does not appear realistic. It could have been contrary to American tradition and to the thrust of wartime propaganda which had created a favorable public image of "Uncle Joe" and Soviet requirements. Moreover, as Aron indicates in another context, American policy consistently rejected direct confrontation with the Soviets.

THE major events which established the nature of the postwar interstate relations were, Aron believes, the Marshall Plan for Europe and the Korean War in an even larger context. With Stalin's refusal to participate in the Marshall Plan, bipolarity was fully established. For the American policy that shifted from advocacy of a universalist world community to acceptance of a balance of power and for America's acceptance of the role as the West's leader, Aron has high praise, toasting that policy revision as "the 'finest hour' of American diplomacy in Europe." "What other policy," he asks, "save containment was open after cooperation with Stalin had proved impossible?"

In regard to Korea, Aron criticizes America's political abandonment of the peninsula, citing Secretary Dean Acheson's January 1950 speech as an error. Professor Aron believes that the United States should have maintained a more forceful policy and should not have eliminated Korea from its defensive perim-

eter until it had insured that the Republic of Korea had sufficient military strength to resist aggression. One might suggest that that is easier said than done. Defense spending was under heavy fire in America, and the nation lacked the troops to garrison South Korea; and to have given President Syngman Rhee greater military strength for himself might have encouraged an attack on North Korea. Even during the Korean War, when Rhee was more dependent upon American support, he proved to be a difficult ally.

More significant is Aron's declaration that the Korean War "set in motion a chain of events in Asia and Europe which is still running out its course today and has determined some of the main characteristics of the period 1950-1972." He states that it was Korea that escalated the cold war to military and global dimensions. Not only did American policy dramatically shift with the establishment of a large, standing peacetime army and the rearming of Europe; now two military blocs stood face to face. Nevertheless, Aron maintains that those military measures were necessary for American credibility and to provide a climate of security and confidence in Europe.

For America, Korea was its first experience with limited war and peace without victory, and, most significantly, says Aron, "it was in Asia far more than in Europe that the American republic assumed the imperial burden." From the Korean involvement he sees direct policy links to American intervention in Vietnam. Despite his reservations about American policy toward Korea prior to the war, Aron agrees that President Truman was correct in intervening militarily once the South was attacked. However, once it was engaged, Aron charges

America with grievous policy errors. The decision to carry the war north of the thirty-eighth parallel not only prevented a limited victory in 1950 but led to a new China policy that was disastrous—a “time bomb,” says Aron, which ultimately exploded into the American intervention in Southeast Asia. Prior to that time, he notes, the United States had avoided taking sides in the Chinese civil war; now it would elevate its hostility to Mao’s regime into an anti-Communist tirade. What was the point, he asks, if China was merely a Soviet satellite? He declares that it would have been a more rational policy to seek an accommodation in Asia similar to American policy in Europe. Instead, the United States compounded the error and plunged into the war in Indochina. It had been providing modest assistance to the French there before the Korean War began, but now massive aid would be provided, and the nature of the war in Indochina was transformed. France had been resisting the independence movement and fought to protect its empire; but with the entrance of the United States, the war became another aspect of the global effort to contain Communism.

Some comment is in order regarding the definitive date when this third period of American foreign policy began, the period in which, says Aron, the United States achieved global hegemony. He writes rather loosely about this. In the prologue he states that the period began either with Pearl Harbor or the Truman Doctrine in 1947. Later, he argues that Truman continued Roosevelt’s universalist policy, and he dismisses the Truman Doctrine as being of slight significance, declaring that for Europe “the major turning point was in fact the Marshall Plan.” He supports that contention by citing a number of events that occurred

in the summer of 1947, including the creation of the Cominform, the treaties concluded between the Western powers and Soviet satellites signifying *de facto* recognition of the sovietization of Eastern Europe, the French decision to join Britain and America in the unification of their zones in Germany, and Stalin’s rejection of the Marshall Plan. Other scholars differ. Robert H. Ferrell suggested about ten years ago that the Truman Doctrine and Marshall Plan together signified the change in policy. More recently, John Lewis Gaddis, like Aron, dismissed the Truman Doctrine as more rhetoric than policy. Gaddis did credit it as being a “real revolution,” but only in the sense that it was accompanied by a “sense of exhilaration” in demonstrating that “for the first time in recent memory the State Department had actually done something, quickly, efficiently, and decisively.” But, unlike Aron, Gaddis does not offer the Marshall Plan as the turning point for Europe; instead he argues that the Korean War was the decisive event. After that, American policy no longer differentiated between Communism and Communist countries (except for Yugoslavia) but treated it as a monolith to be contained everywhere. Inasmuch as Gaddis’s conclusions concerning the significance of the Korean War are substantially the same as Aron’s, one wonders if the Professor has not selected the Marshall Plan largely to give symmetry to his argument; that is, to more sharply delineate a distinction in American policy between Europe and Asia than was really there. Perhaps it is indicative of a native European’s bias.

HAVING already failed to take advantage of the overtures toward thaw in the relationship with the Soviet

union that followed Stalin's death in 1953. Professor Aron believes that the United States erred again the following year when it refused to accept a draw and a demarcation in Vietnam similar to the one it accepted in Korea. He discredits the "domino theory," arguing that while Southeast Asia may have succumbed to Communism as far west as Thailand, there was no likelihood of its success beyond that point. And the loss to the United States, he believes, would not have been significant, pointing out that the expenditures to defend Korea and Vietnam have far exceeded the returns.

Why did containment succeed in Europe but not in Asia? Aron offers two explanations: First, that once Europe was protected against the threat of external aggression, it proved capable of coping with internal Communism; but that was not true of Asia, where nationalism was less developed. Second, in the matter of economic assistance, he finds no common denominator providing guidance—other than that such aid has been beneficial for the reconstruction of war-ravaged developed nations but far less successful in stimulating the economic growth and stability of underdeveloped countries. One factor that he might have elaborated upon is the question of grants versus loans. The reconstruction of Europe, he observes, was greatly assisted by U.S. economic grants, but the Third World more often has been extended only loans. In terms of the best interest for America, Aron suggests that the United States might have been better off had it merely provided loans for Europe, for when its own economic situation would be stronger today. However, that is questionable; although the recovery of Europe and Japan has provided competition for this country, the policy of "guns

and butter" during the Vietnam war was the beginning of American economic woes today. One may suggest that, instead of questioning the economic policy toward Europe, Aron might have seen the value of a similar grant rather than a loan policy with the Third World. Certainly to have attempted to contribute to the reconstruction of Europe after World War II through loans would have raised again, and legitimately, the cry of "Uncle Shylock." It is difficult to believe that a strong Atlantic alliance could have been erected on such a policy. Furthermore, economic conditions in the Third World also justified the provision for grants there.

On the question of imperialism, Aron exonerates the United States of the revisionist charge that it has used its economic strength to further the nation's capitalist expansion. The evidence shows, he believes, that what motivated the United States was the threat of Communism, and while America may have been mistaken in the way in which it extended the scope of its counter-Communism crusade, its economic strength was used for that purpose rather than to expand capitalism. Defining an imperial state as one that uses its strength "to defend its protégés rather than to enslave its clients or dictate its will to the weak," he observes that "as the paramount state, the United States has not ruled." Aron wonders why, when it is generally accepted that neither a colonial policy nor military domination is necessary for growth and prosperity: "If this is true for the vanquished or the secondary powers, why should it be false for the dominant state . . . ?" He dismisses charges that the United States created a new economic imperialism through multinational corporations, excessive consumption of foreign raw materials, or

exorbitant profits realized from overseas investments. Instead he argues that neither foreign trade nor profits from foreign investments were that significant to the American economy. Moreover, the existing lag in the economic growth of the underdeveloped countries, Latin America in particular, Aron attributes to internal problems of their own doing rather than to U.S. policy. In support of that argument one may read with profit Karl M. Schmitt's analysis of the differing development of Mexico and the United States in the decades after 1821. Comparable in size of population and territorial domain and both possessing appreciable natural resources, political turmoil and social inequities have had more to do with the retarded growth of the Mexican economy than did the interference of its northern neighbor.<sup>3</sup> Aron states that the United States has been generally indifferent to the Third World and for the past decade has been investing more heavily in the developed countries. Surely America's policy in regard to the Middle East, he notes, has not been conducive to easy access to oil. And only in the Caribbean and Central America does he believe that the U.S. has followed an "imperialist" policy, continuing to intervene in accordance with its historic interpretation of a legitimate, pre-eminent role there. It would seem, however, from the recent disclosures as to the expenditures made to undermine Allende's government in Chile, Professor Aron has underestimated the Nixon administration's determination to influence the affairs of South America. In regard to that continent, William P. Bundy's proposal that the United States withdraw from the security aspects of the Organization of American States (OAS) has merit.<sup>4</sup>

In the 1950s Aron sees important changes occurring within the rival power

blocs. That was evident in the Hungarian and Suez crises of 1956 and in the Sino-American conflict over Quemoy and Matsu in 1958. In their actions during those events it was apparent that the Soviets and the Americans had reached an accommodation so that neither unduly exacerbated situations unfavorable to the other. Moreover, the actions of the lesser allies of both great powers revealed their independent-mindedness and were indicative of emerging dissension within the rival alliance systems.

Professor Aron believes that under Kennedy the United States reached the height of its hegemony as *the* world power. Nevertheless, he does not accept Robert Osgood's assessment of America's cold war policy as "a striking success," noting that within a few years the conditions were dramatically altered as the Soviet Union also achieved global power status. It was the Kennedy administration's "propensity to a dynamic policy" that led it to test its counterinsurgency capability, for which, declares Aron, it must share "the responsibility for the misfortunes of Gulliver in the quagmire of the rice paddies of Vietnam." Having refused to accept the nationalism issue wracking Vietnam and having failed to discover a leader there similar to Rhee in Korea who was both nationalist and anti-Communist, the United States was seriously handicapped for the achievement of a political victory.

Aron is extremely critical of American military policy in both the bombing of North Vietnam and the "search and destroy" operations in the South. Neither had a chance of success, he argues, and the "only rational" policy should have been a level of intervention sufficient "to gain time enough to consolidate a government capable of maintaining order in South Vietnam and of resisting both the



insurgency and any attack by North Vietnam." Instead the destructiveness of the American military operations not only was unsuccessful in crushing the enemy but also led to revulsion in America and abroad and ultimately discredited the anti-Communist crusade.

For the Nixon-Kissinger diplomacy he has high praise and writes of its "brilliant strokes" in reversing policy toward the Soviet Union and China. He says the new policy "aimed at creating a lasting peace and freedom by means of a *strategy of national security contingent on a realistic deterrence and a diplomacy of active negotiation* [Aron's italics]." The highlights of the new policy were the President's trips to Peking and Moscow, which heralded détente, the withdrawal without defeat from Vietnam, and the 1972 Strategic Arms Limitation Talks (SALT) agreement. On the ultimate issue in Vietnam, he maintains, was whether or not the Thieu government would be abandoned by the United States. But the accord of January 1973 signified, Aron believes, at least the temporary abandonment of Hanoi's insistence on unification of North and South Vietnam under a coalition (Communist) regime. However, the continued level of warfare in South Vietnam belies the professor's contention. Hanoi has not temporarily abandoned its objective of unification according to its terms; instead it is playing for time and the internal collapse of the South. As for the first SALT agreement, there he believes the United States fully expressed its interest in détente by accepting Soviet nuclear superiority.

Aron also defends America's dollar devaluation of 1971, which he argues was overdue and did not represent an American attempt to exercise economic imperialism. The economic recovery of Europe and Japan and the inflation

engendered by Vietnam forced the change in financial policy. And while that decision was to the disadvantage of America's Asian and European allies, he insists that it was realistic. But dollar devaluation also symbolized the changed relationship between the United States and its allies. Now they compete as economic rivals, thus bringing into question other aspects of their alliance. Together these revised policies toward enemies and allies alike signify the end of Aron's third period of American foreign policy.

While the subject of Raymond Aron's essay is American foreign policy and his discussion necessarily centers there, he has no hesitation about stating his convictions on other matters; for example, charging Stalin with the real responsibility for the Korean War, or Castro for the Cuban missile crisis. There are some minor, nevertheless annoying, discrepancies in this book. Whenever there is a reference to the American ground forces engaged in Korea, they are mistakenly referred to as the Seventh Army instead of the Eighth. In his chapter entitled "Disciples of Metternich," which discusses the important Nixon policy shift to détente and withdrawal from Vietnam, the very first sentence states that the President visited Peking and Moscow in 1971—it was 1972. Later in the chapter the Peking visit is dated as March 1972—it was February. And the important North Vietnam offensive that continued while Nixon visited Moscow is first referred to as commencing in April 1971, and then as in April 1972—it was March 30, 1972.

Stanley Hoffmann has characterized Aron's convictions regarding the interstate system's inherent competitive nature and division into contesting units as today's "best expression of this gloomy or

sceptical philosophy.”<sup>5</sup> Although in this book Aron declares that the modern complexity of international affairs requires relationships at levels further than merely a balance of power, the general impression given is that contemporary affairs still require a viable balance between the Soviets and the West. That impression is confirmed by Aron in a more recent interview in which he stated that “if the United States was to withdraw completely from Western Europe, there is a danger that the Communists would take power in Italy and maybe in France.”<sup>6</sup> It is the security of the Western alliance that causes Aron to question the reaction to Watergate, which he sees as affecting the temper of the times and which, he fears, may lead the United

States away from its commitment. Withdrawal from its responsibilities as a great power is impossible for the United States, he argues, and he insists that the nation must continue some middle ground policy between isolationism and global domination. But he is worried and realistically so, that the backlash to Watergate may lead to undesirable restrictions upon Presidential direction of foreign policy. Citing numerous instances of what he considers unwarranted Congressional action since World War I, Aron confides that “it is to the presidency rather than the Senate that Europeans look for an equitable policy.”

Wichita State University

#### Notes

1. Robert H. Ferrell, “Roosevelt and Truman Policy: Continuity or Change?” a paper read at the Organization of American Historians in Cincinnati.

2. John Lewis Gaddis, “Reconsiderations: Was the Truman Doctrine a Real Turning Point?” *Foreign Affairs*, January 1974, pp. 386-402.

3. Karl M. Schmitt, *Mexico and the United States, 1821-1973: Conflict and Coexistence* (New York: John Wiley & Sons, Inc., 1974), pp. 44-50.

4. William P. Bundy, “International Security Today,” *Foreign Affairs*, October 1974, pp. 34-35.

5. Stanley Hoffmann, “The Acceptability of Military Force,” in “Force in Modern Societies: Its Place in International Politics,” *Adelphi Papers*, No. 102 (London: International Institute for Strategic Studies, 1973), p. 3.

6. “A French View of Rising U.S. Power,” *U.S. News & World Report*, April 29, 1974, pp. 50-51.

## The Contributors



THE HONORABLE WILLIAM L. DICKINSON (LL.B., University of Alabama) was elected to the United States Congress in 1964 and represents the Second Congressional District of Alabama. He is the fourth ranking Republican on the House Committee on Armed Services. After graduation from law school in 1950, he practiced law and filled a number of judgeships. He has received the Distinguished Service Award from the Americans for Constitutional Action every year he has been in Congress. Two of his outstanding activities are in support of prisoners of war and a strong national defense. Representative Dickinson is a Navy veteran of World War II and a major in the USAF Reserve.



LEWIS A. FRANK (M.A., University of California at Los Angeles) is an economist and consultant on strategic studies with Analytic Services Inc., Falls Church, Virginia. His writings on weapon systems development and politico-military analyses have appeared widely, the most recent, "Soviet Power after SALT I," in *Strategic Review* (1974). Mr. Frank is author of *The Arms Trade in International Relations* (1969) and is currently writing a book on strategy. He is a graduate of the Industrial College of the Armed Forces and is listed in *American Men and Women of Science—Economics 1975*.



CAPTAIN DONALD J. ALBERTS (USFA, M.A., Georgetown University; M.S., University of Southern California) is Assistant Professor of Political Science, U.S. Air Force Academy, where he specializes in insurgency studies and American defense policy. He has served two tours in Southeast Asia, flying the F-4, and a tour in Europe as a Wild Weasel pilot and wing staff officer. Captain Alberts is a coeditor and contributor to *Political Violence and Insurgency: A Comparative Approach* (1974).



DR. RICHARD E. BISSELL (Ph.D., Fletcher School of Law and Diplomacy, Tufts University) is a research associate at the Foreign Policy Research Institute, Philadelphia, and a visiting research fellow at the Center for International Studies, Princeton University. Currently working on long-range planning for the U.S. government in Africa south of the Sahara, Dr. Bissell will publish his previous research on South African foreign policy in late 1975.



LIEUTENANT COLONEL DAVID N. BURT (Ph.D., Stanford University) is DOD Director, Foreign Military Sales, for Australia, at Canberra. He recently completed four years with the Air Force Institute of Technology as an associate professor in logistics management. He was also Director of the Procurement Management Program, originator of the DOD Procurement Symposia series, and of the Air Force Business Methods Research Management Center. Colonel Burt's articles on procurement and systems acquisition have been published in professional journals.



LAWRENCE R. BENSON (M.A., University of Maryland) is Historian, Air Force Military Training Center, Lackland AFB, Texas. At the time he wrote the article on the Fighter Lead-In Program he was historian of the 49th Tactical Fighter Wing, Holloman AFB, New Mexico. He served with the U.S. Army in Vietnam and taught high school in Arizona before becoming an Air Force civilian employee at Davis-Monthan AFB, Arizona, in 1971.



LIEUTENANT COLONEL GEORGE R. HENNINGAN (M.S., Air Force Institute of Technology) is Chief, B-52D Structural Modification Program Office, B-52 and Missiles Systems Management Division, Oklahoma City ALC. Commissioned from pilot training in 1956, he has served in ATC, USAFE, TAC, PACAF, and ADC; flown the F-86D, F-102, F-106, and 100 missions over North Vietnam in the F-105; and held special assignments with Special Air Warfare Center and Air Defense Weapons Center. Colonel Hennigan is a graduate of Air Command and Staff College and Air War College.



CAPTAIN JOHN G. TERINO (B.S., Fordham University) is Chief, Press Media Branch, Directorate of Information, Hq Tactical Air Command, while serving at Luke AFB, Arizona, where his office received the TAC Information Achievement Award. He handled the problems of urban encroachment and the initial implementation of Air Installation Compatible Use Zone (AICUZ). He has served as an information officer also at AFIT, Hq PACAF, Bien Hoa AB, Vietnam, and Air Force Cambridge Research Laboratories.



DR. JAMES A. FRASER (Ph.D., Columbia University) is Professor Emeritus, Air University, having served as Director of Curriculum, Air University Institute for Professional Development. In World War II he was a navigation instructor and

ground instructor for pilots in the RCAF. Dr. Fraser has served as lecturer in the George Washington University Center and Auburn University Center at Maxwell AFB. He is currently teaching statistics for Troy State University, Montgomery. He is retired as a colonel, USAF Reserve.



DR. GEORGE W. COLLINS (Ph.D., University of Colorado) is Associate Professor of History, Wichita State University. He served as a bomber navigator during World War II and Korea and later in Strategic Air Command. He then taught navigation and history at the United States Air Force Academy until his retirement in 1968. Dr. Collins has published articles on history and navigation in professional journals.



The Air University Review Awards Committee has selected "They Were Good Ol' Boys! An Infantryman Remembers An Loc and the Air Force" by Major John D. Howard, USA, as the outstanding article in the January-February 1975 issue of *Air University Review*.

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MAY-JUNE 1975