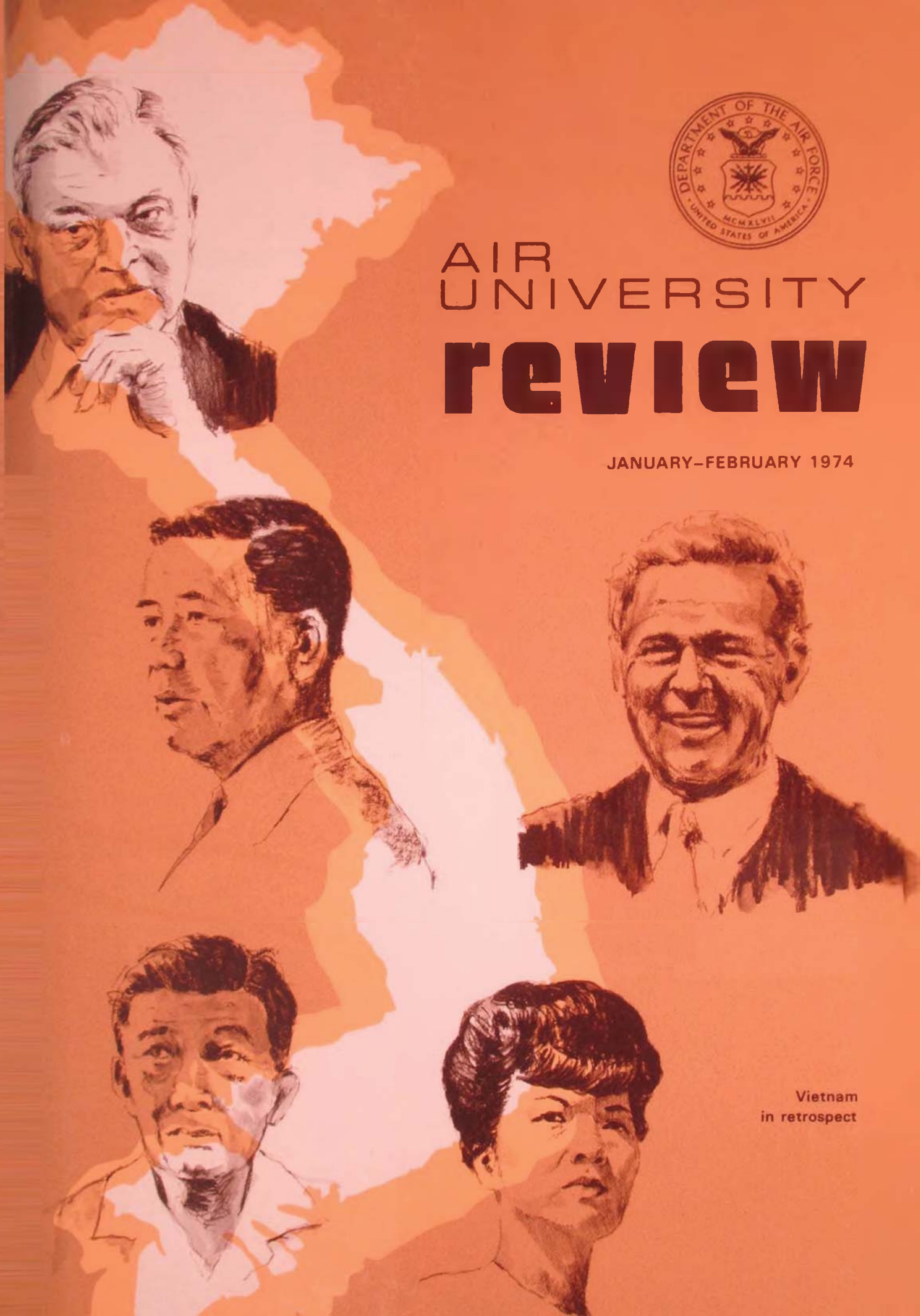

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JANUARY–FEBRUARY 1974

Vietnam
in retrospect

AIR UNIVERSITY
review

THE PROFESSIONAL JOURNAL OF THE UNITED STATES AIR FORCE

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the cover

As Vietnam and our military involvement there recede into the realm of history, Dr. James Hasdorff uses a newly developed technique of the oral historian, the personal interview, for the basis of an authentic insight into the South Vietnam of 1961-1963. In "Vietnam in Retrospect" he presents the on-the-scene experiences of the Honorable Frederick E. Nolting, Jr., as United States Ambassador during the early period of the U.S. presence there.

Nolting

VIETNAM IN RETROSPECT

An Interview with Ambassador Frederick E. Nolting, Jr.

DR. JAMES C. HASDORFF

The Honorable Frederick E. Nolting, Jr., served as American Ambassador to South Vietnam from May 1961 to August 1963, an extremely crucial period in Southeast Asian history. In an interview with Major Richard B. Clement and Dr. James C. Hasdorff of the USAF Oral History Office at Maxwell AFB, Ambassador Nolting reviewed the Vietnamese political situation and the ramifications of the Diem overthrow in November 1963. That interview was the primary basis for this article.

IN the spring of 1961, President John F. Kennedy appointed Frederick E. Nolting, Jr., a scholarly man of letters from Richmond, Virginia, to the critical post of Ambassador to South Vietnam. Ambassador Nolting's diplomatic experience, plus his fluent French and affable manner, soon won him the trust and confidence of the South Vietnamese President, Ngo Dinh Diem. Contrary to what was being published in U.S. newspapers, Ambassador Nolting felt the Diem government was making real progress in winning the allegiance of the South Vietnamese peasants. He cited numerous examples of social and economic progress: new schools, hospitals, roads, sugarcane refineries, textile plants, etc., and consequently an increasing foreign exchange reserve. Moreover, he

stressed the fact that the South Vietnamese economy went from a rice deficit to a rice surplus situation within a three-year period, 1960–1963.

But, in looking back from the perspective of 1971–72, the former Ambassador noted that the American press reported little if anything in this regard. He felt that the press was primarily interested in the "bloody side of the war and in the Saigon rumor-factory."

> If an American military adviser was shot, this would be headlines, but if three new schools were opened you didn't see anything written about it. So the social and economic progress was underplayed very much by the press, in my opinion.

Not only was this played down, he averred, but reporters constantly harped on the notion that the pace of democratization of the Diem government was too slow. They called the regime a "Catholic dictatorship," and Nolting further noted that the *New York Times* coined the uncomplimentary phrase "sink or swim with Diem."

All of these things were highly prejudicial and misleading, in the Ambassador's view, not because the South Vietnamese government "warranted high marks for either efficiency or democracy" but because they deserved great praise "for trying very hard in a very difficult situation to bring improvements that were really lasting. . . ." Furthermore, the hope of making an ideal democracy in South Vietnam "was completely unrealistic."

> After all, they had only been independent of French rule for six years, and they had never had a democratic system of government, not over the two or three thousand years of their total history. I think the Diem government was doing pretty well in instilling the fundamentals—the infrastructure for responsible self-government. But to expect them to accomplish this overnight was utterly ridiculous.

The real tragedy of this situation, he felt, was that Washington became "too inspired by ideals put out by the *New York Times* and others" in regard to what the South Vietnamese should be, and the Kennedy administration became impatient with what they thought was excruciatingly slow progress. It was slow, Ambassador Nolting noted, but it was steady, and the Diem government was "consolidating these gains behind a screen of more effective security." He emphasized that in 1963 he could travel with his family to provinces such as Kien Hoa with relative safety, and one could not have visited such places without armed escort a few years earlier. There were places such as Ca Mau in the south that remained Viet Cong strongholds, but freedom of movement in most areas had improved greatly between 1960 and 1963.

One of the most exaggerated and hence misunderstood events of his tenure was the so-called "Buddhist uprising." Nolting emphasized that he always placed these words in quotes because it was not Buddhist in the sense of a religious affair and it was by no means an uprising by all those of the Buddhist faith.

> It was a contrived, cold-blooded political move organized under the aegis of a newly organized 'General Association of Vietnamese Buddhists,' who sounded as if they represented all the Buddhists in the country but didn't, not by a long shot. Their political agitation was widely interpreted by Vietnamese and Americans as a revolt against religious persecution, just as they intended. In fact, there was no religious persecution on the part of the government, or even religious discrimination. This political plot to undermine Diem's government got a false interpretation in the U.S. press where it was sensationalized and badly misread. And so the American public was misled on that crucial issue, I think.

Although Nolting held the press largely responsible for casting the Diem government in a poor light, he did not agree with

the overly optimistic statements of certain high-level officials from Washington who would make periodic visits to South Vietnam. They would observe conditions and attend some of the regular intelligence briefings in Saigon and then return to the U.S. and immediately hold press conferences. At these conferences they would frequently overemphasize the progress and political stability in that "volatile country." This made most of the people in the U.S. Saigon mission "wince," the Ambassador stated, since they "felt that the progress, while real, was not something that you could go overboard about, and that the situation was not all that stable . . . ." Nolting's taking exception to these overly roseate statements released by Washington officials "about how we were going to clean this thing up and have our advisers out of there by next Christmas" seemed to reflect a position somewhere between the negativism of most of the press and the euphoria prevailing in official Washington at that time.

Another shortcoming on the part of U.S. policy-makers was their failure to look at Southeast Asia as a whole instead of in a "compartmentalized" manner. It was illogical, he stated, to make a stand in South Vietnam and allow the Communists practical immunity in the neighboring countries. This problem was further compounded when Averell Harriman negotiated the so-called Laotian settlement in 1962 "and in the process traded away all effective safeguards. . . ." When the final agreement was signed, Nolting asserted, there were no safeguards in it, and the U.S. "was compelled to rely on the so-called goodwill of the Communist signatories. . . ." Of course, the Communists completely disregarded the agreements, North Vietnamese forces continued their penetration into Laos, and the Ho Chi Minh trail became a Communist thoroughfare. Naturally, this heightened the problem for the South Vietnamese by making it "much more difficult" for them to defend their own country.

The continuing Viet Cong activity in South Vietnam, the anti-Diem sentiment generated by the press, and the euphoria manifested by some Washington officials culminated in a situation that soon led the Kennedy administration along a dangerous path. A number of those surrounding the President became disillusioned with what they considered to be too slow progress in pacifying South Vietnam. Initially, President Diem's brother, Ngo Dinh Nhu, and his wife, Madame Nhu, became the focal points of blame. Their removal, it was believed, would greatly alleviate the country's problems, but Nolting thought that it would have been highly unrealistic for the United States to request that President Diem get rid of his brother. He agreed that public relations would have been better had Nhu "gotten out of there"; nevertheless, he thought this was "an impossible request for one government to put to another."

> I can imagine what the result would have been if the situation had been reversed and the Vietnamese government had made a similar request of President Kennedy. And I think you can imagine what the reply would have been, too. Because of the disproportion in size and power, Washington felt, no doubt, that it could make such a request. But from the point of view of the Vietnamese president —the Vietnamese people for that matter—if Diem had yielded to this he would have lost enormous face with his own people. And the Viet Cong would have had a field day saying he was a puppet of the Americans, that they had even made him throw out his own brother.

The situation finally reached the point where Washington considered that perhaps the South Vietnamese generals "should be encouraged to revolt and make a clean sweep of it." Nolting termed this "a drastic and disastrous thing to even con-

sider," and he still finds it "incredible" that our government did become involved in this very undertaking. After "severe debate in Washington," instructions went out to the new Ambassador, Henry Cabot Lodge, "to give encouragement to the military junta to revolt, on the stupid assumption that they could organize a better government and make more progress against the Viet Cong."

Not only did Ambassador Nolting find this to be preposterous; he also found it to be dishonorable. For in 1961, while he was negotiating with President Diem to increase U.S. aid and support, Diem raised this very point. The South Vietnamese president stated that his country needed American help and that he was grateful for it. However, he wanted it clearly understood that once this relationship was entered into and South Vietnam had become dependent on the U.S. for arms, equipment, technicians, etc., the United States would not utilize this tremendous power "to try and rule this country." Diem declared that as the elected president he could not surrender this prerogative to anyone, and he wanted some assurances to this effect. Nolting recalled that these assurances came back promptly from President Kennedy, "telling him that we had no idea of interfering in his internal affairs." Two years later, however, our government "did exactly what I had been instructed to promise him we wouldn't do."

The U.S. involvement in the Diem overthrow came as "a total surprise" to Ambassador Nolting when he got back to Washington, after being recalled from Saigon. He emphatically stated that the coup was nothing less than "disastrous," and it wiped out "the gradual progress that had been made over the past nine years." During that entire period the U.S. had a total of 98 men killed, by contrast with the skyrocketing casualties after we assumed responsibility for fighting the war.

In answer to a query as to whether his continued support of Diem caused Washington's attitude toward him to change, the Ambassador remarked that initially all was "favorable and commendatory" from the White House, the State Department, as well as the Department of Defense. Then, toward the end of his tenure in South Vietnam, there was a marked change, and when it came to a choice, he had to stick up for his convictions. He strongly believed that

> the continuation of the Diem government was by far the best thing for Vietnam and for the American interest there, and that the temptation to dump him was a temptation that ought to be strongly resisted.

Diem

Nonetheless, those who were in favor of dumping Diem gradually gained influence in Washington, and the so-called Buddhist agitation gave their efforts an additional boost.

Ngo Dinh Nhu

Contrary to the notion held by many, the Ambassador while in Saigon was far from being in "all-out agreement with Diem" and spent a great deal of time arguing with him, "trying to get him to do things that he didn't want to do or couldn't see his way clear to doing." Nevertheless, the two "always managed to have straight-out relations," and they "respected each other." Nolting noted that if Diem promised to do something, he would do it.

> A relationship of confidence between us and between our mission and his government had been built up so that we could help him. Then suddenly it was broken, and those of us who had worked very hard, including General [Paul D.] Harkins and John Richardson and others, to build this relationship, found ourselves classified as pro-Diem people, even though we had been using this relationship to try to influence his government in many ways in which they didn't want to move. But, when once this political crisis developed, you found yourself isolated from the growing influence in Washington who were fed up with the government out there, overinfluenced in my opinion by the American press.

Contrary to the media's totally unrealistic picture of the South Vietnamese president, Nolting felt that Diem "was a very dedicated, sincere, hardworking man . . . honest as the day is long." Nolting agreed, however, that he had some individuals in his government who undoubtedly were dishonest but that Diem would replace them whenever they were discovered.

The Ambassador strongly disagreed with a report submitted to President Kennedy by Roger Hilsman and Michael Forrestal in early 1963, in which Diem was described as an individual who "wants only adulation and is completely insensitive to the desires of the foreign press for factual information." The report also noted that the South Vietnamese president was not only "insensitive to his own image" but was likewise unaffected by "the political consequences of the activities of Madame Nhu and other members of his family and his own tendencies of arbitrariness, failure to delegate and general failure."

Ambassador Nolting called this report "poisonous" and felt that the American reporters in South Vietnam "were much more to blame for the situation that arose than either President Diem or his government." He qualified this by pointing out that Diem's unsophisticated public relations staff were poor "at interpreting themselves to the outside world" and did not realize that "something they might say

would bounce all around the world within the next six hours if it were sensational."

On many occasions, the Ambassador spoke about this problem with members of the American press, who numbered about six resident reporters in the early days of his tour.

> I would talk with them about giving the benefit of the doubt to this struggling government which was beset by difficulties on all sides and not criticizing it so brutally for the things it didn't do right, but to try to help it, to try to give it a break every now and then.

Most American and some foreign press members, particularly the French, were prejudiced against the Diem government, and "they used many opportunities to make the situation worse." Since Diem was a proud man, he resented this, and "resentment built up on all sides." Nolting tried to mediate in many instances, but this problem continued to vex him during his entire tenure in South Vietnam.

Contrary to the Forrestal-Hilsman report, Ambassador Nolting took great exception to the notion that Diem was "insensitive" to what he and members of his family did "to attract adverse publicity." On one occasion the American Embassy procured "through clandestine sources" a copy of a speech Madame Nhu was preparing to give to her "women's lib" movement. Like other speeches she had made, this one would be "subject to very bad interpretation in the Western press." Since she was scheduled to give the speech the next day, Nolting got in touch with President Diem via telephone at Hue, where he was visiting with his 83-year-old mother.

After apologizing for disturbing him, the Ambassador informed Diem that his sister-in-law was preparing to make a speech that potentially could worsen relations between South Vietnam and the U.S. Diem, of course, wanted to know how he had found out that she was going to make this particular speech, but Nolting expressed regret that he could not reveal his source of information. Nevertheless, he assured the president that this was the talk she was about to make and read him a few excerpts from it. After hearing them, Diem agreed that the speech was, in effect, "bad" and that he would "have to stop her again."

Ambassador Nolting soon found out that President Diem had indeed stopped Madame Nhu, for in less than fifteen minutes she called the embassy and wanted to know if Nolting had just spoken with the president. He acknowledged that he had and answered affirmatively her query concerning his involvement in the cancellation of her speech. This caused Madame Nhu to be "furious," but, as an indication of what a "volatile"

Mme Ngo Dinh Nhu

person she was, within a few days she called and apologized for her earlier behavior and agreed that "it would have been a bad mistake for me to have said that."

> So I think this evidence points out President Diem's intentions, at least, and is somewhat contradictory to that sweeping indictment that Hilsman and Forrestal sent. . . .

In answer to a query regarding the gradual U.S. buildup from the unsophisticated FARM GATE operation to general purpose forces, Nolting said he was aware that many felt "this gradual approach was no good" and that "we should have hit harder earlier and so forth." He saw our fundamental mistake, however, as being political in nature and not military. Although military mistakes may have been made later on, the U.S. government made "an irretrievable political mistake" after the end of his tour by encouraging the coup against the elected constitutional government. He felt that if the Diem government had not been undermined, they "would have made it and would have gradually succeeded in pacifying the country and making a reasonably viable place out of South Vietnam." With the amount and type of aid that was being given them, without American combat forces, if the U.S. had persisted with the original program and not "gone for what was supposed to be a quicker solution," Nolting saw an eventual successful conclusion to the problem. Furthermore, the notion that heavier or more sophisticated weapons during the 1961–63 period were the ultimate answer did not at all appeal to him, since he felt "they were doing all right with the weapons they had, and there wasn't any need to use a sledgehammer when something lighter would do."

Acknowledging that many would disagree with him, Ambassador Nolting did not see "this picture that is painted quite often now of a continuum of increasing U.S. military involvement over many years. . . ." Rather, he saw our country initially in a role of "You do it, and we'll help you within certain limits." Following the coup d'état, however, the military junta that came in was unable to govern. Within two years there were nine chiefs of state, and the Viet Cong again made tremendous inroads.

> The strategic hamlet program, which was Nhu's principal thing, and in my opinion a good thing, was wiped out. And all these hospitals and schools and things that I've been talking about were virtually wiped out. Finally, the U.S. was faced with the alternatives: either go in to save Saigon or wash our hands of it. President Johnson made the decision to send American combat forces, but I do not think that there was a need up to '63, before the coup, of American military power in that situation.

Ambassador Nolting viewed the Vietnamese conflict, prior to the Diem overthrow, as a unique experience for the U.S. Following the East-West standoff in the nuclear field, the Communists resorted to so-called "wars of national liberation," and the one in South Vietnam was so announced: Hanoi organized the "National Liberation Front of South Vietnam as the spearhead for the national liberation struggle." As a result, it was the first time the U.S. "really locked horns on this" and took steps to prevent a take-over by subversion. The Ambassador was a hundred percent in favor of helping "the indigenous government preserve itself and its people." The principle of this "is absolutely right and necessary," he asserted, but in the case of South Vietnam, a tragic situation arose when the Kennedy administration became impatient with that government and encouraged someone else to take over. A further tragedy may arise after the final outcome of the Vietnam experience, Nolting speculated,

in that the American people may misread it, and if there were another similar situation, they could say, "Let's not touch it with a ten-foot pole."

> I think that if we recoil in horror from helping a friendly country maintain its independence against this kind of subversion, and if the other side judges that we are going to recoil in horror because of the Vietnam experience, undoubtedly there will be other cases in many parts of the world.

The Ambassador summarized his views on the Vietnam conflict by reiterating that "there wasn't any reason to get involved up to our necks" and that "we should have stayed with the original program." That meant helping the South Vietnamese in a "Do it yourself" resistance. He emphasized that what we were originally doing in South Vietnam was not a Kennedy administration "invention" but had been going on since President Eisenhower's days. During the Kennedy years, however, aid was "increased and accelerated" in response to increased Viet Cong attacks and support that Hanoi was giving them. The principle of our aid was right, but "the tactics went wrong when the Kennedy administration got impatient with the rather slow rate of progress."

As an added point, the Ambassador expressed the "greatest admiration" for most members of the American mission in South Vietnam, particularly the military. They had an extremely difficult mission to accomplish, with many personal risks involved, and they did "an outstandingly fine job, with a diplomatic touch."

> It's hard for a well-trained American officer, in most cases older than a less well-trained Vietnamese officer, to advise him in a way which doesn't assume authority over him, particularly when you come from a big powerful nation, and he's a little fellow and knows it. But the Vietnamese had to maintain the respect of his own troops, and if the American is not tactful in this role, you can see that it just would not work at all. Well, many Americans worked so well in this role that I must say I thought it was a splendid demonstration of not only character and military training and devotion but also of tact and diplomacy. And I think this was true right on up to the top of the military mission in Saigon.

Henry Cabot Lodge

Ambassador Nolting concluded the interview by noting that the first two years he spent in South Vietnam were the "most gratifying" and the last few months were the "worst experience" he had had in his life. This was especially true after losing the argument back in Washington follow-

ing his removal from Saigon "and seeing what happened as a result of the coup." He has had the feeling, despite hopes to the contrary, "that we could not redeem that mistake of 1963." Despite his misgivings, he sincerely hopes that redemption will be possible, but nonetheless "the cost to our country in men, money and honor has been enormous."

IN REVIEWING Ambassador Nolting's appraisal of the Vietnamese situation, one must not assume that failure to conclude the conflict quickly and successfully was due solely to the actions of the Kennedy administration in supporting the Diem overthrow. For in some respects, President Kennedy's action was prompted by his constituency's desire to win the war quickly and decisively. Not only has this been true for the Vietnam War but throughout the nation's history, also. The eminent historian, Thomas A. Bailey, noted this trait in his book, *The American Pageant*, when discussing the Korean War:

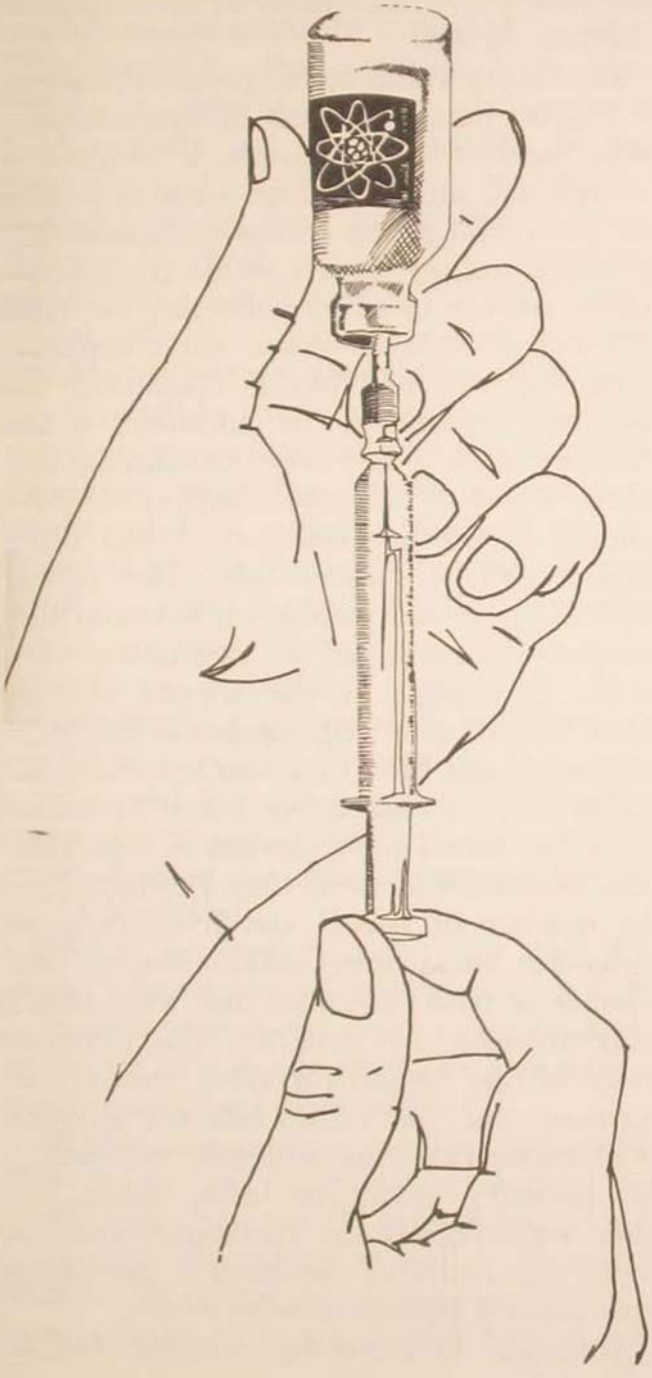
> Americans are not a patient people; they have been accustomed to quick and heady successes. Many of our red-blooded citizens could see no point in being in a war without striving for a satisfying triumph, even though such action would be costly in lives and might wrap the world in flames.

Let us earnestly hope that more maturity and steadfastness will be displayed by our people should the United States find itself involved in future "wars of national liberation." It is an Achilles' heel that we should no longer allow the Communist world to exploit.

Albert F. Simpson Historical Research Center

NUCLEAR MEDICINE

LIEUTENANT COLONEL
WILLIAM C. HARVEY, USAF, MC



THE medical specialty known as nuclear medicine is one of the youngest in modern science. It began in the early 1940s after the demonstration that the fission of uranium could be controlled and that the resulting fission products were both numerous and of biological interest. Many of the by-products of nuclear fission resulted in radioactive substances called radionuclides (the term *radioisotopes* is often incorrectly used). The detection of the radioactivity of these fission-produced radionuclides (and more recently certain accelerator-produced nuclides) forms the basis of nuclear medicine.

Biologists believe that ionizing radiation (such as that produced by a radionuclide) is fundamentally harmful if received in greater amounts than we are all exposed to by natural radiation, such as cosmic rays. The objective of nuclear medicine is to work within a radiation dose range that is considered safe in relation to natural radiation and that received from long-accepted X-ray examinations.

The unit of measurement of radioactivity, named for the famed French scientists, is the curie. One curie of a radioactive substance undergoes some 10^{12} potentially detectable events within the space of one minute. The ability to detect a minute fraction of these events—for example, 10,000

instead of the 1,000,000,000,000 events of a curie—enables nuclear medicine to perform meaningful tests. Thus, we give minute or tracer amounts of a radioactive substance to a patient in the expectation that the number of nuclear disintegrations will provide sufficient information to diagnose disease without harming him.

The concept of a tracer radionuclide is possible because radioactive substances emit such a great number of nuclear disintegrations that only a minuscule amount of a radioactive substance need be administered. For example, with iodine, an essential component of many body proteins and hormones, the substitution of a radioactive form of this element allows the detection of as little as one picogram of iodine (roughly one ten-thousandth of a millionth of an ounce). Tracer doses of radioactive materials are regularly employed in nuclear medicine to evaluate the function of the thyroid gland as well as other organs of internal secretion, such as the pituitary and adrenal glands. A tracer dose of iodine is so minute that it can be safely administered to patients who have had documented, severe, anaphylactic reactions to larger doses of iodine such as are found in agents used to visualize the gallbladder or the kidneys by X ray.

Nuclear medicine, then, exploits the observation that very numerous nuclear transformations can be not only detected but quantitated, thus leading to description of disease that is a quantum jump ahead of traditional methods. In this article I shall note particularly the unique benefits afforded by nuclear medicine, outline the physical and technical prerequisites for participation in this burgeoning field, explain the procedures currently performed at Wilford Hall USAF Medical Center, and finally consider the immediate future of nuclear medicine, particularly as it affects the Air Force.

in-vitro applications

Over a decade ago Dr. Solomon Berson and Dr. Rosalyn Yallow, working at the Bronx Veterans Administration Hospital in New York, developed a technique called radioimmunoassay (RIA), which ranks as one of the most significant advances of medicine in the twentieth century. The technique has universal applicability in clinical medicine and adds a new dimension to investigative medicine as well.

The theory of this technique is surprisingly simple. Small amounts of the material to be measured—for example, a hormone—are injected into an animal such as a rabbit. The rabbit makes antibodies against the hormone, and in several weeks these antibodies are harvested by collecting the rabbit's blood. Analysis shows what happens when the patient's blood, containing an unknown amount of the hormone, is introduced into a test tube containing the rabbit antibody together with a known amount of the hormone, which has been tagged with a radionuclide. The rabbit antibody does not distinguish between the patient's hormone and the radioactive hormone. Depending on the amount of hormone present, a certain number of antibody molecules will bind to a number of radioactive and nonradioactive hormone molecules. The bound molecules can be separated from the unbound molecules. Furthermore, the number of bound and free hormone molecules has a direct relationship to the number of free molecules that were originally present. By counting the radioactivity of the bound (or free) radioactive hormone, one can extrapolate the amount of hormone that was originally present in the patient's blood (or urine, saliva, or whatever). This is the technique that allows of quantitative detection of picogram amounts of a biological substance.

Although theoretically simple, radio-

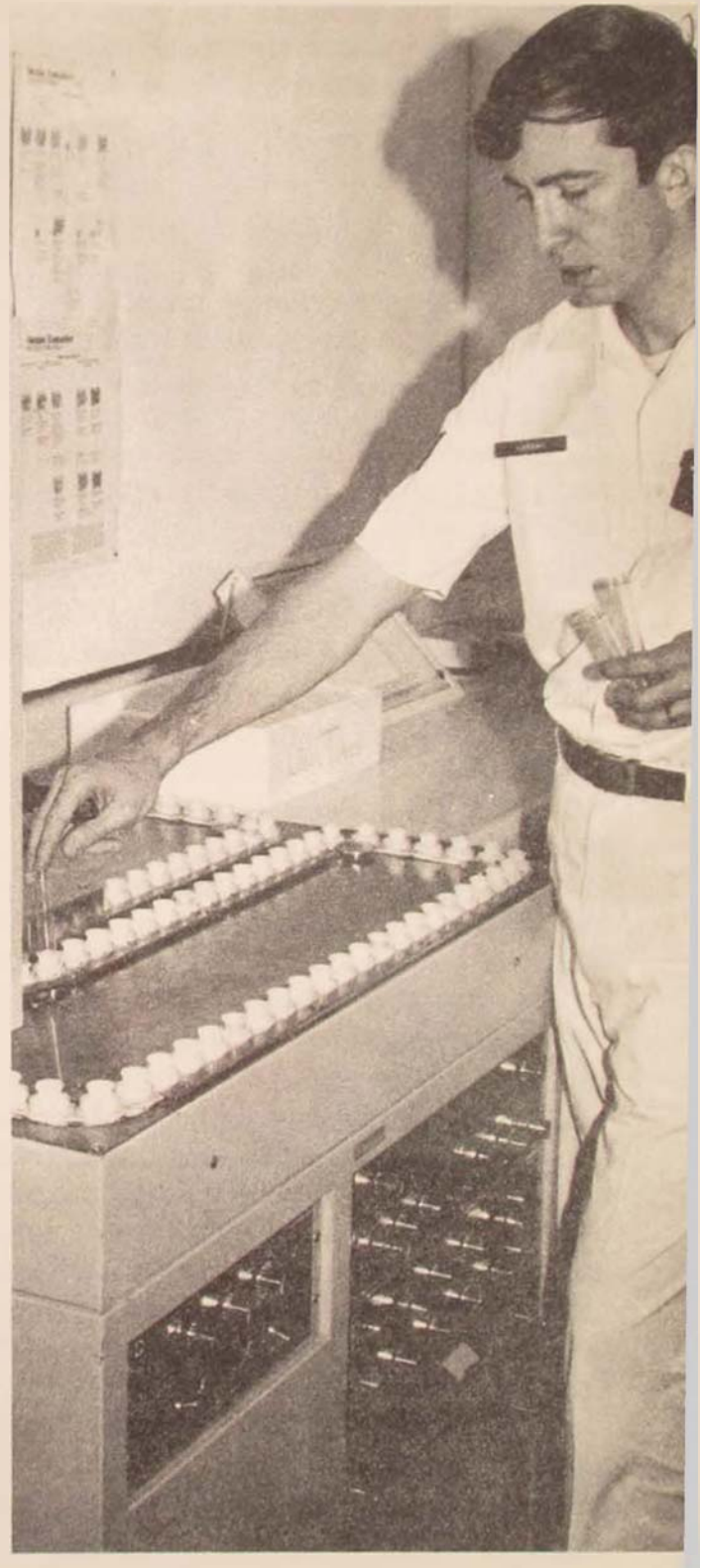
immunoassay entails a number of technical complexities that make it a demanding discipline. Nonetheless, careful quality control permits accurate and reliable estimations of a number of substances that have great medical importance. The equipment required is expensive, and radioimmunoassay generally requires the ability to handle rather large numbers of specimens. To this end, systems that permit of automated counting of specimens and automated calculations of data are required. For example, the accompanying photo shows a gamma counter for measuring radioactivity. It automatically changes samples and prints out the results on a paper tape for later calculation and conversion to final results. This instrument costs about $14,000, and the total investment required for a clinical radioimmunoassay service is approximately $50,000.

As might be expected, radioimmunoassay requires specialized personnel. At present there are fewer than a dozen airmen qualified to perform radioimmunoassay, and the number of Air Force physicians so qualified is equally limited. Another important figure in radioimmunoassay is the radiopharmacist, a qualified pharmacist who is also trained in nuclear medicine. There are perhaps 30 radiopharmacists in the United States, and the Air Force is privileged to have one of them. She is in charge of the modest clinical radioimmunoassay service at Wilford Hall.

What can radioimmunoassay do? Why should any medical center expend $50,000 in scarce investment funds to establish this service? Why should efforts be expended to train specialized personnel?

Radioimmunoassay measures substances which are of considerable medical importance. They are of primal importance in human physiology as well as disease. A partial list of body hormones measurable by RIA includes cortisone, insulin, testosterone,

An automated gamma counter for measuring radioactivity in multiple test tubes



thyroid stimulating hormone, estrogen, progesterone, human growth hormone, gastrin, angiotensin, renin, prostaglandin, erythropoietin, placental lactogen, prolactin, parathormone, and thyrocalcitonin.

The applications of radioimmunoassay and hormone assays are broad indeed, and some examples will be of interest:

• Our study of the nature and cause of diabetes is substantially aided by RIA measurement of insulin, the hormone deficient in diabetics.

• The detection of underactive metabolism can be very difficult from examination of the patient as well as by performing the common blood tests of thyroid function. RIA measurement of the thyroid-stimulating hormone (TSH) is frequently invaluable in the diagnosis of the hypothyroid state. The diagnosis of hypothyroidism is important because it is a condition that is completely curable, and yet, left untreated, it can be fatal.

• Measurement of the male hormone testosterone is often useful in determining the cause of infertility in a woman. Measurement of placental lactogen hormone is the best current determinant of whether a pregnancy will proceed normally or end in miscarriage. The psychological and medical benefits of knowing the fate of a threatened pregnancy are obvious.

• Many cases of high blood pressure are surgically correctable. Radioimmunoassay can diagnose several of the causes of hypertension by assay of blood hormone levels. These assays can presently be offered on a clinical basis to the large number of hypertensive patients seen in Air Force clinics.

• Two examples of immunoassay are particularly exciting at this time. The first concerns the danger of hepatitis arising from blood transfusions. Investigations have shown that most cases of hepatitis following blood transfusion are associated with the presence of the substance hepatitis-associated antigen (HAA) in the donor's blood. This substance can be detected by radioimmunoassay. Current regulations prescribe that every unit of blood for transfusion be checked by one or another technique for the presence of HAA. Although biochemical techniques are available, RIA is presently the most accurate way, and there is increasing pressure, both medical and medicolegal, to provide this test to Air Force facilities that operate in communities where the RIA test for HAA is used.

The other example is the carcino-embryonic antigen (CEA). This is a substance elaborated by the body in minute amounts when bowel cancer develops. The exquisite sensitivity of RIA enables detection of the CEA frequently before the malignancy can be confirmed by any other technique. Conceivably the measurement of CEA as a screening test for bowel cancer will take its place alongside the famed Pap smear for cancer of the cervix.

Obviously the detection of hepatitis-associated antigen and the carcino-embryonic antigen will require both expensive equipment and additional trained personnel. The urgency of the matter may preclude any alternative considerations; the necessity is quite likely already upon us.

In addition to the assay of hormones, RIA can be applied to numerous other substances having medical import: digitalis, morphine, LSD, carcino-embryonic antigen (CEA), hepatitis-associated antigen (HAA), cyclic-adenosine monophosphate (AMP), barbiturates, folic acid, vitamin B-12, and rheumatoid factor. Intoxication with digitalis, which occurs in 20 percent of the heart patients treated with it, is detectable with RIA, and there is no other acceptable technique for detecting potentially fatal overdosage of this primary treatment for

heart failure. A number of other pharmaceuticals that have potentially harmful side effects are also amenable to measurement by RIA. Assays for certain antibiotics also have been developed; the physician knows how much antibiotic he has given the patient, but only a direct blood measurement will tell how much is reaching the site of infection.

Some substances are abnormal if detected at all. Recently an assay has been developed to detect the hallucinogen LSD in the urine. Since RIA can be performed on large numbers of samples, and since the detection of LSD is of great importance in the Air Force drug screening program, again the protean utility of radioimmunoassay is evident. An unlimited number of substances, present in minute quantities and otherwise defying quantitation, can be measured by the technique of radioimmunoassay.

The greater part of the medical twentieth century has been spent in dealing with disease on organ and cellular levels. Radioimmunoassay is a quantum jump in our effort to comprehend, describe, and treat human disease on molecular and physiochemical bases.

other in-vitro applications

The in-vitro (in-glass or chemical) applications of nuclear medicine extend beyond radioimmunoassay. Many substances present in small quantities can be measured without the exquisite sensitivity of radioimmunoassay. The level of circulating thyroid hormone, for example, can be directly measured in the blood, and this test is the single most important screening determination of a patient's metabolic state.

Radionuclides are also employed in the measurement of unknown spaces in biological systems. By use of a principle previously employed in biochemical analysis, the volume or space in which a given substance circulates can be measured accurately. For example, one can introduce radioactive water into a patient and, by applying isotope dilution principles, determine his total body water content. This determination is of inestimable value in clinical research and also has ready application to clinical medicine.

Often the physician needs to know the volume of a patient's blood, and this is readily obtainable by injection of an appropriate radioactive tracer and the use of isotope dilution equations. (The use of this principle in in-vivo, or in-human studies, will be considered later.) The use of isotope dilution principles has provided invaluable investigative information, and again this is readily applicable to clinical study.

A third area of in-vitro radionuclide application involves the kinetics of biology. Traditionally, biology and medicine express themselves in two dimensions, length and breadth, on the one hand and in mass on the other; or, as these translate, in terms of volume and weight—cubic centimeters and milligrams. Nuclear medicine adds a third dimension, time. Nuclear medicine has done much to add time as a third dimension to clinical and investigative medicine. We are now learning to quantitate health and disease on a temporal as well as a conventional weight-length basis.

Nuclear medicine has revamped many "classical" theories of biology. For example, several years ago it was thought that growth hormone was high in youth and low in adulthood. We now know, from kinetic studies with radionuclides, that growth hormone is a very dynamic hormonal system and that its level rises and falls several times each day in the normal child *and* the normal adult. As a result of these kinetic studies, the process of growth and many other biologic functions have become better known.

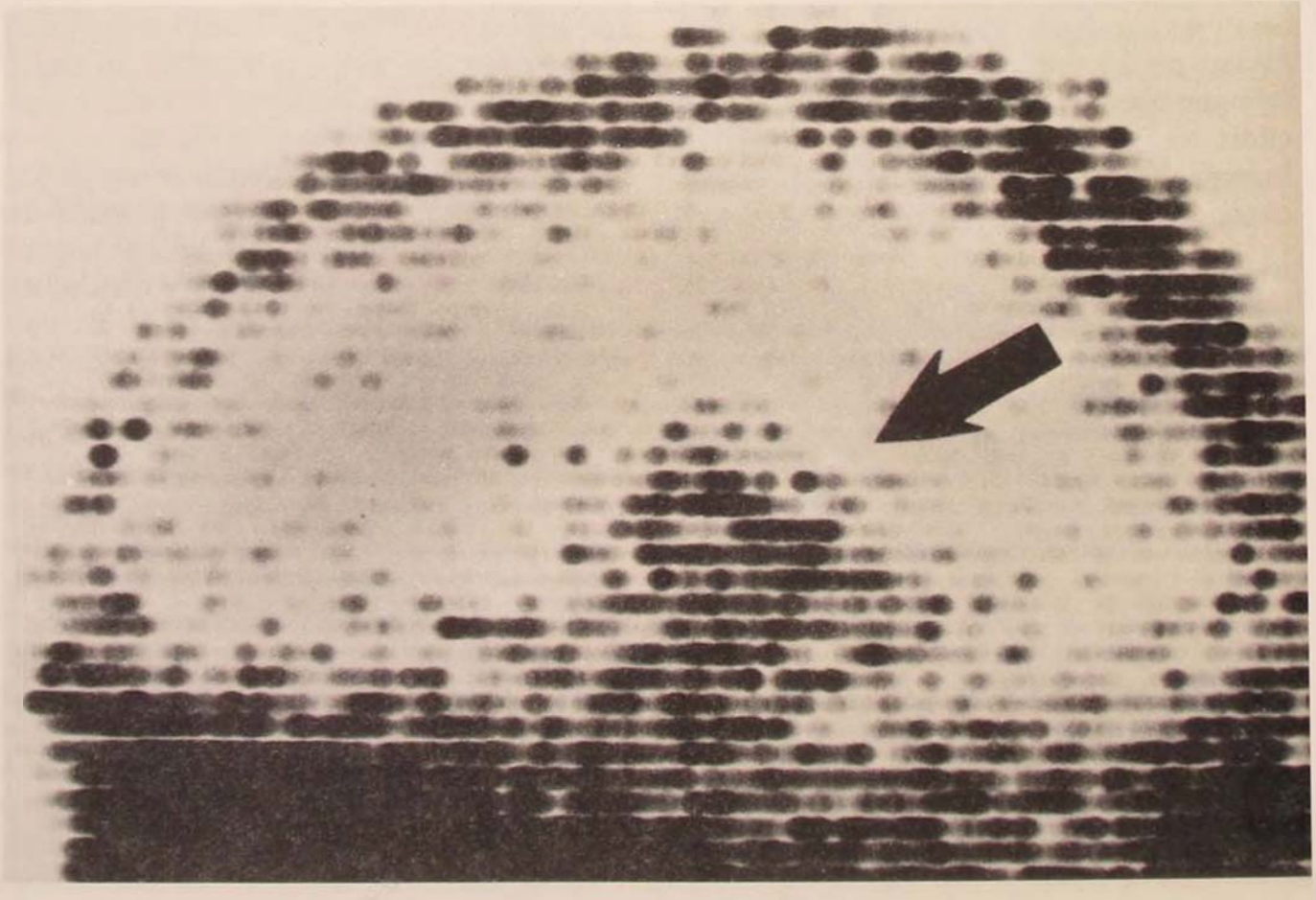
Cancer has classically meant an uncon-

trolled growth of tissue in excess of the normal tissue growth rate. Radionuclide studies of lymphocytic leukemia in adults, however, have shown that the fundamental problem is not that too many white blood cells are born but that too few die. In other words, the presence of excessive circulating white blood cells is due not to excessive birth of these cells but to their failure to die after their normal life span. This observation of chronic lymphocytic leukemia illustrates again the phenomenal capabilities of clinical investigative and clinical nuclear medicine.

The importance of biokinetics in medicine cannot be overestimated. Classical measurements in biology have given rise to a concept of medicine that basically ignored time as a dimension. Measurements were made as if biokinetics did not exist. It is as if one were to sample the traffic on a highway by counting the number of vehicles between point A and point B at some instantaneous time. By this technique one does not determine the nature of the flow of traffic over an extended period of time but rather the number of vehicles on the road at the time the measurement is made.

in-vivo applications

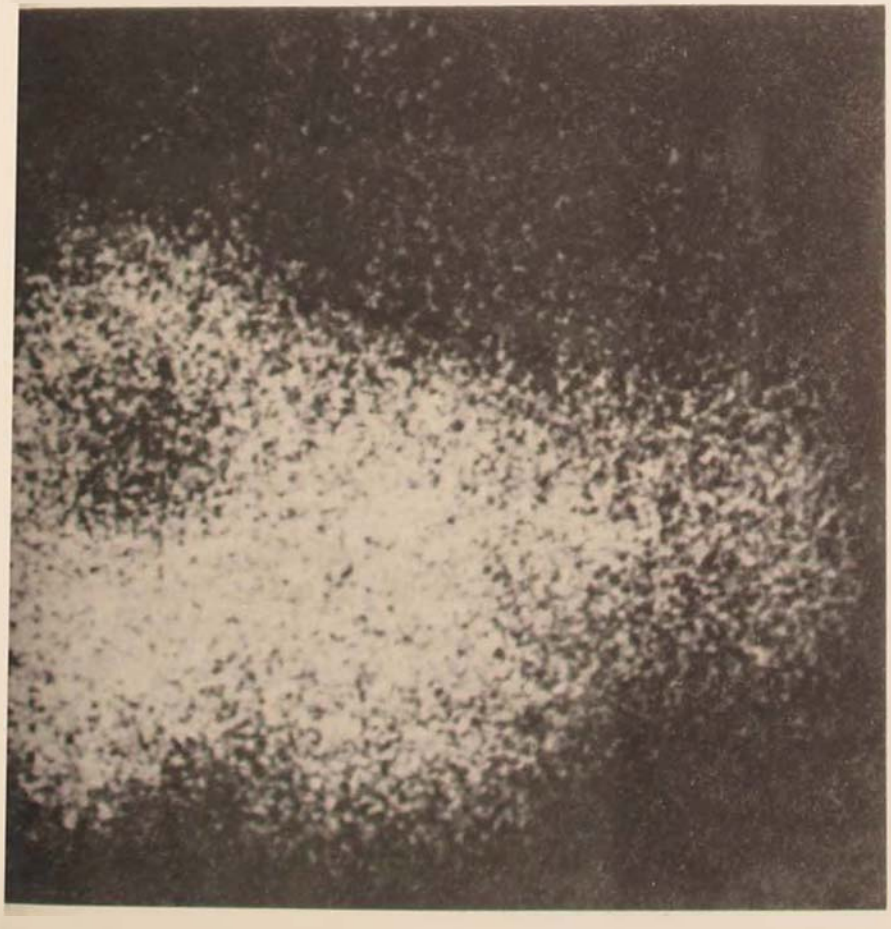
Much effort in nuclear medicine is devoted to giving tracer amounts of radionuclides



to the patient himself rather than to some extracorporeal patient product. The most dramatic use of radionuclides within patients has been in radionuclide organ scanning.

Basically, the object of organ scanning is to show an increase in radioactivity in an area of one body organ or a decrease in radioactivity in another. The photo shows an increase in radioactivity in a scan of the brain of a patient who was found to have a brain tumor. The isotope brain scan can detect and localize some 85 percent of brain tumors, thus vying in accuracy with classical techniques such as angiography. Moreover, unlike other classical techniques, it is quite safe; that is, there are virtually no side effects resulting from the simple injection of an isotope. Today the brain scan is the single most important screening test in the detection of diseases of the brain. A corollary study performed at the same time is the brain flow study. Here a sequence of pictures is made as the radionuclide is distributed throughout the brain. Thus the blood vessels of the brain can be visualized, and important judgments can be made on the competence and symmetry of blood flow in different areas. The study may, for example, show an area of inadequate blood supply before an actual stroke occurs.

The accompanying photo shows an area of decreased radioactivity in the liver of a patient who was shown to have cancer

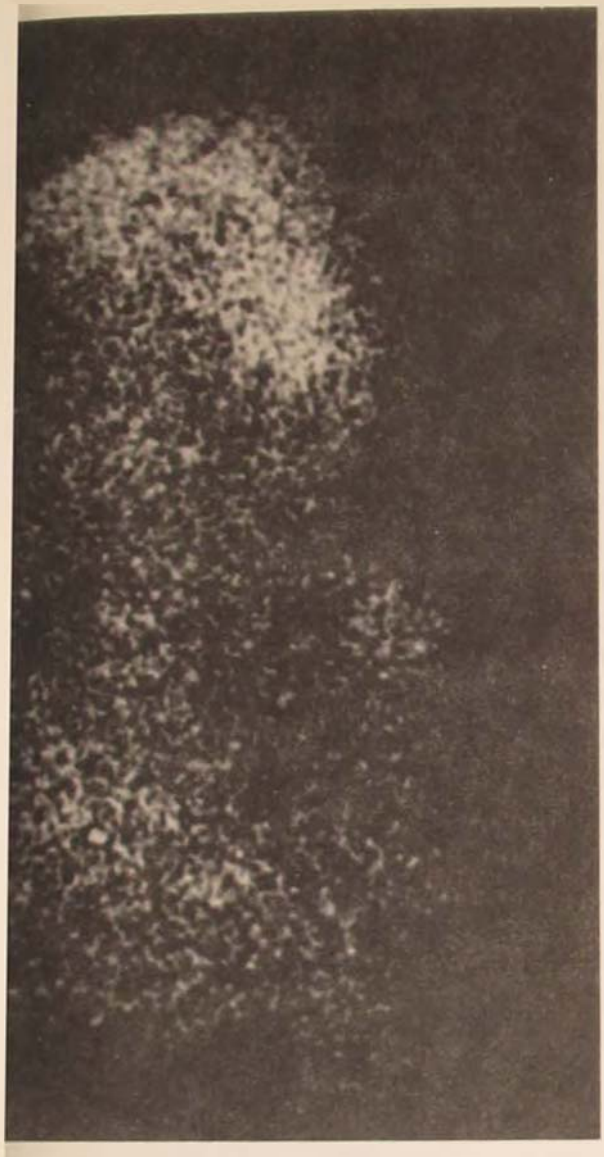


A positive brain scan, the arrow pointing to a dark circular area that represents a brain tumor . . . A positive liver scan, the dark circular area within the white image representing lung tumor that has spread to involve the liver

A gamma scintillation camera, one of the instruments used to ob-
tain organ scans and perform dynamic studies of blood flow . .
Delineation of an abscess produced experimentally in a rabbi

that had advanced to the liver. The liver scan can reveal cancerous deposits in the liver as small as one inch in diameter, before they are extensive enough to be detected by any chemical test. Furthermore, sequential liver scans provide the clinician with an objective measure of the anticancer therapy his patient is receiving. Physicians often request radionuclide organ scanning even when no indication of disease is present. The scans are then used as screening tests to detect disease demonstrable in no other way. The organs commonly scanned include the brain, thyroid, lungs, heart, liver, spleen, pancreas, bone, bone marrow, and kidney.

A screening procedure made generally available only within the past year is the whole-body radionuclide bone scan. Surgeons perform radical or extensive surgery only when there is reasonable hope of eradicating all of the malignancy. Radical surgery usually results in a definite disability of some degree, so there is no point in causing disability if the disease cannot be cured. Radionuclide bone scans are perhaps ten times as accurate in detecting early cancer spread to bone as conventional



X rays. Thus we can identify more of these patients preoperatively and save them the pain and disability of radical surgery.

Body organ scanning requires very expensive and sophisticated equipment. The $35,000 Anger scintillation camera currently utilized at Wilford Hall is seen in the accompanying photograph. A "simple" device to record and retransmit data from this instrument for special statistical treatment, a video-tape storer, costs an additional $15,000. There is no doubt that this relatively simple data storage container adds a significant dimension to our ability to scan both healthy and diseased organs.

It should come as no surprise that computers have been successfully applied to the collection and analysis of data from patients given radionuclides. A case in point is the determination of cardiac output, a measurement of basic importance in the evaluation of heart disease. Traditionally, this measurement is made by meticulously threading a catheter through an arm or leg artery up into the patient's heart. This measurement can now be made by the simple intravenous injection of radionuclides without the use of a catheter. The information obtained can be analyzed in compartmental fashion to ascertain the function of each individual chamber of the heart to determine whether or not any abnormal communication exists between chambers and, most critically, to show how much work the heart can do in a given period of time. The information gained from nuclear angiography augments traditional cardiology as well as developing techniques of cardiac surgery and the treatment of myocardial infarction.

In-vivo nuclear medicine has a number of other exciting applications. With the growing use of kidney transplants, nuclear medicine is showing increasing value in assessing the viability of a transplanted kidney. Before traditional methods are able to detect transplant failure, the radionuclide kidney study can often do so, thus alerting the transplant team of adversity before it can be detected by any other method.

The potential uses of radionuclides in studies of patients are virtually infinite. Many areas of clinical medicine, previously mysterious and inaccessible, lend themselves to radionuclide techniques. At Wilford Hall we have been interested in the radionuclide diagnosis of hidden infections and abscesses. (See photo.) Using an experimental radionuclide, gallium-67, we

have been able to detect hidden abscesses not demonstrated by other diagnostic methods. We believe this can be a significant contribution to clinical medicine. The potential benefits of radionuclides are limited only by the tenacity and ingenuity of their users.

The safety of radionuclides in medicine is the province of a small, elite corps of men known as medical physicists. All of them are trained to the doctoral level and work closely with physicians, technicians, and patients in assuring radiation safety as well as in monitoring equipment, training the Air Force's resident physicians and technicians, and designing research.

Most of the radionuclides used at Wilford Hall USAF Medical Center come in prepackaged form from commercial radiopharmaceutical houses. It is evident now that an on-site radiopharmacist can supervise the local preparation of a number of agents previously available only in kit form. Three advantages result from local preparation:

1. The quality of the radiopharmaceutical in many instances is superior to that of the prepackaged one.

2. The cost of preparing standard radiopharmaceuticals locally is considerably less, saving an estimated $15,000 annually.

3. The ability to compound radiopharmaceuticals locally gives the medical facility a virtually unlimited potential for tailoring clinical research to the individual patient. This ability confers upon a medical facility an advanced treatment capability that is available now only at university and research-oriented medical facilities.

Nuclear medicine has recently been organized in a conjoint alliance with the specialties of internal medicine, radiology, and pathology. We recognize that the benefits of radioactivity are universal in clinical and investigative medicine. To that end, the Wilford Hall Nuclear Medicine Service offers an ongoing course comprising 3 hours of didactic lectures and 16 hou of laboratories. The course is conducte six times a year and is open to any militar physician. We are training, on a regula basis, physicians specializing in interna medicine, pathology, and radiology. Certai technologists as well attend selected po tions of the curriculum.

current resources and the future

The regulatory body of American hospital namely the Joint Commission on Accredita tion of Hospitals, has recently decreed tha all accredited hospitals must offer the patients the benefits of nuclear medicine Of the 75 Air Force CONUS in-patient med cal facilities, nine have the capability o nuclear medicine: USAF Academy, Andrew Keesler, Lackland, Maxwell, Scott, Shep pard, Travis, and Wright-Patterson, plu two overseas bases: Wiesbaden, Germany and Clark AB, Philippines. Those AF hos pitals that do not have this capability ob tain it from the civilian sector at a con siderable cost.

There is no doubt that the price of nucle ar medicine is considerably less in Ai Force facilities than if this resource is ob tained from a civilian medical source. Th actual costs at Wilford Hall are currentl being computed by our laboratory an should provide the Surgeon General wit valuable information. Quite clearly, eco nomics and good medical practice wil dictate a large expansion of Air Forc nuclear medicine in the near future.

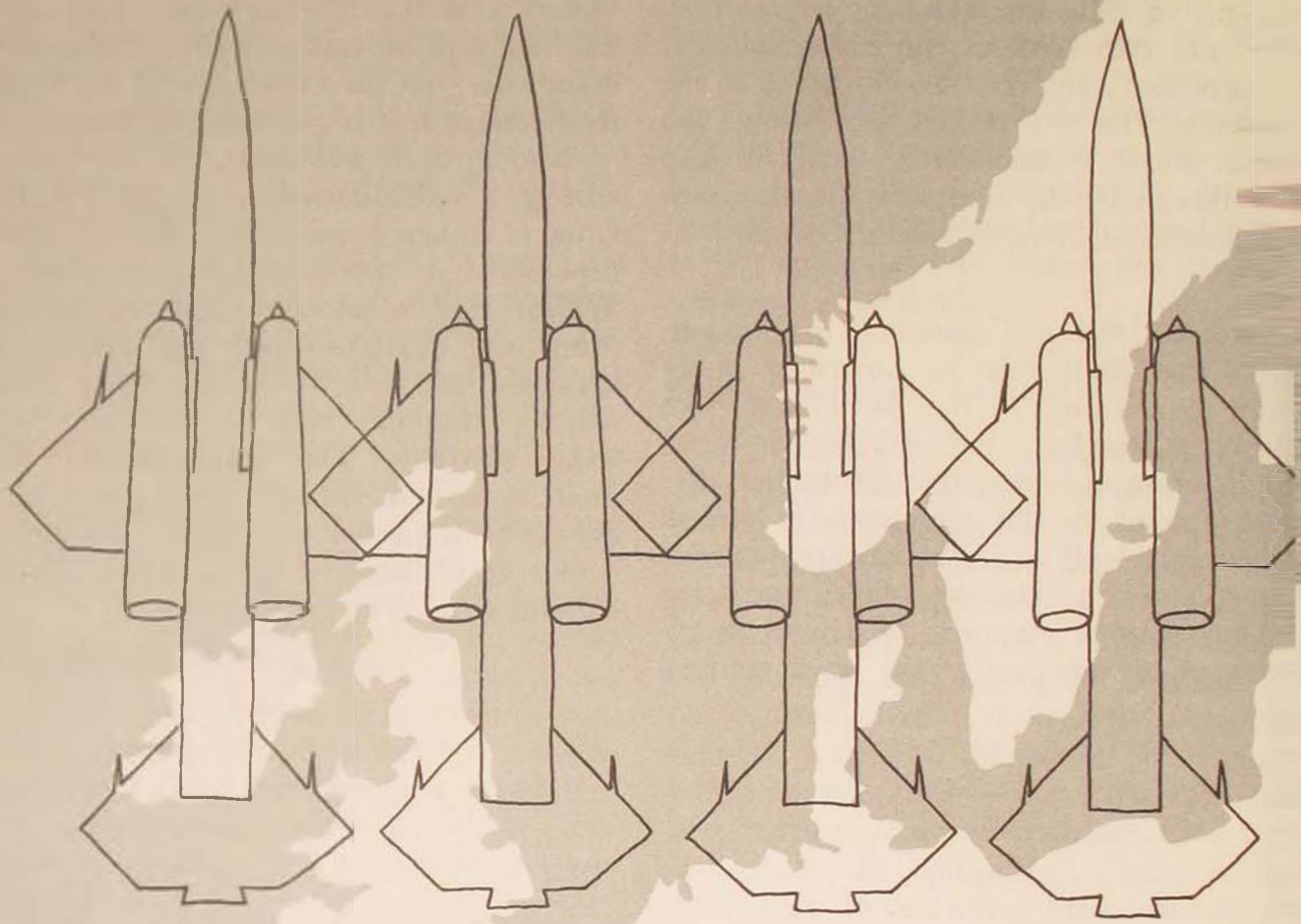
The Air Force has begun to take step to meet this clearly expanding need. I mid-1972 the Air Force Surgeon Genera allied the training of Air Force nuclea medicine technologists with the U.S. Navy training program at Bethesda, Maryland In this program some twelve Air Force technology students per year receive fou

months of didactic training, after which they are dispersed to Air Force medical centers for eight months of practical experience. This will do much to relieve the supercritical technological shortage that had threatened to abort the development of nuclear medicine in the Air Force.

RADIONUCLIDES are assuming an increasingly important role in American medicine; so are they in the Air Force. Both chemical (in-glass) and imaging (in-body) applications of radioactive substances offer unique tools to the physician in clinical research as well as in the routine practice of medicine. The success of nuclear medicine in our service requires a definite commitment on the part of the local medical facility as well as the Air Force. This commitment will be costly, both in dollars and manpower, but the excellence of Air Force medicine cannot be maintained without it.

As mentioned previously, the investment cost of a radiopharmacy will be $50,000. Clinical imaging equipment will be more expensive. A 1000-bed hospital, such as Wilford Hall, requires two gamma cameras (total cost $120,000) plus two rectilinear scanners ($55,000). Very shortly a small on-line computer will be essential (cost some $75,000). The establishment and maintenance of clinical nuclear medicine cannot be regarded as a luxury afforded to American civilians. It has become a medical and a medicolegal necessity.

Wilford Hall USAF Medical Center



TOWARD A COMMON EUROPEAN ARMAMENTS EFFORT

Lieutenant Kenneth C. Stoehrmann

IN THE continuing debate over West European security, a major problem concerns the region's ability to defend itself adequately without the active support of the United States. This desire is heavily dependent on many factors, not least of which is the need for a common armaments effort among these nations.

Twenty-eight years after the devastation of Western Europe that was World War II, this conglomerate of small and middle-class powers is once again becoming a power center in an increasingly multipolar world. Yet this resurgence of power brings new and greater responsibilities that Western Europe might not yet be able to handle fully alone. Nowhere is this lack of ability more apparent than in the defense and security of Western Europe. The continued presence of American troops on European soil and the use by West Europeans of the American nuclear deterrent shield for their protection suggest that Western Europe cannot stand alone in her defense. Yet, someday, through events and factors not fully understood or apparent at present, Western Europe might need to stand alone and fully assume all her responsibilities. In order to do this, she will need the cooperation of all the component nations in many respects, the most important of which is the defense of the homeland.

Closely linked to this need for homeland defense are the many areas necessary to promote a successful defense and security program. Foremost among these is the ability to develop and procure weapon systems required to implement policy and act as a deterrent against any would-be aggressor. Because of the great strides made in technology in recent years, "The speed with which new techniques and discoveries result in the premature obsolescence of equipment . . . presents the military planner with highly formidable decisions." [1] Furthermore, there is no broad basis of agreement concerning defense needs in Western Europe. Many scholars feel that joint armament production and procurement offer a solution to these problems, the most prevalent and persuasive arguments paralleling the following lines of thought.

Initially, joint production and development can be motivated by a desire to stimulate national economies. With the increased involvement of American business in Western Europe, this joint action can also be used to produce European goods competitive with American ones.[2]

Second, joint production and development would allow for greater use of resources on a much larger scale than is presently available nationally. As such, joint weapons collaboration "may have the effect of speeding up the process of 'innovation'; after basic research has made the discoveries, defense R&D . . . may speed up the process of application of these discoveries to civilian objectives." [3] This might also help to place Western Europe on a "technological parity" with the superpowers. Closely related to this idea is the fact that procurement policies themselves are basic to continued security as well as economic growth. Therefore, joint efforts might create a situation in which a security community in Western Europe could be established to handle her own defense better.[4]

Finally, whether or not a security community is set up, it is undeniably true that "the ability of Western Europe to assume a greater burden of European defense and to lessen the American 'hegemony' is related to the creation of collaborative arrangements in Europe itself." [5] Thus a strengthened integrative *movement* would enhance a European deterrent and lessen European technological dependence on the United States.[6]

If Western Europe is to remain independent, she must be willing to defend her-

self. Even though Europeans "find it hard to know how they can work together when their ideas about defense, the Alliance and the future of Europe are so fundamentally different," they must try to solve these problems if they are to succeed.[7] Common weapons development and procurement offer one such area of necessity coupled with practicality that can lead to further West European integration.

Collaborative Weapons Production: the Record and the Future

Through institutions and other bilateral and trilateral agreements, numerous collaborative efforts in West European armaments have been undertaken. A thorough analysis of all these endeavors is beyond the scope of this article.[8] Presented here will be selected efforts to show (1) the range of collaboration available, (2) the types of collaboration attempted, (3) the present efforts at collaboration, and (4) the areas of concern and problems inherent in collaborative weapons development and procurement.

Most West European collaborative efforts have centered around the NATO structure. While the four examples discussed here—based on the F-104G, Sidewinder, Bullpup, and Hawk weapon systems—have different management setups, none proved more efficient or better suited for joint development than any other one.[9] Furthermore, these four projects were all transferred to Western Europe after the research, development, testing, and evaluation (RDT&E) had been done in the United States, and all the projects "died" after their completion.[10] Nevertheless, the projects allowed Western Europe to curb foreign exchange depletions while increasing NATO standardization.[11] Their success seems great when viewed in the latter context but marginal in the former.

The F-104G, a modification of the Lockheed F-104 interceptor, overcame initial competition from the British Lightning and then ran into numerous problems: the use of 500 subcontractors, inertial guidance and radar malfunctions, delays in schedules for operational readiness, and a deplorable system of production and procurement.[12] As a collaborative effort by West Germany, France, Italy, and the Netherlands, the F-104G "was too ambitious, and was initiated with inadequate appreciation of the problems and difficulties involved."[13] Finally, even though unit costs were decreased (approximately $2 million per aircraft), the $1 billion the United States received in licensing fees left a bad taste in many Europeans' mouths.[14]

The Hawk surface-to-air missiles were much less expensive. Scheduled to produce 100 Hawk batteries and 4000 missiles, West European countries spent $600 million to train their forces to use the system and buy licensing rights. Used by France, West Germany, Belgium, Italy, and the Netherlands, the Hawk further improved NATO standardization. But problems soon arose: over 7000 modifications were made to the basic design during production, and by 1964 only 45 percent of scheduled deliveries were completed. Only one final assembly checkout center was established (in Italy), further hampering Hawk's ability to enter operation. Finally, unit cost was higher than if the batteries had been produced in the United States.[15]

Two smaller missile projects, Sidewinder and Bullpup, also underwent some problems in their development and procurement. While the former was on a much larger scale than previous joint efforts (eight nations were involved), both systems ran into cost increases, delays, and the continued dominance of American technology.[16] Decreased dispersal of production plants enhanced the programs, but both systems emphasized the problem of including na-

tions in joint procurement (such as Turkey and Portugal) whose technology is not up to the requirements of the program.[17]

One area that has resulted in considerable success is the construction of a standardized NATO infrastructure in Western Europe. Since its inception in 1950, 220 airfields, miles of pipeline and cable, POL supplies, fuel storage containers, and the NATO Air Defense Ground Environment (NADGE) have been constructed at an estimated cost of $4.3 billion, with yearly operating costs of $20 million.[18]

Only two *ab initio* projects have come to fruition in Western Europe, the Fiat G-91Y aircraft and the Breguet 1150 Atlantique maritime patrol aircraft. The former began in 1953 as a tripartite project; when Italy won the contract over France, the latter dropped out, leaving Italy and West Germany to produce the aircraft.[19] Although bought only by these two nations, the G-91Y incorporated parts from Italy, Great Britain, France, and the Netherlands in its construction. The Atlantique was begun in 1958 with France, the Netherlands, West Germany, and Belgium participating. Throughout its development and production the aircraft met its schedule, but the withdrawal of orders by some nations jeopardized an otherwise successful project.[20]

Paralleling defense-sector efforts, joint procurement in civilian areas grew, especially with the Concorde project and, more recently, the A-300 European airbus. With initial R&D now being handled by the West Europeans, the result has been a succession of projects, most notably aircraft, that are truly West European in all aspects. Their success or failure rests in the future.[21] While most of these advanced programs have one thing in common—i.e., few if any firm orders for production in their early developmental stages—they are a "new generation" of systems being developed in Western Europe. The basic structure and purpose of some of these systems will serve to point up present problems in joint weapons production and procurement.

In the aircraft industry, the Jaguar, just entering service, has been a successful endeavor, 400 aircraft being ordered by Britain and France. Conceived in 1965 (and adopted by NATO in 1968), development of the Jaguar has been at one-third less cost than would a similar unilateral venture by either nation, with unit costs 10 to 15 percent lower.[22] Hopefully, similar goals can be realized from the multirole combat aircraft (MRCA), the first major test of Western Europe's "going it alone" in aircraft production and development.[23] Only equal in performance to the F-111 (which was introduced into service in 1965), the MRCA has already been beset with problems. Full development began only in 1970 after much national infighting over the different versions to be produced, leaving MRCA to be constructed by Britain, Italy, and West Germany at costs 20 percent above initial estimates.[24] Furthermore, national sentiments rose when the contract for the terrain-following radar went to an American firm;[25] but if 1000 aircraft can be produced, unit costs will be only one-half that of a comparable American weapon system.[26] NATO standardization continues, but army and navy joint ventures remain bleak. Some British engines are on French warships, and the 7.62-mm NATO round is coming into increasing use. Yet, outside the aerospace and corresponding electronics industries, large-scale collaborative efforts do not appear to be materializing. What is taking place, though, obviously indicates a logical progression of joint ventures from dependence on others to more independent projects. The reasons for this progression bear analysis.

Problems in Collaborative Efforts

The numerous problems that face West-

ern Europe in the desire to proceed with joint armaments ventures can be reduced to several basic "issue areas" that affect every collaborative effort. Presented here are those areas that offer the greatest stumbling blocks to a more unified and coherent collaborative process.

The great force of nationalism is primary among these areas and might be the catalyst that triggers many of the other problems. Simply, it is extremely difficult for a nation to forego centuries of history to decide its future collectively with other sovereign nations. Nationalistic attitudes pervade even the most minor decisions to such an extent that "decisions on technical questions become, in effect, political decisions." [27] Thus the central problem of cooperation becomes a political one as national interests dovetail into economic means and demands as well as military strategy and overall goals. For example, when Britain needed a new tactical fighter, her decision to purchase the American F-111K was looked upon as "un-European" by France, since the French Mirage IVA (at least according to the French) could have been used by the British even though it was not suited for the British perception of her new aircraft's mission.

This feeling of intense nationalism is even more common in NATO procurement procedures. As one author put it, "This attempt to spell out the responsibilities of delegates to their national governments on the one hand and to NATO on the other only serves to emphasize the basic division between 'NATO interests' and 'national interests' in the Alliance." [28] It is manifested by another fact:

> In agreeing to collaborate in developing and producing armaments, national governments not only tacitly acknowledge their inability to maintain a full range of nationally produced weapons systems, but limit their freedom of action to the extent that they become dependent upon other nations for a part of their weaponry.[29]

No nation is willing to allow another nation to have a large enough say in its defense that in the event of a threat to itself it cannot act in its own interest.[30] Undoubtedly, collaborative ventures do not necessitate such action; but as the dispute over MRCA versions to be produced clearly shows, collaborative actions do raise the possibility and the probability that joint defense planning is the next step to be taken. Present nationalistic tendencies abhor such action.[31]

A second general area of concern is United States domination of a collaborative weapons production system. As has been the case for many years now, "the United States possesses, in dealing with any of them [European nations], a political and technological leverage that the Americans are willing, if necessary, to exploit to the full." [32] It would be easier for Western Europe to band together without the United States, but since Western Europe is *dependent* on American technology, this presents an inherent contradiction.[33] Only recently has Western Europe begun *ab initio* development of major weapons (with the exception of the G-91Y and the Atlantique). Yet—and this is crucial—even if these new projects do succeed, the problem remains. For if Western Europe is to be entirely independent, she needs to produce her own weapons; but to do this she still must have American technology to improve her national industries, and to gain this technology she must "cater" to American designs. Since the United States, too, is interested in its economic well-being, achievement of American arms sales targets will mean that "existing facilities for defense production in Europe will not be fully utilized." [34] It would thus seem that "cooperation with the United States . . . will be essential to any European union,

essential technologically, economically and politically." [35]

Another area of concern is economics. There are numerous reasons why, economically, collaboration is a good policy to follow,[36] yet this analysis is concerned with the problems collaboration raises and, in this case, the particular ones of costs, "fair share," and R&D and defense efforts as related to overall national budgetary constraints.

In treating the latter category first, it is apparent that numerous ramifications emerge from collaborative efforts. For West Germany, it means that she will no longer buy equipment from the United States, a necessity in order to "offset" American troops in Europe. For Britain, it means losing the "special relationship" with the United States (and lower prices). For all the nations that devote a much smaller percentage of their GNP to defense than the United States, it means a significant increase in defense spending overall and R&D spending in particular. This, of course, means a fundamental reordering of priorities that West European nations have not, as yet, been willing to make.

Finally, because of the government ownership of many defense industries in Western Europe and the fact that "the United States balance of payments problems have made it imperative for the American arms industry . . . to sell arms in Europe on a commercial basis," many West European nations are being forced to choose between support for national industries at the expense of American technology and expertise.[37] Thus, collaboration might be the wrong approach, since now West European industries must not only compete with American firms but also bid for contracts in the collaborative weapons procurement system in Western Europe. "Safe haven" contracts from their respective governments, in this case, have also been taken away, leaving many industries bankrupt if they do not win collaborative contracts.

Closely linked to this problem is the idea of "fair share." [38] Simply stated, "there must be a political or technological return for co-operation, and in the case of a European country, it is more likely that it will be political." [39] As such, many nations feel that a collaborative venture is, as they see it, taking needed resources from national priorities in return for marginal outputs. Political outputs are fine, but they do not help prevent industries from going bankrupt or people from starving. More tangible results are desired, but so far these results have been far below what was expected. Besides the obvious fact that many collaboratively produced systems fail to measure up to the necessary performance characteristics originally set out, West European nations balk at any project that does not employ their national industries to the same or greater extent than their initial (mainly monetary) inputs.

If, on the other hand, the problem were "solved" by strict adherence to the "fair share" theory, would collaborative efforts proceed any better? In all probability, no, mainly because there are among West European nations various levels of technological competence not necessarily commensurate with monetary wealth. Thus, it is conceivable for a nation to contribute 15 percent of the funds for a collaborative project but be unable to absorb 15 percent of the project's development in its national industries because of technological "backwardness." Consequently, the idea of "fair share" presents a problem whether it is implemented or not.

The final economic area under discussion is that of the costs of collaborative efforts. As suggested before, collaborative efforts will require increased national spending if first-rate technological weapon systems are to be produced. Present national procure-

ment policies and defense industries are geared to *national* desires, with collaborative efforts acting only as a welcome addition of revenue.[40] To change these industries into parts of a larger collaborative armament system will require a great deal of both faith and money. Furthermore, numerous other costs are involved, most of which spring from the basic premise that "there is little practical recognition that interdependence in defence procurement also forms an essential part of economic policy."[41] The problem is manifested in the fact that even though collaborative efforts will allow more projects to be undertaken, these more costly projects require more costly procurement as well. Procurement is a major portion of each West European nation's defense budget, and the probability of procuring more costly items might increase this level to such an extent that other factors in the defense budget (like initial R&D into the collaborative efforts) will suffer.

There is no question that collaboration releases more money, especially in R&D, for development and procurement of new weapon systems initially. But this newfound storehouse of R&D funds has pitfalls:

> The proportion of all defence R&D which would be available for co-operative projects would differ from one country to another, but no government would be likely to put all its eggs in one basket, either by devoting all its funds to one project or by putting all its funds into co-operative ventures.[42]

Without pooled R&D funds, no nation could afford to develop any weapon above a tank or artillery piece.[43] Yet, can pooled R&D funds produce the needed weapons, or should continued reliance on the United States be maintained? At present, it seems that a mixture of both is being followed, which is ultimately unsuitable to West European efforts to maintain a self-reliant defense posture.

Finally costs become apparent in terms of the dominance of certain nations in certain defense-related industries. Collaborative efforts would seem to do nothing to change this domination.[44] As such, with each nation maintaining a particular expertise, nationalistic tendencies become even more hardened, and the cost of gearing a nation to a specific "expertise" industry or of trying to maintain all industries even though contracts are awarded competitively grows. Although efforts at common funding have achieved some success, most notably in NATO-sponsored projects,[45] no nation is willing to place all its monetary efforts in one particular industry with the hope that that industry will continue to dominate its particular field. Variety continues to be a basic premise of a stable national economy and collaborative projects could act as a force opposing such action.

A final area of concern is the catch-all one adequately described only as "attitudinal": the always present notion that each participant in a problem-solving session has his own way of analyzing and solving the problem and that, unless his wishes are followed, he can sometimes make things quite unpleasant for the rest of the participants. In Western Europe, no government seems to be opposed to the basic idea that "trade-offs are required among efficiency, time urgency, learning processes, specialization, sharing, and political arrangement" if progress is to be made.[46] Exactly what these trade-offs are to be and to what degree constitute the crux of the problem. Some governments are mainly concerned with percentages and "are willing to sacrifice either efficiency or economy . . . if necessary to generate an acceptable degree of participation and sharing."[47] Others favor collaboration at any price, while a third group opposes any such efforts as an invasion of national sovereignty.

It is not my purpose to judge these posi-

ions, rather only to point them out and xpose their importance in presenting na- onal decision-makers with one more area f problems that they must confront. Per- aps it is the hardest area of all to handle, ince many of these attitudinal stands are he result of personal and national biases, iases that the decision-makers themselves ight not even be aware of.

In analyzing many of the problems that ight arise in collaborative efforts, one ould do well to remember that these prob- ems do not exist in a vacuum. They must e handled in the overall context of world, s well as West European, politics. This acet of the overall collaborative effort, ften overlooked, just might be the most ignificant of all.[48] For no matter what be- omes of such efforts, their effects will be elt in both Western Europe and the rest of he world. What might become of these fforts is the final topic of analysis.

What Lies Ahead?—the Lessons Learned and Institutional Intransigence

There can be no doubt that the problems ddressed in the previous analysis are cen- ral to the overall collaborative weapons levelopment and procurement effort. Solu- ion of these problems will take time and great deal of energy, as well as fresh pproaches to the problems themselves. here can be no accurate way of predicting xactly what will happen, yet what can be tated with some certainty is that the present o-so record of collaboration will not im- rove if these problems are not adequately lealt with.

Through the institutions used and the fforts made toward collaboration, sev- ral basic conclusions have arisen. While here is not overall agreement on these onclusions, some of the more generally ccepted ones include:

(1) Central funding, at least in the feasibility and design stages of development, is needed.

(2) Programs should be initiated by multinational organs (like NATO), rather than by national governments.

(3) Each project should be carefully planned and "costed out," with agreements to purchase by governments made at certain points in a system's development.

(4) Overall military strategy must be accepted by all participants and material needs tailored to fit this strategy.

(5) Projects must be technologically beneficial to keep Western Europe in the technological forefront.

(6) Timing of needs by each participant must be considered.

(7) And finally, existing political institutions do not offer a good framework in which to accomplish a common armaments effort.[49]

This final point will be discussed below as it is indeed the crux of many of the present problems facing Western Europe in collaborative efforts. For it is in the setting up of an organ to handle collaborative armaments efforts that the greatest amount of disagreement occurs today. Initially, the entire idea of supranationality is called into question, with many seeing no hope in collaborative efforts.[50] Others insist that supranationality is a viable means of getting people to work together and, in fact, the only plausible means given the situation of nation-states today. These arguments are based on the actual setup of supranational organizations, each one supposedly offering the best solution to both the acceptance of supranationality as a means to achieve cooperation and the successful management of collaborative efforts.

In weapons development, five major structures have been proposed:

- ". . . functional cooperation among West European states should be given pri-

ority over co-operation with states outside the area." [51]

• ". . . if the countries sincerely wish to pool their production efforts, the only way is to create a joint authority with competence in this field. This authority should be an 'economic authority.' " [52]

• "Reliance on multinational enterprise in military production would undoubtedly provide purchasing governments with the latest in hardware and systems at the least cost." [53]

• A technological community to handle production, led by the heaviest R&D spenders in Western Europe. This would use R&D expenditures for concrete development and procurement of weapon systems.[54]

• "One international organization covering several co-production projects would reduce the cost of equity solutions by obtaining trade offs *among* co-production projects or between them and other industrial integration programs." [55]

While each solution is feasible, Western Europe at present is not prepared to accept any of them as a means to increase collaborative armaments efforts. The problems described in the preceding analysis all become involved in each organizational solution put forth. This present failure to solve these problems effectively prevents any new organization from being set up. It now seems to be abundantly clear that the nations of Western Europe are only proceeding with collaborative efforts on a one-for-one basis, renegotiating each one to avoid or solve numerous problems. They are unwilling to make a commitment to a supranational organization that might possibly solve these problems because the risk appears to be too great; i.e., possible success is outweighed by the possible failure that would mean a continuation of present problems plus the additional one of coping with the new organization itself.

Finally, it must be realized that there is a definite possibility that not all armament production lends itself to collaboration. As one author put it,

> The projects which are most suitable for co-operation are those in which R&D cost is such a large part of the cost per unit that dividing it equally with another country saves each side some money, even if the total cost rises or else in which the production cost per unit drops very sharply with each additional unit ordered.[56]

It is entirely possible for collaborative efforts to be more beneficial and cost-effective on a bilateral or trilateral basis than on a NATO-style production level. Undoubtedly, as many present projects clearly show, a few West European nations feel the same way. Again, the entire question comes down to the element of risk involved in a bilateral or trilateral effort versus a truly multinational one. As the history shows, no definite answer has been supplied so far.

Whatever the outcome of collaborative armaments efforts in Western Europe, the picture at present looks somewhat dim for a truly multinational effort structured around a multinational organization. Continued bilateral and trilateral collaborative efforts seem to be the favored route at present. Thus, the problems inherent in all the collaborative efforts analyzed in this article must be solved to the satisfaction of all nations concerned before a common armaments effort in Western Europe can be realized.

Fletcher School of Law and Diplomacy

Notes

1. Robert Rhodes James, "Standardization and Common Production of Weapons in NATO," *Defence, Technology and the Western Alliance*, 6 studies (London: Institute for Strategic Studies, 1967), no. 3, p. 1.

2. For an excellent analysis of this problem, see Jean-Jacques Servan

Schreiber, *The American Challenge*, trans. Ronald Steel (New York: Avon Books, 1967).

3. C. J. E. Harlow, "The European Armaments Base: A Survey: Part 1: Economic Aspects of Defence Procurement," *Defence, Technology and the Western Alliance*, 6 studies (London: Institute for Strategic Studies, 1967), no. 2, p. 21.

4. See John Simpson and Frank Gregory, "West European Collaboration in Weapons Procurement," *Orbis*, vol. 16 (Summer 1972), p. 435.

5. Robert L. Pfaltzgraff, Jr., *The Atlantic Community: A Complex Imbalance* (New York: Van Nostrand Reinhold Co., 1969), pp. 55–57.

6. *Ibid.*

7. John Calmann, "European Co-operation in Defence Technology: The Political Aspect," *Defence, Technology and the Western Alliance*, 6 studies (London: Institute for Strategic Studies, 1967), no. 1, p. 2.

8. See Mary Kaldor, *Defence Industries—National and International Implications* (mimeograph), (University of Sussex: Institute for the Study of International Organization, 1971–72); and Harlow, table 13.

9. Jack N. Behrmann, *Multinational Production Consortia: Lessons from the NATO Experience* (Washington: U.S. Government Printing Office, 1971), p. 15.

10. *Ibid.*, p. 1.

11. *Ibid.*, p. 3.

12. James, p. 15.

13 *Ibid.*, p. 16.

14. *Ibid.*, pp. 16–17. These fees were extremely important for political purposes more than for actual monetary worth, although Lockheed welcomed the added revenue.

15. *Ibid.*, pp. 16–18.

16. *Ibid.*, p. 18.

17. *Ibid.*

18. *Ibid.*, pp. 19–20. Also Neville Brown, *European Security, 1972–1980* (London: Royal United Services Institute, 1972), p. 149.

19. James, p. 11.

20. *Ibid.*, p. 12.

21. Simpson and Gregory, pp. 439–40.

22. Brown, p. 148.

23. Behrmann, p. 23.

24. Brown, p. 148. Britain wants a deep strike/reconnaissance aircraft, West Germany desires close air support as MRCA's role, while Italy wants an air superiority fighter.

25. *Ibid.*, p. 149.

26. *Ibid.*

27. Behrmann, p. 9.

28. James, p. 6.

29. Pfaltzgraff, pp. 177–78.

30. See Eugene B. Skolnikoff, *Science, Technology and American Foreign Policy* (Cambridge, Massachusetts: M.I.T. Press, 1967), p. 183.

31. See Robert L. Pfaltzgraff, Jr., "NATO and European Security: Prospects for the 1970's," *Orbis*, vol. 15 (Spring 1971), p. 172.

32. Calmann, p. 15.

33. Behrmann, p. 23.

34. Harlow, p. 31.

35. Calmann, p. 21.

36. Simpson and Gregory, pp. 445–47.

37. James, p. 3. This choice is by no means clear-cut, as the following discussion indicates.

38. See Servan-Schreiber, pp. 113 ff.

39. Calmann, p. 14.

40. See C. J. E. Harlow, "The European Armaments Base: A Survey: Part 2: National Procurement Policies," *Defence, Technology and the Western Alliance* (London: Institute for Strategic Studies, 1967).

41. Calmann, p. 7.

42. Harlow, Part 1, p. 22.

43. *Ibid.*

44. *Ibid.*, pages 9–12 give an overview of national domination.

45. See E. Vandevanter, Jr., *Common Funding in NATO* (Santa Monica, California: RAND Corporation, 1967).

46. Behrmann, p. 13.

47. *Ibid.*, pp. 4 and 11.

48. For our nation's opinion, see Charles L. Schultze *et al.*, *Setting National Priorities, The 1973 Budget* (Washington: The Brookings Institution, 1972), p. 26.

49. See the following for elaboration of these conclusions: James, pp. 22–24, Calmann, pp. 16–17; and Pfaltzgraff, "NATO and European Security," p. 176.

50. Behrmann, p. 16.

51. Simpson and Gregory, p. 460.

52. Western European Union, *Report Submitted on Behalf of the Committee on Defence Questions and Armaments*, 10th Ordinary Session, vol. 1, part 1, Assembly Documents (Rome: Western European Union, 1964), p. 34.

53. Behrmann, p. 25.

54. Calmann, pp. 20–21.

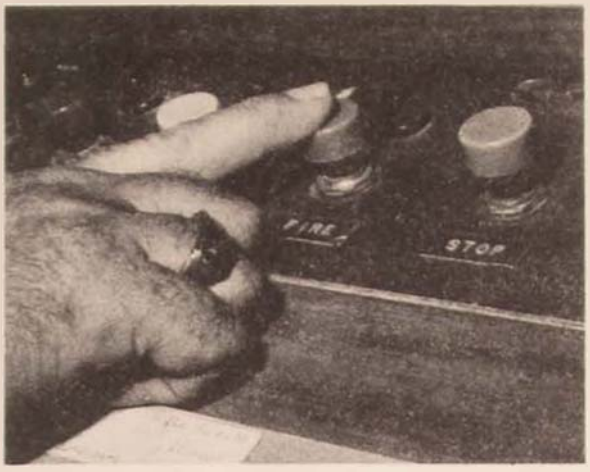
55. Behrmann, p. 2.

56. Harlow, Part 1, p. 23.


P&H

RPV'S MAKE THE DIFFERENCE

HANK BASHAM



WHAT will the fighter pilot's chances be when that bird out there is the real thing, a MIG-21 . . . or a supersonic bomber making a run toward targets within the United States . . . or some other modern jet making an attack?

If he's a pilot of the Aerospace Defense Command, his chances will be good—good because he has experience resulting from weapons firing training and evaluation against remotely piloted vehicles (RPV) at the Air Defense Weapons Center.

RPV's have been around a long time, down along the northwest Florida Gulf Coast area at Tyndall Air Force Base. Here the Teledyne Ryan Firebee jet has been in operation as the prime target for pilots sharpening their air defense skills.

Because this remotely piloted vehicle is the nearest thing to a hostile aircraft, pilots who train against the Firebee will have a better chance against an actual attack. Not just a clay pigeon, this bird is a real jet aircraft. It flies like one. It maneuvers like one. Returning combat pilots confirm they must train against a maneuvering jet to be really prepared.

Those pilots who train at the Air Defense Weapons Center will know just what to expect when the chips are down. They'll know because they have flown against, fired against, and scored against an RPV that strongly simulated an aircraft being flown by an enemy pilot.

It was seventeen years ago when the Firebee entered the

air defense picture at Tyndall Air Force Base, home of the Air Defense Weapons Center, and every pilot within the Aerospace Defense Command has at one time or another pitted his skill against the elusive high-speed and high-flying target. Today, ADC requires every pilot within the command to deploy to Tyndall at least once each year for the Weapons Center's weapons firing program. The drone target, operated by remote control, simulates an enemy invading American airspace.

ADC fighter pilots pit their skill and weapons against the Firebee in a test program conducted by the 4750th Test Squadron. The purpose of the program is to determine how well the weapons perform and to test any recent modifications. The Weapons Center hands down directives on which tactics the pilots will employ and what particular weapons will be fired. Fighter squadrons participate in the program as a unit.

Objectives are designed so as to determine overall ADC interceptor systems capabilities and effectiveness. Each deploying unit at the Weapons Center is assigned different test conditions to satisfy the overall command objectives.

Although weapons testing involves the entire squadron, only a limited number of aircraft deploy to the Weapons Center at any one time. As each interceptor weapon system is qualified by successfully firing its armament load, the aircraft and freshly trained aircrew return to home base to resume air defense alert. The rotation continues until all aircrews in the squadron have fired and qualified their weapon systems. Air National Guard units also undergo the same rigid program at Tyndall.

This program prepares the pilot to operate his weapon system at maximum effectiveness in the tactical air defense role where the threat is a high-speed, highly maneuverable enemy aircraft. The tactical air defense role may be defined as the composite of flight tactics and weapons employment procedures for the purpose of protecting or attacking a tactical strike force in a radar-controller environment.

Although ADC pilots are in constant training and have the opportunity annually to fire live weapons against the Firebee, ADC's biannual Project William Tell held at the Weapons Center provides an even more realistic test for pilots, maintenance crews, weapons controllers, and munitions loading teams as they work under the closest possible simulation of combat conditions.

"It is the proving ground for our aerospace defense network," Lieutenant General Thomas K. McGehee was quoted as saying following the 1972 William Tell.

Pilots firing against the Firebee in the competition voiced unanimous praise for the target systems.

"It was there one minute and gone the next," said one

Aerial launch from a C-130 made dual launches possible. . . . Hughes Falcon missiles are loaded on an F-106 for a firing mission against the elusive drone target.

pilot, recalling the evasive maneuvers executed by the Firebee under remote control.

Major Frank P. Walters and Captain David J. McCloud, members of the 2d Fighter Interceptor Squadron, were the first and last pilots to score "kills" against Firebees in the 1972 William Tell competition. "Les Allouettes" missile hit came as a tie breaker.

"My Firebee was as realistic as any enemy aircraft I hope to ever go up against," noted Walters, praise that was echoed by his teammate McCloud in debriefing sessions.

The first of the drones used at the Weapons Center was the Q2-A. Then came the more modern version of the Firebee, the Q2-C, or, as it is known today, the BQM-34A. Now the newest of Teledyne Ryan's remote-controlled targets, the supersonic Firebee II, is being tested at Tyndall

Final adjustment before launch (a) . . . Ignition (b) . . . Remotely piloted, the Firebee streaks toward the target (c). . . . After blast-off from pad, the Firebee drops the jet-assisted-take-off (JATO) bottle (d) and flies on.

and will soon become operational for the first time in the U.S. Air Force.

The air defense mission of the Firebee started 1 July 1957, when the 4756th Drone Squadron was activated at Tyndall. The squadron was established to organize, equip, administer, maintain, and train personnel to provide remote-controlled target aircraft for practice firing by ADC units deployed to the Weapons Center. The squadron would also support test projects and provide land and water recovery for target drones.

Shortages of trained personnel and various equipment caused delays, but one year later, on 3 July 1958, a B-26 aircraft soaring over the Gulf of Mexico firing range air-launched the first remote-controlled target from Tyndall.

Although this first target flew off into a thunderstorm and was never seen again, the launch marked the beginning of a new era in weapons firing training for pilots charged with the awesome responsibility of air defense. It was the start of a program that would give our pilots a mark of expertise.

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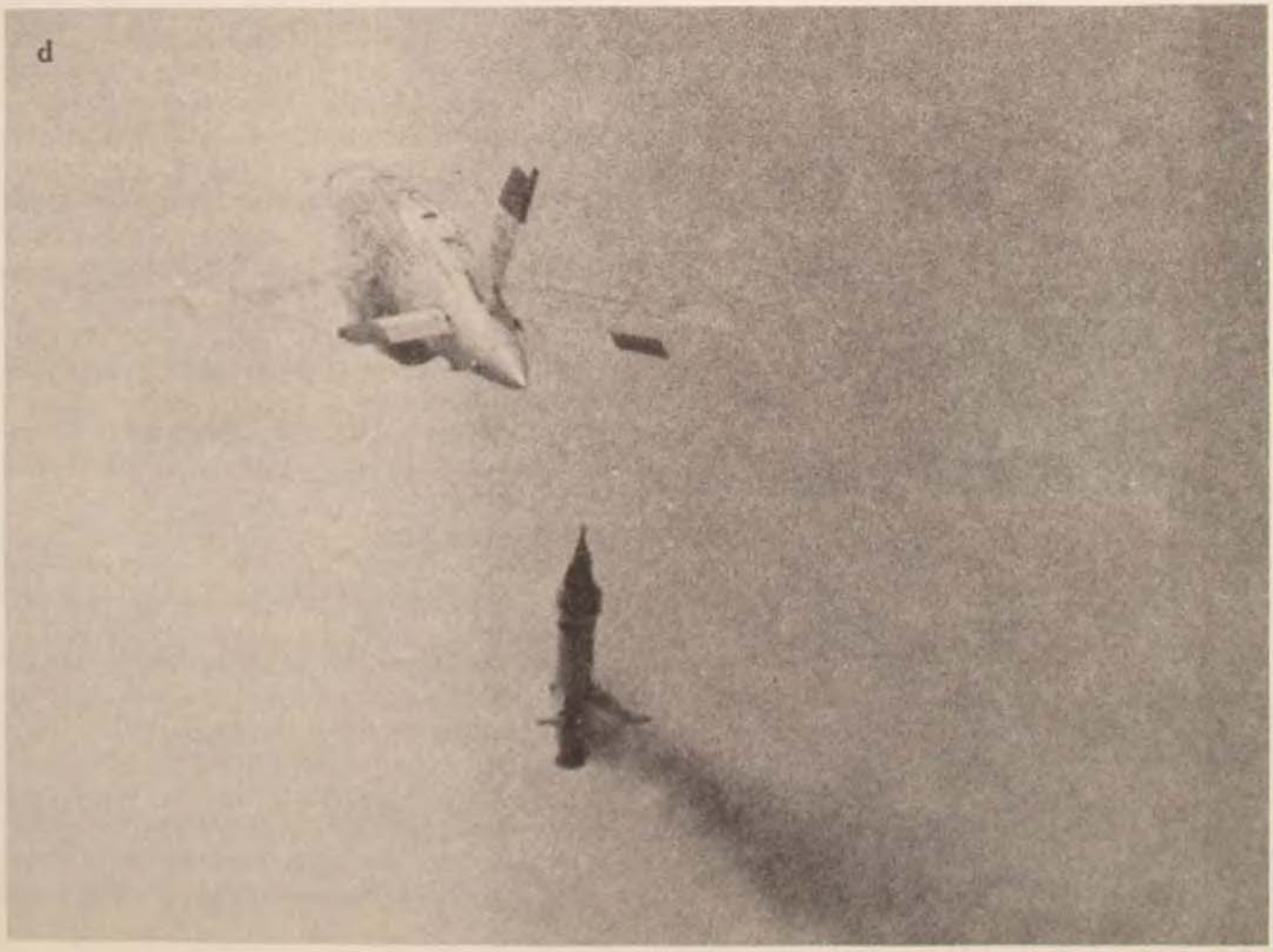


After landing safely on terra firma, the Firebee awaits pickup by a recovery helicopter.

The day of the towed "sleeve target," a carry-over fror World War II, was gone!

Favorable response and great enthusiasm were notice from the very first by pilots flying against the Firebee. On pilot returning from a mission stated. "Streaking throug the air at high subsonic speeds, the Firebee made startling contrast to the towed banner targets previousl used in the firing program at Tyndall."

Another pilot stated emphatically, "The Firebee give realism and the feeling that you are coming to grips wit a 'foe,' which is a much greater challenge to our skil and airplane."

"It's so different from firing at a target being towed a only half the speed of which my aircraft is capable," sti another said.

One month after losing their first target, the 4756t Drone Squadron successfully completed a launch and re covery sequence. About the same time the Air Force gav the green light for the World-Wide Weapons Meet an announced the Firebee would be used as targets for pilot competing in the first of several William Tell projects to b held at Tyndall.

The targets proved highly successful in the firing com petition, and the Drone Squadron's skill increased in th target launches. In the summer of 1959 the squadro successfully launched its 200th target from a B-26 aircraf

A first came in September of that year when the squadro launched dual targets in a test flight designed to giv pilots in the 1959 Weapons Meet a more realistic "battl condition." The first successful dual launch was from th

B-26, and control was exercised by ground controllers at the Apalachicola, Florida, control site. Both targets were successfully recovered after flying at altitudes of 25,000 and 30,000 feet respectively. Both were controlled for 42 minutes in the designated orbit prior to water recovery.

A record launching of 79 targets in the 10-day William Tell in October 1959 was another remarkable feat, but records continued to be set by the Firebee as the Drone Squadron personnel's skill increased.

Early in February 1960 a new and advanced type of drone target was in the testing stage at Tyndall. The new target was the Ryan Q2-C, the improved version of the first Firebee. It had more powerful engines, could climb faster and higher.

But even as the testing program went on, the Q2-C was setting records, and by June 1960 the Drone Squadron marked its 500th launch. It was also in 1960 that the Lockheed C-130 went into use as the aerial launch vehicle —necessary to carry the heavier target.

The year also marked the organization of the 4756th Field Maintenance Squadron to meet the requirements of ground-launching of targets, a new launch method that was being tested. In the meantime the 700th aerial launch was made, and another milestone was reached as more than 100,000 miles had been flown by targets in the air defense role at the Weapons Center. And finally it was time to retire the Q2-A and let the newer target assume the "enemy" role. It was 1 July 1961. The Drone Squadron launched number 739, and the Q2-A was phased out.

New Firebee records were constantly being set at the Weapons Center. On 13 December 1961 a flight record was set as a target was flown 97 minutes to break the old record of 87 minutes. The mission was a normal Weapons Center training flight and was at an altitude of 45,000 feet.

By 1962 it was deemed necessary to find other means of recovering the expensive targets, other than water recovery, as the salt water caused considerable contamination and corrosion, resulting in increased maintenance and turnaround time.

Pinpoint land recovery was the solution, and tests at the Weapons Center proved that drones retrieved in this manner suffered only minor damage and were returned to serviceable condition in less time. While open-sea parachute recovery is still procedural in some instances, Tyndall's Firebee operation normally includes recovery in an open land area on the base. An 85-foot recovery boat is maintained at Tyndall for Firebee retrieval, as required.

The 1000th target was launched 8 May 1962!

It was in this time period that Air Force program man-

agers developed electronic scoring systems that telemeter near-miss distances of weapons fired to a ground control station. Actual weapon "kills" against Firebees were no longer necessary with this advance in the determination of weapon effectiveness.

The benefits resulting from the electronic scoring systems saved money for the Air Force, established accurate standards by which weapon effectiveness can be judged without the loss of Firebees, and added to the sophistication of target operations at Tyndall.

While the 4756th Drone Squadron was establishing a Firebee legacy at Tyndall over the years of its flight operations, Teledyne Ryan Company's Firebee field service teams were providing constant support.

In the William Tell Weapons Meets, special teams of Ryan technicians worked in close harmony with the Drone Squadron. It was in 1965 that Ryan sent a 47-man unit to Tyndall for the biggest, most challenging World-Wide Weapons Meet in history. Pilots competing in this event set all-time records in weapons effectiveness: Firebee missions zoomed to all-time highs; new target reliability marks went onto the boards; and the Meet established new standards for Firebee operations at Tyndall.

Brigadier General Thomas H. Beeson, commander of the 73d Air Division at Tyndall, described it as the "most successful weapons meet conducted by the Air Force" and said the Firebees were "the most effective targets ever flown in this event."

A new flight record in remote-controlled aerial targets was set at Tyndall in 1969 when three Firebees soared into the air at one-hour intervals, each on its 38th flight. They broke the old record of 37 flights by a jet drone target held by the Navy's Pacific Missile Range at Point Mugu, California.

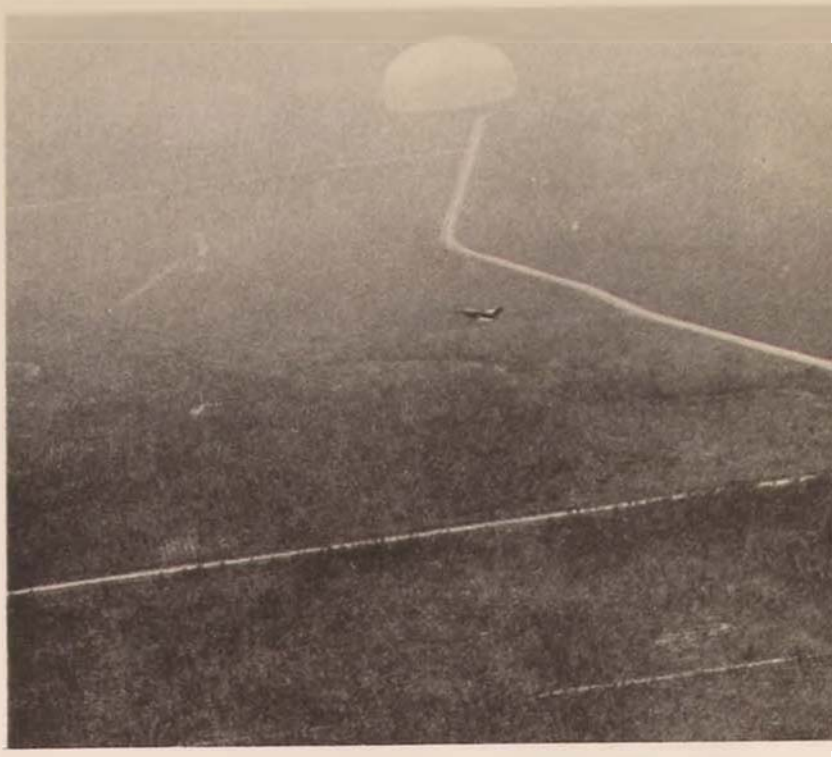
Since that historical 38th flight, one of the three targets launched that day has gone on to mark up an almost unsurpassable record of 87 flights.

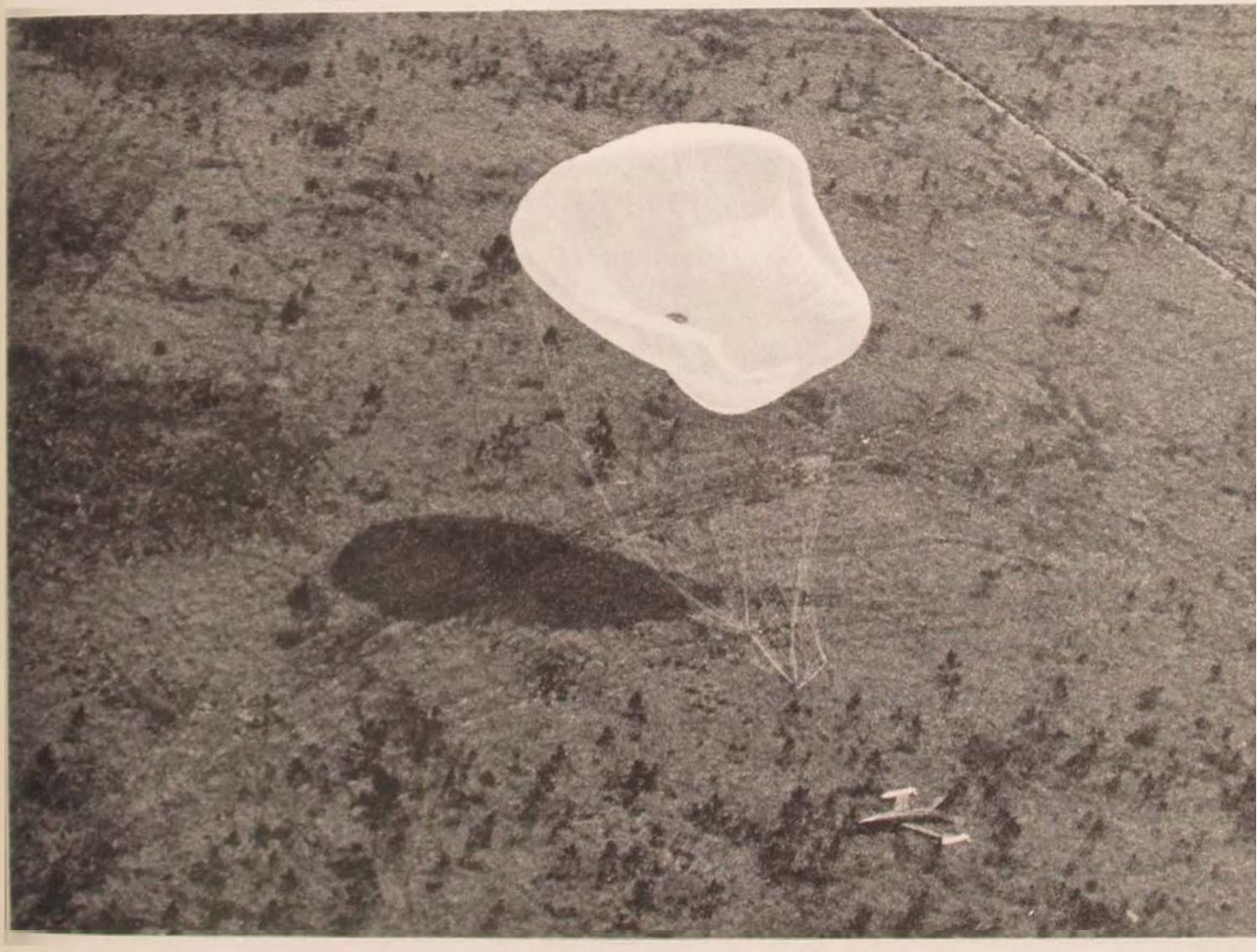
The many repetitive missions flown by the Firebees represent a big dollar savings for the U.S. Air Force.

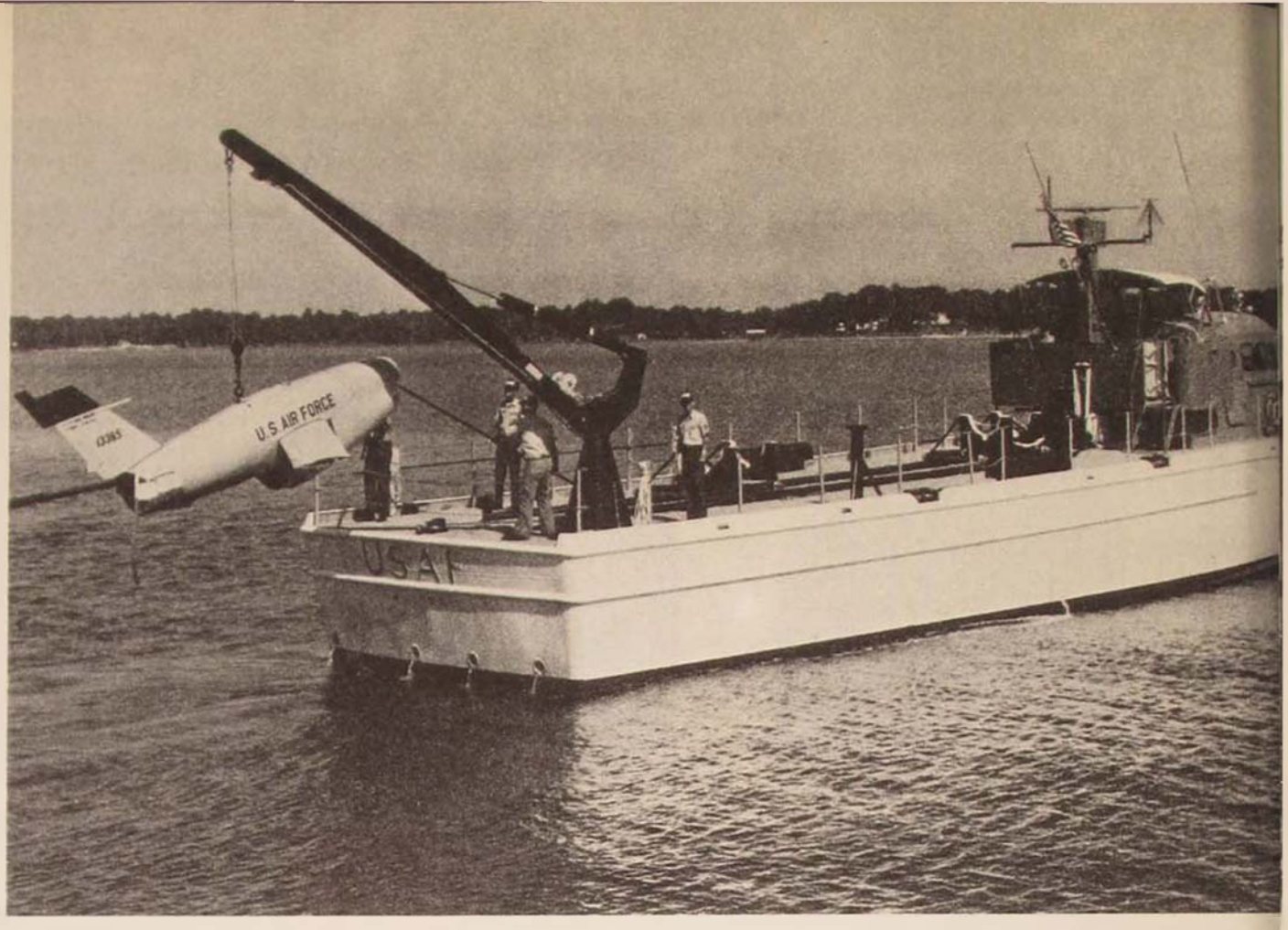
Today, Teledyne Ryan, the Air Force Systems Command, and the Weapons Center are working together on testing the new supersonic Firebee II that will provide a more realistic "enemy" by its speed. This bird was introduced to the Air Force and the Aerospace Defense Command at a rollout ceremony at Project William Tell 1972. Since that time several successful test flights have been conducted by the Air Defense Weapons Center. Additional tests are scheduled before it becomes an operational target for the ADC weapons firing program.

Matched against superior fighter aircraft of advanced

ission accomplished, the Firebee deploys its para-ıute for a soft landing, to be recovered and re-ed for as many as eighty or more future missions.







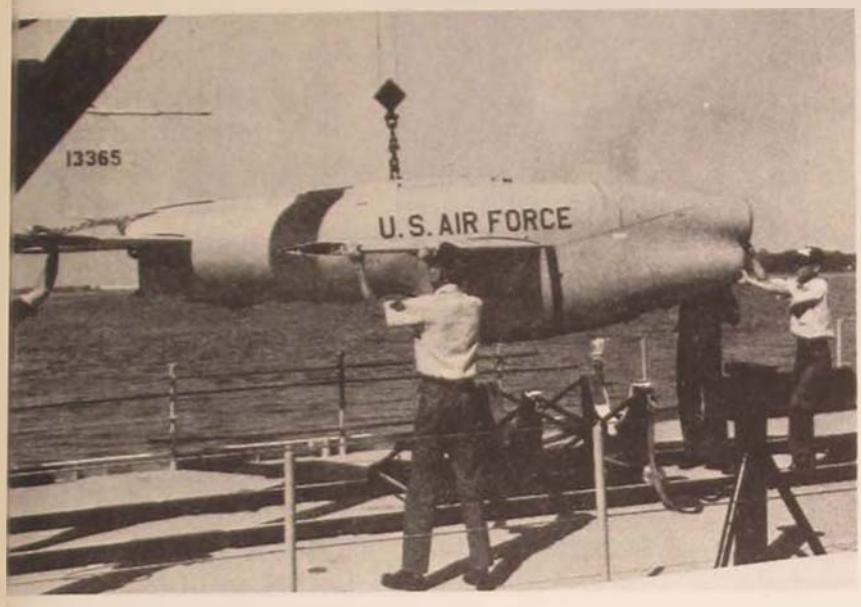
design, Firebee II will fly dual missions. Carrying an e: ternal fuel cell, it will first present itself as a subsonic ta get. Upon completion of that mission, the external cell jettisoned, providing a supersonic configuration for it Mach 1.5 dash.

For 17 years the Firebee has been the practice "enemy for pilots of the Aerospace Defense Command. But in play ing the game for real, a potential enemy can be deterre from aggressive acts against the United States and it allies only if he is convinced that our military power an national resolve are such as to do him unacceptable dam age if he starts an armed conflict. Aerospace defense with the capability to provide warning and active protectio against attack, is an essential ingredient for convincin any would-be aggressor that this country does possess suc power and resolve.

THE AEROSPACE DEFENSE COMMAND provides the deterrer to direct attack. The command tells any potential enem he cannot count on surprising us—and that an indeter minate portion of his attacking forces would never reac their targets in this country.

Where does today's aerospace defense team acquire th essential skills necessary to detect, intercept, identify, an destroy any hostile fighter or bomber aircraft and thu provide the vital deterrent? Charged with this awesom

one recovery crew of Aerospace Defense Command, operating in the Gulf of ico, makes a "big catch," saving approximately $100,000 of taxpayers' money. Firebee RPV had been launched as a simulated "invader" target aircraft realistic training of fighter-interceptor pilots participating in the evalua- and weapons firing program conducted from Tyndall AFB, Florida.



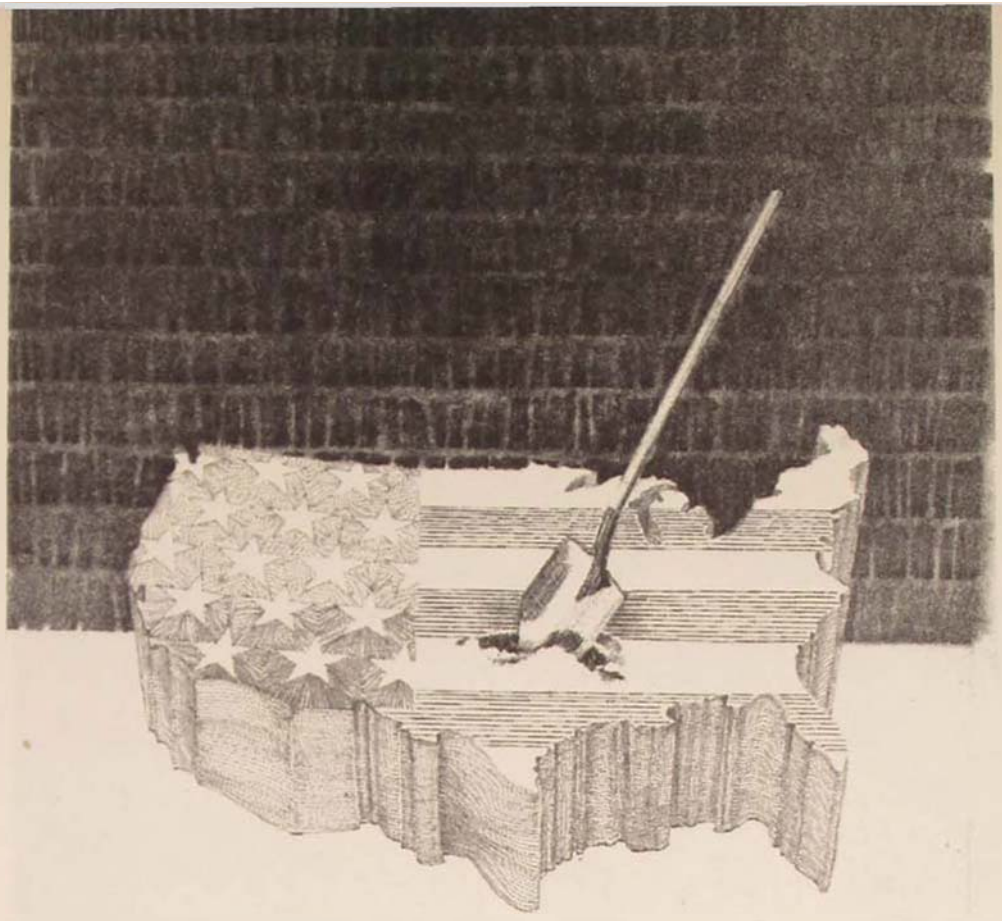
sponsibility is the Air Defense Weapons Center at Tyn- all AFB. Florida This is where expertise in air defense expected as part of everyday living

The Weapons Center, under the command of Brigadier eneral Carl D Peterson, is charged with responsibility for variety of missions, all tied directly to combat readiness aining for the Aerospace Defense Command The Center rovides a single area within the Department of Defense or the centralization of operational and technical expertise n air defense

It's at Tyndall where ADC fighter interceptor pilots undergo n annual weapons firing program—where pilots get ad- anced training in the supersonic F-106 jets—where pilots arn the latest tactics—where tests are conducted for ne Aerospace Defense Command to make sure that new quipment and tactics fit the defense mission Weapons enter personnel also direct the Bomarc B and Mace tar- et launch activity conducted by the 4751st Air Defense Missile Squadron at nearby Hurlburt Field, in support of veapon system development and evaluation

It's a big job, this mission for air defense, and the re- notely piloted Firebee has played a big and important ole in giving this deterrent capability to the fighter pilots f the Aerospace Defense Command It will make the difference when the chips are down!

Hq Air Defense Weapons Center (ADC)



General Parrish continues his thesis begun in the November-December 1973 issue of the Review, *his point of departure being Richard J. Barnet's* Roots of War.

PENS TO PIERCE THE MIGHTY AND DEGRADE THE SWORD, Part II

BRIGADIER GENERAL NOEL F. PARRISH, USAF (Ret)

WHILE Richard J. Barnet has a special place outside his heart for Presidents and their advisers, especially the recent ones, in *Roots of War* he broadens the attack to scorn Americans as a people, along with the nation and its history. "American self-righteousness" is linked to "American obsession with communism." The only possible reason, he maintains, for American interest in the government of Vietnam or of other nations is that Americans "are made uncomfortable by diversity." They have an "insatiable desire for prestige abroad" which manifests "a neurotic need for affection. . . . Compassionate giving on a group basis without expectation of gain or avoidance of some loss is almost unknown."

Since Americans are sick, selfish, and savage in Barnet's view, it is not surprising that he sees the nation as equally evil, although the problem of which is the original cause trips him now and then. The national security managers have so much power and are so busy exercising it to mislead the powerless citizen that they know even less than he knows: "One of McNamara's subordinates has advanced the thesis that the national security managers were more obtuse about the war than the average citizen because they worked straight through the Huntley-Brinkley show and stayed out too late at parties to catch the eleven o'clock news." But what does the less "obtuse" American citizen get out of the news? Something awful: ". . . the powerless can become a lawful, vicarious killer simply by switching on the 6:30 news and listening to the daily body count."

The extreme radical views every nation as evil but none as quite so reprehensible as his own. He sees reflected in the eyes of others a bitterness toward his nation that matches and justifies his own disgust: "In its frustration the United States showed itself to be a homicidal menace for millions of innocent people of Indochina. . . . the number one nation is surpassed by none in the fear and hatred it has inspired around the world."

Almost never in this type of literature is the United States compared favorably with another nation. The rather obvious oversight is somewhat obscured by repeated statements that similarities exist between our leaders and those of past Nazi or present Communist governments. The three most recent Presidents (other than President Nixon, a moving target whom Barnet chooses to ignore) have complained about difficulties in getting orders implemented, just as Hitler did. More fantastically: "When the truth about the Vietnam War began to come out in 1967 and 1968 and the national security managers were forced to defend their policy at dinner parties," some began getting sick and "to show such signs of strain as snapping at subordinates and succumbing to fits of depression."

This reminds Barnet of the behavior of the Nazi "political operators," as Albert Speer describes them, at the bitter end "when the bubble of illusion bursts and they come to see themselves as conspirators." This picture hardly jibes with Barnet's own observation of American political operators humorously calling each other "war criminals" at Cambridge cocktail parties.

Equally inconsistent is Barnet's use of words. In the Alice's Wonderland of his *Institute for Policy Studies*, the lexicographer could well say with Humpty Dumpty, "in a rather scornful tone: 'When I use a word it means just what I choose it to mean.'" When Barnet propounds an observation such as "The roots of the new isolationism are as old as the republic," he is not saying what he seems to say. "New isolationists" commonly means those who newly cry, "Come home, America." This would include Barnet, decidedly, but the word "isolationist" has a sad history since the once unopposed spread of Hitler's power. Barnet arbitrarily changes its meaning and applies it to others. He holds that the new isolationist is one who calls himself "internationalist," but not vice versa, because the "genuine internationalist" is something else again—something resembling himself.

If this begins to sound like George Orwell's description in the novel *1984* of a dictator reversing the meanings of important words, Barnet already has an answer. The meanings were *already* "Orwellian," or reversed (a situation which might be expected in the 'American Empire'): "In the postwar period, swarms of Americans have gone abroad, a good many of them soldiers. American power has been engaged over vast regions of the earth. But this phenomenon

can be described as 'internationalism' only in an Orwellian sense. Americans are never more isolationist than when they go abroad to kill foreigners. Using foreign lives and property as a backdrop for projecting American power is the epitome of national egoism." Neat, is it not? And cool enough, this new way of thinking, and especially appealing to bright young minds looking for new ways of thought!

"Almost never in this type of literature is the United States compared favorably with another nation."

Other words that must be given new meanings in Barnet's vocabulary, which is to say contradictory meanings, include "religion," "patriot," "ethical," "democracy," "flag," and others that have symbolic as well as literal significance. Thus: "All nations preach the ethic of national superiority but the United States has made a religion of it. . . . The old patriots brandished the flag. . . . The young patriots began shredding the flag . . . as if their claim to a piece of America depended upon making a full-scale assault on the national religion." On the other hand, words with derogatory associations are always allowed to stand when they are used by others or applied to others.

Barnet says that James Forrestal, the first Secretary of Defense, once predicted "the recurrence of attacks such as the Nye investigation [referring to Senator Nye's committee of the 1930s, which was assisted by Alger Hiss], to prove that the Army and Navy and American business were combining on a neo-fascist program of American imperialism." Forrestal, who seems more and more prophetic, called such efforts "communist propaganda" and called for "countermeasures." Barnet regrets only that "such countermeasures, including the highly developed Pentagon public relations effort . . . were so skillfully employed, the predicted attacks were inaudible for more than twenty years."

The word *communist* is used by Barnet almost interchangeably with *socialist*, despite a fundamental and historic difference of meaning in the Western world. After agreeing with Communist Rosa Luxemburg that capitalist nations arm themselves to stimulate economic activity, he disagrees with Lenin's argument that "if socialist states had to go to war it would be to defend themselves against the remaining capitalist powers." As with most radicals outside the iron curtain and the Communist Party line, this break with the radicals of the twenties and thirties is unavoidable. "Since 1945 Soviet armies have been used only against socialist states. . . . [Therefore,] war cannot be automatically ended by getting rid of capitalism."

Since the dominant theme of Barnet's writing is the abolition or perhaps the disappearance of war, his hope, or prescription, for this happy eventuality is of more than passing interest. The Library of Political Affairs, the leading book club in its field, refers to *Roots of War* as "the first comprehensive investigation of the forces that propel the U.S. toward international violence" by the "founder of the *Institute for Policy Studies*." Roland Steel, in his highly favorable review of the book, also refers to the Institute which Barnet founded ten years ago and which he "has helped to transform into a brain trust of the radical left." The radical left, then, has despaired of political action for now, since each political party "is controlled by forces in our society which have benefited or have thought they benefited from permanent war." This

surprising assumption was demolished by the Democratic Party campaign of 1972, but the election may have restored it.

Radical doctrines are even more loaded with such imperatives than are most doctrines: "Americans must engage in serious self-examination of those drives within our society that impel us toward destruction." His book, says Barnet, offers "a framework for such a social self-analysis, which, it is hoped, may lead to concrete acts of political and social reconstruction." What kinds of acts? Here the radical plan is so vague as to be almost nonexistent. However, Barnet provides a clue in his effort to establish, despite contradictions among polls on the subject, that the common majority is as pacifist as the elite. If not, democracy must go. Should we have to accept that the "passion of the majority" pushes toward "military adventurism and nuclear war, perhaps we should look upon democracy as a dangerous luxury."

Could there be a majority "peace party"? Hardly, if the radicals write its platform. "A politically effective peace party would have to . . . be honest with the American people about how little national security there is to be purchased in the modern world through military power. It would have to develop a vision of a new world economy based on fairer distribution of resources and power across the planet and to discuss candidly what sacrifices in standard of living Americans must make. . . ." Understandably concerned about the immense and scattered resources required to maintain American economic and military strength, Barnet proposes to buy security by giving these resources away. Is this a salable alternative?

Now appears the fist beneath the soft glove of radical pacifism and generosity. "The solution must be more radical than socialism as it has been preached. Only a government prepared to sell the American people on a very different value system or one *prepared to coerce them into austerity* can hope to reduce the national dependence on foreign resources." (Italics added.) Barnet fails to note that democratic governments have uniformly failed to accomplish such goals by preaching. Only dictatorships have achieved them, and Communist dictatorships have coerced their people into austerity only to arm themselves against capitalist states. In any case Barnet does not pretend to have faith in the pacifism of Communist nations, which is to his credit.

What, then, is to be done, even by a coercive American government that would dismantle its military strength, if it depends upon that strength for continued access to foreign materials? Barnet honestly admits that security without armaments means abandoning dependence on the foreign trade that is basic to the present standard of living. Yet even this self-inflicted weakness may not save us: "We are not saying that if American society were organized for peace, there would be no war. Obviously other nations also have it in their hands to plunge the world into war. But unless American society is organized for peace, the continuation of our generation of war is inevitable. The number one nation is in the strongest position of all to set the tone for international relations and to create the climate under which other nations deem it practical or impractical to organize themselves for peace." Barnet is willing to gamble all on one desperate maneuver which, if

"As with many ideologues, [Barnet] demonstrates a lack of concern for any people or country except as they might function in his prescription for salvation."

proved "impractical" by any strong nation's action, would surely discredit pacifist doctrines for a thousand years as was the case in Western Christendom after its near-destruction by Saracen and barbarian invaders during the Dark Ages.

It would seem that such a likelihood of sacrificing his one consistent ideological goal, the establishment of world pacifism, would deter Barnet from urging that the risk be taken. As with many ideologues, he demonstrates a lack of concern for any people or country except as they might function in his prescription for salvation. While the United States is branded as the most greedy and destructive of nations, *all* nations are bureaucracies designed to inflict violence against their own citizens as well as against other states. He reports that nations have seen their day: "The nation-state is obsolete. Patriotism is old-fashioned . . . the shrewd executive believes that national identification is an encumbrance. . . . George Ball, Herman Kahn, and other celebrators of the multinational corporation proclaim the dawn of a new era in international relations. The corporation has outgrown the state, ushering in what Robert Heilbroner calls a 'businessman's peace'. . . ."

"The desire of a few individuals for symbolic *martyrdom may become a radical creed as they work to confer true martyrdom upon their nation."*

It must be all over for the nation-state when "even national security managers admit that the nation-state is obsolete." Barnet fails to document this last discovery, and he does admit that nations can still make trouble even for international corporations. Despite his enthusiasm for the new "businessman's peace," he decides that multinational corporations are the "new imperialists," since they do not need the international poor and "have no idea what to do with this underclass other than to encourage it not to breed so fast." This leaves no hope for peace unless the obsolete number-one nation-state will exercise a kind of global patriotism to sacrifice its strength and perhaps its democracy. It would then no longer be number one, but the process of its sacrifice may have inspired other nations to do likewise.

The desire of a few individuals for *symbolic* martyrdom may become a radical creed as they work to confer true martyrdom upon their nation. It is a natural progression, since the process of recruiting other martyrs and then drafting the entire nation into the role greatly reduces the inconvenience of one's original sacrifice. Peace is a perpetual hope that enlists wider sympathy than any other, so it is normal for professional preachers of peace to grasp at straws. Barnet repeats an optimism that may have an ominous sound for those who can remember beyond the present generation: "National economies are now so entangled with one another that no one can afford to go to war." This bromide was common just before World War I and also before World War II. Over the past century no one could afford to go to war—or to abandon allies, or to surrender.

What hope, then, for such a slogan as "Peace and poverty through military and economic reductions"? Barnet's friendly critics, who are practically the only critics to be found, are skeptical on this point. The *Saturday Review* admits that "unfortunately his apocalyptic formulas for the future do not possess the cogency of his critiques of the past." The admiring Roland Steel regrets that "like most critics of foreign policy, Barnet is stronger on the attack than on the solution." Steel thinks war is much more

likely than Barnet's remedy, and, strangely enough, Barnet feels the same way: "Whether the Nixon Doctrine or some Democratic equivalent works will depend entirely upon what foreigners do. . . . But it seems more likely that before a generation of peace comes to pass other nations will feel strong enough to challenge the revised concept of American supremacy, thus raising the specter of war." This is likely even when warlike American security managers are gone, if Barnet is correct: "The Soviets have developed . . . a national security bureaucracy that looks remarkably like the American, and . . . behaves much like its counterpart too." Interesting if true, for the upcoming Chinese security managers may well outdo both. Barnet avoids discussing the Maoist operators who are still practicing violence on each other and are deeply committed to aggressive violence in their doctrines.

Were we to cease our examination of the radical plan for peace at this point, we might be deceived that, since few radicals really believe it could be attempted in this country, it is of no more than academic interest. Sincerely pacifist radicals such as Barnet are willing to admit that our present economic strength depends upon access to many foreign materials in great quantities. Equally obvious, without their discussing it, is the fact that only an economically and militarily powerful nation can bargain on even terms. Communist nations, other than China, do not bargain with Russia on equal terms. It is the cold reality of accepting the penalties for sacrificing strength that makes the radical plan unsalable. Yet Barnet hopes to inflict it.

How would our nation "organize for peace"? Barnet insists upon this throughout the book, but explains it only at the end. These are the steps proposed by the director of the "radical brain trust":

"The first, and most important, is to shrink the military bureaucracies [read 'forces'] in size so that the balance of power in government once again passes to those agencies which are in the business of building and healing instead of killing and destroying." Regardless of the rhetoric, it is obvious that this step has already been taken. This year's budget message states that fact specifically. And Barnet's next step?

"The second is to re-establish some form of popular control over the national security managers. . . . Congress must reassert the constitutional prerogatives it gave up so long ago in the area of foreign affairs. There should be a constitutional limit on the President's right to commit troops abroad without a declaration of war." This part of the plan, like the previous one, has been proposed many times in the past, but unlike the previous one it has failed of adoption. Now, since *Roots of War* was written, this second step is well under way.

"It is the cold reality of accepting the penalties for sacrificing strength that makes the radical plan unsalable. Yet Barnet hopes to inflict it."

"The third structural change in the national security bureaucracy would be to change the system of rewards and to introduce the notion of personal responsibility for official acts. . . . There must be a new operational code . . . that rewards peacemakers instead of warmakers. It is in this connection that serious discussion of the issue of war crimes in Vietnam is so important." This somewhat muted suggestion for the final step should not be overlooked, for Barnet is not referring here to the "little" men in uniform who claimed to be carrying out orders but to all who "planned" the war and those who participated at higher

levels of command. Here the repeated drawing of parallels with Nazis and other dictators reaches a climax in the recommendation for a new Nürnberg trial, this time in America for Americans.

Why such a shocking proposal as this? Barnet explains bluntly: "Those who strive for peace other than by military means do so at great personal risk; those who engage in bureaucratic homicide do so with impunity." In plain words, those who constantly call themselves peacemakers are persecuted, dangerously so, while those who serve their country in war get away with murder. Barnet and his doctrinal colleagues who professedly "strive for peace" want those who "got away with murder" tried, and they want them punished. Once tolerated and respected as conscientious objectors, they now demand rewards for themselves and punishment for all whose conscience leads them into lines of duty. The sword is more merciful than the radical pen.

"The sword is more merciful than the radical pen."

Despite the disturbing revelation of that ultimate step, all the emphasis is on the necessary first step of the radical plan: shrink the military "until the excessive power of that bureaucracy is broken." If that is accomplished to the degree demanded by many far less radical than Barnet, the second step—reducing the President's power—may not matter a great deal anyway. Of course, the President will still be expected to protect freedom of the seas, freedom to trade with willing partners, and other rights that are essential to American survival as a free nation among other free nations. These rights are more likely to be challenged as we are militarily weakened; and even the radical planners admit this could mean war. Therefore, their now attainable goal, if they are doctrinaire pacifist radicals, is that the United States shall be unprepared. Their voluminous and widely praised writings, such as *Roots of War*, are dedicated to reductions in strength and in spirit. The warning is not veiled. The full meaning is there for all to read. Many do read, but few comprehend the full meaning.

Why men who recognize that their own nation's independence and influence depend upon maintenance of its military and economic strength will counsel the abandonment of that strength to achieve a most precarious peace is difficult to fathom. Yet we know from the history of radical reformist movements, just as we observe in the present instance, that even as they despair of their ever distant goals such zealots provide blueprints and guidance for uncritical sympathizers who know not to what dead end they follow.

Barnet deprecates the capacity of "American leadership" for "understanding and empathy": "Within a few days, I talked to Pham Van Dong, the Premier of North Vietnam, in Hanoi, and to Henry Kissinger, President Nixon's national security adviser, in the White House. . . . The Premier had the ability to put himself in Nixon's place. Kissinger, on the other hand, while evidencing respect and even a little admiration for his adversary's skill, seemed to have no genuine understanding of what motivated him." Whether Kissinger understood what motivated Barnet is not mentioned, but Barnet's own comments invite us to try.

This latest book offers within itself no real basis for understanding, but it does indicate the social ideal to which Barnet is passionately committed and the model governmental system he favors. Considering the first, the social ideal, we are aware that the intensity of a commitment may be revealed by how desperate is the search for justification and precedent. Choosing the

Shoshone Indians as an example to prove a point is a startling ploy: "Despite the efforts of the apologists of American policy to justify permanent war by invoking pop anthropology, the view that militarism is a biologically determined aspect of the human condition cannot stand serious scrutiny. War . . . is unknown among some of the most primitive men—the Great Basin Shoshone Indians, for example, who are about as close to a biological 'state of nature' as one can find." Except for the fact that the Shoshone have not existed in a truly primitive state for at least a century, both statements are true, but at what cost to his argument! Peter Farb's famous book, *Man's Rise to Civilization*, treats these Indians sympathetically and credits them with "having achieved one of the noblest aspirations of civilized man. They did not engage in warfare." Farb also calls them "pitiful and impoverished," too much so to defend themselves. They were not practitioners of war but were nevertheless its victims: "Whenever other Indians invaded their lands and attacked them, the Shoshone did not fight back but simply ran away and hid." In fleeing, they often left their women to the invaders' mercy.

After horses arrived with the Spanish, the Shoshone could not maintain them in their desert hideouts because they and the horses ate the same food and there was not enough. Their mounted relatives, the Utes, captured many Shoshone each spring when they were weak from hunger and "fattened them as slaves for sale to the Spaniards in Santa Fe." Such is the example of peace through self-denial that Barnet chose to cite in the introduction of his book on the subject, and such is the backfire, upon examination, of his own excursion into what he scorned as "pop anthropology." Surely Barnet knew the pitiful fate of the famous "Digger Indians," but in not bringing it up, he relied upon his readers' ignorance of some very pertinent details. Examples that might offer some support for his ideal proposals are obviously hard to come by, but a dedicated zealot will not be denied.

Not to limit himself to primitives, Barnet provides a modern example: "The descendants of the ferocious Swedes who terrorized northern Europe in the eighteenth century are now professional peacemakers." One wonders just how many "professional peacemakers" any nation could support. Barnet fails to mention that Sweden has a military establishment more powerful than that of all the other Scandinavian countries combined. A better example might have been Switzerland, the nation that for more than a century has turned peacemaking and neutralism into a major national asset. It would not do to mention, though, that Switzerland trains its entire male population for war and has seriously considered making its own nuclear weapons.

Barnet is himself an erudite man in many fields. His examples and illustrations are obviously not intended for such as he, but rather for the uninformed and inexperienced

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idealist who already leans toward commitment to some worthy cause. His radical pacifism is not specifically a political cause, despite its use as such. None are more anxious to see American military retrench-

ment than are the militarily expanding Communist nations, but the Institute for Policy Studies is no nest of Communist propaganda. The American philosophical revolutionary no longer weights himself with the millstones of Russian, Chinese, or even Cuban behavior. He simply minimizes the threats they pose and blames his own country's policies, whatever they may have been, as the original cause. In this effort he specializes in pilfered papers, insiders' secrets, anonymous revelations, frequently distorted history, and supposedly applicable observations by great international "thinkers" of the past.

Barnet lists among the most influential for this book such well-known names as Freud, Fromm, Lippmann, Machiavelli, Marx, C. Wright Mills, and, last but not least, William Appleman Williams. Except for the last two, these are recognized innovators in several types of theory. More interesting by far is Barnet's opening sentence, which attributes to Mikhail Bakunin (along with Sigmund Freud) the observation that "the role of the state is to assert a monopoly on crime." Barnet adds, "The very meaning of sovereignty which states guard so jealously is the magical power to decide what is or is not a crime. The 'state' is of course an abstraction. . . ." Throughout the book Barnet repeatedly castigates all "bureaucratic structures" which compose that "criminally homicidal" authority, the "state." Certainly this is not liberalism, socialism, communism, or any other philosophy that recognizes the need or necessity for effective social organization, which in the modern world means "bureaucracy."

"Generally his effort to pillory indiscriminately all persons military results in wild jabs in all directions, so erroneous as to be humorous were the intent less serious."

What is the philosophy? It is anarchism, a late nineteenth century movement in which Mikhail Bakunin was the early "giant." The goal of anarchism was the destruction of every authority and of all government, since the "state," as Barnet complains, has the "power to decide what is or is not a crime."

His objection is that governments rule by "criminal violence" over individuals who should follow only their own consciences, since nothing matters but "the self," a philosophy expressed in the novel and movie *A Clockwork Orange*. The "bureaucratically homicidal" state must be destroyed, by violence, of course, all of which is justified since the end is nonviolence. Barnet wants American "war criminals" (bureaucrats) punished. But in general he appears satisfied with activism such as that of priests Philip and Daniel Berrigan, "who preached symbolic violence against draft records as the means of stopping real violence against human beings in Indochina."

In the early days the action of anarchist revolt was known as "propaganda by the deed." These deeds were always destructive and were often murderous, but all was in accord with Bakunin's most famous statement: "The urge to destroy is also a creative urge." Freud and his followers helped explain the spirit of anarchism and its defiant destructiveness as springing from hatred of parental or other authority figures in childhood. The current recrudescence of anarchism is seldom indiscriminately violent, as was the original. With few exceptions, it is expressed in sublimated form as "symbolic" defiance and as persistent denunciation of all symbols of authority and power.

To say or even to imply that Barnet is "an anarchist" would be as pointless and as inexcusably defamatory as his own re-

peated application of epithets such as "criminal," "homicidal," and "killer" to various individuals. Yet to say that the philosophy of nongovernment which he begins by approving and continues to express throughout the book resembles anarchism is simply to agree with Webster.

A distinguishing characteristic of that philosophy is to be weak and vague on all constructive efforts but intensely specific and direct "on the attack." Here we approach the second favorite target of Barnet's spleen, after his blood-smearing dissection of the national security managers. His repetitive castigation of all things military, which he arbitrarily calls "militaristic," is of course far less adept than his verbal butchery of his erstwhile friends and associates, the national security managers.

Nevertheless, he knows more about high-level military discrepancies than might be expected, and his barbs are not always beside the mark. He is in some degree correct in saying that each service looks to its own interests and that "each military service has also worked out a view of the world that justifies its own self-proclaimed mission." (Barnet's military sophistication does not include the Key West Agreements.) "For the Army, the job is to preserve a 'balance of power' and to keep order around the world through counterinsurgency campaigns and limited wars. . . . The Air Force view of the world is much more alarmist. . . . It is essential to have an enemy worthy of your own weapons and your own war plans. . . . In the 1950's the Air Force and the Army struggled over control of the missile program. The counterinsurgency obsession of the early sixties was in large part a campaign by the U.S. Army to get 'a piece of the action' back from the CIA and the Air Force, which reigned supreme all through the Eisenhower era." All this is difficult for an honest military man to deny, but again the value of Barnet's analysis is diluted when he gets carried away by his theme: "There are tens of thousands of mysterious objects in the Soviet Union which the Army is convinced are tanks but which any Air Force intelligence officer knows are really airplanes."

Little else is contributed in *Roots of War* to the neglected subject of interservice conflicts, although the problem has reached the stage of open warfare in several countries. Barnet fails to attack his favorite target, McNamara's militarized civilians, for their *divide et impera* ("divide and rule"—Machiavellian precept) policy in halting all progress toward true unification of the military services. In fact, as a student of bureaucratic homicide, he welcomes "public display" of costly interservice conflict. Generally his effort to pillory indiscriminately all persons military results in wild jabs in all directions, so erroneous as to be humorous were the intent less serious.

". . . Barnet continues: 'There is much to hate about *America, and nothing so much as American militarism from which so many other evils flow.' "*

Senator Goldwater, a pet hate, is accused of advocating the nuclear bombing of Cuba because in one secret paper he advised the use of the Strategic Air Command there. Barnet charges: "In 1961 the Strategic Air Command was capable of carrying out nuclear strikes only, a fact of which Goldwater, an Air Force Major General, was aware." Elementary logic to the effect that planes which carry large bombs can also carry small ones would have avoided this blooper.

Elsewhere Barnet refers to "the Goldwater-LeMay wing of the radical right."

He must have meant Wallace-LeMay, yet not even these political partners were in quite the same wing. Other names that always appear in books of this type appear here, and the always-leading name, that of Dr. Stefan T. Possony, is misspelled "Possoney." Though he heads a research agency somewhat more respected than Barnet's, Possony is labeled "Professor." Other familiar names listed as "Goldwater's advisers" include William Kintner, Robert Strausz-Hupé, Warren Nutter, and David Abshire. Two Air Force general officers are listed, just as they are listed on almost every radical "nailing" list for the past ten years (to the envy of some of their colleagues): Dale O. Smith and Robert C. Richardson III. Barnet quotes but fails to credit their sensible advice to candidate Goldwater, unfortunately unheeded, which was to avoid making nuclear weapons a campaign issue.

Such antimilitary gaucheries abound in Barnet's as in other hate-all-uniforms anthologies of wrongly charged evils and errors. The principal target is quite naturally the U.S. Air Force, it being responsible for the principal target system. He condemns especially "the mass air raid and the repeated air strike," which are surely opposites, and reminisces that "Americans, along with Germans and British to a lesser degree, have been engaged in this form of bureaucratic homicide for almost thirty years, since the decision in 1942 to bomb Germany into submission." Evidently the Allied ground forces never got word of any such lifesaving achievement, and Barnet appears ignorant of the sixty-year history of concentrated air attacks, which originated in 1914, not in 1942.

"In the radical account, all who worked with the military were wrong and all who worked against them were right."

The term "bureaucratic homicide" for all military action is not out of place in Barnet's peculiar phraseology, since he says "the bureaucratic killer looks at an assigned task as a technical operation much like any other." By such distortions of meaning he is able to indulge the radical penchant for comparing Americans with Nazis, and in this case for comparing American airmen with Gestapo chief Adolph Eichmann, also a "dispassionate long-range killer who . . . hated to visit the camps" despite his "insatiable killing intention."

Comparisons with Chinese leaders ("killers") are avoided, and Russians are seldom mentioned except when Barnet follows the lead of better-known "historians" of the new left who blame Russian bad behavior on American influences. Thus, "The invasion of Czechoslovakia in 1968 was executed and justified to the world in terms remarkably similar to the American invasion of the Dominican Republic three years earlier." That the two "invasions" were almost totally different in nature, purpose, and outcome is scarcely recognized in "mod" academic circles today and completely ignored among radicals. That President Johnson used fewer troops on this excursion than President Kennedy mobilized to cover the registration of James Meredith at the University of Mississippi is little known anywhere. Undistorted history is the corrective most feared by radical polemicists, so ideological "historians" have been widely touted by radicals in recent years.

Of the Russian power-wielders, Khrushchev has become a favorite folk hero among many Americans, perhaps because remembering to put enough "h's" into the name is a mark of some erudition. Barnet's principal statement about him displays a complete lack of erudition on the explosive subject of nuclear weapons: "Since the

ouster of Khrushchev the Soviet Union for the first time in the postwar era has been engaged in a serious effort to catch up to the United States in nuclear arms." Without puzzling over the superfluous term "in the postwar era," one is truly baffled to guess what Barnet could have had in mind. As a champion of nuclear weaponry, Khrushchev outperformed Secretary Dulles and Admiral Radford combined. He ridiculed nonnuclear weaponry, threatened to use nuclear weapons, prepared Cuba for nuclear warheads, broke his nuclear test-ban agreement with Eisenhower, and tested the superbomb that hopefully will stand as the monster weapon of all time.

The revisionist version of history is full of surprises for anyone who has the most elementary knowledge or recollection of what really happened. But courses in recent history are rare, and those who remember are now in the minority. Barnet's statement that in 1952 "the Soviet Union has yet to develop a way of delivering the atomic bomb on the United States" is used to prove a point, yet false by at least two years. With equal recklessness Barnet charges that, despite the self-serving claims of Air Force generals, intelligence shows the Soviets consistently behind in the arms race—a familiar canard which is now countered by arms limitation agreements that allow the Russians certain nuclear advantages.

Right-wingers who are opposite in extremes become favorite targets for Barnet and his school: "Men such as Dr. Fred Schwarz, the Reverend Billy James Hargis, and the Reverend Carl McIntyre preached global conversion by means of the Bomb. Their crusades were well financed by such fierce anticommunists as the dog-food millionaire H. L. Hunt and some of the oil-rich Texans."

While these fundamentalist evangelists are sometimes as careless with facts as is Barnet, they have never preached any such doctrine. *Roots of War* is scarcely read in Texas beyond a coterie at the big University, but if it were and oilman Hunt heard of Barnet's silly description of him, the old gentleman would probably bark right back. McNamara's famous whiz kids might well respond with the intellectual equivalent of a bark at Barnet's claim that they suggested "using the supersonic boom of B-52's to break windows in Hanoi," since not even these brain-busters wanted the B-52s to shed their wings.

Did Kennedy campaigners in 1960 cry "missile gap" because of "erroneous intelligence estimates leaked by the Air Force"? This would be an interesting pot-versus-kettle case if true, but Kennedy's statements on this subject were drafted by once-hawkish Senator Stuart Symington, who had access to all the information.

Is the Democratic Party "the party of arms race"? Do generals covet deployed bases "because famous bases build military morale"? If you question these and many other such statements, then you have no proper appreciation for researcher Richard Barnet, nor for the Institute for Policy Studies, nor for the strong antiwar thrust of the new left, revisionist, and radical movements. In this event, you would probably be in the minority on the faculty of a large, recently expanded university; it is the kind of information that is most believable to "involved" faculty members and students.

No longer is it considered wise to spell America with a "k" or to wave Viet Cong flags, since, as Barnet observes, such actions tend to alienate people: "No one who hates *America* or appears to hate it can change this country." This would be the most encouraging statement in the book if it were true, but Barnet continues: "There is much to hate *about* America, and nothing so much as American militarism from which so many other evils flow." Again he is not following accepted definitions, for *militarism* in the

current radical lexicon—and Barnet's—is not an aggressive attitude or policy such as most Americans oppose but is *all things military,* or as Webster puts it, "of or relating to soldiers, arms, or war." To this Barnet and his ideological brethren would add all civilians of whatever occupation who do not display, as he does, hostility and suspicion,

"The total message of Roots of War *is, strangely but clearly: 'We must* reject *our power.' "*

if not fear, of all military personnel in this country or any other, with the possible exception of "people's" soldiers such as the Viet Cong.

Take the case of Leonard Sullivan in the Office of Defense Research and Engineering, who testified that in a few years electronic instrumentation will enable us "to tell when anybody shoots, what he is shooting at, and where he was shooting from." Now, it would be difficult to imagine anything more attractive to a man of peace who really wants to stop the shooting than such a device, but somehow the very existence of scientist Sullivan so infuriates Barnet that he writes: "One need only listen to the testimony . . . to appreciate that this professional killer is embarked on an intellectual adventure." Ordinarily Barnet reserves the epithet "professional killer" for men in uniform and "bureaucratic killer" for civilians in the Departments of Defense and State, but he seems to provide a special place in his inferno for scientists who work on anything that might connect with a weapon.

Always on the attack, moving fast and firing from the hip, Barnet neglects no targets, civilian or military. He accuses McNamara of deception to "neutralize bureaucratic opposition," this time the opposing "bureaucrats" being the Joint Chiefs of Staff. In another situation, after the Tet offensive, ". . . Secretary McNamara and Assistant Secretaries McNaughton and Enthoven, were arguing that to accept the recommendations for more troops would amount to giving the JCS a 'blank check.' " Johnson was so taken aback by the JCS request for seven hundred thousand troops for two more years that he began to back away from the war and from the Presidency. Strangely, however, Barnet tells in another passage that the same prediction was made two years earlier, with opposite results: "When, in 1966, the Chairman of the Joint Chiefs of Staff told President Johnson . . . that it would take seven hundred thousand U.S. troops at least five years to achieve victory, the President told the general he was crazy and walked out of the room."

Apparently it is impossible to "process and vent without intermission all today's ugly secrets" without getting crossed up on some of them. These stories indicate Johnson refused to believe the Joint Chiefs at all, despite the complete consistency of their estimates in 1966 and in 1968. Then whom did he trust? Did McNamara, McNaughton, and Enthoven persuade Johnson in 1966 that JCS estimates were insanely high and in 1968 that they were too low to be credible, even though the second estimate was a vindication of the first? It is almost unbelievable that these responsible civilians could have remained influential after such inconsistency and that the Joint Chiefs should have lost influence after they were so accurate in their judgments through the two worst years of the war.

For all this the military leaders are given no credit in the book, and it becomes obvious that here is, after all, a pattern to Barnet's random attacks. The national security managers are favorite targets because Barnet was one among them, as was Ellsberg with his xerox eyes and tape-recorder brain that "recalled" innumerable conversations word

for word. These conversations were with friends and associates who trusted him at the time. Since few if any military men trusted him, they are less prominent in "under-the-dryer gossip."

In this scenario of scandal, the military are the managed rather than the managers, but their evil practices are basic to the value system of the story. In the radical account, all who worked with the military were wrong and all who worked against them were right. Barnet's basic target is revealed in his most sweeping and inaccurate pronouncement concerning the war's residue: "The Air Force already has its version of the 'stab in the back' myth: The civilian leaders were unwilling to kill enough people fast enough to win the war."

Such a statement distorts the Air Force's long-established concept of its mission. Despite Barnet's admonition to understand one's enemy, he makes no effort to understand or even to analyze the institution that is his most constant target. It represents to him the culmination of evil, not its roots. The particular national security managers whom he could pillory so mercilessly because he was among them—he lists his culminating title as "consultant to the Department of Defense"—are gone now, back to their various schools, research organizations, and other "academic cover." The military remain, to pick up the pieces and prepare against whatever threat may next prove too forceful to be parried by words.

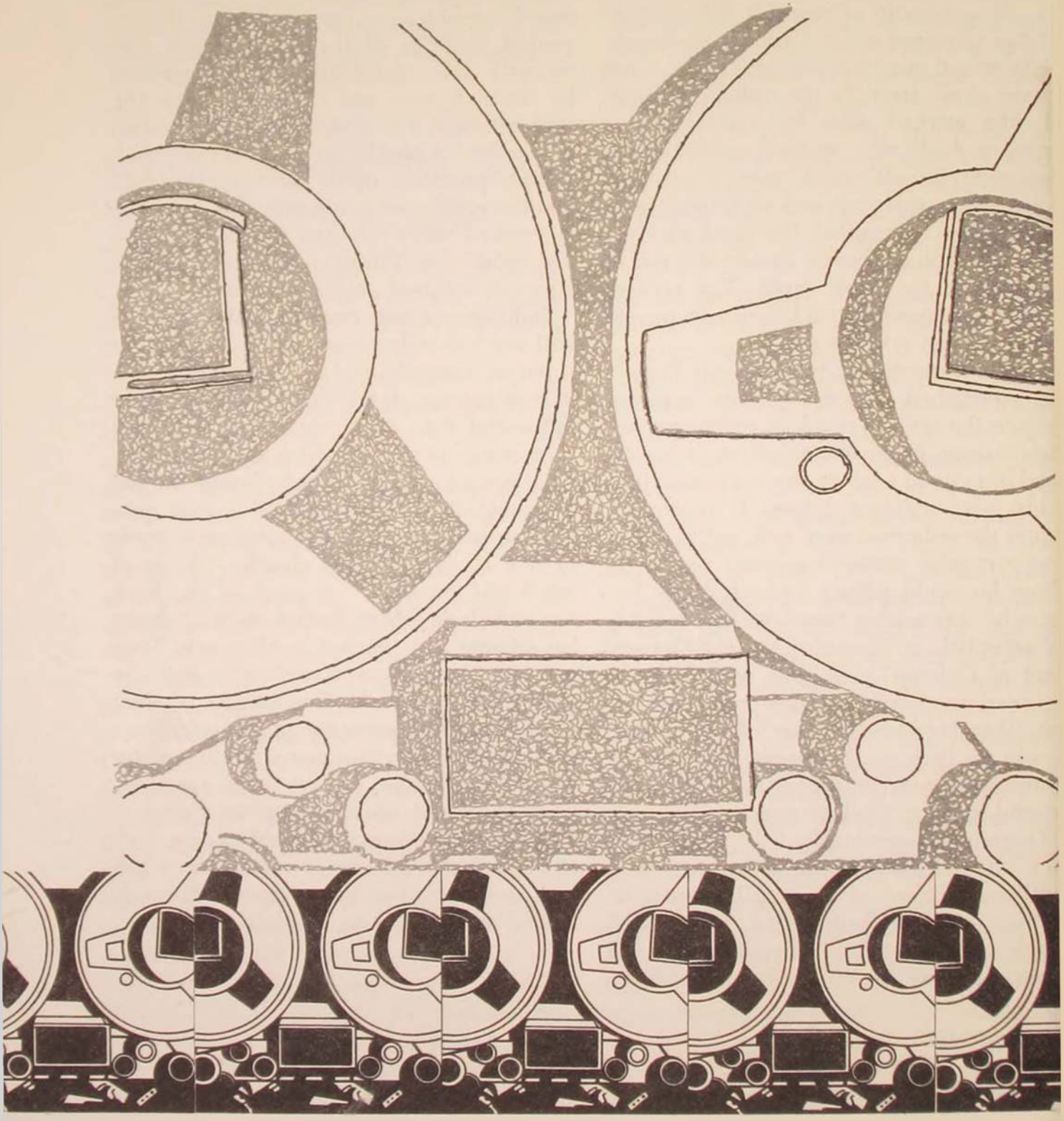
There is no occasion for any "stab in the back" attitude, despite the frustrations and fruitless sacrifices of the earlier years in Vietnam and the humiliating bluster and bungle of a few public officials. Pilots and crews of all services were able ultimately to move toward an end of the war, and they did what had to be done for this purpose. As compared with other military miseries of American history, such as the culpable mismanagement of the 1812 war, the forfeited campaigns of the Civil War, the repeated futilities of the Indian wars, and recently the consecutive embarrassments by North Korean and Chinese armies, the Vietnam war was reasonably well handled in the field. Considering both the unprecedented pressures upon them in the field and the indifference at home, the men who performed effectively through the last years and months of Vietnam deserve a special honor as veterans among veterans.

Indifference and even hostility at home will not suddenly disappear. *Roots of War* is but an example, and not an extreme one, of a mounting attack that is already more influential than is generally believed. Yet its message is simple and is the obverse of what Barnet calls an "inanity" once uttered by Secretary of State Rusk: "We must project our power." The total message of *Roots of War* is, strangely but clearly: "We must *reject* our power." For good or ill, Rusk has had his day. Now Barnet and his cohorts have theirs, but there is a difference. They are not in positions of authority and can only try to persuade. The targets of their persuasion are known: the young academics and certain vulnerable men in public office. Counterpersuasion, to be most effective, must be based upon an understanding of radical motivations, philosophies, methods of argument, and use or misuse of words and meanings. For this purpose, *Roots of War* is an outstanding revelation.

San Antonio, Texas

ADP CENTRALIZATION AND THE USAF FUNCTIONAL MANAGER

MAJOR EDWARD E. REYNOLDS, JR.



THE relative merit of centralization of data processing versus decentralization has been a subject of concern for those associated with Air Force automatic data processing (ADP) for a number of years. In 1972, as a result of the installation of third-generation computers, budget limitations, and pressures from the federal government to manage ADP resources more efficiently, the Air Force reorganized data processing at major air command and higher levels. This reorganization reduces the decentralization arguments to academic discussions but does not necessarily solve the problems that promoted concern in the first place.

The purpose of this article is to identify problems in the interrelationship between the functional user of automatic data processing and those specialists tasked with supporting the user. A brief history of the Air Force ADP move towards centralization will provide the background.

The Air Force has several automatic data processing systems located at all levels within its organization. Located at base level are usually two third-generation computers, a UNIVAC 1050-II supporting a worldwide logistics system and a Burroughs 3500 providing support for Accounting and Finance, Personnel, Pay, Civil Engineering, and others as required. At major command level there are computers from most of the major computer manufacturers to support command and control, intelligence, planning, and special applications such as weather, strategic planning, airlift, tactical control, and weapon system development. Hq USAF uses Honeywell and IBM computers to support the Air Staff, the Office of the Secretary of Defense, and other agencies of the federal government.

In 1955 the Directorate of Statistical Services (predecessor to the current Directorate of Data Automation) was given responsibility for managing the punched card accounting machine (PCAM) equipment and computers throughout the Air Force. During the following seven-year period, most PCAM procedures and computer programs were developed by the statistical services activity at the organizational level where the equipment was used. Generally, the standardization of report formats was the only centralized effort directed towards ADP. In 1961 an Assistant for Data Automation was designated at Hq USAF under the Comptroller to centralize and coordinate all ADP design efforts. This move was followed in 1962 by the establishment of the Directorate of Data Systems and Statistics and the Data Service Center, a field extension for centralized Hq USAF computer processing in the Pentagon. At this time functional areas were given the responsibility for design and development of standardized systems. Decentralization of data systems responsibilities, including operation of equipment, occurred in some areas.[1]

Initially all base-level support was provided by one computer operated by the base comptroller. The second base-level computer was installed when Hq Air Force Systems and Logistics developed a worldwide base-level supply system. The system was centralized to the extent that the hardware procurement and software systems were developed and standardized at Hq AF. Base-level ADP personnel were prohibited from making local modifications. The true test of the worldwide supply system came in Vietnam, and the system proved to be a valuable management tool.

The base comptroller's computer was upgraded to third-generation equipment and used to support worldwide management information systems in several functional areas: Personnel developed the Base Level Military Personnel System (BLMPS); Civil Engineering, the Base Engineering Automated Management System (BEAMS); and Comptroller, the Budgeting and Accounting

System (PRIME). All three systems utilize remote terminals interfaced with the Burroughs 3500 (B-3500) central computer. The software for all three systems was designed and maintained by a central Data Systems Design Center. Functional analysts assigned to the center played a key role in developing these systems.

Although the base-level B-3500s are not linked directly with other bases, they do output standard reports that are transmitted over the Automatic Digital Network (AUTODIN) to other bases.

During the late fifties and early sixties Air Force technology was producing rapid advances in computer technology. These industry-leading advancements were to develop command and control systems for the Air Defense Command, Strategic Air Command, and the North American Air Defense Command.

ADC's SAGE (semiautomatic ground environment) system pioneered the development of magnetic core memory and cathode ray tube (CRT) display consoles. SAGE also pioneered in integrating data acquisition, processing, and controlling functions. The management of the system was centralized to the extent of hardware procurement and software systems. Initially the system was deployed at 29 locations with decentralized operational control. SAGE was developed at Massachusetts Institute of Technology Lincoln Laboratory in the mid-1950s and was upgraded in the 1960s by the backup intercept control (BUIC) system. In essence, BUIC is a transistorized SAGE system operating at twelve locations. Its management control is similar to that of the SAGE centers.

A second major system was developed for SAC. Strategic Air Command and Control System (SACCS) was the first major system to combine specialized communications with computers. Both teletype terminals and voice communications provided a worldwide link between the Hq SAC Command Post and each unit's command post. Large computer-generated multicolored displays were another advancement pioneered by SACCS.

NORAD developed the Ballistic Missile Early Warning System (BMEWS), which combined communications and radar inputs with the computer. All three systems were designed, developed, and managed within their separate organizations. Both SACCS and BMEWS were highly centralized, with computers installed in only a few locations. In SACCS all personnel and hardware were managed by the functional manager.

While SAC was developing its own command and control system, the other major commands were centralizing their command and control systems under the Air Force Integrated Command and Control System (AFICCS). The degree of centralization under AFICCS called for common hardware (IBM-1410), operating systems software, and report formats. Since the computers were not tied together, each location had its own files and functional user applications programs. The centralization started to fall apart when third-generation computers (IBM-360) replaced the original second-generation computers in AFICCS. The IBM-360 offered a variety of operating systems, and each organization made its decision as to which system would be best for its operation. As a result, at least four different systems were installed as of May 1971.[2]

Another ADP system located at major command and higher levels is the Intelligence Data Handling System (IDHS). The differences in IDHS requirements at each operating location precluded any standardization of hardware or software. The only centralization in IDHS was in the planning and procurement of hardware; otherwise, each IDHS computer was autonomous in both hardware operation and software design. Air Force Systems Command's ADP requirements resulted in a similar system.

The evolution of Air Force ADP personnel was also decentralized at the start. The only Air Force Specialty Codes (AFSC) utilized exclusively with the computer were in the comptroller-statistical career field. Other ADP personnel had a prefix added to their functional AFSC—or in the case of mathematicians a suffix—to identify their computer expertise.

By the late sixties the Air Force had a large number of computers, along with supporting staffs from different functional career fields, with no single manager of the system. In 1967 Hq USAF established the USAF Data Systems Design Center (AFDSDC) with the mission to analyze, design, develop, program, test, implement, and maintain all automated data processing systems as assigned by Hq USAF.[3] Primarily, their efforts were directed towards the base-level systems. Responsibilities in the areas of command and control and Intelligence Data Handling System were not assigned to AFDSDC.

The next step towards centralization took place in 1970, when Air Force established the "Computer Technology" career field (AFSC:51XX). The ADP AFSC's in the comptroller and mathematician career fields were converted to 51XX, thus allowing for a more flexible utilization of computer expertise within the Air Force. Since 1970 many ADP organizations have also converted functional AFSC's with the "C" or "D" prefixes to 51XX. This move gives the ADP organization a better mix between functional and computer expertise.

For a number of years the Congress has been critical of DOD ADP management.[4] The Air Force had over 1200 computers in FY 72, valued at almost $1 billion.[5] The Secretary of the Air Force had become concerned with the cost and time involved in acquiring ADP due to the DOD centralized control of ADP procurement.[6] The logical step was to appoint a single manager over Air Force ADP. Since the Executive Office of the President and the Department of Defense had placed ADP under their comptroller organizations, the Air Force followed suit. Effective 29 February 1972, the Air Force Data Automation Agency (AFDAA) was activated, with three subordinate centers: the Air Force Data Services Center (AFDSC), the Air Force Data Systems Design Center (AFDSDC), and the Federal Automatic Data Processing Simulation Center (FEDSIM).[7] The overall mission of AFDAA is to provide centralized management and common organizational alignment of similarly engaged ADP activities.[8] The Comptroller's Director of Data Automation also serves as the Commander, AFDAA.[9]

Throughout the Air Force at major command level, similar reorganizations took place. As an example, SAC, which has the largest number of military ADP personnel assigned to one major command in the Air Force,[10] combined its operations, intelligence, and comptroller ADP organizations into one organization. Of the more than 1400 ADP personnel assigned to Hq SAC, fewer than 200 were left with the functional user.[11] One difference exists at SAC in that the Director of Data Automation reports to the Chief of Staff instead of the Comptroller.

user/ADP relationship

Today the Air Force has third-generation computers with enormous potential to assist the functional manager in his decision-making. The ADP organization has come of age, with its own career field and control through its centralized organization. There are still complaints from the functional users. In the 1971–72 classes at Air War College and Air Command and Staff College, the problems of ADP constituted a popular area of research.[12] An underlying theme in many of the research reports was

how to improve the relationship between the user and ADP. A recent study of the SAC ADP reorganization uncovered areas of discontent in the relationship. Therefore, let us examine some elements of the relationship.

Base level. At the base level the initial reaction of the user is that he has to live with a system forced on him by regulations. He is told what information he must submit to the ADP center and what output he is to receive. True, he now has some flexibility through remote computers to query the computer and receive some data on a random basis, but the format of his query and the output are highly structured. Whether he uses an output product or not, he still receives them. (He soon learns after an operational readiness inspection that there usually is a good use for the product.) If he desires additional information or reformatted data on a continuing basis, he is discouraged in his efforts by the paperwork required by ADP to consider the request.

Very little innovation is done at the base level. The relationship between user and ADP is firmly structured. A poor relationship exists only when personalities conflict or if mechanical problems create excessive "computer downtime" when a user has a pressing need for support.

ADP personnel at the base level sometimes forget that they exist to support the user, not just to operate the computer. Without the user, the need for the computer does not exist. Thus, base-level ADP personnel must become familiar with the users' products and requirements. Often they have the ability to assist the user in solving a unique or one-time requirement. The functional user also has a responsibility to educate himself on the base-level ADP system. ADP cannot support him if he does not ask for the support or if he does not know what support is available.

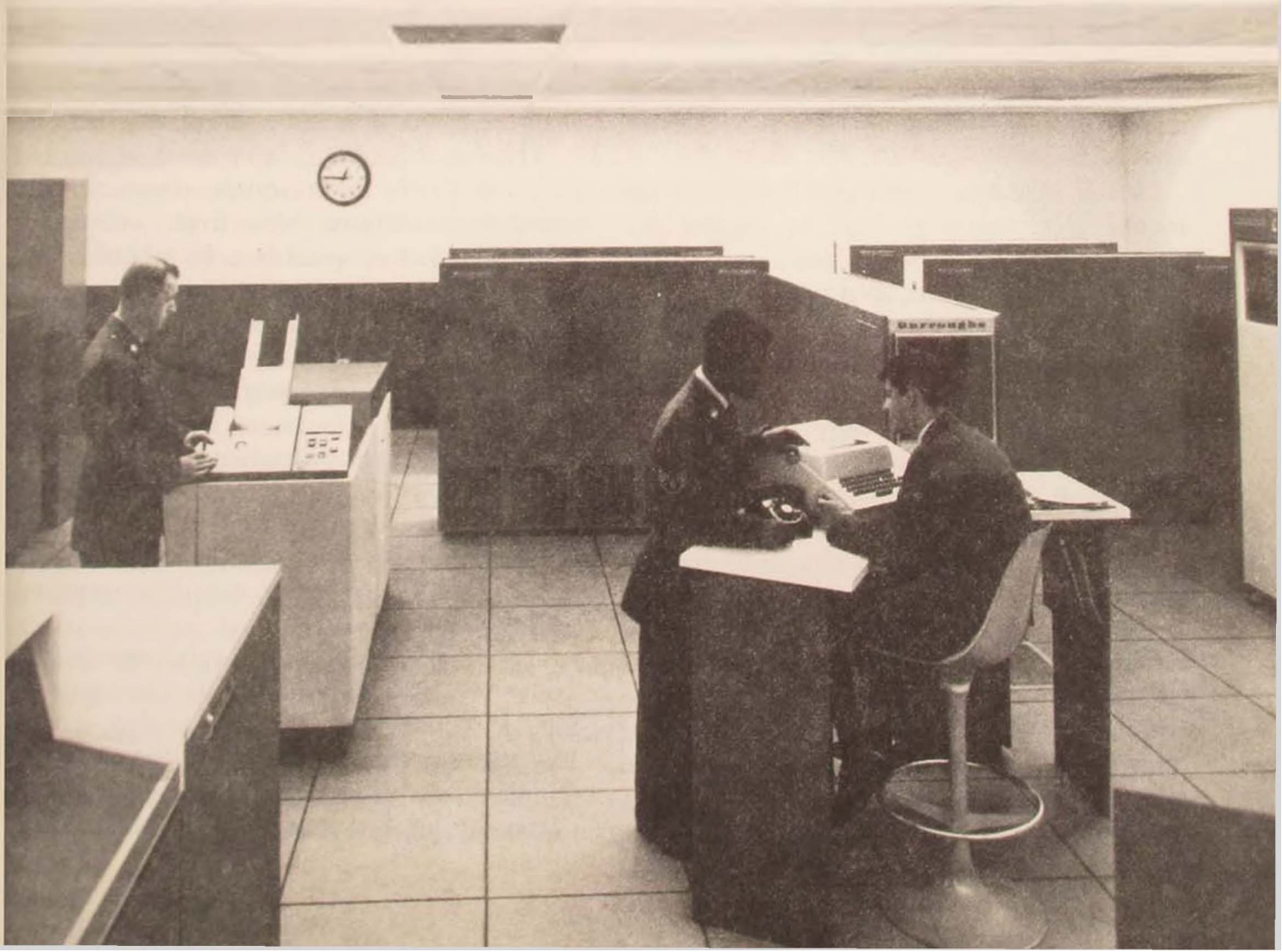
How many functional managers who are required to submit data to or who receive reports from the ADP center have ever visited the center or received a briefing on its operation? How often has the same manager sat down with the ADP manager and discussed mutual problems? In order to have an effective relationship, there has to be a line of communication and understanding.

As previously mentioned, the base-level application software is designed and maintained at higher headquarters. Representatives of the functional areas participate in the design. For the most part there are experienced functional personnel trained in ADP. Most were selected from the very type of organization that will be supported by the product under design. The Air Force operates in a dynamic environment; the functional expert one or two years out of the area begins to lose touch with the day-to-day problems with which he was once so familiar. The base-level functional manager therefore has a responsibility to provide feedback on the effectiveness of his ADP support. He is an important person! The system exists to support him, not for him to support the system. If he finds he no longer needs a certain ADP product or could use some additional information, he should inform his higher headquarters of the situation.

This does not necessarily mean that he has to submit a formal change request (which is highly desirable), but it does mean that he is responsible for providing the feedback to his functional representative at the design center so that ADP analysts can review the situation.

The base-level Data Processing Installation (DPI) manager has a similar responsibility towards the higher headquarters. He also is an important person! The ADP analyst responsible for system operation needs the feedback from the unit level in order to provide the best support possible. The DPI manager can also assist the functional man-

Air Force automatic data processing (ADP) systems usually include two third-generation computers at base level: (1) a UNIVAC 1050-II (left), operated in real time to control all input and output transactions of the worldwide logistics system; and (2) a Burroughs 3500 (below) to interface management information in such functional areas as personnel, engineering, and comptroller.



ager in forwarding his feedback to the proper analysts. By working together at base level and providing feedback to the design centers, these managers naturally improve the harmony and effectiveness of the system.

Major Command Level. At the major command level the situation is different. The type of ADP in operation provides for daily contact between the functional user and the ADP analysts designing and maintaining the system supporting the user. Therefore, the feedback should be easy and the relationship at its best—but it isn't necessarily true. For the most part, it is even less favorable than at base level. At the base level the user and ADP personnel work within a system directed from above, and thus they develop a sense of comradeship in a situation over which they have little control. By contrast, at major command level the user often perceives that ADP can do more for him, and the ADP analyst perceives that the user could be more helpful, understanding, and cooperative in solving ADP problems.

It was at major command level that the recent reorganization had its biggest impact. Prior to the centralization, the ADP function was often located within the functional area, with the functional user and ADP personnel working for the same manager. If problems arose that affected the user/ADP relationship, they could be resolved at the manager's level.

Also, at major command headquarters the user/ADP relationship is similar to that in industry, especially in the management decision-making involved in planning and analyzing performance. Centralized Air Force-wide applications programs cannot be used in this environment. Close interaction between user and ADP analyst is required. The types of programs developed have to be highly flexible and dynamic. Weapon systems change, guidance changes, concepts change, and the planning factors change. The decisions required this year are not the same as the decisions made last year, nor will they likely be the same as the ones required next year.

It is in this dynamic environment that the functional user has to operate. The increased complexity and sophistication of the Air Force require increased and more efficient ADP support. As an example, the target application of the newest missile systems cannot be accomplished manually. Each sortie's trajectory has to be simulated through a computer program to insure that the targets selected are valid. The days of "pins and strings" and range arcs on charts are gone forever. In addition to those problems that cannot be resolved manually, there are increasing requirements to make optimal decisions requiring computer iterations in support of the impacts of budget cuts, SALT talks, personnel cuts, and weapon system allocations. Effective decisions in many areas are highly dependent on ADP support; yet ADP is not a simple tool to use.

The functional manager is often limited in his ability to question the computer. The computer restrains him from asking all possible types of questions. In addition, the answer he receives is often in a format that gives him more or less information than he needs.[13] He is also often frustrated by the time required to receive an answer to his questions. If the manager is not educated in the ADP system providing his support, he can be frustrated also by asking simple (to his mind) questions that the computer cannot answer either because it does not understand the request or the data required are not available.

On the other side of the relationship, the ADP specialist is often frustrated in his dealings with the user. The ADP analyst would like to have the user describe the problem and be available for consultation and operational testing, but otherwise he wants to be

left alone to design the solution. He is very unhappy when changes are requested after the design phase is started. The inability of the user to state exactly what he wants is rarely perceived as a lack of ADP knowledge but more often from the viewpoint that the user does not know what he is doing or what he wants. The analyst therefore proceeds to design a system as he thinks it should be. If it is not accepted with enthusiasm by the user, the analyst often retreats into a shell and turns his efforts to another project that hopefully will be more rewarding psychologically.

Two characteristics emerge from this discussion that often create unfavorable user/ADP relationships. The relationship begins to deteriorate when either or both parties have a lack of understanding of their opposite activities. Five lieutenant colonels conducted research on the relationship while attending the Air War College in fiscal year 1972. They developed three possible alternatives for improving the relationship:

1. Require functional users to develop a detailed understanding of ADP.

2. Require ADP analysts to develop a detailed understanding of the functional area they support.

3. To both the functional organization and the ADP organization, assign only personnel who have a thorough understanding of both activities.

Their recommendation was to select the third alternative.[14]

To a great extent their recommendation was followed in decentralizing ADP organizations. As an example, until the establishment of the computer technology career field, most analyst programmers assigned to Hq SAC's operations and intelligence ADP organizations had functional AFSC's with "C" or "D" prefixes. It became apparent over the years that there was a weakness in the system. A SAC navigator trained in ADP and assigned as an analyst to support the activities of the Joint Strategic Target Planning Staff (JSTPS) could communicate with the planner in the planner's terminology, but he did not really understand the day-to-day job of the planner. The only thing they had in common was their SAC crew background—neither fully understood the other's activities.

Major command activities of functional users are unique to that major command. Personnel are normally assigned to a three- or four-year tour. Thus it is rare that the ADP manager can find an individual experienced in both ADP and the specific functional areas he is tasked to support. It was sometimes accomplished when both organizations were under one manager; intradivision transfers could be accomplished, especially when an individual was promoted out of a job. Under the new centralized organization and AFSC's, it will become less frequent. The sophistication of present-day computers requires more training and dedication than the early computers. ADP specialists are more effective in the ADP organization than functional specialists trained in ADP.

One answer is to develop the functional ADP analyst located in the functional area.[15] In the Air War College report previously cited were the following recommendations:

1. That the ADP office provide ADP familiarization for the functional managers they are tasked to support.

2. That a "functional ADP analyst" position be created in each functional organization at an appropriate level in the hierarchy to allow him to perform effectively.

3. That the functional ADP analyst's duties be:

a. To serve as the centralized ADP authority in his areas of assignment.

b. To act as liaison between his area, the ADP organization, and other interacting functional areas.

c. To maintain ADP expertise.

d. To lead all efforts within his area that concern the application of ADP to the area's activities.

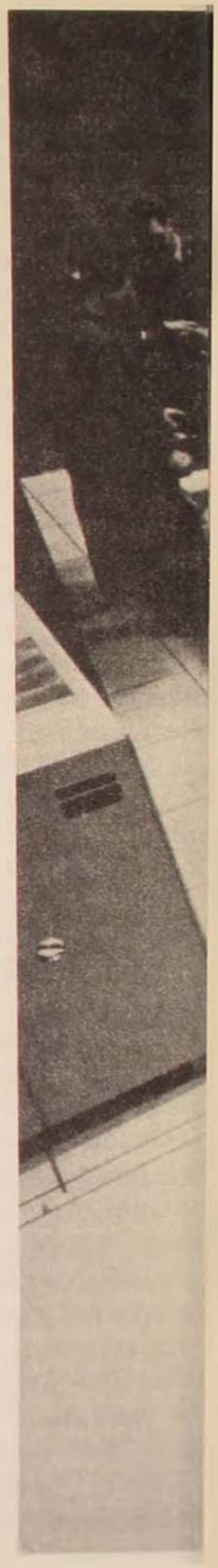
e. To participate with like analysts to improve the overall system.

These recommendations deserve serious consideration by Air Force personnel and manpower planners. In the interim a more practical solution must be found. Not every organization has the work load to support a dedicated analyst. Yet the organization needs to participate in the user/ADP relationship. The budget and consequent personnel limitations imposed by Congress will also hamper enactment of the recommendations. What is needed is a solution that can be implemented today.

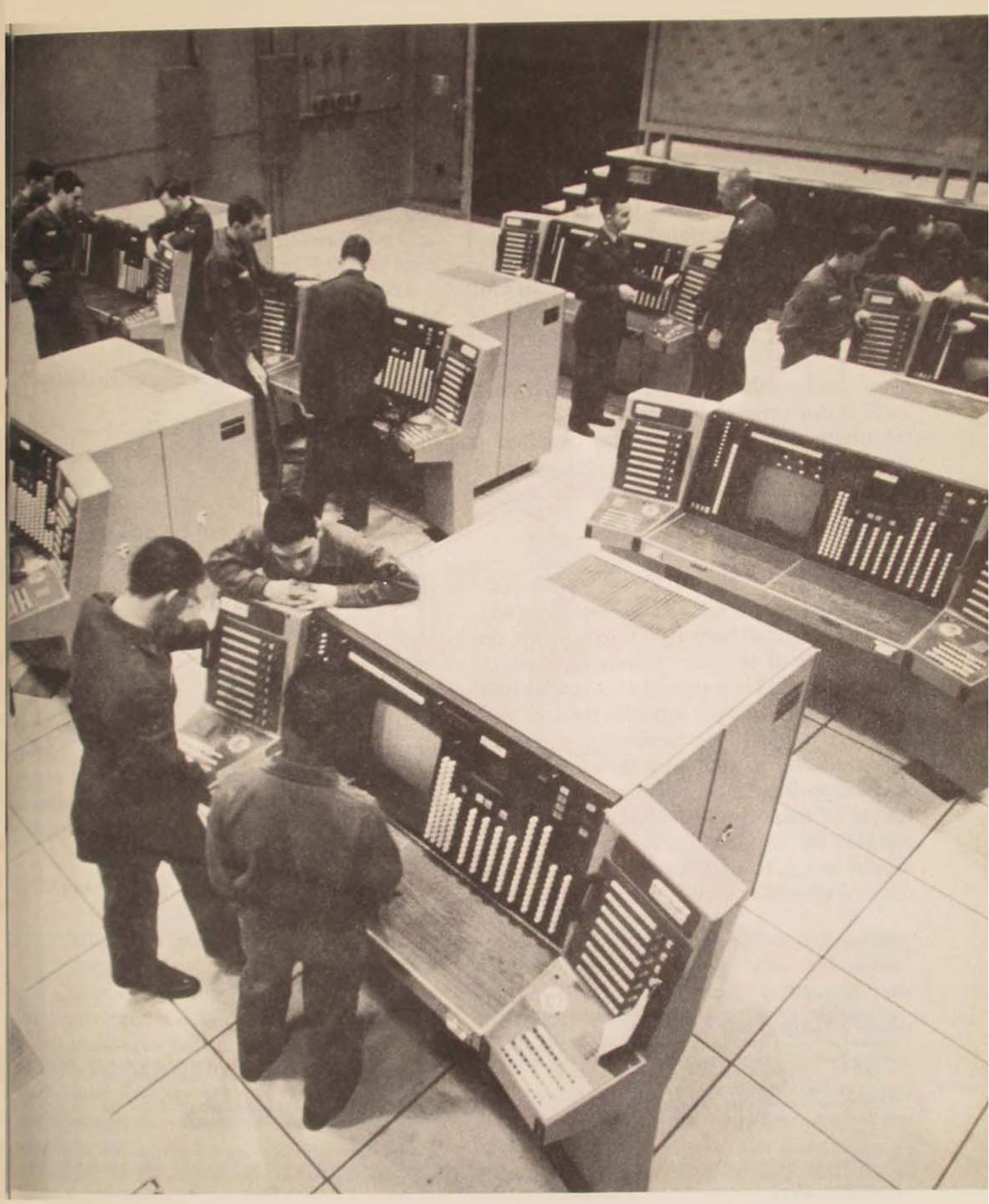
conclusion

There is a danger in the overcentralization of automatic data processing. The functional user can become frustrated when he lacks an understanding of the support that ADP can provide him. If he becomes too isolated as a result of the centralization, he has difficulty communicating with the ADP analyst. Their relationship may soon deteriorate. The ADP analyst also contributes to the deterioration when his own activities become more important than supporting the user or when through lack of effective communication with the user his products do not fulfill the user's requirements.

The centralization of ADP organizations is here to stay. Both the functional user who lost control over his ADP support and the new ADP organization must learn to live with it effectively. Just because he no longer has an ADP element in his organization, the



The BUIC backup intercept control system is essentially a transistorized SAGE system. Operated at twelve locations, its management control also resembles SAGE's.



functional manager cannot stop being involved with ADP. ADP exists to support him, and he has a responsibility to work closely with the ADP analyst to assist him in developing the required support.

The ADP manager must guard against the computer's becoming more important than the functions it is tasked to support. Even though he has functional experts assigned, they may never have actually worked in the exact areas supported, or they can soon become outdated in their knowledge of the details of the area they represent. At Centralized Design Centers such as AFDSDC, they can become stale very rapidly if feedback is not provided by the base-level user. At major command level the problem is more a "people" problem in the communications and interactions between the analyst and the functional user.

recommendations

Functional managers who rely on ADP support should first become familiar with the capabilities of the ADP system tasked with their support. They should also task at least one individual in their subordinate area with the responsibility of becoming a central ADP authority. If the work load is apparent and the position can be justified, they should create a "functional ADP analyst" as recommended by the AWC study; otherwise they should assign the function as an additional duty. With either choice, they should insure that the individual selected has a thorough knowledge of the ADP systems applicable or else have him receive adequate training. In many functional organizations, company-grade and junior field-grade officers have had computer courses in college. The functional managers should seek out those within the organization with computer expertise and put them to work to help both the manager and the overall system.

ADP managers should live by and preach the following guidelines for an effective relationship with the user:

- It is the USER's responsibility to determine
  WHAT needs to be done
  WHY it needs to be done.
- It is ADP's responsibility to determine
  HOW it will be done
  and to coordinate with the user
  WHO will do it
  WHEN it will be accomplished
  WHERE it will be accomplished

IN THE PAST the Air Force has been an industry leader in computer technology and applications. In the future the Air Force should continue to develop if it can enjoy a strong relationship and positive feedback between functional users and automatic data processing organizations.

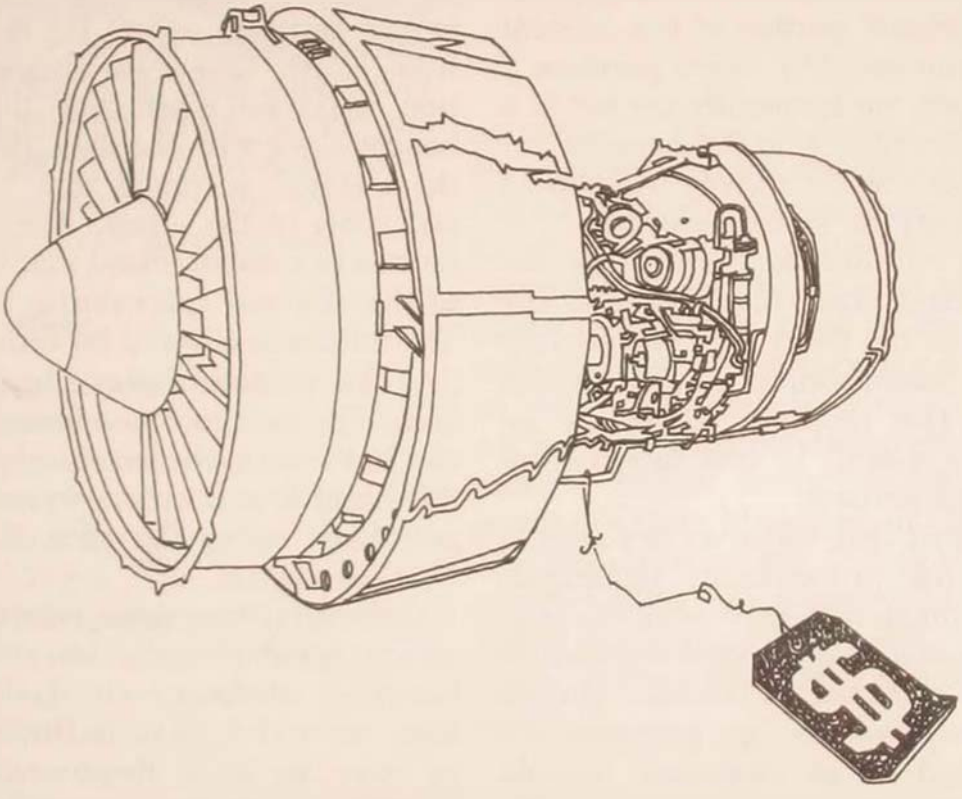
University of Nebraska (AFIT

Notes

1. Major Donald J. Berg, "Establishment of a Computer Command," Air Command and Staff College thesis, 1972, p. 16.
2. Lieutenant Colonel Phillip J. Wendt, "WWMCCS–1980 Command and Control: A Study of Computer Management," Air War College thesis, 1972, p. 19.
3. Air Force Regulation 23-42, para 2-a.
4. *Government Electronic Data Processing Systems*, p. 302. See also *Report to the President and the Secretary of Defense on the Department of Defense*, pp. 151–58.
5. Spencer J. Schedler, "Data Automation Program Redirection," *Supplement to the Air Force Policy Letter for Commanders*, July 1972, p. 24.
6. *Ibid.*
7. AFR 23-40, para 1-a.
8. *Ibid.*, para 2-a.
9. *Ibid.*, para 3-a.
10. SAC's authorized manning of AFSC 51XX was 225 as of January 197 USAF authorized manning of AFSC 51XX on the same date was 1812.
11. Reorganization background data supplied by SAC/ADE.
12. *Air University Abstracts of Research Reports*, 1972, pp. 36, 46, 71, and 8
13. Eric W. Wolf, "Command Information Systems—What Was Promise What We Have, What We Need," *Data Automation Digest*, August 196 pp. 24–25.
14. Lieutenant Colonel Clark R. Aamodt *et al.*, "Relationships Between Fun tional and Computer Elements," Air War College thesis, 1972, p. 5.
15. *Ibid.*, pp. 58–59.
16. *Ibid.*

IMPROVED SYSTEMS SUPPORT THROUGH DATA ACQUISITION

LIEUTENANT COLONEL DAVID N. BURT



THE SUPPORT we provide for our defense systems is greatly affected by the availability of suitable engineering reprocurement data. Additional procurement costs frequently arise when acquiring replenishment spare parts as a result of the nonavailability of the right data. The Air Force acquires some half million new pieces of engineering data each year. These data are used as the basis of reprocurement of spares for support of our defense systems as requirements develop. The reprocurement problems resulting from nonexistent or inadequate data include additional procurement costs, manufacturing problems, and quality problems.

In this article we will examine some of the problems resulting from inadequate data, describe the data acquisition process, identify problem areas in the data acquisition, and advance possible solutions to our data problems.

Impact of Inadequate Data on System Support

The *Dayton Daily News* of February 22, 1972, reported that according to Representative Leslie Aspin (Democratic Congressman, Wisconsin) a General Accounting Office report had recently stated: "It cost the Air Force $56 million in markup to buy F-111 parts through the prime contractor, the General Dynamics Corp., instead of from subcontractors making the parts. A 'significant' portion of this amount could have been saved by direct purchase."

Unfortunately, we frequently are not in a position to determine who the manufacturing subcontractor is for a given component because of faulty or incomplete data. For example, the information available to the Air Materiel Area (AMA) responsible for the landing gear on the C-5A does not identify the ultimate manufacturer of the various components. This problem, caused by inadequate data, results in cost increases of from 50 to 100 percent.

It is estimated that when we are able to use competitive procurement techniques we save an estimated 25 percent of the noncompetitive price.[1] An extreme example of this recently occurred at Warner Robins AMA. Data required to "go competitive" were developed on an electronic module that had previously been procured "sole source" at a cost of $500 per unit. The competitive price was $94 each. Over $200,000 was saved on the first competitive buy!

Based on a number of interviews, Grant Flint and Franklin W. Jesser have developed a table depicting the range of possible dollar savings in each of the last four fiscal years *had data adequate for competitive procurement been available.* The calculations reflected in the accompanying table are based on the estimate of a 25 percent average savings resulting from competitive procurement over sole source. These calculations indicate that as much as $147 million in spare parts acquisition could have been saved if we had bought adequate data when we acquired the systems being supported!

manufacturing problems

Our experience with the purchase of spare and replacement items using contractor-furnished data has been very unsatisfactory. For example, in the late 1960s Sacramento AMA (SMAMA) bought some lower-wing skins in two separate orders for the F-100 fleet from North American Rockwell Corporation. Data for fabricating the skins were bought along with the skins. (Wing skins are the metallic coverings that fit on the ribs and spars of the wings. They are cut and formed to a standardized size, then attached to the ribs and spars during modification.) The tolerance allowed for fitting these skins (i.e., the amount of play allowed) was 3/32 inch. The skins received from North American in these two orders fitted properly. The third and fourth orders were placed competitively, using the data obtained from North American.

Generally, the skins received on these competitively placed orders also fit properly, but many of them were well out of tolerance. Some of them varied from the standard by over an inch. Engineering at SMAMA investigated the problem and found that it resulted from a designation that had been placed on the drawings by North American Rockwell. This designation indicated that "hand pressure" could be used during quality control checking to bring the skins into alignment; i.e., if the skins could be brought within the allowed 3/32-inch tolerance by applying hand pressure, they were acceptable. Unfortunately the interpretation of "hand pressure" by the source under the competitive buys was different from the

orth American interpretation of "hand ressure." Production of the unsuitable ins occurred because the competitive ource's interpretation was "looser" than ie North American interpretation. No rbitrary measurement of this designation .g., x number of pounds of hand pressure er square inch) exists; therefore, the con- actor was legally justified in using the looser" interpretation. The Air Force was bliged to pay for unusable skins.[2]

One stopgap solution to this problem has een to require suppliers who use such ata in manufacturing to submit preproduction samples or the first article from the roposed production line. Such procedures ave had a significant effect on the acceptability of the items. Obviously, these rocedures do increase both the time and ost required for spares procurement.

uality control problems

nterviews with personnel assigned to the Materiel Management Directorate at various AMA's indicate that much of our "quality problem" on replacement items is based n inadequate data being used in Procurement Data Packages. The magnitude of ata's contribution to the quality problem s not known, but there can be little question that technical data constitute a factor n the problem.

The Data Acquisition Process

Now that we have shown how inadequate ata affect our ability to support our defense systems, let us briefly describe the ata acquisition process.[3]

The basis for establishing data requirements is the Data Call, which is thus defined: "The formal procedure used by the Data Management Officer to acquire data equirements for any given program/ roject from appropriate Government activities."[4] Prior to letting the contract for a major program, the Data Management Officer for that program issues a Data Call to all government participants. The procurement activity is included as one of the prime participants. Each of the participating activities carefully screens and prepares its data requirements during this period. All requests must be documented and fully justified before being submitted to the program's Data Management Officer (DMO). The DMO consolidates all data requests on a contract Data Requirements List (DD Form 1423). He also organizes his personnel to begin review of the proposed data requirements.

Fiscal Year	Total Procurements	Computed Possible Savings*
1972	873,851	$34,954,000
1971	641,745	32,087,000
1970	1,016,028	42,334,000
1969	1,233,545	38,540,000

*Based on a 25 percent savings that would have resulted if adequate data had been available to enable competitive purchase, but which had to be purchased "sole source" because adequate data were not available.

Computation of possible savings by increasing the number of Air Force Logistics Command competitive procurements by 50 percent when adequate data are available

data review

To insure that unnecessary or duplicate data are not being requested, a Data Requirements Review Board (DRRB) is assembled by the project or program manager to review data requirements. The DRRB is composed of representatives from each of the major functions requiring data on a certain project. The objective of the review is to procure data on the basis of need for a specific intended use and only when requirements can be economically

justified. Data review in the precontractual stage normally involves three phases.

The first-phase review is to combine data requirements and make sure they are essential to the present and future management of the project. Future management is an important consideration. If a "breakout" for broader base procurement is intended, more comprehensive data may be required. Once data requirements have been established, they are consolidated and listed on the DD Form 1423, which is to be included in the Request for Proposal (RFP).

During the second phase of review, the DMO insures that data requirements listed on the DD Form 1423 are consistent with the contract statement of work. The DMO also insures that the DD Form 1423 is included in the RFP.

The third phase of precontractual review commences after the contractors have submitted proposals on the program. Certain members of the DRRB are again assembled to review data requirements. This review is to evaluate the estimated price of acquiring the data versus its application. Various alternatives are studied. During this final phase, the DD Form 1423 is modified as necessary to be included in the final contract.

contractor involvement

After the contract has been awarded, the DMO must be constantly alert to changing requirements for data. When changes occur, the DD Form 1423 is modified as necessary, with coordination from the requiring activity. The DRRB may be reconvened if necessary to establish new requirements.

Acquiring data is an extremely complex process. It directly interfaces with many other DOD programs, such as Procurement Method Coding and the High Dollar Spare Parts Breakout Program. The interrelationship of these programs is so complex tha it is difficult to discern which processe precede the others. We will now attemp to integrate the programs by providing general analysis of the entire data acquisi tion process.

After a contractor has been selected, h must present a list of all items represente in the contract. This list will include item with federal stock numbers. The list is sen to the Defense Logistics Service Cente (DLSC) in Battle Creek, Michigan. At th DLSC the list of items is run through a com puter to isolate all the items with federa stock numbers.

The government must now decide whethe to buy from the prime contractor or furnis certain items. A list of the items to b purchased is returned to the prime con tractor. These are the items that may re quire data to be furnished.

Procurement Method Coding (PMC) i the determination of the procuremen method to be used on a certain item. Thi program is concerned primarily with th purchasing of spare parts, which are de fined as "spares and reparable parts, repai able and consumable, purchased for us in the maintenance, overhaul, and repair c equipment such as ships, tanks, guns, air craft, etc."[5]

Once a contract is awarded, the con tractor is required to furnish Contracto Recommended Codes (CRC) on specifi items. These codes designate the metho of procurement recommended by the cor tractor. The three established CRC's are:

(a) CRC 6. This spare part is recommende for procurement by open competition.

(b) CRC 7. This spare part is recommende for procurement only from selected source(for reasons indicated by the suffix code.

(c) CRC 8. This spare part is recommende for procurement only from the prime cor tractor for reasons indicated by the suffi code.

There are eleven alphabetic codes that may be used as suffixes to the CRC. These are support codes included by the contractor to justify his recommended method of procurement.

After CRC's have been submitted, a verification meeting is held at the screening contractor's facility. This meeting is to review and substantiate the contractor's submitted code. The review normally culminates when the reviewing DOD component assigns Procurement Method Codes to the item reviewed.[6]

Procurement Method Codes are assigned by the reviewing DOD component after studying the screening contractor's recommended codes and substantiating data. These PMC's denote the method to be employed in procuring spare parts. Any one of the five following PMC's may be assigned:

(a) PMC 1. Spare parts screened and found to be already competitive.

(b) PMC 2. Spare parts screened and determined for the first time to be suitable for competitive procurement.

(c) PMC 3. Spare parts screened and found to be procured directly from the actual manufacturer or vendor.

(d) PMC 4. Spare parts screened and determined for the first time to be suitable for direct purchase from the actual vendor rather than the original prime contractor who is not the actual manufacturer.

(e) PMC 5. Spare parts screened and determined not suitable for competitive procurement or direct purchase and which, therefore, continue to be procured from a prime contractor who is not the actual manufacturer.[7]

The PMC assigned to each spare part determines the type of data required from the prime contractor concerning that spare part. For example, if an item is coded suitable for competitive procurement for the first time, considerably more data are required than if a code of 5 is assigned.

The screening contractor's recommendation or agreement with the reviewing DOD component on CRC's constitutes a requirement for the contractor to provide data under that item listed on the DD Form 1423. For each designated item, a procurement data package is developed. Various kinds of data/information and levels of detail (information on purchasing, manufacturing, verification, etc.) could be contained within a procurement data package, depending upon the item and its identified method of procurement. Procurement data packages are prepared for:

(a) Competitive (open competition) acquisition of identical items.

(b) Competitive (open competition) acquisition of interchangeable items.

(c) Competitive (negotiated) acquisition of items from selected qualified sources.

(d) Noncompetitive (sole or directed source) acquisition of items.[8]

The specific data included in each data package vary with the item itself and the selected method of procurement.

acceptance and inspection of data

One of the primary objectives of the DOD program for the management of technical data is to insure that effective quality assurance (QA) programs and procedures are established. Emphasis must be given to the acquisition, inspection, and handling of data for spare parts. It is critical that data be inspected to assure compliance with the terms of the contract prior to acceptance and payment.

Contractors normally submit their prepared data through the Air Force Plant Representative Office to the Administrative Contracting Officer (ACO). The ACO is the signature authority for the DD Form 250, Materiel Inspection and Receiving Report. He is responsible for insuring that the general format of the data is adequate. His

signature on the DD Form 250 represents acceptance of the data by the Air Force. Once the data have been accepted, they are sent to the Data Depository at Wright-Patterson AFB. Copies are often forwarded to the supporting AMA's at this time.

Apparent Problems in the Data Acquisition Process

Several points in the data acquisition process appear to contribute to the conditions described in the first section of this article:

(a) The Procurement Method Code process,

(b) The degree of clarity of the directives and instructions provided to the contractors responsible for the preparation of data,

(c) Government quality assurance of the data preparation process and inspection of the actual data.

Procurement Method Coding is the first key point in the process. The personnel involved in this process tend to be risk averse. There is a natural tendency to code an item for procurement from the prime contractor if the slightest doubt exists as to other firms' being able to produce a satisfactory item.

The second key problem area is the quality of the guidance we provide the contractors. Both contractor and contract administrators believe that the governing directives and instructions are a key cause of the problem. This contention is supported by subjective comments received from AMA personnel (e.g., which indicate that the rules and regulations dealing with the preparation of data are not specific enough for new contractors).

To investigate the possibility that the levels at which the applicable directives are written are not compatible with the levels at which they must be used, a fog count test[9] was applied to a selected sample o directives provided to contractors. It wa found that the publications in the sampl are not suitable, so far as reading level i concerned, for an individual who has no reached the equivalent of the third year o college in reading comprehension. Yet th contractor personnel working in this are are generally the least experienced an lowest paid.

The quality assurance of the data prepara tion process and the inspection of the com pleted data are perhaps the most chal lenging of the three cited problem areas.

Lack of agreement among personnel o AFLC, AFSC, and DCAS with regard to as signment of responsibilities for quality as surance of engineering data is one familia aspect of this problem. The *Data Manage ment Officers' Handbook*, published by th Aeronautical Systems Division (ASD) of AFSC recognizes this problem in a sketch cap tioned, "Who Is Responsible for Data? The sketch shows the Program Manage the Data Management Officer, and the AS Technical Manager all pointing to the AFL Functional Manager. The AFLC Functiona Manager is pointing to the using comman representative, who is in turn pointing t the Program Manager.[10]

The quality assurance function associate with contractor generated reprocuremen data is composed of two basic tasks: (1) t assure compliance with all the specifica tions, standards, or other contractuall referenced directives that describe how th data are to be compiled, presented, an displayed; and (2) to assure the best pos sible technical adequacy of the data.

The first task is relatively straightforwar for both contractor and the governmen activity responsible for quality assurance The second task, assuring technical adequac of engineering data that will be used as th basis of reprocurement of spares, pose great problems. The design contractor ca

only be expected to provide adequacy and completeness in relation to what his needs were, based on his production techniques. The only activity capable of determining if the data are adequate for reprocurement is the prospective new contractor, who must produce from the data package. Unfortunately, this prospective new contractor is unknown at the time the data are acquired by the government. The responsibility for final inspection and acceptance of the data is assigned to the office having engineering cognizance of the hardware item which the data represent. The inspection of the data may be delegated to the agency having inspection cognizance over the contractor.[11] This delegation must not extend to determination of engineering/technical adequacy of the data being inspected.[12] Unfortunately, it appears that the activity responsible for determining the adequacy of the data has neither the time, the orientation, nor the personnel qualified to determine if the data will be suitable for reprocurement purposes. Thus, many of the engineering data intended for use on future reprocurements enter our inventory without adequate quality assurance. And history has shown that many of the data are unsuited to be the bases of reprocurement of spares.

Solutions to Our Data Problems

Three unusual or "way out" solutions to our data problems may be of interest:

(1) In-house engineering of all systems.

(2) Single manufacturer responsibility for a given type of system (e.g., firm X would develop and produce all fighters for Air Force, Navy, and Marines), with all replenishment spare parts purchased from this source.

(3) A contract provision making the contractor pecuniarily liable for all defects in data.

The author neither endorses nor defends these solutions; they are mentioned to stimulate the reader's thinking.

More feasible solutions include:

(4) Improved control of the Procurement Method Coding process.

(5) Improved guidance on contractor's responsibility in preparing data.

(6) Assignment of engineers to live with the data during their development and through their acceptance and use by the AMA. (This concept is similar to the assignment of the future Systems Manager as Deputy Program Director for Integrated Logistics Support.)

(7) Emphasis on and improvement of the quality assurance (QA) responsibility of the Administrative Contracting Officer (AFPRO, NAVPRO, DCAS).

(8) Assignment of quality assurance responsibility on reprocurement data to AFLC.

(9) Review of existing high-value item data at the responsible AMA in an effort to upgrade the quality of data required to support existing systems.

Suggestions 4, 5, and 9 are not controversial. To some extent, efforts are under way to implement all three of these approaches. For example, the author recently discussed these approaches with members of the PMC team for the F-15.

Some attention is currently being paid to the area of guidance to the contractor on preparation of data. It would appear that more emphasis should be placed on this area.

Review of the data after acceptance can be accomplished and is being accomplished to assure that the data can properly be used for reprocurement purposes. Oklahoma City AMA (OCAMA), for example, maintains a DOD High Dollar Spare Parts Breakout Program whose purpose is to enable the buyer to procure spare parts as competitively as possible or from the ultimate manufacturer by taking action to obtain

and examine reprocurement data, drawings, and specifications. This program implements the provisions of AFR 57-6, which emphasize competitive procurement of spare parts.[13] Vigorous pursuit of the objectives specified by this program, in conjunction with implementation of the Competition with Confidence Program prescribed by AFLCP 70-2,[14] has brought about a significant reduction in the percentage of dollars spent through sole source procurement and a corresponding increase in the percentage of dollars spent for direct purchase and competitive procurements.

The other suggestions—6, 7, and 8—deal with different approaches to answering the question, How do we best control the quality of data on items destined to enter our inventory?

The concept of assigning engineers to live with data during their development is now being tested by OCAMA. Engineering personnel from this AMA are now at the B–1 System Program Office (SPO). If these individuals are permitted to influence the Administrative Contracting Office personnel in the surveillance of data preparation, this may be a highly successful approach. As with any longitudinal approach, though, personnel and TDY problems are present.

Emphasizing and enlarging the QA responsibility of the Administrative Contracting Office (ACO) is a possible solution to the data quality problem. However, a thorough review of the ACO's responsibilities and capabilities in this area is essential. There is some indication that the ACO's motivation *may* be a hurdle in making this approach successful.

The alternative which is most attractive to the author for better controlling the quality of data is that of assigning quality assurance responsibility for insuring technical adequacy for reprocurement to Air Force Logistics Command. This is the command that will have to live with the data for the life of the system. Thus, this activity has the motivation and orientation to best insure that data adequate for maintenance, reprocurement, and manufacture are produced by the contractor and accepted by the government. Leon R. Reed and William F. Furr estimate that fifty data engineering specialists would be required by AFLC for this task. These individuals would be located at the contractors' plants during the preparation of the data.[15]

The estimated annual cost for salaries and travel for this group of data engineers is $1.4 million. As mentioned earlier in the article, when we are able to use competitive procurement techniques, it is estimated that we save 25 percent of the noncompetitive price. Based on projections for expenditures for replenishment spare parts procurement for FY74 thru FY76, a two percent increase in competition for these procurements will more than compensate for the salaries and expenses of the required data engineers. Obviously, the benefits from improved quality assurance will grow as older systems leave the inventory and a larger share of our replenishment spare parts procurement is in support of systems for which we have adequate data.

DATA ACQUISITION is not an easy or a popular topic, but we have shown the importance of this process. It affects the dollars spent on spare and replacement parts, the manufacturing process, the time required to purchase spares, and our ability to monitor contractor quality.

After describing the data process, we proposed several solutions to our problems. The basic recommendations include: (1) giving better indoctrination to members of the Procurement Method Coding process on the effect of their decisions; (2) improving the comprehensibility and quality of instructions provided to our contractors;

(3) reviewing existing data that may be required for future spare parts buys, to increase the prospect of buying either from the ultimate manufacturer or competitively; and (4) improving the quality assurance process.

School of Systems and Logistics, AFIT

Notes

This article is based largely on two master's theses completed at the School of Systems and Logistics, Air Force Institute of Technology. These theses, *Inspection and Acceptance of Contractor-Prepared Engineering Data*, by Grant Flint and Franklin W. Jesser, and *The Impact of Quality Assurance on the Adequacy of Data for Air Force Reprocurement*, by Leon R. Reed and William F. Furr, provide considerably more insight into the area of data acquisition. Copies of the theses may be obtained from the Defense Documentation Center.

The author of this article is responsible for the selection of material made from these two theses, its integration, and the resulting article.

1. U.S. Department of Defense, *High Dollar Spare Parts Breakout Program*, March 1969, para 3-201.13(b).

2. Robert Price, SMAMA engineer, interview at Wright-Patterson AFB, Ohio, April 1972.

3. Much of the material contained in this section was obtained from an unpublished paper by Captain Robert N. Lutz entitled "Determination of How Information Is Acquired, Stored, and Transmitted to the Support AMA on the Ultimate Manufacturer of Components of a Major System." School of Systems and Logistics, Air Force Institute of Technology, Wright-Patterson AFB, Ohio, June 1972.

4. U.S. Department of the Air Force, *Management of Contractor Data*, 30 June 1969, p. 3.

5. U.S. Department of Defense, *High Dollar Spare Parts Breakout Program*, March 1969, p. 3.

6. U.S. Department of Defense, *Procurement Method Coding of Replenishment Spare Parts*, MIL-STD-789B, 15 May 1970, p. 10.

7. *Ibid.*, p. 5.

8. U.S. Department of Defense, *Procurement Data Package*, MIL-STD-885B, 22 October 1971, p. 4.

9. The fog count is a very simple, yet quite effective, device for determining the readability of a publication. Complete details for use of this device are given in Air Force Pamphlet 10-1, *Guide for Air Force Writing*, pp. 155–59.

10. *Data Management Officers' Handbook*, AFSS, WPAFB, Ohio, 1971, p. 1.

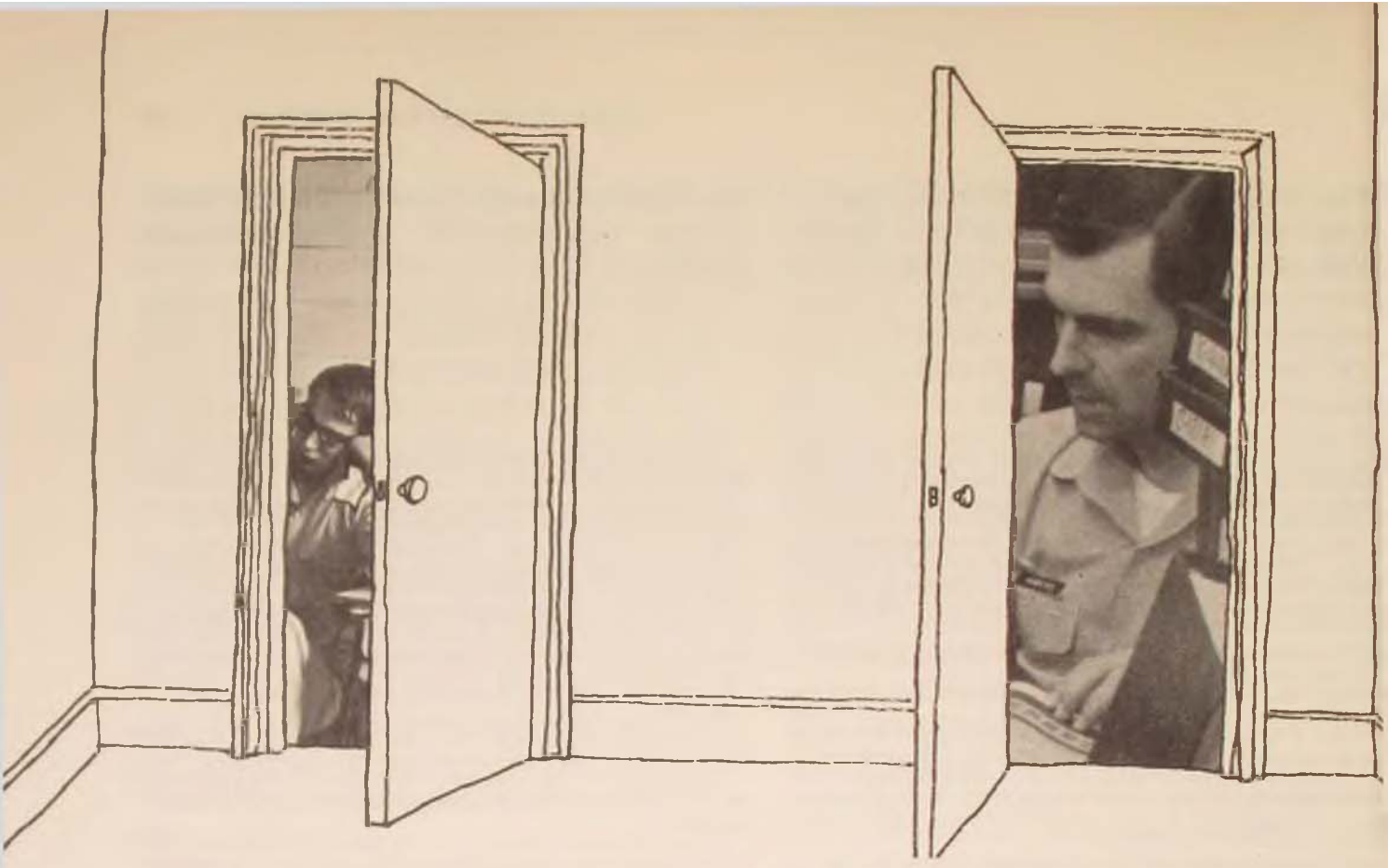
11. ASDM310-1, para 6-1, 2, pp. 6-1, 6-2.

12. AFR 310-1, para 7.d. (2), p. 7.

13. OCAMA-TAFB Regulation 57-1, *OCAMA DOD High Dollar Spare Parts Breakout Program*, Tinker AFB, Oklahoma, 1971, p. 1.

14. The Competition with Confidence Program stresses obtaining engineering data that will facilitate procurement of spare parts with as much competition as possible.

15. Leon R. Reed and William F. Furr, *The Impact of Quality Assurance on the Adequacy of Data for Air Force Reprocurement*, master's thesis SLSR-21-73A, 7 March 1973, pp. 109–11.



In the old days the captain used the cat-o'-nine-tails on a sailor who disobeyed an order; the company president fired a man who slacked off on the job; the high-school principal expelled a pupil who talked back to his teacher. Whether or not this really made groups more productive, the old days are gone—admirals now permit sailors to grow sideburns; company presidents party with their employees; and high-school principals try to "understand" their pupils.

The man in charge used to have unquestioned authority; today he must often persuade. But being an effective leader always has been more complicated than standing on authority. . . .

FRED FIEDLER[1]

THE AIR FORCE SUPERVISOR

Giving and Receiving Help

CAPTAIN ROBERT A. ZAWACKI
LIEUTENANT COLONEL PETER E. LASOTA

In My Opinion

IF Fred Fiedler is correct and the key to being an effective leader is the ability to persuade, then how does a modern leader perform the task of persuading peers and subordinates?

self-concept

To answer this question, the modern Air Force supervisor must understand what happens inside a person when he is being

"persuaded" or "counseled." Each of us, as human beings, has created an image of ourself that has been referred to by various behavioralists as the self-image, self-structure, or self-concept. Regardless of the label, it is a system of ideas and beliefs that one has about himself, which he has accumulated through his life experiences in numerous environments.

Technically, the self-concept is defined as "an integrated structure of assumptions (or beliefs) about self, perceptions of the self, feelings about the self, influenced by and influencing a less clearly integrated set of beliefs, views, and emotions toward the world outside the self." [2] A supervisor should remember certain important dimensions of the subordinate's self-concept: (1) it is a pattern of beliefs that has been developed over a prolonged period of time; (2) a person has a basic need to preserve this system of ideas about self; and (3) a normal person not only likes to maintain or preserve it but also likes to enhance or improve upon it.

Research findings[3] indicate that a person copes with threat to his self-concept by exhibiting defensive behavior or by changing his self-concept. Normally, it is easier for a threatened subordinate to act defensively than to change the self-concept. Furthermore, the greater the threat, the more negative the subordinate becomes toward the supervisor's comments. Given this description of a person's self-concept, how does a supervisor persuade or counsel a subordinate?

the helping relationship

Perhaps the most abused word in civilian society and the military community is *counselor.* Counselors run the gamut from the well-trained professional to rank amateurs who deal in many nonbehavioral-related areas, such as loan counseling or even funeral counseling. The *real* counselor who understands the application of behavioral concepts is a well-trained expert. The Air Force cannot expect its present-day leaders to be counselors in the professional sense of the word. However, it can expect today's commanders and supervisors at least to be familiar with certain behavioral concepts and apply them in management of today's personnel force.

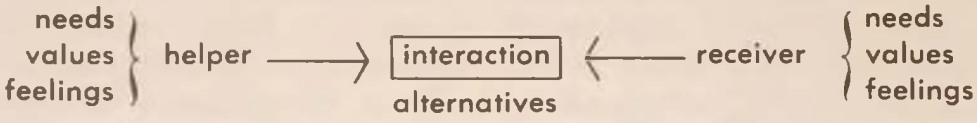
Commanders are rightfully concerned about the direct conflict between their counseling role and responsibilities and their role of disciplinarian. This concern is understandable when one realizes that few of our present-day commanders have much management training to supplement the technical competence that earned them their promotions and positions of responsibility. Can the commander's concern about conducting what are apparently conflicting roles be resolved? If so, how? The answer is much simpler than one would expect. It consists in understanding the two roles and their application in the force of the 1970s.

Let us consider the following example. How many roles does almost every officer fill on a daily basis? In addition to each man's role as an officer, he is usually a husband, father, commander, disciplinarian, and lover. Each of these roles has its distinctive requirements, which are managed by most of us on a daily basis. We manage the role differences by "shifting gears" or "changing hats." We recognize the requirements of each individual role and change our mental set to accommodate each role. Why, then, is the managing of the commander/counselor role so difficult? We submit it is in part because of a lack of complete understanding of the counselor role and misconceptions about role changing.

To simplify the problem, let us address the counseling role in terms of a helper/receiver relationship instead of a counselor/client atmosphere. The helper and receiver must both understand that the helper is try-

ing to influence and change the behavior of the receiver in a direction that will be useful to the receiver (and at the same time could serve some useful purpose to the helper).

The following diagram is helpful in understanding the helping situation:[4]



Note that both parties have their needs, values, and feelings that will influence their behavior in the relationship. In days of old, the commander often told the receiver what was best for him without any interaction or without considering the subordinate's needs, values, and feelings. The receiver often carried out the commander's prescription through either fear or respect. If the receiver carried out the commander's recommendation and it proved to be an unsuccessful solution, the receiver could blame the helper for poor advice.

As mentioned earlier, today's leadership must consider persuasion as a device for changing behavior. Today's young airman may rebel at being arbitrarily told what he can or cannot do. The helper must understand this and be prepared for other approaches. One approach that is understood today is that of maximizing alternatives. If both parties in the helping relationship agree there is a problem or that the receiver's demonstrated behavior is unacceptable, then the foundation exists for exploring alternate courses of behavior. If the helper can get the receiver to understand and explore the courses of action (alternatives) available to him, he has gone a long way toward solving the problem or modifying the behavior. Ideally, the receiver must be free to choose the course of action that he feels is best for him under the specific circumstances. Behaviorally, the receiver is more apt to carry out a course of action that he identifies as his because it is his decision and he is thus responsible for the outcome. A spin-off benefit of this type of help is that the receiver is primarily responsible for his own actions. The receiver is acting of his own free choice from alternatives that the helper can accept or approve of as the commander. Since the receiver has participated in the decision-making, he will probably be more firmly committed to carrying it to a successful conclusion.

As a commander or supervisor, the officer/helper can let the receiving party know what he expects, such as payment of debts, improved performance, better dormitory conduct, et cetera. However, if he has helped the receiver explore alternatives and arrive at a decision, he can be certain that his role as a helper stands a better chance of being successful than if he had directed the receiver to specific action.

conditions for success

A commander or supervisor gives feedback to individuals to help them develop and become more effective members of the Air Force team. Given the helper/receiver relationship, by following certain guidelines one can become a more effective counselor/commander. Some of those guidelines,

stated directly, include the following:

(1) Don't argue. The subordinate will attempt to preserve his self-concept by meeting your argument with resistance. If you increase your argument or position, he further increases his resistance, and the unproductive spiral continues.

(2) Be prepared to listen. You must *understand* the subordinate's point of view before you can begin a joint exploration of the alternatives. However, understanding his viewpoint does not mean that you must agree with or support his position. There is a difference between empathy and sympathy! As a good listener, you should let the subordinate do over fifty percent of the talking. It is very easy, because of your extensive Air Force experience, to be caught in a telling or prescribing role. Again, when you play a telling role, the receiver may feel threatened and leave the scene (mentally) or act defensively.

(3) Direct your comments toward behavior which the subordinate can do something about. By giving people unfavorable feedback about behavior over which they have no control, we as supervisors only increase their defensiveness and sense of frustration.

(4) Keep your feedback timely. Generally, feedback is most helpful to the subordinate if it is given at the earliest opportunity after a given instance of behavior. Further, research indicates that individuals may have a certain tolerance level for accepting unfavorable feedback. When that level is approached or surpassed, no further learning takes place. Therefore, give feedback often and in small quantities. A comprehensive, once-a-year review of performance with a subordinate does not appear to be the correct way to develop subordinates as future Air Force leaders.

(5) Understand your subordinates as subjects, not as objects that are only a personnel resource. These people are human beings, with feelings, needs, and values. Try to see the world through their eyes and frame of reference.

(6) As you follow the above steps, be alert for signals from the subordinate that indicate his commitment and ownership in the outcome of the relationship. Once the subordinate assumes responsibility for overcoming his shortcomings, your task as a commander and helper is practically complete.

IN CONCLUSION, as times change, Air Force commanders and supervisors—as well as industrial leaders—can no longer stand on their authority and still be effective leaders. Leadership has become an art of persuading peers and subordinates toward an objective.

To persuade others, the modern supervisor must realize that every subordinate has a self-concept that has been developed through years of being conditioned in numerous environments and situations. Individuals are committed to preserving or improving their self-concept, and any threat to that image creates defensive reactions. Alvin Toffler, in his popular book *Future Shock*, discusses this theme when he states that "once we commit ourselves to a particular model, . . . we fight energetically to build it, and perhaps even more so to preserve it against challenge. For the style becomes extremely important to us. This is doubly true of the people of the future. . . ." [5]

Thus, the old directive days are gone, and the subordinate of the present and future will be deeply concerned with his self-concept. Today's commander, as well as the commander of the future, can increase his effectiveness by understanding certain behavioral science concepts and by applying them in the helping relationship. The modern commander and supervisor will, through the guidelines elaborated here, help the subordinate maximize alternatives. Further,

he will create the helper/receiver relationship whereby the receiver will have ownership in the alternative selected and be committed to that particular course of action.

Every man is a volume, if you know how to read him.
WILLIAM E. CHANNING

United States Air Force Academy

Notes

1. Fred E. Fiedler, "The Trouble with Leadership Training Is That It Doesn't Train Leaders," *Psychology Today*, February 1973, pp. 23–24.
2. Arthur N. Turner and George F. Lombard, *Interpersonal Behavior and Administration* (New York: The Free Press, 1969), p. 159.
3. Emanuel Kay, Herbert H. Meyer, and John R. P. French, Jr., "Effects of Threat in a Performance Appraisal Interview," *Journal of Applied Psychology*, October 1965, pp. 311–17.
4. The concept of the helper and receiver relationship is a modification from Carl Ransom Rogers, *Client-Centered Therapy* (New York: Houghton Mifflin Co., 1951). Also, some of the ideas came from a handout by George F. J. Lehner, Professor of Psychology, University of California at Los Angeles. See also Henry P. Knowles and Borje O. Saxberg, *Personality and Leadership Behavior* (Reading, Massachusetts: Addison-Wesley Publishing Co., 1971), pp. 71–101.
5. Alvin Toffler, *Future Shock* (New York: Bantam Books, Inc., 1970), p. 313.

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THE EDITOR

REPORTING INACCURACIES— A ROSE BY ANOTHER NAME

LIEUTENANT COLONEL MONROE T. SMITH

IF THE question were asked, "Who among you is an honest man?" how many would answer, "I am"? Perhaps most—hopefully the great majority. I would expect such an answer because when I ask about honesty, about integrity, I am not talking to the "kickback" artist, the embezzler, the accepter of bribes. These people are patently dishonest. The people I am addressing this article to are everyday "good guys." These are the people who make the USAF go, the officers, NCO's, and airmen in all career areas.

integrity defined

A good place to start any discussion is to define the terms. From the looks of things, we haven't really grasped their meaning. Webster defines integrity as "an unimpaired condition, adherence to a code of . . . values." A synonym for integrity is honesty. This same dictionary defines honesty as "adherence to the facts," and goes on to say that "integrity implies trustworthiness and incorruptibility to a degree that one is incapable of being false to a trust. . . ." Further, "honesty implies a refusal to lie, steal, or deceive in any way." The definitions seem simple, but are they?

Now, picture this scenario. Political tensions in the world have become acute. The President calls the National Security Council together. During the discussion the question of military preparedness comes up. "How many aircraft can you put in the air over area X, properly configured, with crews trained to do the job?" the Chairman of the Joint Chiefs of Staff is asked. The Chairman replies, "I have reports that say N amount, but I don't put much stock in those reports." Realistic? Perhaps not. But that is the direction things could go if steps are not taken. Immediate and positive steps; bold steps; well-publicized steps.

Do we have a problem with honesty and integrity in the USAF today? In my opinion, we do. However, we call it by another name: "inaccurate reporting." Like the proverbial "rose by any other name," the smell is the same.

specific examples from personal interviews

Let's get into some specifics. Air Force Manual 65-110, *Standard Aerospace Vehicle*

and Equipment Status Reports, requires that aircraft be reported operationally ready (OR) or not operationally ready (NOR). Aircraft NOR may be either out for maintenance (NORM) or out for supply (NORS).[1] Status reporting goes to higher headquarters, where the information is used as inputs to a variety of programs. The reporting procedure is exceedingly simple. It would not be germane here to go through the reporting process: an aircraft is either operationally ready or not operationally ready.

Somehow it became a "no-no" for a unit to report aircraft NORS—or at least to report more than a certain percent NORS. A maintenance officer in Vietnam related that his unit had gone 60-odd days without a NORS! The reason for the long spell without a NORS: the unit simply refused to report them! If an aircraft needed a part not available from supply or from repair, the aircraft was simply reported out of commission for maintenance until the part became available. An isolated case, you say. Pick out several issues of *TIG Brief* from any year and chances are at least one will contain an article about AFM 65-110 "reporting inaccuracies." [2] Inaccuracies are for untrained people; the people involved in 65-110 reporting are well trained and knowledgeable. The procedures are clear. The people responsible for the reports are simply reporting untruthfully.

Take another case of "inaccurate reporting." The Due in from Maintenance (DIFM) program is designed to assist base managers in controlling their repair cycle items. Parts in the repair cycle in excess of ten days are determined to be delinquent.[3] Delinquent items are cause for management actions. Obviously, broken parts cannot be used to repair end items, and these broken parts are counted as base assets. The dollar value of the delinquents is compared to the unit's total dollar value of all issued repair cycle assets to determine the percentage delinquent. Maintenance and supply officers have found many ways to circumvent the system. One way is to issue (on paper) expensive items to a unit just before the close of a reporting period to increase the unit's total dollar issues so its percentage delinquent would be within an "acceptable" limit. The IG reports say that numerous "reporting inaccuracies" occur in the DIFM program.[4]

General Ryan touched on the NORS/DIFM/repair cycle asset problem in his remarks to the worldwide Logistics Conference on 20 October 1971 when he said, "I can cite examples of aircraft NORS with numerous reparables in the shop [a NORS cannot exist when reparables are on hand]. . . . In most cases there are procedures . . . people are not following these procedures." [5]

Another area of "reporting inaccuracies" involves general military training (GMT). GMT involves many things, some almost onerous. First aid, security, aerobics, etc., are subjects you cannot generate much enthusiasm for. One individual relates how he spent over three years at a major air command headquarters and never once was asked to do any of his GMT. When he inquired about GMT, he was informed that the administrative NCO took care of the GMT requirements.

Such practice must be nearly universal. *TIG Brief* of 19 November 1971 said:

> . . . reporting of [GMT] accomplishments was highly inaccurate. Many units were reporting 100% completion of GMT written tests, but actual checks of individual training records showed that the figures were frequently in error by large percentages. Reporting of aerobics testing fared no better . . . units were regularly running no-fail programs or reporting unrealistically high percentages of people scoring in the 'fair,' 'good,' or 'excellent' categories.[6]

Let's talk about honesty in another area, aircraft accident reporting. To help prevent future accidents, complete and detailed

analyses are required on accidents. AFR 127-4 details the requirement for reporting accidents. The dollar value/injury/man-hour criteria are quite explicit in determining accidents versus incidents.

Many cases of "inaccurate accident reporting" came from Vietnam, where battle damage is easy to come by. A maintenance officer related how two aircraft landed gear-up (pilot error) and another landed short of the runway, shearing the gear, and all were reported by the wing to 7AF either as "battle damage" or as *incidents only.* At a minimum, each aircraft required two complete engines and extensive sheet-metal repair to the fuselage, easily exceeding the limits of an incident and far removed from "battle damage." Another case of "inaccurate reporting."

Not all the examples are from the support area. Aircrew members related early difficulty with an air-to-ground missile. Reliability of this missile was a definite problem. Gradually, units began reporting 100 percent reliable launches of these missiles. Yet when an inspection team arrived, missile reliability decreased sharply. Several pilots related how they "tweeked" the system—using all sorts of unauthorized procedures, including the use of aircraft radar in the target area to get a reliable missile impact. Another case of "inaccurate reporting."

And, of course, the most celebrated case of reporting inaccuracy of all—the General John Lavelle case. Without arguing the merits of the case, it was clear to investigators that General Lavelle ordered or caused false reports to be submitted on air activity over North Vietnam.[7]

WHAT causes basically honest people to do these things? Many reasons could be cited, but the two I feel most important are lack of leadership by example and use of management systems as evaluation devices.

It is difficult to expect integrity from the rank and file if the rank and file do not see that same quality in those who lead them. The "no NORS" requirement in Vietnam was *directed* by the Wing Director of Materiel. The aircraft accidents reported as battle damage or incident in Vietnam were done through the concerted action of the Wing Director of Operations and the Director of Materiel.

I am convinced our very top echelon does not condone such actions. As a member of a SAC "First Team" briefing, I listened to General Thomas Power, then SAC Commander, respond to a question about the Management Control System (MCS) by saying he had never fired anyone for being on the bottom of MCS but that he had fired several commanders for lying to him. I believe this is the prevalent attitude of our very top echelon.

Somehow this attitude doesn't hold true as you come down the chain of command. This attitude of not telling it like it is to the higher commander is not new. There was a time in history when the bearer of bad news was beheaded. Thus it didn't take long for the rank and file to get the message: the boss doesn't like bad news.

Today we don't behead people literally—but we do figuratively. Have you ever seen a high-ranking officer take "bad news" gracefully? The bearer of bad news is frequently put "on the carpet," grilled unmercifully, berated, coerced, and finally tossed out with the admonishment to come back when the problem is corrected. Either that, or he is told to come back next week or next month with the problem cured. Guess what? The staff officer dutifully returns at the appointed time and the problem is better. The senior officer looks over the "good" reports and congratulates himself on his management ability.

This is not to say that many problems and problem areas are not made better

with command interest. They are. What I am saying is that command interest seems to force the problem underground or to force the people responsible for reporting to report a good story whether they have one or not. Units reporting "straight" are quickly whipped into "line" by pressure of being different.

A case in point. From 1964 to 1967 a major air command had an "assistance team" of maintenance and supply personnel who would "help" any base having difficulty getting parts as reflected by a relatively high NORS or cannibalization rate. This "help" came in the form of a *thorough* inspection of local procedures used in ordering, processing, and repairing parts. It wasn't long until NORS and cannibalization rates went down in the command. Strangely (?) enough, IG discrepancies in "reporting inaccuracies" went up.

The second major problem revolves around using management information systems in evaluation. This is a three-pronged problem involving, first, the setting of goals within the information system; second, using the information system to evaluate commands, units, sections, etc.; and third, using data from this same management system for individual evaluation.

Most management information systems have goals established. For example, GMT has a goal of 100 percent compliance.[8] The operationally ready rate goal for aircraft is presently 71 percent.[9] The Base Self Sufficiency goal is generally accepted as 95 percent.[10] The list is almost endless. Goals within themselves are not inherently bad. People should know when the system they are managing is doing the job. However, so many management systems are in existence with seemingly unrealistic or nonmission-related "goals" that people cannot relate the goal to actual mission accomplishment. Consequently, it becomes a game to beat the system.

Management information systems are usually designed to pinpoint trouble areas by exception, so that management can take corrective action. When people become engrossed in achieving some unrealistic goal, they lose sight of what the system actually was designed to do. I am convinced that, when you set an unrealistic or nonmission-directed goal, you initiate a goal-oriented attack—regardless of how it is achieved.

Such goals actually lead to the next problem area: evaluation by management systems. If a goal is established and people know the wing, squadron, or unit is being evaluated (based on achieving or not achieving that goal), they are not going to submit a report showing a bad picture. Why? Because they themselves are being evaluated through this management information system. People are going to use everything imaginable to report achieving the goal, including "inaccurate reporting."

Commands are being or have been compared against one another in operationally ready (OR) rates, NORS rates, accident rates, DIFM rates, etc. Each lower command echelon compares its subordinate units in a like manner.

What difference does it make if SAC has an 85 percent in-commission rate and MAC a 75 percent? The crucial question is this: Did the command perform its assigned mission during the month/quarter/year? Did SAC train its crews and keep X targets covered? Did MAC haul X tons of cargo or move the Army division in X days? If they failed to do the tasks assigned, all the rates in the world are meaningless. Likewise, if they had 100 percent rates in everything, yet failed to do their assigned task, the rates are again meaningless.

Individual evaluations (OER's/APR's) stem from the wing/squadron/unit comparisons and rely heavily on management information system data. Pick up any promotion folder and here is what you are likely to see: Cap-

tain Blank maintained an 85 percent OR rate while keeping his NORS rate to 2 percent. His DIFM rate is always below 10 percent . . . etc. Management information data are used throughout the entire OER/APR system. Knowing that his OER/APR will reflect what *he reports,* how can an individual report less than the "acceptable" goal? It would be exceedingly difficult.

The USAF IG is acutely aware of this problem. *TIG Brief* of 10 March 1972 asked commanders to get out and see what is actually going on and not to rely on the "stand-up" briefing to give them the information. The *TIG Brief* said, "It is not the nature of the 'human beast' to stand up in front of his commander and peers and admit he is guilty of mismanagement." [11] If we cannot expect candid reporting in stand-ups, face-to-face, how can we ever expect candid reporting on faceless, nonthreatening pieces of paper?

the solution

First, and most important, we must reawaken the spirit of honesty and integrity. To do this, the very top commanders in the USAF must make it exceedingly clear they will not tolerate lack of integrity, including that which is euphemistically called "inaccurate reporting."

General Ryan took the first steps toward this awakening. On 13 October 1972 he dispatched a message to all commanders in which he reaffirmed that "integrity—which includes full and accurate disclosure—is the keystone of military service." He went on to say, "False reporting is a clear example of a failure of integrity." [12]

Again on 1 November 1972, in the *Policy Letter for Commanders,* General Ryan repeated his call for integrity:

> Integrity is the most important responsibility of command. Commanders are dependent on the integrity of those reporting to them in every decision they make. Integrity can be ordered but it can only be achieved by encouragement and example.[13]

The first steps have been taken. Now the IG's—from Hq USAF down to the units—should be instructed to concentrate on detecting reporting inaccuracies. Since most reports have offices of primary responsibility, commanders should then determine if the inaccuracy was a result of a lack of training, an oversight, or an intentional misrepresentation. Where violations of integrity are evident, the individuals should be handled just like any other violator of the UCMJ.

Next, goals within the management information systems should be thoroughly reviewed with an eye toward eliminating not only the unrealistic goals but also the goals for goals' sake. For example, the operationally ready rate of aircraft (71 percent) has been supposedly inviolate for over a decade. Yet, General Ryan told all major commands, "I am convinced that 'OR' standards as used today pertaining to equipment readiness are no longer a valid measurement of a unit's combat-ready status." He went on to delete the 71 percent OR "standard" as a criterion for arriving at the unit's combat-readiness status.[14] There are many other supposedly inviolate goals throughout our management systems in desperate need of revision or elimination.

Next, Air Force Manuals 36-10 and 39-62 must be revised to limit severely the inclusion of management information data as a fact or specific achievement in the evaluation of how an officer or airman performs his job.

Further, the USAF must modify all ratings/evaluation systems that rely on management information data. Internally generated, local management data should not be used in rating/evaluation systems. This will remove the major incentive and driving force behind inaccurate reporting. If ratings/evaluations are necessary—and I feel that

some are—then the data source should be other than a local management system.

Finally, top echelon commanders must realize the consequences of "beheading" bearers of bad news. This is not to say that mediocrity must or should be accepted. Management systems are designed to highlight problem areas so that root-cause corrective action may be taken. By refusing to accept the very thing that the system was designed to reflect, the top manager *forces* people at the lower echelon into "reporting inaccuracies" so they or their bearers of bad news do not get "beheaded."

If the cure seems extreme, sometimes extreme problems require extreme solutions. Somehow we must get across the idea that check marks on a computer card purposefully mismarked are as much a lie as an oral or written falsehood. Only by recognizing the problem for what it is and responding with a positive action program from the top down can we be assured that what is contained in a particular report is, in fact, fact. A positive program, properly administered, would make it unnecessary to call this rose by another name.

Air War College

Notes

1. AFM 65-110, *Standard Aerospace Vehicle and Equipment Status Reports*, 1 September 1968, p. 3.
2. For example, *TIG Brief*, Number 1, Volume XXIII, 15 January 1971, p. 13.
3. AFM 66-1, *Maintenance Management*, Vol. II, *Chief of Maintenance*, (Aircraft and Missile), Department of the Air Force, Headquarters USAF, Washington, D.C., p. 2-103.
4. For example, *TIG Brief*, Number 9, Volume XXIII, 7 May 1971, p. 10; and *TIG Brief*, Number 14, Volume XXIV, 28 July 1972, p. 14.
5. General John D. Ryan, "The Logistics Manager in the 70s." *Supplement to the Air Force Policy Letter for Commanders*, February 1972, p. 14.
6. *TIG Brief*, Number 22, Volume XXIII, 19 November 1972, p. 21.
7. Hedley Burrell, "Probe Begins on Demoted AF General," *Washington Post*, 12 June 1972, p. 1; and George C. Wilson, "Bombing Violation Conceded," *Washington Post*, 13 June 1972, pp. A1 and 16.
8. AFM 50-15, *General Military Training*, para 1-4.
9. AFM 65-110, p. 18.
10. *Maintenance Processing of Reparable Property and Repair Cycle Asset*, Technical Order 00-20-3, 15 June 1972, para 3-6.
11. *TIG Brief*, Number 4, Volume XXIV, 10 March 1972, p. 1.
12. CSAF message to ALMAJCOM 1634/72, 13 October 1972.
13. P. 1.
14. CSAF message ALMAJCOM 1126/70, 5 August 1970.

RACE RELATIONS: REFLECTIONS ON A YEAR PAST

Captain Alfred Dahler

FOR ME, the past year has proved to be the most interesting, exciting, rewarding, and, at the same time, the most confusing and frustrating in my Air Force career. Sounds like a paradox, but it is not meant as such; it simply capsules my emotional and intellectual reflections on my first year as a Race Relations instructor. This has been an experience I would not want to trade; it far surpassed the implications of the somewhat restrictive title of Race Relations. It included reaching out to people, the people who make up the Air Force, and learning about their wants, needs, hopes, desires, differences, disappointments, their points of view on numerous subjects, and their ways of looking at and interpreting life.

Every week during the past 12 months, I have met 25 new people, ranging in rank from airman through colonel, male and female, young and old, white and nonwhite, leaders and followers, from operational units, maintenance organizations, support units, and headquarters staffs. I have listened to and participated in arguments pro and con concerning the aspects of race relations in the Air Force, the political direction of our nation, and the various systems of value expressed in our multiracial society. I have listened to people express their devotion and commitment to the Air Force and the "American way of life"; I have listened to others counting the days until release from military bondage and expressing their general disappointment and alienation from the social and political processes of our country. I have experienced severe verbal attacks and ridicule, but I have also received support and mental sustenance from some of the most unlikely quarters.

I found my own prejudices, concepts, beliefs, ideas, and feelings challenged and re-examined—some were changed and some were sustained. I had to take a close look at myself, examine my past, put the present into context, and take a look ahead into the future to find where I was going and where I wanted to go. Yet, the single most important reward I have gained from this turbulent year has been one of hope—hope that race relations is a definite step in the right direction, hope that the concept of race relations can make social and behavioral contributions far beyond its present limited scope, and hope that present within our organization are all the attributes and ingredients necessary to insure a viable and trenchant future Air Force.

This hope is not based on any naïve assumptions that, the attributes and ingredients being present, matters will take care of themselves. On the contrary, I am firmly convinced that only through capturing the essence of these forces and channeling them by positive, creative, and imaginative leadership is there hope for future success.

To be sure, I am not unaware of the disparity existing between the public relations campaign waged from the top in behalf of the race relations and other social actions programs and the empirical realities experienced at the field or working level. I am fully aware that the Air Force's race relations and equal opportunity programs are not spontaneous commitments motivated by a thrust for internal reform. Rather, they exist because of outside politi-

cal pressure, civil rights developments in the society at large, and a mounting pressure threatening organizational life and property. How the Air Force got into race relations and social actions programs need not be an item of great concern; the point is that these programs are now part of the active organizational establishment. Karl Mannheim has stated:

> In any social situation nonincremental innovation tends to come from outside the established system or pattern of relationships. Innovations tend to be viewed by members of established systems as disequilibria, even as irrationality.[1]

This observation, it seems to me, has much evident applicability to the race relations and social actions situation in the Air Force today.

As a general observation, the programs seem to be well received and supported by most minority personnel and the young, college-educated, middle-class whites—by the former because of intricate personal involvement and by the latter because of increased social awareness developed while growing up in the 1960s. Among the older generation of senior NCO's and field-grade officers, I have perceived a conservative approach to life in the sense that they seem to be suspicious of change and dedicated to the maintenance of existing views, conditions, and institutions. This is, however, paradoxical conservatism in the same manner that much American conservative thought is paradoxical: it seems to encourage and vigorously support scientific and technological change yet vehemently objects to change in social, cultural, political, and moral relationships. As a general trend, the above perceptions are adequately descriptive of my observations, yet, only in a general sense, as many variations are evident which have sustained me in maintaining an optimistic attitude toward the feasibility of bringing about needed positive and constructive social changes.

One major point of frustration has been the ambivalent attitudes of Air Force top management expressed toward the race relations and equal opportunity and treatment programs. The perceived lack of purpose and orientation plaguing both programs seems to be attributable to a lack of honesty and definition of goals on the part of the responsible leadership. Too often the message comes across as "Do something; we don't care what, but look busy." This expressed ambivalence has contributed to serious and damaging mistakes on a practical level by both majority and minority personnel as well as the subordinate leadership and rank and file. In an anxious hastiness to comply with command directives to the effect that no "racial problems" will be tolerated, many unit commanders and supervisors have chosen to interpret any difference of opinion between people from different racial groups as "racial incidents." They have interpreted any complaint by minority group members as evidence of discrimination, and they have disregarded enforcement of regulations for fear of causing racial conflict. In some instances unfounded and unreasonable demands have been met by appeasement, to avoid publicity and present a semblance of order and harmony.

Acquiescing to demands of the most vocal elements of any group has resulted in encouraging the confrontation methodology in lieu of the analytical, systematic approach to problem solving. Certainly the impatience and displeasure exhibited by minority personnel in challenging present institutional norms are understandable in view of a national history of injustice. Seeing "whitey" scared and on the run yields tremendous satisfaction to some individuals but will prove very dangerous if not channeled toward positive ends. It fosters the

development of a false sense of power, at best a Pyrrhic victory, which can only end in hurting precisely those personnel already jeopardized because of negative racial attitudes and discrimination.

On the whole, the present situation seems to be a poor basis on which to develop long-range solutions leading to harmonious race relations and an effective concept of equal opportunity. The temptation to scrap present efforts as unworkable or unnecessary may become increasingly popular in the near future, prompted by increasingly limited fiscal resources. Yielding to that temptation would be tragic. Rather, it is imperative that we learn to contend with the problems of social change in a positive manner.

THE QUESTION that looms now is, "Where do we go from here?" In the words of Curtis R. Smothers, Director for Equal Opportunity (Military), Office of the Secretary of Defense: How can we "move from *ad hoc* efforts and crisis programs to a system of affirmative, goal-oriented equal opportunity management capable of meeting the root causes of inequality?" [2]

To address the question, we must take an objective look at our efforts over the past year. We must ask ourselves some basic questions:

1. Why a race relations program, its goal, its purpose, its limitations? Have we defined the problem correctly?

2. What different groups of people are we trying to reach, and how can we best reach these groups? Were our original intentions and assumptions correct? Is our message valid, and are our messengers capable of disseminating it?

3. What changes should be made to insure equal opportunity and treatment as a reality, not just a slogan? What changes can be made within the restrictions of the Air Force organizational purview? Have we established realistic goals?

In my opinion, the experienced racial unrest and disharmony are not the problem but a symptom, as are drug and alcohol abuse. Concentration on the symptoms has obscured and camouflaged the basic problem that is at the bubbling spring of social unrest. What, then, is the basic problem? It seems to me it is the clash of two opposing systems of value. Both these systems are very evident in our society at large; and because, as Samuel P. Huntington writes, one of the imperatives that shapes the military institutions of any society arises from the social forces, ideologies, and institutions within that society,[3] they are also very evident in the Air Force today. One is a system of values that identifies with economic efficiency and material gain; it is adhered to by a large number of people who are excessively occupied with material security and personal aggrandizement. The second system of values is identified with a quest for social justice and is adhered to by a large number of people who are concerned with fashioning a humanistic, cooperative, and pluralistic society.

In the interpretative model of the "economic efficiency" value system, the basic driving force is seen as a quest for material security. Basic to this cultural experience is a bourgeois utilitarian system of values; man is perceived in terms of his usefulness in consequence of his employment. It justifies treating man as a means to an end, rather than an end in himself, and has found reinforcement in such concepts as Puritan ethics, social Darwinism, a laissez-faire system of economics, and a system of business that has been permitted to assume unchallenged power to dominate our lives, largely indifferent to human ends.

Certainly, failure to acknowledge the unprecedented material gain and the scientific and technological advances bestowed

	Economic Efficiency Value System	Social Justice Value System
Goal	Material security	Social justice
Value	Utilitarian	Freedom and dignity
Approach	Conservative	Liberal
Concept	Closure	Pluralism
Relationship	Antipolitical	Political
Expected behavior	Acceptance	Self-determination
Enforcement	Domination	Cooperation
Consequence	Compromise of personal identity and values or alienation and punishment	Freedom of expression and being, human relations based on honesty

upon certain segments of our society would be to ignore reality. But it is precisely my purpose to point out that this material wealth and security have been gained at a terrible tolerance of human abuse—for example, expressed toward others in the form of racial discrimination and expressed toward self in alcohol and drug abuse. Although, ideologically, this system of values acknowledges that each individual has infinite dignity and worth, in practice it has been true utilitarian, recognizing individual needs, aspirations, and capabilities only as they are of use in the furtherance of material gain and security. It is precisely this paradox that in my opinion is the underlying cause of our nation's social and racial problems.

It is the refusal to recognize this paradox that has provided the rationalization to abuse and exploit racial minorities and other powerless groups. It has provided the rationalization to exclude the economically deprived, useless, or obsolete, those handicapped by youth, age, health, race, or mental disabilities—the powerless, the voiceless, the abused, the forgotten—from sharing in the American dream of material wealth. It has further provided rationalization for a national pseudoinnocence by supplying historical, religious, biological, psychological, social, and cultural concepts that have allowed a game of censure for the victim and abuse and condemnation for those who dared to challenge the suppositions of this economic efficiency value system.

In my interpretative model of the "social justice" value system, I see emanating a striving for changes and adoption of concepts that will insure human freedom and dignity to all individuals, regardless of their utilitarian value to society. The difference between the two systems is that the former acknowledges these same concepts as ideals whereas the latter is concerned with their empirical application. In the social justice value system, I perceive a commitment to alleviate human suffering and indignity related to economic, social, and racial discrimination. This system of values is permeated by a form of liberalism in that it remains open to the examination of new concepts, ideas, and societal arrangements as opposed to an approach of conservatism witnessed in the economic efficiency value system, which is suspicious of change and dedicated to the maintenance of existing views, conditions, and institutional arrangements.

Another characteristic of the social justice system of values is its commitment to a pluralistic society that encourages the coexistence of variant values and cultural experiences. This concept is characterized by a political arrangement of open access to the decision-making processes that encourage controversy and respect open discussion of differing views. It is perceived as political in the sense that it does not shy away from controversy but tries to solve its differences and problems by cooperation and by appealing to logic and reason. In

this way it differs from the system of economic efficiency, which, on a practical level, demands acceptance of a one-way philosophy and views opposition to this as dysfunctional and illegitimate.

IF THE PROBLEM, then, is one of two opposing systems of value—a communication gap based on differing experiences and interpretations of the ongoing social process as well as a difference of interpretation based on varied cultural and racial experiences—our concentration on a discussion of race relations is too constrictive and self-defeating. It is a case of crisis management neglecting to bridge a communication and social-awareness gap experienced by the majority of Air Force personnel and provide a systematic approach to solving the social problems plaguing our organization.

My suggestion to answering my first set of questions, as to why a race relations program, would be to enhance the scope of the present race relations education program to one addressing itself to the whole spectrum of contemporary social problems. As a first step, combining the race relations, drug abuse, and alcohol abuse education efforts and adding other subjects would do much to enhance the scope of the present education program. The additional subjects should include—but not be limited to—the generation gap problem, women's liberation movement, the problems of youth, the problems of the white ethnic and lower socioeconomic groups in our society, the problem of age in our society, the military and its relationship to contemporary society, the political and civil rights of service members, explanation and clarification of the military judicial system, the relationship of officer and enlisted personnel, rank and earned privileges versus abuse of the system, problems of military families, and inequality problems of single military personnel.

Regarding my second set of questions, concerning what different groups we are trying to reach, my observation has been and is that the shotgun approach of providing 18 hours of annual mandatory training is unsatisfactory and counterproductive for several reasons. One, people are at various levels of awareness; different people need different messages and involvement in different settings. Two, there is a lack of sophistication and perception (by both majority and minority personnel, concerning the social aspects raised, especially in relationship to Air Force organizational needs) of possible avenues for effecting change and the imposed institutional and operational limitations. Third, race relations instructors whose specific training is limited to exposure at the Defense Race Relations Institute are severely handicapped in dealing with the wide range of issues and implications surfacing in an environment of intense emotional human interaction permeated by controversial subject matters. Fourth, the prescribed course length of 18 hours is inadequate to fulfill a definite need for background information and provide factual data plus personal involvement and interaction necessary to achieve a positive learning effect. Yet, the annual repetitive cycle seems to be somewhat superfluous. Fifth, the program's mandatory requirements set up an unnecessary psychological barrier to many personnel. The carrot approach may be more beneficial than the stick.

The following suggestions regarding the structure and the content of an education program addressing itself to contemporary social problems would, in my opinion, be helpful in providing relevancy and purpose. First, the program should not be mandatory for all military personnel; rather, a system of rewards should be initiated to give special recognition and career rewards to those

interested enough to participate. For example, enlisted personnel participating could earn extra promotion points to count toward their WAPS test score. For personnel not covered by WAPS, attendance and participation should be a consideration for promotion and for assignment to positions of leadership and sensitive staff positions, i.e., sensitive in regard to dealing with human factors. In such a system the choice would be left with the individual and would provide an avenue for the ambitious and those motivated toward high achievement and organizational well-being to help themselves and the Air Force.

Second, since people are at various stages of development and have different backgrounds and experiences, there should be available a variety of means through which this requirement could be satisfied. Until now, the Air Force has taken a very restricted approach. Rather than one course offered through social actions channels, use could be made of local resources in the form of available college courses, suitable courses that could be offered by, for example, the judge advocate's office, the chaplain's office, and civilian organizations involved in transactional analysis and encounter group actions. This approach could also bring about involvement by work and participation in local drug abuse and alcohol abuse counseling and treatment centers, interracial community council organizations, or youth programs.

Third, if in-house courses through social actions channels are to be maintained as a core, these courses should be expanded in length, perhaps from 18 to 36 or more hours, and suggested attendance should be every two or three years instead of annually. This would allow in-depth background study through the use of textbooks and assignments, to be concluded with extensive opportunity for personal interaction and involvement through the use of encounter techniques and minimarathon sessions.

Fourth, instructors assigned to the program should have as a minimum qualification requirement a bachelor's degree in either a humanities or a behavioral science subject. In addition, they should have a demonstrated knowledge of Air Force organizational policies and procedures, experience as a supervisor or commander, and a demonstrated ability to pursue independent research, in order to be able to develop curricula serving the varied needs of Air Force personnel and the local organizational situation. Also, an instructor should be capable of providing counseling services to interested personnel, to insure a continued growth of awareness and perception in social and human behavior complexities throughout their Air Force careers.

In addition, I am firmly convinced that to achieve a system of affirmative, goal-oriented equal-opportunity management, capable of correcting the root causes of inequality, demands much more than an educational program. It demands a change in organizational policies and procedures. To this, I addressed my third set of questions: "What changes should be made to insure equal opportunity and treatment as a reality, not just a slogan? What changes can be made within the restrictions of the Air Force organizational purview? Have we established realistic goals?"

In searching for achievable goals, I am fully conscious that human freedom is not an absolute. Freedom, in my view, is freedom from fear, want, exploitation, and arbitrariness. It is cooperation, a positive respect for the rights and dignity of fellow human beings, and, above all, honesty and integrity in professional and personal relationships. I am committed to the idea:

> As there is no life without structure, so there is no life without constraints. . . . What is important is not whether there are limits but how much choice we have within those limits.[4]

I believe that we, as individuals, as officers and airmen, as commanders and organizational members, must clearly understand our rights and our responsibilities. We must have a common understanding of our possibilities and our limitations. We must be allowed to pursue those possibilities to the fullest and have the limitations enforced free of arbitrary and subjective value judgments. Contrary to the beliefs expressed by certain factions, I do not believe that educational efforts or changes in policies, procedure, and organization necessary to enhance the social consciousness and perception of human behavior of Air Force personnel are detrimental to good discipline, nor do I believe that they undermine the functional ability of the Air Force to carry out its mission requirements. What is required, however, is a clear-cut and honest statement of purpose and achievable goals.

As previously stated, I do not believe that an educational effort alone is sufficient to achieve the goals of equal opportunity and treatment. What is needed is a close examination of our patterns of organization, functional employment of personnel, and the whole spectrum of assumptions and traditions governing the management of our personnel resources. I am not advocating change for the sake of change; rather, we should be able to establish a method of planning for and developing policies and procedures through a process of empirical reasoning and limited controlled application, relying on facts rather than on personal opinions and dated traditions. What seems to plague our system is an inability to plan for and anticipate future social and human value needs affecting the management of personnel resources.

I continue to be mystified by an Air Force philosophy which is clearly committed to marshaling the best intellectual talent and a wealth of material resources to achieve and maintain scientific and technological superiority, yet which sanctions an amateurish and poorly financed approach toward solving its social problems. This is an inexcusable lassitude in view of the sophistication achieved in the humanities and behavioral sciences.

I SUBMIT for consideration the idea of developing a behavioral science group dedicated to future human resources development and the study of advanced human organizational concepts and employment patterns. The group should be established as a function of the Deputy Chief of Staff for Personnel at Headquarters United States Air Force and have assigned under its control one or two Air Force bases to serve as laboratories in which to test ideas and concepts for their suitability and adaptability. If we are to create a climate of equal opportunity and treatment and develop a flexible human resources program to meet ever changing organizational needs, we must be prepared to examine and evaluate recruitment, training, technical, managerial, and professional qualification criteria, and employment of personnel. We must examine and evaluate the present system of officer and enlisted personnel ranks, military courtesies, grooming standards, and many other items.

"What we call necessary institutions," wrote Alexis de Tocqueville, "are often no more than institutions to which we have grown accustomed." [5] To determine by test and evaluation whether they are necessary or are simply outgrown traditions requiring replacement with new ideas and concepts could be the mission of a group such as I propose. This would provide empirical and factual data to decision-makers and eliminate reliance simply on traditions and personal opinions.

At the beginning of this article I stated

that the past year has proved to be the most interesting, exciting, and rewarding—and at the same time the most confusing and frustrating—in my Air Force career. And so it has been. I believe the initiation of the race relations education program was a bold and pioneering commitment. But we must recognize that it represents only a small beginning. We now need to take a look at where we have been and where we are today. We must define our purpose and our goals.

The first task, in my opinion, would be to develop a definition of the problem. My observations have led me to believe that the basic problem is not one of race but that race is a symptom of the problem ensuing from a clash of differing systems of value or basic beliefs about man in his relationship to society. I find support for this idea in Milton Rokeach's book *The Open and Closed Mind*, in which he reaches the conclusion

> . . . that we categorize people and groups of people in terms of the extent to which their beliefs are congruent or incongruent with our own. We generally seem to prefer, to one degree or another, those with belief systems that are more congruent with our own. Our findings suggest that this organizing principle is far more important than other kinds of categorizations, such as race or ethnic grouping, in determining our relations with others.[6]

Second, we must re-examine our assumptions concerning the education program provided. We must strive to institute a program tailored to individual needs, providing rewards of career advancement to those concerned individuals who exhibit motivation, interest, and ambition in developing their social consciousness for better service to the Air Force.

And third, we must recognize that education alone is not enough but that we must challenge traditional concepts applied in the organizing, employing, and managing of our human resources.

The possibilities and probabilities inherent in the present social programs are limited only by our imagination. The development of new pioneering concepts of human interaction could prove beneficial not only to the Air Force but also to the other services and our society as a whole.

Hq PACAF

Notes

1. Karl Mannheim quoted in Theodore J. Lowi, *The Politics of Disorder* (New York: Basic Books, Inc., 1971), p. 31.
2. Curtis R. Smothers, *Compliance Monitoring Visit to Pacific Command Installations* (Washington, D.C.: Manpower and Reserve Affairs, July 28, 1972), p. 3.
3. Samuel P. Huntington, *The Soldier and the State* (Cambridge: Belknap Press of Harvard, 1967), p. 2.
4. John Holt, *Freedom and Beyond* (New York: E. P. Dutton and Company, Inc., 1972), pp. 17–18.
5. Alexis de Tocqueville quoted in Charles E. Silberman, *Crisis in the Classroom: The Remaking of American Education* (New York: Random House, 1970), p. 207.
6. Milton Rokeach, *The Open and Closed Mind* (New York: Basic Books, Inc., 1960), p. 391.

Books and Ideas

THE ART OF COMMAND

DR. I. B. HOLLEY, JR.

IF one may paraphrase Napoleon, today's ambitious soldier should carry in his pack not a marshal's baton but Marshall's biography. Forrest Pogue's magnificent third volume, *George C. Marshall: Organizer of Victory*,† continues his account of the nation's great wartime leader from the dark days of delay and frustration at the beginning of 1943 to victory in Europe early in 1945. Like its predecessors, this volume is a triumph of exhaustive scholarship and sustained artistry, making it at once utterly absorbing and a pleasure to read.

General George C. Marshall, by Christine L. Pogue

† Forrest C. Pogue, *George C. Marshall: Organizer of Victory, 1943-1945* (New York: The Viking Press, 1973, $15.00), xviii and 683 pages.

Although most military readers will be more interested in what the author has to say than how he says it, there is good reason to observe the almost architectonic structure of this volume. Officers, whatever their specialties, are persuaders, whether writing staff papers or briefing their superiors. And what better way is there to learn persuasion than by conscious analysis of a master's work? The author rivets one's attention in the first few pages with a succession of thumbnail sketches of the principal actors—Churchill, Roosevelt, and Marshall. Then, when the polarities of personality and national policy have been established, the reader is transported to the international conference at Casablanca, where the U.S. and British military chiefs and heads of state sought to hammer out a mutually acceptable strategic plan, including the Combined Bomber Offensive, for the liberation of Europe.

With the objectives outlined at Casablanca establishing the immediate tasks to be done, the author then devotes a series of chapters to a careful description of the machinery of command, the building of the Pentagon, how the staff functioned, and above all how General Marshall left the imprint of his values and his qualities on the whole process. Upon this foundation of fact and insight, the rest of the book is formulated. A succession of international conferences, whose very names—Quebec, Tehran, Cairo, Yalta—have become historic symbols, mark the continuing struggle to achieve free world cooperation. But national self-interest, the mischance of war, and the clash of personalities repeatedly eroded this cooperation, raising the challenges to Marshall's generalship that marked his climb to greatness and provide the substance of this book.

Readers who come to this volume expecting dramatic interpretive breakthroughs on the issues of grand strategy will be disappointed. There are few surprises in the narrative. Its real merit is the contribution it makes to the art of command. Those who would profit most from it will heed the injunction in the Book of Common Prayer to "read, mark, learn, and inwardly digest." Those who will but take the trouble to reread and annotate will find here a veritable treatise on generalship for aspiring commanders.

The first requisite for any officer is character, and Forrest Pogue is at pains to depict the elements of personal strength that made George Marshall the man he was. In all humility, Marshall thought it unseemly to accept honors as Chief of Staff when other men risked their lives in battle. Doubtlessly it was easy to brush aside awards and decorations as mere baubles; men who know the taste of real power have little need of symbolic tokens to reinforce their egos. But what about supreme command of the Allied assault on Europe? As a professional soldier, Marshall wanted that command; it was his for the asking. But he would not reach for it when the indication was that he was most needed in his post as Chief of Staff. This voluntary renunciation of his enduring ambition, which the author describes as the greatest drama of the general's life, clearly delineates the self-effacing character of the man, a soldier for whom such words as duty and honor were more than catchphrases.

Yet another dimension of Marshall's character is compassion. Only a man with genuine sensitivity to the feelings of others can truly understand the complex human drama of a nation at war as Marshall did. During the period immediately following Pearl Harbor, he tried to write a personal note to the bereaved parents or spouse of each soldier killed in battle. The mounting carnage soon made this impossible, but his anguish remained. To make sure that the President, as the ultimate political authority

for every military undertaking, was fully aware of the human costs involved, the Chief of Staff every few days put the casualty figures before him "because you get hardened to these things and have to be very careful to keep them always in the forefront of your mind."

The other side of the coin of compassion is firmness. An effective leader knows when to say no. Marshall learned that the farther one goes up the ladder of power, the more one is besieged by importunate acquaintances seeking favors. Virtually all such requests he rejected with icy rectitude. The sole exceptions were those where individuals sought transfers from rear area posts of no danger to duty in combat; these he honored when he could.

Finally, Marshall had the moral courage that is a mark of character. He vowed to resign rather than carry out a policy he believed to be unwise. He did this on no more than a handful of occasions and always without theatrics. The quiet, ominous intensity of his threat invariably was enough to make his point. Probably the last time he felt driven to this extremity was when Prime Minister Churchill mounted a drive to have General "Monty" Montgomery set up as a Ground Commander-in-Chief between Eisenhower as Supreme Commander and the British and American armies in the field, a move Marshall successfully forestalled by his courageous threat to step down. The cost of this gesture in defense of General Eisenhower's position can best be measured when one recalls that this happened on the eve of victory, when to step down would mean to deny himself the personal reward for years of agonizing effort.

While it may be argued that character is often a matter of inheritance or early upbringing, there were many aspects of Marshall's superiority as a leader that bore the marks of conscious preparation and continued effort even after he had become Chief of Staff. For example, papers drafted for his signature seldom passed across his desk unchanged as he slashed needless verbiage and sought precisely the right words for a succinct and unambiguous message. His unending quest for a direct, simple, and effective prose style not only sharpened his own abilities but served as an education for a whole generation of staff officers exposed to his deft emendations.

In yet another area Marshall's penchant for careful personal preparation served him well. He read widely if not deeply from history. From a biography of Cicero he took consolation that his problems of leadership were "neither new nor insoluble." While flying to the conference at Cairo he read the addresses of William Pitt, surely an adroit move for one who wished to establish immediate rapport with Mr. Churchill—and, as it proved, a successful one. Studying to know his man before negotiations was a Marshall hallmark. As he said of Stalin at Cairo, "I always thought they made a mistake in treating Stalin [as if he were] a product of the Foreign Service. He was a rough SOB who made his way by murder . . . and should be talked to that way." Seemingly "none of our people had read his early history, and I thought that was quite essential when . . . dealing with a fellow who had done the things he did. . . ."

To be successful, a Chief of Staff must establish an effective working relationship with his political superiors. While many incumbents have managed to perfect a working relationship with the President and the other members of his Administration, from the Secretary down, few have been as successful in their dealings with Congress as George Marshall. Evidence that Marshall was highly regarded by members of Congress is to be found on every hand. Explaining just why he was so regarded presents difficulties, but some of the ingredients are discernible.

To begin with, Marshall had, as a matter of deep conviction, a highly developed sense of military subordination to the civil authorities. "I do not think the military authorities should make any political decisions. . . ." If the last word rested with the President and Congress, this still left the initiative for persuasion with the military, and it was here that the Chief of Staff scored some of his most notable triumphs. For a man who was neither physically impressive nor charismatic as a personality, he was a remarkably persuasive speaker. One of his colleagues described his appearance before a political body, where he spoke entirely without notes, calm, unruffled, unhurried, emotionless: "In his low but clear voice, speaking carefully articulated and exactly formed sentences, he gave an accounting of the military activities in each theater of war all over the globe. No sentence was ever begun without being carefully and purposefully ended. No words were wasted." The secret of his impact seems to have rested on his ability to convey a sense of utter sincerity.

Men instinctively trusted George Marshall—members of Congress, the President, and the man in the street. Nor were they mistaken in this trust, for it was not only his demeanor and his words but his acts which induced conviction. One example will suffice to illustrate why the people of the nation believed him and willingly entrusted their sons to his care: He was fundamentally egalitarian; as a general rule he opposed direct commissions for college men, insisting that service in the ranks was the proper route to officers' school. And as the pace of combat quickened, he directed that at least 50 percent of the vacancies in the junior-officer ranks of divisions in combat be filled by direct commissioning of outstanding noncommissioned officers.

Still another factor behind Marshall's ability to secure respect and support was his remarkable ability to make use of the press. As Pogue reports, the Chief of Staff came only slowly to success in dealing with newsmen, groping his way toward an improved relationship, "first holding its members at arm's length, then delegating his press officers to explain the Army's policy patiently and openly, then instituting his off-the-record briefings for top Washington correspondents, and at last appearing at press meetings before key members of the profession." There was, however, more to Marshall's success than mounting self-confidence. Journalists trusted him because he understood that honest press coverage cuts two ways: he was as ready to accept criticism as he was to pass out news releases. Indeed, his willingness to condone dissent, sometimes painfully critical, stands as a model for all commanders who may be tempted to exercise a tight censorship over troop newspapers. Marshall knew what he was getting into and took his cue from General Pershing's experience in 1918 with *Stars and Stripes*, where irreverent journalists had provoked many a division commander to indignation. For Marshall, in a democratic army such a newspaper was a necessity. He admitted it was difficult to handle, but he insisted, "If you begin to restrain it, the paper loses its cast as the voice of the enlisted man."

After winning the confidence of the press, the Chief of Staff demonstrated that he knew how to use the instrument. When a field commander failed to give adequate news coverage to his subordinate units and their leaders, Marshall would chide him. To MacArthur, a frequent offender in this respect, he pointed out that unless his public relations people provided more names, there would be fewer credits for MacArthur's command. On the other hand, Marshall deliberately used the press to build up leaders who merited support.

General George C. Marshall touring 92d Division, Fifth Army, near Reggio, Italy, February 1945

Fearing Churchill's drive to secure the ground command for Monty, the Chief of Staff stirred up coverage for Eisenhower as Supreme Commander: "It is a damned outrage that because he is self-effacing and not self-advertising . . . they ignore him completely. . . ." Later, when Ike was riding high as Supreme Commander, Marshall prodded him to see that some of his more neglected army commanders received their fair share of publicity. The Chief of Staff could recall only too painfully how quickly all but a few of the Army's triumphs were forgotten after World War I, and he was determined to avoid a repetition.

No small part of Marshall's genius was his sensitivity to the motivations that impelled men to lay down their lives in battle. He understood that the soldier thousands of miles from home lacked the spur which goaded men who fought to defend their homes at their backs. "I think the first thing

General Marshall washes from a jerrican near Saint-Pierre du Mont on his visit to Normandy in June 1944.

is that he has to know what it is all about." To this end he turned to the media, secured the "Why We Fight" series, established a Morale Branch, introduced public opinion polling to heed the soldiers' gripes, and pushed for the prompt award of theater ribbons. Although he thought it "rather pathetic" to see how much importance the men attached to such recognition, he nonetheless took steps to turn their feelings to good account. On another occasion he pointed out that while infantrymen made up only 11 percent of the total air and ground force, they accounted for 60 percent of the casualties. Once again turning to the media for support, he observed, "Men will stand almost anything if their work receives public acknowledgment."

Marshall's success with the world outside the Army, with the President, the Congress, the press, and the public at large, was matched and probably made possible by his remarkable ability to command the loyalty of his subordinates within the service. He understood that most difficult of lessons: that loyalty down is just as important as loyalty up. When a key subordinate suffered an ill-informed political attack, he invested many hours on the Hill fending off the misrepresentations. His sincere consideration for the feelings of his soldiers manifested itself in a thousand ways. He was quick to resent Prime Minister Churchill's references to the common soldiers as "the dull mass."

Marshall's instructions sent to the major generals whose divisions in training he planned to inspect provide a wealth of insights on the man and a practical manual for emulation. He wanted to be met by the division commander and no one else. There was to be no advertising of the visit; photographs were permitted, provided they were unposed. A simple dinner with the senior officers down through colonels was to be followed by inspections of troops firing on the ranges. After this he wanted to talk to junior and noncommissioned officers, captains, and lieutenants, with no seniors present. In addition he explicitly banned any influx of senior officers from nearby corps and army headquarters during the course of his visit. There were, moreover, to be no guards of honor, no reviews, no escorts, no aides or orderlies of any kind. And while he wanted to talk with the first sergeants of a number of companies, he explicitly directed that none were to be held in camp over Sunday merely to respond to his wish. Finally, he directed that no leaves were to be canceled because of his scheduled inspection. Surely it is not difficult to see why such a considerate man commanded the loyalty of his troops.

One significant facet of Marshall's ability to hold the loyalty of his subordinates and sustain high morale stemmed from his ability to select outstanding men for promotion and assignment. Even those who lose out in the competition for advancement find it easy to bear the disappointment when it is clear to all that those who were chosen are outstanding individuals. The ability of the Chief of Staff to appoint successful commanders doubtlessly required sound intuitive judgment, but it involved something more. Marshall worked at the problem in a systematic fashion. Throughout his career, he kept book on promising officers. More than that, he deliberately cultivated potential top leaders by arranging to give progressively more demanding command assignments to the likely young men on his list.

In retrospect it is a simple matter to count only the successes, the roster of army and army group commanders who led the assault on Fortress Europa. But it is fatally easy to read history backwards. After the triumphs, anyone could point to the qualities which an Eisenhower or a Bradley, a Patton or a Clark, displayed in that in-

credibly massive operation. In order to assess meaningfully Marshall's qualities as a judge of men, one must go back and stand with him as he selected a virtually unknown officer with no combat experience to command the landings in North Africa. And when that operation proved to be something less than brilliantly successful at all points, one must see how Marshall continued to have faith in his chosen instrument, urging him upon the heads of state for still higher responsibilities as Supreme Commander of the Allied cross-channel effort. This inner assurance, before the record was clear to all, is the true measure of Marshall's ability to pick winners and back them even when the contraindications seemed greatest.

Finally, there is the measure of Marshall's statesmanship, his ability to perform successfully in the treacherous environment of inter-Allied planning. Here again the bitter experience of World War I gave him valuable perspective on the pitfalls to be avoided. Marshall's effectiveness here seems to have stemmed from a strict insistence upon harmony. No matter how aggravating, no matter how offensive an Allied representative might be, the Chief of Staff insisted that his subordinates abstain from all criticism and complaint. Those who fell short he not infrequently dismissed. A few such instances soon made his position clear. Nor were his expectations of his subordinates unjustified, for he set the pace himself in remarkable displays of self-control when dealing in person with such difficult allies as the mercurial Mr. Churchill and the "magnificently insufferable" de Gaulle.

FOR AIR FORCE READERS there are some items of special note in this volume, notably Marshall's interest in the potential of airborne attacks and an extended treatment of the controversial bombing of Dresden. The difficulties encountered in pinning down responsibility for the latter event offer instructive parallels for the assessment of somewhat similar controversies arising out of air operations in Vietnam. For the contemporary generation of readers who have not read the flood of books dealing with the formulation of grand strategy in World War II, the author offers an absorbing and cohesive narrative entirely comprehensible without extensive prior knowledge. But readable and useful as all this may be, the primary value of this volume derives from the many insights it offers on the ever elusive art of command.

Durham, North Carolina

POLITICIANS, GENERALS, AND STRATEGISTS

HERMAN S. WOLK

One of the few unequivocally sound lessons of history is that the lessons we should learn are usually learned imperfectly if at all.

—Bernard Brodie, *War and Politics*

IT has been said that, despite the absence of a world war, the decade of the sixties was in some respects the worst decade experienced by the United States in this century. A case can be made for this assertion. America experienced a series of traumas, including war, assassination, and severe social and cultural stresses. All these shocks fed on one another. None was more poisonous than the Vietnam war. Its effects buffeted every segment of our society, so pervasive was its character.

It was the longest of American wars; and though at this writing American involvement in Indochina seems almost to be over, it will doubtless be some time before the severe effects lessen. This war forced fundamental thinking, none more important than the relationship between the purpose and means of war.

This century has been called the century of violence. It is unique in history because revolutionary technological developments provided man with unprecedentedly destructive weapons for waging conflict. Consequently, our age has been marked by an urgent attempt to reconcile old habits with new means. Development of atomic weapons and their use at the end of World War II ushered in the nuclear age. Statesmen recognized that survival now demanded restraint and perhaps ultimately weapons limitations, if not disarmament.

The singular value of Bernard Brodie's *War and Politics*† is that it is the work of one who has reflected long and deeply on the interaction of military power and statecraft and who was in the vanguard of those who, after the Second World War, attempted to understand and communicate the meaning of the existence of the atomic bomb. Among scholar-strategists, he pointed the way. The destructive power of the atom was so great that now its only conceivable role would be to prevent nuclear war. The fact that such a war has not occurred is tribute to the bomb's awesome power and to the healthy fear it engendered in the minds of the world's people and their leaders.

Brodie was perhaps the first American scholar-strategist comprehensively to relate the traditional role of arms to the nuclear age. In *The Absolute Weapon* (1946), which he both edited and contributed to, he emphasized that the atomic revolution had shattered the traditional uses of military power:

> The atomic bomb erases the traditional pattern because its enormous destructive potency is bound vastly to reduce the time necessary to achieve those results which presumably accrue from strategic bombing. . . . A world accustomed to thinking it horrible that wars should last four or five years is now appalled at the prospect that future wars may last only a few days.[1]

In *Strategy in the Missile Age* (1959), Brodie wrote that the only use for these incredibly destructive weapons was to prevent war.

† Bernard Brodie, *War and Politics* (New York: The Macmillan Company; London: Collier-Macmillan, 1973, $8.95), 514 pages.

This meant pursuit of a strategy of nuclear deterrence. The instrument of deterrence would have to be maintained "at a high pitch of efficiency" always. "It is now up to us," he stressed, "to pay the price to make it work." This book remains the best treatise on the origins of air strategy and the policy of nuclear deterrence.

Brodie has always been a scholar-strategist with a difference, his thought firmly rooted in *realpolitik*. In *War and Politics*, his driving concern, from Clausewitz, is the question of matching military means with political purpose. In this regard, the First World War was a disaster —a grinding war of attrition pursued, as Brodie observes, for "victory for its own sake." This conflict, fought from trenches, took on a power all its own.

As Brodie writes, Brigadier General Giulio Douhet, the Italian air theoretician, had been appalled (like Winston Churchill, among others) at the carnage of World War I, attended by no clearly articulated political objectives save to press on to victory. Aircraft held promise as offensive machines. No effective defense against them existed. Effective military action would depend on mastery of the air, and the major objectives should be population and industry. To Douhet, the airplane was unique. It could reach the enemy's vitals without being stopped.[2]

Though Douhet had misjudged the effectiveness of air defense and the ability of civilians to withstand bombing attacks, his conception of air warfare and organization of air forces provided a model onto which subsequent ideas could be grafted. Though passage of time ultimately bared his misjudgments, his framework remains relevant, his basic idea having been resuscitated by the development of nuclear weapons.

With the end of World War I, statesmen groped for a way around grueling wars of attrition. The years between the wars produced, if nothing else, a jump in the magnitude of destructiveness with development of the bombing plane, which had shown promise as a military weapon prior to the end of World War I.

The bomber played a significant role in World War II. Though critics have charged that strategic bombing failed to achieve its objectives[3] and that it proved too costly, Brodie notes that the European bombing offensive achieved its goal, though tardily. In the Pacific, the American bombing offensive with B-29s—after naval and ground forces had put them within reach of Japan's home islands—had brought Japan to a state of collapse prior to the dropping of two atomic bombs.

Moreover, the historical record shows that by June 1945 General Henry Harley ("Hap") Arnold, AAF Commander, was convinced that the *conventional* bombing offensive would force Japan to surrender within a few months without having to drop the atomic bomb. This was communicated to President Truman on 18 June 1945 by Lieutenant General Ira C. Eaker (Arnold was in Okinawa).[4] Arnold also directed Major General Curtis E. LeMay, XXI Bomber Command, to inform the Joint Chiefs that there was every indication that conventional strategic bombing could bring Japan down. On 19 June LeMay briefed the Chiefs. General Arnold's view was based not only on the success of the B-29 campaign since March 1945 but also on the fact that—unlike Europe—the Pacific bombing offensive was under the direct control of the Army Air Forces.[5] Arnold was determined to show that a nation could be defeated without being invaded.

After the war, in November 1945, in his Third Report to the Secretary of War, General Arnold wrote that "the atomic bombs on Hiroshima and Nagasaki did not

cause the defeat of Japan, however large a part they may have played in assisting the Japanese decision to surrender. Japan was defeated already by the cumulative destruction of her capacity to make war."[6] This judgment was subsequently confirmed by the *United States Strategic Bombing Survey*. In sum, Japan's defeat without invasion was, as Kent Roberts Greenfield wrote, "an achievement unprecedented in the history of war."[7]

As for dropping the two atomic bombs, Brodie in retrospect approves of President Truman's decision: "A demonstration over a deserted island would have been anything but impressive, and there were too few bombs in hand to use one in that manner." (p. 53) Also, Brodie correctly emphasizes that LeMay's incendiary campaign—urged by Arnold in February and March—was well along in the process of turning Japan's major industrial and population centers into ruins. Brodie gets confused here, however, and writes that the most destructive attack of this war (including the atomic attacks) occurred on 23 May 1945 on Tokyo. This is incorrect, the great fire storm raid taking place the night of 9–10 March 1945, killing 72,489 people and injuring over 40,000, according to the official record of the Japanese War History Office.

With hindsight, the historian's potent weapon, he notes that after more than a quarter century the use of atomic bombs on Japan "has not made one iota more likely any future use. One would suspect that quite the contrary is the case." (p. 56) The nuclear balance has been exceedingly stable, so far vindicating Winston Churchill's prophecy that mankind could look forward to the nuclear age with confidence that a nuclear war would not occur.

Korea, Brodie observes, was the first American war fought without Congressional approval and "would have been inconceivable before the changes wrought by World War II in the American people's conception of their nation's world role." (p. 58) In a democracy, public support for war is crucial, a point that Brodie constantly emphasizes. When a President confronts a decision for war,

> . . . it is hard to see the slightest justification for the President's unwillingness to share his responsibility as well as his authority with Congress. True, too small a majority even in a favorable vote may be an embarrassment, but if the President has no more support than that, it is better he not be at war. There is also the danger, certainly realized later in the case of Vietnam, that the President will begin to identify his own personal prestige with that of the United States. (pp. 111–12)

Nonetheless, President Truman committed American forces in Korea. When this conflict locked into stalemate, it became an issue in the 1952 campaign. Eisenhower, after being elected, went to Korea and then determined to end the war. In May 1953, after Secretary of State John Foster Dulles informed the Communist Chinese, through New Delhi, that if the war was not ended the United States would carry the attack (including A-bombs) to China, a truce was signed in July 1953. This threatened use of nuclear weapons has since been called the classic triumph of the "massive retaliation" policy of the Eisenhower administration.

Brodie devotes considerable space to Vietnam, a disaster he says that we inflicted on ourselves, largely resulting from decisions made by President Lyndon B. Johnson. But what about earlier decisions made by President John F. Kennedy? Kennedy, Brodie correctly notes, was much concerned about Indochina. He increased American "military advisers" in Vietnam from about 600 to almost 17,000. Kennedy must also bear responsibility "for ap-

pointing those officials who were to guide his successor down the path of major military intervention in Vietnam." Brodie nevertheless believes that President Kennedy would not have escalated in the fashion of President Johnson. Kennedy "was free of the personal pigheadedness and truculence that Johnson so markedly betrayed. There can thus be little doubt that his conduct concerning Vietnam would have been critically and basically different." (p. 143)

On nuclear weapons, unlike several recent commentaries that suggest the nuclear balance remains unstable, even precarious,[8] Brodie bears down hard on the idea that this balance is "decidedly *not* delicate." Nuclear weapons have not been used since World War II, and scientist-novelist C. P. Snow's prediction in 1960 that they would be used before the decade had ended has fortunately proved to be wrong. There are, of course, no panaceas. But, as Brodie points out, "we have ample reason to feel now that nuclear weapons do act critically to deter wars between the major powers, and not nuclear wars alone but any wars. That is really a very great gain." (p. 430)

In *War and Politics*, Brodie returns to points previously discussed in articles and books, among them the contention that Albert Wohlstetter's January 1959 article, "The Delicate Balance of Terror," published in *Foreign Affairs*, shook up the Strategic Air Command, "which had consistently refused to recognize that it had a serious vulnerability problem." (p. 380) This allegation is false. The fact is that, from the day he took command of SAC in October 1948, General LeMay was acutely aware that his forces were vulnerable and also that his crews were not adequately trained.

Secretary of the Air Force Stuart Symington and Chief of Staff General Hoyt S. Vandenberg had discussed SAC's weaknesse with LeMay prior to his leaving for Omaha and LeMay's orders were to upgrade th command as quickly as possible. With th Berlin blockade having begun in June 194 the Truman administration wished to im prove the nation's strategic atomic capabil ity.

Consequently, LeMay moved swiftly t improve training (instituting much mor realistic bombing practice and his "lea crew" concept) and push for the B-36, a "intercontinental" bomber. He also ordere a disciplined program to perfect refueling techniques. Specifically on the matter o vulnerability, he was in fact much con cerned. He thought that bases in the Unite Kingdom might be "lost" with the out break of war, hence the United State could not afford to depend on them fo launching a strategic counteroffensive. Fo this reason, among others, LeMay had ad vocated development of the B-36 and SAC' refueling techniques. He emphasized thes critical points at a conference of Air Forc commanders convened by Vandenberg a Maxwell Field in December 1948. The were considered by the Air Force Board o officers in early 1949, this group decidin to increase B-36 production.

In short, from the start LeMay recognize the problem. In his presentation to a World wide Commanders' Conference in April 1950 he stated that SAC in the near future would be exceedingly vulnerable to a firs strike. He told top Air Force leaders tha "we could lose the whole striking force be fore it can deliver a blow." The Truman administration and the Air Staff shared LeMay's concern, and in the early 1950s Vandenberg and Secretary of the Air Force Thomas K. Finletter agreed that protecting SAC was top priority—a major national issue on which the country's foreign policy would depend.[9]

In the 1950s, then, SAC developed a sub-

tantial air refueling capacity and in 1956 nd 1957 conducted ground alert tests, eading to the command's ground alert pro- ram that began in October 1957. Also, 3-52 dispersal started in 1958, and B-52 air- orne alert tests began in September 1958. Thus, though it may be argued that to some legree the Air Force acted tardily, it is wrong to say that the Air Force by 1959 ad "refused to recognize" the vulner- ibility problem.

Another long-standing concern of Brodie's s military influence on national policy. When military advice has been bad, Brodie ays it should not have been followed. He loes, of course, recognize the President's inal responsibility, and he does not hesi- ate to say when he thinks a President e.g., Lyndon Johnson) has used bad judg- ment. He accuses the military generally nd high Air Force officers specifically Generals LeMay, Thomas S. Power, and Nathan F. Twining) of holding parochial iews, based primarily on weapons capa- ility rather than on broad international olitical analysis, and of being "hard-liners." (Chap. X)

"It is perhaps too bad we cannot give ll our top generals and admirals the useful raining of being a President for eight ears," Brodie writes, "but considering the leep convictions of some of them, it would e hazardous to try." (p. 494) This point, of course, is really irrelevant; just as irrelevant s the idea that Presidents ought to take a urn at becoming generals for a while, though heaven knows they might find this xperience useful. I understand Brodie's concern, but it must also be said that these fficers did keep their views under control while on active duty. *That is the important point.* I would not fear to give them Brodie's prescribed training. I have no doubt that our generals and admirals would come to appreciate—very swiftly if they hadn't already—the complexity of the nation's problems. They were, after all, specialists of a rare order. Many of them undoubtedly held views which Brodie would label narrow, for most dealt daily throughout their professional lives with the problems of military hardware.

In citing former Air Force Chief of Staff General Thomas D. White, Brodie makes the mistake of zeroing in on something General White wrote in 1963 *(after he retired),* to show the hard-line military view. (p. 466) Paradoxically, in selecting White, he has singled out an Air Force Chief of Staff with a deserved reputation for reflection and analysis distinguished by broad perspective. To be fair, Brodie writes that General White was "far from being the kind of notorious hard-liner" that LeMay was! Brodie's comment reminded me of a speech General White gave in 1957 to Air Force members of the National War College and the Industrial College of the Armed Forces: disdain parochial views, he admonished these officers. . . . Too much time and effort, he said, have been spent on interservice squabbling. . . . Creative thinking is required. . . . Do not be afraid of new ideas. . . . Above everything, always keep in mind what is good for this country. In my judgment, this speech more accurately reflects General White's career and the cast of his mind than the statement Brodie quoted.

I am also reminded of General Power. When CINCSAC, he could often be somewhat caustic and even truculent when meeting the press. But the important point was that when conferring on substantive matters with Secretary of Defense Robert S. McNamara, he was unfailingly a man of vision and restraint.

But despite Brodie's somewhat surprising vehemence, he does understand the origins and reasons for the military perception. And I am confident he would be among the first to recognize that throughout its history

the United States has been—with few exceptions—fortunate in the caliber of its professional military.

The Second World War comes to mind. General Arnold and his predecessors had nourished the Army Air Corps through lean, unfulfilled years. When the United States entered World War II, Arnold was ready. On orders from President Franklin Roosevelt *(who had previously excluded him from high councils)*, Arnold quickly built up the Army Air Forces, placed men he knew to be competent in positions of leadership, and then organized and directed the AAF's global campaigns. Despite precarious health (he had several heart attacks during the war), General Arnold, with superior administrative skill and dedication to the task, displayed what Americans have always admired in their military men: loyalty, competence, integrity. These traits have never been in short supply among the American military.

I THINK *War and Politics* a timely book. Brodie's thinking is especially welcome at this time when citizens must think about our country's vital interests. To do so inevitably leads one to the Constitution and the ideas of the Founding Fathers who framed this remarkable document.

The decision to make war, as Brodie says, is not to be taken lightly. In a democratic republic like the United States, it is much more than simply a matter of strategy, tactics, and hardware. Democracies do not wage sustained war successfully—ever—without overwhelming support of the citizenry. And when the nation does go to war, it is essential to remember that "*restraint in the application of force—in order to keep that application compatible with its purpose—may make the force applied ineffective for its purpose.*" (p. 358)

Strategy, of course, is directly related to the objectives of military efforts. Always the purpose. Are the means and cost compatible with the national objective? Ours is a nation more known for technologists than strategists or philosophers. Yet, we lose sight of purpose only at our grave peril. Technological skill is important. But it cannot solve all problems, nor can it substitute for logic or judgment.

National purpose, at any time, is derived from our traditions and values. Should politicians ever be in doubt about them, they need only consult the repository: the people of the United States.

Silver Spring, Maryland

Notes

1. Bernard Brodie, "The Atomic Bomb and American Security," Memorandum #18, November 1, 1945, Yale Institute of International Studies. This study was expanded and included in Bernard Brodie, ed., *The Absolute Weapon: Atomic Power and World Order* (New York: Harcourt, Brace, 1946).

2. A new edition of Giulio Douhet's major work, first published in 1921, *The Command of the Air*, trans. Dino Ferrari (New York: Coward-McCann, 1942) has been published by Arno Press, New York, 1972, as a volume in its "World Affairs" series.

3. For example, according to Nordal Akerman, the importance of strategic bombing was subsequently "denied, now that it has become clear that the German industrial and military potential continued to grow in spite of ever more intense bombing." Nordal Akerman, *On the Doctrine of Limited War*, trans. Keith Bradfield (Lund, Sweden: Berlingska Boktryckeriet, 1972), p. 56.

4. Interview, Thomas A. Sturm and Herman S. Wolk with Lieutenant General Ira C. Eaker, 27 November 1972.

5. Arnold, *Global Mission*, pp. 566–67. For emphasizing the importance of this point, I am indebted to Thomas A. Sturm, my colleague.

6. Third Report of the Commanding General of the Army Air Forces to the Secretary of War, 12 November 1945, p. 53.

7. Kent Roberts Greenfield, *American Strategy in World War II: A Reconsideration* (Baltimore: The Johns Hopkins Press, 1963), p. 121.

8. See, for example, Fred Charles Ikle, "Can Nuclear Deterrence Last Out the Century?" *Foreign Affairs*, January 1973.

9. "Concept of Long Range Bombardment Operations," paper presented to Aircraft and Weapons Board by War Plans Division, January 1953.

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The Air University Review Awards Committee has selected "Soviet Dissent: Its Sources and Significance" by Major Ralph C. Gauer, USA, as the outstanding article in the November–December 1973 issue of *Air University Review*.

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