Advances in hardware and combat techniques have added significantly to the capabilities of the free world's prime deterrent force, the . . .

STRATEGIC AIR COMMAND

Gen. Thomas S. Power, USAF

COMMANDER IN CHIEF, SAC

General Power, an active military flyer for more than thirty years, has been SAC Commander in Chief since mid-1957. Previously, he was SAC Vice Commander from 1948 to 1954 and ARDC Commander from 1954 to 1957. General Power flew B-24 and B-29 bombers in Europe, North Africa, and the Pacific during the second World War.

CONTRARY to widespread public opinion, the primary mission of the Strategic Air Command is not one of "massive retaliation." SAC's primary job is its peacetime mission of deterrence—to help maintain an honorable peace by discouraging aggression.

The dictionary defines "deterrence" as the principle of "restraining from action through fear of consequences." Hence, the basic objective of our national policy of deterrence is to keep any potential aggressor convinced that an attack on this country or on any of its allies would result in unacceptable consequences to him. This policy has been successful to the extent that it has prevented an all-out nuclear war to this date.

The future success of our policy of deterrence in averting both general and limited war hinges on a variety of political, economic, technological, military, and related factors. In combination, these factors must impress on the Communist world that this nation is capable, prepared, and determined to protect its interests and security by applying its military strength whenever, wherever, and however necessary.

It is obvious, therefore, that military strength by itself has little if any deterrent value. To serve its purposes in preventing war of any kind as well as in helping contain the spread of global Communist domination, military strength must meet a number of conditions.

First, the threat which it poses to an aggressor must be used with skill and sophistication by our statesmen in countering diplomatic blackmail. Second, it must be backed by the full support and cooperation of the American people. Next, our armed forces must possess—and be known to possess—the resources, flexibility, and reaction capability to permit their selective and effective employment regardless of the locale, scope, and nature of military action required. Finally, military strength must be maintained at an "adequate" level without imposing an "undue burden" on the nation's economy.

The determination of what is "adequate" on the one hand and "undue burden" on the other is subject to a great deal of speculation and indeed subjective interpretation. There can be little doubt that the great majority of the American people will support the quantity and quality of military resources which the Congress and Chief Executive agree are necessary to back up our policy of deterrence. But there can be no conclusive answer as to "adequate" quantity and quality as long as we cannot predict what degree of damage a potential aggressor would consider unacceptable or be unwilling to risk.

Under these circumstances, the only safe and, in the long run, most economical approach in establishing our future military requirements is to base them on the worst possible contingency, namely, a massive surprise attack against the United States. If we are fully prepared to cope with and thereby avert such a contingency, we should be even better prepared to deal with and avert lesser threats.

This does not mean that we should resort to the sledge-hammer approach in resolving local crises and limited conflicts. We will always need a variety of special tools for handling special situations as they may arise. But from the standpoint of deterrence, our real and evident capability to achieve a decisive military victory in a nuclear war must serve not only to prevent general war but also to discourage limited conflicts and, should they occur, help win them or prevent them from expanding into general war.

At present and for the foreseeable future, the major share of the nation's military deterrent is contributed by the Strategic Air Command. As of today, SAC has the unquestionable capability to counter any act of aggression with decisive results. Its alert force—

representing one-third of its combat-ready strike forces –stands ready day and night to go to war within fifteen minutes and, upon orders from the President, carry out its mission, regardless of whether it calls for a limited objective or total destruction of an aggressor's war-making capacity.

But as we address ourselves to the future, SAC faces two major problems which stem from the steady advances in the Soviet's offensive and defensive capabilities. For one, the growing missile potential of the Soviets poses a formidable threat to the survival of SAC's strike forces in case of a surprise attack. And, second, improvements in the Soviet's aerial defenses tend to make it increasingly difficult for SAC's manned bombers to penetrate to their assigned targets.

SAC is endeavoring to meet these problems, without impairing its day-to-day combat readiness, by concentrating its efforts on three areas—modernization of the strike forces, development of new tactics and techniques, and measures to ensure the survival of an adequate percentage of its strike capability under the most unfavorable conditions. The gratifying progress made in all three of these areas is reflected in the following review of the command's activities and accomplishments during the past twelve months.

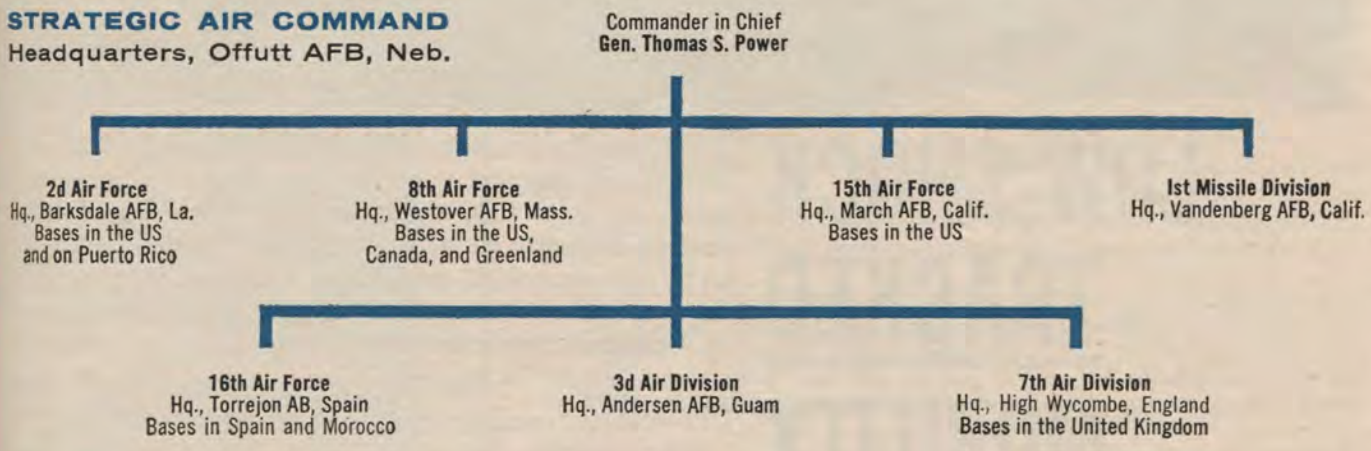
SAC's centrally controlled global organization now comprises some seventy bases which are spread throughout the free world. Command personnel strength is at the 270,000 mark, making SAC the largest single component within the US military establishment.

Most of SAC's fighting strength today and for the immediate future lies in its force of manned bombers, about 2,000 long-range jet aircraft which presently are entrusted with the delivery of over ninety percent of the free world's firepower, as measured in TNT equivalents. Backing up the bomber force is a fleet of tanker aircraft—KC-97s and the newer all-jet KC-135s—which give the bombers the range needed to strike targets anywhere in the world and reach their recovery bases.

Backbone of the combat forces still is the B-47 medium bomber which, however, will be phased out gradually during the next few years and replaced both with missiles and the B-58, our first supersonic jet bomber. SAC's first operational B-58 unit was activated at Carswell AFB, Tex., in March 1960. Crews of this unit, the 43d Bomb Wing, are now familiarizing themselves with this Mach 2 bomber. Current plans call for three B-58 wings.

The B-52 inventory included some 550 aircraft at

(Continued on page 67)



The B-52G, new version of SAC's major current bomber, can carry Hound Dog air-to-surface missiles as well as usual bomb load. The first of the new, turbofan-powered B-52Hs is scheduled for completion sometime early in 1961.

the end of fiscal year 1960. SAC has started to receive the B-52G, latest modification of this eight-jet heavy bomber, and development is well under way on the B-52H which will have still greater range and thrust. Both the G and H models will be capable of carrying various types of air-to-ground missiles, as will be discussed below. The first B-52H is scheduled for completion in early 1961.

To ensure the continual modernization of its manned bomber force and thereby prevent a dangerous gap in its combat capability, SAC has strongly urged a virile and expeditious development program for the B-70, a highly advanced aircraft with greatly increased speed, range, and altitude performance. The B-70 will have to take the place of the B-52 when that aircraft nears the end of its useful service life and, like the obsolescent B-47 now, must be replaced by more advanced weapon systems. Congress has appropriated the funds required to provide a limited number of B-70s by the mid-1960s.

In addition to modernization, the past year has seen considerable progress in SAC's program for enhancing the survivability of its strike forces in the face of a surprise attack. The bomber and tanker alert forces are now spread out over more than fifty bases in this country, as compared to some forty bases a year ago. A dispersal program for the manned force, being implemented as rapidly as possible, is designed to place no more than one B-47 wing of forty-five aircraft or one B-52 strategic wing of fifteen aircraft on any one base. The primary objective of dispersal, as applied to both manned and unmanned weapon systems, is to increase the target system of a potential aggressor and thus to lower his confidence that he can hit and destroy all our strike forces simultaneously.

Toward this end, SAC also is conducting tests involving the use of bases of other USAF commands as well as civilian airports for the periodic deployment of some B-47 units. Under this plan, which was announced in June, B-47 units would be deployed from their home stations to a number of suitable Air Force bases and nonmilitary airfields for short periods of time. The main purpose of this tactic is to make it more difficult for an enemy to predict the exact locations of SAC's medium bomber force at any particular instant.

Another advantage of dispersal lies in the fact that it adds runways and thereby compresses the time required for launching the alert force. SAC's reaction capability will be enhanced still further by a new "minimum interval" takeoff procedure which was tested successfully at several SAC bases during the spring of 1960. The tests, called Project Open Road, demonstrated that all alert aircraft at a base could be launched at a rate some four times greater than previously thought possible. This procedure is now being implemented throughout the command, ensuring takeoff of the entire alert force in a matter of minutes after warning of an attack has been received at SAC Headquarters.

But as the Soviet missile threat continues to grow and, with it, the danger to SAC's strike forces, it becomes increasingly urgent to supplement the ground

Atlas ICBM stands on alert beside gantry at Vandenberg AFB, Calif., free world's first operational ICBM base. Twenty SAC ICBM bases were programed by end of FY 1960.

alert by placing at least part of the heavy force on an airborne alert. Further tests of this tactic and indoctrination of crews were conducted during the past twelve months. The tests have clearly shown that SAC can initiate a sustained airborne alert to the full extent permitted by available resources. The major problem is stockpiling of the necessary spare parts, some of which have very long lead times.

At present, funds have been allocated to provide the capability for placing one-eighth of SAC's heavy bomber force on airborne alert. It is hoped that this figure can be doubled in order to ensure an effective deterrent in the critical period ahead. I am speaking of the period when the Soviets may have enough ballistic missiles to risk a surprise attack while this country still lacks adequate facilities to give SAC's ground-alert force the required minimum of fifteen minutes warning of such an attack.

The Ballistic Missile Early Warning System (BMEWS), which is now under construction, is expected eventually to provide sufficient, reliable warning to permit the airborne alert force to revert to ground alert. Until then, however, a sizable force of B-52s on airborne alert would represent our most

(Continued on following page)

Radio operators work at control board of SAC's new single-sideband radio system known as "Short Order." System can put Hq. SAC in immediate contact with aircraft anywhere.

Minuteman mobility test train begins its initial run at Hill AFB, Utah, on June 20. Test trains, scheduled to run through the fall, develop missile mobility doctrine.

effective deterrent in convincing the Soviets that they cannot attack this country with impunity, regardless of how well they may plan and execute a surprise missile attack.

The airborne concept is also utilized for assuring continuity of control in the event that SAC's underground control center of Offutt AFB, Neb., and all alternate SAC headquarters should be destroyed simultaneously. Procedures for maintaining an airborne command post under emergency conditions were initiated in July. Three KC-135 aircraft have been equipped with the communications gear necessary to control the global strike forces. One of these aircraft will always be ready to take off within fifteen minutes, with a full crew of controllers and technicians. Each standby crew is headed by a general officer from SAC Headquarters who would assume command of the force if such should become necessary.

SAC's continued efforts toward improving the penetration capability of its manned weapon systems led to a program of low-level training missions for B-47 and B-52 crews. Announced in November 1959, the program is designed to check out crews on radar bombing approaches from altitudes as low as 1,000 feet. As a result of this program, SAC crews will be able to operate at the most advantageous altitudes, from very high to very low, and can resort to low-level tactics to assist them in slipping under the enemy's warning and intercept radars.

But SAC's striking power no longer rests solely in its bombers. On September 9, 1959, the first Atlas ICBM was launched by a SAC crew, marking the birth of the command's operational missile capability. Since this historic event, ICBMs have joined the manned alert force, and, although their number still is small, they are destined to assume an ever greater share of the deterrent load.

Locations for twelve new ICBM bases were announced during the past year, including Atlas sites at Altus AFB, Okla.; Dyess AFB, Tex.; Fairchild AFB, Wash.; Forbes AFB, Kan.; Lincoln AFB, Neb.; Plattsburgh AFB, N. Y.; and Walker AFB, N. M. Titan sites were announced for Beale AFB, Calif.; Davis-Monthan AFB, Ariz.; McConnell AFB, Kan.; and Little Rock AFB, Ark. Malmstrom AFB, Mont., was the first site announced for the Minuteman.

These site selections brought the total of SAC's announced ICBM bases to twenty by the end of fiscal year 1960. Construction is well under way at some of these bases, and Vandenberg AFB, Calif., already has a combat-ready Atlas unit, the 576th Strategic Missile Squadron. Training of crews to man SAC's growing complex of missile bases continues at a steady rate under the direction of SAC's 1st Missile Division at Vandenberg.

The plan is to disperse ICBM sites as extensively as presently available funds will allow. Hardening through use of underground concrete silos and aboveground concrete "coffin launchers" will serve further to enhance the survivability of the missile sites. Hardening and dispersal are particularly important for the missile force since missiles cannot be recalled and, therefore, would have to ride out any initial attack to preclude their being launched upon spurious warning.

In addition to hardening and dispersal of ICBM sites, SAC is now resorting to another protective tactic —mobility—tests of which began in June 1960. Mobility is a most attractive defense tactic against missile attacks because the probability of destroying a mobile target with a long-range missile is very small. The advantages of mobility are fully exploited in SAC's airborne alert system and also underlie the basic concept of the Navy's Polaris weapon system, which uses a nuclear-powered submarine as a missile platform. US-based mobile ICBMs and the airborne alert forces will have the added advantage of being beyond the range of Soviet reconnaissance and countermeasures.

The mobility concept is especially suitable for the Minuteman, a greatly simplified solid-fuel ICBM which will require minimum maintenance and will have very high-reaction capability. Present plans call for placing a portion of the Minuteman force on trains moving over random patterns throughout the nation, in addition to the use of widely dispersed and well hardened fixed sites.

A special SAC task force was established at Hill AFB, Utah, to conduct a series of deployments with a Minuteman Mobility Test Train. The first deployment ended June 27 after seven days of random travel over existing civilian rail facilities in the Ogden area. The test series will continue through the fall of 1960 with other rail movements in the Far West and Midwest.

The rail tests, which do not involve actual missile hardware, are designed to analyze problems associated with mobility, control, and communications. A train control center at Hill AFB monitors the movement of the test train between available rail sidings, using SAC's single-sideband radio system. All movements of the train are coordinated with the Association of American Railroads and the railroad companies whose facilities are being used in the deployments. The

(Continued on page 71)

Air Force Ballistic Missile Division, Air Materiel Command, the US Army Transportation Corps, and the various industrial concerns associated with the Minuteman development are providing assistance for the tests.

Another significant area for the utilization of missiles lies in their marriage with the manned bomber, which will add greatly to the latter's utility and flexibility. The first step in this direction is the airborne GAM-77 Hound Dog, a supersonic and accurately guided air-to-ground missile with a nuclear warhead. The B-52G bomber can carry two of these missiles—one under each wing—in addition to its regular nuclear payload. The Hound Dog, whose first production model was accepted by SAC in December 1958, will make it possible to attack the enemy's defenses from hundreds of miles away and thereby help the bomber to penetrate to its target. In addition, it will permit a variety of new tactics, such as attacks on several targets in different areas on the same mission.

A different type of penetration aid is represented by the Quail missile, which is a decoy system designed to confuse the enemy's radars by reflecting the same radar image as the B-52. It can be launched in quantity from target-bound bombers and thus assist in the penetration of enemy defenses. The first multiple Quail launch was conducted successfully over the Eglin AFB, Fla., test range in June 1960.

The next step will be the use of manned aircraft as airborne and virtually invulnerable platforms for air-launching ballistic missiles. One of the most promising is the GAM-87 Sky Bolt, which will be SAC's first ALBM. This weapon system will lend itself to use on SAC's present B-52 fleet as well as on the supersonic and nuclear-powered aircraft which are expected to enter the Strategic Air Command's inventory in the years ahead.

In my considered opinion, there will be a requirement for manned weapon systems for the foreseeable future, although in decreasing numbers. It is not likely that there will ever be a complete substitute for man's reasoning power, for it is that capacity which will always be needed over enemy territory in order to deal with unpredictable problems. In fact, it is not beyond the realm of imagination that, someday, a technological breakthrough may lead to development of effective defenses against ballistic missiles. If this should come to pass, and we must not rule out the possibility, there may be increased need again for our manned weapon systems—an added reason why manned systems should always reflect the latest advances in technology.

The point is that we cannot afford to place our entire or main reliance on any one particular type of weapon system, whether manned of unmanned, because the consequences could be disastrous if future advances in technology should impair or nullify its utility. For this reason, the Strategic Air Command must plan for a well balanced aerospace force of both manned and unmanned weapon systems, designed and timed to operate in the demanding environments of the future.

However, modernization of the weapons inventory would be of little value unless accompanied by commensurate advances in support facilities and equipment. This applies, in particular, to SAC's global communications network upon which hinges effective command and control of the worldwide strike forces. SAC now has the most modern and extensive network of telephone, teletype, and radio systems in the world, and several new systems were added during the past year, with still more advanced techniques under development.

In March 1960, a new single-sideband radio system, known as "Short Order," was put into operation. This system provides instant voice communications between the SAC Command Post in the Underground Control Center at Offutt and combat aircraft in flight over any part of the globe. Messages can be relayed in all directions from the powerful 45,000-watt transmitters located near Offutt and at the headquarters of each of SAC's three numbered air forces—Westover AFB, Mass., Barksdale AFB, La., and March AFB, Calif. "Short Order" would be the medium through which SAC bombers, launched under "Positive Control" in the event of tactical warning of an attack, would receive the "go-code" signal authorizing them to proceed to their designated targets once the President should direct a counterattack.

Thus, the past year has witnessed continued and significant improvements all along the line which have added greatly to SAC's fighting capability and, hence, its deterrent strength. But these improvements were possible only because of steps taken in the past. Future improvements will depend on the steps which are taken today, and it is, therefore, none too early to prepare ourselves for the unprecedented demands of the dawning space age. For there can be no doubt that, eventually, we will have to extend our defenses ever deeper into space.

It would be futile to speculate about the problems and promises that the battle for space supremacy may entail. But we must accept the fact that the conquest of space is far more than a scientific challenge. Indeed, supremacy in space may well be a matter of survival for the free nations of the world.

To achieve and maintain such supremacy for the sake of a lasting and honorable peace will demand an all-out cooperative effort which will have to draw upon all the economic, technological, and military assets at our command. In the event of need, SAC can be expected to contribute its share to this effort by putting into space strategic weapon systems designed to provide as convincing a deterrent to aggression as we have had in the past. To attain this goal, we may think in terms of strategic satellites or, even, perhaps, of manned spacecraft which would orbit the earth in a continuous space alert.

The day when such weapons become a reality may still be far in the future. But regardless of the dramatic challenges that lie ahead, it is safe to predict that, the American people can always count on SAC and its men to do their part—on the ground, in the air, and in space.—END